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Coping With Perceived Racism: A Significant Factor in the Development of Obesity in African American Women?

Denee T. Mwendwa, PhD, **Georica Gholson, MS**, **Regina C. Sims, PhD**, **Shellie-Anne Levy, MS**, **Mana Ali, MS**, **C. Jules Harrell, PhD**, **Clive O. Callender, MD**, and **Alfonso L. Campbell Jr, PhD**

Department of Psychology (Drs Mwendwa, Sims, Harrell, and Campbell and Mss Gholson, Levy, and Ali), Howard University, Washington, District of Columbia; School of Medicine/National Minority Organ and Tissue Transplant Program, Washington, District of Columbia (Dr Callender).

Abstract

Background—African American women have the highest rates of obesity in the United States. The prevalence of obesity in this group calls for the identification of psychosocial factors that increase risk. Psychological stress has been associated with obesity in women; however, there is scant literature that has explored the impact of racism on body mass index (BMI) in African American women.

Objective—The current study aimed to determine whether emotional responses and behavioral coping responses to perceived racism were associated with BMI in African American women.

Methods—A sample of 110 African American women participated in a community-based study. Height and weight measurements were taken to calculate BMI and participants completed the Perceived Racism Scale and the Perceived Stress Scale.

Results—Hierarchical regression analyses demonstrated a significant relationship between BMI and behavioral coping responses to perceived racism. Findings for emotional responses to perceived racism and appraisal of one's daily life as stressful were nonsignificant. Mean comparisons of BMI groups showed that obese African American women used more behavioral coping responses to perceived racism as compared to normal-weight and overweight women in the sample.

Conclusion—Findings suggest that behavioral coping responses better explained increased risk for obesity in African American women. A biobehavioral pathway may explain this finding with a stress-response process that includes cortisol reactivity. Maladaptive behavioral coping responses may also provide insight into obesity risk. Future research is needed to determine which behavioral coping responses place African American women at greater risk for obesity.

Keywords

obesity; African Americans; women's health; racism; stress; coping

Correspondence: Denee T. Mwendwa, PhD, Department of Psychology, 525 Bryant St NW, Washington, DC 20059 (dmwendwa@howard.edu).

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Current estimates for the overall prevalence of overweight and obesity in the United States is 68%, with people of color disproportionately represented.[1] African Americans have the highest rates of obesity (44.1%) in comparison to Mexican Americans (39.3%), Hispanics (37.9%), and Caucasians (32.8%).[1] In general, men are more likely to be overweight/obese as compared to women.[1] However, the rate for overweight/obesity in African American women (77%) surpasses that of their African American (63%), Mexican American (73%), and Caucasian (69%) male counterparts.[1,2] The rates of overweight/obesity, particularly among African American women, are staggering. The rates are especially alarming in light of the fact that obesity serves as a precursor to chronic diseases such as cardiovascular disease (CVD), certain cancers, hypertension, renal disease, and diabetes mellitus.[3-7]

Psychological stress is associated with greater risk for obesity. It often leads to maladaptive coping behaviors such as increased food intake, intake of sweet foods, emotional eating, haphazard meal planning, and poor appetite regulation.[8,9] Periods of psychological stress have also been associated with the selection of high-fat foods over healthier low-fat items.[10] Studies have shown that women who experience stress are more likely to overeat and choose unhealthy foods as compared to men.[10,11] Despite these findings, poor eating behaviors and lack of physical activity do not provide a full explanation for the obesity disparity that exists between African American women and their ethnic counterparts. Research has suggested that repeated stress exposure and ineffective stress management contribute to a stress response mechanism that releases cortisol and promotes weight gain in women.[12,13] In addition to the daily life stressors that many African American women endure, perceived racism is a psychological stressor also linked to poor health outcomes and has been found to increase blood pressure and risk for cardiovascular disease.[14,15] An assumption can be made that, similar to the stress-response mechanism seen with chronic life stress, perceived racism may follow the same pathway, where inefficient coping styles also elicit a heightened stress response that leads to poor mental and physical health outcomes.

Racism has been identified as a unique psychological stressor for African Americans.[16] One study reported an association between perceived racism and increased weight gain in African American women.[17] Everyday experiences with racism have been associated with increased BMI across all weight classifications in African American women.[17] Prolonged exposure to perceived racism was also associated with depressive feelings, social isolation, reduced physical activity, and increased food consumption, which are behaviors likely to increase weight.[18,19] Another study found that internalized racism was linked to abdominal obesity and blood pressure in women from the Caribbean.[20] In addition, passive emotional responses to racism have been associated with abdominal fat in African American women.[21]

Studies on the relation between perceived racism and obesity have focused primarily on experiences with perceived racism in various domains of one's life (eg, on the job, applying for a bank loan) or the emotional responses to perceived racism (eg, anger, frustration, sadness). Although these factors are critical to the understanding of obesity risk in African American women, there is also a need to determine the impact of behavioral coping responses (eg, praying, speaking up, avoiding it) to perceived racism on obesity risk in African American women. The notion of having to cope daily with perceived racism could

result in the overuse of the stress response mechanism, which may increase the risk for health-related problems such as obesity in African-American women. Behavioral coping responses are vital to the perceived racism narrative and may further explain disparate rates of obesity in African American women.

There is a paucity of knowledge regarding the association between behavioral coping responses to perceived racism and BMI in African American women. Consequently, there is a need to broaden obesity-related research to include not only emotional responses but also behavioral coping responses to perceived racism. Generally, coping responses are employed to attenuate the effects of physical and psychological stress on health outcomes. Previous research on racism and health has linked a passive coping style with poorer health outcomes.[22] Research has suggested that African Americans who cope with racism in an active manner have better physical health.[23] However, adaptive and maladaptive coping responses produce both a physiological and psychological stress response.[24] It can be argued that the chronic use of either maladaptive or adaptive behavioral coping responses to perceived racism may produce a heightened stress response that has long-term deleterious health consequences. Therefore, it is necessary to examine the relations between emotional responses and behavioral coping responses to perceived racism and BMI in African American women.

The current study aimed to fill the gap in the current literature by examining the relations among BMI, behavioral coping responses, and emotional responses to perceived racism. In addition, we investigated the influence of perceived daily stress on BMI in African American women. We hypothesized that increased BMI would be associated with greater behavioral coping and emotional responses to perceived racism and increased perceived daily stress.

METHODS

Data Source

The current study was conducted in conjunction with the Minority Organ Tissue Transplant Education Program Stress and Psychoneuroimmunological Factors in Renal Health and Disease Study, which aimed to validate a model that identifies biological and psychosocial risk factors that contribute to impaired renal function and renal disease in African Americans. The overall study involved the assessment of cognitive, psychosocial, biological, and spiritual/religious variables. The psychological variables of perceived stress and perceived racism and the biological variable of BMI were used in the current study.

Participants

The sample consisted of 214 African Americans aged 18 to 73 years (M = 45.60, SD = 11.56). The sample was 48.36% male and 51.64% female. The current analysis used a subsample of 110 African American females. The mean age for this sample was 47 years (SD = 10.85). The mean education level for participants was 14.20 years (SD = 2.46). Roughly 67% of study participants reported earnings of $40 000 per year or less. Participants were recruited for the study by conventional methods (eg, flyers, health fairs,

and word of mouth), contacted via telephone, and scheduled an appointment for data collection. Participants were asked about current medication use, alcohol consumption, and cigarette use. Exclusion criteria for the study included current drug, emotional, and domestic abuse. Participants were also excluded if they had a current diagnosis of a psychiatric illness. They received monetary compensation after completion of the study.

Measures

Perceived Stress Scale—The Perceived Stress Scale (PSS-10) is the most widely used psychological instrument for measuring the perception of stress.[25] It is a 10-item assessment designed to measure the degree to which an individual perceives and appraises life events as stressful on a Likert scale from 0 (never) to 4 (very often).[25] Examples of scale items include: “In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?” and “In the last month, how often have you felt that you were unable to control the important things in your life?” Both test-retest reliability and predictive validity[25] have a coefficient of 0.85.

Perceived Racism Scale—The Perceived Racism Scale[26] is a multidimensional instrument that consists of 51 items that assess the experience of racism in African Americans. It allows respondents to describe their experiences with and reaction to racist incidents both recently and throughout their lifetimes across a variety of situational domains (eg, academic domain and public domain). Responses are categorized into domains that include frequency of exposure to racism, emotional responses to racism, and behavioral coping responses to perceived racism. Emotional responses to racism were assessed on a Likert scale from 1 (not at all) to 5 (extremely), with emotions that range from “angry,” “frustrated,” “powerless,” “hopeless,” “ashamed,” and “strengthened” in response to encounters with racism in various domains. The behavioral coping responses to perceived racism are a total score that measures the behaviors associated with having to cope with racism, such as praying, speaking up, and avoiding, in different facets of one's life (eg, jobs and schools). Test-retest reliability coefficients for racism emotions ranged from 0.50 to 0.78 and 0.59 to 0.60 for coping with perceived racism. Internal validity coefficients are 0.94 for emotional responses and range from 0.92 to 0.94 for behavioral coping responses to perceived racism.[26]

Body mass index—A balance scale was used to measure the weight and height of participants. Weight and height measurements were used to calculate BMI by converting weight from pounds to kilograms and converting height from inches to meters. The participants wore clothing during the measurement.

Procedure—The overall study required 4 to 6 hours to complete and took place at the General Clinical Research Center (GCRC) at Howard University Hospital in Washington, DC. Participants were given an overview of the study requirements and procedure. All participants provided informed consent as required by the Howard University institutional review board. They completed a demographic information form and a health history form. Trained graduate students administered a battery of biopsychosocial, neuropsychological,

and spiritual/religious measures. A nurse on duty collected the weight and height measurements as well as physiological data for the larger study in the GCRC.

RESULTS

Data Analysis

SPSS 17.0 was used for all statistical analyses. All variables were checked for normality of variance. Means and standard deviations were calculated for all study variables. Hierarchical regression analyses were conducted to examine the associations between behavioral coping responses to perceived racism and BMI, emotional responses to perceived racism and BMI, and perceived stress and BMI. Each of the 3 hierarchical regressions contained 2 models. In the first model of each regression, BMI was regressed on each independent variable. In the second model of each regression, BMI was regressed on each independent variable after controlling for the influence of 3 covariates. The covariates were age, education, and income. These variables are known to influence BMI.

Finally, significant independent variables in the regression were further examined to determine if they varied as a function of membership in 1 of 3 weight groups. The BMI variable was divided into 3 groups based on widely used cutoffs: normal weight (BMI = 18-24 kg/m^2), overweight (BMI = 25-29 kg/m^2), and obese (BMI = ≥30 kg/m^2). A one-way analysis of variance (ANOVA) was run on significant independent variables to evaluate the effects of BMI group membership on behavioral coping responses to perceived racism, emotional responses to perceived racism, and perceived stress. Follow-up post hoc analyses were run to detect significant differences in perceived racism domains and perceived stress by BMI group.

Demographic characteristics and means and standard deviations for all study variables are found in Table 1. Nearly 62% of African American women in the sample met the criteria for obesity. The results of the hierarchical regression analyses can be found in Table 2. The first regression tested the hypothesis that behavioral coping responses to perceived racism would be significantly associated with BMI before and after controlling for age, education, and income. The first model was significant ($F = 6.440$, $p < .05$) and suggested that behavioral coping responses were a significant predictor of BMI. The second model was also significant ($F = 3.942$, $p < .05$). After controlling for age, education, and income, behavioral coping responses to perceived racism had a significant positive association with BMI (ß = .254, $p < .05$). The second regression tested the hypothesis that emotional responses to perceived racism would be associated with BMI. The first model was nonsignificant. Emotional coping was not a significant predictor of BMI. The second model was significant ($F = 3.854$, $p < .05$); however, emotional responses to perceived racism were not a significant independent predictor of BMI. The third regression tested the hypothesis that perceived stress was associated with BMI. Both models 1 and 2 were nonsignificant. Perceived stress was not a signficant predictor of BMI prior to or after controlling for age, education, and income. Within the 3 regressions, none of the covariates were significantly associated with BMI. In the final step of the analysis, a one-way ANOVA was run on the behavioral coping responses to perceived racism and BMI to determine if behavioral coping responses were significantly different among normal-weight, overweight, and obese women.

There was a significant main effect of BMI on behavioral coping responses ($F = 4.019$, $p < .05$). A Tukey Honestly Significant Difference (HSD) post hoc analysis showed significant differences in behavioral coping responses by BMI group ($p < .05$). Behavioral coping responses to perceived racism were significantly greater for obese women (M = 61.11) as compared to normal-weight women (M = 53.42).

DISCUSSION

Racism is an inescapable reality for most African Americans. It is a reality that previous research has shown to have negative health consequences.[16,27] The current study sought to examine the relations between BMI and emotional and behavioral coping responses to perceived racism in a community-based sample of African American women. We also investigated the relations between BMI and perceived daily stress. There was no association between BMI and emotional responses to perceived racism. Additionally, there was not any association between increased BMI and perceived daily stress. Higher BMI was only associated with greater behavioral coping responses to perceived racism. Further analysis that separated the sample into categories based on weight classification found there was a significant difference between normal-weight and obese women in their endorsement of behavioral coping responses to perceived racism. African American women who were obese endorsed having to use more behavioral coping responses to perceived racism than normal-weight individuals. BMI groups did not differ in their reports of emotional responses to perceived racism or perceived daily stress.

Research shows that racism is a unique stressor that adversely impacts BMI in African American women.[17] Our study supports this finding and further expands the scope of this research by demonstrating an association between higher BMI and greater behavioral coping responses to perceived racism in a community-based sample of African American women. Reasons for this association are very complex and must first be understood in the context of racism. The effects of living with racism constitutes a stressor that is related to an immutable characteristic—one's skin color. Racism in the United States espouses an ideology of inferiority based on skin color. It has had generational implications, and the overall health of African Americans has suffered from the legacy of inequality. Systemic inequities have contributed to more African Americans being denied access to social and economic resources that help prevent disease and promote overall health and wellness.[27] African Americans are more likely to be uninsured or underinsured,[28,29] and because of an assumption of inferiority, many are often misdiagnosed by physicians and less likely to receive appropriate medical treatment.[30,31] Racism affects every facet of the individual from the macrolevel to the microlevel of society.

The impact of racism on African Americans is far reaching; therefore, the finding that African American women in this sample reported having to use behavioral coping responses to perceived racism is not surprising. Furthermore, the finding that revealed the association between obese women and behavioral coping responses was also not totally unexpected. It follows other research that has demonstrated the ill effects of racism on health outcomes,[32] as well as the impact of racism on weight gain.[33,34] The mechanism that explains this relationship may involve a biological stress response (eg, cortisol production) and a

behavioral stress response, such as coping. Prolonged exposure to stress, as with having to cope with perceived racism, may produce higher cortisol reactivity, which research has linked to increased food consumption and poor food choices.[35] This stress response alters overall eating behaviors and increases weight.[35] Although the coping process may provide positive mental health effects in some instances, the unhealthy behaviors that result contribute to poor health outcomes.[36] Therefore, coping with perceived racism across one's lifetime may ultimately increase the risk for obesity in African American women over and above short-tetm and/or situational stress.

Within our sample, there was not any association between emotional responses and BMI. This outcome was unexpected since literature has suggested that negative emotion is linked to weight gain and obesity.[37] This nonsignificant finding suggests that emotional responses were not salient for African American women in this sample. However, the absence of a statistically significant relationship between emotional responses and BMI did not obviate those feelings from the women in the study. Indeed, the women involved in the study expressed 1 or more emotional responses regarding their experiences with racism. Another plausible explanation is that the relation between emotional responses to perceived racism and BMI may have been mediated by behavioral coping responses. African American women in this sample may have had an emotional response, such as anger or frustration, but they further used behavioral coping strategies (eg, ignoring, prayer, getting violent) to assuage their emotional reactions to perceived racism. In this case, behavioral coping responses would have diminished the effect of the relationship between emotional responses and BMI. The overuse of any maladaptive and/or adaptive behavioral coping response may lead to poorer health outcomes in this case.

Research suggests that perceived stress is positively associated with weight.[38,39] However, within this sample of African American women, there was not an association between perceived daily stress and weight. This is consistent with another study that did not find an association with perceived stress and baseline weight in a sample of overweight and obese African American and Caucasian women.[40] A possible explanation for this finding may be that the PSS-10 is a global measure of stress and does not measure specific stressors experienced by African American women, such as coping with perceived racism.

Clinical Implications

Findings from this study have important clinical implications. The first involves understanding that obesity in African American women is a complex phenomenon that involves an amalgamation of biological, psychological, social, and environmental factors. In this study, behavioral responses to coping with perceived racism were associated with obesity in African American women. Because the subjective experience of psychological stress has deleterious effects on health behaviors and outcomes, it is important that health professionals routinely assess for psychological stress that is particularly relevant to the African American experience. Furthermore, weight loss interventions need to incorporate culturally relevant stress management techniques that enhance the psychological resources available to African American women to cope with prolonged exposure to stress.

Limitations

Several limitations within the study should be considered. Given that our study was disproportionately obese and more obese than African American women in general, our results may not generalize to all African American women. Greater variability in weight among participants may have produced different outcomes for perceived stress and perceived racism. Furthermore, although behavioral coping responses were associated with weight status, our study did not examine the effects of coping with other forms of discrimination that may be related to excess weight. Finally, using BMI as our sole measure of obesity limited our ability to extend the findings to measures that assess variability in weight distribution (eg, waist-to-hip ratio and waist circumference).

Future Research

African American women are not only subjected to racial discrimination but may also face other types of discrimination. Future research should include measures that assess multiple stressors, including discrimination and their effects on obesity. In addition, future studies should examine the influence of acute vs chronic sources of stress on obesity in African American women. These studies should include equal numbers of participants in each weight group to more accurately assess the relations between perceived stress, perceived racism, and obesity. Finally, future studies should include additional indices of obesity, such as waist-to-hip ratio and body fat percentage, to determine if various types of fat distribution affect the perception of stress and racism in this population.

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Table 1

Descriptive Statistics for Study Variables

	Mean	SD
Age	47.01	10.85
Education, y	14.20	2.46
Perceived Stress Scale	16.98	7.50
Behavioral coping responses to perceived racism	8.43	4.96
Emotional responses to perceived racism	58.19	20.55
Body mass index	32.32	9.34
	%	
Marital status		
Single	61.9	
Married	18.1	
Divorced	12.4	
Widowed	1.9	
Separated	5.7	
Income		
<$10 000	29.4	
$10 001-$20 000	13.8	
$20 001-$30 000	12.8	
$30 001-$40 000	10.1	
$40 001-$50 000	11.9	
$50 001-$65 000	10.1	
$65 001-$80 000	7.3	
>$80 000	4.6	
Body mass index range		
18-24 (normal)	18.2	
25-29 (overweight)	20.2	
≥30 (obese)	61.6	

Table 2

Hierarchical Regression Analyses: Associations Among Behavioral Coping Responses to Perceived Racism Scores, Emotional Responses to Perceived Racism Scores, and Perceived Stress Scale Scores, and Body Mass Index

	B	SE B	β	Adjusted R^2	F	*p* Value
Body mass index						
Model 1				0.058	6.440[a]	.013
Behavioral coping responses to perceived racism	0.043	0.017	.261*			
Model 2				0.117	3.942[a]	.037
Behavioral coping responses to perceived racism	0.041	0.017	.254*			
Age	0.006	0.007	.088			
Education	–0.076	0.040	–.230			
Income	–0.029	0.045	–.078			
Model 1				0.015	2.334	.130
Emotional coping responses to perceived racism	0.006	0.004	.163			
Model 2				0.116	3.854[b]	.006
Emotional coping responses to perceived racism	0.008	0.004	.193			
Age	0.007	0.008	.092			
Education	–0.068	0.041	–.210			
Income	–0.065	0.045	–.184			
Model 1				–0.007	0.317	.575
Perceived Stress Scale	0.006	0.011	.058			
Model 2				0.070	2.812*	.030
Perceived Stress Scale	0.001	0.011	.013			
Age	0.005	0.008	.071			
Education	–0.058	0.041	–.175			
Income	–0.066	0.043	–.187			

[a] $p < .05$.

[b] $p < .01$.