An Examination of Attitudes and Stigma in the Context of Weight Acceptance

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Jessica Michie Murakami

Committee: Janet Latner (Chair)

Kelly Vitousek

Elaine Hatfield

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Abstract

Given the difficulty of achieving and sustaining weight loss, stigma reduction through acceptance may be a more realistic method of improving psychological wellbeing related to weight. However, due to the pervasiveness of fat stigma, the relationship between body acceptance and obesity stigma must be considered. This study aims to examine attitudes expressed toward normal weight versus obese individuals who either accept or do not accept their weight. In Study 1, 393 participants were randomly assigned to read one of four vignettes about a female target who is obese and accepting of her weight, obese and non-accepting of her weight, normal weight and accepting, or normal weight and non-accepting. These vignettes were accompanied by a computer-generated image of the target. Participants responded to a series of self-report measures of general bias against the target, medical insurance-based bias against the target, perceptions of the target's self-esteem, perceptions of psychopathology experienced by the target, anti-fat attitudes, and weight bias internalization. In Study 2, 394 participants were randomly assigned to the same vignette conditions without the target images. Participants then responded to the same measures as in Study 1 as well as two additional measures of bias against the target. In both studies, the relationship between the dependent variables and the factors of target weight and acceptance were analyzed with MANOVAs followed by 2x2 ANOVAs for overall samples as well as with the samples split by gender. Most results from Study 1 were replicated in Study 2. In both studies, main effects for weight and acceptance on some measures of stigma were observed. However, no interactions between weight and acceptance on measures of stigma emerged. Additional measures revealed that target weight and acceptance also play a role in the perceptions of target

self-esteem and psychopathology. As the findings indicate that weight acceptance leads to less stigma and does not interact with weight to increase stigma, these studies provide promising support for weight acceptance as a public health model.

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Introduction

With nearly 70% of adults in the United States classified as overweight (Body Mass Index [BMI] greater than 25 kg/m^2) or obese (BMI greater than 30 kg/m^2), the trend toward obesity is especially alarming (Flegal, Carroll, Kit, & Ogden, 2012). Despite recent reports that excess weight may not significantly impact health (Flegal, Kit, Orpana & Graubard, 2013), a substantial body of medical research links obesity to both higher rates of death and decreased quality of life (Bray, 2004; Calle, Thun, Petrelli, Rodriguez, & Heath, 1999; Calle, Rodriguez, Walker-Thurmond & Thun, 2003; Lawrence & Kopelman, 2004). Therefore, obesity is commonly labeled one of the greatest health crises in the United States (Oliver, 2006) and other Western countries (World Health Organization, 1999; Chiolero & Paccaud, 2009).

The psychological effects of obesity are equally important. Beyond stressors linked to various chronic medical conditions associated with obesity (e.g., diabetes mellitus, heart disease, and certain forms of cancer; Kim & Popkin, 2006; Lewis et al., 2009), the prevalence of weight bias and stigma has been well documented (Puhl & Heuer, 2009; Puhl & Latner, 2007). Stigma is commonly defined as a social construction that leads targeted individuals to be perceived as distinctly different from normative expectations due to certain undesirable characteristics (Dovidio, Major & Crocker, 2000). As a result, these individuals are devalued or considered deviant in specific social contexts that are prescribed by cultural, historical and situational factors (Dovido, et al., 2000). Furthermore, observable conditions are more likely to be targets of stigma. Observability increases the likelihood of social rejection as these features become the primary indicator used by others to define the stigma target's identity (Crocker, Major &

Steele, 1998). Stigmatized characteristics that are perceived as controllable are also more frequently denigrated (Crandall, 2000). Being perceived in such a demeaning way may affect how stigmatized individuals interpret negative attitudes from others and cope with stigma (Puhl & Brownell, 2003).

Common negative stereotypes attributed to obese individuals include being lazy, incompetent, intellectually slow, sloppy, socially inept, and lacking in self-esteem, self-control and will power (Puhl & Brownell, 2001; Allon, 1982; Harris, 1990). According to Andreyeva, Puhl, and Brownell (2008), weight/height discrimination has increased by approximately 66% over the past decade. This bias has been documented to exist both explicitly (Crandall, 1994) and implicitly (Teachman, Gapinski, Brownell, Rawlins, & Jeyaram, 2003) in the general population as well as in educational institutions, medical facilities, places of employment, and in personal relationships between friends and family members (Andreyeva, Puhl, & Brownell, 2008; Crandall, 1994; Puhl, Andreyeva, & Brownell, 2008; Puhl & Brownell, 2001; Roehling, 1999). Research indicates that these social consequences of weight stigma have psychological repercussions including increased vulnerability to low self-esteem, depression, and anxiety (Puhl & Latner, 2007).

Furthermore, in the current era of healthcare reform and managed care, stigma is likely to be enhanced by the perception of societal costs of being overweight or obese. With annual medical expenditure attributable to overweight and obesity estimated at $92.6 billion dollars (as valued in 2002) and obese individuals being absent from jobs more frequently than their normal weighted peers, obesity has documented impacts that are costly to society as a whole (Finkelstein, Flebelkorn, & Wang, 2003; Finkelstein,

Ruhm, & Kosa, 2005). As a result of increased public focus on obesity, research suggests that stigma experienced by obese adults has also intensified (Lewis, Thomas, Blood, et al., 2010; Lewis, Thomas, Hyde, et al., 2010).

While weight loss has clear financial and medical benefits for individuals who are overweight and obese (Blackburn, 1995; Mertens & Van Gaal, 2000), the relationship between weight reduction and stigma reduction is less apparent. Controllability Theory posits that stigma against heavier individuals stems from a belief that obesity is caused by a lack of self-control and discipline (Crandall, 1994; Ebneter, Latner, & O'Brien, 2011). Given data that approximately 39% of women and 21% of men are currently trying to lose weight, and 55% of women and 21% of men have attempted to diet (Hill, 2002), the belief that weight is controllable appears widespread in the general population (Thomas, Hyde, Karunaratne, Kausman, & Komesaroff, 2008). In the context of Controllability Theory, demonstrating control over one's weight through weight loss should reduce stigma experienced by individuals struggling with weight concerns.

Support for Controllability Theory is supported by findings that participants who are shown images of before-and-after diet advertisements display greater obesity stigma than participants shown only the obese individual from these images (Geier, Schwartz, & Brownell, 2003). Similarly, Fardouly and Vartanian (2011) observed that formerly obese individuals who achieved normal weight status were rated more favorably (less lazy, sloppy, and less competent, and more likely to exercise and eat healthily) than their weight-stable counterparts. On the other hand, more recent research has revealed differences in anti-fat stigma as a result of knowing one's weight history, suggesting that residual effects of anti-fat bias are experienced by persons who have lost weight. Latner,

Ebneter, and O'Brien (2012) found that normal weight individuals who were formerly obese were more stigmatized on levels of attractiveness compared to weight-stable normal weight individuals. In fact, these formerly obese normal weight individuals experienced just as much attractiveness-related stigma as currently obese individuals. These results suggest that even when individuals have lost substantial amounts of weight, residual stigma remains against formerly obese individuals who are no longer overweight. Given these mixed results, further research investigating the relationship between stigma and controllability is necessary before confident conclusions can be drawn.

Despite the widespread belief that weight loss is readily achievable, substantial and sustained long-term weight loss is relatively rare (French, Jeffery, & Murray, 1999). Given evidence that weight loss is difficult for most and may be ineffective at reducing stigma, acceptance of one's body size and shape may be a more successful method to manage stigma. Puhl and Brownell (2003) examined techniques utilized by overweight adults in response to weight-based stigma. Including weight loss, they identified nine common coping strategies.

Of particular interest are the aspects of self-protection, negotiation of identity, and communal coping. Self-protection describes strategies that stigmatized individuals use to preserve self-esteem, including selectively minimizing domains that stigma is assigned to and valuing attributes other than the stigmatized feature (Puhl & Brownell, 2003). Through negotiation of identity—the adjusting of self-image as a reaction to situational demands—individuals may participate in support, social, or advocacy groups for a variety of reasons including combating discrimination and enhancing self-esteem (Deaux

& Ethier, 1998). This may contribute to social activism, wherein individuals band together to protest the target of discrimination (Puhl & Brownell, 2003). Thus, stigmatized individuals who perceive their status as unchangeable may engage in social activism as a coping strategy (Deaux & Ethier, 1998).

Although few studies have explored the mechanisms that influence individuals to choose various coping strategies, the emergence of Fat Acceptance as a movement in the 1960s represents an integration of self-protection, negotiation of identity, and social activism in response to weight-based discrimination and stigma (Cooper, 2008). Rejecting the power of stigmatizing language, this movement embraces the term "fat." Although there is no standardized definition of fat acceptance, proponents of this movement reject the idealization of thinness and assert that health is the result of mental and physical wellness independent of physical size or appearance (www.size-acceptance.org). Groups devoted to this cause, including the Association for Size Diversity and Health (ASDAH) and the National Association to Advance Fat Acceptance (NAAFA), have become active in lobbying for anti-discrimination laws and rights for fat individuals. The growth of online communities, known as the "Fatosphere," have further expanded discussion and awareness of fat acceptance (Dickins, Thomas, King, Lewis, & Holland, 2011). While some critics assert that fat acceptance promotes obesity and social deviance (Yahoo!voices: Jillita Horton, 2009; 99 Percent Pure Propaganda, 2008; Jessica Gottlieb, 2008), the limited research on this movement supports positive physical and psychological outcomes for those who engage within the Fatosphere and fat acceptance (Dickens et al., 2011; Lewis et al., 2011; Myers & Rothblum, 2010). In the study

conducted by Dickens and colleagues (2011), Fatosphere bloggers identified feelings of empowerment and self-acceptance once freed from the stigma of fatness.

Similarly, fat acceptance is consistent with the messages of body acceptance conveyed by recent public health models for the management of obesity and chronic dieting such as the Health at Every Size (HAES) movement (Bacon, Stern, Van Loan, & Keim, 2005). A holistic approach, HAES contrasts the ineffectiveness and perils of dieting with self-acceptance and the acceptance of natural body diversity and the contributions of social, emotional, spiritual, and physical factors to health and psychological well-being (Bacon, et al., 2005; Bacon, 2008; Robinson, 2005). This transition of focus from losing weight to improving health outcomes via healthy non-dieting behavior is consistent with the messages of eating disorder prevention and treatment programs (Cooper & Fairburn, 2001; Cooper & Fairburn, 2002; Cooper, Fairburn, & Hawker, 2003; Fairburn, 2008). However, in the context of obesity, the perspective represents a major paradigmatic shift. While there is a growing body of evidence for the psychological and physical benefits for HAES (Gagnon-Girouard et al., 2010; Provencher et al., 2009), the relationship between body acceptance and weight-based stigma has yet to be empirically explored.

In the context of Controllability Theory, stigma is increased by the belief that obesity is caused by a lack of self-control and discipline. Therefore, body acceptance might be perceived by those who subscribe to Controllability Theory as a forfeiture of control and embracing a non-ideal weight and lifestyle. This could possibly compound stigma such that an individual may experience both stigma from others for being obese, as well as stigma for rejecting the premise of controllability. As others' perceptions affect

an individual's self-concept and self-esteem, there is a need to explore societal attitudes towards weight acceptance.

Summary and Study Aims

Given the difficulty of achieving and sustaining weight loss, stigma reduction through acceptance may be a more robust method of improving psychological well being related to weight. This is consistent with the messages of body acceptance conveyed in both obesity and eating disorder prevention and intervention programs. However, the concepts of acceptance and health at any size represent a major paradigmatic shift for practitioners working with populations struggling with weight-related issues. Further, acceptance may be perceived as a rejection of Controllability Theory and could thus make obese individuals who practice weight acceptance more vulnerable to weight-related stigma than obese individuals who do not accept their weight. Thus, further research on the stigmatization of weight acceptance is needed to help inform healthcare practitioners' decisions whether to recommend weight loss or fat acceptance at a stable weight. While there is evidence for the psychological benefits of weight acceptance, fat stigma is pervasive and ubiquitous, and the relationship between body acceptance and obesity stigma has yet to be established. The purpose of the present study is to examine attitudes expressed toward normal weight versus obese individuals who either accept or do not accept their weight status. Participants will be given examples of obese or normal weight target individuals who either accept or do not accept their weight, and participants' attitudes and stigma levels towards these targets will be assessed. In addition, internalized weight bias and weight controllability beliefs will be explored for

possible associations with stigma across these different targets and general obesity stigma. Attitudes related to health insurance costs of obesity will also be explored.

The primary research hypotheses are as follows:

1) Consistent with previous research findings, there will be a main effect of target body weight, with obese targets being assigned more stigma than their normal weight counterparts.

2) Given the high levels of anti-fat stigma, and consistent with Controllability Theory, the target's degree of body acceptance will interact with body weight such that the target who is obese and accepting of her weight will be subject to more stigma than her obese counterpart who is dissatisfied with her weight. However, the normal weight target who is accepting of her weight will be subject to less stigma than her normal weight counterpart who is dissatisfied with her weight.

STUDY 1

Methods

Participants

All questionnaires for this study were uploaded and administered using the online service, SurveyMonkey (www.surveymonkey.com). Participants were male and female students over the age of 18 who were recruited from undergraduate classes at the University of Hawaii. Eight participants' data were deleted, as they answered fewer than 25% of survey questions.

The final study sample consisted of 393 participants (284 female, 109 male) recruited from Psychology courses at the University of Hawaii at Manoa in exchange for course credit.

The mean age was 21.06 (*SD* = 5.39), with a range of 18 to 63. As Hawaii has a high proportion of multiracial individuals, participants were allowed to select more than one category for racial identity. The ethnic breakdown of this sample was 15.1% Caucasian, 41.1% Asian, 39.5% mixed ethnicity, 2.8% Hispanic, 0.8% Pacific Islander, 0.3% African or African American, and 0.3% other. 15.6% of the sample endorsed some Native Hawaiian or Pacific Islander heritage. Participant body mass indexes ranged from 15.55 to 44.29 with a mean of 22.95 (*SD* = 4.19), Underweight (BMI <18.5): *N* = 32 (8.1%), normal weight (18.5 ≤ BMI < 24.99): *N* = 264 (67.2%), overweight (25≤BMI<30): *N* = 65 (16.5%), obese (BMI≥30): *N* = 22 (5.6%); *N* = 10 (2.5%) failed to provide adequate information (i.e. height or weight) to determine their BMI.

Procedures

Participants who volunteered to take part in the study were provided with a link to the online survey. After accessing SurveyMonkey, participants were presented with a consent form and were notified that continuing on to the next page of the study constituted informed consent to participate.

Four experimental conditions were developed using vignettes to describe a 21-year old target. As females are more often subject to weight stigma than males (Puhl & Brownell, 2001; Puhl & Heuer, 2009), the target was female. Two of these vignettes describe the target at a weight that is obese given her height, while the other two vignettes describe the target at a normal weight given her height. In these weight categories, the target is either accepting or not accepting of her body. All vignettes were made uniform such that language and details unrelated to weight status and body satisfaction were matched across conditions. Therefore, in the first vignette, the target's

height and weight equal a Body Mass Index (BMI) of 35.2. She is described as dissatisfied with her body size and shape and feels unattractive because of her weight (Condition 1: Obese & Non-accepting). In the second vignette, the target also has a BMI of 35.2, but is described as satisfied with her body size and shape and as feeling attractive at her weight (Condition 2: Obese & Accepting). The third and fourth vignettes are identical to the first and second respectively, except that the target has a BMI of 20.6 (Condition 3: Normal & Non-accepting; Condition 4: Normal & Accepting). In all four vignettes, the target has been weight-stable for five years. Therefore, the vignettes represent the two dimensions of weight status (i.e. obese or normal BMI) and body satisfaction (i.e. accepting or non-accepting). Table 1 displays all of the vignette conditions.

Table 1:
Vignette Conditions

Condition	Body Accepting	Body Non-accepting
Weight: Normal	NA	NN
Weight: Obese	OA	ON

Note: N = Normal, O = Obese, A = Accepting, N = Non-accepting

In addition to the aforementioned vignettes, images of the targets were created using the "My Virtual Model" modeling software (http://www.mvm.com/demovs.html) and uploaded to SurveyMonkey. The same model was used across conditions at the two different weights described in the vignettes. This was intended to control for elements such as facial attractiveness, hairstyle, body shape, and clothing. The models were rated by eight undergraduate raters for resemblance to average students at the University of Hawaii. Raters evaluated targets on a 7-point scale from 1 = *Very unlike a UH student* to 7 = *very like a UH student*. The targets designed for the study scored an average of 6.0,

6.6, and 6.1 for facial resemblance, clothing resemblance, and overall appearance, respectively, with no difference between groups. After viewing vignettes paired with the appropriate image, participants completed several measures.

Measures

Universal Measure of Bias (Stigma). The Universal Measure of Bias (UMB; Latner, O'Brien, Durso, Brinkman, & MacDonald, 2008) is a measure of bias against different targets, such as individuals who are fat, Muslim, or homosexual (e.g., I find people like [name] attractive). It is a 20-item scale comprised of 3 subscales: Negative Judgment, Distance, Attraction, and Equal Rights. Items are scored on a 7-point Likert Scale from *1 = strongly agree* to *7 = strongly disagree*, such that higher scores correspond to stronger bias against a specified target. The UMB has been used in previous research using vignettes describing individuals of different weights and has shown to be able to detect differences in stigma towards these individuals (Latner et al., in press). Cronbach's alpha in the present sample was 0.87.

Description and Measure of Health Insurance Bias. (MHIB). To assess attitudes related to weight issues as they affect societal costs, a measure of health insurance bias was constructed and rated for clarity and face validity by undergraduate raters. On the basis of feedback from raters, a paragraph was added to improve participant understanding of group medical insurance. This was also rated for clarity and face validity with satisfactory results by seven undergraduate raters who rated items on a 1-7 scale from 1 = *Very Unclear* to 7 = *Very Clear*. The paragraph received an average rating of 6.8, while the four items ranged from 6.4 to 6.8. In the present sample,

Cronbach's alpha was 0.52; therefore, it was additionally analyzed with three of the four items, which had an adequate Cronbach's alpha of 0.79.

Anti-fat Attitudes. The Crandall Anti-Fat Attitudes Scale (AFA; Crandall, 1994) is a reliable and valid measure of negative attitudes related to fat (e.g., I really don't like fat people much). It is a 13-item measure comprised of three subscales: Dislike, Fear of Fat and Willpower. Items are scored on a 10-point Likert Scale from *1 = very strongly agree* to *9 = very strongly disagree* such that lower scores indicate more negative value for fatness. This measure was included as an assessment of general obesity stigma, not stigma specific to target stimuli. In this study, the AFA yielded a Cronbach's alpha of 0.82.

Weight Bias Internalization Scale-Revised. The Weight Bias Internalization Scale (WBIS; Durso & Latner, 2008) is a measure of negative beliefs about overweight and obese stereotypes as applied to oneself (e.g., As an overweight person, I feel that I am just as competent as anyone). The WBIS-R is an 11-item measure scored on a 7-point Likert Scale from *1 = strongly disagree* to *7 = strongly agree* such that higher scores correspond to higher levels of internalized weight-based bias. This study used a revised version of the Weight Bias Internalization scale (WBIS-R) that omits words that assume the responder identifies as overweight. Instead, the WBIS-R assesses beliefs about weight-based negative beliefs and stereotypes as applied to oneself (e.g. At *my weight*, I feel that I am just as competent as anyone). In the present study, Cronbach's alpha was 0.79.

Modified Rosenberg Self-Esteem Scale. The Rosenberg Self-Esteem Scale (RSE; Rosenberg 1965) is a frequently used measure of global self-esteem. The original

RSE had 10-items rated on a Guttman scale, but the current version utilizes a 4-point Likert Scale from *1=Strongly disagree* to *4= Strongly agree* such that higher scores indicate a more positive orientation to oneself. As the goal of this study was to gather participant impressions of the target, this measure was modified to ask questions about participants' opinions of the target's self-esteem (e.g. People like Ashley feel that they have a number of good qualities). Cronbach's alpha for the modified version in the present study was 0.87.

Perceived Psychopathology. Three questions were added to measure participants' perceptions of the target's psychopathology. Perceived Psychopathology (PP) included threw-items scored on a Likert scale from *1 = Strongly Agree* to *4= Strongly disagree* such that lower scores indicate greater participant perceptions of target psychopathology. Items included "Ashley is probably depressed," "Ashley is a generally unhappy person," and "Ashley has psychological problems." In the present study, Cronbach's alpha was 0.85.

Analysis

Power analysis

According to Cohen (1992), effect sizes for small, medium, and large effects for analyses of variance are .25, .50, and .75, respectively. Therefore, anticipating a medium effect size for an ANOVA with an alpha level at .05 and a power of .90, it was determined that the appropriate sample size would be 92 participants (i.e., 23 participants per four groups) for the current study. The final sample consisted of 393 participants, which was deemed sufficiently large to detect effects in the present study.

Data Preparation & Analysis

Study data were downloaded directly from SurveyMonkey into SPSS. The data were then evaluated for missing data. Missing value analysis was used to examine if other missing data occurred at random or systematically and it was determined that missing values occurred completely at random.

Each of the four vignette conditions was assigned dummy variables. To verify adequate randomization to conditions, initial one-way ANOVAs were run to detect for potential mean differences in demographic variables within each condition. Using a 2x2 classification system, dummy variables were then assigned to conditions: accepting vs. non-accepting and obese target vs. normal weight target.

Homogeneity of variance of the complete sample was run using Levene's test for the following dependent variables: UMB total, attraction, distance, and negative judgment subscales, MHIB, AFA dislike, willpower, and fear of fat subscales, perceived psychopathology, WBIS-revised, and the modified RSE. All subscales and total scores were insignificant on Levene's Test except the UMB subscale assessing attractiveness ($F(3, 376) = 5.09$, $p = .002$), and the Perceived Psychopathology scale ($F(3, 383) = 3.16$, $p = .024$). These significant scores on Levene's test indicate violations of the assumption of homogeneity of variance for the ANOVA. Therefore, the UMB Attractiveness was mathematically transformed by natural logarithm to fulfill the distribution assumption of normality required for the use of the analysis of variance (ANOVA) test resulting in an insignificant score on Levene's Test. A variety of strategies were applied to attend to the violation for the Perceived Psychopathology scale, but the overall results were unaffected. Moreover, it was determined that the violation of homogeneity was acceptable given the robust nature of two-way ANOVA with respect to the violations of

the assumptions, particularly when there are large and equal numbers of participants in each group (Field, 2009).

Using Pearson's product moment correlations, the data were examined for correlations between the dependant variables and gender, BMI, ethnicity, and age. Gender was significantly correlated with all of the dependent variables. A MANOVA with gender, weight and acceptance as factors was run with the following dependent variables: UMB negative judgment, dislike, attraction (transformed), and equal rights subscales; three-item version of the MHIB, AFA dislike, fear of fat, and willpower subscales; and the WBIS-Revised, Perceived Psychopathology, and modified RSE. The equality of covariance matrices was also tested via Box's test, which was significant (F=1.26, $p < .001$). However, as the sample sizes for each group were nearly equal, it is recommended that Box's test be overlooked due to being unstable, and Pillai-Bartlett trace being robust even when MANOVA assumptions are violated (Field, 2009). Given the significance of the overall MANOVA, the univariate main effects were examined. 2x2 ANOVAs were then run on the following dependent variables using the entire sample: UMB total, UMB attraction, distance, and negative judgment subscales, three-item MHIB, AFA dislike, willpower, and fear of fat subscales;, perceived psychopathology, WBIS-revised, and modified RSE. As gender emerged as significant in the MANOVA, 2x2 ANOVAs for weight condition by acceptance condition on the dependent variables were run for each gender.

Results

Preliminary one-way ANOVAs revealed no differences between randomized experimental groups for age ($F(3, 395) = 0.50$, $p = .682$), gender ($F(3, 393) = 0.42$, $p =$

.737) BMI ($F(3, 387) = 0.06$, $p = .977$), and ethnicity ($F(3, 393) = .60$, $p = .610$). Associations between demographic variables and dependent variables were assessed using Pearson's product-moment correlations. For the majority of scales, gender was significantly correlated with the dependent variables. Pearson's product-moment correlations also revealed that the dependent variables were indeed correlated with each other. Therefore, a MANOVA was run with weight, acceptance, and gender (dummy coded) as factors with the following dependent variables: the UMB subscales, the three-item version of the MHIB, Perceived Psychopathology, the subscales of the AFA, the WBIS-revised, and the modified RSE. The MANOVA revealed a significant multivariate main effect for gender (Wilks' $\lambda = .825$, $F(11, 311) = 5.99$ $p < .001$, $\eta^2 = .175$), weight (Wilks' $\lambda = .567$, $F(11, 311) = 21.62$, $p < .001$, $\eta^2 = .433$) and acceptance, (Wilks' $\lambda = .642$, $F(11, 311) = 15.77$, $p < .001$, $\eta^2 = .358$). There were also multivariate interactions between weight and acceptance (Wilks' $\lambda = .933$, $F(11, 311) = 2.03$, $p = .025$, $\eta^2 = .067$), weight and gender (Wilks' $\lambda = .891$, $F(11, 311) = 3.45$, $p < .001$, $\eta^2 = .109$), and weight, acceptance and gender (Wilks' $\lambda = .931$, $F(11, 311) = 2.11$, $p = .019$, $\eta^2 = .069$).

Combined Sample

Table 2 displays the means and standard deviations for the dependent variables in each vignette condition for the combined sample. Table 3 and 4 report the *F* values and effect sizes for each condition and interaction for the combined sample. 2x2 ANOVAs for the combined sample revealed main effects for weight on the UMB Attraction (transformed) ($F(1, 379) = 38.73$, $p < .001$, $\eta^2 = .093$), UMB Negative Judgment, ($F(1, 382) = 66.732$, $p < .001$, $\eta^2 = .150$), UMB Distance ($F(1, 377) = 24.46$, $p < .001$, $\eta^2 =$

Table 2

Study 1, Overall Sample: Means and standard deviations of dependent measures.

	Accepting		*Non-Accepting*	
	Obese Mean (SD)	Normal Weight Mean (SD)	Obese Mean (SD)	Normal Weight Mean (SD)
*UMB**				
Attraction	1.11 (0.41)$^{a, a}$	0.84 (0.39)$^{b, a}$	1.29 (0.39)$^{a, b}$	1.02 (0.47)$^{b, b}$
Negative-judgment	2.05 (1.00)$^{a, a}$	2.98 (1.11)$^{b, a}$	2.26 (1.03)$^{a, a}$	3.15 (1.21)$^{b, a}$
Distance	2.12 (0.90)$^{a, a}$	2.60 (0.91)$^{b, a}$	2.45 (0.99)$^{a, b}$	2.98 (1.18)$^{b, b}$
Equal rights	2.44 (1.39)$^{a, a}$	2.96 (1.36)$^{b, a}$	2.59 (1.32)$^{a, a}$	3.02 (1.47)$^{b, a}$
Total	2.50 (0.82)$^{a, a}$	2.79 (0.76)$^{b, a}$	2.85 (0.82)$^{a, b}$	3.04 (0.94)$^{b, b}$
*AFA***				
Dislike	7.11 (1.65)$^{a, a, a}$	6.81 (1.68)$^{a, a, b}$	6.86 (1.64)$^{a, a, c}$	7.30 (1.66)$^{a, a, d}$
Willpower	4.35 (1.89)	4.23 (1.90)	4.01 (1.84)	4.28 (1.81)
Fear of fat	3.72 (2.52)	3.87 (2.77)	3.66 (2.49)	3.92 (2.54)
*MHIB (3-item version)**	2.74 (1.31)	2.40 (1.33)	2.77 (1.34)	2.65 (1.33)
*WBIS-R**	2.64 (1.38)	2.92 (1.44)	2.74 (1.36)	3.02 (1.44)
*RSE**	2.93 (0.42)$^{a, a, a}$	3.08 (0.40)$^{a, b, b}$	2.48 (0.43)$^{a, b, c}$	2.32 (0.44)$^{a, b, d}$
*Perceived Psychopathology***	3.17 (0.48)$^{a, a}$	3.31 (0.56)$^{a, a}$	2. 55 (0.61)$^{a, b}$	2.48 (0.58)$^{a, b}$

Note: *Higher scores denote greater stigma/self-esteem, **Lower scores denote greater bias/psychopathology.

Within rows, mean scores with different superscript letters are significantly different ($p < 0.05$), first number indicates main effects for weight, second for acceptance, third for interactions

Table 3
Study 1, Overall Sample 2x2 ANOVA: Degrees of Freedom = 1, Mean Squares, F values and partial eta square for dependent variables.

	MS	F	η^2
UMB Attraction			
Weight	6.85	38.73***	.093
Acceptance	3.01	17.04***	.043
Weight x Acceptance	0.003	0.01	.000
UMB Negative Judgment			
Weight	79.53	66.73***	.150
Acceptance	3.64	3.05	.008
Weight x Acceptance	0.03	0.027	.000
UMB Distance			
Weight	24.64	24.46***	.060
Acceptance	12.10	12.01**	.030
Weight x Acceptance	0.05	0.05	.000
UMB Equal Rights			
Weight	21.82	11.23**	.029
Acceptance	0.97	0.50	.001
Weight x Acceptance	0.17	0.09	.000
UMB Total			
Weight	5.19	7.34**	.021
Acceptance	7.84	11.09**	.031
Weight x Acceptance	0.21	0.309	.001
AFA Dislike			
Weight	0.49	0.18	.000
Acceptance	1.31	0.47	.001
Weight x Acceptance	13.59	4.93*	.013
AFA Willpower			
Weight	0.56	0.16	.000
Acceptance	2.22	0.63	.002
Weight x Acceptance	3.67	1.05	.003

Note: *$p < .05$, **$p < .01$. ***$p < .001$

Table 4.
Study 1, Overall Sample 2x2 ANOVA: Degrees of Freedom = 1, Mean Squares, F values and partial eta square for dependent variables

	MS	*F*	η^2
AFA Fear of Fat			
Weight	0.005	0.59	.002
Acceptance	0.27	0.001	.000
Weight x Acceptance	0.27	0.04	.000
MHIB (3-Item Version)			
Weight	0.56	0.16	.000
Acceptance	2.22	0.63	.002
Weight x Acceptance	3.67	1.05	.003
WBIS-R			
Weight	7.56	3.81	.010
Acceptance	0.97	0.48	.001
Weight x Acceptance	0.00	0.00	.000
*Modified RSE**			
Weight	0.003	0.01	.000
Acceptance	36.05	196.11***	.336
Weight x Acceptance	2.40	13.06***	.033
Perceived Psychopathology			
Weight	0.13	0.42	.001
Acceptance	50.97	161.90***	.297
Weight x Acceptance	1.06	3.39	.009

Note: $*p < .05$, $**p < .01$. $***p < .001$

.060), UMB Equal Rights ($F(1,383) = 11.23$, $p = .001$, $\eta^2 = .029$), and UMB total ($F(1, 342) = 7.34$, $p = .007$, $\eta^2 = .021$). Contrary to Hypothesis 1, higher stigma was found for the normal weighted target on the UMB Negative Judgment, Equal Rights, and total, than for their obese counterparts. However, for the UMB Attraction, results were consistent with Hypothesis 1 such that obese targets were subject to greater stigma than normal weight targets.

Additionally, main effects for acceptance emerged in the UMB Attraction (transformed) ($F(1,376) = 17.04$, $p < .001$, $\eta^2 = .043$), UMB Distance ($F(1, 377) = 12.01$, $p = .001$, $\eta^2 = .030$), and UMB Total, ($F(1, 342) = 11.09$, $p = .001$, $\eta^2 = .060$). In these cases, acceptance elicited lesser stigma than not accepting one's body weight and shape. Additionally, acceptance emerged as a main effect for the modified RSE ($F(1, 392) = 196.11$, $p < .001$, $\eta^2 = .336$), as well as the Perceived Psychopathology measure ($F(1, 387) = 161.90$, $p < .001$, $\eta^2 = .297$), such that accepting targets were thought to have higher self-esteem and less psychopathology.

Contrary to Hypothesis 2, no interactions emerged on the UMB total or any subscales. However, interactions emerged on the modified RSE ($F(1, 392) = 13.06$, $p < .001$, $\eta^2 = .033$) and the AFA Dislike subscale ($F(1, 385) = 4.93$, $p = .027$, $\eta^2 = .013$). The modified RSE interaction emerged such that those who were Normal & Accepting were rated as having higher self-esteem than those who were Obese & Accepting. Both Normal & Accepting and Obese & Accepting were seen as having higher self-esteem than those who were Obese & Non-Accepting, who in turn were rated as having higher self-esteem than those who were Normal & Non-accepting. For the AFA Dislike subscale, the interaction emerged such that the Normal & Accepting and Obese & Non-Accepting group were subject to greater stigma than the Obese & Accepting and Normal & Non-Accepting groups were subject to greater lesser stigma.

Sample Split by Gender

Table 5 displays the means and standard deviations for the dependent variables in each vignette condition for males and females.

Table 5.
Study 1, Gender-Split Sample: Means and standard deviations of dependent measures

		Accepting		*Non-Accepting*	
		Obese	Normal	Obese	Normal
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Male	*UMB**				
	Attraction	4.50 (1.31)$^{a, a}$	2.15 (0.73)$^{b, a}$	4.48 (1.26)$^{a, a}$	2.70 (1.25)$^{b, a}$
	Negative-judgment	2.53 (1.08)$^{a, a}$	3.34 (1.09)$^{b, a}$	2.56 (1.03)$^{a, a}$	2.92 (0.91)$^{b, a}$
	Distance	2.82 (0.91)	2.57 (0.87)	2.68 (0.86)	2.78 (0.98)
	Equal rights	2.63 (1.36)	3.16 (1.37)	2.80 (1.55)	3.09 (1.26)
	Total	3.17(0.87)$^{a, a}$	2.80(0.64)$^{b, a}$	3.15(0.74)$^{a, a}$	2.86(0.84)$^{b, a}$
Female	*UMB**				
	Attraction	2.97 (1.06)$^{a, a}$	2.62 (0.89)$^{b, a}$	3.63(1.23)$^{a, b}$	3.64(1.22)$^{b, b}$
	Negative-judgment	1.90 (0.93)$^{a, a}$	2.85 (1.10)$^{b, a}$	2.13 (1.01)$^{a, b}$	3.26 (1.31)$^{b, b}$
	Distance	1.90 (0.78)$^{a, a}$	2.61 (0.93)$^{b, a}$	2.34 (1.04)$^{a, b}$	3.06 (1.24)$^{b, b}$
	Equal rights	2.38 (1.40)$^{a, a}$	2.89 (1.36)$^{b, a}$	2.49 (1.21)$^{a, a}$	2.99 (1.56)$^{b, a}$
	Total	2.30(0.69)$^{a, a}$	2.79 (0.80)$^{b, a}$	2.71 (0.82)$^{a, b}$	3.12(0.97)$^{b, b}$
Male	*AFA***				
	Dislike	6.28 (2.07)	6.46 (1.62)	6.50 (1.53)	6.84 (2.35)
	Willpower	3.62 (1.80)	3.68 (1.77)	4.04 (1.97)	4.30 (1.77)
	Fear of fat	4.28 (2.46)	5.21 (2.88)	4.94 (2.45)	5.33 (2.69)
Female	*AFA***				
	Dislike	7.38 (1.40)$^{a, a, a}$	6.94 (1.69)$^{a, a, b}$	7.01 (1.67)$^{a, a, c}$	7.50 (1.24)$^{a, a, d}$
	Willpower	4.59 (1.87)	4.43 (1.92)	3.99 (1.80)	4.26 (1.84)
	Fear of fat	3.55 (2.53)	3.44 (2.61)	3.07(2.30)	3.34 (2.25)
Male	*MHIB (3-item)**	3.10 (1.45)	2.74 (1.49)	2.97 (1.38)	2.54 (1.24)
Female	*MHIB (3-item)**	2.62 (1.25)	2.28 (1.26)	2.67 (1.32)	2.70 (1.37)
Male	*WBIS-R**	2.36 (1.14)	2.26 (1.19)	2.45 (1.20)	2.33 (1.28)
Female	*WBIS-R**	2.73 (1.45)$^{a, a}$	3.17 (1.45)$^{b, a}$	2.87 (1.41)$^{a, a}$	3.29 (1.42)$^{b, a}$
Male	*Modified RSE**	2.82 (0.28)$^{a, a, a}$	3.18 (0.38)$^{a, a, b}$	2.59 (0.48)$^{a, b, c}$	2.31 (0.44)$^{a, b, d}$
Female	*Modified RSE**	2.96 (0.46)$^{a, a}$	3.04 (0.41)$^{a, a}$	2.43 (0.40)$^{a, b}$	2.32 (0.44)$^{a, b}$
Male	*PP***	3.21 (0.65)$^{a, a}$	3.28 (0.57)$^{a, a}$	2.44 (0.67)$^{a, b}$	2.58 (0.44)$^{a, b}$
Female	*PP***	3.16 (0.41)$^{a, a, a}$	3.32 (0.56)$^{a, a, b}$	2.60 (0.57)$^{a, b, c}$	2.44 (0.62)$^{a, b, d}$

Note: *Higher scores denote greater stigma/bias/self-esteem, **Lower scores denote greater bias/psychopathology.
Within rows, mean scores with different superscript letters are significantly different ($p < 0.05$), first number indicates main effects for weight, second for acceptance, third for interactions

Table 6.
Study 1,Gender-Split Sample, Males. 2x2 ANOVA: Degrees of Freedom, Mean Squares, F values and partial eta square for dependent variables. df = 1

	MS	F	η^2
UMB Attraction			
Weight	11.27	69.04***	.408
Acceptance	0.15	0.96	.010
Weight x Acceptance	0.22	1.36	.013
UMB Negative Judgment			
Weight	8.83	8.32*	.076
Acceptance	1.00	0.94	.009
Weight x Acceptance	1.31	1.23	.012
UMB Distance			
Weight	0.15	0.17	.002
Acceptance	0.03	0.04	.000
Weight x Acceptance	0.79	0.95	.009
UMB Equal Rights			
Weight	4.60	2.34	.022
Acceptance	0.06	0.03	.000
Weight x Acceptance	0.38	0.19	.002
UMB Total			
Weight	2.62	4.30*	.044
Acceptance	0.01	0.016	.000
Weight x Acceptance	0.05	0.08	.001
AFA Dislike			
Weight	1.89	.050	.005
Acceptance	2.36	0.63	.006
Weight x Acceptance	0.16	0.04	.000
AFA Willpower			
Weight	0.67	0.19	.002
Acceptance	7.33	2.17	.020
Weight x Acceptance	0.30	0.09	.001

Table 7

Study 1,Gender-Split Sample, Males. 2x2 ANOVA: Degrees of Freedom =1, Mean Squares, F values and partial eta square for dependent variables.

	MS	F	η^2
AFA Fear of Fat			
Weight	11.29	1.64	.016
Acceptance	3.995	0.58	.006
Weight x Acceptance	1.910	0.27	.003
MHIB (3-Item Version)			
Weight	4.189	2.15	.020
Acceptance	.711	0.36	.003
Weight x Acceptance	.037	0.01	.000
WBIS-R			
Weight	.318	0.21	.002
Acceptance	.181	0.12	.001
Weight x Acceptance	.002	0.001	.000
Modified RSE			
Weight	.049	0.29	.003
Acceptance	8.11	48.23***	.315
Weight x Acceptance	2.74	16.33***	.135
Perceived Psychopathology			
Weight	.273	0.76	.007
Acceptance	14.344	40.17***	.281
Weight x Acceptance	.032	0.08	.001

Note: $*p < .05$, $**p < .01$. $***p < .001$

Table 8

Study 1,Gender-Split Sample, Females. 2x2 ANOVA: Degrees of Freedom =1, Mean Squares, F values and partial eta square for dependent variables

	MS	F	η^2
UMB Attraction			
Weight	1.10	6.79**	.024
Acceptance	2.78	17.07***	.059
Weight x Acceptance	3.61	0.00	.000
UMB Negative			
Judgment			
Weight	74.76	62.69***	.186
Acceptance	7.04	5.90**	.021
Weight x Acceptance	0.50	0.42	.002
UMB Distance			
Weight	35.96	35.53***	.114
Acceptance	13.98	13.81***	.048
Weight x Acceptance	1.50	0.00	.000
UMB Equal Rights			
Weight	17.77	9.12**	.032
Acceptance	0.77	0.39	.001
Weight x Acceptance	0.004	0.00	.000
UMB Total			
Weight	12.91	18.85***	.070
Acceptance	8.71	12.72***	.048
Weight x Acceptance	0.11	0.17	.001
AFA Dislike			
Weight	0.03	0.01	.000
Acceptance	0.55	0.24	.001
Weight x Acceptance	15.15	6.62**	.024
AFA Willpower			
Weight	0.25	0.07	.000
Acceptance	10.43	3.01	.011
Weight x Acceptance	3.25	0.93	.003

Note: *$p < .05$, **$p < .01$. ***$p < .001$

Table 9
Study 1,Gender-Split Sample, Females. 2x2 ANOVA: Degrees of Freedom = 1, Mean Squares, F values and partial eta square for dependent variables.

	MS	F	η^2
AFA Fear of Fat			
Weight	11.29	1.64	.016
Acceptance	3.99	0.58	.006
Weight x Acceptance	1.91	0.27	.003
MHIB (3-Item Version)			
Weight	1.83	1.07	.004
Acceptance	3.83	2.25	.008
Weight x Acceptance	2.36	1.39	.005
WBIS-R			
Weight	12.72	6.16**	.022
Acceptance	1.22	0.59	.002
Weight x Acceptance	0.004	0.002	.000
Modified RSE			
Weight	1.23	1.37	.005
Acceptance	0.34	0.38	.001
Weight x Acceptance	0.08	0.09	.000
Perceived Psychopathology			
Weight	0.01	0.09	.000
Acceptance	28.11	149.75***	.349
Weight x Acceptance	0.63	3.39*	.012

Note: *$p < .05$, **$p < .01$. ***$p < .001$

Tables 6 and 7 report the *F* values and effect sizes for each condition and interaction for males. Tables 8 and 9 report the *F* values and effect sizes for each condition and interaction for females.

2x2 ANOVAs for males revealed main effects for weight on the UMB Attraction (transformed) ($F(1, 104) = 69.04$, $p < .001$, $\eta^2 = .408$), UMB Negative Judgment ($F(1,$

105) = 8.32, p = .005, η^2 = .076), as well as the UMB total (F(1, 97) = 4.30, p = .041, η^2 = .044). Contrary to Hypothesis 1, the target of normal weight was subject to greater stigma than the obese target on the UMB negative judgment measure. Consistent with Hypothesis 1, obese targets were subject to more stigma than their normal weight counterparts on both the UMB Attraction and UMB total scores in males.

For females, main effects for weight emerged on the UMB Attraction (transformed) (F(1, 276) = 6.79, p < .001, η^2 = .059), UMB Negative Judgment (F(1, 278) = 62.69, p < .001, η^2 = .186), UMB Distance (F(1, 281) = 35.53, p < .001, η^2 = .114), UMB Equal Rights (F(1, 277) = 9.12, p = .003, η^2 = .032), UMB total (F(1, 255) =18.85, p < .001, η^2 = .070). Contrary to Hypothesis 1 for women, in all cases except the UMB Attraction, targets of normal weight were subject to more stigma than their obese counterparts. Main effects also emerged for weight for females on the WBIS-R (F(1, 275) = 6.16, p =.014, η^2 = .022) such that participants who read the vignettes describing a normal weight target experienced greater internalized weight bias with regard to their own weight.

No main effects emerged for acceptance for males on the UMB total or subscales. However, main effects for acceptance for males were found on the Perceived Psychopathology Scale (F(1, 107) = 40.17, p = .000, η^2 = .281) and the modified RSE (F(1, 109) = 48.23, p < .001, η^2 = .315), such that targets who were accepting of weight were thought to have less psychopathology and better self-esteem compared to non-accepting targets.

For females, main effects emerged for acceptance on the UMB Attraction (F(1, 276) = 6.79, p = .010, η^2 = .024), UMB Negative Judgment (F(1, 278) = 5.90, p = .016,

$\eta^2 = .021$), UMB Distance ($F(1, 281) = 13.81$, $p < .001$, $\eta^2 = .048$), UMB total ($F(1, 255) = 12.72$, $p < .001$), $\eta^2 = .048$. In these cases, the targets who were non-accepting of their weight were subject to more stigma than targets who were accepting of their weight. Main effects were also shown for females on the Perceived Psychopathology scale ($F(1, 280) = 120.70$, $p < .001$, $\eta^2 = .304$), such that targets who were accepting of weight were seen as experiencing less psychopathology than their non-accepting counterparts.

An interaction emerged for males on the modified RSE ($F(1, 109) = 16.33$, $p < .001$, $\eta^2 = .135$), such that those who were Normal & Accepting were rated as having higher self-esteem than those who were Obese & Accepting. Both Normal & Accepting and Obese & Accepting targets were seen as having higher self-esteem than those who were Obese & Non-Accepting, who in turn were rated as having higher self-esteem than those who were Normal & Non-Accepting. An interaction emerged for females on the AFA Dislike subscale ($F(1, 279) = 6.62$, $p = .011$, $\eta^2 = .024$) such that participants who read the vignette about the target who was Normal & Accepting expressed the greatest dislike of fat individuals, followed by those who read the Obese & Non-accepting vignette, then Obese & Accepting and Normal & Non-Accepting. An interaction also emerged for females on the Perceived Psychopathology Scale ($F(1, 280) = 6.07$, $p = .014$, $\eta^2 = .022$), such that those who were Normal & Accepting were rated as having less psychopathology than those who were Obese & Accepting. Both Normal & Accepting and Obese & Accepting targets were seen has having higher self-esteem than those who were Obese & Non-Accepting, who in turn were rated as having less psychopathology than those who were Normal & Non-accepting.

Discussion

The present study examined stigma and other attitudes expressed based on weight and weight acceptance using vignettes accompanied by target images. In both the combined and gender split samples, several measures of stigma indicated that—contrary to earlier hypotheses—normal weight targets were subject to greater stigma than obese targets. In fact, weight only emerged as a main effect in the predicted direction on the UMB Attraction subscale in both the combined and gender split samples.

In contrast, acceptance emerged as a main effect in both the combined and gender split samples, such that targets who were weight accepting were subject to less stigma than non-accepting targets. These results suggest that accepting attitudes toward weight may result in lesser stigma—an encouraging implication for weight acceptance as a public health model. Further encouragement may be derived from findings that, contrary to Hypothesis 2, there were no interactions of stigma assignment between weight and acceptance.

Nevertheless, due to the unexpected results with respect to weight stigma in Study 1, several hypotheses were generated to explain this deviation from the literature regarding weight stigma. As similar previous research using vignettes (e.g. Latner et al., 2012) did not utilize an image of the target, the leading hypothesis was that the target image was confounding the results of Study 1 as it may have added variables such as implying ethnicity or other information that may have contributed to bias. Therefore, Study 2 was conducted with the target image omitted.

STUDY 2

Study 2 was conducted to clarify the results of Study 1 while eliminating potential confounds generated by incorporating an image representing the target. In order to ensure that the dependent variable of stigma was being adequately assessed, two additional measures for assessing stigma were added, as discussed below.

Methods

Participants

The study sample consisted of 394 participants (260 female, 134 male) recruited from four University of Hawaii campuses: University of Hawaii Hilo, University of Hawaii West Oahu, Kapiolani Community College, and University of Hawaii at Manoa. Participants run from the University of Hawaii at Manoa were screened to ensure that they had not previously participated in Study 1.

The mean age was 20.80 (*SD* = 5.20), with a range of 18 to 61. The ethnic breakdown of this sample was 20.3% Caucasian, 40.4% Asian, 35.3% mixed ethnicity, 2% Hispanic, 1.3% Pacific Islander, 0.3% African or African American, 0.3% Native American or Alaska Native, and 0.3% Other. As participants were allowed to select multiple ethnicities, 14.7% of the sample endorsed some Native Hawaiian or Pacific Islander heritage. Participant body mass indexes ranged from 16.14-53.22.29 with a mean of 23.61 (4.81); Underweight (BMI <18.5): *N* = 30 (7.61%); normal weight (18.5 ≤ BMI < 25): *N* = 237 (60.15%); overweight (25≤BMI<30): *N*=86 (21.80%); obese (BMI≥30):*N*=37 (9.39%). The BMI of this sample did not significantly differ from Study 1 ($F(1, 783) = 1.78$, $p = .18$).

Measures & Procedures

The same methods employed in Study 1 were repeated in Study 2, except for the absence of accompanying images in Study 2. Recruitment, randomization, and dissemination of the surveys were identical to Study 1. The UMB ($\alpha = 0.88$), MHIB ($\alpha = 0.51$), Perceived Psychopathology ($\alpha = 0.86$), WBIS-R ($\alpha = 0.93$), and modified RSE ($\alpha = 0.87$) were again administered in Study 2. As in Study 1, a three-item version of the MHIB yielded an acceptable Cronbach's alpha of 0.77 and was used for analyses. Additionally, as supplementary measures of stigma, the AFA subscales were modified from their original text to be target specific (e.g. I really don't like people who are Ashley's weight much; people who are Ashley's weight make me feel somewhat uncomfortable). This version of the scale yielded a Cronbach's alpha of 0.79 in the present sample.

As a third measure of target-specific stigma, the Fat Phobia Scale was also added. The short-form of the Fat Phobia Scale (FPS; Bacon, Scheltema, & Robinson, 2001) is a 14-item measure scored on a five-point semantic differential scale. That is, items contain two adjectives that are weighted on opposing sides of the scale. Participants are asked to choose the word that more closely describes the target. The fourteen items yield a mean such that higher scores indicate greater levels of fat phobia. Previous research with this measure has demonstrated excellent reliability. In the present sample, Cronbach's alpha was 0.84.

Analysis

As with Study 1, Study 2 data were downloaded directly from SurveyMonkey into SPSS. The data then were evaluated for missing data. Missing value analysis was

used to examine if other missing data occurred at random or systematically, and it was determined that missing values occurred completely at random.

As in Study 1, each vignette condition was assigned dummy variables. Initial one-way ANOVAs were then run between demographic variables and each condition to examine for adequate sample randomization. A one-way ANOVA was also conducted to examine differences between the demographic variables in Study 1 and Study 2. Using a 2x2 classification system, dummy variables were then assigned to each vignette condition: accepting vs. non-accepting and obese target vs. normal weight target.

Homogeneity of variance of the complete sample was run using Levene's test for the following dependent variables: UMB total, attraction, distance, and negative judgment subscales, Fat Phobia, MHIB, Modified AFA dislike, willpower, and fear of fat subscales, Perceived Psychopathology, WBIS-R, and the modified RSE using Levene's test. All subscales and total scores were insignificant on Levene's Test for all measures except the Fat Phobia Scale ($F(3, 350) = 2.90$, $p = .035$). Therefore, the Fat Phobia Scale was mathematically transformed by square root to fulfill the distribution assumption of normality required for the use of the analysis of variance test resulting in insignificant scores on Levene's Test, ($F(3, 350) = 3.02$, $p = .085$). As with Study 1, Pearson's product moment correlations revealed correlations between gender and the dependant variables. Therefore, as in Study 1, a MANOVA with gender, weight and acceptance as factors was run with the following dependent variables: UMB negative judgment, dislike, attraction (transformed), and equal rights subscales;, three-item version of the MHIB, Modified AFA dislike, fear of fat, and willpower subscales, WBIS-R, Perceived Psychopathology, modified RSE, and the Fat Phobia Scale. Given the significance of the

overall MANOVA, the univariate main effects were examined in both the combined sample as well as with the sample split by gender.

Results

Preliminary one-way ANOVAs revealed no differences between randomized experimental groups for age, ($F(3, 391) = 2.14$, $p = .094$), gender ($F(3, 393) = 2.02$, $p = .110$), BMI category ($F(3, 393) = 2.02$, $p = .110$, or ethnicity ($F(3, 393) = .601$, $p = .613$). Associations between demographic variables and dependent variables were assessed using Pearson's product-moment correlations. For the majority of scales, gender was significantly correlated with the dependent variables. Pearson's product-moment correlations also revealed that the dependent variables were correlated with each other. Therefore, a MANOVA was run with gender (dummy coded) as a factor. The MANOVA revealed a significant multivariate main effect for gender (Wilks' $\lambda = .809$, $F(12, 268) = 5.28$, $p < .001$, $\eta^2 = .191$) weight (Wilks' $\lambda = .679$, $F(12, 268) = 10.55$, $p < .001$, $\eta^2 = .321$), and acceptance (Wilks' $\lambda = .631$, $F(12, 268) = 13.03$, $p < .001$, $\eta^2 = .369$). No overall multivariate interactions emerged.

Combined Sample

Table 10 displays the means and standard deviations for the dependent variables in each vignette condition for the combined sample. Tables 11 and 12 report the F values and effect sizes for each condition and interaction Follow up 2x2 ANOVAs for the combined sample revealed main effects for weight on the UMB Attraction ($F(1, 383) = 15.36$, $p < .001$, $\eta^2 = .039$), UMB Negative Judgment ($F(1, 384) = 30.70$, $p < .001$, $\eta^2 = .073$), UMB Distance ($F(1, 382) = 16.36$, $p < .001$, $\eta^2 = .041$), UMB Equal Rights ($F(1,381) = 10.10$, $p = .002$, $\eta^2 = .026$), and UMB total ($F(1, 356) = 10.05$, $p = .002$, $\eta^2 =$

.028). In all these cases except the UMB attraction, contrary to Hypothesis 1 and replicating the findings of Study 1, targets of normal weight resulted in higher stigma compared to their obese counterparts.

Table 10

Study 2, Overall Sample: Means and standard deviations of dependent measures.

	Accepting		*Non-accepting*	
	Obese Mean (SD)	Normal Weight Mean (SD)	Obese Mean (SD)	Normal Weight Mean (SD)
*UMB**				
Attraction	3.43 (1.08)$^{a, a}$	3.04 (1.02)$^{b, a}$	3.78 (1.16)$^{a, b}$	3.29 (1.09)$^{b, b}$
Negative-judgment	2.31 (1.14)$^{a, a}$	2.95 (1.11)$^{b, a}$	2.41 (1.09)$^{a, a}$	3.02 (1.08)$^{b, a}$
Distance	2.27 (0.88)$^{a, a}$	2.66 (0.88)$^{b, a}$	2.48 (1.10)$^{a, b}$	2.91 (1.05)$^{b, b}$
Equal rights	2.49 (1.43)$^{a, a}$	2.86 (1.34)$^{b, a}$	2.40 (1.37)$^{a, a}$	2.92 (1.34)$^{b, a}$
Total	2.62 (0.80)$^{a, a}$	2.88 (0.81)$^{b, a}$	2.74 (0.91)$^{a, a}$	3.05 (0.82)$^{b, a}$
*AFA-Modified***				
Dislike	7.23 (1.58)	7.15 (1.88)	7.08 (1.51)	7.29 (1.84)
Willpower	4.69 (1.90)$^{a, a}$	5.98 (1.81)$^{b, a}$	4.14 (1.94)$^{a, b}$	5.26 (1.92)$^{b, b}$
Fear of fat	3.99 (2.55)	3.93 (2.63)	4.56 (2.57)	3.94 (2.37)
*MHIB (3-item version)**	2.67 (1.31)	2.55 (1.22)	2.70 (1.44)	2.78 (1.37)
*DBEQ**	2.55 (0.82)	2.73 (0.94)	2.49 (0.83)	2.58 (0.87)
*WBIS-R**	2.86 (1.43)$^{a, a}$	3.40 (1.60)$^{b, a}$	2.68 (1.30)$^{a, a,}$	3.09 (1.41)$^{b, a}$
*RSE-R**	2.91 (0.51)$^{a, a, a}$	3.06 (0.40)$^{a, b, b}$	2.42 (0.43)$^{a, a, c}$	2.34 (0.45)$^{a, b, d}$
*Perceived Psychopathology***	3.19 (0.62)$^{a, a}$	3.12 (0.61)$^{a, b}$	2.54 (0.61)$^{a, a}$	2.38 (0.58)$^{a, b}$
*Fat Phobia Scale**	1.76 (0.06)$^{a, a}$	1.72 (0.05)$^{b, a}$	1.83 (0.06)$^{a, b}$	1.76 (0.06)$^{b, b}$

Note: *Higher scores denote greater stigma/bias/self-esteem, **Lower scores denote greater bias/psychopathology.

Within rows, mean scores with different superscript letters are significantly different ($p < 0.05$), first number indicates main effects for weight, second for acceptance, third for interactions

Table 11
Study 2, Overall Sample 2x2 ANOVA: Degrees of Freedom = 1, Mean Squares, F values and partial eta square for dependent variables.

	MS	*F*	η^2
UMB Attraction			
Weight	18.33	15.36***	.039
Acceptance	8.42	7.06**	.018
Weight x Acceptance	0.25	0.21	.001
UMB Negative Judgment			
Weight	37.09	30.07***	.073
Acceptance	0.76	0.61	.002
Weight x Acceptance	0.01	0.01	.000
UMB Distance			
Weight	15.91	16.36***	.041
Acceptance	5.03	5.17*	.014
Weight x Acceptance	0.04	0.04	.000
UMB Equal Rights			
Weight	19.16	10.10**	.026
Acceptance	0.02	0.01	.000
Weight x Acceptance	0.51	0.27	.001
UMB Total			
Weight	7.09	10.05**	.028
Acceptance	1.74	2.48	.007
Weight x Acceptance	0.03	0.05	.000
Modified AFA Dislike			
Weight	0.35	0.12	.000
Acceptance	0.00	0.00	.000
Weight x Acceptance	1.85	.63	.002
Modified AFA Willpower			
Weight	136.59	37.90***	.092
Acceptance	38.11	10.57**	.028
Weight x Acceptance	0.75	0.20	.001

Note: *$p < .05$, **$p < .01$. ***$p < .001$

Table 12
Study 2, Overall Sample 2x2 ANOVA: Degrees of Freedom = 1, Mean Squares, F values and partial eta square for dependent variables.

	MS	F	η^2
Modified AFA Fear of Fat			
Weight	10.75	1.67	.004
Acceptance	7.72	1.20	.003
Weight x Acceptance	7.40	1.15	.003
MHIB (3-Item Version)			
Weight	0.03	0.02	.000
Acceptance	1.73	0.96	.003
Weight x Acceptance	0.94	0.52	.001
WBIS-R			
Weight	20.79	10.02**	.027
Acceptance	5.13	2.47	.007
Weight x Acceptance	0.39	0.19	.001
Modified RSE			
Weight	0.10	0.52	.001
Acceptance	34.26	166.16***	.312
Weight x Acceptance	1.22	5.94*	.016
Perceived Psychopathology			
Weight	1.21	3.23	.008
Acceptance	46.24	123.19***	.246
Weight x Acceptance	0.18	0.49	.001
Fat Phobia Scale			
Weight	0.26	64.43***	.155
Acceptance	0.27	66.82***	.160
Weight x Acceptance	0.00	0.78	.002

Note: *$p < .05$, **$p < .01$. ***$p < .001$

Main effects for weight also emerged on the WBIS-R ($F(1, 369) = 10.02$, $p = .002$, $\eta^2 = .027$), such that participants who read about normal targets reported greater degrees of internalized weight bias than participants who read about obese targets. Weight emerged as a main effect on the Fat Phobia Scale ($F(1, 354) = 64.43$, $p < .001$, $\eta^2 = .155$), such that, converging with Hypothesis 1, obese targets elicited greater degrees of fat phobia from participants compared to normal weight targets. Finally, weight emerged as a main effect on the Modified AFA Willpower subscale ($F(1, 373) = 37.90$, $p < .001$, $\eta^2 = .092$) such that obese targets were rated as having lower willpower than normal weight targets.

As in Study 1, main effects also emerged for acceptance on the UMB Attraction ($F(1, 383) = 7.06$, $p = .008$, $\eta^2 = .018$), and the UMB Distance, ($F(1, 382) = 5.17$, $p = .023$, $\eta^2 = .014$). On both of these subscales, targets who were non-accepting of weight were assigned more stigma than accepting targets. Also similar to Study 1, acceptance emerged as a main effect for the modified RSE ($F(1, 371) = 166.16$, $p < .001$, $\eta^2 = .312$), as well as the Perceived Psychopathology measure ($F(1, 381) = 123.19$, $p < .001$, $\eta^2 = .246$), indicating that weight-accepting targets were thought to have higher self-esteem and less psychopathology than their weight non-accepting counterparts. Acceptance emerged as a main effect on the Fat Phobia Scale ($F(1, 354) = 66.82$, $p < .001$, $\eta^2 = .160$), such that non-accepting targets elicited greater degrees of fat phobia from participants compared to accepting targets. Finally, acceptance emerged as a main effect on the Modified AFA Willpower subscale ($F(1, 373) = 37.90$, $p = .001$, $\eta^2 = .028$) such that non-accepting targets were rated as having lower willpower than accepting targets.

Contrary to Hypothesis 2 and replicating the findings of Study 1, no interactions emerged on the UMB total or any subscales. However, as in Study 1, an interaction emerged on the modified RSE ($F(1, 371) = 5.94$, $p = .015$, $\eta^2 = .016$), such that those who were Normal & Accepting were rated as having higher self-esteem than those who were Obese & Accepting. Both Normal & Accepting and Obese & Accepting were seen as having higher self-esteem than those who were Obese & Non-accepting, who in turn were rated as having higher self-esteem than those who were Normal & Non-accepting.

Sample Split by Gender

Tables 13 displays the means and standard deviations for the dependent variables in each vignette condition. Table 14 reports the *F* values and effect sizes for each condition and interaction for males. Table 15 reports the *F* values and effect sizes for each condition and interaction for females.

2x2 ANOVAs for males revealed main effects for weight on the UMB Negative Judgment ($F(1, 129) = 12.50$, $p = .001$, $\eta^2 = .091$) and UMB Attraction ($F(1, 131) = 19.07$, $p < .001$, $\eta^2 = .131$). For the UMB Negative Judgment, contrary to Hypothesis 1 and replicating the results of Study 1, the target of normal weight was subject to greater stigma than the obese target. However, for the UMB Attraction, consistent with Hypothesis 1 and the results of Study 1, males assigned obese targets more stigma than normal weight targets. Converging with this finding on the UMB Attraction scale results, a main effect emerged for weight on the Fat Phobia Scale ($F(1,131) = 48.99$, $p < .001$, $\eta^2 = .176$), such that obese targets elicited greater fat phobia than normal weight targets. Weight also emerged as a main effect for males on the WBIS-R ($F(1, 125) = 4.67$, $p = .033$, $\eta^2 = .037$), the Modified AFA Willpower subscale ($F(1, 131) = 5.64$, $p = .019$, $\eta^2 =$

Table 13
Study 2, Gender Split Sample: Means and standard deviations of dependent measures

		Accepting		*Non-accepting*	
		Obese	Normal Weight	Obese	Normal Weight
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Male	*UMB**				
	Attraction	4.13 (0.92)$^{a, a}$	3.15 (0.90)$^{b, a}$	4.03 (1.07)$^{a, a}$	3.41 (1.13)$^{b, a}$
	Negative-judgment	2.65 (1.21)$^{a, a}$	3.37 (1.01)$^{b, a}$	2.49 (1.03)$^{a, a}$	3.17 (1.16)$^{b, a}$
	Distance	2.77 (0.74)	2.90 (0.83)	2.63 (1.03)	2.87 (0.98)
	Equal rights	2.90 (1.74)	2.98 (1.15)	2.66 (1.45)	2.85 (1.13)
	Total	3.11 (0.80)	3.10 (0.77)	2.91 (0.84)	3.10 (0.81)
Female	*UMB**				
	Attraction	3.14 (1.01)$^{a, a}$	3.00 (1.06)$^{a, a}$	3.58 (1.19)$^{a, b}$	3.22 (1.07)$^{a, b}$
	Negative-judgment	2.17 (1.08)$^{a, a}$	2.78 (1.11)$^{b, a}$	2.36 (1.14)$^{a, a}$	2.94 (1.04)$^{b, a}$
	Distance	2.06 (0.86)$^{a, a}$	2.57 (0.89)$^{b, a}$	2.38 (1.14)$^{a, b}$	2.94 (1.10)$^{b, b}$
	Equal rights	2.31 (1.26)$^{a, a}$	2.81 (1.42)$^{b, a}$	2.21 (1.30)$^{a, a}$	2.96 (1.46)$^{b, a}$
	Total	2.42 (0.72)$^{a, a}$	2.80 (0.81)$^{b, a}$	2.62 (0.95)$^{a, a}$	3.01 (0.83)$^{b, a}$
Male	*Modified AFA***				
	Dislike	7.30 (1.40)	6.98 (2.15)	6.95 (1.54)	6.78 (2.24)
	Willpower	4.52 (1.95)$^{a, a}$	5.52 (1.80)$^{b, a}$	3.82 (1.96)$^{a, b}$	4.38 (1.67)$^{b, b}$
	Fear of fat	4.75 (2.46)	5.08 (2.59)	5.58 (2.23)	4.90 (2.29)
Female	*Modified AFA***				
	Dislike	7.20 (1.65)	7.22 (1.76)	7.18 (1.50)	7.56 (1.53)
	Willpower	4.76 (1.89)$^{a, a}$	6.18 (1.79)$^{b, a}$	4.38 (1.90)$^{a, a}$	5.78 (1.88)$^{b, a}$
	Fear of fat	3.69 (2.54)	3.45 (2.51)	3.83 (2.57)	3.37 (2.25)
Male	*MHIB (3-item)**	2.94 (1.35)	2.58 (1.18)	2.81 (1.44)	2.77 (1.51)
Female	*MHIB (3-item)**	2.56 (1.28)	2.53 (1.24)	2.63 (1.45)	2.79 (1.29)
Male	*WBIS-R**	2.30 (1.12)$^{a, a}$	3.08 (1.34)$^{b, a}$	2.30 (1.09)$^{a, a}$	2.46 (1.21)$^{b, a}$
Female	*WBIS-R**	3.06 (1.49)$^{a, a}$	3.54 (1.69)$^{b, a}$	2.96 (1.37)$^{a, a}$	3.45 (1.40)$^{b, a}$
Male	*Modified RSE**	3.00 (0.53)$^{a, a}$	2.93 (0.35)$^{a, a}$	2.47 (0.38)$^{a, b}$	2.37 (0.38)$^{a, b}$
Female	*Modified RSE**	2.88 (0.50)$^{a, a, a}$	3.11 (0.40)$^{a, a, b}$	2.39 (0.46)$^{a, b, c}$	2.32 (0.48)$^{a, b, d}$
Male	*PP***	3.30 (0.60)$^{a, a}$	2.98 (0.72)$^{b, a}$	2.65 (0.54)$^{a, b}$	2.34 (0.65)$^{b, b}$
Female	*PP***	3.14 (0.63)$^{a, a}$	3.18 (0.56)$^{a, a}$	2.45 (0.65)$^{a, b}$	2.40 (0.55)$^{a, b}$
Male	*Fat Phobia Scale***	1.77 (0.08)$^{a, a}$	1.71 (0.04)$^{b, a}$	1.82 (0.06)$^{a, b}$	1.77 (0.06)$^{b, b}$
Female	*Fat Phobia Scale**	1.76 (0.06)$^{a, a}$	1.72 (0.05)$^{b, a}$	1.83 (0.06)$^{a, b}$	1.76 (0.06)$^{b, b}$

Note: *Higher scores denote greater stigma/bias/self-esteem, **Lower scores denote psychopathology.
Within rows, mean scores with different superscript letters are significantly different ($p < 0.05$), first number indicates main effects for weight, second for acceptance, third for interactions

Table 14

Study 2,Gender-Split Sample, Males. 2x2 ANOVA: Degrees of Freedom = 1, Mean Squares, F values and partial eta square for dependent variables.

	MS	F	η^2
UMB Attraction			
Weight	20.24	19.07***	.131
Acceptance	0.22	0.20	.002
Weight x Acceptance	1.02	0.96	.008
UMB Negative Judgment			
Weight	15.41	12.50**	.091
Acceptance	1.04	0.85	.007
Weight x Acceptance	0.01	.013	.000
UMB Distance			
Weight	1.15	1.15	.011
Acceptance	0.23	0.27	.002
Weight x Acceptance	0.10	0.11	.001
UMB Equal Rights			
Weight	0.59	0.30	.002
Acceptance	1.07	0.55	.004
Weight x Acceptance	1.08	0.83	.000
UMB Total			
Weight	1.22	0.34	.003
Acceptance	0.27	0.41	.004
Weight x Acceptance	.304	0.46	.004
Modified AFA Dislike			
Weight	1.867	0.53	.004
Acceptance	2.287	0.65	.005
Weight x Acceptance	.184	0.05	.000
Modified AFA Willpower			
Weight	19.3	5.64*	.043
Acceptance	26.7	7.78**	.058
Weight x Acceptance	1.53	0.44	.003

*$p < .05$, **$p < .01$. ***$p < .001$

Table 15

Study 2,Gender-Split Sample, Males. 2x2 ANOVA: Degrees of Freedom = 1, Mean Squares, F values and partial eta square for dependent variables.

	MS	F	η^2
Modified AFA Fear of Fat			
Weight	0.87	0.15	.001
Acceptance	3.30	0.58	.005
Weight x Acceptance	8.05	1.42	.011
MHIB (3-Item Version)			
Weight	1.24	0.63	.005
Acceptance	0.02	0.014	.000
Weight x Acceptance	0.74	0.38	.003
WBIS-R			
Weight	6.59	4.67*	.037
Acceptance	2.93	2.07	.017
Weight x Acceptance	1.96	1.96	.016
Modified RSE			
Weight	0.19	1.13	.009
Acceptance	8.85	50.45***	.296
Weight x Acceptance	0.004	.021	.000
Perceived Psychopathology			
Weight	3.22	8.223*	.061
Acceptance	13.30	33.89***	.211
Weight x Acceptance	0.00	.001	.000
Fat Phobia Scale			
Weight	0.19	48.97***	.176
Acceptance	0.16	43.44***	.159
Weight x Acceptance	0.008	2.09	.009

Note: *$p < .05$, **$p < .01$. ***$p < .001$

Table 16

Study 2,Gender-Split Sample, Females. 2x2 ANOVA: Degrees of Freedom = 1, Mean Squares, F values and partial eta square for dependent variables.

	MS	F	η^2
UMB Attraction			
Weight	4.03	3.42	.014
Acceptance	6.67	5.67**	.022
Weight x Acceptance	0.77	0.65	.003
UMB Negative Judgment			
Weight	22.20	18.46***	.069
Acceptance	1.84	1.53	.006
Weight x Acceptance	0.01	0.009	.000
UMB Distance			
Weight	17. 51	17.60***	.067
Acceptance	7.46	7.50**	.029
Weight x Acceptance	0.02	0.02	.000
UMB Equal Rights			
Weight	24.34	13.10***	.050
Acceptance	0.02	0.01	.000
Weight x Acceptance	0.96	0.51	.002
UMB Total			
Weight	8.60	12.60***	.052
Acceptance	2.53	3.71	.016
Weight x Acceptance	0.001	0.001	.000
Modified AFA Dislike			
Weight	2.56	0.97	.004
Acceptance	1.57	0.59	.002
Weight x Acceptance	2.03	0.77	.003
Modified AFA Willpower			
Weight	120.72	34.52***	.125
Acceptance	9.06	2.592	.011
Weight x Acceptance	0.009	.003	.000

Note: *$p < .05$, **$p < .01$. ***$p < .001$

Table 17
Study 2,Gender-Split Sample, Females. 2x2 ANOVA: Degrees of Freedom = 1, Mean Squares, F values and partial eta square for dependent variables.

	MS	F	η^2
Modified AFA Fear of Fat			
Weight	7.61	1.24	.005
Acceptance	0.06	0.01	.000
Weight x Acceptance	0.78	0.12	.001
MHIB (3-Item Version)			
Weight	0.29	0.16	.001
Acceptance	1.59	0.91	.004
Weight x Acceptance	0.60	0.34	.001
WBIS-R			
Weight	14.31	6.36**	.026
Acceptance	0.50	0.22	.001
Weight x Acceptance	0.002	0.001	.000
*RSE**			
Weight	0.416	1.88	.008
Acceptance	25.13	113.98***	.319
Weight x Acceptance	1.35	6.15**	.025
Perceived Psychopathology			
Weight	0.002	.006	.000
Acceptance	33.44	92.07***	.272
Weight x Acceptance	0.105	0.28	.001
Fat Phobia Scale			
Weight	0.19	48.97***	.176
Acceptance	0.16	43.44***	.159
Weight x Acceptance	0.008	2.09	.009

Note: $*p < .05$, $**p < .01$. $***p < .001$

.043), and the Perceived Psychopathology Scale ($F(1, 131) = 8.22$, $p = .005$, $\eta^2 = .061$). On the WBIS-R, the main effect emerged such that participants who read the vignettes describing normal weight targets experienced greater internalized weight bias. On the Modified AFA Willpower, targets who were weight accepting were rated more positively (i.e., seen as having higher willpower) than those who were non-accepting. For Perceived Psychopathology, targets who were normal weight were viewed as experiencing greater degrees of psychopathology compared to obese targets. Weight was not a main effect for these scales in Study 1.

For females, main effects for weight emerged on the UMB Negative Judgment ($F(1, 255) = 18.46$, $p < .001$, $\eta^2 = .069$), UMB Distance ($F(1, 251) = 17.60$, $p < .001$, $\eta^2 = .067$), UMB Equal Rights ($F(1, 251) = 13.10$, $p < .001$, $\eta^2 = .050$), and UMB total ($F(1, 236) = 12.60$, $p < .001$, $\eta^2 = .052$). For women, in all cases, contrary to Hypothesis 1 and replicating the findings of Study 1, targets of normal weight were subject to more stigma than their obese counterparts. However, converging with Hypothesis 1, weight emerged as a main effect on the Fat Phobia Scale ($F(1, 234) = 48.97$. $p < .001$, $\eta^2 = .176$), such that obese targets elicited more fat phobic attitudes than normal weight targets. Replicating the results of Study 1, main effects also emerged for weight for females on the WBIS-R ($F(1, 244) = 6.36$, $p = .012$, $\eta^2 = .026$), such that participants who read the vignettes describing a normal weight target experienced greater internalized weight bias with regard to their own weight. Weight also emerged as a main effect for females on the modified AFA Willpower subscale ($F(1, 246) = 34.52$, $p < .001$, $\eta^2 = .125$), such that targets who were weight accepting were rated more positively (i.e. seen as having higher willpower) than those who were non-accepting.

No main effects emerged for acceptance for males on the UMB total or subscales. However, acceptance emerged as a main effect on the Fat Phobia Scale for males ($F(1, 131) = 43.44$, $p < .001$, $\eta^2 = .159$) such that accepting targets were subject to less stigma than non-accepting targets. Interestingly, acceptance emerged for males as a main effect on the modified AFA willpower subscale ($F(1, 131) = 7.78$, $p = .006$, $\eta^2 = .058$), such that accepting targets were rated as having greater willpower than normal weight targets. Replicating the findings of Study 1, main effects for acceptance were found on the Modified RSE ($F(1, 124) = 50.45$, $p < .001$, $\eta^2 = .296$) and Perceived Psychopathology Scale for males ($F(1, 131) = 33.89$, $p < .001$, $\eta^2 = .211$), such that accepting targets were thought to have less psychopathology and higher self-esteem than their non-accepting counterparts.

For females, main effects emerged for acceptance on the UMB Attraction ($F(1, 252) = 5.67$, $p = .018$, $\eta^2 = .022$), and UMB Distance ($F(1, 251) = 7.50$, $p = .007$, $\eta^2 = .029$). In these cases, the targets who were non-accepting of weight were subject to more stigma than targets who were accepting of weight. On the Fat Phobia Scale, acceptance emerged as a main effect ($F(1, 234) = 43.44$, $p < .001$, $\eta^2 = .159$), such that those who were non-accepting elicited greater fat phobic attitudes. Main effects were also shown for females on the Perceived Psychopathology scale ($F(1, 250) = 92.07$, $p < .001$, $\eta^2 = .272$), and on the modified RSE ($F(1, 247) = 113.98$, $p < .001$, $\eta^2 = .319$), such that targets who were accepting of weight were seen as experiencing less psychopathology and having greater self-esteem than their non-accepting counterparts.

The only interaction that emerged was on the modified RSE ($F(1, 247) = 6.15$, $p = .014$, $\eta^2 = .025$), such that those who were Normal & Accepting were rated as having

higher self-esteem than those who were Obese & Accepting. Both Normal & Accepting and Obese & Accepting were seen has having higher self-esteem than those who were Obese & Non-accepting, who in turn were rated as having higher self-esteem than those who were Normal & Non-accepting.

Discussion

The present study was conducted to clarify the results of Study 1 for stigma and other attitudes expressed based on weight and weight acceptance using vignettes alone. Converging with the results of Study 1 and contrary to ad-hoc Hypothesis 1, in both the combined and gender split samples, the Universal Measure of Bias indicated that normal weight targets were subject to greater stigma than obese targets. Replicating findings for the combined sample and for males in Study 1, weight was a main effect in the predicted direction on the UMB Attraction subscale. Weight emerged in the predicted direction on the additional measure of stigma included in Study 2, the Fat Phobia Scale.

As in Study 1, acceptance emerged as a main effect, such that targets who were weight accepting were subject to less stigma than non-accepting targets. Further, as in Study 1, accepting targets were perceived as having better self-esteem and lower psychopathology than their non-accepting counterparts. Also replicating the results of Study 1 and contrary to ad-hoc Hypothesis 2, there were no interactions of stigma assignment between weight and acceptance.

Since the majority of the results of Study 1 were replicated in Study 2, it seems the inclusion of the image was not a significant confounding factor in Study 1.

Summary & Concluding Discussion

The present studies examined stigma and other attitudes expressed toward normal weight and obese individuals who either accept or do not accept their weight status. Similar findings in Study 1 and Study 2 were observed on most measures. In both studies, findings on the UMB Attraction revealed main effects for weight such that the obese target was subject to greater stigma than the normal weight target for the overall sample and for males. Further, overall sample and gender-split results revealed replicated main effects for weight on the UMB Negative Judgment, Distance, and Equal Rights such that normal targets were subject to more stigma than obese targets. Main effects for weight were also replicated on the WBIS-R for females. Main effects for acceptance were replicated in the overall sample and gender-split samples for the Modified RSE and Perceived Psychopathology Scale as well as for overall and female samples for UMB Attraction and Distance. Finally, the interaction between weight and acceptance in the overall sample was replicated on the modified RSE.

Some differences did emerge between Study 1 and Study 2. For example, acceptance emerged as a main effect on the UMB total for the overall sample of Study 1, but not for Study 2. In gender-split samples, some main effects were not replicated—for example, weight emerged as a main effect for the UMB total for males in Study 1, but not Study 2. These differences suggest some of these findings are not entirely stable. There are several possible explanations for these discrepant findings between the two studies. First, these differences might be due to the omission of the image in Study 2, which may have reduced error due to reactions to perceptions of ethnicity or appearance of the target image. Alternatively, despite random sample assignment within each study, the

recruitment sources of Study 1 and Study 2 were slightly different. Study 1 consisted primarily of students recruited from psychology courses at the University of Hawaii at Manoa whereas Study 2 participants came entirely from non-psychology courses at UH Manoa as well as students from other UH system campuses. Therefore, it is possible that there may have been unmeasured sample differences that led to the few discrepant of results between Study 1 and 2.

The findings for target weight as a predictor of stigma are particularly interesting. Contrary to Hypothesis 1, the results of both studies indicate that individuals of normal weight were subject to greater overall stigma as well as being generally viewed more negatively than their obese counterparts. Main effects were replicated between Study 1 and Study 2 for the overall sample on the UMB Negative Judgment, Equal Rights, and total, as well for males on the UMB Negative Judgment and total score, and for females on the UMB Distance, Equal Rights and total. These results diverge from previous findings of high levels of anti-fat stigma (e.g. Puhl & Heuer, 2009; Puhl & Latner, 2007). Several post-hoc hypotheses may be considered to explain these results.

As previous research using vignettes and the UMB to assess stigma did not include target images, the first hypothesis for these findings was that the images created to correspond to the vignettes introduced error and confounded results, possibly by implying the ethnicity of the target or presenting other appearance-based features that may have influenced participant attitudes toward the target. However, this hypothesis was tested in Study 2, which revealed the same main effects of normal weight receiving greater stigma on all subscales of the UMB except the Attraction subscale.

Another hypothesis for these surprising results is that social desirability may have affected ratings on the UMB, an explicit measure of bias. While it is true that explicit measures of bias have been found to be useful in detecting differences when anonymous sampling techniques are used (e.g. Latner et al., 2012), there may be some limitations to the use of these measures. Even when using anonymous sampling techniques, implicit measures yield consistently higher levels of bias compared to explicit measures (Greenwald & Banaji, 1995), and appear to be better predictors of discriminatory behavior (Rudman, Ashmore & Gary, 2001). This has also been observed in research examining weight-based bias. Wang, Brownell and Wadden (2004) demonstrated a discrepancy between scores on an explicit and implicit test of weight bias in an overweight population. In this study, they found that anonymous participants would explicitly endorse that fat people are lazier than thin people, but would otherwise select neutral endorsements. However, on implicit tests, participants appeared far more biased. Similarly, Bessenhoff and Sherman (2000) found that implicit measures of bias could predict fat phobic behavior in an experiment while explicit measures could not. Collectively, these studies may indicate that even with anonymous answering, social desirability may play a significant role in how individuals answer sensitive topics such as weight-based stigma.

A third hypothesis is that main effects for weight on the WBIS-R observed in males in Study 2 and females in both studies may have also impacted external weight bias. In these studies, participants who read vignettes describing normal weight targets reported greater internalized weight bias than those who read vignettes describing obese targets. This converges with findings that priming participants with the presentation of

ideal female images leads to greater body image dissatisfaction (Tiggemann, & McGill, 2004; Heinberg, & Thompson, 1995; Hargreaves & Tiggemann, 2002). Based on the results of a study of treatment-seeking adults, Carels et al. (2009) found that internalized weight stigma is related to the presence of specific etiological and ideological beliefs about weight and the world. Therefore, it is possible that participants reading vignettes about normal weight targets felt greater internalized weight bias and became more aware of "just world" and controllability beliefs when answering questions of weight-related stigma leading to greater stigmatization of the target.

Finally, it is important to consider the possibility that methodological flaws may have affected the results of this study leading to the puzzling results on the UMB subscales. Given that all participants were administered the same measures regardless of which vignette they received, it is possible that some of the questions on the UMB did not necessarily seem related to the normal weight target's weight which led participants to answer items based on other aspects of the target that were presented in the vignette. Another consideration that future studies may address is that the target's Body Mass Index label was never explicitly stated in the vignettes. Instead, participants were provided with the target's height and weight. Therefore it is possible that participants may have been unclear about how to interpret the target's height and weight resulting in confusion or reference to non-weight related descriptors of the target when answering the items on the UMB.

The only subscale of the UMB that revealed a main effect for weight in the predicted direction was the scale assessing attractiveness. On this subscale of the UMB, obese targets were subject to more stigma than normal weight targets in the combined

sample and for males alone in both studies. These results may suggest that stigma based on attractiveness differs from the other forms of stigma investigated. Alternatively, given the ambiguous nature of what constitutes "attractiveness," it is possible that ratings of target attractiveness do not necessarily indicate negative participant impressions. Therefore, although perceptions of attractiveness may sometimes overlap with stigma, it is also important to consider that the attitudes indicated on the UMB Attraction subscale may not indicate actual stigmatizing attitudes.

Nevertheless, if the current findings do reflect stigma, the gender effects observed may suggest convergence with findings that heterosexual men place greater value on physical attractiveness of partners compared to women (Feingold, 1990; Schwarz & Hassebrauck, 2012). Evidence also supports that stigmatization of the attractiveness of heavier women is widespread (Boyes & Latner, 2009), while other studies examining stigma and weight have also found stigmatization of attractiveness in particular (Latner, et al., 2012, Ciao & Latner, 2011). Sutherland (1947)'s sociological theory of Differential Association provides a framework that may provide an alternative explanation of this. Originally conceptualized as a theory of criminology, Differential Association theory posits that interactions with deviant individuals can lead to the development of deviant values, attitudes, techniques, and motives. This concept has been applied to other forms of deviance. Christakis and Fowler (2007) reported findings positing the person-to-person spread of obesity. Similarly, Carrell, Hoekstra, and West (2011) found that friendship with someone with poor exercise habits was correlated with a decrease in physical activity. While these weight-related findings have been extensively critiqued and questioned (e.g. Cohen-Cole & Fletcher, 2008a, Cohen-Cole &

Fletcher, 2008b), the dissemination of these ideas by the popular media has as been rapid and far reaching (e.g. Blue, 2007; Hellmich, 2010; Hitti, 2007). Further, some evidence indicates that romantic relationships have greater risk to adopt deviant patterns of partners. Research on the relationship between delinquency and increased behaviors in peers versus romantic partners indicates that partners are more likely to engage in increased deviance compared to peers. Katz, Beach, and Joiner (1999) found that people in close relationships with depressed individuals were at greater risk of developing depression themselves. As the evidence indicates that romantic relationships are at increased likelihood to result in the transmission the deviant behaviors, perhaps the stigmatization of attractiveness allows individuals to insulate themselves from the possible effects of engaging in a romantic relationship with obese individuals. As the target was female and the majority of participants endorsed that they are heterosexual, this may in part explain why when study samples were gender-split, weight accounted for much more of the variance for the UMB attractiveness scores for men (p = .000, η^2 = .408) compared to women (p = .010, η^2 = .059) in Study 1. Further, the main effect of weight on the UMB attractiveness was replicated in men, but not women, in Study 2. That is, for men, the female target may have been viewed as a more realistic representation of a potential romantic partner, thereby activating the association between attraction and exposure to potential deviance.

In Study 2, two additional measures were included to assess stigma. However, as these measures only appeared in Study 2, the stability of these findings has not been established. Results from the first additional measure, the Fat Phobia Scale, revealed a main effect for weight in both the combined and gender-split sample of Study 2 such that

obese targets were subject to more stigma than normal weight targets. These results support Hypothesis 1 and converge with previous findings of the stigmatization of weight (e.g. Puhl & Heuer, 2009; Puhl & Latner, 2007). These results differ from those seen on the UMB subscales assessing Negative Judgment, and Distance. Although the FPS is an explicit measure of general weight bias like the UMB, it uses two opposing adjectives ranked on a semantic differential scale. Therefore, a plausible explanation for the difference in FPS and UMB scores may be that the FPS may assess for different aspects of stigma from the UMB subscales or that it simply assesses broader, more general stigma.

For the second additional measure of stigma, the Modified Crandall Anti-fat Attitudes Scale, supporting Hypothesis 1 and consistent with Controllability Theory, weight emerged as a main effect on the Modified AFA Willpower subscale such than obese targets were seen as having less willpower than normal weight targets. Controllability Theory states that stigma against heavier individuals stems from the belief that obesity is the product of poor discipline and willpower (Crandall, 1994). Therefore, these findings on the Modified AFA Willpower subscale support the hypothesis that obese individuals are seen as having less self-control and consequently may converge with the finding of greater stigma for obese targets on the FPS.

Notably, the results of both Study 1 and Study 2 suggest that accepting attitudes toward weight result in lesser stigma. Specifically, the result for the overall samples of Study 1 and 2 showed that accepting individuals were less stigmatized on attractiveness. Further, this main effect was observed on the UMB Attraction for females and in the gender-split samples in both studies. Main effects were not replicated for other forms of

stigma. In view of the findings for weight-based stigmatization of attractiveness, these results are interesting. As females, but not males, endorsed acceptance as more attractive, may reflect several possible attitudes. As attractiveness is conceptualized as a construct defined by consensus (Hatfield & Sprecher, 1986), this may be further evidence for the statement that men and women attribute different qualities to attractiveness.

Feingold (1992) also found that acceptance is associated with many favorable qualities, including better mental health and self-esteem. This converges with findings from both studies found that for overall and gender split samples, acceptance was linked to attributions of better target self-esteem and mental health. Men and women in both of the present studies rated targets who were accepting as more mentally healthy and having higher self-esteem. This may indicate that the recommendation of weight acceptance as a public health model does not enhance stigma. Therefore, in addition to potentially empowering individuals engaging in weight-acceptance, the results of the studies would indicate that individuals who are accepting of their weight, regardless of their BMI, are generally subject to lesser stigma and perceived to have better self-esteem and less psychopathology. Crocker (2002) found evidence to support the view that perceptions of others have a significant impact on one's self-esteem. This may converge with previous findings that indicate that weight acceptance fosters empowerment and improves overall psychological wellbeing (Bacon, et al. 2005; Bacon & Robinson, 2005).

The present studies suggest that weight acceptance leads to lesser stigma compared to lack of acceptance. This also suggests that acceptance may lead to less stigmatization on the basis of perceived mental illness. Stigma associated with psychopathology is well documented (e.g. Corrigan & Watson, 2002; Fink, 1992; Link,

Yang, Phelan, & Collins, 2004). Some research also indicates that obese individuals face stigma in part due to the perception that they are mentally ill, leading to compounded stigma of obesity and mental illness (Link, et al., 2004; Radke, et al., 2010; Mizock, 2012). Therefore, if weight acceptance leads to perceptions of less mental illness and better self-esteem regardless of target weight, acceptance of one's weight may have implications for alleviating the compound stigma of obesity and perceived mental instability.

On the additional measures of stigma included in Study 2, acceptance also emerged as a main effect on the FPS and AFA willpower subscale. Converging with findings on the UMB Attraction subscale in Study 1 and Study 2, acceptance emerged such that non-accepting targets were subject to more stigma than accepting targets. These findings on the FPS provide further support that acceptance is viewed more positively than non-acceptance independent of weight. Further, on the Modified AFA Willpower subscale, accepting targets were rated as having better will power than Non-accepting targets. These findings may suggest that acceptance is viewed as favorable as it possibly indicates the individual as exercising a form control over their weight-related attitudes. This would suggest that acceptance is not incompatible with Controllability Theory, but rather may help to mediate the stigma associated with obesity.

Ad hoc Hypothesis 2—that the target's degree of body acceptance would interact with body weight, resulting in acceptance being more stigmatized in obese individuals and being non-accepting would be more stigmatized in normal weight individuals—also was not supported by either study. These results were unexpected given the ubiquitous nature of anti-fat stigma (Puhl & Heuer, 2009; Puhl & Latner, 2007) and the proposed

underlying role of Controllability Theory in the association of negative beliefs about obese people and obesity-related stigma (Crandall, 1994). It may be that acceptance does not necessarily conflict with Controllability Theory. That is, while the belief that weight is controllable is widespread, acceptance of one's body is not necessarily viewed as a forfeiture of control. Given posited methods of stigma management, weight acceptance may be viewed as a form of standing up to stigma and acting in a way inconsistent with stigmatizing attitudes that leads to renegotiation of previously negative representations in a more positive light (Campbell & Deacon, 2006).

The only interaction that was replicated between Study 1 and Study 2 was for the modified RSE for the overall sample. This interaction was interesting as accepting targets were rated as having better self-esteem than non-accepting targets. However, a normal weight target that was accepting was seen as having the best self-esteem while the normal weight target non-accepting target was perceived as having the worst. Despite the concept of normative discontent regarding body image as a societal stereotype for women (Rodin, Silberstein, & Streigel-Moore, 1984; Tantleff-Dunn, Barnes, & Larose, 2011), it seems that women of normal weight who are experiencing body dissatisfaction are thought to have lower self-esteem when compared to obese counterparts. One hypothesis to explain this may be that participants identified the normal weight, non-accepting target as having unnecessary body dissatisfaction that participants attributed to low self-esteem.

Limitations

The present studies had several limitations. Despite the racial diversity of the samples collected, the samples do differ from typical U.S. samples in that some ethnic demographics are not sufficiently represented (e.g. those of African American, Hispanic

heritage). In addition to ethnic minorities, other minority groups, such those belonging to sexual minorities, may also have been underrepresented in the current sample. Moreover, given that the samples were recruited from university and college campuses, the age demographics indicate that sample members were mostly educated young adults. Therefore, studies replicating this research in different populations are needed to understand the generalizability of these findings.

In Study 1, the images that accompanied the vignettes were computer-generated representations of two women, one normal weight and one obese. Introduction of the image does introduce potential confounds such as possible inference of the target's ethnicity. As many of the results from Study 1 were replicated in Study 2, it is possible that the image was not a significant confound.

In addition, several alterations were made to measures to make them more appropriate to the research question. For the modified AFA, modified RSE and the WBIS-R, prior evidence for the validity of these versions of the scale is lacking. Similarly, the Perceived Psychopathology Scale and the Description and Measure of Insurance Bias were created for the present study and therefore also lack evidence of validity. As such, further examination of these types of bias is merited. Additionally, as mentioned earlier, the majority of measures used in this study were primarily explicitly worded on a sensitive topic. Despite anonymous responding, this may have added social desirability as a confound. To counter this, future studies may incorporate an implicit measure of stigma. Future research may also be conducted addressing measurement of target-directed perceptions of weight-bias internalization, anti-fat attitudes, perceived psychopathology and insurance bias.

Conclusions

The implications of the present studies are promising for the dissemination of weight acceptance as a public health model despite ubiquitous weight stigma. As weight acceptance gains momentum as a model for managing obesity and an alternative to the negative psychological repercussions of chronic dieting, it is important to determine if weight acceptance influences the levels of stigma faced by individuals practicing size acceptance. Contrary to conjecture that weight acceptance by obese persons might be stigmatized, this study failed to find increased stigma based on weight acceptance. A target's weight acceptance was not found to impact negative attitudes towards the target. In the cases where significant differences emerged based on acceptance, acceptance was associated with more positive attitudes toward the target than non-acceptance. Further, these studies suggest weight does not appear to interact with acceptance to produce greater stigma for obese individuals. Additional findings also indicate that negative attitudes regarding perceived mental illness or poor self-esteem may be lessened toward those practicing weight acceptance. While more research is clearly merited, these findings are encouraging given the controversy surrounding the weight acceptance model and the limited research on attitudes toward individuals practicing weight acceptance.

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APPENDIX A: DEMOGRAPHICS QUESTIONNAIRE

Please answer the following questions as completely and honestly as possible:

1. Age: _____
2. Gender: _____
3. Sexual Orientation: _____
4. Please list all of the ethnic groups that you belong to (for example, African-American, Filipino, Hawaiian, Native American, White, Hispanic, Chinese, Japanese, etc.):

   _____

   _____
5. Do you strongly identify with any of the ethnic groups that you listed above?
   - ❒ No, I do not strongly identify with any of the ethnic groups I listed
   - ❒ Yes, I strongly identify with:

     _____
6. Education Level:

❒ Some college

- ❒ High school diploma/GED
- ❒ Some college
- ❒ 4 year college degree
- ❒ Some graduate school
- ❒ Advanced degree

7. What is your current Weight? (Even if you aren't very sure, please provide your best estimate.)

   _____ pounds (alternatively, ____ kilograms)
8. What is your current height? (Even if you aren't very sure, please provide your best estimate.)

   _____ Feet _____ Inches _____ Alternatively, centimeters

APPENDIX B: VIGNETTES & TARGET IMAGES

Condition 1: Obese/Non-accepting Ashley is a 21-year-old college student. She also works part-time. Throughout her life, Ashley has always been this size. She reached her current height of 5 feet and 4 inches (1.62m) at about 16 years of age and since then she has always weighed around 205 pounds (93kg). **At her weight, Ashley has always rejected her body size and shape. Ashley believes her body shape and body weight is unattractive and her body is unacceptable because of her current weight.** Ashley's adult weight has never changed very much. In sum, Ashley is now 5' 4" (1.62m) tall, weighs 205 pounds (93kg), and **believes her body and weight are unacceptable.** **Condition 2: Obese/Accepting** Ashley is a 21-year-old college student. She also works part-time. Throughout her life, Ashley has always been this size. She reached her current height of 5 feet and 4 inches (1.62m) at about 16 years of age and since then she has always weighed around 205 pounds (93kg). **At her weight, Ashley has always accepted her body size and shape. Ashley believes she her body shape and body weight is attractive and her body is satisfactory at her current weight. She feels attractive at her weight.** Ashley's adult weight has never changed very much. In sum, Ashley is now 5' 4" (1.62m) tall, weighs 205 pounds (93kg), and **believes her body and weight are acceptable.**	 Target Image (Obese) (Study 1)
Condition 3: Normal Weight/Non-accepting Ashley is a 21-year-old college student. She also works part-time. Throughout her life, Ashley has always been of this size. She reached her current height of 5 feet and 4 inches (1.62m) at about 16 years of age and since then she has always weighed around 120(54.43kg). **At her weight, Ashley has always rejected her body size and shape. Ashley believes her body shape and body weight is unattractive and her body is unacceptable because of her current weight.** Ashley's adult weight has never changed very much. In sum, Ashley is now 5' 4" (1.62m) tall, weighs 120 (54.43 kg), and **believes her body and weight are unacceptable.** **Condition 4: Normal Weight/Accepting** Ashley is a 21-year-old college student. She also works part-time. Throughout her life, Ashley has always been this size. She reached her current height of 5 feet and 4 inches (1.62m) at about 16 years of age and since then she has always weighed around 120(54.43 kg). **At her weight, Ashley has always accepted her body size and shape. Ashley believes she her body shape and body weight is attractive and her body is satisfactory at her current weight. She feels attractive at her weight.** Ashley's adult weight has never changed very much. In sum, Ashley is now 5' 4" (1.62m) tall, weighs 120 (54.43 kg), and **believes her body and weight are acceptable.**	 Target Image: (Normal Weight) (Study 1)

APPENDIX C: UNIVERSAL MEASURE OF BIAS

Instructions: You just read about Ashley. There are many other people who are like Ashley who are [heavy and dissatisfied/heavy and satisfied/normal weighted and dissatisfied/normal weighted and satisfied]heavy and dissatisfied with their bodies. The following questionnaire asks your impressions of people like Ashley.

	strongly agree	moderately agree	slightly agree	neither agree nor disagree	slightly disagree	moderately disagree	strongly disagree
1. Special effort should be taken to make sure that people like Ashley have the same rights and privileges as other people.	1	2	3	4	5	6	7
2. I would be comfortable having a person like Ashley in my group of friends.	1	2	3	4	5	6	7
3. People like Ashley are attractive.	1	2	3	4	5	6	7
4. People like Ashley make good romantic partners	1	2	3	4	5	6	7
5. People like Ashley have bad hygiene.	1	2	3	4	5	6	7
6. People like Ashley are sexy.	1	2	3	4	5	6	7
7. People like Ashley tend towards bad behavior.	1	2	3	4	5	6	7
8. I would not want to have a person like Ashley as a roommate	1	2	3	4	5	6	7
9. People like Ashley are a turn-off.	1	2	3	4	5	6	7

10. I find people like Ashley pleasant to look at.	1	2	3	4	5	6	7
11. Special effort should be taken to make sure that people like Ashley have the same salaries as other people.	1	2	3	4	5	6	7
12. Sometimes I think that people like Ashley are dishonest.	1	2	3	4	5	6	7
13. I try to understand the perspective of people like Ashley.	1	2	3	4	5	6	7
14. Special effort should be taken to make sure that people like Ashley have the same educational opportunities as other people.	1	2	3	4	5	6	7
15. In general, people like Ashley don't think about the needs of other people.	1	2	3	4	5	6	7
16. People like Ashley are sloppy.	1	2	3	4	5	6	7
17. I like people like Ashley.	1	2	3	4	5	6	7
18. Special effort should be taken to make sure that people like Ashley have the same housing opportunities as other people.	1	2	3	4	5	6	7
19. I don't enjoy having a conversation with a person like Ashley.	1	2	3	4	5	6	7

20. I would like having a person like Ashley at my place of worship or community center.	1	2	3	4	5	6	7

APPENDIX D: DESCRIPTION AND MEASURE OF INSURANCE BIAS.

The following is a simplistic explanation of how group health insurance works in the United States. Please read the text carefully:

When you sign up for group health insurance coverage, you join a group of other people to combine your purchasing power. Instead of individuals paying for expensive medical services on an as-needed basis, your insurer covers a whole group of people together. These group members pay premiums to the insurance company. When a group member has a health problem, his or her treatment is paid for using the money generated by collecting premiums. This way, the individual who has the problem does not have to pay for the entire cost of his or her treatment. Insurance companies are betting on the likelihood that the amount of money paid in premiums by every member of the group will be higher than the total medical costs for the group. In a sense, the healthier people are paying for those in their group who require medical care. In exchange, the healthy people have the assurance that the same help will be available to them if and when they need it. Sometimes some group members require more medical care than others or are at higher risk for future medical conditions. If there are many of these individuals in a group, the premiums for all group members may increase. This increase would ensure that the insurance company will not run out of money to care for those who require care.

The following questionnaire asks your impression of people like Ashley.

4. Special effort should be made by the government to make sure that people like Ashley have the same rights to healthcare as other people.	1 **strongly agree**	2 **moderately agree**	3 **slightly agree**	4 **neither agree nor disagree**	5 **slightly disagree**	6 **moderately disagree**	7 **strongly disagree**
1. Special effort should be made by insurance companies to make sure that people like Ashley have the same access to reasonable insurance rates as other people.	1	2	3	4	5	6	7
2. I would be willing to have a person like Ashley in my group insurance plan.	1	2	3	4	5	6	7
3. In general, people like Ashley don't think about their impact on insurance rates.	1	2	3	4	5	6	7

APPENDIX E: MODIFIED ROSENBERG SELF-ESTEEM SCALE

The following questionnaire asks your impression of people like Ashley.

	Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
1. People like Ashley feel that they are of worth, at least on an equal plane with others.	1	2	3	4
2. People like Ashley feel that they have a number of good qualities.	1	2	3	4
3. All in all, people like Ashley are inclined to feel that they are failures.	1	2	3	4
4. People like Ashley are able to do things as well as most other people.	1	2	3	4
5. People like Ashley feel they do not have much to be proud of.	1	2	3	4
6. People like Ashley take a positive attitude toward themselves.	1	2	3	4
7. On the whole, people like Ashley are satisfied with themselves.	1	2	3	4
8. People like Ashley wish they could have more respect for themselves.	1	2	3	4
9. People like Ashley certainly feel useless at times.	1	2	3	4
10. At times, people like Ashley think that they are no good at all.	1	2	3	4

APPENDIX F: PERCEIVED PSYCHOPATHOLOGY

The following questionnaire asks your impression of people like Ashley.

	Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**
Ashley is probably depressed.	1	2	3	4
Ashley is a generally unhappy person.	1	2	3	4

Ashley has psychological problems.	1	2	3	4

APPENDIX G: CRANDALL ANTI-FAT ATTITUDES QUESTIONNAIRE

Please indicate using the scale (1 = very strongly disagree to 9 = very strongly disagree) below, the extent to which you agree or disagree with the following statements about fat people.

1 = Very strongly agree……9 = Very Strongly Disagree									
I really don't like fat people much.	1	2	3	4	5	6	7	8	9
I don't have many friends that are fat	1	2	3	4	5	6	7	8	9
I tend to think that people who are overweight are a little untrustworthy.	1	2	3	4	5	6	7	8	9
Although some fat people are surely smart, in general, I think they tend not to be quite as bright as normal weight people.	1	2	3	4	5	6	7	8	9
I have a hard time taking fat people too seriously.	1	2	3	4	5	6	7	8	9
Fat people make me feel somewhat uncomfortable.	1	2	3	4	5	6	7	8	9
If I were an employer looking to hire, I might avoid hiring a fat person.	1	2	3	4	5	6	7	8	9
I feel disgusted with myself when I gain weight.	1	2	3	4	5	6	7	8	9
One of the worst things that could happen to me would be if I gained 25 pounds.	1	2	3	4	5	6	7	8	9
I worry about becoming fat.	1	2	3	4	5	6	7	8	9
People who weigh too much could lose at least some part of their weight through a little exercise.	1	2	3	4	5	6	7	8	9
Some people are fat because they have no willpower.	1	2	3	4	5	6	7	8	9
Fat people tend to be fat pretty much through their own fault	1	2	3	4	5	6	7	8	9

APPENDIX H: MODIFIED CRANDALL ANTI-FAT ATTITUDES QUESTIONNAIRE

Please indicate using the scale (1 = very strongly disagree to 9 = very strongly disagree) below, the extent to which you agree or disagree with the following statements about people like Ashley.

1 = Very strongly agree……9 = Very Strongly Disagree									
I really don't like people who are Ashley's weight much.	1	2	3	4	5	6	7	8	9
2. I don't have many friends that are Ashley's weight.	1	2	3	4	5	6	7	8	9
I tend to think that people who are Ashley's weight are a little untrustworthy.	1	2	3	4	5	6	7	8	9
4. Although some people at Ashley's weight are surely smart, in general, I think they tend not to be quite as bright as normal 1weight p1eople.	1	2	3	4	5	6	7	8	9
5. I have a hard time taking people who are Ashley's weight to seriously.	1	2	3	4	5	6	7	8	9
6. People who are Ashley's weight make me feel somewhat uncomfortable.	1	2	3	4	5	6	7	8	9
7. If I were an employer looking to hire, I might avoid hiring a person who is Ashley's weight.	1	2	3	4	5	6	7	8	9
8. I feel disgusted with myself when I gain weight.	1	2	3	4	5	6	7	8	9
9. One of the worst things that could happen to me would be if I gained 25 ponds.	1	2	3	4	5	6	7	8	9
10. I worry about becoming fat.	1	2	3	4	5	6	7	8	9
11. People who are Ashley's weight could lose at least some part of their weight through a little exercise.	1	2	3	4	5	6	7	8	9
12. Some people are Ashley's weight because they have no willpower.	1	2	3	4	5	6	7	8	9
13. People who are Ashley's weight tend to be that size pretty much through their own fault.	1	2	3	4	5	6	7	8	9

APPENDIX I: WEIGHT BIAS INTERNALIZATION SCALE REVISED

Please answer the following questions using this scale:

1	2	3	4	5	6	7
Strongly disagree	**Disagree**	**Slightly disagree**	**Neutral**	**Slightly agree**	**Agree**	**Strongly agree**

_____1. At my weight, I feel that I am just as competent as anyone.
_____2. I am less attractive than most other people because of my weight.
_____3. I feel anxious about being my weight because of what people might think of me.
_____4. I wish I could drastically change my weight.
_____5. Whenever I think a lot about being my weight, I feel depressed.
_____6. I hate myself for being my weight.
_____7. My weight is a major way that I judge my value as a person.
_____8. I don't feel that I deserve to have a really fulfilling social life, as long as I'm at my weight.
_____9. I am OK being the weight that I am.
_____10. Because I'm my weight, I don't feel like my true self.
_____11. Because of my weight, I don't understand how anyone attractive would want to date me

APPENDIX J: FAT PHOBIA SCALE

Listed below are 14 pairs of adjectives sometimes used to describe a person like *Ashley.* For each adjective pair, please choose the option closest to the adjective that you feel best describes your feelings and beliefs.

5 (Lazy)	4	3	2	1 (Industrious)
5 (No will power)	4	3	2	1 (Has will power)
5 (Attractive)	4	3	2	1 (Unattractive)
5 (Good self- control)	4	3	2	1 (Poor self- control)
5 (Fast)	4	3	2	1 (Slow)
5 (Having endurance)	4	3	2	1 (Having no endurance)
5 (Active)	4	3	2	1 (Inactive)
5 (Weak)	4	3	2	1 (Strong)
5 (Self- indulgent)	4	3	2	1 (Self- sacrificing)
5 (Dislikes food)	4	3	2	1 (Likes food)
5 (Shapeless)	4	3	2	1 (Shapely)
5 (Undereats)	4	3	2	1 (Overeats)
5 (Insecure)	4	3	2	1 (Secure)
5 (Low self-esteem)	4	3	2	1 (High self-esteem)