Binge Eating is Not Associated with Elevated Eating, Weight, or Shape Concerns in the Absence of the Desire to Lose Weight in Men

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ABSTRACT
Objective: To investigate whether the desire to lose weight moderates the association between objective binge eating episodes (OBEs) and eating and body image-related psychopathology in men.

Method: Participants (N = 404) completed questionnaires assessing eating and body image psychopathology and were grouped based on the presence of OBEs and the desire to lose weight.

Results: The desire to lose weight was found to moderate the relationships between the presence of OBEs and restraint, eating concerns, shape concerns, and weight concerns but not the presence of fasting, purging, driven exercise, or body image dissatisfaction. In fact, men who experienced OBEs engaged in similar rates of purging regardless of whether they desired to lose weight.

Discussion: The results of this study suggest that disordered eating behaviors may be manifested differently in some men compared to what is typically observed in women, with over one-quarter of men who reported binge eating following this unusual pattern.

Keywords: binge eating; men; body image; exercise; compensatory behaviors

Introduction
Research on disordered eating behaviors in men has been underrepresented in the literature to date. This is likely largely due to the substantial gender difference in rates of eating disorders; however, certain eating disordered behaviors, such as binge eating, have been found to occur at similar rates among men and women. For example, recent studies found that 20.7% of women in a community sample 3 and 21.3% of a college sample 4 of women endorsed the presence of objectively large binge eating episodes (OBEs) over the previous 4 weeks. Comparatively, a recent study of college men found this rate to be 25.0%. 5

In contrast, gender differences have been found in rates of purging behavior with women reporting higher rates than men. 2 Recent research found that 4.8% of a community sample 4 and 8.8% of a college sample 4 of women endorsed engaging in self-induced vomiting over the previous 4 weeks, while 1.3 and 8.3%, respectively, reported using laxatives. Conversely, in a sample of college-age men, Lavender et al. 5 found that only 3.2% reported self-induced vomiting and 2.7% reported the use of laxatives.

Perhaps in part due to gender differences in rates of purging, bulimia nervosa is at least three times more prevalent in women than in men. 1,6 The use of inappropriate compensatory behaviors is often aimed at minimizing or eliminating the effects of eating large amounts of food on one’s body shape or weight, and differences in body image ideals may also play a role.

Women tend to desire to be thinner than they currently are, 7 while men tend to desire to be more muscular. 8 Thus, on average, women are more likely to desire to lose weight to achieve their ideal body whereas men are more likely to desire to gain weight, ultimately in the form of muscle mass, to achieve theirs. Consuming a large amount of food in a short period of time, as occurs during OBEs, represents a behavior with consequences that oppose the body ideal of most women while being more consistent with the ideal of many men. As a result, experiencing OBEs may impact men and women’s affective states differently and thus dem-
The purpose of this study was to test the hypothesis that binge eating would not be associated with elevated eating concerns, poor body image, and compensatory behaviors ostensibly aimed at weight-loss among men who do not desire to lose weight. It was hypothesized that this relationship would not be found for exercise-related behaviors, which may function both as compensatory behaviors and as potentially pathological muscle-gain behaviors. As a result, it is reasonable to expect it to be present in men who binge eat and wish to lose weight as well as men who wish to gain or maintain weight or muscle mass.

**Method**

**Participants**

Participants (N = 404) were undergraduate men participating for credit toward a course requirement in one of two studies on eating disorders and their correlates. Their mean (SD) age was 19.1 (2.0) years, and their mean (SD) body mass index was 25.0 (4.9) kg m−2. A total of 68.1% of participants identified themselves as Caucasian, 10.4% as African American, 7.9% as Asian American, 7.7% as Latino, 5.7% as other, and 0.2% were unknown. There were no significant differences in age, BMI, or ethnic breakdown between the two samples.

**Materials**

The Eating Disorder Examination-Questionnaire (EDE-Q9) is a 28-item self-report questionnaire that has four subscales including restraint, eating concerns, shape concerns, and weight concerns. It also assesses the frequency of binge eating, purging, fasting, and compulsive or driven exercise for weight or shape reasons. All questions are answered in reference to the previous 4 weeks. Cronbach’s alphas for the EDE-Q subscales were 0.79 for restraint, 0.81 for eating concern, 0.89 for shape concern, and 0.80 for weight concern in the present study, representing acceptable to good internal consistency.

The multidimensional body-self relations questionnaire appearance scale (MBSRQ10) is a 34-item self-report questionnaire that assesses body image disturbance using a five-point scale. Participants rate how much they agree with statements about their appearance from “definitely disagree” to “definitely agree.” Included with this measure is the nine-item body area satisfaction scale (BASS10) that assesses satisfaction with specific body areas on a five-point scale ranging from “very dissatisfied” to “very satisfied.” Cronbach’s alpha for the MBSRQ appearance evaluation scale was 0.87, for the overweight preoccupation scale it was 0.72, and for the BASS it was 0.81 in the present study, representing acceptable to good internal consistency.

The drive for muscularity scale (DMS11) is a 15-item self-report questionnaire that assesses body image as it relates to muscularity, the desire to become more muscular, and the presence of muscle-gain behaviors using a six-point scale from “Always” to “Never.” Cronbach’s alphas were 0.86 for the DMS muscle-development behaviors subscale and 0.90 for the muscularity-oriented attitudes subscale, representing good internal consistency.

**Design and Procedure**

Participants completed self-report questionnaires including the EDE-Q, MBSRQ, DMS, and a demographics questionnaire. Participants in one study also completed questionnaires about exercise and coping, while participants in the other study completed questionnaires regarding emotion regulation. Both studies were approved by the authors’ institutional review board.

**Data Analyses**

Three multivariate analyses of variance (MANOVAs) were conducted to test whether the desire to lose weight moderated the relationship between the presence of OBEs and eating and body image variables as measured by the EDE-Q, MBSRQ, and DMS. The number of OBEs over the previous 4 weeks was coded as present or absent due to its extreme positive skew. An item from the EDE-Q regarding how many days over the preceding 4 weeks individuals had a strong desire to lose weight was also dichotomously coded, with 0 days coded as the desire being absent and ≥1 day as the desire being present, because the presence of a strong desire to lose weight on even 1 day may have changed one’s interpretation of binge eating episodes from being neutral events to threatening events in regards to the achievement of his body image goals. In addition, three logistic regression analyses were conducted to test whether the desire to lose weight moderated the relationship between the presence of binge eating and the presence of inappropriate compensatory or muscle-gain behaviors. Statistical significance was set at p < .05.

**Results**

A total of 25% of men reported the presence of OBEs over the previous 4 weeks. Of these 103 men, 27 (26%) reported the presence of OBEs in the absence of a desire to lose weight. Of the 301 men who did not report OBEs, 135 (45%) reported a desire to lose weight. Men reporting the presence of OBEs did not differ from men who did not report...
OBEs in mean body mass index (26.0 versus 24.7 kg m\(^{-2}\), respectively; \(t(133.2) = 1.92, p = .06\)) or age (19.0 vs. 19.1 years, respectively; \(t(402) = 0.73, p = .47\)). Men who desired to lose weight reported a significantly higher mean body mass index compared to men who did not desire to lose weight (26.9 versus 23.0 kg/m\(^2\), respectively; \(t(326.7) = 9.16, p < .05\)); however, these men did not differ in age (19.0 vs. 19.1 years, respectively; \(t(402) = 0.78, p = .44\)).

The hypothesis that the desire to lose weight would moderate the association between the presence of OBEs and eating, weight, and shape concerns was supported. The first MANOVA included EDE-Q Restrain, Eating Concerns, Weight Concerns, and Shape Concerns and indicated that the desire to lose weight significantly moderated the relationship between the presence of OBEs and these variables (Table 1; \(F(4, 397) = 4.11, p < .05; \eta_{p}^2 = .04\)). Individuals who experienced OBEs and desired to lose weight demonstrated the highest restraint and eating, weight, and shape concerns as measured by the EDE-Q. Conversely, in the second MANOVA, no moderation was present for the muscle-development behaviors and muscularity-oriented body image attitudes subscales of the DMS (\(F(2, 399) = 0.28, p = .76; \eta_{p}^2 = .00\)). There was, however, a main effect of the presence of OBEs on these variables (\(F(2, 399) = 3.38, p < .05; \eta_{p}^2 = .02\)). This difference was due to men who reported the presence of OBEs reporting engaging in more muscle-development behaviors than men who did not report OBEs.

In the third MANOVA, including the appearance evaluation, overweight preoccupation, and BASS scales of the MBSRQ, there also was no moderation present (\(F(3, 397) = 1.57, p = .20; \eta_{p}^2 = 0.01\)). There were, however, main effects of both the presence of OBEs (\(F(3, 397) = 7.88, p < .05; \eta_{p}^2 = 0.06\)) and the presence of a desire to lose weight (\(F(3, 397) = 36.02, p < .05; \eta_{p}^2 = 0.21\)), suggesting that men who reported OBEs were less satisfied with their appearance and more preoccupied with being overweight than men who did not report OBEs, and men who reported a desire to lose weight were less satisfied with their appearance and more preoccupied with being overweight than men who did not report a desire to lose weight.

Finally, as hypothesized, the results of the logistic regression analyses indicated that there was no moderation of the presence of driven exercise, but contrary to the hypothesis, there was also no moderation of the presence of purging or fasting (Table 1). A main effect of the presence of OBEs on the presence of purging indicates that rates of purging were higher in men who reported OBEs than men who did not, but there was no main effect of the desire to lose weight. For fasting and driven exercise, there were main effects of both the presence of OBEs and the presence of a desire to lose weight. In both cases, the presence of these variables was related to significantly higher rates of fasting and

<table>
<thead>
<tr>
<th>Behaviors</th>
<th>No Desire to Lose Weight (n = 166)</th>
<th>Desire to Lose Weight (n = 133)</th>
<th>No Desire to Lose Weight (n = 27)</th>
<th>Desire to Lose Weight (n = 76)</th>
<th>OBEs (F(1, 400))</th>
<th>Desire to Lose Weight (F(1, 400))</th>
<th>Interaction (F(1, 400))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purging</td>
<td>1 (0.6%)</td>
<td>5 (3.7%)</td>
<td>5 (18.5%)</td>
<td>11 (14.5%)</td>
<td>12.85*</td>
<td>96.83*</td>
<td>4.78*</td>
</tr>
<tr>
<td>Fasting</td>
<td>10 (6.0%)</td>
<td>41 (30.4%)</td>
<td>8 (29.6%)</td>
<td>38 (50.0%)</td>
<td>3.88*</td>
<td>4.02*</td>
<td>0.77*</td>
</tr>
<tr>
<td>Driven exercise</td>
<td>18 (10.8%)</td>
<td>51 (37.8%)</td>
<td>9 (33.3%)</td>
<td>50 (65.8%)</td>
<td>3.61*</td>
<td>4.38*</td>
<td>0.94*</td>
</tr>
</tbody>
</table>

* \(p < .05\); OBEs = objective binge episodes; EDE-Q = eating disorders examination-questionnaire; DMS = drive for muscularity scale; MBSRQ = multidimensional body-self relations questionnaire; BASS = body areas satisfaction scale; OR = odds ratio; 95% CI = 95% confidence intervals.
Discussion

The results partially supported the hypothesis that the desire to lose weight would moderate the relationship between the presence of OBEs and eating and body image concerns and inappropriate compensatory behaviors aimed at weight-loss. Significant moderation in the expected direction was found on all four EDE-Q subscales. Additionally, no moderation was found for the presence of driven exercise or for muscle-development behaviors; however, there was a main effect of the presence of OBEs for both muscle-development behaviors and driven exercise. Regardless of whether men desired to lose weight, experiencing OBEs was related to engaging in more exercise-related behavior. For some of these men, exercise may have been aimed at counteracting the effects of OBEs via caloric expenditure. For others, it may have been aimed at maximizing the calories ingested from OBEs through muscle-gain behaviors, and for others, exercise may not have been related to attempts to lose or influence weight but rather been used as a method of altering body shape (e.g., muscle tone and definition).

Curiously, and counter to the study hypothesis, very similar rates of purging and fasting were found in men who reported OBEs regardless of whether or not they also reported a desire to lose weight. These methods of inappropriate compensatory behavior are ostensibly aimed at weight-loss, or at least the prevention of weight gain. Thus, it is not immediately clear why men who did not desire to lose weight, and in fact, reported significantly higher rates of muscle-development behaviors compared to men who did not experience OBEs, would engage in purging or fasting at comparable rates to men who experienced OBEs and desired to lose weight.

This unexpected finding may have resulted from at least four factors. First, it may have been due to an item used to separate groups that assessed whether individuals had a “strong desire” to lose weight. Men who experienced mild or moderate desires to lose weight or only desired to maintain weight may not have endorsed this item, but they may still have been more likely to engage in a compensatory behavior than men who actually desired to gain weight. Alternatively, binge eating may predispose men to engage in purging behavior as a result of distress from the perceived loss of control that accompanies these eating episodes and/or from violating diets aimed at “eating clean” (e.g., eating less processed foods, more organic foods, and more low carbohydrate foods) regardless of whether they desire to lose weight. Third, men may have been uncomfortable reporting concerns regarding their eating and body image even though they engaged in disordered behaviors that threatened their body image. In other words, they may have felt comfortable reporting honestly about the presence or absence of objective behavioral phenomena but uncomfortable reporting honestly about their subjective cognitive and affective experience. Finally, binge eating and inappropriate compensatory behaviors may serve a function in a subset of men that is not related to concerns about their shape and weight or that is not related to shape and weight concerns as is measured by the EDE-Q. Importantly, the EDE-Q may not be sensitive to the body image concerns of all men who experience OBEs.

Limitations include the use of a convenience sample of undergraduate men, most of whom did not report significant levels of eating pathology, and the use of a single item to distinguish men who desired to lose weight from those who did not. Future research should attempt to replicate the results of this study in independent samples and through the use of more varied assessment measures that specifically address the body image concerns of men while generating hypotheses about the presentation and function of disordered eating behaviors in men. Future research should also investigate whether items on the EDE-Q function differentially for men compared to women. The results of this research may improve the understanding of disordered eating behavior in men and help elucidate the mechanisms underlying documented gender differences in the rates of disordered eating behaviors and eating disorder syndromes.

References