

# ETHNIC IDENTITY AND IMPLICIT ANTI-FAT BIAS: SIMILARITIES AND DIFFERENCES BETWEEN AFRICAN AMERICAN AND CAUCASIAN WOMEN

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Research using self-report or explicit measures of body image suggests African American women have a more accepting view of larger figures than non-Hispanic White (NHW) women. However, increasing research indicates that explicit views may vary from those held at a deeper, implicit level. Our study examined whether African American women held an implicit negative bias toward overweight/fat individuals, despite a greater explicit acceptance of larger body size. Additionally, ethnic identity was measured to assess if strength of identity related to bias. Anti-fat bias was compared within and between ethnic groups using an Implicit Association Test (IAT), which measures the strength of automatic associations between two concepts. This online IAT measured spontaneous thoughts about figures of various body weights (underweight, overweight, obese) and positive and negative terms (eg, attractive and unattractive or healthy and unhealthy). A pervasive anti-fat bias was found in African American as well as NHW women. For both groups, this bias was related to ethnic identity when thinking about figure size and health. Specifically, African American women with lower ethnic identity were more negatively biased and NHW women with higher ethnic identity were more negatively biased. Findings from this study indicate that implicitly there are few differences in the way these two ethnicities classify heavy figures, and therefore African Americans may not be immune to weight stigma. Given the prevalence of obesity and the lack of research on weight stigma among African American women, there is need to address this issue and its impact on well-being. *Ethn Dis.* 2016;26(1):69-76; doi:10.18865/ed.26.1.69

**Keywords:** Weight Bias, IAT, Women, African American, Non-Hispanic White

## INTRODUCTION

More than 80% of Black and African American women are overweight and, alarmingly, half are obese.<sup>1</sup> Consequently, the negative implications of excess weight are a serious public health concern for this population.<sup>2</sup> Among these consequences is weight stigma, which may impact the psychological and social well-being of Black women and impede their health care utilization as it does among other groups.<sup>3</sup> Unfortunately, numerous studies have demonstrated that health care settings are rife with weight stigmatization from a variety of health care providers who hold negative stereotypes and attitudes toward overweight patients.<sup>4</sup> Patients frequently report being stigmatized by providers and data on provider-patient interaction show less time and education are spent with obese pa-

tients. This can make obese individuals less likely to engage in preventative health care and more likely to delay needed care due to concerns about negative attitudes from providers.<sup>4</sup>

The extent of weight stigma faced by African American women is less clear as there is a lack of research examining weight stigma within ethnic

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and cultural groups. Further, many presume the acceptance of larger body sizes mitigates negative weight bias. The prevalence of obesity among African American women and the potential impact of weight stigma signal the need to develop a better culturally specific understanding of weight stig-

ma. Thus, the purpose of our study was to examine whether African American women hold an implicit negative bias toward overweight/fat individuals, despite a greater acceptance of larger body size. Anti-fat bias was compared within and between ethnic groups using the Anti-Fat Implicit Association Test (IAT).

Unfortunately, there are just a few studies examining anti-fat biases among African Americans. Latner and colleagues concluded that while African American college women held fewer explicit stigmatized views of obesity than their NHW peers, obesity was still stigmatized.<sup>5</sup> Wang and colleagues measured weight stigma among overweight individuals, primarily women, using implicit and explicit measures.<sup>6</sup> Participants evidenced a significant anti-fat bias on the IAT, indicating in-group devaluation as the sample was comprised of overweight individuals. The bias did not differ significantly by ethnic group, although the authors noted the sample size as a limitation in addressing this question.

### **Method Effect: Utility of an Implicit Association Test (IAT)**

The majority of the research assessing body size/weight stigma uses explicit measures (eg, self-report questionnaires, interviews, focus groups). These can be subject to social desirability bias, ie, the tendency for participants to respond in a manner that would be viewed favorably by others. There has been an increasing focus on implicit measures, which are thought to measure automatic cognition by removing self-presentation confounds.<sup>7</sup> Given the sensitive nature of prejudi-

cial attitudes, implicit measures offer an important tool to examine fat-bias. The IAT is the one of the most commonly used implicit measures and is based on the premise that when two concepts are highly associated (eg, fat-bad), a discrimination task that pairs the two linked concepts will be easier for participants than when conflicting concepts are paired (eg, thin-bad).

### **Implicit Measures of Body Image and Fat Bias**

Within the area of eating behaviors, implicit attitudes have been examined with regard to fat-bias,<sup>8</sup> internalization of a thin ideal,<sup>9</sup> and body image dissatisfaction.<sup>10-11</sup> Interestingly, explicit and implicit measures are not always found to be in agreement within the area of eating behavior and, as suggested by Juarascio and colleagues may represent complementary means to assess eating related behavior.<sup>9</sup>

One study administered an IAT to 86 female college students of unreported ethnicity/race.<sup>11</sup> Participants categorized weight-related words (thin, heavy), and positive/negative words. In general, "fat" was more strongly associated with negative than positive words.<sup>11</sup> Others found that participants, regardless of their own weight, preferred thin people to fat people.<sup>12</sup> Moreover, the majority of participants implicitly connected fat with laziness and stupidity, and thin with motivation and intelligence.<sup>12</sup> These findings suggest that there may be more negative assumptions about obese persons than positive. However, there is no current evidence for an ethnic difference in implicit attitudes as the authors

of these studies did not compare attitudes by participant ethnicity.

### **Our Study and Hypotheses**

In order to investigate ethnic differences in implicit fat bias, our research recorded automatic responses to female figures using an Anti-Fat IAT, adapted from the original IAT.<sup>13</sup> This replicated the methods of previous studies on anti-fat biases.<sup>11,12</sup> New pairs of words were used and computer-generated images replaced words for the fat/thin category. Additionally, three figure pairs were presented to participants: underweight-overweight figures, overweight-obese figures, and underweight-obese figures. This allowed for comparisons between a larger range of figures than simply overweight and underweight.

Based on Schwartz and colleagues results,<sup>12</sup> a general anti-fat bias response on the revised IAT was expected for all participants. We also anticipated that anti-fat bias would be significantly stronger among NHW women compared with African American women. We further hypothesized that ethnic identity would differentially affect African American and NHW women; specifically that the cultural milieu of African Americans suggests that the stronger the identification with African American values, the lower the anti-fat bias, while NHW women may have greater anti-fat bias with greater affiliation to cultural standards.

## **METHOD**

### **Participants**

We recruited 517 (207 African American, 310 NHW) females to

**Table 1. Demographic factors by participant ethnicity**

		Mean	SD
Age <sup>a</sup> , years	African American	34.45	10.83
	Non-Hispanic Whites	32.42	11.17
BMI <sup>c</sup> , kg/m <sup>2</sup>	African American	30.18	8.49
	Non-Hispanic Whites	26.71	7.59
MEIM <sup>c</sup>	African American	18.70	4.03
	Non-Hispanic Whites	16.78	3.99
BDI	African American	10.67	10.81
	Non-Hispanic Whites	11.81	10.40
Education	African American	3.52	1.01
	Non-Hispanic Whites	3.41	1.12
Income	African American	2.80	1.38
	Non-Hispanic Whites	2.80	1.41
MBSRQ subscales			
Appearance evaluation <sup>c</sup>	African American	20.75	3.70
	Non-Hispanic Whites	18.87	3.88
Appearance orientation <sup>a</sup>	African American	43.64	7.62
	Non-Hispanic Whites	41.96	8.45
Fitness evaluation <sup>b</sup>	African American	10.43	2.26
	Non-Hispanic Whites	9.65	2.66
Fitness orientation	African American	40.32	8.83
	Non-Hispanic Whites	38.99	10.23
Health evaluation	African American	21.43	4.52
	Non-Hispanic Whites	20.99	4.77
Health orientation <sup>a</sup>	African American	27.68	5.44
	Non-Hispanic Whites	26.48	5.43
Illness orientation <sup>c</sup>	African American	17.36	3.62
	Non-Hispanic Whites	15.92	3.56
Overweight preoccupation <sup>a</sup>	African American	10.94	3.36
	Non-Hispanic Whites	11.74	3.61

Education level: 1=Grade school or left high school before graduation; 2=High school; 3=Junior college or technical/trade school; 4=College graduate (bachelors); 5=Post Graduate work (masters, doctorate).

Income level: 1=Below \$20,000; 2= Between \$20,000 and 40,000; 3=Between \$40,000 and 60,000; 4=Between \$60,000 and 80,000; 5=Greater than \$80,000.

t scores were presented for t-tests (age, BMI, MEIM, BDI, education and income), and F scores were presented for MANOVA tests (MBSRQ subscales).

a. Significant at the P < .05 level on an Independent samples t-test.

b. Significant at the P < .01 level on an Independent samples t-test.

c. Significant at the P < .001 level on an Independent samples t-test.

participate in an online study about perceptions of bodies. Mean age of the overall sample was 33.23 years (SD=11.03) with African Americans being approximately two years older (Table 1). Based on self-reported heights and weights, BMI was calculated and differed significantly by group. African American women were, on average, obese (BMI=30.18) and their NHW counterparts were overweight (BMI=26.71).

Participants were recruited through flyers or Amazon’s MTurk, a crowdsourcing website increasingly used by researchers to conduct web-based research.<sup>14</sup> Participants were directed to the *Inquisit* website for the study where they completed a demographic questionnaire, explicit measures and the IAT online. Consent was obtained for all participants. The test took less than 20 minutes to complete, and participants were

compensated \$.40 for their time and offered an entry into a raffle for a \$50 gift certificate. This project was approved through American University’s Institutional Review Board.

**Measures**

*Explicit Measure of Body Image and Attitudes* were reported by participants; measures included general demographic information such as age, ethnicity, education, and household income. Additionally, individuals were asked to report their height and weight to determine BMI.

*Multidimensional Body-Self Relations Questionnaire-Appearance Scales (MBSRQ-AS)*<sup>15</sup> is a measure of body image attitudes that was used to gauge explicit differences in body image. This measure includes 69 Likert-scale questions that are divided into seven factor subscales and three multi-item subscales related to self-perceptions of appearance and health. The MBSRQ-AS has an internal consistency ranging from .75 to .91.<sup>16</sup> The results of our study indicated similar internal consistency for participants.

The *Multigroup Ethnic Identity Measure (MEIM)*<sup>17</sup> measures racial identity attitudes. We included this measure to investigate if cultural identity was related to anti-fat attitudes. This 20-item questionnaire evaluates one’s sense of belonging to a certain ethnic group, as opposed to “other group” orientation. Overall Cronbach’s alpha was .90, indicating high reliability for the full range of ethnic identity scores. In our study, correlation between items was similarly high at .88. Specifically, for African Americans there was a Cronbach’s alpha of .885, and it was .832 for NHW.

*Revised Implicit Association Test (IAT)* was a modified version of the IAT,<sup>13</sup> the Anti-Fat IAT, used for this study (Figure 1). Attribute stimuli were taken from previous studies.<sup>12,18</sup> Attributes were selected based on relevance to concepts of attractiveness (ie, gorgeous, appealing, pleasing, repulsive, ugly, and gross), healthiness (ie, fit, lively, vigorous, sick, ailing, and ill), and general negative/positive connotation (ie, wonderful, joyful, excellent, terrible, nasty, and horrible). Images of female figures were computer-generated models created on the site Myvirtualmodel.com. Three body sizes depicting underweight (BMI of 18 kg/m<sup>2</sup>), overweight (BMI of 28 kg/m<sup>2</sup>), and obese (BMI of 44 kg/m<sup>2</sup>) were generated for two ethnicities (African American, NHW). Age, facial features, and hairstyles were varied, but matched for each weight category.

Participants completed one of nine attributes by figure variations of the IAT. The three attribute pairs (attractive/unattractive, healthy/unhealthy,

good/bad) were combined with three figure combinations (overweight/underweight, obese/underweight, overweight/obese). Each participant rated both ethnicities. Presentations were counterbalanced such that half of the participants viewed the NHW variation first, and half initially saw the African American set.

Data on latency time were recorded and analyzed within as well as between groups using the standard scoring algorithm.<sup>19</sup> The outcome variable is a D or difference score, which varies from +2 to -2. A positive IAT D score indicates associations with schema-congruent ideas (thinner figure and positive attribute). A negative D score reflects schema-incongruent associations (heavier figure and positive attribute).

## RESULTS

A total of 598 participants responded to the survey. The sample

included in analyses consisted of 517, as a number were excluded based on demographics (eg, excluded for indicating they were male). Additionally, 20 participants were excluded for responding too slowly or quickly on the IAT as recommended by previous studies.<sup>19</sup> Of the 517 included in analysis, 207 were African American, 310 were NHW.

Between groups analyses were conducted using independent t-tests (Table 1). African Americans were significantly older than the NHW sample. Univariate tests demonstrated that group membership had a significant effect on BMI ( $P < .001$ ), and MEIM score ( $P < .001$ ). African Americans had higher BMIs and higher ethnic identity scores. A MANOVA revealed difference in MBSRQ subscales scores ( $F(8,458) = 8.41$ ,  $P < .001$ , Pillai's Trace = .13). Specifically, ethnicity affected Appearance Evaluation ( $P < .001$ ), Appearance Orientation BD.




	Practice Trial	Practice Trial	Critical Trial	Practice Trial	Reversed Critical Trial
Sorting Task	Images of underweight & obese women	Words related to Good & Bad	underweight women or Good words & obese women or Bad words	underweight & obese women sorted in reverse position	underweight women or Bad words & obese women or Good words
Sample	underweight    obese 	GOOD    BAD  <b>JOYFUL</b>	underweight    obese or                    or GOOD            BAD  <b>JOYFUL</b>	obese    underweight  	obese    underweight or                    or GOOD            BAD  

Figure 1: Sample sequence of trials for the Anti-Fat IAT



**Correlations Between Explicit Body Image Measures and Implicit Anti-fat Bias**

While no significant correlation was found between MBSRQ total scores and Average D scores  $r(409) = -.03, P = .58$ , there were several weak findings for subscores and specific IAT types for participants. In particular, there was a weak, but significant correlation between Appearance Orientation scores and D scores on the Good/Bad IAT for Caucasian participants  $r(83) = .23, P < .05$ . Additionally African American participants showed correlations between scores on the Appearance Evaluation subscale of the MBSRQ and D scores on IATs that presented underweight-overweight figures,  $r(55) = -.27, P < .05$ , as well as D scores on IATs that used the attributes of Healthy-Unhealthy  $r(51) = -.28, P = .05$ . Lastly, the scores on the Overweight preoccupation subscale for African American participants was weakly negatively correlated with IATs presenting underweight and obese figures,  $r(57) = -.29, P < .05$

**General Anti-fat Bias for all Participants**

Evidence was found to support the hypothesis that all participants have significant anti-fat biases. The overall mean D was positive (.29), indicating that participants in this study generally associated heavier figures with negative concepts and thinner figures with positive ones. As presented in Table 2, D scores for all attributes (attractive/unattractive; good/bad; healthy/unhealthy) and weight category (under/overweight; underweight/obese; overweight/obese) were positive. This indicates that regardless of which ad-

**Table 2. Mean D scores for model weight categories and attributes**

		Mean	SD
Underweight / overweight figures	Overall	.19	.38
	African American participants	.12	.38
	Non-Hispanic Whites participants	.23	.37
Underweight / obese figures	Overall	.27	.37
	African American participants	.23	.38
	Non-Hispanic Whites participants	.30	.37
Overweight / obese figures	Overall	.42	.33
	African American participants	.40	.35
	Non-Hispanic Whites participants	.43	.31
Attractive / unattractive	Overall	.34	.36
	African American participants	.34	.36
	Non-Hispanic Whites participants	.34	.35
Good / bad	Overall	.19	.38
	African American participants	.12	.41
	Non-Hispanic Whites participants	.25	.34
Healthy / unhealthy	Overall	.34	.37
	African American participants	.36	.39
	Non-Hispanic Whites participants	.36	.39

jective used or weight comparison, there was a significant negative automatic association with heavier figures.

**Examining Differences by Ethnicity and Ethnic Identity**

A one-way analysis of covariance (ANCOVA) was performed to test between group differences in D scores across all tests, co-varying BMI (Table 3). There were no between groups differences,  $F(1, 418) = 1.48; P = .23$  ( $\eta^2$  of .0022). Multiple regression analysis revealed an ethnicity by ethnic identity interaction on IATs with the attributes of “healthy” and “unhealthy” (Table 4). Results suggest that the participant’s level of ethnic identity influences D scores for African American participants when sorting figures using words related to health. Specifically for NHW, the greater the ethnic identity the stronger the anti-fat bias, whereas for African Americans, anti-fat bias was negatively correlated

with ethnic identity. Between groups analyses (Table 5), indicate that only the good/bad test produced significantly different D scores, with NHW showing greater anti-fat bias than African Americans on these tests.

**DISCUSSION**

To our knowledge, this online study of implicit attitudes toward overweight /obesity was the first study to compare anti-fat bias between African American women and NHW women while accounting for ethnic identity. Several subscales of explicit measures of body image correlated weakly with implicit measures of anti-fat bias, but no overarching significant relationships were detected. Interestingly, both groups demonstrated an anti-fat bias, showing a significant association between thin figures and positive attributes as well as heavier figures and negative attributes. While

**Table 3. ANCOVA for difference in average D scores based on participant ethnicity**

		Mean	SD	F	df	Sig.(2-tailed)
D scores overall	African Americans	.25	.36	1.48	418	.23
	Non-Hispanic Whites	.32	.39			

**Table 4. Summary of multiple regression analysis for the effect of ethnicity and MEIM on D score for tests presenting healthy/ unhealthy attributes**

Variable	B	SE(B)	$\beta$	T	Sig. (p)
Ethnicity	-.03	.04	-.08	-.82	.41
MEIM Score	.003	.01	.04	.38	.70
Interaction of MEIM x ethnicity	-.02	.01	-.17	-1.96	.05

overall IAT D score did not significantly differ by ethnic group, the overall average IAT D score of 0.29, is slightly lower than previous studies with predominately Caucasian samples (D = .35 and D = .48).<sup>20,21</sup>

A significant anti-fat bias was found within all attribute categories. That is, participants implicitly believed that heavier women were unattractive, unhealthy, and generally “bad” while also associating thinner women with being attractive, healthy and “good.” This effect was seen at every body weight com-

parison (underweight-overweight, underweight-obese, and overweight-obese) with participants favoring the lighter figure in each case.

It is important to note that ethnic identity differentially affected D scores for each ethnic group for comparisons of healthy verses unhealthy. NHW participants with higher ethnic identity showed greater anti-fat bias. This is in concert with traditional Caucasian European norms that equate thinness with health and beauty. The opposite relationship occurred with African Ameri-

cans, where those with high ethnic identity had significantly less anti-fat bias. Here too, less bias matches traditional beliefs and norms for African Americans with whom being “big” is considered healthy and perhaps even necessary to ward off potential disease and illness. Thus, these results are consistent with the explicit cultural norms of each group and point to the need to examine ethnic identity

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**Table 5. Independent samples t-test comparison of all IATs by ethnicity of participant**

	Participants by group	Mean	SD	t	df	sig (2-tailed)
Attractive/Unattractive	African American	.34	.36	.10	138	.92
	Non-Hispanic Whites	.34	.35			
Good/bad <sup>a</sup>	African American	.12	.41	2.07	146	.04
	Non-Hispanic Whites	.25	.34			
Healthy/unhealthy	African American	.31	.34	.73	130	.47
	Non-Hispanic Whites	.36	.39			
Underweight/overweight	African American	.12	.38	1.83	145	.07
	Non-Hispanic Whites	.23	.37			
Underweight/ obese	African American	.23	.38	1.05	133	.30
	Non-Hispanic Whites	.30	.37			
Overweight/obese	African American	.40	.35	.59	136	.55
	Non-Hispanic Whites	.43	.31			

<sup>a</sup> Significant at the P<.05.

as well as ethnicity in the context of work on weight. This finding suggests implicit anti-fat attitudes are universal among both NHW and African American women. This may suggest that perhaps an increased focus of intervention on health behaviors--- not just body weight and size ---- may be a more impactful method for attitude change given the strong stigmatized attitudes about larger figure size.

In moving forward, the findings of our study should be viewed in light of several limitations including the use of figures, the role of participant factors such as age or cohort and BMI

on bias, and measurement strategy. In this study, the images of underweight figures, with a BMI of 18 kg/m<sup>2</sup>, may have caused a floor effect for underweight models. Future studies employing ultra-thin figures may be required to reveal ethnic differences in weight bias. Investigations may also need to address attitudes toward overweight by age cohort. Type of measurement must also be considered in this discussion. It is possible that explicit measures elicit consciously controlled responses consistent with longstanding cultural beliefs, whereas implicit means produce more raw scores of attitudes. Consequently, it is conceivable that equally negative attitudes are held by both groups, but African Americans are simply not willing to disclose those attitudes on explicit measures. Regardless it is important to acknowledge that the explicit acceptance of larger body sizes in African American culture suggested by other studies may inadvertently mask an implicit negative weight bias, along with the health and well-being repercussions of this negative bias.

## CONCLUSION

It is vital to consider the existence of negative weight bias among African Americans by itself. Traditionally, studies focusing on weight-related issues have compared NHW women to African Americans, concluding that African Americans show comparatively less distress over their own weight as well as decreased stigma surrounding larger figures. While this comparison may point to a relative protective factor against poor body

image for instance, it presumes that a comparison with the dominant cultural group is needed to understand the minority population. This may be short-sighted, and lead to researchers missing culturally specific distress within a smaller population. As researchers and clinicians, we must not presume that “less” bias is no bias, or that one group is less in need of research attention. Weight bias is a culturally specific construct, and therefore must be addressed not only by comparisons, but also within-group investigations. Given the prevalence of obesity and the paucity of research on weight stigma among African American women, there is need to address this issue and its impact on mental health as well as treatment of eating-related issues such as obesity and disordered eating behaviors. A new emphasis on culturally tailored health care interventions may need to include an examination of larger cultural factors and ethnic identity.

## ACKNOWLEDGMENTS

This research was supported, in part, by funding from the National Institute on Minority Health and Health Disparities (NIMHD), National Institutes of Health [Grant Number: 5P20MD000505]. The opinions or assertions contained herein are the private ones of the authors and are not to be construed as official or reflecting the views of the Department of Defense or the Uniformed Services University.

## CONFLICT OF INTEREST

No reports of conflict of interest.

## AUTHOR CONTRIBUTIONS

Research concept and design: Hart, Sbrocco, Carter. Acquisition of data: Hart. Data analysis and interpretation: Hart. Manuscript draft: Hart. Statistical expertise: Hart, Sbrocco. Acquisition of funding: Hart, Sbrocco. Administrative: Carter

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