

SEX DIFFERENCES IN PERCEIVED WEIGHT-BASED STIGMATIZATION AMONG AFRICAN AMERICANS

This study examined sex differences in calculated and perceived weights and weight-based stigmatization. 371 African Americans (females=258) responded to a health and wellness survey. Body mass index (BMI) was calculated from self-reported height and weight and categorized as underweight (7.0%), normal (48.2%), overweight (29.9%), and obese (14.8%). Perceived weight was measured by asking participants, "Do you consider yourself to be overweight?" Responses were then dichotomized as accurate or inaccurate. Stigmatization was constructed from 16 statements regarding perceived treatment due to weight status. Males and females differed in their perceptions of their weights. More than 20% of the participants had inaccurate perceptions of their weights, with the majority of the inaccurate participants (82.5%) perceiving their weight status lower than their actual weight status. More overweight or obese males than overweight or obese females did not perceive themselves as overweight (60.3% vs 28.3%, respectively, $P < .001$). While male and female perceptions of weight-based stigmatization were not statistically different ($P = .071$), participants who accurately perceived themselves to be overweight had higher perceived weight-based stigma scores than inaccurate participants who were overweight ($P = .001$). Males and females who were inaccurate were less likely to perceive weight-based stigmatization. (*Ethn Dis.* 2010;20[Suppl 1]:S1-196-S1-200)

Key Words: Weight Bias, Weight-based Stigmatization, Misperception of Weight, African American, Sex Differences

From Morgan State University, Department of Psychology, Baltimore, Md (PSJ, LG); Johns Hopkins Bloomberg School of Public Health, Department of Population, Family and Reproductive Health, Baltimore, Md. (SMG); University of Maryland School of Medicine, Office of Policy and Planning/The Comprehensive Center for Minority Health and Health Disparities, Baltimore, Md. (SZ); Norfolk State University, The Ethelyn R. Strong School of Social Work, Norfolk, Va. (DCB).

Pamela E. Scott-Johnson, PhD; Susan M. Gross, PhD, MPH, RD; Lynnett M. Gray; Shijun Zhu, PhD; Dorothy C. Browne, MSW, MPH, DrPH

INTRODUCTION

Obesity and its disproportionate impact on racially and ethnically diverse communities continue to be an American crisis. The prevalence of obesity has more than doubled since the 1980s, with African Americans and Hispanics unevenly affected. Analysis of the NHANES II data for 1976–1980 revealed that the prevalence of obesity for males was 12.7%, and for females 17%. NHANES results from 1999–2000 calculated the male and female prevalence of obesity at 27.7% and 34.0% respectively.¹ While the prevalence increased significantly since 1999, no overall significant increases between 2004 and 2006 were identified.² However, substantial differences were reported for African Americans and other ethnic/racial groups. Further examination reveals that the prevalence of obesity more than doubled for African American females, particularly for those between the ages of 20–39 years and ≥ 60 years.

In 2006, the prevalence of obesity among African American females between the ages of 20 and 39 years was 50% compared to 25% for White females; prevalence for African American females aged ≥ 60 years was 62% compared to 30% for White females.² No overall statistically significant differences in obesity by ethnicity/race and age group were reported for males;

African American males between the ages of 20 and 39 years have the highest prevalence of obesity (40%); White males between the ages of 40 and 59 years have the highest prevalence of obesity (40%).² Recent reports show that Black individuals have a 51% higher prevalence of obesity than White individuals; Hispanic individuals have a 21% higher prevalence of obesity than White individuals.³ Identifying factors that reduce the prevalence of obesity and the negative impact on health outcomes continues to be one of the greatest health challenges in the United States.

Addressing the health impact of obesity is complicated by the social stigmatization and weight bias against overweight and obese individuals. Weight stigma or bias is defined as "negative attitudes and beliefs that are manifested by stereotypes, rejection and prejudice toward individuals because they are overweight or obese."⁴ Weight-based stigmatization and discrimination has been well established in the literature.^{5–10} Unlike other health issues, weight is seen as controllable,^{5,11} thus creating a negative social dynamic that stigmatizes and blames the individual for being overweight and obese.⁹ Overweight and obese individuals are stigmatized and are perceived as lacking in self-control, failures in taking personal responsibility, and lazy.^{5,12,13} This social stigmatization leads to neglect because society blames them for their problems. Pomeranz⁹ suggests that as long as weight bias and weight-based stigmatization remain socially acceptable, addressing the problems faced by overweight and obese individuals and the related health disparities as well as solving the obesity crisis remain elusive.

Address correspondence and reprint requests to Pamela E. Scott-Johnson, PhD; Morgan State University; Department of Psychology; 1700 E. Cold Spring Lane; Baltimore, MD 21251; 443-885-3508; 443-885-8239 (fax); pamelascottjohnson@morgan.edu; drpsjohnson@yahoo.com

The impact of weight-based stigmatization on psychological well-being and social participation begins with teasing in childhood and adolescence^{10,14} and continues throughout adulthood.^{4,5,7,15,16} Wang and her colleagues⁷ demonstrated that not only does the overweight and obese individual internalize negative perceptions imposed by society but they also devalue themselves and other overweight and obese individuals. Women report greater weight-based stigmatization and are judged more negatively than males of similar weight categories.^{7,8,15,17} Regardless of age, pictures of heavier individuals were rated as less attractive than normal weight individuals. Heavier females were rated as the least attractive.¹⁵

In addition to differences in self- and other-perception of weight bias and stigma, research also examined differences in self- and other-perception of stigma based on race and ethnicity.^{8,12,14,18} As compared to overweight and obese White adolescent girls, overweight and obese Black adolescent girls (23% and 56%, respectively) were less troubled by weight-related teasing by peers and family members.¹⁴ Obese Hispanic girls reported the greatest percentage of peer teasing (79%). Overweight and obese adolescent Black and obese Asian American boys reported the least amount of teasing from peers and family members. Obese Hispanic White and racially mixed boys receive the most teasing from peers. Latner and her colleagues⁸ reported that African American women view other overweight and obese individuals more favorably than did African American men, White men, and White women. White males were more likely to stigmatize obese persons than Black females. African American males were just as likely to attribute negative stereotypes toward obese persons as White males.⁸ According to the results reported by Carr and her colleagues,¹⁸ obese II/III White men perceive greater

levels of teasing and harassment and disrespectful treatment than normal weight White men. Extremely obese Black men perceive lesser levels of teasing and harassment or disrespect than normal weight Black men. For women, perception of negative interpersonal treatment did not vary by race or weight status.

Self-perception of weight bias may in part be related to self-perception of weight status. Individual who fail to perceive themselves as overweight or obese may also inaccurately categorize them as overweight or obese. van den Berg et al¹⁴ reported that non-Hispanic Blacks were bothered less by teasing from peers and family members. One reason for being less bothered could be that they did not perceive weight bias or stigma. While Sanderson, Darley, and Messinger¹⁹ suggest that the self-categorization theory promotes perceptual inaccuracy in weight, Roccas and Brewer's²⁰ social complexity theory is equally as plausible. Self-categorization theory, developed by Turner, Hogg, Oakes, Reicher, and Wetherell,²¹ suggests that overweight and obese individuals fail to see themselves within that group, which is socially stigmatized by weight, particularly when bias or discrimination may be perceived because of race or sex. Thus, accuracy and perceptions of weight categorization can greatly affect perceptions of stigmatization. Pomeranz⁹ suggested that social stigmatization and efforts to promote self-control of eating may be used to motivate individuals to lose weight. When overweight and obese individuals mis-categorized themselves, social stigma fails to motivate changes in behavior and become an ineffective and maladaptive health strategy.

Paeratakul and colleagues²² and Gross et al²³ reported racial/ethnic differences in the perception of weight and weight status. According to Paeratakul,²² African American males and females are less likely to perceive themselves as overweight. Overweight

males are more likely than overweight females to classify themselves as normal weight. Additionally, overweight African American males are particularly inaccurate in categorizing their weights.^{22,23} Gross et al²³ examined actual and perceived weight status and body satisfaction of college-age African Americans and demonstrated that if the 50.4% male participants who were categorized by their reported weights as overweight or obese (OW/O), 59.7% inaccurately perceived themselves as normal weight and chose ideal weights and healthy weights that were heavier than males with accurate weight perceptions. Inaccurate overweight and obese males desired larger upper torsos and larger body parts (ie, arms, legs, chest area). In regard to health and perceptions of social status, inaccurate overweight and obese males were less likely to agree that losing weight supported healthiness or that losing weight would make them more social.

This study examined sex differences in calculated and perceived weight and weight-based stigmatization among African Americans. We hypothesized that males, compared to females, would be less accurate in their perceived weight status and would perceive less negative perceptions of weight-based stigmatization.

METHODS

Participants were 371 African American young adults (258 females) graduating in spring 2003 from a historically Black university in the mid-Atlantic region.

Weight status

Body mass index (BMI) was calculated in kg/m² using self-reported height and weight; participants were categorized according to NIH guidelines²⁴: underweight ≤ 18 , acceptable 19–24, overweight 25–29, obese 30–34, or extreme obesity (obesity II) ≥ 35 at both baseline and follow-up surveys.

Self-Perception of Body Size Variables

Self-perception as overweight and obese was measured using two questions: "Do you consider yourself now to be overweight?" and "Do you consider yourself now to be obese?" A dichotomous summary variable was constructed to represent all individuals who responded, "yes" to either of these items.

Accuracy of Weight Perception

A variable representing accuracy of self-perception of overweight or obese was constructed by comparing self-perception items with current weight status. Those who were underweight or had acceptable weight and misclassified themselves as overweight or obese were categorized as inaccurate. Those who were overweight, obese or extremely obese and did not classify themselves as at least overweight were also categorized as inaccurate.

Perceived Weight-based Stigmatization (PWSS)

The Perceived Weight-based Stigmatization Scale (PWSS) was operationalized with a set of sixteen items adapted from previous studies, mostly related to social interactions of young adults.²³ Factor analysis confirmed that the items formed one 16-item scale, which assessed the respondent's perceptions of potentially negative weight-based attitudes and impressions by family, friends and peers such as "Because of my weight people think I am lazy" or "Because of my weight people often treat me differently." Respondents indicated the extent of agreement with each item using a Likert scale of five anchored points, which included "Strongly agree", "Agree", "Undecided", "Disagree" or "Strongly disagree." Individual scores were calculated by summing the answers of the sixteen items. The total score for the scale ranged from 16 to 80, with lower scores indicating greater perceptions of stigmatization and negative perceptions

of weight. The mean score for the stigma scale for this group was 34.3 ± 4.9 with a median score of 36.0 and the range was from 17 to 40. The standardized alpha for a subscale using these 16 items was 0.89.

Statistical Analysis

Sociodemographic, weight-related, self-perception of body size and weight-related stigma variables were summarized using means and frequencies. All variables were stratified by sex and χ^2 tests and *t* tests were used to determine if there was a statistically significant difference between males and females. A sex comparison of self-perception of body size by weight status was examined in a weight-stratified analysis of respondents with a BMI ≥ 25 . For each weight status category (overweight, obese and extremely obese), χ^2 tests and *t* tests were used to compare variables by sex. In addition one way ANOVA tests and Pearson correlations were used to test for linear associations between continuous variables and increasing weight status.

RESULTS

Of the 58 males who were at least overweight, only 39.6% ($n=23$) classified themselves as overweight. Of the 22 males who were obese (BMI ≥ 30) only 18.2% ($n=4$) classified themselves as obese. Of the 106 females who were at least overweight, 72.6% ($n=77$) accurately classified themselves as overweight. Of the 33 females who were obese (BMI ≥ 30) only 30% ($n=10$) accurately classified themselves as obese. Body mass index (BMI) was calculated in kg/m^2 using self-reported height and weight and were categorized as underweight (7.0%), normal (48.2%), overweight (29.9%), and obese (14.8%). As hypothesized, males had higher average BMI than females (26.20 ± 5.15 vs 25.05 ± 5.82 , respectively, $P < .005$).

Approximately 47.7% of the participants were overweight or obese. Males were more likely to be obese (BMI, 30–34) than female respondents. Females were more likely to perceive themselves as overweight or obese compared with males (51.3% vs 41.4%, respectively, $P = .08$). Males were more likely than females to inaccurately misclassify their weight status. Males and females differed in their perception of weights. More than 20% of participants had an inaccurate perception of their weight, with the majority of inaccurate participants (82.5%) perceiving that their weight status was lower than their actual weight status. Only 4% ($n=1$) of the underweight participants perceived themselves as overweight in this sample and 11% ($n=13$) of participants of normal weight perceive themselves as overweight. More overweight or obese males than overweight or obese females did not perceived themselves as overweight (60.3% vs 28.3%, respectively, $P < .001$).

The results demonstrated that regardless of the accuracy of perceived weight status, there are significant sex differences in perceived weight-based stigmatization, with females having greater perceptions of weight-based stigma (lower stigma scale scores indicate greater stigma) than the males (33.8 ± 5.3 vs 34.6 ± 4.8 , respectively; $F(4,370) = 4.7$, $P = .001$). Morbidly obese males had the greatest perception of weight-based stigmatization (30.8 ± 5.4), with underweight males having the least negative perceptions of stigma (39.5 ± 0.7). As predicted, there were significant differences in perceived weight-based stigmatization between inaccurate and accurate males (35.3 ± 4.8 vs 33.1 ± 4.3 , respectively; $F(1,112) = 5.1$, $P = .026$).

For males, who are accurate in categorizing their weights, as BMI increases so did perception of weight-based stigma ($r = -0.35$, $P < .01$). Inaccurate overweight, obese, and morbidly obese males have more positive percep-

tions about their weight than do their overweight and obese counterparts (34.9 ± 4.9 vs 29.3 ± 4.8). For females, there are no significant differences in perceived stigmatization regardless of the accuracy (or inaccuracy) in categorizing their weights. Like accurate males, for all females as BMI increased perception of weight-based stigmatization increased ($r = -0.274$, $P < .001$).

DISCUSSION

As predicted, we found sex differences in perceived and calculated weight status. The results also confirm previous findings²³ regarding the inaccuracy of perceived weight status by males. Research suggests that perceived stigmatization is consistent with perceptions of weight. That is, the more self recognition and acknowledgement of one's weight, the greater the perception of stigmatization and the greater the negative impact on social interactions. We confirmed predictions that females would be more accurate in categorizing their weights and would perceive greater stigmatizations. Conversely, males were more inaccurate in categorizing their weights and desired increased sizes in their extremities (eg, arms, legs, and thighs) and engaged in fewer weight loss behaviors.²³ Females perceived greater levels of stigmatizations and, thus, societal pressures. Males and females who inaccurately categorized their weights have similar, positive perceptions of weight. However, males who accurately categorized their weights have greater perceptions of weight-based stigmatization. Overweight and obese males who inaccurately categorized their weights were less likely to perceive weight-based stigmatization, similarly to underweight and optimal weight males.

Implications

If social stigma is used to motivate overweight and obese individuals to lose

weight and when overweight and obese individuals fail to perceive themselves as such, other strategies should be used. As suggested by Pomeranz,⁹ blaming the victim, in this case those who are overweight and obese, does not address factors that influence weight, such as lack of available exercise options, food environments that lack affordable fresh fruits and vegetables, and access to fast foods with high fat and carbohydrate content. In order to effectively address and develop appropriate, culturally sensitive interventions for African Americans, especially males, researchers and health practitioners must examine perceptual, cognitive, and psychosocial factors related to overweight and obesity and resulting negative health outcomes. This study provides evidence that if African American males are to develop healthier lifestyles and improved health outcomes, accurate perceptions related to weight must be recognized and acknowledged.

ACKNOWLEDGMENTS

This research was funded and supported from awards to Morgan State University by the NIH National Center on Minority Health and Health Disparities 1P60MD000214-01, 5P60MD00217-02, U24DA12390-04.

REFERENCES

- Flegal KM, Carroll MD, Ogden CL, Johnson CL. Prevalence and trends in obesity among US adults 1999–2000. *JAMA*. 2002;288(14):1723–1727.
- Ogden CL, Carroll MD, McDowell MA, Flegal KM. Obesity among adults in the United States – no change since 2003–2004. 2007;NCHS data brief no 1. Hyattsville, Md.: National Center for Health Statistics.
- Center for Disease Control and Prevention. Differences in prevalence of obesity among black, white, and Hispanic adults—United States, 2006–2008. Available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5827a2.htm>. Last accessed: July 28, 2009.
- Puhl RM, Moss-Racusin CA, Schwartz MB, Brownell KD. Weight stigmatization and bias reduction: perspectives of overweight and obese adults. *Health Educ Res*. 2008;23(2):347–358.
- Puhl RM, Brownell KD. Bias, discrimination, and obesity. *Obes Res*. 2001;9:788–805.
- Puhl RM, Brownell KD. Psychosocial origins of obesity stigma: toward changing a powerful and pervasive bias. *Obes Rev*. 2003;4(4):213–227.
- Wang SS, Brownell KD, Wadden TA. The influence of the stigma of obesity on overweight individuals. *Int J Obes Relat Metab Disord*. 2004;28(10):1333–1337.
- Lamer JD, Stunkard AJ, Wilson GT. Stigmatized students: Age, sex, and ethnicity effects in the stigmatization of obesity. *Obes Res*. 2005;13:1226–1231.
- Pomeranz JL. A historical analysis of public health, the law, and the stigmatized social groups: the need for both obesity and weight bias legislation. *Obesity*. 2008;6(Suppl 2):S93–S103.
- Tang-Peronard JL, Heitmann BL. Stigmatization of obese children and adolescents, the importance of gender. *Obes Rev*. 2008;9(6):522–534.
- Blaine B, Williams Z. Belief in the controllability of weight and attributions to prejudice among heavyweight women. *Sex Roles*. 2004;51(1/2):7984.
- Carr D, Friedman MA. Is obesity stigmatizing? Body weight, perceived discrimination, and psychological well-being in the United States. *J Health Soc Behav*. 2005;46(3):244–259.
- Puhl RM, Schwartz MB, Brownell KD. Impact of perceived consensus on stereotypes about obese people: A new approach for reducing bias. *Health Psych*. 2005;24(5):517–525.
- van den Berg P, Neumark-Sztainer D, Eisenberg ME, Haines J. Racial/ethnic differences in weight-related teasing in adolescents. *Obesity*. 2008;16(Suppl 2):S3–S10.
- Hebl MR, Ruggs EN, Singletary SL, Beal DJ. Perceptions of obesity across the lifespan. *Obesity*. 2008;16:S46–52.
- Zettel-Watson L, Britton M. The impact of obesity on the social participation of older adults. *J of Gen Psych*. 2008;135(4):409–423.
- Cossrow NHF, Jeffery RW, McGuire MT. Understanding weight stigmatization: A focus group. *J Nutr Ed*. 2001;33:208–214.
- Carr D, Jaffe KJ, Friedman MA. Perceived interpersonal mistreatment among obese Americans: Do race, class, and gender matter? *Obesity*. 2008;16:S60–S68.
- Sanderson CA, Darley JM, Mesinger CS. "I'm not as thin as you think I am": The development and consequences of feeling discrepant from the thinness norm. *Pers Soc Psychol Bull*. 2002;28(2):172–183.

WEIGHT-BASED STIGMATIZATION - Scott-Johnson et al

20. Roccas S, Brewer MB. Social identity complexity. *Pers Soc Psychol Rev.* 2002;6(2): 88-106.
21. Turner JC, Hogg MA, Oakes PJ, Reicher SD, Wetherell M. *Rediscovering the Social Group: A Self-categorization Theory.* Oxford, England: Basil Blackwell; 1987.
22. Paeratakul S, White MA, Williamson DA, et al. Sex, race/ethnicity, socioeconomic status, and BMI in relation to self-perception of overweight. *Obes Res.* 2002;10(5):345-350.
23. Gross SM, Scott-Johnson PE, Browne DC. College-age, African American males' misperceptions about weight status, body size, and shape. *Ethn Dis.* 2005;15(4):S5-34-S5-38.
24. Center for Disease Control and Prevention. About BMI for adults. Available at http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html. Last accessed March 2, 2009.