



# Perceived Racism in Relation to Weight Change in the Black Women's Health Study

YVETTE C. COZIER, DSc, LAUREN A. WISE, ScD, JULIE R. PALMER, ScD, AND LYNN ROSENBERG, ScD

**PURPOSE:** Obesity is more common in black women than in white women. Racial discrimination is a form of chronic stress that may influence weight.

**METHODS:** We assessed the association of perceived racism with weight change between 1997 and 2005 in 43,103 women from the Black Women's Health Study, a prospective follow-up of U.S. black women aged 21–69 years at entry in 1995. Eight questions about perceptions and experiences of racism were asked in 1997 from which two summary variables were created: everyday racism (e.g., how often do people act “as if you are not intelligent?”), and lifetime racism (e.g., unfair treatment due to race “on the job”). Mixed linear regression models were used to calculate the multivariate adjusted means for changes in body weight across categories of perceived racism.

**RESULTS:** Weight gain increased as levels of everyday and lifetime racism increased. The mean multi-variable-adjusted difference in weight change between the highest and the lowest quartile of everyday racism was 0.56 kg. The mean difference comparing the highest category of lifetime racism to the lowest was 0.48 kg.

**CONCLUSION:** These prospective data suggest that experiences of racism may contribute to the excess burden of obesity in U.S. black women.

*Ann Epidemiol* 2009;19:379–387. © 2009 Elsevier Inc. All rights reserved.

**KEY WORDS:** Racism, Racial Discrimination, Black Women, Obesity, Weight, Stress, Psychosocial Stress.

## INTRODUCTION

Obesity is an established risk factor for numerous health conditions, including cardiovascular disease, and mortality (1–3). Black women have a higher prevalence of overweight, obesity, and extreme obesity than white women (4, 5). Between 1999 and 2002, 77% of black women were overweight or obese and 14% were extremely obese (body mass index [BMI]  $\geq 35.0$ ) compared with 57% and 5.5%, respectively among white women (5).

Despite extensive research, the observed racial disparities in obesity are poorly understood (6). Stress has been associated with weight gain and obesity in both animals (7, 8) and humans (9–11). Specifically, psychosocial stress associated with low income and low education has been associated with weight gain (10), and it is hypothesized that such stress results in neuroendocrine-autonomic dysregulation which, in turn, influences the accumulation of excess body fat (12–14). Racial discrimination may be an important psychosocial

stressor in the lives of black women (15–17). Cross-sectional studies in non-U.S. populations have found associations of internalized racism with increased obesity (18) and waist circumference (19, 20). A cross-sectional study in the United States found an association of experiences of racial discrimination with increased obesity (21), while another found an inverse relationship with waist-to-hip ratio (22). The sample sizes in these studies were relatively small, ranging from 129 (18) to 1,956 (21) study subjects.

In the present report, we prospectively evaluate the association of perceived racism with weight change over 8 years of follow-up among 43,103 U.S. black women, using data from the Black Women's Health Study (BWHS). We also explore whether perceived racism is associated with change in waist circumference.

## METHODS

The human subjects' protocol for this study was approved by the Boston University Medical Center and Howard University Cancer Center Institutional Review Boards. The BWHS is a follow-up study of U.S. black women that began in 1995 when 59,000 women aged 21–69 years enrolled through postal health questionnaires, which were sent mainly to subscribers of *Essence* magazine, members of selected black women's professional organizations, and

From Slone Epidemiology Center, Boston University, MA. Funding support: This work was supported by National Cancer Institute Grant CA58420.

Address correspondence to: Yvette C Cozier, Slone Epidemiology Center at Boston University, 1010 Commonwealth Ave., Boston, MA 02215. Tel: (617) 734-6006. Fax: (617) 738-5119. E-mail: ycozier@slone.bu.edu.

Received December 15, 2008; accepted January 20, 2009.

---

**Selected Abbreviations and Acronyms**

---

BMI = body mass index  
BWHS = Black Women's Health Study  
HPA = hypothalamic-pituitary-adrenal

---

friends and relatives of early respondents. Participants indicated their informed consent by completing the questionnaires. At baseline, subjects were 21 to 69 years of age (median, 38 years), 97% had completed high school, and 44% had completed college. Over 80% were from California, Georgia, Illinois, Indiana, Louisiana, Maryland, Massachusetts, Michigan, New Jersey, New York, South Carolina, Virginia, and the District of Columbia. Participants are mailed biennial questionnaires to obtain updated health information. As of 2007, cohort retention has been 80%.

**Exposure Variables**

The 1997 follow-up questionnaire contained eight questions on perceptions and experiences of racism adapted from an instrument developed by Williams and colleagues (23). Five questions asked about the frequency in daily life (everyday racism) of the following experiences: "you receive poorer service than other people in restaurants or stores," "people act as if they think you are not intelligent," "people act as if they are afraid of you," "people act as if they think you are dishonest," and "people act as if they are better than you". Response options were "never," "a few times a year," "once a month," "once a week," "almost every day". Three questions asked about lifetime experience of being "treated unfairly due to your race" on the job, in housing, and by the police (lifetime racism). Response categories were "yes" and "no". Based on the results of principal components factor analysis, two summary racism variables were created from the eight individual variables (24). The first variable, summary everyday racism, averaged subjects' responses to the five questions of everyday racism and was divided into quartiles. The second variable, summary lifetime racism, categorized responses to the three questions of lifetime racism according to the number of positive responses (none to all, "yes" to one, "yes" to two, and "yes" to all three).

**Covariates**

In 1995, we collected information on self-reported height (feet and inches), current weight (given in pounds), waist circumference (in inches), and hip circumference (in inches). Current weight was updated every 2 years by follow-up questionnaire. BMI was calculated as weight (in kilograms) divided by height squared (in square meters). Education (in years) was collected on the 1995 and 2003 surveys; data on smoking status, alcohol consumption,

vigorous physical activity, parity, menopausal status, and geographic region were collected on each follow-up questionnaire. Modified versions of the Block-National Cancer Institute food frequency questionnaire (25) were included in the 1995 and 2001 surveys; from these we obtained measures of total daily energy intake (in kilocalories), percent of calories from fat and total saturated fat (in grams), and weekly fast food consumption. Household income was assessed in 2003, and data on coping were collected on the 2005 survey by use of the Abbreviated Carver Coping Scale (26).

**Change in Weight and Waist Circumference**

Weight change was calculated as the difference between self-reported weight in 2-year intervals from information provided on the 1997, 1999, 2001, 2003, and 2005 follow-up questionnaires; for example, weight change for the 1997–1999 follow-up interval was the difference between weights reported in 1997 and 1999 given in pounds, which was converted to kilograms. Cumulative change in waist circumference was calculated as the difference between waist circumferences (inches) reported in 1995 and 2005, converted to centimeters.

**Validation of Weight, Height, and Waist Circumference**

We assessed the validity of self-reported weight, height, and waist circumference among 115 BWHS participants residing in the Washington, DC metropolitan area who participated in a validation study of physical activity conducted at Howard University Cancer Center. The participants were weighed and measured by clinic personnel in 2000–2001. The Spearman correlation between self-reported and technician-measured weight (mean, 176 vs. 181 lb, respectively) was 0.97; the correlation between self-reported and technician-measured height (mean, 64.4 inches vs. 64.0 inches, respectively) was 0.93. Self-reported waist circumference reported on the 1995 questionnaire was, on average, 4.7 inches lower than technician measurements with a correlation coefficient of 0.75 (27).

**Data Analysis**

Follow-up for the current analysis began in 1997, as the racism questions were included on that questionnaire. The analytic sample consisted of women who completed the 1997 questionnaire and at least one of the follow-up surveys. We excluded women with missing values for baseline weight or height ( $n = 2,582$ ), education ( $n = 60$ ), and one or more of the racism questions ( $n = 4,068$ ). Further exclusions were made for women with baseline weight of  $\leq 80$  lb or  $\geq 300$  lb ( $n = 652$ ), who reported undergoing gastric bypass surgery on the 1999 questionnaire ( $n = 75$ ), were currently pregnant in 2005 ( $n = 278$ ), or who reported

Download English Version:

<https://daneshyari.com/en/article/3445120>

Download Persian Version:

<https://daneshyari.com/article/3445120>

[Daneshyari.com](https://daneshyari.com)