

PAPER

The influence of the stigma of obesity on overweight individuals

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OBJECTIVE: To investigate the internalization of anti-fat bias among overweight individuals across a variety of attitudes and stereotypes.

DESIGN: Two studies were conducted using the Implicit Association Test (IAT), a performance-based measure of bias, to examine beliefs among overweight individuals about 'fat people' vs 'thin people'. Study two also contained explicit measures of attitudes about obese people.

SUBJECTS: Study 1 participants were 68 overweight patients at a treatment research clinic (60 women, 8 men; mean Body Mass Index (BMI) of 37.1 ± 3.9 kg/m²). Study 2 involved 48 overweight participants (33 women, 15 men) with a BMI of 34.5 ± 4.0 kg/m².

RESULTS: Participants exhibited significant anti-fat bias on the IAT across several attributes and stereotypes. They also endorsed the explicit belief that fat people are lazier than thin people.

CONCLUSION: Unlike other minority group members, overweight individuals do not appear to hold more favorable attitudes toward ingroup members. This ingroup devaluation has implications for changing the stigma of obesity and for understanding the psychosocial and even medical impact of obesity on those affected.

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Introduction

A growing body of literature indicates that obese people are stigmatized and discriminated against in a number of areas, including the workplace, social settings, school, and interactions with health professionals.¹ Unlike the bias against many other minority groups, however, negative attitudes toward overweight individuals are accepted and even encouraged. Obese persons often speak of public ridicule (eg, strangers approaching them in grocery stores and commenting on their food choices or scolding them in restaurants for eating dessert) and teasing (eg, being made fun of as children because of their weight). On a societal level, similar messages are transmitted. For instance, top-rated television programs consistently ridicule overweight characters and portray them in stereotypical fashion as being underemployed, gluttonous, and devoid of healthy relationships.²

The pervasiveness of this stigma may affect the beliefs of overweight individuals themselves. Social identity theory states that members of a distinct group are more likely to view group members in a more positive light and members of the outgroup more negatively.³ Overweight persons, however, appear to lack this preference for the 'ingroup' and instead hold negative attitudes.⁴ This internalization of weight stigma seems quite different from the behavior of other minority groups and is the focus of the present investigations.

Implicit vs explicit measures of bias

Explicit self-report measures are often used to assess bias, but their validity can be compromised for several reasons: responses are easily manipulated and dependent upon the wording of the instrument;⁵ people are often unable to verbalize or accurately report the beliefs they hold;⁶ and for reasons of social desirability some people may be reluctant to report biased attitudes. Implicit performance-based measures may be more accurate measures of bias. They assess beliefs without participants' awareness of the purpose of assessment, thereby reducing reactivity to the measure. Such

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assessments minimize the problem of social desirability and eliminate reliance on the individual's verbalizing and reporting beliefs.

Implicit and explicit measures of attitudes are often uncorrelated. Implicit measures yield consistently higher levels of bias than explicit measures^{7,8} and appear to be better predictors than explicit measures of discriminatory behavior. Bessenoff and Sherman⁹ found that an implicit measure of weight bias predicted the distance participants sat away from an overweight confederate while an explicit measure of bias did not. The predictive validity of implicit measures has also been demonstrated with race.^{10–12}

The Implicit Association Test (IAT)^{7,13} is one widely used implicit measure of bias. It is a timed instrument that examines associations between target groups and beliefs, and has been used to assess valenced associations of race, gender, and more recently, of weight. Participants are presented with words that fit into two target groups (eg, 'fat people' and 'thin people') and two groups of attributes (eg, 'bad' or 'good'). Pairings that may be attitude-consistent (eg, 'fat people' paired with 'bad') or attitude-inconsistent (eg, 'fat people' paired with 'good') are presented. Participants respond more quickly when classifying words that are typically associated.

Among average-weight individuals, and even health care providers who specialize in obesity treatment, there is a clear anti-fat bias when attitudes are measured implicitly.^{14,15} Recently, Rudman *et al*⁴ demonstrated that overweight individuals themselves hold negative associations with being overweight. Using the IAT, they studied four minority groups (ie, Jews, Asians, poor people, and overweight people) and found that overweight people favored the outgroup over the ingroup, whereas Jews and Asians did not. Overweight participants more strongly associated 'thin people' with 'pleasant' and 'overweight people' with 'unpleasant.' In addition, the overweight group was distinct from the other three as the only minority group that reported little explicit preference for the ingroup. This study is an important start, but did not examine attributes beyond pleasant and unpleasant, or moderating variables like race.

The purpose of the first study was to examine categories of general worth ('good' and 'bad') and to explore ethnic differences in the degree of implicit bias towards overweight individuals. We hypothesized that African-American participants would be less likely to show ingroup devaluation than would Caucasians because African-American communities generally hold less negative cultural values about being heavy.¹⁶

Study one Methods

Participants. Participants were 68 overweight individuals enrolled in a university-based weight loss research program (60 women, eight men). They had a mean weight of 102.7

(standard deviation of 14.3 kg), a body mass index (BMI) of 37.1 ± 3.9 kg/m², and a mean age of 43.1 ± 9.4 y. In all, 42 of the participants were Caucasian and 26 were African American.

Procedure. The IAT was administered to the participants individually after a brief check-in at the treatment clinic. Participants first completed a practice IAT to familiarize them with the procedure. They were instructed to examine words that belonged to two target groups (ie, 'flowers' and 'insects') and two attribute groups (ie, 'good' and 'bad'). Attitude-consistent headings were paired together (eg, flowers + good, insects + bad). Participants then classified a list of words into their appropriate category by checking off a circle in the right or left column as quickly as possible (eg, 'daisy' should be classified as a flower). They were explicitly instructed not to pay attention to the category pairings in this task: 'You are simply classifying words into categories. You are not making judgments about the words. That is, you are not saying flowers are good and insects are bad.' Participants were instructed to start at the beginning and proceed down the page without skipping any items. They were also told not to correct any mistakes they made. Participants were given 20 s to complete as many items as possible. After completion of the first page, they were given a second sheet with the same four groups, but with two of the category headings switched so that category-inconsistent headings anchored each column (eg, insects + good, flowers + bad).

The IAT of interest consisted of two new target groups (ie, 'fat people' and 'thin people') and the same two groups of attributes (ie, 'good' and 'bad'). Half of the participants were first presented with attitude-consistent category pairings (ie, fat people + bad), and half received the attitude-inconsistent pairings first (ie, fat people + good). Participants again had 20 s to complete as many items as possible. After completing the first half of the IAT, participants were given a second sheet of items with two of the four category headings switched.

Participants self-reported age and ethnicity information. Clinical records were used to verify their height and weight information.

Statistical analyses. First, a net correct score was calculated for the attitude-consistent condition and the attitude-inconsistent condition by subtracting the number of incorrect responses from correct responses. Then, a difference score was calculated by subtracting the net correct score in the attitude-inconsistent condition (eg, fat people + good) from the attitude-consistent condition (eg, fat people + bad). A positive difference score indicates a stronger association with attitude-consistent pairings, and can be interpreted as a pro-thin or anti-fat association.

To assess differences in the strength of the associations, a one-sample *t*-test was used to compare this difference score to a no-bias score of 0. An independent sample *t*-test was

used to assess possible differences in the degree of association related to ethnicity. Regressions were used to assess the degree of association in relation to continuously distributed variables, such as participants' starting BMI and age.

Results

The integrity of the data was checked according to standards of similar studies.^{14,15} All participants completed at least five items for each condition. However, nine participants were eliminated because they incorrectly classified at least 35% of items in either condition. A high error rate suggested they were distracted or failed to fully understand the IAT directions. The remaining 59 participants (37 Caucasians, 22 African-Americans) were used for data analysis.

When 'fat people' and 'good' were paired together, respondents correctly categorized 9.8 ± 4.8 items. In contrast, when 'fat people' and 'bad' were associated, correct responses increased to 16.4 ± 5.4 , indicating a significant anti-fat bias ($t(58) = 9.0$, $P < 0.001$). The Cohen's d was 1.3, a robust effect size,¹⁷ which is similar in magnitude to effect sizes calculated in studies of weight stigma among average-weight individuals.¹⁵ There were no differences in the degree of bias between ethnic groups (Caucasians = 7.19 ± 6.47 , African Americans = 5.59 ± 3.75 , $t(58) = 1.1$, $P = 0.30$). There were also no differences based on age or initial BMI. Owing to the small number of men in the study, it was not possible to conduct analyses looking at differences due to gender, but when the analysis is repeated excluding men, the robustness of the findings remained unchanged, $t(51) = 7.80$, $P < 0.001$.

Study two

Study two examined the ingroup bias of overweight individuals on a variety of attitudes using both implicit and explicit measures. The attitudes of interest included an evaluation of general worth (bad-good), two specific stereotypes typically associated with overweight individuals (being lazy and stupid) and an evaluation of global self-worth (worthless vs significant). Laziness and stupidity are two of the most frequent stereotypes of overweight individuals.¹⁸ We expected participants to exhibit ingroup devaluation for specific stereotypes as well as general self-worth when assessed implicitly, and to a lesser degree when assessed explicitly. We also examined the relationship between implicit and explicit measures. Though most studies of bias find low correlations between these measures, we hypothesized that implicit and explicit measures may be more highly correlated in this study because the stigma against obesity is more accepted than stigma against other minority groups like ethnic minorities or women, so participants may be more willing to report explicit negative attitudes.

Methods

Participants. Participants were 48 overweight individuals (33 women, 15 men) enrolled in a weight-loss study different from that of study 1. They had a mean weight of 99.3 ± 16.7 kg, a BMI of 34.5 ± 4.0 kg/m², and a mean age of 48.9 ± 9.2 y. All but one participant was Caucasian, and all were 3 weeks into treatment when tested. This sample was slightly older, less heavy, and less ethnically diverse than the participants in study 1.

Procedure. Four forms of the IAT were administered to each participant (ie, good-bad, smart-stupid, lazy-motivated, and worthless-significant) using the same procedure as described in the first study. After completing the IAT, participants answered an eight-item self-report assessment of their attitudes about fat people and thin people. Each item used a seven-point bipolar scale anchored at either end by one of a dichotomous pair ($-3 =$ negative word, $0 =$ neutral, $+3 =$ positive word), the same pairs used in the IAT (eg, good-bad, smart-stupid, lazy-motivated, worthless-significant). Participants were asked to circle the number congruent with their beliefs about the statements: 'I think fat people are...good' or 'I think thin people are...bad.'

The same analyses as in study 1 were used. In addition, Pearson product moment correlations were used to compare participants' implicit and explicit attitudes.

Results

Data were checked for integrity and all were retained for analysis. Participants exhibited significant associations (all P s < 0.0001) between 'fat people' and negative qualities across all the four IATs (see Table 1). On the explicit measures, participants reported that fat people were significantly lazier and less motivated than thin people, but did not endorse any other explicit anti-fat bias. There were no differences based on sex or initial BMI on both implicit and explicit measures. There were no significant correlations between any of the implicit measures and explicit measures,

Table 1 Implicit and explicit measures of attitude in study 2

	N	Mean	t value	Cohen's d
<i>Implicit associations</i>				
Bad-good	39	$4.3 \pm 6.2^*$	4.36	0.74
Lazy-motivated	40	$5.6 \pm 5.3^*$	5.60	0.77
Stupid-smart	44	$6.1 \pm 5.1^*$	8.01	1.04
Worthless-valuable	42	$4.1 \pm 5.0^*$	5.26	0.71
<i>Explicit attitudes</i>				
Bad-good	48	$0.27 \pm 1.0^\dagger$	1.91	0.28
Lazy-motivated	48	$0.92 \pm 1.2^*$	5.22	0.95
Stupid-smart	48	0.15 ± 1.2	0.853	0.14
Worthless-valuable	48	0.21 ± 0.87	1.65	0.19

Means are average difference scores (scores on first attitude in the dichotomy minus the second attitude). * $P < 0.0001$, $^\dagger P = 0.063$.

Table 2 Correlations between implicit and explicit measures of bias in study 2

	Good–bad IAT	Motivated–lazy IAT	Smart–stupid IAT	Valuable–worthless IAT	Explicit good–bad	Explicit motivated–lazy	Explicit smart–stupid	Explicit valuable–worthless
Good–bad IAT	—	0.38 ^a	0.40 ^a	0.38 ^a	0.18	0.21	–0.16	0.09
Motivated–lazy IAT		—	0.49 ^b	0.50 ^b	0.14	0.11	0.05	0.25
Smart–stupid IAT			—	0.68 ^b	–0.09	0.04	–0.14	–0.04
Valuable–worthless IAT				—	–0.10	0.10	–0.09	0.08
Explicit good–bad					—	0.45 ^a	0.48 ^a	0.70 ^b
Explicit motivated–lazy						—	0.19	0.50 ^b
Explicit smart–stupid							—	0.65 ^a
Explicit valuable–worthless								—

N = 48. ^aCorrelation is significant at the 0.01 level (two-tailed). ^bCorrelation is significant at the 0.001 level.

though there were moderate to high correlations within implicit measures and within explicit measures (see Table 2).

General discussion

These data provide further evidence that overweight individuals appear to internalize the powerful social stigma that exists in society. As expected, overweight individuals hold strong, consistent negative implicit associations about being overweight and exhibit no preference for ingroup members. Indeed, this ingroup devaluation was demonstrated across specific stereotypes of overweight individuals (ie, laziness and stupidity) as well as evaluations of general worth. Unlike Rudman *et al*,⁴ who found no explicit ingroup devaluation, our data suggest that explicit group devaluation does occur on specific stereotypes. Our participants explicitly reported that fat people are lazier than thin people. Yet, despite the evidence of both implicit and explicit ingroup devaluation, the correlation between implicit and explicit measures of bias was quite low. Our pattern of results was consistent with other studies, which have found more bias on implicit than explicit measures, and little relationship between the two.^{7,10} Our data suggest that, despite willingness to report explicit bias, some monitoring of attitudes still occurred.

The implications of the lack of ingroup preference among overweight people could be serious, as it may serve to perpetuate the stigma of obesity. For instance, if group members do not contest the negative views that non-obese people hold about their group, they may fail to provoke conscious thought about the stereotyping of obese people. Indeed, overweight individuals who stereotype others in their group may be particularly persuasive to outgroup members, since stigmatized sources are more motivating than non-stigmatized sources in prompting majority group members to examine a particular message.¹⁹

Somewhat surprisingly, the strength of this anti-fat bias did not differ significantly by ethnicity, although the trend was in the predicted direction, with African Americans holding a less strong bias compared to Caucasians. A clear limitation in this study, however, was the sample size, which

might not have provided sufficient power to detect ethnic differences. A power analysis suggested that we would need almost four times the number of participants in each group in order to correctly detect a difference of 80% of the time. Alternatively, it may be the case that, despite different cultural definitions of body size among African Americans,²⁰ the stereotypes of obese people in the general culture may prevail.

There are several theoretical reasons for why this stigma against overweight individuals is so pervasive and stable. First, the perceived mobility of group membership may be a unique variable that contributes to ingroup devaluation among overweight individuals. Weight is seen as controllable,^{21,22} unlike other stigmatized traits such as race and gender. Our subjects held a particularly strong explicit belief that fat people are lazy. This belief assumes that overweight individuals simply lack motivation or responsibility for a condition that is under their control. Anesbury and Tigge-man²³ found that providing a medical explanation for a target's obesity reduces perceived controllability of obesity and increases liking of the target. If people who fail at self-control in 'controllable' situations are considered less likeable, those in high perceived-control situations who do not even attempt to exert self-control should be especially devalued.

Second, the refractory nature of weight loss provides 'evidence' to both in- and outgroup members that negative stereotypes against overweight individuals are accurate. Each time overweight individuals try to lose weight but fail to keep it off, they may reinforce, to themselves and to others, the perception that they are lazy or lack willpower. Third, there are clearly perceived benefits associated with the outgroup. They are powerful social and even economic benefits of being thin.

We did not ask our participants about their perceived group membership. We assumed that since they were actively trying to lose weight, they recognized that they were overweight. It is possible that some did not identify themselves as part of the group, and thus felt freer to derogate fat people. Thus, instead of selecting participants solely based on weight, we could investigate those individuals who identify as overweight or obese. Perhaps high

identifiers show even less of a preference for the ingroup than low identifiers. Future work could also examine whether participants' goal weights affect their degree of bias, such that those who are more discrepant from their goal weight might feel differently about overweight individuals than those who have reached their desired weight.

The implications for this strong and pervasive stigma against overweight people are potentially significant. Unlike most minority groups, overweight individuals do not have the protective barrier that ingroup preference provides. They may suffer more from negative experiences due to their weight, prompting them to try more drastic and dangerous behaviors to avoid future negative events. Trying to change societal stigma towards obesity is an important goal in improving the lives of overweight individuals. Given our data, the mission to erase the stigma of obesity should target all individuals, including those who are overweight.

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