

Is Skin Color a Marker for Racial Discrimination? Explaining the Skin Color–Hypertension Relationship

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It is widely assumed that dark-skinned Blacks have higher rates of hypertension than their lighter-skinned cohorts because the former experience greater racial discrimination. However, there is no empirical evidence linking skin color to discrimination. This study tested the extent to which skin color is associated with differential exposure to discrimination for a sample of 300 Black adults. Results revealed that dark-skinned Blacks were 11 times more likely to experience frequent racial discrimination than their light-skinned counterparts; 67% of subjects reporting high discrimination were dark-skinned and only 8.5% were light-skinned. These preliminary findings suggest that skin color indeed may be a marker for racial discrimination and highlight the need to assess discrimination in studies of the skin color–hypertension relationship.

KEY WORDS: skin color; Blacks; racial discrimination; hypertension.

INTRODUCTION

Numerous studies have revealed that dark-skinned Blacks have significantly higher rates of hypertension than their lighter-skinned cohorts and have noted that the high rates for dark-skinned Blacks may account for racial differences in hypertension prevalence (Coresh *et al.*, 1991; Gleiberman *et al.*, 1995; Harburg *et al.*, 1973, 1978; Klag *et al.*, 1991; Keil *et al.*, 1977, 1981;

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Krieger, 1990; Krieger and Sidney, 1996). Although this relationship between skin color and hypertension among Blacks is clear, the meaning of it is not. Two major explanations for it have been advanced. The *genetic explanation* argues that hypertension is in part linked to genetic Blackness; dark-skinned Blacks have higher rates of hypertension because they are more genetically Black than their lighter-skinned counterparts (who have greater “genetic admixture”; genetic Whiteness). Alternatively, the *social explanation* argues that hypertension is in part linked to stress; dark-skinned Blacks have higher rates of hypertension because they experience higher levels of (stressful) racial discrimination than their lighter-skinned cohorts (for a discussion see Krieger *et al.*, 1998). These two explanations have been widely accepted despite the absence of empirical evidence for them: Those who interpret the skin color–hypertension relationship as a function of genetic admixture have never assessed genetic differences (but instead have assumed skin color to be a proxy for those). Likewise, those who interpret the skin color–hypertension relationship as a function of racial discrimination have not assessed discrimination [but instead have assumed skin color to be a marker for it (see Krieger *et al.*, 1998)]. Both arguments are clearly circular.

Hence, to understand the skin color–hypertension relationship, the assumption that skin color is a marker for racial admixture must be tested empirically, and the assumption that skin color is a proxy for racial discrimination similarly must be tested empirically. To date, only one study has directly tested the assumption that skin color among Blacks is related to differential exposure to racial discrimination. Using a brief measure of exposure (*ever*) to racial discrimination in seven situations, Krieger and her colleagues (1998) found that skin color *was not* associated with self-reported discrimination in five of the seven situations and was only weakly associated with discrimination in the remaining two situations (i.e., discrimination by the police/courts and discrimination at school). Strong associations between skin color and gender were found, in which Black women had significantly lighter skin than Black men as measured with a Photovolt 577 reflectance meter.

Unfortunately, Krieger *et al.* (1998) measured the extent to which Blacks have *ever* experienced discrimination. However, racial discrimination is so common that 80–95% of Blacks in health studies report experiencing discrimination of some type (Krieger, 1990; Krieger and Sidney, 1996; Krieger *et al.*, 1998), leaving little variance to be associated with skin color. Thus, to test the widely held assumption that skin color is associated with differential exposure to racial discrimination, a comprehensive, reliable, valid measure of the frequency of discrimination (as opposed to discrimination *ever*) is needed (Krieger *et al.*, 1998). This study used such a measure to assess the skin color–discrimination relationship.

METHOD

Subjects. Three hundred Black adults (195 women, 105 men) participated. Their ages ranged from 15 to 79 years (mean = 38.72 years, $\sigma = 13.95$ years) and their annual incomes from \$0 to \$125,000 (mean = \$30,058, $\sigma = \$21,422$). Their education levels were as follows: 15.5% were high-school dropouts, 22.2% were high-school graduates, 38.7% had taken some college courses, and 21.5% had college degrees.

Procedure. Black health educators asked Blacks in public settings (e.g., beauty parlors, community centers) in south-central Los Angeles to complete a survey.

Materials. The anonymous survey contained the Schedule of Racist Events (Landrine and Klonoff, 1996; Klonoff and Landrine, 1999), demographic questions, a question on skin color, and Krieger's (1990) racism scale; the latter was included to establish further the validity of the Schedule of Racist Events, and was not entered into any analyses given the lack of a relationship between scores on that scale and skin color (Krieger *et al.*, 1998).

The Schedule of Racist Events (SRE) measures the frequency of a variety of types of racial discrimination (e.g., in salaries, by store clerks) in Blacks' lives (Table I). Types of racial discrimination are conceptualized as culturally specific, stressful events (i.e., racist events) that are analogous to the generic (can happen to anyone) stressful life events (e.g., getting fired) that are measured by popular stress inventories such as the PERI-LES (Dohrenwend *et al.*, 1978). The SRE also measures people's appraisals of the stressfulness of the racist events, in a manner similar to the Perceived Stress Scale (Cohen, 1986; Cohen *et al.*, 1983) and the Hassles Scale (Kanner *et al.*, 1981). The logic behind the appraisal (vs. the events) approach to measuring stress is that two people may experience the same stressful event (getting fired, being called a nigger) with equal frequency, but one may find it very stressful, while the other dismisses it. Theoretically, the event should have a greater negative impact on the individual who appraised it as stressful (Cohen, 1986). Hence some stress researchers take the frequency-of-events and others the appraisal-of-events approach to measuring stress. The SRE uses both: it is an 18-item scale on which Blacks estimate the frequency with which they have experienced specific racist events and then give their appraisals of those. Each item is answered on scales that range from 1 (the event never happened to me) to 6 (the event happens almost all of the time). Items are completed once for the frequency of the racist events in the past year, again for the frequency of the events in one's entire lifetime, and again for the appraisal of the stressfulness of each event as shown by the examples in Table I. These are treated as the subscales Recent Racist Events (range, 18–108), Lifetime Racist Events (range, 18–108), and Appraised Racist Events (range, 17–102).

Table I. Sample Items from the Schedule of Racist Events

Circle 1 = if the event has NEVER happened to you
 Circle 2 = if the event happened ONCE IN A WHILE (less than 10% of the time)
 Circle 3 = if the event happened SOMETIMES (10–25% of the time)
 Circle 4 = if the event happened A LOT (26–49% of the time)
 Circle 5 = if the event happened MOST OF THE TIME (50–70% of the time)
 Circle 6 = if the event happened ALMOST ALL OF THE TIME (more than 70% of the time)

1. How many times have you been treated unfairly by *teachers and professors* because you are Black?

How many times IN YOUR ENTIRE LIFE?	1	2	3	4	5	6
How many times IN THE PAST YEAR?	1	2	3	4	5	6

Not at all stressful Very stressful

How stressful was this for you?	1	2	3	4	5	6
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2. How many times have you been treated unfairly by *your employers, bosses, and supervisors* because you are Black?

4. How many times have you been treated unfairly by *people in service jobs* (by store clerks, waiters, bartenders, bank tellers, and others) because you are Black?

10. How many times have you been *accused or suspected of doing something wrong* (such as stealing, cheating, not doing your share of the work, or breaking the law) because you are Black?

17. How many times have you been *made fun of, picked on, pushed, shoved, hit, or threatened with harm* because you are Black?

15. How many times have you been *called a racist name* like nigger, coon, jungle bunny, or other names?

16. How many times have you *gotten into an argument or a fight about something racist that was done to you or done to somebody else?*

As shown in Table II, the SRE has an exceptionally high reliability. The SRE also has strong validity as a measure of stressful events and as a measure of racism: the SRE has stronger relationships with the PERI-LES and the Hassles (stress scales) than those scales do with each other (Table III, top) and has strong relationships to Krieger's (1990) brief measure of racism as well (Table III, bottom). All items in each SRE subscale load on a single factor (Klonoff and Landrine, 1999). The construct validity of the SRE was established through structural equation modeling (Klonoff *et al.*, 1999).

To assess skin color, Blacks rated their skin as follows: 1 = very light-skinned, 2 = light-skinned, 3 = medium-skinned, 4 = dark-skinned, 5 = very dark-skinned. Those rating themselves 1 or 2 were categorized as Light, those rating themselves 3 were categorized as Medium, and those who rated themselves 4 or 5 were categorized as Dark.

RESULTS

Analysis of Skin Color Groups. To assess the relationship between skin color and experiencing racial discrimination, a MANOVA was conducted using three skin color groups (Light, Medium, Dark) as the grouping factor

Table II. Reliability of the Schedule of Racist Events

Racist events	No. of items	Mean	σ	Internal consistency reliability, Cronbach's α	Split-half reliability, r	1-month test-retest reliability, r
Reliability for the standardization sample ^a						
Recent	18	40.99	19.82	.949	.928	.956
Lifetime	18	53.93	21.99	.953	.907	.946
Appraisal	17	51.47	21.61	.936	.919	.963
Reliability for the cross-validation sample ^b						
						SE
Recent	18	38.75	17.18	.947	.839	0.753
Lifetime	18	45.86	18.41	.940	.827	0.808
Appraisal	17	44.23	20.34	.943	.822	0.892
Reliability for the current sample						
Recent	18	53.04	11.71	.956	.938	1.34
Lifetime	18	63.78	13.09	.966	.947	1.52
Appraisal	17	65.53	25.39	.966	.933	1.52

^a Adapted from Landrine and Klonoff (1996).

^b Adapted from Klonoff and Landrine (1999).

Table III. Validity of the Schedule of Racist Events

Convergent validity as a measure of stress (standardization sample) ^a			
	Hassles frequency	PERI-LES	Hassles intensity (appraisal)
PERI-LES	.19 ns		
Hassles intensity	-.28 ns	.16 ns	
SRE Recent	.54 (.0005)	.27 (.001)	.22 ns
SRE Lifetime	.54 (.0005)	.32 (.0005)	.31 (.05)
SRE Appraisal	.37 (.016)	.24 (.005)	.46 (.003)
Convergent validity as a measure of racism (current sample) ^b			
Krieger (1990) discrimination items:			
"Have you ever been treated unfairly because of your race?" (yes = 1, no = 0)	Recent racist events	Lifetime racist events	Appraised racist events
At school	.36	.39	.35
Getting a job	.35	.46	.40
At work	.38	.48	.49
Getting housing	.45	.55	.49
In medical care	.44	.45	.45
By the police	.42	.45	.38
Total score on Krieger items	.64	.71	.67

^a ns, not significant. These data on the standardization sample have not been reported elsewhere.

^b All correlations are point biserial except that for total score, which is a normal, bivariate correlation. All r 's in the bottom of the table are significant at .005.

Table IV. Analysis of Skin Color Groups

Dependent variable	Group 1. Light (<i>n</i> = 56)	Group 2. Medium (<i>n</i> = 106)	Group 3. Dark (<i>n</i> = 132)	<i>F</i> ^a	Tukey HSD
Recent racism	41.59	43.69	56.25	10.09**	1 = 2 < 3
Lifetime racism	50.85	55.18	72.50	16.13**	1 = 2 < 3
Appraised racism	55.25	54.18	72.99	13.20**	1 = 2 < 3
Income	\$22,443	\$32,923	\$30,841	3.20*	1 < 2
Gender					
Men	14.8%	32.0%	39.1%	$\chi^2_{(df\ 2)} = 10.28, p = .006$	
Women	85.2%	68.0%	60.9%		
Education					
<HS	9.8%	8.9%	22.4%	$\chi^2_{(df\ 6)} = 16.39, p = .012$	
HS grad	21.6%	17.8%	24.8%		
Some college	41.2%	44.6%	39.2%		
≥College grad	27.5%	28.7%	13.6%		

^a*df* = 2, 182 for each *F*.

* *p* = .043.

** *p* = .0005.

and the three SRE subscales and income as the dependent variables. The MANOVA was significant [Wilks' $\lambda = .799$, $F(8,352) = 5.209$, $p = .00005$]; follow-up ANOVAs, post hoc comparisons, and chi-square analyses are listed in Table IV. As shown in Table IV (top), Dark-Skinned Blacks reported significantly more frequent racial discrimination in the past year (Recent Racism) and in the course of their lifetimes (Lifetime Racism) and also found that racism to be more subjectively stressful (Appraised Racism) than did other Blacks. Skin color was also associated with income, gender, and education (Table IV, bottom). Light-Skinned Blacks tended to be women and were more likely than Dark-Skinned Blacks to be college educated and less likely to be high-school dropouts.

Analysis of Racial Discrimination Groups. An alternative way to assess the relationship between skin color and discrimination is to group subjects into high vs. low racial discrimination groups and then examine the association of these groups with skin color. Cluster analysis of cases (CAC) was used to define discrimination groups empirically. In CAC, the program, rather than the researcher, creates groups that differ on the dependent variables, thereby avoiding groups defined by arbitrary cut-points that are prone to experimenter bias. The program was instructed to create two groups that differ maximally on the three SRE scales. *K*-means cluster analysis with centroid sorting was used because of the relatively large number of cases; cluster centers were iteratively estimated from the data (see Anderberg, 1973). As shown in Table V (top), the ensuing Low and High Discrimination clusters differed

Table V. Analysis of Racial Discrimination Groups

Dependent variable	Cluster 1: Low Discrimination group (n = 147)	Cluster 2: High Discrimination group (n = 110)	Cluster analysis ANOVA <i>F</i> *
SRE Recent	36.60	69.55	318.54
SRE Lifetime	45.35	87.36	606.69
SRE Appraisal	44.71	86.01	451.84
Age	36.26 ($\sigma = 13.7$)	40.75 ($\sigma = 14.1$)	$t_{(df\ 233)} = -2.45,$ $p = .02$
Income	\$30,212 ($\sigma = 22,234$)	\$29,593 ($\sigma = 20,122$)	$t_{(df\ 182)} = 0.193,$ $p = .85$ (ns)
Education			
HS dropout	10.9%	21.5%	$\chi^2_{(df\ 3)} = 12.59,$ $p = .006$
HS grad	15.9%	27.1%	
Some college	48.6%	32.7%	
≥ College grad	24.6%	18.7%	
Skin color			
Light	26.9%	8.5%	$\chi^2_{(df\ 2)} = 38.37,$ $p = .0005$
Medium	44.8%	24.5%	
Dark	28.3%	67.0%	
Gender			
Women	74.5%	57.0%	$\chi^2_{(df\ 1)} = 8.51,$ $p = .004$
Men	25.5%	43.0%	

*df = 1, 255 and $p < .0005$ for each *F*.

significantly on all SRE scales, with the High-Discrimination cluster scoring twice as high on each scale. Chi-square analyses, *t* tests (Table V, bottom), and logistic regression (Table VI) then were used to examine relationships.

As shown in Table V (bottom), High Racial Discrimination subjects were significantly older than Low Discrimination subjects, no doubt because Lifetime Racism scores increase with age (length of lifetime). The High and Low Racial Discrimination groups did not differ in their incomes but did

Table VI. Stepwise Logistic Regression Predicting Membership in the High Discrimination Cluster from Income, Age, Gender, Education, and Skin Color

Variable selected	β	SE	Coef./SE	OR	95% CI
Reference group: Light-Skinned					
1. Skin color					
Medium-Skinned	.654	.6243	1.048	1.92	0.566, 6.539
Dark-Skinned	2.39	.6057	3.948	10.93	3.334, 35.821
Reference group: Women					
2. Gender					
Men	1.097	.373	2.939	2.995	1.441, 6.226

differ in education, gender, and skin color. The High Discrimination group had significantly more high-school dropouts and significantly fewer college graduates than the Low Racial Discrimination group. The High Discrimination group also had significantly fewer Light-Skinned Blacks and significantly more Dark-Skinned Blacks than the Low Discrimination Group: 67% of High Discrimination subjects were dark-skinned and only 8.5% were light-skinned. The Low Discrimination group also was predominantly women (74.5%). As shown in Table VI, a stepwise logistic regression predicted membership in the High Discrimination Group from these variables: income, age, education group, gender, and skin color group (Light, Medium, Dark). Only skin color and gender predicted membership in the High Discrimination Group. Dark-Skinned Blacks were 10.9 times more likely than Light-Skinned Blacks to be in the High Discrimination group, and men were 3 times more likely than women to be in that group.

DISCUSSION

When divided into skin color groups, analyses revealed that Dark-Skinned Blacks reported significantly more frequent and more stressful experiences with racial discrimination than their lighter-skinned cohorts. Similarly, when clustered into groups that differ maximally in discrimination, analyses revealed that 67% of subjects who experience frequent discrimination were dark-skinned and only 8.5% were light-skinned. Dark-Skinned Blacks were 11 times more likely to be in the high discrimination group than their light-skinned counterparts. Likewise, gender was the only status variable consistently associated with skin color and discrimination in all analyses: 74.5% of Light-Skinned Blacks were women and hence women tended to be in the low discrimination group.

These results suggest that there is a strong relationship between skin color and exposure to racial discrimination among Blacks and that this relationship may be strong enough for skin color to indeed be treated as a marker for racial discrimination. However, this study is limited by the use of self-reported (instead of measured) skin color. Nonetheless, a strong relationship between gender and skin color was found here despite using self-reported skin color, and it matches Krieger's (1998) finding using measured skin color; this implies that these self-reports of skin color, albeit inferior to direct measurement, nonetheless may be a valid procedure for assessing skin color among Blacks. The gender-skin color relationship found here and in the Krieger *et al.* (1998) study is consistent with evidence that Black women have greater concerns about skin color than Black men and (unlike Black men) use skin-bleaching creams (Russel *et al.*, 1992); hence, Black women

self-reported lighter skin than did Black men in this study and, when their skin was measured by Krieger *et al.* (1998), did indeed have lighter skin than Black men.

In addition to being limited by the use of self-reported skin color, this study is limited by its modest, nonrandom sample, and hence the findings must be regarded as preliminary. However preliminary they may be, these findings nonetheless provide the first empirical evidence for the view that skin color among Blacks is a marker for racial discrimination, and so provide the first tentative empirical support for the social explanation of the skin color–hypertension relationship. Clearly, studies with large samples are now needed in which skin color, hypertension, and discrimination are all measured; then the hypothesis that discrimination is the moderator variable explaining the skin color–hypertension relationship can finally be empirically tested. Such studies would benefit from using the SRE as the measure of racial discrimination because it is comprehensive enough to be sensitive to differences among Blacks by skin color and has clear psychometric integrity.

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