

Weight Stigma Predicts Poorer Psychological Well-Being Through Internalized Weight Bias and Maladaptive Coping Responses

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Objective: Weight-based stigmatization is associated with negative psychological and behavioral consequences, but individuals respond to stigma in different ways. The present study aimed to understand some of the factors that predict how one will cope with weight stigma and how different coping responses predict psychological well-being.

Methods: Across four samples, 1,391 individuals who identified as having overweight or obesity completed surveys assessing the frequency of weight stigma experiences, internalized weight bias, coping responses to weight stigma, and psychological distress.

Results: Frequency of weight stigma predicted greater internalized weight bias, which predicted more frequent use of maladaptive coping responses (“disengagement coping”) and less frequent use of adaptive coping responses (“reappraisal coping”), in turn predicting more depression, anxiety, and stress symptoms.

Conclusions: The more that individuals with overweight or obesity experience weight stigma and internalize weight bias, the more they report using maladaptive coping and the less they report using adaptive coping when dealing with weight stigma. Maladaptive coping is strongly associated with poorer psychological well-being. Thus, those who experience more frequent weight stigma may be more vulnerable to psychological distress because they appear to be at greater risk of employing maladaptive coping strategies.

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Introduction

People with overweight or obesity frequently face stigma and discrimination because of their weight. Weight stigma occurs in a range of settings, including employment and health care settings, and in interpersonal relationships (1); it also emanates from a range of sources, including friends, family, and strangers (2). Research has indicated that weight stigma experiences are common (3) and can be a daily experience for some people with overweight or obesity (2-4). Importantly, experiencing weight stigma is associated with a range of negative consequences, both psychological (body dissatisfaction, depression, low self-esteem) (5-8) and motivational and/or behavioral (physiological stress, unhealthy eating and exercise behaviors) (9-18). Moreover, weight-based discrimination is associated with an increased risk of developing obesity (19) and an increased risk of mortality over and above the effects of BMI and indicators of poor health (20).

Although weight stigma is associated with a range of negative outcomes, it is not the case that everyone responds to weight stigma experiences in the same way. Indeed, people with overweight or obesity report a variety of ways in which they attempt to cope with these stigmatizing experiences, and the strategies that people use to cope with weight stigma are likely to predict the outcomes that follow from these experiences (21). Myers and Rosen (21) devised the Coping Responses Inventory (CRI) to capture the different ways that people cope with weight stigma. This measure consists of 99 items across 21 subscales, including subscales that assess the frequency of responding to weight stigma by seeking social support, engaging in self-love, withdrawing, or engaging in negative self-talk. Although a wide range of coping responses was identified, less is known about which coping responses are “adaptive” (i.e., predict better psychological outcomes) or “maladaptive” (i.e., predict poorer psychological outcomes). Some studies have identified maladaptive CRI subscales (e.g., responding with negative self-talk, crying/isolating

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oneself, avoiding or leaving the weight stigma situation) but not subscales that could be categorized as adaptive (21,22). In contrast, one study identified two adaptive coping subscales of the CRI (seeking social support and engaging in positive self-talk) but found no evidence of maladaptive coping responses (23). Thus, it appears that different coping responses might be associated with positive and negative outcomes, but there is a lack of consistency about which particular coping responses can be considered maladaptive or adaptive.

Another important issue that has not been comprehensively addressed in previous research is what individual difference factors are associated with different coping responses. We first explored whether the frequency of experiencing weight stigma would be associated with different coping responses. Previous research has shown that weight stigma frequency is associated with more coping responses to weight stigma (21-23), but we were specifically interested in whether weight stigma frequency might be associated with maladaptive coping more strongly than with adaptive coping. Given that the frequency of weight stigma experiences is associated with more negative outcomes (1), it is possible that one of the mechanisms through which these more negative outcomes emerge is via a tendency to use maladaptive coping responses. This relationship between stigma frequency and maladaptive coping may be particularly likely when weight stigma frequency is operationalized as subjective perceptions of experiences with weight stigma (rather than objectively measured weight stigma experiences).

A second individual difference factor that might predict the likelihood of engaging in the different coping responses is internalized weight bias. Internalized weight bias refers to the extent to which people endorse weight-based stereotypes and beliefs as being true of the self, and it is associated with a range of negative outcomes, including eating disturbance, poor body image, and poor psychological and physical health (24-29). Internalized weight bias may also be associated with specific coping responses. Recent studies have found some evidence that people who are high (relative to people who are low) in internalized weight bias are more likely to cope with weight stigma by refusing to diet, overeating or engaging in disordered eating, and avoiding exercise or with negative emotions (30,31). The nature of the relationship between weight stigma, internalized weight bias, and coping is less clear; that is, does internalized weight bias act as a moderator or a mediator of the link between weight stigma and coping? Some studies have found that internalized weight bias moderates the relationship between weight stigma and behavioral outcomes (e.g., exercise avoidance (32), binge eating behavior (30)), such that the negative effects of stigma are stronger for individuals who are high in internalized weight bias. Other studies have found that weight bias internalization mediates the association between weight stigma experiences and psychological and behavioral outcomes (e.g., exercise behavior (33), psychological distress, disordered eating (14)).

The aim of the current research was to examine whether the frequency of weight stigma experiences and internalized weight bias predict two different coping responses (one adaptive and one maladaptive), and whether the coping response, in turn, predicts psychological distress. We first tested a structural path model in which weight stigma frequency predicted coping, and coping predicted depression, anxiety, and stress symptoms. We then explored whether internalized weight bias moderated or mediated the paths between

weight stigma frequency and the coping responses. The models were initially tested in Sample 1, and we sought to replicate the findings in Samples 2 through 4.

Methods

Participants

In all four samples, participants were recruited online via Amazon Mechanical Turk (Mturk) (Amazon Mechanical Turk, Inc., Seattle, Washington). All participants lived in the United States and responded to an advertisement that did not mention weight stigma but sought people who identify as having overweight or obesity to participate in a study about their life experiences. Participants were excluded if they failed any of the attention checks, did not report their height and weight, or had BMI < 25. Valid data were available for 455 participants in Sample 1 (55.6% women; 78.9% White; $M_{\text{age}} = 36.78$; $SD_{\text{age}} = 10.84$; $M_{\text{BMI}} = 36.44$; $SD_{\text{BMI}} = 7.55$), 463 participants in Sample 2 (54.2% women; 81.4% White; $M_{\text{age}} = 37.87$; $SD_{\text{age}} = 11.19$; $M_{\text{BMI}} = 36.41$; $SD_{\text{BMI}} = 7.25$), 236 participants in Sample 3 (59.3% women; 75.8% White; $M_{\text{age}} = 36.78$; $SD_{\text{age}} = 11.59$; $M_{\text{BMI}} = 35.73$; $SD_{\text{BMI}} = 7.29$), and 237 participants in Sample 4 (57.8% women; 78.9% White; $M_{\text{age}} = 35.70$; $SD_{\text{age}} = 10.77$; $M_{\text{BMI}} = 35.47$; $SD_{\text{BMI}} = 7.19$). Note that these samples were also included in a paper describing the development and validation of a brief measure of coping responses (34). That paper reported bivariate correlations among the variables only; no structural models were tested.

Measures

Weight stigma frequency. Participants completed the Brief Stigmatizing Situations Inventory (SSI) (35), a 10-item scale that assesses the frequency of a range of weight stigma experiences. Sample items include, “Being glared at or harassed by bus passengers for taking up ‘too much’ room” and “Having people assume you overeat or binge eat because you are overweight.” The response scale ranged from 0 = never to 9 = daily in Samples 1 to 3; in Sample 4, the response scale was modified to 0 = never, 1 = rarely, 2 = sometimes, 3 = often, and 4 = always ($\alpha > 0.89$).

Coping with weight stigma. Participants completed the Brief CRI (34), a measure of coping with negative situations related to weight. The disengagement coping subscale (reflecting a “maladaptive” coping response) contains five items and assesses negative self-talk, withdrawal, and avoidance responses to weight stigma (e.g., “I avoid looking in the mirror so that I don’t have to think about my weight;” $\alpha > 0.82$). The reappraisal coping subscale (reflecting an “adaptive” coping response) contains five items and measures positive self-talk, self-love, and cognitive reappraisal responses to weight stigma (e.g., “I try to think about good things that have happened to me;” $\alpha > 0.82$). These scales demonstrate good construct validity (correlating in the expected direction with outcomes such as body dissatisfaction and self-esteem) and concurrent validity (correlating with relevant subscales of more general measures of coping) (34). The response scales used were the same as those used for the Brief SSI.

Psychological distress. Participants completed the Depression, Anxiety, and Stress Scale (36) to assess the severity of depression, anxiety, and stress symptoms over the past week. Each subscale

contains seven items, for example, “I found it hard to wind down” (stress; $\alpha_s > 0.88$), “I experienced trembling (e.g., in the hands)” (anxiety; $\alpha_s > 0.86$), and “I felt that I had nothing to look forward to” (depression; $\alpha_s > 0.93$). Items are scored by using a response scale from 0 = did not apply to me at all over the past week to 3 = applied to me very much or most of the time over the past week.

Internalized weight bias. Participants completed the Weight Bias Internalization Scale (25), modified to be applicable to a person of any weight (37). The 11-item Weight Bias Internalization Scale is a measure of the extent to which one endorses negative weight-related beliefs as being personally relevant and includes items such as, “I am less attractive than most other people because of my weight” (1 = strongly disagree to 7 = strongly agree; $\alpha_s > 0.89$).

Procedure

Participants completed the questionnaires online. After providing informed consent, participants completed the Brief SSI, and then all other measures were presented in random order. Finally, participants reported their age, sex, ethnicity, height, and weight, and then read a debriefing statement. This research was approved by the University of New South Wales Human Research Ethics Advisory Panel (Behavioural Sciences).

Analytic strategy

In Sample 1, we first tested the hypothesized path model of weight stigma frequency predicting psychological distress through disengagement and reappraisal coping. We ran the model, refined it by removing nonsignificant paths, and then attempted to confirm the refined model in Samples 2 to 4. We then explored whether weight bias internalization acted as a moderator or a mediator of the relationship between weight stigma frequency and each of the coping responses. Again, this model was first tested in Sample 1, and then Samples 2 to 4 attempted to confirm the model. Finally, we tested an alternative causal model in which weight stigma frequency predicted coping, which predicted internalized weight bias, which, in turn, predicted psychological distress.

All path models were conducted in Amos (SPSS software; IBM Corp., Armonk, New York) (38). Indirect effects were tested by using a bootstrap estimation approach with 5,000 samples (39). All bias-corrected percentile bootstrap confidence intervals are reported at the 95% confidence level. Phantom variable models were conducted to obtain estimates and confidence intervals for specific indirect effects (i.e., the indirect effects of stigma on the outcomes through reappraisal coping, separately from the indirect effects of stigma on the outcomes through disengagement coping) (40). Note that the term “predict” refers to statistical prediction.

Results

Initial path model

We conducted a fully saturated path model in Sample 1 in which weight stigma frequency predicted both reappraisal coping and disengagement coping (the residuals of which were free to be correlated), and these coping responses, in turn, predicted depression, anxiety, and stress (the residuals of which were free to be

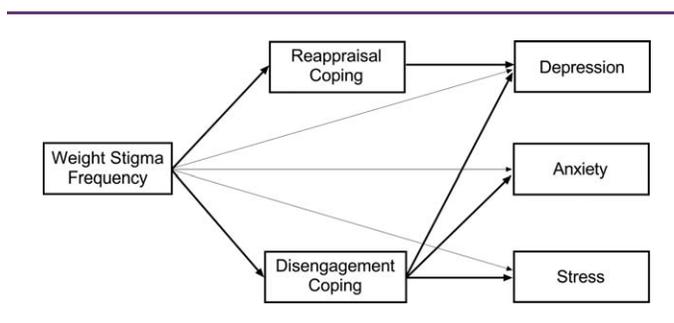


Figure 1 Refined model of weight stigma frequency predicting psychological distress through coping; Model 1. Thick arrows indicate primary paths of interest; thin arrows indicate additional paths that were free to be estimated.

correlated). Weight stigma frequency was also free to directly predict the outcomes separate to the indirect effects. All paths were significant except for the paths from reappraisal coping to anxiety and stress ($\beta_s > -0.06$; $P_s > 0.150$). The model was refined to remove these nonsignificant paths (Model 1; Figure 1). Table 1 reports the standardized coefficients of all direct paths in this refined model; Table 2 reports the unstandardized coefficients and confidence intervals for all relevant indirect effects. Weight stigma frequency predicted greater use of both disengagement coping and reappraisal coping. Weight stigma frequency predicted lower depression through the use of reappraisal coping and predicted greater depression, anxiety, and stress through the use of disengagement coping. Weight stigma frequency directly predicted all outcomes over and above the indirect effects.

Confirming the model. Model 1 was then tested in Samples 2 to 4 separately (see Table 1 and Table 2 for path coefficients). The model was largely confirmed across the three samples. Model fit indices were good in Samples 2 and 4 ($\chi^2 [2, n = 448 \text{ and } 237] < 1.25$; $P_s > 0.536$; CFI > 0.99 ; root mean square error of approximation [RMSEA] < 0.01). In Sample 3, modification indices (MI) revealed that model fit would improve by freeing the path from reappraisal coping to stress (MI = 7.83; $\beta = -0.12$; $P = 0.001$). The model fit the data well after freeing this path ($\chi^2 [1, n = 236] = 1.84$; $P = 0.175$; CFI = 0.99; RMSEA = 0.06). The only other inconsistency across samples was that the path from weight stigma frequency to reappraisal coping was significant and positive in Samples 1 and 2, was not significant in Sample 3, and was actually negative in Sample 4. Thus, there was a negative indirect effect of stigma frequency on depression through reappraisal coping in Samples 1 and 2, no indirect effect in Sample 3, and a positive indirect effect in Sample 4. In all four samples, however, weight stigma frequency indirectly predicted greater depression, anxiety, and stress through more frequent use of disengagement coping.

Comparing the strength of paths from stigma to coping. We also examined whether weight stigma frequency more strongly predicted one type of coping response over the other. We constrained the path from weight stigma frequency to disengagement coping to be equal to the path to reappraisal coping (after reverse-scoring the reappraisal coping variable in Sample 4 so that both paths were positive). Doing so significantly worsened model fit in all samples ($\Delta\chi^2 [1] > 19.21$; $P_s < 0.001$). These results indicate that weight stigma frequency more strongly predicted the use of disengagement coping

TABLE 1 Standardized coefficients of all direct paths in Samples 1 to 4

Model	Path	Sample 1, β	Sample 2, β	Sample 3, β	Sample 4, β
Model 1	Stigma → Reappraisal	0.15*	0.16*	0.01	-0.18**
	Stigma → Disengagement	0.46*	0.48*	0.50*	0.57*
	Reappraisal → Depression	-0.11*	-0.15*	-0.25*	-0.14*
	Reappraisal → Stress	-	-	-0.12**	-
	Disengagement → Depression	0.55*	0.54*	0.54*	0.58*
	Disengagement → Anxiety	0.31*	0.30*	0.39*	0.35*
	Disengagement → Stress	0.43*	0.41*	0.50*	0.46*
	Stigma → Depression	0.13**	0.18*	0.18*	0.07
	Stigma → Anxiety	0.33*	0.37*	0.36*	0.25*
	Stigma → Stress	0.16*	0.21*	0.20*	0.17**
Model 3	Stigma → Internalization	0.23*	0.27*	0.29*	0.42*
	Internalization → Reappraisal	-0.24*	-0.43*	-0.40*	-0.62*
	Internalization → Disengagement	0.62*	0.62*	0.58*	0.62*
	Stigma → Reappraisal	0.20*	0.27*	0.13***	0.08
	Stigma → Disengagement	0.31*	0.31*	0.32*	0.31*

Model 1 refers to refined model of weight stigma predicting psychological distress through coping (Figure 1, with addition of path from reappraisal coping to stress in Sample 3). Model 3 refers to mediation model with internalized weight bias (Figure 2) and reports only those paths that are additional to or different from Model 1.
 * $P < 0.001$.
 ** $P < 0.01$.
 *** $P < 0.05$.

(β s = 0.46-0.57) than it predicted the use of reappraisal coping (β s = 0.01 to |0.18|).

Internalized weight bias: moderator or mediator?

Internalization as a moderator. We first explored weight bias internalization as a moderator of the relationship between weight stigma frequency and coping in Sample 1. We tested a model in which weight stigma frequency, internalized weight bias, and the

interaction between the two predicted reappraisal coping and disengagement coping, which, in turn, predicted the psychological distress outcomes (Model 2). The interaction term did not significantly predict either of the two coping responses (β s < 0.02 ; P s > 0.702), providing no evidence for a moderated effect. This lack of moderation was largely replicated in Samples 2 to 4 (β s $< |0.05|$; P s > 0.432); we found only one significant interaction out of a possible six. Probing the significant interaction revealed that, in Study 4, stigma frequency more strongly predicted disengagement coping for

TABLE 2 Unstandardized coefficients and 95% confidence intervals (CI) of indirect effects from weight stigma frequency to psychological distress in Samples 1 to 4

Model	Indirect path	Sample 1, b (CI)	Sample 2, b (CI)	Sample 3, b (CI)	Sample 4, b (CI)
Model 1	Stigma → Reappraisal → Depression	-0.05 (-0.11, 0.02)	-0.08 (-0.14, -0.03)	-0.01 (-0.12, 0.09)	0.18 (0.03, 0.45)
	Stigma → Disengagement → Depression	0.84 (0.65, 1.04)	0.84 (0.66, 1.04)	0.86 (0.60, 1.16)	2.48 (1.90, 3.17)
	Stigma → Disengagement → Anxiety	0.36 (0.24, 0.50)	0.39 (0.25, 0.53)	0.53 (0.34, 0.76)	1.18 (0.75, 1.70)
	Stigma → Reappraisal → Stress	-	-	-0.01 (-0.06, 0.04)	-
	Stigma → Disengagement → Stress	0.55 (0.40, 0.72)	0.56 (0.40, 0.75)	0.74 (0.53, 0.99)	1.60 (1.07, 2.22)
Model 3	Stigma → Internalization → Disengagement → Anxiety	0.11 (0.07, 0.18)	0.13 (0.08, 0.21)	0.18 (0.10, 0.30)	0.54 (0.32, 0.84)
	Stigma → Internalization → Reappraisal → Depression	0.02 (0.01, 0.04)	0.05 (0.03, 0.09)	0.10 (0.05, 0.17)	0.27 (0.10, 0.51)
	Stigma → Internalization → Disengagement → Depression	0.26 (0.16, 0.39)	0.29 (0.20, 0.41)	0.30 (0.17, 0.46)	1.14 (0.77, 1.59)
	Stigma → Internalization → Reappraisal → Stress	-	-	0.03 (0.01, 0.07)	-
	Stigma → Internalization → Disengagement → Stress	0.17 (0.10, 0.26)	0.20 (0.12, 0.29)	0.21 (0.11, 0.35)	0.73 (0.46, 1.09)

Primary indirect effects from weight stigma frequency to psychological distress in Model 1 (through coping only) and Model 3 (through internalization and coping) are reported.

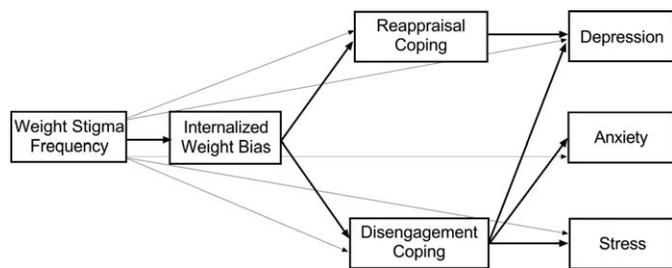


Figure 2 Mediation model of weight stigma frequency predicting psychological distress through weight bias internalization and coping; Model 3. Thick arrows indicate primary paths of interest; thin arrows indicate additional paths that were free to be estimated.

individuals who were high ($\beta = 0.40$; $P < 0.001$) relative to low ($\beta = 0.19$; $P = 0.002$; $\beta = 0.11$; $P = 0.007$) in internalized weight bias.

Internalization as a mediator. We next examined whether internalized weight bias mediated the association between weight stigma frequency and the different coping responses, which, in turn, predicted psychological distress (Model 3; Figure 2). Disengagement coping was free to predict depression, anxiety, and stress; reappraisal coping was free to predict depression (and stress in Sample 3). Weight stigma frequency was also allowed to directly predict both coping responses and all outcomes, but internalization was not free to directly predict the outcomes. The model fit the data well in Sample 1 ($\chi^2 [5, n = 455] = 7.12$; $P = 0.212$; CFI = 0.99; RMSEA = 0.03). Path coefficients are presented in Table 1, and serial indirect effects are reported in Table 2. There was an indirect path from weight stigma frequency to depression serially through heightened internalized weight bias and both less frequent reappraisal coping and more frequent disengagement coping. There were also indirect paths from weight stigma frequency to anxiety and stress serially through internalized weight bias and more frequent disengagement coping.

This mediation model was confirmed in Samples 2 through 4. The model fit the data well in Samples 2 and 4 ($\chi^2 [5, n = 237-448] < 5.34$; $P_s > 0.374$; CFIs = 0.99; RMSEAs < 0.02). In Sample 3, modification indices revealed that freeing the path from internalized weight bias to stress would improve model fit (MI = 4.37; $\beta = 0.15$; $P = 0.002$). The model fit well after freeing this path ($\chi^2 [3, n = 236] = 6.12$; $P = 0.106$; CFI > 0.99 ; RMSEA = 0.07). All serial indirect effects were significant in all samples (Table 2).

Note that in Samples 1 through 3, the path from internalized weight bias to disengagement coping (β s from 0.58 to 0.62) was significantly larger in magnitude than the path from internalized weight bias to reappraisal coping (β s from 0.24 to 0.43; $\Delta\chi^2 [1] > 5.74$; $P_s < 0.018$). In Sample 4, the two paths were of the same magnitude ($\beta = 0.62$; $\Delta\chi^2 [1] = 0.16$; $P = 0.688$).

Alternative model

Because our data are cross-sectional, alternative causal models are plausible. For example, it is possible that people's coping responses to weight stigma dictate the extent to which weight bias is

internalized. We therefore tested a model in which weight stigma frequency predicted coping, which, in turn, predicted internalization, and internalization, in turn, predicted psychological distress. Weight stigma frequency and disengagement coping were also allowed to directly predict all outcomes, and reappraisal coping was allowed to predict depression (and stress in Sample 3). In all samples, the model fit well ($\chi^2 [1-2, N = 236-455] < 2.15$; $P_s > 0.237$; CFIs = 1.00; RMSEAs < 0.05). However, in all samples, internalized weight bias did not significantly predict the outcomes (β s $< |0.09|$; $P_s > 0.118$), except for Sample 3, in which internalization predicted greater depression and stress (β s > 0.13 ; $P_s < 0.034$). Thus, the initially hypothesized model appears to provide a better account for the data.

Ancillary models

We reran the final models controlling for age, sex, and BMI, and the pattern remained unchanged. Furthermore, multigroup analyses exploring sex differences in the magnitude of the paths in the model showed no evidence of consistent sex differences across the four samples.

Discussion

The present research aimed to advance our understanding of the factors that predict how people cope with weight stigma experiences, and how different coping responses predict psychological well-being. Among people with overweight and obesity, frequently experiencing weight stigma was consistently associated with more frequent use of disengagement coping, and disengagement coping consistently predicted poorer psychological outcomes (greater depression, anxiety, and stress). The results for reappraisal coping were less robust. In some cases, weight stigma frequency was associated with more frequent reappraisal coping, and sometimes with less. Furthermore, reappraisal coping consistently predicted lower depression but did not consistently predict anxiety or stress. Experiencing weight stigma may be such a negative experience that reappraisal coping responses (at least as operationalized in our measure) can only do so much to mitigate its harmful effects.

We also explored the mechanism underlying the link between weight stigma frequency and the type of coping response employed. Frequently experiencing weight stigma was associated with greater internalized weight bias, and this, in turn, predicted the coping responses that people used in response to weight stigma experiences. Internalized weight bias predicted more frequent use of maladaptive coping responses (disengagement coping) and somewhat less frequent use of adaptive coping responses (reappraisal coping). These findings are consistent with previous studies that have identified internalized weight bias as a mediator between weight stigma frequency and a range of psychological and behavioral outcomes (14,33). Although weight bias internalization has been found to moderate the association between weight stigma frequency and motivational and/or behavioral outcomes in some studies (30,32), we did not find consistent evidence of moderation on coping. Overall, our findings suggest that one mechanism through which people who frequently experience weight stigma may be at risk for poor outcomes is the harm associated with the adoption of maladaptive coping strategies.

Limitations and future directions

Although we hypothesized and provided evidence for a model in which weight stigma frequency predicts internalized weight bias, which, in turn, predicts coping and psychological distress, the data are cross-sectional and, thus, we cannot make strong claims about the causal relationships among these variables. Note, however, that we found limited support for an alternative model in which weight stigma frequency predicted coping, coping predicted internalization, and internalization predicted distress. Thus, the hypothesized model appears to provide a better account of the data than the alternative model. Of course, additional models are possible, and the relationships among the variables may well be bidirectional. For example, experiencing frequent weight stigma may cause psychological distress through more maladaptive coping and, in turn, psychological distress may influence the extent to which an individual perceives weight stigma in the future or responds to it in maladaptive ways. Future research should use longitudinal or experimental methodologies to more clearly tease apart these causal pathways.

The current study identifies two different coping responses: one maladaptive and one adaptive. It is important to note, however, that our coping measure does not comprehensively examine all of the possible coping responses to weight stigma. The two subscales focus largely on cognitive coping responses and do not adequately assess behavioral responses to weight stigma. Further work is needed to identify how weight stigma frequency and weight bias internalization predict other types of coping responses and to investigate how these coping responses predict psychological well-being. It is also important to acknowledge that the list of predictor variables we tested is by no means exhaustive. There are likely to be numerous factors that predict how one will cope with weight stigma (e.g., the extent to which one has access to social support or is high in rejection sensitivity). Future research should expand upon the model tested here to explore additional predictors as well as additional outcomes (e.g., health behaviors) (7).

The limitations of online samples should also be acknowledged. Although participants recruited via MTurk have been shown to produce valid and reliable data, MTurk samples are not representative of the population (i.e., MTurk workers tend to be younger and more educated than the general population) (41). Future research should assess whether the current model generalizes to samples that are more diverse. We did have adequate samples of men and women in the current study, which allowed us to explore potential sex differences. Although previous research has identified that women and men report engaging in different coping responses to weight stigma (31), we did not find consistent sex differences in the associations among variables tested in our model. Thus, even if there are sex differences in response tendencies, the predictors and consequences of those tendencies may be similar for both women and men.

Implications

An important question that emerges from the current findings is: how might we reduce the likelihood that people will respond to weight stigma in maladaptive ways? The current model suggests a number of potential points of intervention. First, because weight bias internalization predicts people's coping responses, one way to reduce the impact of weight stigma might be to reduce internalized weight bias. Several recent studies have provided preliminary

support for interventions that aim to reduce weight bias internalization (42-44). Another approach would be to reduce the extent to which people rely on maladaptive coping responses when dealing with weight stigmatizing experiences and, instead, provide them with more adaptive coping strategies. Further research is needed to identify effective adaptive coping responses to weight stigma. Interventions could also take advantage of new technologies, such as ecological momentary interventions, in which people are sent in-the-moment messages (e.g., via an application on their phones) when it is most needed (e.g., when they have identified that a weight stigmatizing experience has just occurred) (45).

Conclusion

With four samples of more than 1,300 participants who identified as having overweight or obesity, frequently experiencing weight stigma was predictive of internalizing negative stereotypes about weight, and this internalization predicted how participants cope with weight stigma. The findings suggest that weight stigma predicts poor psychological well-being through a tendency to internalize the bias and engage in maladaptive coping in response to weight stigma. This raises the possibility of a harmful cycle whereby frequent weight stigma predicts the likelihood that people will cope with weight stigmatizing experiences in maladaptive, unhealthy ways, further perpetuating the link between weight stigma and poor psychological well-being. Reducing internalized weight bias and identifying ways for people to adaptively cope with weight stigma may help to counteract some of these harmful effects. **O**

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