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The Moralization of Obesity

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Introduction

Weight stigma is a troubling and pervasive phenomenon in the U.S. (Puhl & Heuer, 2009). Obese individuals are more likely to experience a myriad of problems stemming from weight stigma (also referred to in the literature as obesity stigma, weight bias, and anti-fat attitudes/prejudice), including increased stress and disordered eating (Tomiyama, 2014), interpersonal discrimination (Carr & Friedman, 2005), and discrimination in the domains of employment and healthcare (Puhl & Heuer, 2009). The present research proposes that viewing weight stigma through a moral lens helps to integrate other theoretical perspectives and yields novel predictions about the consequences of moralized obesity attitudes.

Weight Stigma Theories

Control attributions for overweight and obesity (hereafter referred to as obesity) is one prominent explanation for the development of anti-fat attitudes. Many studies have found a moderate to strong positive relationship between negative attitudes toward obese people and beliefs that obesity is caused by poor lifestyle choices or lack of willpower (e.g., Allison, Basile, & Yuker, 1991; Crandall, 1994). Crandall (1994) theorized that people who endorse the Protestant work ethic (PWE) see obesity as a violation of the Protestant values of hard work and self-discipline. Those whose worldview emphasizes such values would be motivated to view obese people not as being victims of uncontrollable health issues, but rather as being capable of controlling their weight with sufficient effort, and thereby justify any prejudice or discrimination towards obese individuals as being deserved (Crandall, 1994).

Another prominent explanation of weight stigma emphasizes the role of disgust. According to the oral rejection theory, disgust evolved as an efficient cue that motivates people to avoid dangerous substances as well as individuals with signs of disease (Rozin, Haidt, &

McCauley, 2008). Intriguingly, obesity itself may act as a disease cue that elicits disgust and avoidance, as obese people may appear to have swollen limbs, labored breathing, or skin problems (Park, Schaller, & Crandall, 2007). In support of this notion, greater pathogen disgust sensitivity (Park et al., 2007), as well as general disgust felt toward obese people (e.g., Vartanian, 2010), have been found to predict stronger anti-fat attitudes.

Moral Judgments and Obesity

Reviews of weight stigma interventions have found that attempts to change people's beliefs about the controllability of weight appear to have small and inconsistent effects on weight bias, and other interventions likewise tend to be minimally effective (Daníelsdóttir, O'Brien, & Ciao, 2010; Lee, Ata, & Brannick, 2014). Why do negative attitudes toward obese people seem to be so intractable? An important reason, we propose, is that many people tend to view obesity as a moral failing, rather than a health condition deserving of sympathy or a matter of personal preference. Attitudes become moralized when they transition from mere preferences to value judgments of a behavior as right or wrong (Rozin, 1999). Moral attitudes have unique features and consequences that are not seen in strong, nonmoral attitudes (Skitka, 2010). Moral attitudes are experienced as self-evident objective beliefs that should apply to everyone (rather than subjective preferences), and are associated with intense emotions, such as disgust and anger (Skitka, 2010).

The process of moralization is likely to have profound societal and individual-level effects. Rozin (1999) argues that some or all of the following would ensue as an undesirable behavior becomes moralized: increased government action (e.g., taxation), institutional and scientific support for eliminating the deviant behavior, the sanctioning of increased social surveillance and condemnation, stronger parent-to-child transmission of the moralized attitude,

greater internalization of the moralized attitude, and association of disgust with the moralized behavior (e.g., cigarette smoking). Although it is beyond the scope of this article to enumerate and test each consequence, it is clear that some of these consequences are relevant to the case of obesity. Examples include the various "junk-food" taxes that have been proposed in the U.S. and other countries (Franck, Grandi, & Eisenberg, 2013), the ongoing phenomenon known as "fat-shaming" (Cain, Donaghue, & Ditchburn, 2017), the transmission of parents' attitudes toward overweight to their children (e.g., Hansson & Rasmussen, 2010), and the clear association of obesity with disgust (Vartanian, 2010).

Moral attitudes may be particularly likely to develop in health domains because, historically, physical health conditions were often explained as consequences of the individual's moral failure (Brandt & Rozin, 1997). Inclusion of obesity attitudes in the moral domain is consistent with moral psychology's expansion in recent years to include not only concerns over harm and justice, but also other domains, including sanctity/purity (Schweder, Much, Mahapatra, & Park, 1997; Graham et al., 2013). Associations of obesity with disgust and poor moral character (e.g., laziness) suggest that people may view obesity as a violation of bodily purity, a highly moralized domain.

A moral perspective would help to explain the roles of control beliefs and disgust in weight stigma. Considerable research in moral psychology, as well as normative theories of blame and ascription of responsibility, demonstrate that people assign blame when an individual is seen as having control over a harmful outcome (Alicke, 2000). Blame is reduced when a moral agent is seen as less causally responsible for a negative outcome (Shaver, 1985). It stands to reason, then, that if obesity is viewed as harmful or undesirable, and it is seen as a controllable condition caused by the individual's choices, obese individuals are likely to elicit moral

condemnation. Additionally, as Crandall (1994) has demonstrated, anti-fat attitudes are associated with an "ideology of blame," in which people who endorse PWE values and a just world ideology are motivated to attribute control to others and blame people for their problems if they appear to lack self-control. Another potential pathway to obesity moralization is disgust. Disgust cues may lead to the construction of moral prohibitions as an effective tool for ensuring avoidance of perceived threats to the self or group (Rozin et al., 2008). For example, greater disgust predicts harsher moral judgments of homosexuals (Olatunji, Puncochar, & Kramer, 2017). Given that anti-fat attitudes are associated with pathogen disgust sensitivity (Park et al., 2007) and disgust reactions to obesity more generally (Vartanian, 2010), disgust may lead to negative moral judgments of obese individuals.

There are likely reciprocal relationships between beliefs about the controllability of weight, disgust, and moral judgments of obesity. People may hold negative moral judgments about obese people because they believe that obesity is controllable. The process may also flow in the other direction, such that people may first have disgust reactions to obesity that inspire moral condemnation, following which people strengthen their conviction that obesity is controllable in order to justify their initial moral judgment. However moralization occurs initially, all of these factors appear capable of intensifying negative moral judgments.

Implications of Obesity Moralization

Some research has acknowledged the moral overtones of obesity attitudes (e.g., Masicampo, Barth, & Ambady, 2014; Tauber, 2018) as well as people's moral discourse surrounding their own dietary habits and weight (Davis, Goar, Manago, & Reidinger, 2018; Fielding-Singh, 2018), but little psychological research has empirically examined people's moral judgments of others' obesity. We propose that viewing obesity through a moral lens helps to

integrate past theoretical perspectives and findings, while also generating novel predictions derived from the larger literature on moral attitudes. As noted previously, moralization of obesity would be expected to be associated with stronger belief in the controllability of obesity as well as feeling greater disgust towards obese individuals. Moralization should also have implications for discrimination towards obese people, exaggeration of the health consequences of obesity, the tenacity of anti-fat attitudes, and objections to surgical weight-loss methods.

Moralized attitudes have been shown to predict a desire for greater social and physical distance from, as well as greater intolerance of, individuals seen as morally unsavory (Skitka, 2010). These findings suggest that people who hold moralized obesity attitudes may be more likely than those with non-moral attitudes to express prejudice toward and discriminate against obese people.

Moralization promotes an exaggeration of the risks or consequences of the moralized behavior (Rozin, 1999). Studies on moral coherence processes show that people strive for cognitive consistency by altering their factual beliefs about an action's consequences to fit their moral judgments (Liu & Ditto, 2013). One implication of this is that people who judge obesity as morally wrong may exaggerate the health risks of obesity. This implication may be especially important in the context of healthcare, as many healthcare providers report negative attitudes towards their obese patients (Hebl & Xu, 2001), and surveys and anecdotal accounts suggest that physicians may overestimate the role of patients' weight in their health problems ("Heavy," 2011; Puhl & Brownell, 2006) and provide worse treatment as a result.

People who hold a moral conviction about an issue tend to be less susceptible to persuasion (Luttrell, Petty, Briñol, & Wagner, 2016). Given the tenacity of moral attitudes, people with moralized obesity attitudes may be less amenable to changing their anti-fat attitudes

or their beliefs about the causes of obesity. Moralization of obesity may help explain why interventions that target beliefs about the controllability of weight tend to have small and inconsistent effects on weight bias (Daníelsdóttir et al., 2010; Lee et al., 2014).

Moralized obesity attitudes may also result in greater stigmatization of people who choose surgical treatments (e.g., bariatric surgery) as opposed to more traditional weight loss methods (e.g., diet and exercise). If people see a problem as a moral one (i.e., a problem caused by the individual's own poor choices), then they may expect that person to atone for what they perceive as a moral transgression. Research on the role of effort in judgments of moral and immoral actions suggests that earning atonement, or receiving a more favorable moral evaluation, comes from a person performing a desirable and effortful action, rather than something seen as effortless (Bigman & Tamir, 2016). Experimental studies support this account, revealing that individuals who chose bariatric surgery to lose weight were viewed as lazier, less responsible for their weight loss, and even less healthy than people in control who choose to exercise/diet (Mattingly et al., 2009). This bias is likely because surgery is perceived as requiring less effort than diet and exercise methods, and perceived effort towards weight loss is an important determinant of judgments of obese individuals (Beames, Black, & Vartanian, 2016; Black, Sokol, & Vartanian, 2014). A study found that negative perceptions of bariatric surgery patients were attenuated when information was provided that emphasizes the significant amount of effort (through diet and exercise) required to make the surgery successful (Vartanian & Fardouly, 2014). Would this framing strategy decrease the stigma that high moralizers would likely attach to bariatric surgery? On the one hand, people who moralize obesity may be particularly attuned to information about effort and have more positive views of people who exert effort following surgery. On the other hand, stronger moralizers may be more likely than

others to resist attempts to change their beliefs, and thus be unmoved by additional information about the effort associated with bariatric surgery.

Overview of Present Research

Study 1 explored the hypothesized relations among moralized attitudes toward obesity, control attributions for obesity, and disgust. To better understand other factors that may be related to moralization of obesity, we investigated its relation to constructs that are known to be associated with anti-fat attitudes. Similar to anti-fat attitudes, moralization was expected to be positively related to PWE, body shame, male gender, and political conservatism, and negatively related to participants' body weight. A measure of objective knowledge of the health risks of obesity was also included to explore whether moralization of obesity is correlated with higher or lower knowledge of obesity. Study 1 also hypothesized that moralized obesity attitudes would be positively related to endorsement of discriminatory actions toward obese individuals, as well as the perception of greater health risks associated with obesity. Study 2 tested whether high moralizers of obesity were more impervious to persuasion compared to low moralizers, by exposing participants to persuasive arguments for classifying obesity as a disease. The final study evaluated perceptions of targets who lost weight through diet and exercise or through surgery, and included a condition in which the surgical weight loss method was described as requiring a great deal of effort (Vartanian & Fardouly, 2014). This manipulation tested whether adding information about the effort involved reduces the stigma that high moralizers of obesity likely attach to surgery.

Study 1

Method

Participants. Participants were recruited from Amazon's MTurk platform in July of 2018. This study was conducted as a replication of prior research in 2016 that appeared in the first author's Master's Thesis (Ringel, 2016); those results were fully consistent with the present study. We consider the present study stronger because the moralization scale was improved and additional measures were included to explore moralization's relation to other constructs, such as PWE. Although its structure makes it most appropriate to be presented as Study 1, it was actually conducted after Studies 2 and 3. Two hundred and fifty U.S.-based participants were recruited, but 21 participants with duplicate IP addresses and/or suspicious duplicate location numbers needed to be removed from the dataset; removal of those participants did not affect any conclusions or significant results. The final sample (N = 229) consisted of 118 women and 111 men (M_{age} = 33.2 years). A majority identified as White (76.4%), and the rest of the participants identified as Black (6.6%), Asian or Asian American (9.6%), Latinx (6.1%), or other races or ethnicities (1.3%).

Procedure and materials. Ethics approval for this and all studies presented was obtained from the Institutional Review Board, University of California, Irvine. Participants volunteered for a paid study advertised as a brief survey of attitudes toward health issues and were compensated $1.50. Participants first completed measures of moralization of obesity, anti-fat attitudes, body shame, and endorsement of discrimination, which were randomized to control for order effects. Following these, participants completed the Obesity Risk Knowledge Scale, perceptions of health risks associated with obesity, a PWE scale, and demographic questions. Item order was randomized within each scale.

Moralization of obesity scale. Participants indicated their agreement from 1 (*strongly disagree*) to 7 (*strongly agree*) with eight items created by the authors. The items were as

follows: “Gaining an excessive amount of weight is disrespectful to one's body,” “Thinness is a moral virtue,” “Obesity is a moral failing,” “Obesity is a sign of personal weakness,” “Obesity is NOT a moral issue” (reverse-scored), “If a person is capable of being thin, they should be thin,” “Even if it were culturally acceptable to be obese, it would still be wrong,” and “Obesity would be wrong even if it had no negative health effects.” The items were designed to capture both general moral disapproval of obesity and the kind of absolutist thinking that is characteristic of moral attitudes (e.g., believing that everyone should avoid obesity even if it were socially accepted or unrelated to health; see Baron & Spranca, 1997, and Skitka, 2010, for discussions of absolutism in moral thinking). The items were averaged to create an overall *obesity moralization* score ($\alpha = .87$).

Anti-fat attitudes. Participants completed a modified version of Crandall’s (1994) anti-fat attitudes (AFA) scale (18 items). Items with the word “fat” were replaced with “obese” to better match the other scales in this study. Items were rated on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Seven items captured dislike of obese people (e.g., “I really don’t like obese people much”) and were averaged to create a *dislike* score ($\alpha = .91$). Three additional items related to disgust (e.g., “obese people disgust me”) were taken from Quinn and Crocker’s (1999) modification of the AFA scale and averaged to create an overall *disgust* score ($\alpha = .91$). Eight items (three from the original AFA scale and five from Quinn and Crocker) captured beliefs about willpower and control over body weight, which were averaged to create a *perceived control* score ($\alpha = .88$).

Body shame. Participants completed the eight-item body shame subscale of the Objectified Body Consciousness measure (McKinley & Hyde, 1996). The subscale contains items such as, “When I can’t control my weight, I feel like something must be wrong with me,”

and "When I'm not the size I think I should be, I feel ashamed," rated from 1 (*strongly disagree*) to 7 (*strongly agree*). The items were averaged to create a *body shame* score (α = .82).

Discrimination. Six items were created to capture endorsement of discrimination against obese individuals and were measured on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The items were written as follows: "Obese people should have to pay for two seats on an airplane," "Legal protections and benefits for people with disabilities should NOT be extended to obese people," "There should be laws that protect obese people from weight-based discrimination" (reverse-coded), "Employers should be allowed to consider weight when making hiring decisions," "Obese people should have to pay more for health insurance than non-obese people," and "Obese people should be treated the same as non-obese people in every area of life" (reverse-coded). The items were combined to create an overall endorsement of *discrimination* score (α = .73; *M* = 3.44, *SD* = 1.08).

Obesity risk knowledge scale. The obesity risk knowledge scale (Swift, Glazebrook, & MacDonald, 2006) consists of 10 true/false items that measure knowledge of the health risks associated with obesity and actions people can take to minimize these risks. Responses were coded as 1 (correct) or 0 (incorrect) and summed to create an obesity *knowledge* score.

Perceived health risks. Participants were asked to rate obese people's risk (compared to non-obese people) of experiencing 12 different health conditions on a sliding scale from 0 (*no greater risk than non-obese people*) to 100 (*100% greater risk of developing this condition*). Ten of the items are known to be associated with obesity according to the National Institutes of Health (2016): cancer, heart disease, type 2 diabetes, high blood pressure, sleep apnea, liver and gallbladder disease, osteoarthritis, stroke, gynecological problems, and high cholesterol. A *perceived risk* score was calculated that combined all 10 items (α =.92; *M* = 61.68, *SD* = 20.33).

In contrast, two items were included that have no association with obesity: Graves' Disease and "Nerys Syndrome," a fictional health condition created for the purposes of this study. These items were included to assess whether moralization predicted perceptions of obesity health risks even for unfamiliar health conditions. The two health conditions were combined to form a measure of *unfamiliar conditions risk* (α = .84; M = 34.69, SD = 25.82).

***Protestant work ethic scale*.** The PWE scale (Mirels & Garrett, 1971) contains 19 items (α = .84) that measure the degree to which people endorse certain work ethic values and beliefs about success. These include the beliefs that hard work gives life meaning and leads to success, and that too much leisure time is harmful or an indication of laziness.

Additional measures. In all three studies, participants were asked to provide their height and weight to calculate body mass index (BMI). They also indicated their self-perceived weight status on a scale from 1 to 6 (*very thin, thin, average, overweight, obese, morbidly obese*). Self-perceived weight status was used in subsequent analyses in each study for the following reasons: self-perceived weight was available for every participant (compared to a small number of missing values on BMI in each study), correlated between .72 and .80 with BMI in each study, correlated with moralization to the same degree as BMI, and has been shown at times to be a more appropriate predictor in previous research (e.g., Mulder et al., 2015). Political orientation was measured on a scale ranging from 1 (*very liberal*) to 7 (*very conservative*) with additional options for other types of political leanings (e.g., Libertarian).

Results

Correlations. As hypothesized, greater moralization of obesity was strongly associated with control attributions for obesity and greater disgust (Table 1). Moralization was also related to dislike of obese individuals, endorsement of PWE, and political conservatism, which was

expected based on past findings (Crandall, 1994). BMI and self-perceived weight were negatively correlated with moralization and anti-fat attitudes, indicating that overweight and obese participants had lesser negative views of obese people. Additionally, gender (r = -.10, p = .15) and age (r = -.09, p = .20) were not significantly correlated with moralization. Interestingly, moralization was associated with less, rather than more, knowledge about obesity (see Table 1).

<Insert Table 1 About Here>

Regressions. Ordinary Least Squares (OLS) regression analyses were conducted to test the hypotheses that moralization of obesity predicts greater endorsement of discrimination against obese persons and higher perceived risk of various health consequences of obesity. As shown in Table 2, variables were entered hierarchically, with covariates (self-perceived weight and conservatism) in the first block, followed by moralization in the second block. Greater moralization predicted stronger endorsement of discrimination against obese individuals. Moralization marginally predicted stronger perceptions of the risk represented by the 10 health problems associated with obesity. However, moralization was a stronger predictor of ratings of obese individuals' risk for the unfamiliar health problems (which included a fake condition). Taken together, moralization predicted stronger perceptions of the health risks of obesity, to the point that participants believed obese people to be at greater risk than non-obese people of developing even unfamiliar and nonexistent diseases.

<Insert Table 2 About Here>

Discussion

Study 1 revealed that moral disapproval of obesity was significantly correlated with control attributions for weight, dislike and disgust towards obese individuals, personal body shame, PWE, and conservatism, while being negatively related to BMI, self-perceived weight,

and knowledge of obesity. Moralization of obesity also predicted greater endorsement of discrimination towards obese people and stronger perceived risk of obesity-related health problems, particularly for unfamiliar health disorders. This was the case despite moralization being associated with lower objective knowledge about obesity. In sum, these results comport with past research indicating that moral attitudes promote greater intolerance of individuals viewed as morally unfavorable and encourage inflated perceptions of the negative consequences of moralized behavior (Rozin, 1999; Skitka, 2010).

Study 2

The purpose of Study 2 was to examine the degree to which moralized obesity attitudes are more resistant to persuasion than non-moralized attitudes. We hypothesized that as moralization of obesity increased, people would be less persuaded by arguments for classifying obesity as a disease. Similar to some people's objections to alcoholism being viewed as a disease because it is seen as a self-inflicted, controllable problem (Schomerus et al., 2010), we expected that people would have similar objections to classifying obesity as a disease. Participants were assigned, either before or after completing the other study measures, to read and rate the persuasiveness of arguments for classifying obesity as a disease. This enabled us both to examine whether the arguments were effective in decreasing control attributions for obesity (and in turn, moralization), as well as to determine across the sample as a whole if higher moralizers tended to rate the arguments lower in persuasiveness compared to low moralizers.

Method

Participants. We aimed to recruit at least 200 participants per condition in order to have 80% power to detect a small effect size. Participants were 479 visitors to YourMorals.org during April to June of 2017. The site is an online research platform that features studies related to

morality, politics, and personality. Twenty-four participants failed the attention check and were excluded from analysis (inclusion of these participants did not substantively alter the results). The final sample (N = 455) consisted of 253 men, 149 women, and 53 participants who did not report gender. As gender was not a focal variable of interest and it is a categorical predictor rather than a criterion variable in this research, the missing values were not a concern and thus were not imputed. The average age was 36.1 years. The majority of the sample (93.3%) identified as living in Western countries (72% U.S.). A majority of participants identified as White (82.6%), with the rest identifying as Asian or Asian American (5.9%), multiracial (4.0%), Latinx (2.9%), or other races and ethnicities (4.6%).

Procedure and materials. The order of presentation was counterbalanced such that participants read, either before (n = 222) or after (n = 233) the other survey measures, six brief arguments (order randomized) in favor of classifying obesity as a disease. The statements focused on how the causes of obesity are complex and not a function of individual willpower, and that surgical options are considered more effective for weight loss than traditional diet and exercise. Each statement contained a relevant, real citation (author and year) to convey that the arguments were derived from legitimate research. Participants rated the persuasiveness of each statement on a scale from 1 (*not at all persuasive*) to 7 (*extremely persuasive*); the argument ratings were averaged to create an overall arguments score (α = .87; M = 4.18, SD = 1.46). Participants completed several other survey measures (identical to those used in Study 1) in the following order: *Moralization of obesity* (α = .88), anti-fat attitudes (*dislike*, α = .85; *disgust*, α = .89; *perceived control*, α = .93), *body shame* (α = .80; body shame was not relevant to the present analyses and will not be discussed further), self-perceived weight, and demographic items.

Results

For half the sample that evaluated the persuasive arguments before the other survey measures, we assessed whether the arguments decreased moralization or lower anti-fat attitude scores. This type of manipulation, which aimed to convince participants that obesity is a complex disorder that cannot be explained simply by individual self-control, would be expected to decrease participants' control attributions for obesity (Crandall, 1994). Independent samples t-tests comparing the group who read the arguments first to the group that read the arguments last revealed that the persuasive arguments had no significant effect on moralization, perceived control, disgust, or dislike (see Table 3).

<Insert Table 3 About Here>

We also hypothesized that higher moralizers would rate the arguments for classifying obesity as a disease lower in persuasiveness compared to low moralizers. We first tested for differences in persuasiveness ratings based on order of presentation. Participants who read the arguments first rated them slightly less persuasive (M = 4.02, SD = 1.46) than those who read them last (M = 4.33, SD = 1.45), $t(453) = 2.32$, p =.021. Because of this significant difference, order of presentation was included as a covariate in subsequent regression analyses. Persuasiveness ratings of the arguments were evaluated using hierarchical OLS regression. As shown in Table 4, self-perceived weight, conservatism, and order of presentation were entered in the first block as covariates and were all statistically significant predictors of argument ratings. Higher self-perceived weight predicted higher argument ratings, whereas conservatism and reading the arguments before completing the other attitude measures both predicted lower ratings. Moralization (entered in the next block) predicted lower argument ratings and explained an additional 9% of the variation in ratings of the persuasive arguments. Thus, as moralization of

obesity increased, the arguments for classifying obesity as a disease were viewed as less convincing.

<Insert Table 4 About Here>

Discussion

The persuasive arguments for classifying obesity as a disease did not succeed in influencing moralization or other aspects of weight stigma, suggesting that brief interventions targeting control beliefs may be largely ineffective in reducing moral and anti-fat attitudes. The hypothesis that high moralizers of obesity would rate the persuasive arguments as less persuasive compared to low moralizers was supported; as moralization increased, persuasiveness ratings decreased. Overall, these findings align with prior research suggesting that moralized attitudes are particularly resistant to change.

Study 3

Our final study investigated the stigma associated with bariatric surgery. A study found that stigma may be reduced if people are informed of how much effort—in the form of diet, controlled eating, and exercise—is truly involved in making bariatric surgery successful (Vartanian & Fardouly, 2014). Given this finding and the crucial role of effort/control attributions in anti-fat attitudes, people who show greater moralization of obesity (compared to those low on moralization) may care more about obese individuals putting effort into weight loss and thus rate a surgery recipient more positively if the person's effortful behavior is highlighted. However, the results of Study 2 and previous research demonstrating how difficult it is to change moral attitudes (e.g., Luttrell et al., 2016) suggest that it may be difficult to decrease their negative perceptions of bariatric surgery. Thus, although we acknowledged that both predictions are plausible, based on prior research with moral attitudes we hypothesized that people who

score higher on moralization of obesity would be less influenced by information about the effort associated with bariatric surgery compared to low moralizers. More specifically, we predicted that participants with greater moralization of obesity would rate a vignette target who chose bariatric surgery just as negatively regardless of whether the target was described as engaging in effortful behaviors to make the surgery successful. Overall, we also expected participants with greater moralization to view any surgery target as being lazier and less responsible for their weight loss compared to a target who lost weight through diet and exercise.

Method

Participants. Three hundred and sixty U.S.-based participants (205 men, 155 women; M_{age} = 35.0 years) were recruited from Amazon's MTurk platform in August of 2017. Five participants failed the attention check item and were excluded from analyses, leaving a final sample size of N = 355 (inclusion of these participants did not substantively alter any results). The sample size satisfied our requirements, as we had aimed to recruit at least 100 participants per condition to have enough power to detect a small-to-medium effect size. Participants were compensated $1.00 to participate in a brief online survey advertised as a "study of person perception." A majority of participants identified as White (69.4%), with the rest identifying as Asian or Asian American (11.1%), Black (10.0%), Latinx (5.8%), or other races and ethnicities (3.6%).

Procedure and materials. Participants were randomly assigned to one of three conditions: *diet/exercise* (n = 120), *surgery* (n = 116), and *surgery-effort* (n = 119). In all conditions, participants read identical descriptions of a woman that included her age, career, and hobbies, along with a statement of how she had struggled with obesity for many years. Depending on the condition, the woman was then described as having lost 95 pounds through

either diet and exercise, surgery, or surgery combined with diet and exercise (stimulus materials adapted from Vartanian & Fardouly, 2014). The surgery-effort condition thus emphasized that the surgery required effortful diet and exercise to make it successful. After evaluating the target, participants completed the same moralization and attitude measures as in Study 2 (order randomized).

Participants rated the target on 15 personal characteristics from 1 (*not at all*) to 7 (*extremely*) (adapted from Vartanian & Fardouly, 2014). The main outcome of interest was the perception of the target's *laziness*, measured by taking the average of four items: lazy, self-disciplined (reverse-scored), sloppy, and poor personal hygiene ($\alpha = .83$). Although of lesser importance for the present research, we also evaluated whether moralization predicted negative evaluations more generally by including items about *competence*, measured as the average of four traits: competent, efficient, successful, and intelligent ($\alpha = .87$). The remaining seven items (likable, popular, shy, aggressive, irritable, unhappy, and attractive) were not relevant for the purposes of the current study; they were only included to make the list of traits appear more comprehensive to participants.

Following the trait ratings, participants were asked two questions about the target's responsibility for her weight loss (adapted from Vartanian & Fardouly, 2014), measured on a scale from 1 (*none/not at all*) to 5 (*very much*). One question focused on control: "How much control do you think Susan has over her weight?" The other question focused on responsibility for weight loss: "To what extent do you think Susan was responsible for her weight loss?" The items were only moderately correlated ($r = .39$), so we decided to evaluate each item separately. A final question, adapted from a national survey on obesity attitudes (ASMBS/NORC, 2016), asked participants, "how do you think Susan should feel about her weight loss?" Participants

rated three items—proud, embarrassed, and happy—on a scale from 1 (*not at all*) to 5 (*extremely*). The "happy" item was only included to make the list seem more comprehensive to participants, so it was not considered an outcome of interest in the present research.

Results

One-way Analysis of Variance (ANOVA) tests and post hoc comparisons were first conducted to examine differences in target ratings by study condition. Because we ran six omnibus tests, we set our alpha level to .008 in order to keep the familywise alpha at the target of .05. We considered the tests as statistically significant (ps < .008) for target laziness, control over weight, responsibility for weight loss, and feeling proud of weight loss. We followed the significant omnibus findings with Scheffe-corrected post hoc pairwise comparisons. As shown in Table 5, the target who lost weight via diet and exercise was viewed far more favorably compared to the targets in the surgery conditions. Adding information about effort did not substantially attenuate the stigma attached to surgery, as evidenced by the nonsignificant differences between the surgery and surgery-effort conditions. Moreover, the surgery-effort target was still rated significantly worse than the diet/exercise target on five of the six dependent variables.

<Insert Table 5 About Here>

OLS regression analyses were conducted to examine the effects of obesity moralization and condition on target ratings. Self-perceived weight was again included as a covariate, but political conservatism was excluded because 24 participants were missing on that variable due to choosing a response option outside of the liberal-conservative continuum (e.g., Libertarian). Gender was also included as a covariate because it significantly correlated with moralization (r = .16, p = .003) and it is reasonable to expect some gender differences to appear given that

participants were rating a female target. Dummy variables were created to represent the three study conditions; regressions included the surgery and surgery-effort conditions, leaving the diet/exercise condition as the reference group. We also tested the interaction between moralization and study condition for the six outcomes of interest: laziness, competence, control over weight, responsibility for weight loss, and pride and embarrassment over weight loss.

As shown in Table 6, study condition had a significant main effect on all dependent variables, even when adjusting for self-perceived weight, gender, and moralization of obesity. This suggests that, compared to an individual who loses weight through diet and exercise, bariatric surgery leads to more negative evaluations of an individual. Moralization had a significant main effect on target ratings of laziness, which we considered our focal outcome of interest. Thus, greater moralization predicted higher ratings of laziness across conditions. Moralization also had a small but significant main effect on ratings of competence, control over weight, and embarrassment over weight loss. The main effects indicated that greater moralization predicted lower ratings of competence and control over weight, and higher ratings of embarrassment.

There was a small, marginally significant (p = .06) interaction between moralization and the surgery-effort condition. The results suggest that providing information about the effort associated with surgery did not decrease perceptions of laziness, particularly for moderate and high moralizers (see Figure 1). This type of pattern was also seen for responsibility for weight loss and pride, with moderate and high moralizers particularly unaffected by the provision of effort information.

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Discussion

Overall, adding information about effort did not attenuate negative perceptions of individuals who choose weight-loss surgery (see Table 5). Moral attitudes toward obesity appear to exacerbate this effect for certain perceived traits, such as laziness, suggesting that many people who moralize obesity will not change their reaction to bariatric surgery regardless of the effort a surgery candidate must exert to make the surgery successful (see Figure 1). People who moralize obesity have rigid beliefs about the controllability of weight and may see surgery as an unnecessary or lazy method of weight loss. Another possibility is that the information in the surgery-effort condition, which stated that the target had to diet and exercise in order to make the surgery successful, inadvertently reinforced the belief that obese people can lose weight through more traditional methods. This could have made participants question the necessity of the surgery. More research is needed to determine whether correcting misperceptions about bariatric surgery may unintentionally lead people to question the necessity of the surgery itself. It should also be noted that the target's gender may have influenced judgments of the target. Future research should include male targets in order to determine whether men and women face equal levels of stigma from bariatric surgery.

The strongest findings were the main effects for condition, which demonstrated that the targets who chose weight-loss surgery, regardless of how much effort they exerted to make it successful, were perceived as lazier, less competent, less in control over their weight, less responsible for their weight loss, less deserving of taking pride in their weight loss, and should feel more embarrassed than the target who lost weight through diet and exercise (see Table 6).

Our findings differed somewhat from Vartanian and Fardouly (2014). Adding information about effort did little to improve people's perceptions of the target, whereas in the

original study the added information significantly improved perceptions of the target's laziness and competence. More research is needed to better understand why these results diverged from previous research. Nevertheless, the present study suggests that correcting misperceptions about weight-loss surgery may do little to improve people's attitudes, and people with stronger moral disapproval of obesity appear to be unaffected by information about the effort involved in surgery.

General Discussion

Across three studies, moralization of obesity emerged as a robust predictor of weight stigma and of many negative consequences that are the hallmarks of moralized attitudes. For example, Study 1 found that moralization predicted stronger endorsement of discrimination against obese people and greater association of health risks with obesity (see Table 2). These findings are consistent with past research showing that moral attitudes promote prejudice and discrimination (Skitka, 2010) as well as an exaggeration of the perceived risks of a moralized behavior (Rozin, 1999). The persuasive arguments in Study 2, which focused on obesity as being mostly uncontrollable, did not significantly influence anti-fat attitudes or moralization of obesity (see Table 3). Moreover, greater moralization of obesity predicted lower persuasiveness ratings of the arguments, suggesting that control-based arguments are an ineffective persuasion tactic for people with stronger moral attitudes toward obesity (see Table 4). This is consistent with past research suggesting that moral attitudes are especially resistant to change (Luttrell et al., 2016). Study 3 demonstrated that people who moralize obesity are more likely to stigmatize individuals who achieve weight loss through surgery. Stronger moralizers of obesity were unaffected by effort information that should in theory reduce the stigma of surgery (see Figure 1). Taken

together, the results suggest that a moral perspective helps to integrate past findings and generates novel predictions about the consequences of moralized obesity attitudes.

Limitations and Future Directions

The present research has a number of limitations to take into consideration. The samples were primarily composed of U.S. participants, which limits the generalizability of our findings. Moreover, participants were limited to those who have the ability and resources to volunteer for online research. The samples also lacked ethnic diversity, as participants largely identified as European Americans. Moralization of obesity may be lower in individuals from different cultural backgrounds with less emphasis on the thin-ideal body type or different perceptions of overweight/obesity (e.g., Crandall & Martinez, 1996; Jefferson & Stake, 2009). Another limitation is that the findings were largely correlational. Experimental and longitudinal studies are needed to better understand the precise antecedents and effects of obesity moralization.

Our studies raise important questions for future research. At the intrapersonal level, we may ask how obesity moralization affects individuals themselves. For instance, do obese individuals who hold negative moral attitudes about obesity suffer worse mental health outcomes? This seems likely given that greater belief in the controllability of obesity and stronger endorsement of the PWE are associated with lower well-being among overweight individuals (Quinn & Crocker, 1999). Recent experiments have likewise found that moralized anti-obesity messages, compared to non-moralized messages, may backfire by leading overweight individuals to cope by making poorer dietary choices (Mulder, Rupp, & Dijkstra, 2015; Täuber, Gausel, & Flint, 2018). On the other hand, could moralization be positive for some individuals? Perhaps thinner individuals who moralize weight are more motivated than non-moralizers to maintain a healthy weight, leading them to adopt beneficial lifestyle changes.

Little research has investigated differences in experienced stigma and self-stigma between people at varying levels of overweight and obesity (Puhl & Heuer, 2009). Women are particularly vulnerable to internalized weight stigma (Jefferson & Stake, 2009; Quinn & Crocker, 1999), and thus may be more likely to moralize their own weight even if they are not obese. People with stronger moral attitudes toward obesity may also be more likely to view overweight (rather than just obesity) negatively, despite the murky evidence for lower levels of overweight being unhealthy (Khazan, 2017). Although the present research focused on perceptions of people with obesity, future research would benefit from exploring perceptions of individuals with varying levels of overweight.

Future research should also focus on interventions that meaningfully decrease stigmatization of obese individuals. A moral perspective on weight stigma may aid in designing effective interventions by targeting moral values. For example, an experiment found that exposing people to arguments from the Fat Rights movement (which embraces overweight and opposes medical terms for fatness) decreased endorsement of anti-fat attitudes (Frederick, Saguy, & Gruys, 2016). Future research should explore whether such arguments, particularly ones that emphasize other cherished moral values such as personal freedom and individualism, are effective in decreasing moralized obesity attitudes.

Of particular concern for future research is whether healthcare providers' moral judgments influence their treatment of obese patients. Weight bias is prevalent among health care professionals, even among obesity specialists (Tomiyama et al., 2015). Although this can sometimes take the form of negative judgments of patients, it may be equally problematic when physicians avoid discussing weight with their patients out of fear of making patients uncomfortable or being labeled as prejudiced (Blackburn & Stathi, 2019). Much more work is

needed to understand how healthcare providers can discuss weight with patients in productive, non-moralizing ways. Future studies should also examine whether healthcare professionals who tend to moralize obesity treat obese patients differently, both interpersonally and in terms of the care they provide to patients.

At the societal level, people who moralize obesity may also be less supportive of public policies or funding aimed at treating obesity, as some studies indicate that people oppose policies perceived to benefit those seen as less deserving of publicly funded assistance (e.g., Barry, McGinty, Pescosolido, & Goldman, 2014; Mata & Hertwig, 2018). This issue is relevant to current healthcare debates in the U.S., where people disagree over who should have access to health insurance and how much people should pay for their care.

Conclusion

In this paper we presented evidence that negative moral judgments of obesity are commonplace in U.S. samples, developed a brief and reliable measure of moralized obesity attitudes, and demonstrated multiple consequences of obesity moralization. These consequences include greater endorsement of discrimination towards obese people, exaggeration of the health consequences of obesity, resistance to attitude change, and objections to surgical weight loss methods. A moral perspective on obesity explains why past research has consistently found control beliefs (e.g., Crandall, 1994) and disgust reactions (e.g., Park et al., 2007; Vartanian, 2010) to be crucial components of anti-fat prejudice. A moral perspective may also explain why interventions to reduce anti-fat prejudice often fail or are minimally effective (Daníelsdóttir et al., 2010; Lee et al., 2014), as moral attitudes have been found in past research, and in the present studies, to be particularly strong and resistant to change. Taken together, the current findings may aid in designing more effective anti-fat prejudice interventions in the future.

More broadly, the present research begs the question of how moralization processes are relevant to other health issues that are or may become stigmatized. To what extent will people come to be blamed for and discriminated against in some form for having what are increasingly referred to as "lifestyle" diseases, such as diabetes, high blood pressure, and heart disease? Can a balance be struck between encouraging individuals to adopt healthy behaviors while de-moralizing the diseases themselves? It is our hope that future research will illuminate how to prevent other health issues from following the same detrimental path as that of obesity.

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Table 1
Summary of Pairwise Correlations and Descriptive Statistics for Study 1 Measures

Measure	1	2	3	4	5	6	7	8	9	10
1. Moralization	-									
2. Perceived control	.59***	-								
3. Disgust	.63***	.53***	-							
4. Dislike	.67***	.52***	.89***	-						
5. Obesity knowledge	-.20**	-.09	-.29***	-.27***	-					
6. Body shame	.38***	.18**	.32***	.32***	-.13	-				
7. PWE	.49***	.45***	.26***	.36***	-.14*	.19**	-			
8. Conservatism	.28***	.21**	.11	.12	-.06	-.03	.37***	-		
9. BMI	-.20**	-.12	-.28***	-.35***	.14*	.19**	-.13*	-.02	-	
10. SP-Weight	-.15*	-.20**	-.25***	-.30***	.11	.31***	-.15*	-.11	.72***	-
Descriptives										
M	3.59	4.55	2.87	2.99	6.53	3.85	4.34	3.47	26.74	3.30
SD	1.19	1.05	1.64	1.41	1.63	1.15	0.75	1.78	7.27	0.94

Note. PWE = Protestant work ethic. SP-Weight = self-perceived weight.
*$p < .05$; **$p < .01$; ***$p < .001$.

Table 2
Moralization of Obesity Predicts Endorsement of Discrimination and Perceived Risk of Health Problems of Obese Individuals (Study 1)

	Discrimination	Perceived Risk (10-item)	Unfamiliar Conditions Risk (2-item)
	b (*SE*)	*b* (*SE*)	*b* (*SE*)
Model 1			
SP-Weight	-0.31 (0.07)***	2.17 (1.44)	-4.67 (1.82)*
Conservatism	0.09 (0.04)*	1.18 (0.77)	1.84 (0.97)†
Model 2			
SP-Weight	-0.24 (0.07)***	2.48 (1.44)†	-3.65 (1.75)*
Conservatism	0.02 (0.04)	0.80 (0.79)	0.58 (0.96)
Moralization	0.43 (0.05)***	2.10 (1.18)†	6.89 (1.43)***
F (3, 213)	31.85***	2.47†	11.93***
Adjusted R^2	0.30	0.02	0.13

Note. The *b* values represent unstandardized coefficients; standard errors shown in parentheses. SP-Weight = self-perceived weight. The model's sample size was slightly reduced due to 12 participants choosing an option outside the standard liberal to conservative continuum (e.g., Libertarian).
$^{\dagger}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

Table 3
Means and Independent Samples T-Tests for Effect of Persuasive Arguments on Obesity Attitude Variables (Study 2)

	Read Arguments First *M* (*SD*)	Read Arguments Last *M* (*SD*)	*t* (453)	*p*
Moralization	3.32 (1.43)	3.41 (1.46)	-0.70	.48
Perceived Control	4.26 (1.52)	4.34 (1.62)	-0.57	.57
Disgust	3.30 (1.75)	3.33 (1.71)	-0.20	.85
Dislike	2.87 (1.33)	3.01 (1.28)	-1.11	.27

Table 4
Predictors of Persuasive Argument Mean Rating (Study 2)

	b (*SE*)	*95% CI*	β	*t*	*p*
Model 1					
SP-Weight	.22 (.06)	[.11, .34]	.17	3.97	<.001
Conservatism	-.30 (.03)	[-.37, -.23]	-.37	-8.71	<.001
Order of Presentation	-.38 (.13)	[-.62, -.13]	-.13	-3.02	.003
Model 2					
SP-Weight	.13 (.06)	[.02, .24]	.10	2.38	.018
Conservatism	-.19 (.04)	[-.26, -.12]	-.23	-5.28	<.001
Order of Presentation	-.39 (.12)	[-.62, -.16]	-.13	-3.28	.001
Moralization	-.35 (.05)	[-.44, -.26]	-.34	-7.52	<.001
Model Statistics		F (4, 445) = 42.81***			
		Adjusted R^2 = .27			

Note. Model statistics are shown for model 2. Five participants were missing on Conservatism and were thus excluded from the model.

Table 5
Mean Ratings of Target by Weight Loss Condition and One-way ANOVA Results (Study 3)

	Condition				
	Diet/Exercise (*n*=120)	Surgery (*n*=116)	Surgery-effort (*n*=119)	*F* (*df*)	*p*
Laziness	2.50 (1.13)[a]	3.11 (1.21)[b]	2.89 (1.27)[b]	7.81 (2, 352)	<.001
Competence	5.26 (0.98)[a]	4.94 (1.08)[a,b]	4.89 (0.96)[b]	4.74 (2, 352)	.009
Control over weight	4.18 (0.79)[a]	3.52 (1.04)[b]	3.79 (0.92)[b]	15.07 (2, 351)	<.001
Responsible for weight loss	4.71 (0.53)[a]	3.65 (1.05)[b]	3.72 (0.98)[b]	53.32 (2, 351)	<.001
Proud of weight loss	4.69 (0.62)[a]	4.16 (0.92)[b]	4.24 (0.96)[b]	13.80 (2, 350)	<.001
Embarrassed over weight loss	1.52 (1.07)[a]	1.86 (1.07)[b]	1.79 (1.07)[a,b]	3.42 (2, 351)	.034

Note. Superscripts indicate that the means differ at the .05 level of significance (based on Scheffe-corrected post hoc pairwise comparisons). Standard deviations shown in parentheses next to means.

Table 6
Predictors of Target Ratings (Study 3)

	Laziness	Competence	Control over Weight	Responsible for weight loss	Proud	Embarrassed
	b (SE)	*b (SE)*	*b (SE)*	*b (SE)*	*b (SE)*	*b (SE)*
Model 1						
SP-Weight	-.13 (.06)*	.12 (.05)*	.07 (.05)	.09 (.05)†	.05 (.04)	-.01 (.06)
Gender	.41 (.12)**	-.45 (.11)***	-.08 (.10)	-.13 (.10)	-.34 (.09)***	.30 (.11)**
Surgery	.63 (.14)***	-.33 (.13)*	-.64 (.12)***	-1.06 (.12)***	-.54 (.11)***	.37 (.13)**
Surgery-effort	.50 (.14)**	-.42 (.12)**	-.35 (.12)**	-1.00 (.12)***	-.49 (.11)***	.36 (.13)**
Moralization	.28 (.05)***	-.09 (.04)*	-.13 (.04)**	.001 (.04)	-.05 (.03)	.23 (.04)***
Model 2						
SP-Weight	-.13 (.06)*	.12 (.05)*	.07 (.05)	.09 (.05)†	.05 (.04)	-.01 (.06)
Gender	.41 (.12)**	-.45 (.11)***	-.08 (.10)	-.13 (.10)	-.34 (.09)***	.30 (.11)**
Surgery	.61 (.14)***	-.32 (.13)*	-.64 (.12)***	-1.04 (.12)***	-.53 (.11)***	.35 (.13)*
Surgery-effort	.51 (.14)***	-.43 (.13)**	-.36 (.12)**	-1.01 (.12)***	-.50 (.11)***	.37 (.13)**
Moralization	.20 (.07)**	-.07 (.06)	.17 (.06)**	.06 (.05)	.02 (.05)	.16 (.06)*
Surgery × Moralization	.09 (.11)	-.01 (.09)	-.04 (.09)	-.08 (.08)	-.09 (.08)	.09 (.10)
Surgery-effort × Moralization	.21 (.11)†	-.09 (.10)	-.14 (.09)	-.16 (.09)†	-.17 (.08)*	.16 (.10)
F (7, 345)	13.19***	7.42***	6.47***	16.83***	8.04***	7.51***
Adjusted R^2	.20	.11	.10	.24	.12	.12

Note. Gender was coded 1 for males, 0 for females. The diet/exercise condition was treated as the reference group. Standard errors are shown in parentheses. Moralization was mean-centered to reduce multicollinearity.
$^{\dagger}p < .10$; $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

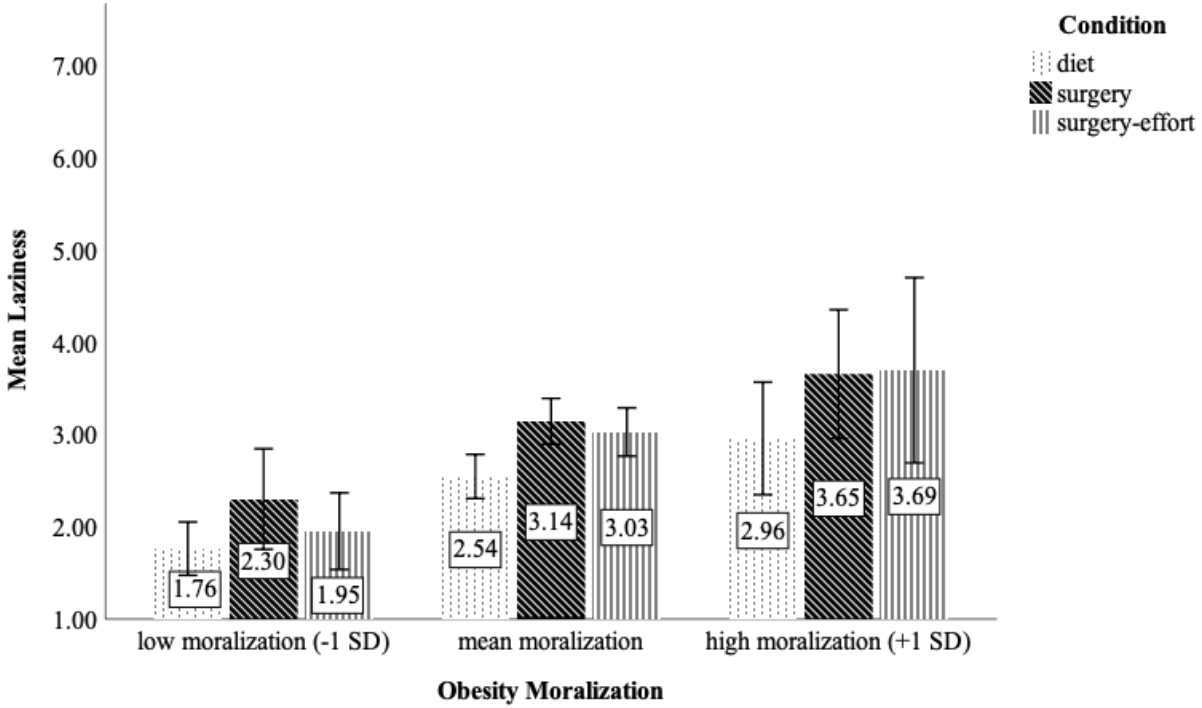

Figure 1. Target laziness ratings by condition and level of obesity moralization. Cell means are shown in each bar. Error bars represent 95% confidence intervals. *SD* = standard deviation. Participants were categorized as low (less than 1 *SD* below the mean), moderate (scoring within 1 *SD* of the mean), or high (scoring higher than 1 *SD* above the mean) on moralization of obesity.

Research Highlights

- It is beneficial, theoretically, to examine obesity stigma through a moral lens.
- Moralization of obesity predicts endorsement of weight-based discrimination.
- Moralized obesity attitudes predict more resistance to persuasive arguments.
- Moralization helps to explain stigmatization of bariatric surgery.
- Moralization of health-related issues has important implications for research.