



Implicit and explicit attitudes toward fatness and thinness: The role of the internalization of societal standards[☆]

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Abstract

Two studies examined restrained and unrestrained eaters' implicit and explicit attitudes toward fatness and thinness. Participants completed measures of implicit and explicit attitudes toward fatness and thinness (Studies 1 and 2), and a measure of the internalization of sociocultural attitudes toward thinness (Study 2). Restrained and unrestrained eaters both had strong implicit negative attitudes toward fatness, but restrained eaters had stronger negative explicit attitudes and beliefs about fatness. Explicit attitudes and beliefs were related to the degree of internalization of sociocultural attitudes, and the internalization of sociocultural attitudes partially mediated the relation between dietary restraint and explicit attitudes. These results suggest that most people are aware of societal standards regarding fatness and thinness and have developed negative implicit attitudes toward fatness, but that only some people (in particular, restrained eaters) have internalized these standards and developed negative explicit attitudes toward fatness that they endorse as personal beliefs.

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Introduction

Social pressures and media messages expounding both the virtues of thinness and the vices of overweight encourage women to diet in order to achieve the ideal (i.e., thin) body shape. Furthermore, negative attitudes toward overweight and

obese individuals are extremely common in Western society (Puhl & Brownell, 2001), reflecting our society's pervasive negative attitudes toward fatness, particularly for women. These social pressures to achieve the thin ideal are thought to be largely responsible for women's "normative discontent" with their bodies (Rodin, Silberstein, & Striegel-Moore, 1984) and for the more clinically significant body dissatisfaction observed among eating-disordered individuals (Stice, 1994, 2002). Individual differences in the extent to which these sociocultural attitudes are adopted as personal values and beliefs can have important implications for understanding

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individuals' personal relationship with body weight and size (Stice, 2002).

Earlier research using self-report measures has described anti-fat attitudes at an explicit level (e.g., Crandall, 1994). In last decade, there has been increased interest in so-called unobtrusive measures of attitudes, which assess people's implicit (or automatic) attitudes. The primary advantage of these measures is that they are thought to be relatively resistant to response biases and other demand characteristics, which can be particularly useful when there is reluctance to explicitly report one's attitudes. A few recent studies have examined people's weight-related attitudes at both the implicit and explicit levels, and have noted the ways in which implicit and explicit attitudes can differ. For example, Teachman and Brownell (2001; Teachman, Gapinski, Brownell, Rawlins, & Jeyaram, 2003) found strong evidence of negative implicit attitudes toward overweight people in the general population, and even among health-care professionals. They did not, however, find any such negative attitudes on explicit measures, nor did they find any significant correlations between implicit and explicit attitude measures. Teachman and Brownell (2001) did find small positive correlations between implicit and explicit stereotypes (e.g., *lazy*) of obese people, which the authors argued may have been due to the fact that it is more socially acceptable to express a given stereotype than it is to declare a negative attitude toward a group of people. Bessenoff and Sherman (2000) also found that individuals high and low in their explicit anti-fat attitudes did not differ in terms of their implicit anti-fat attitudes. Thus, it appears from these studies that although most people have implicit anti-fat attitudes, not everyone expresses these negative attitudes explicitly. Importantly, implicit attitudes predict some forms of behavior (e.g., non-verbal, spontaneous behavior) better than do explicit attitudes (e.g., Dovidio, Kawakami, & Gaertner, 2002). For example, Bessenoff and Sherman (2000) found that implicit attitudes, but not explicit attitudes, predicted how far individuals chose to sit from an overweight person.

The findings of Teachman et al. (Teachman & Brownell, 2001; Teachman et al., 2003) and Bessenoff and Sherman (2000) are consistent with recent work in social cognition demonstrating that implicit and explicit attitudes are conceptually distinct constructs (see Rudman, 2004). It has been suggested that people can

have *dual attitudes* toward the same object (Wilson, Lindsey, & Schooler, 2000), with implicit attitudes being ones that have in part been acquired from messages in the environment, and explicit attitudes reflecting the attitudes that individuals have internalized and endorse as personal beliefs (see also Devine, 1989; Karpinski & Hilton, 2001). If explicit attitudes are those that have been internalized and endorsed as personal beliefs, then it follows that those who have internalized the cultural attitudes to a greater degree would be more likely to express those attitudes explicitly.

Dieters are known to have internalized social standards regarding thinness to a considerable degree (Griffiths et al., 2000). One might expect, therefore, that dieters will be more likely to explicitly endorse anti-fat attitudes as personal beliefs than will non-dieters. Other research has shown that internalization of social standards plays an important role in body dissatisfaction. For example, research has shown that the internalization of social standards predicts body dissatisfaction (e.g., Stice, 2002), and internalization has been shown to mediate the relation between parental, peer, and media influence and body dissatisfaction (e.g., Keery, van den Berg, & Thompson, 2004; Stice, Schupak-Neuberg, Shaw, & Stein, 1994; Tiggemann, 2003). Therefore, examining the relation between internalization of social standards and anti-fat attitudes could contribute to a broader understanding of people's affective experience with their own and others' body weight.

There is generally little difference between dieters and non-dieters with respect to their knowledge or awareness of the social standards (Griffiths et al., 2000). Recall that implicit attitudes are thought in part to reflect exposure to cultural attitudes and messages in one's environment. Because everyone has been exposed to (and is aware of) the same social messages regarding thinness and fatness, we might expect dieters and non-dieters to have the same implicit attitudes.

The purpose of the present research was to explore the relation between the internalization of social standards and anti-fat attitudes by examining the implicit and explicit attitudes that restrained eaters (dieters) and unrestrained eaters (non-dieters) have toward thinness and fatness. Previous research on implicit anti-fat attitudes has focused on attitudes toward a specific target group (i.e., fat people). Our focus, however, was on implicit attitudes toward

fatness (and thinness) in more abstract, general terms, as this approach might be more meaningfully related to dietary restraint and associated explicit body attitudes. We predicted that restrained and unrestrained eaters would both have implicit negative attitudes toward fatness, but that restrained eaters would have developed stronger explicit negative attitudes and beliefs. In Study 2, we specifically examined the role of awareness and internalization of social standards regarding thinness in implicit and explicit attitudes. We expected that internalization (but not awareness) of social standards would be related to explicit attitudes toward fatness and thinness.

Study 1

Method

Participants

Fifty-six female undergraduate students were recruited from psychology courses at the University of Toronto. The sample size was based on other research using the Implicit Association Test that has generally found robust effects with relatively small samples (e.g., Greenwald, McGhee, & Schwartz, 1998). The mean age was 19.5 years (range = 16–42). Participants were classified as restrained or unrestrained eaters on the basis of their scores on the Restraint Scale (Herman & Polivy, 1980). As in previous research, individuals scoring 15 or above were classified as restrained eaters and individuals scoring below 15 were classified as unrestrained eaters. In the present study there were 28 restrained eaters ($M = 19.18$, $SD = 2.86$) and 28 unrestrained eaters ($M = 8.41$, $SD = 4.11$). Restrained eaters ($M = 22.26$, $SD = 2.84$) had somewhat higher BMIs than did unrestrained eaters ($M = 20.88$, $SD = 2.55$), $t_{(52)} = 1.87$, $p < 0.07$, $d = 0.51$.

Materials and apparatus

Implicit measure. Implicit attitudes were assessed using the Implicit Association Test (IAT; Greenwald et al., 1998). The IAT is a computer-based reaction-time measure that uses response latencies to measure the relative strength of association between two concept categories. The IAT typically pairs various concepts with pleasant and unpleasant evaluative words, and has generally been used to measure implicit racial attitudes. The IAT has also been used to assess implicit attitudes

of clinical relevance, such as attitudes toward phobic stimuli (e.g., Teachman & Woody, 2003), smoking (Sherman, Rose, Koch, Presson, & Chassin, 2003), and alcohol and drug use (e.g., Wiers, Van Woerden, Smulders, & De Jong, 2002), demonstrating the versatility of its application. More recently, researchers have used the IAT to assess implicit anti-fat attitudes (Schwartz, Chambliss, Brownell, Blair, & Billington, 2003; Schwartz, Vartanian, Nosek, & Brownell, 2005; Teachman & Brownell, 2001; Teachman et al., 2003; Wang, Brownell, & Wadden, 2004), and have found consistent anti-fat attitudes, even among obese individuals and health professionals.

The IAT consists of five blocks of trials. For each trial, a single word appears in the center of the computer screen, and participants are asked to categorize this word as quickly and as accurately as possible using one of two response keys. There are two critical blocks of trials in the IAT: a block of congruent trials and a block of incongruent trials. For congruent trials in the present study, fat words and unpleasant words were categorized with one response key (“z”), and thin words and pleasant words were categorized with another response key (“/”). This categorization task should be easy to perform if “fat” is in fact associated with “unpleasant” and “thin” is in fact associated with “pleasant.” For incongruent trials, the key responses required for pleasant and unpleasant words were reversed so that fat words and pleasant words were categorized with the “z” key, and thin words and unpleasant words were categorized with the “/” key. If “fat” is associated with “unpleasant” (and “thin” with “pleasant”), then this categorization task should be more difficult to perform, and should therefore produce longer response latencies. The difference in mean response latencies between congruent trials and incongruent trials provides an index of the strength of association between fatness and unpleasant words and between thinness and pleasant words.

The stimuli for the IAT in the present study were eight thin words (*bony, lanky, lean, scrawny, skinny, slender, slim, willowy*) and eight fat words (*chubby, chunky, heavy, obese, overweight, plump, pudgy, stout*), which had been used in previous research in our laboratory. The second set of stimuli consisted of eight pleasant words (*paradise, love, friend, lucky, miracle, happy, laughter, peace*) and eight unpleasant words (*murder, pain, death, grief, assault, bad, poverty, evil*), which were selected from the set of pleasant and

unpleasant words used in the original IAT research (Greenwald et al., 1998).

Explicit beliefs/attitudes. Participants responded to a five-item measure designed to assess explicit beliefs and attitudes related to body weight. This measure included the three items from the Fear of Fat subscale of Crandall's (1994) Antifat Attitudes Scale ("I feel disgusted with myself when I gain weight," "I worry about becoming fat," "One of the worst things that could happen to me would be if I gained 25 pounds"). One additional item ("I am preoccupied with a desire to be thinner") was taken from the Eating Attitudes Test (Garner, Olmsted, Bohr, & Garfinkel, 1982). These particular items were selected because they addressed general beliefs and attitudes about body weight, rather than judgments of other people (as in Crandall's Dislike scale) or behaviors and eating-disorder symptoms (as in the Eating Attitudes Test). A fifth item ("Thinness is something that people should strive for") was created specifically for the purpose of this study to assess more generalized beliefs about body weight. Each item was rated on a 7-point scale (1 = *completely agree*, 7 = *completely disagree*), and the five items were combined into a composite explicit beliefs measure. The composite measure had good reliability (Cronbach's $\alpha = 0.88$).

Restraint Scale. The Restraint Scale (Herman & Polivy, 1980), a 10-item self-report measure of eating habits, dieting concerns, and weight fluctuations, is a widely-used measure of dietary restraint, and has good reliability and validity. In the present study, Cronbach's α was 0.87. Participants were also asked to indicate their current height and weight.

Procedure

Participants were preselected on the basis of their Restraint Scale scores obtained at a pre-screening session, and came to the laboratory individually to complete several computer tasks and questionnaires as part of a larger study. Congruence order for the IAT (i.e., whether participants responded to the congruent block or the incongruent block first) was counter-balanced across participants. After signing a consent form, participants were given oral instructions regarding the IAT procedure, which were then reiterated in written form on the computer screen.

After completing the IAT, participants completed the Restraint Scale (to verify their restraint status) and the measure of explicit attitudes and beliefs, and were then debriefed and thanked for their participation. All participants received course credit for taking part in this study.

Results

Implicit attitudes

IAT data were compiled according to the improved *D* scoring algorithm suggested by Greenwald, Nosek and Banaji (2003). Positive values on the IAT indicate negative associations with fatness (and positive associations with thinness) (see Table 1 for means). As predicted, restrained and unrestrained eaters both showed strong implicit negative evaluations of fatness (or positive evaluations of thinness). *T*-tests revealed that the mean *D* score for each group differed significantly from zero, $t_{(27)} = 3.61$, $p < 0.002$, $d = 0.68$, and $t_{(27)} = 2.72$, $p < 0.02$, $d = 0.51$, for restrained and unrestrained eaters, respectively. In addition, there was no difference between restrained and unrestrained eaters with respect to their *D* scores, $t < 1$, ns, $d = 0.14$. (It is unlikely that this latter finding is due to low power; power analysis indicated that we would have needed more than 1000 participants for an effect of this magnitude to be statistically significant at the 0.05 level with 80% power.) Thus, restrained and unrestrained eaters both had equally strong negative implicit attitudes toward fatness (or positive attitudes toward thinness).

Explicit beliefs/attitudes

As predicted, restrained eaters had more negative explicit beliefs/attitudes regarding fatness than did unrestrained eaters, $t_{(58)} = 6.35$, $p < 0.001$, $d = 1.64$ (Table 1).

Correlation between the IAT and explicit beliefs/attitudes

Consistent with other research comparing implicit and explicit anti-fat attitudes, the correlation between IAT *D* scores and explicit belief/attitudes was negligible ($r = 0.004$, ns).

BMI as a moderator

All analyses reported above were repeated controlling for BMI, and in each case the results remained

Table 1
Means (*SD*) for implicit and explicit attitudes in Studies 1 and 2

	Study 1		Study 2	
	R (<i>n</i> = 28)	UR (<i>n</i> = 28)	R (<i>n</i> = 22)	UR (<i>n</i> = 31)
IAT <i>D</i> effect	0.57 (0.84)	0.45 (0.88)	0.68 (0.57)	0.46 (0.66)
Explicit attitudes/beliefs	5.09 ^a (1.12)	3.11 ^b (1.29)	4.95 ^a (0.94)	4.02 ^b (1.10)
Semantic-differential scales	–	–	3.32 ^a (1.39)	2.10 ^b (1.70)
SATAQ-A	–	–	28.82 (5.28)	29.12 (5.53)
SATAQ-I	–	–	38.27 ^a (7.25)	30.84 ^b (7.87)

Note: R = restrained eaters, UR = unrestrained eaters, SATAQ-A = Sociocultural Attitudes Toward Appearance Questionnaire, awareness scale, SATAQ-I = Sociocultural Attitudes Toward Appearance Questionnaire, internalization scale. For each study, means within a row with different superscripts are significantly different at $p < 0.01$.

unchanged. These findings are consistent with other work showing evidence of anti-fat attitudes across the weight spectrum (e.g., Schwartz et al., 2005; Wang et al., 2004).

Discussion

The results of Study 1 showed that, as predicted, restrained and unrestrained eaters both had strong implicit anti-fat attitudes, but the two groups diverged in their explicit beliefs/attitudes. We wished to extend this study with a second study that had three main objectives. First, we wanted to replicate the findings of Study 1. Second, researchers using the IAT as a measure of implicit attitudes often use semantic-differential scales to assess explicit attitudes. With semantic-differential scales, the attitude object is rated on a scale that is anchored by two opposite terms (e.g., favourable–unfavourable, good–bad, pleasant–unpleasant). Accordingly, Study 2 included a pair of semantic-differential scales assessing attitudes toward fatness and thinness. Finally, we hypothesized that the internalization of societal standards regarding fatness and thinness would be related to anti-fat attitudes, so Study 2 included a measure assessing people's awareness and internalization of these societal standards.

Study 2

Participants

Fifty-three female undergraduate students from an introductory psychology course at the University of

Toronto participated in exchange for course credit.¹ Their mean age was 21 years (range = 18–29). There were 22 restrained eaters ($M = 18.50$, $SD = 3.25$) and 31 unrestrained eaters ($M = 9.52$, $SD = 3.23$). Restrained eaters ($M = 22.55$, $SD = 2.96$) had somewhat higher BMIs than did unrestrained eaters ($M = 20.95$, $SD = 3.13$), $t_{(48)} = 1.81$, $p < 0.08$, $d = 0.53$.

Materials and procedure

The materials and procedure were identical to those in Study 1, with a few exceptions. First, in addition to the explicit attitudes and beliefs assessed in Study 1, participants were asked to rate thinness and fatness (separately) on a semantic-differential scale (1 = *extremely favorable*, 7 = *extremely unfavorable*). Second, participants completed the Sociocultural Attitudes Toward Appearance Questionnaire (SATAQ; Heinberg, Thompson, & Stormer, 1995), a reliable and valid measure of people's awareness and internalization of sociocultural standards regarding thinness and fatness. This measure consists of 14-items (six for the awareness scale, eight for the internalization scale), each of which was rated on a 7-point scale (1 = *completely agree*, 7 = *completely disagree*). The reliability for the internalization scale in the present study was acceptable (Cronbach's $\alpha = 0.79$), but was somewhat lower for the awareness

¹ One participant's data were excluded from this study because her score on the internalization scale of the SATAQ was more than four standard deviations below the mean of the rest of the group.

scale (Cronbach's $\alpha = 0.64$).² Finally, presentation of the implicit and explicit measures was counterbalanced across participants, and all participants completed the Restraint Scale last. Cronbach's α was 0.77 for the Restraint Scale and 0.73 for the explicit beliefs/attitudes measure.

Results and discussion

Implicit attitudes

As in Study 1, both restrained and unrestrained eaters had strong implicit negative evaluations of fatness (or positive evaluations of thinness) (see Table 1). *T*-tests revealed that the IAT *D* scores for each group differed significantly from zero, $t_{(21)} = 5.52$, $p < 0.001$, $d = 1.12$, and $t_{(30)} = 3.87$, $p < 0.002$, $d = 0.70$, for restrained and unrestrained eaters, respectively. The difference between restrained and unrestrained eaters in their implicit attitudes was not statistically significant, $t_{(51)} = 1.23$, $p > 0.2$, $d = 0.35$. As in Study 1, this latter finding is probably not due to insufficient power; power analysis indicated that we would have needed more than 500 participants for an effect of this magnitude to be statistically significant at the 0.05 level with 80% power.

Explicit beliefs/attitudes

As in Study 1, restrained eaters had stronger negative explicit beliefs/attitudes regarding fatness than did unrestrained eaters, $t_{(51)} = 3.23$, $p < 0.005$, $d = 0.90$ (Table 1).

Semantic-differential scales

Participants also responded to two semantic-differential items assessing their explicit attitudes toward thinness and fatness. The correlation between these two items was -0.39 , $p < 0.005$. To be consistent with the scoring of the IAT, a difference score was calculated by subtracting scores on the thinness item from scores on the fatness item. The result was that positive scores reflect a relatively greater negative attitude toward fatness (or positive attitude toward thinness), whereas negative scores reflect a relatively greater negative attitude toward thinness (or positive

attitude toward fatness) (range = -6 to 6). Consistent with the results for the explicit beliefs/attitudes measure, restrained eaters had more negative explicit attitudes toward fatness on the semantic-differential scale than did unrestrained eaters, $t_{(51)} = 2.77$, $p < 0.01$, $d = 0.77$ (see Table 1). The correlation between the explicit beliefs/attitudes measure and the semantic-differential scale was 0.40 , $p < 0.005$, indicating that they assess related constructs.

Correlations between the IAT and explicit measures

There were no significant correlations between IAT scores and either the explicit beliefs/attitudes measure ($r = -0.06$, ns) or the semantic-differential scale ($r = 0.17$, $p > 0.2$).

SATAQ

Restrained and unrestrained eaters did not differ in their awareness of the societal attitudes toward thinness, $t < 1$, ns. There was, however, a significant difference in the internalization of these societal attitudes. Restrained eaters reported a greater degree of internalization than did unrestrained eaters, $t_{(51)} = 3.50$, $p < 0.002$, $d = 0.97$ (see Table 1).

Correlations between SATAQ scales and implicit and explicit attitudes

Awareness of societal standards regarding thinness was uncorrelated with both implicit and explicit attitudes ($r_s < 0.13$, $p_s > 0.3$). Internalization of societal standards was correlated with explicit beliefs/attitudes ($r = 0.31$, $p < 0.03$) and with the semantic-differential measure ($r = 0.36$, $p < 0.01$), indicating that those individuals who had internalized the societal standards to a greater degree also had more negative explicit attitudes and beliefs about fatness. Internalization, however, was not correlated with implicit attitudes ($r = 0.14$, $p > 0.3$).

BMI as a moderator

As in Study 1, all of the analyses reported above were repeated controlling for BMI, and in each case the results remained unchanged.

Test of mediation

Having found the expected associations between internalization of social standards and explicit

² Previous research has also found that the reliability of the awareness scale is somewhat lower than is that of the internalization scale (e.g., Griffiths et al., 2000; Heinberg et al., 1995; Tiggemann, 2003).

attitudes and beliefs regarding fatness, we wanted to test whether internalization mediated the relation between dietary restraint and explicit attitudes and beliefs. We used the bootstrapping method described by Shrout and Bolger (2002), with the SPSS macro provided by Preacher and Hayes (2004). It has been argued (e.g., Preacher & Hayes, 2004; Shrout & Bolger, 2002) that such bootstrapping methodology is more appropriate for smaller samples than are procedures such as the Sobel test (Sobel, 1982), as the latter are overly conservative when used with smaller samples. (For more details about the bootstrapping procedure, see Preacher and Hayes, 2004; Shrout & Bolger, 2002.) The bootstrapping procedure was used to test the null hypothesis that the indirect path from dietary restraint to explicit attitudes and beliefs through internalization was not significantly different from zero. These analyses were conducted separately for the semantic-differential and explicit beliefs/attitudes measures. For the semantic-differential measure of explicit attitudes, the 95% confidence interval was 0.0041, 0.0578. Because zero is not in the confidence interval, we can conclude that the indirect effect is significantly different from zero at $p < 0.05$ (two-tailed). The indirect effect for the explicit beliefs/attitudes measure was not significantly different from zero, with a 95% confidence interval of -0.0043 , 0.0311 . These findings suggest that the observed difference in explicit attitudes (at least as measured by the semantic-differential scale) between restrained and unrestrained eaters is at least partially attributable to differences in the extent to which they have internalized social standards regarding thinness.

General discussion

The present research examined implicit and explicit attitudes toward fatness and thinness among restrained and unrestrained eaters. Across both studies, we found that restrained and unrestrained eaters had equally strong implicit negative attitudes toward fatness (and positive attitudes toward thinness). In contrast, restrained eaters reported greater degrees of explicit negative attitudes and beliefs than did unrestrained eaters.

In addition, Study 2 found no differences between restrained and unrestrained eaters in their level of

awareness of societal standards regarding thinness. We did, however, find that restrained eaters had a greater degree of internalization of these standards than did unrestrained eaters. Furthermore, internalization (but not awareness) of societal standards was positively correlated with explicit attitudes and beliefs, and internalization partially mediated the relation between dietary restraint and explicit attitudes regarding fatness. Thus, it appears that most people have been exposed to and are aware of the societal standards, and have also developed negative implicit attitudes toward fatness (and positive attitudes toward thinness) that are consistent with those standards. In contrast, only some people (in particular, restrained eaters) have internalized these standards, and have also developed negative explicit attitudes toward fatness that they endorse as their own personal beliefs (cf. Karpinski & Hilton, 2001; Wilson et al., 2000).

The findings of the present studies dovetail with the findings of other research showing that the degree of internalization of the thin-body ideal partially mediates the link between exposure to thin-ideal images in the media and body dissatisfaction (Keery et al., 2004; Stice et al., 1994; Tiggemann, 2003). Taken together, these findings suggest that exposure to (or awareness of) societal standards is not sufficient for an individual to develop explicit anti-fat attitudes (either in terms of general beliefs about fatness, or in terms of one's opinion about one's own body). Rather, the extent to which anti-fat attitudes are endorsed as personally meaningful beliefs depends upon the degree to which individuals have internalized these societal standards. Thus, understanding how societal standards regarding thinness and fatness influence individuals' personal relationship with body weight and size requires taking into consideration the degree of internalization of societal standards. Future research should explore which factors make an individual more likely to internalize societal pressures; candidates would include low self-esteem and identity confusion (Stice, 1994) or perhaps the presence of more proximal pressures from family and peers (Stice, Spangler, & Agras, 2001).

There are some limitations of the present study that could be addressed in future research. First, although our findings replicated across both studies, the sample size in each study was relatively small. Second, we found that internalization of societal standards partially

mediated the relation between dietary restraint and explicit attitudes; but our design was cross-sectional, and therefore the mediation was purely statistical in nature. Future research prospectively assessing attitudes and internalization in a larger sample would provide further insight into the operation of these mechanisms in the development of anti-fat attitudes. Another potential limitation of the present research concerns our attitude/belief measure. Although the attitude/belief measure demonstrated adequate reliability and content validity, further research is needed to establish the construct validity of this measure.

Another direction for future research would be to determine whether the internalization/attitude link described in the present research is relevant to other weight-concerned groups. For example, a recent study (Friedman et al., 2005) found that anti-fat attitudes moderated the psychological impact of stigma experiences among obese individuals. In addition, Wang et al. (2004) found that obese individuals had strong negative anti-fat attitudes, and the authors suggested that this was a result of obese individuals having internalized the prevalent cultural attitudes. Their study, however, did not directly assess internalization; rather, internalization was inferred from the finding that obese individuals held anti-fat attitudes. Taken with the findings of the present study, it appears that the degree to which individuals internalize societal standards regarding fatness and thinness could be an important factor in determining the psychological impact of stigma experiences among obese individuals.

Finally, the present study demonstrated strong implicit anti-fat attitudes irrespective of dietary restraint status. This finding is consistent with other research showing the apparent universality of implicit anti-fat attitudes (e.g., Schwartz et al., 2003, 2005; Teachman & Brownell, 2001; Wang et al., 2004). These findings could be particularly important in light of research showing that implicit attitudes predict certain forms of behavior (including non-verbal behavior and spontaneous behavior) (e.g., Dovidio et al., 2002). Future research could examine the types of behaviors that are related to implicit anti-fat attitudes, both in terms of interactions with others (e.g., non-verbal behavior in interactions with overweight/obese people) and self-directed behaviors (e.g., eating, dieting, and exercise behaviors in particular contexts).

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