

The Relationship between Body Image and Physical Activity in African American Women

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BACKGROUND: Overweight and obesity are associated with numerous chronic health conditions and increased health care costs and disproportionately affect ethnic minority women. [1,2] High rates of overweight and obesity in African American (AA) women have been attributed, in part, to physical inactivity and cultural influences on body image perceptions. [3]

PURPOSE: The purpose of this study was to determine the relationships among body mass index (BMI=kg/m²), body image perception (perceived and desired) and physical activity (PA), both self-reported and objectively measured.

METHODS: Anthropometric measures of BMI and Pulvers' culturally relevant body image[3], International Physical Activity Questionnaire (IPAQ)[4], socioeconomic status and uni-directional ActiGraph GT1M accelerometer [5] data were collected from 249 AA women in Houston. Raw silhouette data was converted to BMI, ranging from 16 to 40 kg/m². Measured, perceived and desired BMI were used to create normal, overweight and obese weight status categories used in analyses. IPAQ physical activity type, work-related, transportation, domestic and leisure-time, and intensity, walking-, moderate- and vigorous-intensity physical activity, were used in analyses. Accelerometer activity counts were converted to minutes and an individual-specific cutpoint was used to determine whether each minutes was spent doing moderate or greater physical activity. An average number of minutes spent doing moderate or greater physical activity was used in analyses.

RESULTS: Women ($M=44.8$ yrs, $SD=9.5$) were educated (53% college graduates), overweight ($M=35.0$ kg/m², $SD=9.2$) and largely sedentary ($M=23.8$ minutes of moderate-intensity PA, $SD=1.9$). Less than half of women perceived their weight correctly regardless of their actual weight ($p < 0.001$). Figure 1 depicts the percentage of women by weight status category who desire to be normal, overweight or obese. Nearly three-fourths (73.9%) of women who were normal weight desired to be obese, and over half (50.9%) of obese women still desired to be overweight or obese. Women in all weight classes (normal, overweight and obese) varied in objective measures of PA ($F(2,112)=4.424$, $p=.014$), indicating normal weight women did significantly more physical activity than obese women (Normal $M=33.3$, $SD=26.7$; Obese $M=20.5$, $SD=17.0$). Regression analyses showed objectively measured PA was significantly associated with BMI ($Beta=-.271$, $p=.005$); as PA increased, BMI decreased. Self-

reported walking was significantly associated with perceived BMI ($Beta=-.187, p=.014$); as walking increased, perceived BMI decreased.

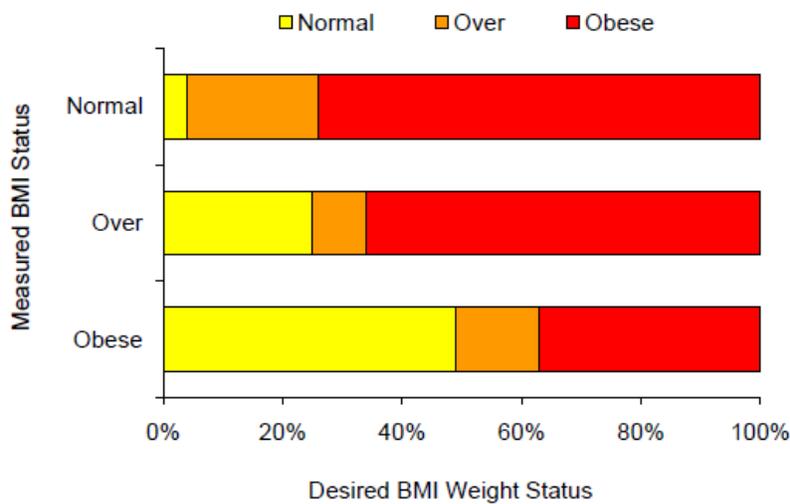


Figure 1. Relationship between measured and desired BMI in African American women

CONCLUSIONS: Results suggest AA women who are smaller may want to be obese, and obese AA women may want to be smaller, revealing dichotomous distortion in body images. Study findings indicate that physical activity habits may influence body image perceptions, but more work is needed to determine the relationship between physical activity and perceived or desired body image, suggesting an important avenue of intervention. Efforts are needed to help women perceive normal weight as desirable for good health and beauty and address cultural differences in normative ideals. Increased awareness of healthy BMI may lead to increased physical activity and intervention adherence and reduce obesity prevalence in AA women.

REFERENCES:

- [1] Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak CJ, Flegal KM. Prevalence of overweight and obesity in the United States, 1999-2004. *JAMA* 2006, 295(13):1549-1555.
- [2] Breitkopf CR & Berenson AB. Correlates of weight loss behaviors among low-income African American, Caucasian, and Latina women. *The American College of Obstetricians and Gynecologists* 2004, 103(2).
- [3] Pulvers KM, Lee RE, Kaur H, Mayo MS, Fitzgibbon ML, Jeffries SK, Butler J, Hou Q, Ahluwalia JS. Development of a culturally relevant body image instrument among urban African Americans. *Obes Res* 2004; 12(10):1641-1651.
- [4] Craig CL, Marshall AL, Sjostrom M, Bauman AE, Booth ML, Ainsworth BE, Pratt M, Ekelund U, Yngve A, Sallis JF, Oja P. International physical activity questionnaire: 12-country reliability and validity. *Med Sci Sports Exerc* 2003, 35(8):1381-1395.
- [5] Welk GJ. Principles of design and analyses for the calibration of accelerometry-based activity monitors. *Med Sci Sports Exerc* 2005, 37(11 Suppl):S501-11.