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Weight stigma facilitates unhealthy eating and weight gain via fear of fat

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Abstract

Objective—Across two studies, we examine if the relationships between perceived weight stigma, maladaptive eating behaviors (Study 1 & 2) and weight gain (Study 2) are mediated by fear of fat (FOF).

Method—In Study 1, 189 participants completed measures of eating behavior (e.g., emotional and restrained eating), FOF, perceived weight stigma and height and weight. In Study 2, a longitudinal design, participants reported their perceived weight stigma, FOF and had their height and weight measured; they then returned 10 weeks later to complete measures of eating behaviors (e.g., flexible restraint, ridged restraint, and emotional eating) and height and weight. We examined the predictive value of weight stigma at session 1 on eating behavior and weight gain at session 2. Further, we examined FOF as a mediator of these relationships.

Results—In Study 1, we found that FOF significantly mediated the positive relationship between perceived weight stigma and restrained eating behavior (*b*=.13, CI: .09 to .19). In Study 2, we found that perceived weight stigma predicted weight gain over the 10-week period and that this relationship was mediated by both FOF (*b*=.31, CI: .03 to .78) and rigid restraint of eating (*b*=.07, CI: .002 to .28). Flexible restraint and emotional eating behavior were not mediators of the relationship between perceived weight stigma and weight gain.

Conclusion—Fear of fat may be one process through which perceptions of weight stigma lead to maladaptive eating behavior and weight gain. Understanding this important process may lead to more effective healthy weight interventions.

Keywords

Weight stigma; Fear of Fat; Weight Gain; Eating Behavior; Rigid Restraint

Weight stigma is on the rise in the United States and, in fact, today is more socially acceptable and prevalent than many other forms of bias (Brochu & Esses, 2011; Puhl & Heuer, 2009). Although now the numerical majority in the U.S. (i.e., nearly two thirds of

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Americans are categorized as overweight or obese; Ogden, Caroll, Kit, & Flegal, 2014), those with higher body weight experience discrimination in housing, employment, education and health care (Latner & Stunkard, 2003; see Puhl & Huer, 2009 for review). Some public health programs designed to reduce the number of Americans with higher body weight actually use stigmatization as a tool to motivate individuals to lose weight. Georgia's Strong4Life campaign uses stigmatizing images and messages in an attempt to reduce childhood obesity in Georgia (e.g., a picture of a heavy weight child with the phrase "Fat kids become fat adults"; Teegardin, 2011). Such campaigns may actually be counterproductive and create a vicious cycle in which experiencing weight stigma leads to weight gain through increased unhealthy eating behavior, physiological stress and negative emotional experiences (e.g.,Tomiyama, 2014). Although these links have been proposed, little research has examined the links and possible underlying mechanisms between weight stigma, increased unhealthy eating behavior and weight gain.

Weight Stigma, Eating Behavior, and Weight Gain

To be stigmatized is to feel devalued by others, socially discredited, stereotyped, tainted, shunned and avoided based on a personal attribute (Goffman, 1963; Link & Phelan, 2001). Weight stigma is the experience of this social devaluation and condemnation based on an individual's weight (e.g. Major, Eliezer, & Rieck, 2012; Puhl & Brownell, 2001; Puhl & Heuer, 2010; Tomiyama, 2014). This particular form of stigma has been theorized to undermine weight loss attempts by increasing eating and promoting maladaptive dieting patterns (Puhl & Heuer, 2010; Major, Hunger, Bunyan, & Miller, 2014; Tomiyama, 2014). Weight stigma can be considered a stressor which may lead to "comfort" or emotional eating as a way to alleviate the aversive state (Adam & Epel, 2007). Stress has been found to be associated with increased emotional eating, which in turn has been linked to increased weight gain (Koenders & van Strien, 2011; van Strien, Herman, & Verheijden, 2012). Individuals with higher body weight who have been exposed to weight-based stigmatizing information have been found to order and consume more calories compared to those exposed to neutral stimuli (Araiza & Wellman, 2016; Major, et al., 2014; Schvey, Puhl, & Brownell, 2011). Exposure to weight stigma has also been associated with increased drive for unhealthy, high-calorie, high-sugar foods (Tomiyama & Mann, 2013). Experiences of weight-based teasing are associated with increased disordered eating behavior (O'Brien et al., 2016). Yet, some studies have failed to find a link between emotional eating and increased weight gain (Snoek, Engels, van Strien, & Otten, 2013). Therefore, it is important to identify mechanisms through which weight stigma may lead to increased eating, desire for comfort food, or subsequent weight gain.

Although the experience of weight stigma may lead to increased eating, it may also promote restrictive eating behaviors in an effort to lose weight and thus avoid experiencing further stigmatization. Weight loss interventions like the Strong4Life campaign (Teegardin, 2011) and those advocated by health policy scholar Daniel Callahan seek to use such stigmatization to pressure individuals into losing weight (Callahan, 2012). Although restrictive dieting is advocated by the popular press and practiced by many as a weight loss strategy, long term weight loss is unlikely to be the result of such dieting (see Mann et al., 2007; Tomiyama, Ahlstrom, & Mann, 2013). Also, though on the surface it might seem that

dietary restraint would lead to weight loss, research has shown that dietary restraint is actually predictive of weight gain (Drapeau et al., 2003; Pliner & Saunders, 2008; Stice, Presnell, Shaw, & Rohde, 2005). In fact, chronic restrained eating has been theorized to contribute to appetite dysregulation and disordered eating, in addition to weight gain (Garner & Wooley, 1991; Polivy & Herman, 1985). The aversive nature of weight stigma is likely to motivate individuals to engage in restrictive eating behaviors where calorie intake is closely monitored and high calorie/"unhealthy" foods are avoided. Experiencing weight stigma may place pressure on individuals to engage in this maladaptive dieting strategy, which ironically could lead to increased weight. Perceptions of weight stigma as a predictor of dietary restraint, and the subsequent impact on weight gain, have yet to be examined.

Weight Stigma, Fear of Fat, and Eating Behavior

Weight stigmatization is likely to elicit a "fear of fat" (a fear of being overweight or gaining weight) that may motivate unhealthy eating behaviors and ultimately lead to weight gain. Although rarely examined, fear of fat is theorized to be associated with a desire to avoid the stigmatization that the overweight face (Ackard, Croll, & Kearney-Cooke, 2002; Dalley & Buunk, 2009). In an effort to escape or avoid the discrimination that individuals who are overweight experience, fear of fat is thought to increase unhealthy, maladaptive eating behaviors such as those embodied by anorexia and bulimia (American Psychiatric Association, 2013; Davis & Claridge, 1998). Fear of fat has also previously been shown to be positively associated with dietary restraint among college women (Dalley, Toffanin, & Pollet, 2012). Although negative emotional responses (e.g., shame, Dickerson, Gruenewald, & Kemeny, 2004; Tomiyama, 2014; Himmelstein & Tomiyama, 2015) have been proposed as one process through which weight stigma leads to weight gain, no research has yet examined the role of fear of fat. Due to the logical connection between weight stigma and fear of fat, we propose that fear of fat may be an additional process through which weight stigma leads to weight gain.

The Current Research

The current research examines the relationships between perceived weight stigma, fear of fat and maladaptive eating behaviors (Study 1) and tests the hypothesis that fear of fat may be an intermediary step between weight stigma and maladaptive eating behaviors. Further, we examine how the relationships between weight stigma, fear of fat, and maladaptive eating behaviors are related to weight gain over a 10-week period (Study 2). We propose that weight stigma is positively related to fear of fat, which is related to higher levels of maladaptive eating behaviors, which in turn are related to increased weight gain. Across two studies, we demonstrate the role that fear of fat may play in the relationships between weight stigma, maladaptive eating behaviors and, ultimately, weight gain.

Study 1: Weight Stigma, Fear of Fat and Maladaptive Eating Behaviors

Hypotheses

In Study 1, we hypothesized that the higher participants were in weight stigma the higher their fear of fat, restrained eating, and emotional eating. Further, we hypothesized that the

higher participants were in fear of fat, the higher they would be in rigid restraint and emotional eating. Finally we tested the hypothesis that fear of fat may be one mechanism underlying the association between weight stigma and maladaptive eating behaviors (i.e., restrained eating, emotional eating).

Method

Participants and Procedures—Participants (*N*=193) were recruited for a study on College Student Health and Wellbeing from an undergraduate psychology subject pool at a western University in the U.S. in exchange for course credit. Participants completed self-report measures of perceived weight stigma, fear of fat, restrictive eating and emotional eating behavior. A female research assistant recorded physical measurements of height and weight at the end of the session for calculation of BMI; weight was not reacted to or read aloud. A total of 4 participants were dropped from analyses (3 currently pregnant; 1 declined participation). The final sample consisted of 189 participants (Race/Ethnicity: 65.6% Latino, 13.8% White, 7.4% Asian, 5.3% African American, 1.1% American Indian, 6.9% Other; Gender: 81% Female; Age: *M*=21.35, *SD*=3.77).

Measures—Descriptive information for all measures including means, standard deviations and scale alphas are presented in Table 1.

Perceived Weight Stigma: We measured the extent to which individuals perceived they are stigmatized based on weight with 5 items: “I feel that people avoid me in social situations because of my weight.”; “Stereotypes about the overweight have not affected me personally.” (Reverse Scored); “In social situations, I feel that I don’t fit in because of my weight.”; “I almost never think about my weight when I interact with people.” (Reverse Scored); and “My weight does not influence how people act with me.” (Reverse Scored) (0=Strongly disagree; 6=Strongly agree).

Fear of Fat: We measured fear of fat with Crandall’s 3-item fear of fat scale (Crandall, 1994): “One of the worst things that could happen to me would be if I gained 25 pounds.”; “I worry about becoming fat.”; and “I feel disgusted with myself when I gain weight.” (0=Strongly disagree; 6=Strongly agree).

Restrained and Emotional Eating Behaviors: We used the 10-item restrained subscale (e.g., “Do you deliberately eat less in order not to gain weight?”) and the 13-item emotional eating subscale (e.g., “Do you feel the desire to eat when you are emotionally upset or stressed?”) from the Dutch Eating Behavior Questionnaire (DEBQ; van Strien, Frijters, Bergers, & Defares, 1986; 1=Never to 5=Often).

Analysis Strategy—To examine the hypothesis that the positive association between weight stigma and maladaptive eating behavior is mediated by fear of fat we used PROCESS (Model 4; Hayes, 2013). Although BMI was significantly correlated with fear of fat and restrained eating (see Table 1), it was not a significant covariate when included in the final models predicting restrained eating (*b*=.006, *SE*=.009, *p*=.51, CI: −.01 to .02) and emotional eating (*b*= −.006, *SE*=.009, *p*=.48, CI: −.01 to .02). As the more parsimonious model is

preferred, we dropped BMI from the analyses. We used a biased-corrected 95% confidence interval and examined direct and indirect effects based on 5,000 bootstrapped samples. A significant indirect effect is indicated by a confidence interval that does not include zero. Descriptive statistics and correlations among variables are presented in Table 1. Details on the models are presented in Table 2.[1]

Results

Emotional Eating Behavior—The model was significant (see Table 2) and the hypothesized indirect effect of weight stigma on emotional eating via fear of fat was also significant. Additionally, a significant direct relationship from weight stigma to emotional eating remained in the presence of fear of fat (Figure 1A).

Restrained Eating Behavior—The model was significant (see Table 2) and as hypothesized, the indirect effect of weight stigma on restrained eating via fear of fat was also significant, indicating that the association between weight stigma and restrained eating is in part due to fear of fat (Figure 1B).

Study 1: Discussion

Consistent with the study hypotheses, we find fear of fat is one process that explains the positive relationship between perceptions of weight stigma and maladaptive eating behaviors. Weight stigma may engender fear of fat which in turn may increase maladaptive eating behaviors. Both emotional eating and restrained eating have previously been shown to be positively associated with increased weight gain (Drapeau et al., 2013; Macht & Simons, 2000). Thus, it seems reasonable that perceived weight stigma may foster fear of fat, which in turn leads to maladaptive eating behavior and subsequent weight gain.

There are a number of limitations that will be addressed in Study 2. First, our measure of restraint in Study 1 does not distinguish between rigid and flexible restraint. Flexible restrained eating (e.g., if I eat this cake tonight, I will eat healthier/less tomorrow) can be differentiated from the more maladaptive rigid restraint (e.g., I will never eat that delicious tempting cake...is it chocolate?; Westenhoefer, 1991). Rigid or inflexible control over eating is most likely to lead to weight gain (e.g., Palascha, van Kleef, & van Trijp, 2015). For example, among women working to sustain weight loss, rigid restraint is associated with greater attentional bias to food and less effective long-term weight loss than flexible restraint (Westenhoefer et al., 2013). Accordingly, in Study 2 we used a different measure of eating behavior with subscales for both rigid and flexible restraint, in addition to emotional eating. Second, although Study 1 provides evidence for the role of fear of fat in the association between weight stigma and self-reported maladaptive eating behaviors, it fails to address actual weight gain. As such, we examine weight gain in Study 2. Finally, our sample was comprised primarily of women in Study 1 (reflecting the demographics of the subject pool). Thus, consistent with the majority of related research, our findings may only be

[1]A structural equation model incorporating both models into a single analysis can be found in the supplemental material. Analyzing the data using PROCESS or SEM yields the same pattern of results thus for ease of presentation the PROCESS analyses are presented in text.

generalizable to women. In Study 2, we examine our hypotheses solely among women to better compare to the existing literature.

Study 2: Weight Stigma, Fear of Fat, Maladaptive Eating Behaviors and Weight Gain

We hypothesized that fear of fat is an important process through which weight stigma influences eating behavior and weight gain. In an extension of Study 1, we examine the relationships between weight stigma and fear of fat (Session 1) and maladaptive eating behaviors and weight change measured 10 weeks later (Session 2). The design of Study 2 allows for three important improvements over Study 1. Specifically, in Study 2 we (1) distinguish between rigid and flexible restraint, (2) measure the predictors in our model (i.e., weight stigma, fear of fat) 10 weeks prior to the outcomes (i.e., eating behavior, weight change), and (3) assess actual change in weight.

We hypothesize that weight stigma will indirectly influence weight gain through the effect of weight stigma on fear of fat and maladaptive eating behaviors. Specifically, we hypothesize that weight stigma will be positively associated with fear of fat. In turn, fear of fat will be positively associated with rigid restraint and emotional eating. Finally, emotional eating and rigid (but not flexible) restraint will be positively associated with weight gain.

Method

Participants and Procedure—Participants were women (N = 84) recruited from an undergraduate psychology subject pool at a northeastern University in the U.S. for a two-part study on College Women's Health in exchange for course credit. In Session 1, participants completed the same measures of perceived weight stigma, fear of fat and BMI described in Study 1. Participants then returned 10–11 weeks later at the end of the semester to complete measures of eating behavior and record BMI. A total of 12 participants were dropped from the final analyses (9 failed to return for Session 2; 3 failed to complete a primary measures of interest). The final sample consisted of 72 female participants (94.7% White; Age: M=18.16, SD=.69).

Measures—Descriptive information for all measures including means, standard deviations and scale alphas are presented in Table 3.

Eating Behavior: We measured self-reported eating behavior with subscales adapted from the classic Three Factor Eating Questionnaire (TFEQ; Stunkard & Messick, 1985). Specifically, we used a common approach in the literature for differentiating rigid from flexible restraint with the TFEQ (Westenhoefer, 1991). *Rigid Restraint* is measured with 16 items (e.g., "Sometimes I skip meals to avoid gaining weight."; "Without a diet plan I wouldn't know how to control my diet."). *Flexible Restraint* is assessed with 13 items (e.g., "While on a diet, if I eat food that is not allowed, I consciously eat less for a period of time to make up for it."; "If I eat a little bit more on one day, I make up for it the next day."). We used a validated 3-item approach to assess emotional eating with the TFEQ (Karlsson, Persson, Sjöström, & Sullivan, 2000) (i.e., "When I feel anxious, I find myself eating";

"When I feel blue I overeat"; "When I feel lonely, I console myself by eating.") (0=strongly disagree to 6=strongly agree).

Weight Gain: Weight gain was calculated by subtracting Session 1 weight from Session 2 weight, such that positive numbers indicate weight gain and negative numbers indicate weight loss. On average, participants gained 2½ lbs over the 10-week period.

Analysis Strategy: We used PROCESS (Model 6; Hayes, 2013) to examine our hypotheses that the positive association between weight stigma and weight gain is mediated by fear of fat and eating behavior. Rigid restraint, flexible restraint, and emotional eating were examined in separate models. We examined change in weight using change in lbs. Results are unchanged if BMI is used (not surprising as height is unlikely to change). We first examined the models with BMI at Session 1 as a covariate. BMI was not a significant predictor of weight change in any of the models (Rigid Restraint Model: b= .04, SE= .14, p= .74, CI −.23 to .32; Flexible Restraint Model: b= .07, SE= .14, p= .64, CI −.21 to .34; Emotional Eating Model: b= .04, SE= .14, p= .78, CI −.24 to .32). As the more parsimonious model is preferred, we dropped BMI from the final models. We used a biased-corrected 95% confidence interval as the index for mediation, and examined direct and indirect effects based on 5,000 bootstrapped samples. Correlations among variables are presented in Table 3. Details on the model analyses are presented in Table 4.[2]

Results

Rigid Restraint—Consistent with our hypotheses, the total effect of weight stigma on weight gain over the 10-week period was positive and significant, b= 1.03, p< .01. Individuals at 1 SD below the mean of weight stigma gained an average of 1.17 pounds and individuals 1 SD above gained an average of 3.89 pounds.

As shown in Figure 2A, weight stigma was associated with greater fear of fat and greater rigid restraint. In turn, both fear of fat and rigid restraint were positively associated with weight gain. Both of these indirect effects of weight stigma on weight gain were significant. Further, fear of fat also influenced weight gain through the positive association with rigid restraint, which in turn was positively associated with weight gain. With these indirect effects of weight stigma via fear of fat and rigid restraint accounted for, the direct effect of weight stigma on weight gain was not significant. Thus, weight stigma may increase weight gain in part due to the associated increase in fear of fat and rigid restraint.

Flexible Restraint—Flexible restraint was not a significant predictor of weight gain and neither of the indirect effects involving flexible restraint were significant (see Table 4). Thus, there is no evidence to suggest that flexible restraint plays a role in understanding the relationship between weight stigma and weight gain (Figure 2B).

[2]A structural equation model incorporating all models into a single analysis can be found in the supplemental material. Analyzing the data using PROCESS or SEM yields the same pattern of results thus for ease of presentation the PROCESS analyses are presented in text.

Emotional Eating—Consistent with the prior analysis, emotional eating was not a significant predictor of weight gain and neither of the indirect effects involving emotional eating were significant (see Table 4). This suggests that the relationship between weight stigma and weight gain may not be explained by increases in emotional eating (Figure 2C).

Study 2: Discussion

In Study 2, we found that the positive relationship between weight stigma and weight gain over a 10-week period was mediated by fear of fat and rigid restraint eating. Flexible restraint and emotional eating, however, did not mediate the relationship between weight stigma and weight gain. Consistent with previous research, rigid, but not flexible, restraint was associated with weight gain (Papascha, van Kleef, & van Trijp, 2015:Smith, Williamson, Bray, & Ryan, 1999; Stewart, Williamson, & White, 2002). These findings build on Study 1, suggesting that the fear of fat which weight stigmatization may engender within individuals could ultimately contribute to weight gain. This is the first research to our knowledge to provide evidence that fear of fat may be a mechanism by which weight stigma is influencing weight gain over time.

General Discussion

Across two studies, using different measures of eating behavior, we demonstrated that the relationship between weight stigma and maladaptive eating behavior is mediated by fear of fat. In Study 2, we found that these relationships are associated with weight gain over a 10-week period. These findings are particularly important as they directly contradict assumptions underlying several campaigns targeted at reducing obesity rates. Campaigns like Georgia's Strong4Life are predicated on the idea that stigmatizing individuals who are overweight will motivate them to lose weight and engage in healthier eating behavior. By demonstrating the maladaptive role fear of fat between weight stigma, eating behavior and weight gain; this study suggests that the stigma that such campaigns are relying upon to motivate individuals is likely to be counterproductive. Our research suggests that interventions targeted at reducing feelings of stigmatization may, in fact, be a better strategy for achieving weight loss. "Healthy at any weight" and "body acceptance" campaigns which have arisen in recent years may better address weight loss and unhealthy eating behaviors.

Fear of fat as a mechanism has not been examined or discussed at length when considering the links between weight stigma, maladaptive eating and weight gain. The vast majority of research has focused on negative emotions such as guilt, shame and sadness as mediating mechanisms (Dickerson, Gruenewald, & Kemeny, 2004; Frederickson, Roberts, Noll, Quinn, & Twenge, 1998; O'Brien et al., 2016). Although all of these negative emotions may be motivated by perceptions of weight stigma, little research has been conducted on the role of fear of fat in the relationship between weight stigma, eating behavior and weight gain. Our research suggests that the fear of fat that weight stigma engenders is another possible mechanism for the positive relationships between weight stigma, eating behavior and weight gain. Our findings are consistent with the cyclic obesity/weight-based stigma (COBWEBS) model which suggests that there is a recursive feedback loop between weight stigmatization and weight gain (Tomiyama, 2014). The COBWEBS model theorizes that experiencing

weight based stigma increased physiological stress, which in turn contributes to increased eating behavior and cortisol production, which then contributes to weight gain and ultimately this weight gain increases the likelihood of further stigmatization. This model has suggested that guilt and shame may be elicited by the stress of experiencing weight stigmatization and proved one possible mechanism which may account for increased eating and subsequent weight gain. Here we suggest that fear of fat may be another particularly important variable to examine as an intermediary step between weight stigma and weight gain. Further, fear of fat may play an intermediate role between weight stigma and a variety of outcomes including psychological wellbeing, cognitive performance and interpersonal interaction. Finally, our research has implications for the development of eating disorders such as anorexia and bulimia. Fear about weight gain is part of the diagnostic criteria for these disorders and it is likely that weight stigma plays a role in their development. Future research should examine more closely how weight stigma and fear of fat may be associated with the developmental trajectory of these or other eating disorders.

Limitations

The current research offers new insights into the relationship between weight stigma, eating behavior and weight gain, but it is not without limitations. The current samples are primarily, or entirely, limited to female participants and thus our findings may not generalize to male participants. Theoretically, however, weight stigma should follow similar trajectories among men; the major difference is likely to be the degree to which weight stigma is experienced (e.g., men experience weight stigma at lower rates overall compared to women; Hebl & Turchin, 2005). Future research should replicate these findings with male participants. Study 2 consists of a relatively small sample (N=77) and is limited to a relatively short window of time. It remains unclear how stable this pattern of results may be over a longer period of time. Within Study 2, we did not control for menstrual cycle or time of day for weight assessment. These variables may have added to error in measurement, however, they are unlikely to have exerted a significant influence on our results. There is no theoretical reason to expect that perceptions of weight stigma would be associated with weight increases due to menstrual phase or time of day at which they were measured. Although weight salience, and therefore weight stigma, may be heightened during certain phases of the menstrual cycle, it is unlikely to explain the association with weight change 10 weeks later. Finally, the current research focused on fear of fat as one possible mediator, which had yet to be examined; however, we did not examine the roles of shame or guilt in these relationships. Thus, we cannot say which plays a stronger role in the process and future work should examine all of these simultaneously, as this was beyond the scope of the current studies.

Conclusions

The primary contribution of the current research rests in the identification of a possible mechanism between weight stigma, eating behavior and weight gain: *fear of fat*. Understanding the relationship between weight stigma and fear of fat has implications for a wide range of possible outcomes. These findings also suggest that, rather than focusing solely on reducing internalized feelings of shame/guilt, interventions might also explore possible ways of reducing fear of fat; a fear likely heightened by many popular weight loss

campaigns. The current research highlights the need for greater consideration of fear of fat in the examination of weight stigma.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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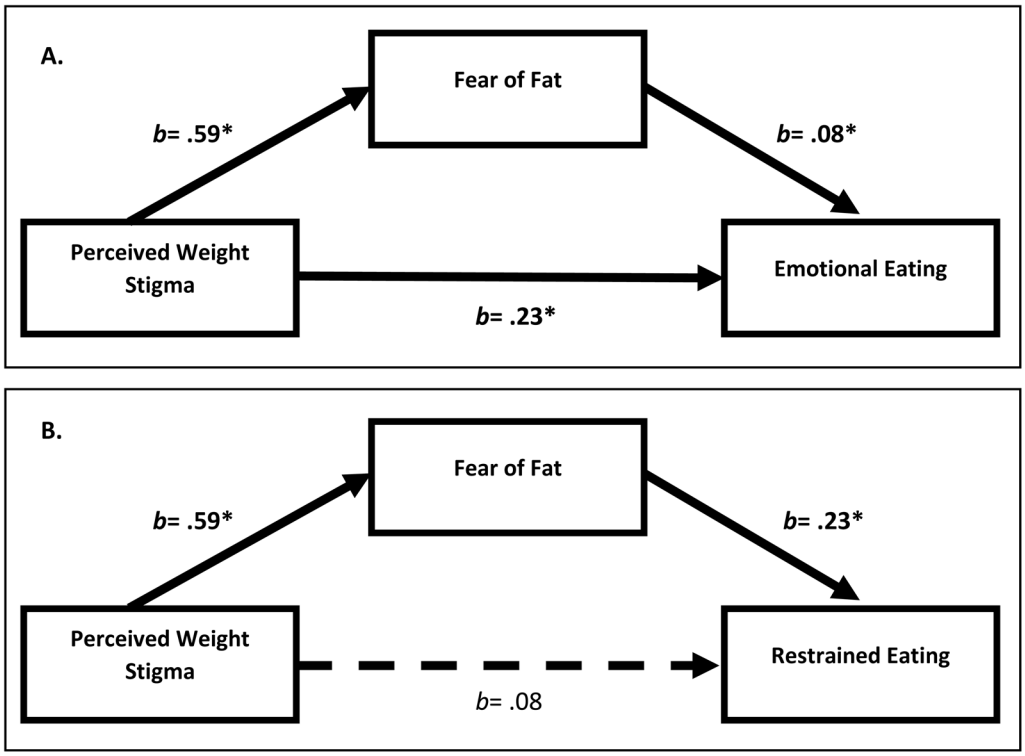

Figure 1.

The relationships between weight stigma and eating behavior are mediated by fear of fat.

Note: *$p < .05$

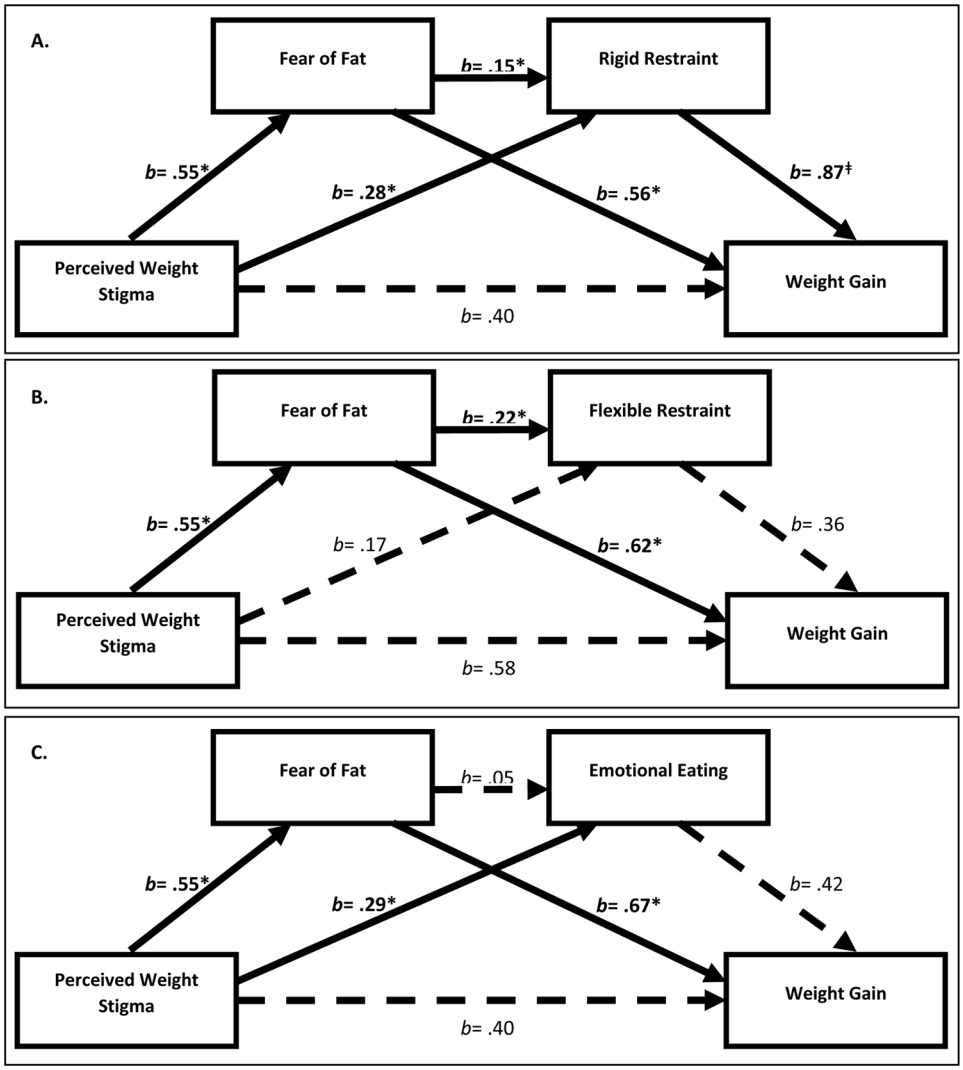

Figure 2.

The relationship between weight stigma and weight gain is mediated by fear of fat and eating behavior.

Note: Unstandardized coefficients are reported ‡$p = .06$; *$p < .05$.

Table 1

Correlations among variables and descriptive information for Study 1.

Study 1	1	2	3	4	Mean (SD)	Range	α
1. Weight Stigma					2.51 (1.21)	0.00 – 6.00	.81
2. Fear of Fat	**.37**				3.21 (1.92)	0.00 – 6.00	.90
3. Restrained Eating	**.32**	**.57**			2.49 (.83)	1.00 – 4.70	.89
4. Emotional Eating	**.43**	**.32**	**.17**		2.22 (.79)	1.00 – 5.00	.94
5. Body Mass Index	**.36**	**.25**	**.22**	.14	26.49 (6.25)	16.34 – 49.93	

Note: Bold text indicates $p < .05$

Table 2

Study 1: Restrained Eating and Emotional Eating Models.

Predictor	Outcome	*b(SE)*	CI	*p*	R^2	*F*
Weight Stigma	Fear of Fat	.59(.11)	.35 to .81	.000	.14	(1,186) = 29.66, *p*<.000
Fear of Fat	Restraint	.24(.03)	.18 to .29	.000	.34	(2,185) = 47.95, *p*<.000
Weight Stigma	Restraint	.08(.05)	−.001 to .17	.053		
Indirect: Stigma→Fear of Fat→Restraint		.13(.03)	.09 to .19			
Fear of Fat	Emotional	.08(.03)	.02 to .14	.008	.21	(2,185) = 24.96, *p*<.000
Weight Stigma	Emotional	.23(.05)	.14 to .32	.000		
Indirect: Stigma→Fear of Fat→Emotional		.05(.02)	.01 to .10			

Table 3

Correlations among variables and descriptive information for Study 2.

Study 2	1	2	3	4	5	6	7	8	9	Mean (SD)	Range	α
Session 1												
1. Weight Stigma										1.83 (1.32)	0.00 – 5.40	.79
2. Fear of Fat	**.40**									3.85 (1.82)	0.00 – 6.00	.90
3. Weight (lbs)	**.65**	**.23**								145.80 (30.37)	110.00 – 250.00	
4. Body Mass Index	**.63**	.15	**.90**							23.33 (4.40)	17.59 – 38.69	
Session 2												
5. Rigid Control	**.43**	**.37**	**.39**	**.28**						2.02 (1.13)	0.07 – 4.60	.90
6. Flexible Control	**.33**	**.42**	**.26**	.13	**.82**					2.67 (1.19)	0.00 – 5.64	.89
7. Emotional Eating	**.30**	.18	**.27**	**.26**	**.40**	**.34**				1.81 (1.39)	0.00 – 5.00	.81
8. Weight (lbs)	**.66**	**.27**	**.99**	**.89**	**.43**	**.29**	**.29**			148.26 (31.81)	110.00 – 260.00	
9. Body Mass Index	**.65**	.20	**.91**	**.98**	**.32**	.16	**.30**	**.92**		23.72 (4.58)	17.74 – 38.15	
10. Weight Gain (lbs)	**.32**	**.38**	**.28**	.20	**.37**	**.27**	**.24**	**.40**	**.35**	2.53 (4.28)	−6.00 – 13.00	

Note: Bold text indicates $p < .05$

Table 4

Study 2: Rigid Restraint, Flexible Restraint and Emotional Eating Models.

Predictor	Outcome	*b(SE)*	CI	*p*	R^2	*F*
Weight Stigma	Fear of Fat	.55(.15)	.25 to .85	.001	.16	(1,70) = 13.33, *p*<.001
Fear of Fat	Rigid	.15(.07)	.01 to .29	.04	.23	(2,69) = 10.32, *p*<.000
Weight Stigma	Rigid	.28(.10)	.08 to .47	.01		
Fear of Fat	Weight Gain	.57(.28)	−.001 to 1.13	.050	.21	(3,68) = 6.18, *p*<.000
Rigid	Weight Gain	.87(.46)	−.06 to 1.79	.07		
Weight Stigma	Weight Gain	.40(.40)	−.40 to 1.20	.33		
Indirect: Stigma→Fear of Fat→WG		.31(.19)	.03 to .78			
Stigma→Rigid→WG		.24(.14)	.03 to .62			
Stigma→Fear of Fat→Rigid→WG		.07(.06)	.002 to .28			
Fear of Fat	Flexible	.22(.08)	.07 to .37	.01	.20	(2,69) = 8.85, *p*<.000
Weight Stigma	Flexible	.17(.11)	.08 to .47	.01		
Fear of Fat	Weight Gain	.62(.30)	.02 to 1.21	.04	.18	(3,68) = 5.04, *p*<.01
Flexible	Weight Gain	.36(.44)	−.53 to 1.24	.42		
Weight Stigma	Weight Gain	.58(.40)	−.21 to 1.37	.15		
Indirect: Stigma→Fear of Fat→WG		.34(.19)	.06 to .80			
Stigma→Flexible→WG		.06(.09)	−.04 to .33			
Stigma→Fear of Fat→Flexible→WG		.04(.05)	−.02 to .19			
Fear of Fat	Emotional	.05(.09)	−.14 to .24	.58	.10	(2,69) = 3.80, *p*=.027
Weight Stigma	Emotional	.29(.13)	.03 to .56	.03		
Fear of Fat	Weight Gain	.67(.28)	.12 to 1.23	.02	.19	(3,68) = 5.35, *p*<.01
Emotional	Weight Gain	.42(.36)	−.28 to 1.13	.24		
Weight Stigma	Weight Gain	.52(.40)	−.28 to 1.32	.20		
Indirect: Stigma→Fear of Fat→WG		.48(.27)	.09 to 1.21			
Stigma→Emotional→WG		.08(.12)	−.05 to .49			
Stigma→Fear of Fat→Emotional→WG		.02(.05)	−.03 to .21			