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Significance of Overvaluation of Shape/Weight in Binge Eating Disorder: Comparative Study with Overweight and Bulimia Nervosa

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Abstract

Increasing empirical evidence supports the validity of binge eating disorder (BED) and its inclusion as a formal diagnosis in the *DSM-V*. Contention exists regarding the criteria for BED, including whether, like bulimia nervosa (BN), it should be characterized by overvaluation of shape/weight. This study examined the significance of overvaluation for BED using two complementary comparisons groups. Participants were 324 women who completed self-report instruments as part of an internet study. Analyses compared BMI, eating disorder (ED) features, and depressive levels in four groups: 123 overweight participants without ED, 47 BED participants who do not overvalue shape/weight, 101 BED participants who overvalue shape/weight, and 53 BN participants. Both BED groups had significantly greater ED psychopathology than the overweight group. Within BED, the group with overvaluation had significantly greater ED psychopathology and depressive levels despite no differences in binge eating. BED with overvaluation and BN groups differed little from each other but had significantly higher ED psychopathology and depressive levels than the other groups. Group differences existed despite similar age and BMI across the groups, as well as when controlling for group differences in depression levels. These findings provide further support for the validity of BED and suggest that overvaluation of shape/weight, which provides important information about BED severity, warrants consideration as either a diagnostic specifier or as a dimensional severity rating. Although inclusion of overvaluation of shape/weight could be considered as a required criterion for BED, this would exclude a substantial proportion of BED patients with clinically significant problems.

Keywords

shape and weight concerns; binge eating disorder; bulimia nervosa; obesity; body image; diagnosis

Introduction

Binge eating disorder (BED), a research category in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*) (1), is defined by recurrent binge eating without inappropriate weight-control behaviors that characterize bulimia nervosa (BN). BED is more prevalent than the two formal eating disorder (ED) diagnoses (BN and anorexia nervosa (AN)) combined (2). Patients with BED differ from obese patients without BED and from other

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disordered eating groups (3). Striegel-Moore and Franko (4) concluded, based on a critical review of the literature, sufficient empirical evidence exists to support the inclusion of BED as a distinct and formal eating disorder (ED) in the *DSM-V*.

The *DSM-IV* diagnoses of BN and AN, but not for BED, include required criteria reflecting significant body image disturbance. In the case of BN, *DSM-IV* requires the presence of overvaluation of shape/weight, or the “undue influence of body weight or shape on self-evaluation” (1). Persons characterized by overvaluation define their self-worth primarily by their judgments about their body shape/weight. Overvaluation is related to but distinct from the more general concept of body dissatisfaction (5). Only a portion of the many who are dissatisfied with their appearance define their self-worth primarily on the basis of their shape/weight.

The few available data suggest that, overall, patients with BED have elevated shape/weight concerns (6,7) and, in particular, overvaluation (7) that are similar to patients with BN. Within BED, overvaluation of shape and weight appears to have clinical significance. Overvaluation levels, assessed with the Eating Disorder Examination (EDE) (8), were associated significantly with ED psychopathology and psychological functioning in a study of 399 treatment-seeking patients with BED (9). Hrabosky et al. (9) also found that BED patients who overvalue shape/weight (i.e., shape/weight very high on the list of things that influence their self-evaluation) had significantly greater ED and psychological disturbances than those who do not overvalue their shape/weight. More recently, Masheb and Grilo (10) reported that overvaluation of shape/weight significantly predicted outcomes in a controlled treatment study for BED.

The above findings indicate that overvaluation of shape/weight is an important clinical feature in BED. As we move toward the *DSM-V* (11,12) questions remain whether revisions to BED criteria would improve the diagnosis (6). An important question is whether this body-image-related cognitive feature should be a required criterion for the diagnosis or alternatively used as a dimensional severity rating or as a diagnostic specifier or modifier (11).

Mond, Hay, Rodgers, and Owen (13), in a community-based study using the self-report EDE Questionnaire (EDE-Q) (14), found that participants with BED with overvaluation had greater ED psychopathology than participants with BED without overvaluation. However, BED participants without overvaluation did not differ significantly from obese participants who did not binge eat. Thus, Mond et al. (13) suggested that overvaluation be considered as a required criterion for BED. Grilo and colleagues (15), in a clinically-based study of 210 overweight patients using the EDE interview, found that participants with BED with overvaluation had significantly greater ED severity and depression levels than BED participants who do not overvalue their shape/weight. Both BED groups (i.e., with and without overvaluation) had significantly greater ED psychopathology and depression than the overweight non-binge-eating comparison group. Grilo et al. (15) concluded that these findings suggest the importance of shape/weight overvaluation as a diagnostic modifier and, in contrast to Mond et al. (13), that overvaluation should not be a required criterion for BED because this would exclude a substantial proportion of patients with clinically significant problems.

The discrepancy between the Mond et al (13) and Grilo et al (15) studies could be due to several factors. First, Mond et al. (13) used the self-report EDE-Q whereas Grilo et al. (15) used the EDE to determine diagnoses and to assess the degree of overvaluation. Studies have found that scale scores tapping cognitive features are significantly higher when the self-report version is used versus the interview version of the EDE (16,17). Second, the Mond et al. (13) study was community-based whereas the Grilo et al. (15) was clinic-based; since treatment-seeking is associated with greater distress and clinic-biases (18,19), this may account for some of the discrepancy. Lastly, the limited sample sizes for the BED comparison groups in the Mond et

al. (13) may have limited power to detect significant findings compared with the overweight group.

The present study aims to examine further the significance of overvaluation of shape/weight for BED by comparing participants with BED who overvalue their shape/weight, participants with BED who do not overvalue their shape/weight, overweight participants without EDs, and participants with BN. We used the internet to recruit participants for an on-line survey rather than a treatment-seeking or clinic-based sample. Participants with BN, a formal ED category that requires overvaluation of shape/weight for diagnosis, were included to provide an additional important comparison not used in the earlier studies.

Methods and Procedures

Participants

Participants were 324 female community volunteers who responded to online advertisements requesting participation in a research study on eating and dieting. These women were identified from a larger sample of 937 women based on the criteria (described below) used to create four study groups¹. Advertisements were placed on Craigslist internet classified ads and on Google banners, and contained a link to an external website with questionnaires. An attempt was made to sample from a variety of geographic regions by advertising on Craigslist in different cities throughout the United States. The advertisement appeared as a Google banner when users entered the following keywords: “weight gain; body image; binge eating; compulsive eating; obesity; obesity epidemic; obesity test; obesity studies; obesity quiz; weight questionnaire; weight quiz; weight studies; eating test; eating questionnaire.”

Overall, the mean age was 35.8 (SD = 10.8) and the mean body mass index (BMI) was 34.2 kg/m² (SD=9.1). The racial/ethnic distribution for the total study group was: 77.8% (n=252) Caucasian, 8.0% (n=26) Hispanic American, 4.9% (n=16) African American, 4.3% (n=14) Asian American, and 4.9% (n=16) reporting “other” or had missing racial/ethnic data.

Assessment and Measures

Participants completed the self-report questionnaires through the online data gathering website SurveyMonkey (<http://www.surveymonkey.com>). Survey Monkey is a research-based web server with secure 128-bit data encryption. Participants were required to affirm willingness to participate and to provide informed consent, prior to accessing the questionnaires. No personal identifying information was collected. These procedures and the study received IRB (Human Subjects Protection) review and approval.

Participants provided basic demographic information, including self-reported height and current weight, and completed a battery of self-report measures.

Eating Disorder Examination Questionnaire (EDE-Q) (14) the self-report version of the Eating Disorder Examination (EDE) (8), assesses EDs and their features. The EDE-Q focuses on the previous 28 days and assesses the frequency of objective bulimic episodes (OBEs; eating unusually large amounts of food while experiencing a subjective sense of loss of control, which corresponds to *DSM-IV* definition of binge eating), subjective bulimic episodes (SBEs; eating

¹Of the 937 women who responded to the survey, 837 completed the EDE-Q. The overweight group with N=123 participants was created as follows: 455 women reported no OBEs, of which 351 met BMI (≥ 25) criteria, of which 307 denied purging behaviors, of which 197 denied SBEs, of which 123 also denied overvaluation of shape/weight. The BED and the BN study groups were created from 237 women who reported at least weekly OBEs (145 women who reported irregular binge eating were excluded) in combination with the additional requirements of weekly purging and overvaluation for BN (not met by 36 women) to yield (N=53 participants with BN) or with the requirement of no purging to yield BED (N=148).

small quantities of food while experiencing a subjective sense of loss of control), as well as various purging behaviors (self-induced vomiting, laxative misuse, diuretic misuse). The EDE-Q also comprises four subscales: dietary restraint, eating concerns, weight concerns, and shape concerns. The EDE-Q has received psychometric support, including adequate test-retest reliability (20) and good convergence with the EDE in studies with diverse disordered-eating groups (16,17,21) and has especially good reliability for assessing purging behaviors (22). In the present study, the subscales of the EDE-Q showed good internal consistency (Restraint $\alpha = .80$; Eating Concerns $\alpha = .88$; Shape Concerns $\alpha = .88$; Weight Concerns $\alpha = .77$).

The Three Factor Eating Questionnaire (TFEQ) (23) is a widely used self-report measure of eating behavior with three factors: cognitive restraint, disinhibition of control over eating, and perceived hunger. The TFEQ has received some psychometric support (23,24), although recent research found that TFEQ restraint scores (like other restraint measures) are not correlated with objective measures of actual caloric intake (25). In the present study, the TFEQ subscales showed adequate internal consistency (Restraint $\alpha = .81$; Disinhibition $\alpha = .80$; Hunger $\alpha = .84$).

The Beck Depression Inventory (BDI) (26), 21-item version, assesses current depression level and symptoms of depression. It is a widely used and well-established measure with excellent reliability and validity (27). Higher scores reflect higher levels of depression and, more broadly, negative affect and are an efficient marker for broad psychopathology (28). In the present study, the BDI showed excellent internal consistency ($\alpha = .91$).

Creation of Study Groups

Four study groups were created: overweight participants ($\text{BMI} \geq 25$) without ED psychopathology, participants with BED who overvalue their shape/weight, participants with BED who do not overvalue their shape/weight, and participants with BN. The overweight comparison group was created based on the absence of ED psychopathology operationalized as no binge eating (OBEs or SBEs), no purging (vomiting, laxative use, or diuretic use), and without clinical levels of overvaluation of shape/weight (defined here as five or greater on a scale of 0 to 6 on the EDE-Q items as described below). The BED and BN groups were created using modified frequency criteria of a minimum of once weekly for the key behavioral features based on the EDE-Q for the past 28 days. Thus, BED required a minimum frequency once-weekly OBEs without purging or extreme weight control methods and BN required a minimum frequency of once-weekly OBEs and once-weekly purging behaviors during the past 28 days. This approach was used because research has consistently supported broadening the required frequency criterion from twice-weekly to once-weekly for both BED (29-31) and BN (32-34)².

Overvaluation of shape/weight was measured using two specific items from the EDE-Q: "Over the past four weeks, has your *shape* influenced how you feel about (judge, think, evaluate) yourself as a person?" and "Over the past 4 weeks has your *weight* influenced how you feel about (judge, think, evaluate) yourself as a person?" The two overvaluation items are rated on a 7-point forced-choice scale anchored with 0 (No importance) to 6 (Supreme importance: nothing is more important in the subject's scheme for self-evaluation) in reference to each of the past three months. A composite *shape/weight overvaluation* value was created based on mean scores of these two items for the past four weeks consistent with prior studies with BED

²A parallel series of exploratory analyses was performed on the subset of study groups defined using twice-weekly binge (BED) and twice-weekly binge and purge (BN) criteria (determined similarly using the EDE-Q) for the longer duration stipulations for both BN (3 months) and BED (6 months) (determined using the Questionnaire on Eating and Weight Patterns (42)). Despite substantially reduced Ns and decreased power, these exploratory analyses revealed a similar patterning of group differences as those reported here for the broader-defined study groups.

(13,15) and BN (35). Although Fairburn and Cooper's (8) suggested clinical cut-off score of 4 (i.e., moderate importance) on the EDE to characterize participants who clinically overvalue their shape/weight, since we used the EDE-Q – which yields higher scores than the EDE on these questions (16,17,36), we used a cut-off score of 5. Thus, the *overvaluation* group included participants who reported that their shape and/or weight are high on the list of things that influence their self-evaluation (i.e., score ≥ 5 on either overvaluation item). The BED group who do not overvalue their shape/weight included participants with scores < 5 on both overvaluation items.

Statistical Analysis

General linear model (GLM) analysis of variance (ANOVA) was used to compare the four groups on the clinical measures. In addition to statistical significance testing, partial η^2 , an effect size (ES) measure, was calculated; these values represent the proportion of variation in the criterion measure accounted for by group membership. When ANOVAs revealed significant overall group differences, Scheffe post-hoc tests were performed to determine which specific groups differed. A parallel series of ANCOVAs was performed controlling for BDI scores for all of the study measures. These ANCOVAs were planned given findings that higher levels of depressive/negative affect may signal a more disturbed subtype of eating disturbance across diverse groups, including BED (28), BN (37), and non-clinical samples (38). When the ANCOVAs revealed significant overall group differences, for post-hoc tests, Bonferroni correction was performed on the BDI-adjusted contrasts.

Results

Of the 324 participants, 123 were categorized as overweight (BMI ≥ 25) without ED psychopathology, 148 with BED – of which 47 (32%) were subcategorized as BED without overvaluation and 101 (68%) subcategorized as BED with overvaluation, and 53 with BN. ANOVAs revealed that the four groups differed significantly on overvaluation of shape/weight dimensional scores (see Table 1) as expected based on the method for creating the four study groups. Scheffe post-hoc tests revealed that the overweight comparison group had significantly lower overvaluation of shape/weight scores than the BED without overvaluation group, which in turn had significantly lower overvaluation than the BED with overvaluation and the BN groups, which did not differ significantly from each other. Chi-square tests of independence revealed that the four groups did not differ significantly in ethnicity (White vs. non-White) (χ^2 ($df = 3$, $N = 324$) = 6.06, $p = .11$). ANOVA revealed that the four groups did not differ significantly in age (F (3,320) = 2.31, $p = .08$, $\eta^2 = 0.02$).

Table 1 summarizes descriptive statistics and statistical analyses comparing the four groups on the clinical measures. The four groups did not differ significantly in BMI. The four groups differed significantly in the frequency of OBEs. Scheffe post-hoc tests revealed that the overweight comparison group (per the method for creating the study groups) reported significantly fewer OBEs than the three other groups; in addition, the two BED groups did not differ significantly from one another but both BED groups reported significantly fewer OBEs than the BN group. The four groups differed significantly on all four EDEQ subscales and the three TFEQ subscales. Scheffe post-hoc tests revealed a number of significant specific differences as follows. On the EDE-Q restraint scale, the two BED groups did not differ from each other but had significant lower scores than the BN group while the overweight group had lower scores than the BED with overvaluation and the BN groups. On the EDE-Q eating concern scale, a significant graded pattern was observed with the overweight group having lower scores than the BED group without overvaluation which had lower scores than the BED group with overvaluation which had lower scores than the BN group. On the EDE-Q shape concern scale, the overweight group reported lower shape concerns than the BED without

overvaluation group, which in turn reported lower scores than the BED group with overvaluation and BN groups; the BED with overvaluation group and BN groups did not differ from one another. On the weight concern scale, the overweight and BED without overvaluation groups did not differ significantly from each other, but reported lower weight concerns than the BED group with overvaluation and the BN group which, in turn, did not significantly differ from each other. On the TFEQ, overall group differences were small on the restraint scale but large on the disinhibition and hunger scales. Scheffe posthoc tests on the disinhibition and the hunger scales revealed the overweight group had lower scores than the three other groups, the two BED groups did not differ significantly, and the BED group with overvaluation and BN groups did not differ significantly.

Table 1 also summarizes findings from the ANCOVAs controlling for BDI scores. ANCOVAs revealed significant overall group differences on all of the clinical variables and the effect sizes were mostly medium to large, except for BMI and TFEQ restraint. Moreover, the partial η^2 values for the specific ANCOVAs were not substantially reduced for most variables relative to the partial η^2 values for the ANOVAs. Bonferroni correction on the BDI-adjusted contrasts revealed an overall similar pattern to the Scheffe post-hoc (ANOVA) comparisons.

Discussion

This study yielded two primary findings. First, the results provide further support for the distinctiveness of overweight persons who binge eat versus overweight persons who do not binge eat. Persons with BED, regardless of whether they overvalued their shape/weight, had significantly greater ED psychopathology than the overweight group. These findings add to the increasing evidence base supporting the validity of BED (4) and for broadening of the required frequency of binge eating from twice to once-weekly (12,39). Second, the findings provide further support for overvaluation of shape/weight as an important distinguishing clinical feature within BED (9). Overvaluation of shape/weight provides important information about the severity of BED above and beyond patients' depressive levels, and therefore warrants consideration as either a diagnostic specifier or as a dimensional severity rating (see 11). Although inclusion of overvaluation of shape/weight could be considered as a required criterion for BED (13), our findings here converge with those reported by Grilo and colleagues (15) that this would exclude a substantial proportion of BED patients with clinically significant problems.

Overvaluation of shape/weight provides important information about severity in patients with BED. Within BED, overvaluation signals the presence of significantly greater ED psychopathology and greater depressive/negative affect. BED participants who overvalue their shape/weight have significantly greater psychopathology than BED participants who do not overvalue their shape/weight despite not differing in either BMI or binge eating frequency. Moreover, BED patients with overvaluation differed little from patients with BN in some areas of ED psychopathology, depressive/negative affect, and some eating behaviors (disinhibition and hunger) although patients with BN had significantly greater binge eating frequency and maladaptive levels of restraint. Controlling for depressive/negative affect (BDI), a well-established marker for greater severity in both BED (28) and BN (37), did not alter the patterning of group differences. Moreover, the effect sizes for the group differences when controlling for BDI scores (ANCOVAs) were not substantially reduced for most variables relative to the effect sizes for the ANOVAs. These findings suggest that overvaluation contributes important information about BED above and beyond participants' depressive/negative affect levels.

Our overall findings, based on self-report findings from a large series of volunteers who participated in an anonymous internet-based study, converge with previous community-based

(13) and clinic-based (15) studies in suggesting the clinical importance of overvaluation of shape/weight in persons with BED. More specifically, however, these findings are consistent with those reported by Grilo et al. (15) - based on investigator-based interview methods with treatment-seekers - that overvaluation warrants consideration as a diagnostic specifier or modifier but that it should not be required since this would eliminate many clinically significant cases. These findings are at odds with those of Mond et al (13) who suggested that overvaluation be considered as a diagnostic requirement. We found that BED patients who do not overvalue their shape/weight are still characterized by greater psychopathology than an overweight comparison group. Thus, requiring overvaluation for the BED diagnosis would result in many persons with clinically significant behavioral and psychological features of ED not receiving a BED diagnosis and, in turn, increase further the already overly-broad EDNOS category (12,39).

Wilfley et al. (12) noted the advantages of considering dimensional severity ratings in addition to the categorical *DSM* system. The degree of overvaluation conveys important individual differences not just in the disorder severity but in a clinically significant cognitive feature. This cognitive feature receives particular attention in cognitive-behavioral therapy, which has demonstrated specific efficacy (40) and is considered the best-established available treatment (41). This cognitive feature could guide clinicians in planning clinical interventions (e.g., cognitive re-structuring methods in cognitive behavioral treatments) targeting shape/weight overvaluation. This seems indicated in light of initial findings that pretreatment levels of overvaluation of shape/weight significantly predict treatment outcomes (10).

Our study has a number of strengths and limitations that should be considered when interpreting the findings. One limitation is our reliance on self-report which may be unreliable or biased. Our self-report measure (i.e., the EDE-Q) used to classify participants has shown acceptable test-retest reliability and convergence with the EDE interview in studies with diverse patient and community studies of EDs. Nonetheless, our study groups were created based on self-report, rather than clinician-derived diagnoses, and our algorithms did not require full diagnostic or duration criteria. In light of the tendency for higher ratings of cognitive features on the EDE-Q relative to the EDE interview, we conservatively utilized a more stringent score on the relevant overvaluation items to create the BED overvaluation groups. We note that our study groups are essentially a sample of convenience based on self-selected persons who volunteered for a study administered over the internet. Although the internet is increasingly used by many people for a variety of health-related issues, its use is greatest among persons aged less than 65, women, and those with higher education levels (43). Thus, generalizability of our findings based on internet sampling must be considered within this context. Moreover, generalizability of our findings to epidemiological or to clinical samples is uncertain. Nonetheless, our findings have value in that they can be considered alongside the emerging literature based primarily on treatment-seeking clinical samples that, in turn, are also potentially confounded by several factors (18). We also note the higher BMI than expected in the BN participants, who are most frequently not overweight in clinic-based studies. We speculate that the higher than expected BMI in the BN group might be partly explained by recent increases in the prevalence of comorbid obesity and ED behaviors in the population and that the increases for comorbid ED/obesity have been greater than for either ED or obesity alone (44). Moreover, recent epidemiologic research indicates an increased risk of both BN and EDNOS in overweight and obese groups (45). In terms of strengths, this study is the first to examine these diagnostic issues relevant for BED using two different relevant and complementary comparison groups - overweight persons without eating disorders and persons with BN.

With this context in mind, to summarize, these findings based on respondents to an internet-based study, provide further support for the validity of BED and for broadening of the required

frequency of binge eating from twice to once-weekly. These findings suggest that overvaluation of shape/weight, which provides important information about BED severity, warrants consideration as either a diagnostic specifier or as a dimensional severity rating. Although inclusion of overvaluation of shape/weight could be considered as a required criterion for BED, this would exclude a substantial proportion of BED patients with clinically significant problems.

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Comparison of Overweight (n=123), BED without Overvaluation (n=47), BED with Overvaluation (n=101), and BN (n=53), and BN Groups

Table 1

	Overweight		BED without Overvaluation		BED with overvaluation		BN		ANOVA ¹		ANCOVAs controlling for BDI ²			
	M	SD	M	SD	M	SD	M	SD	F	p	F	p	Eta Squared	posthoc
BMI	33.4	7.0	35.0	11.2	35.6	10.1	32.9	9.3	1.68	.17	2.67	.05	.03	
Weekly Binges	0.0 _a	0.0	1.9 _b	1.4	2.6 _b	1.8	3.7 _c	3.7	60.33	.00	33.69	.00	.26	abbc
BDI	11.3 _a	8.3	14.6 _a	7.4	21.8 _b	11.2	25.4 _b	9.7	35.07	.00				
EDEQ Restraint	1.6 _a	1.2	2.0 _{ab}	1.5	2.6 _b	1.6	3.8 _c	1.6	29.81	.00	17.19	.00	.15	a,ab,b,c
EDEQ Eating Concern	0.7 _a	0.8	2.2 _b	1.3	3.5 _c	1.5	4.3 _d	1.3	149.22	.00	84.78	.00	.47	abcd
EDEQ Shape Concern ³	3.1 _a	1.4	4.0 _b	1.4	5.1 _c	1.0	5.4 _c	0.6	71.40	.00	37.13	.00	.28	abcc
EDEQ Weight Concern ³	2.6 _a	1.2	3.1 _a	1.3	4.5 _b	1.1	4.8 _b	0.9	76.38	.00	39.79	.00	.30	aabb
EDEQ Global	2.0 _a	0.8	2.8 _b	1.1	4.0 _c	0.9	4.6 _d	0.8	147.94	.00	82.97	.00	.47	abcd
Shape/Weight Overvalue	2.4 _a	1.4	2.9 _b	1.2	5.6 _c	0.5	5.7 _c	0.5	246.31	.00	150.25	.00	.61	aabb
TFEQ Restraint	9.1 _a	4.6	8.8 _a	4.0	8.7 _a	4.4	11.3 _b	4.2	4.43	.01	6.43	.00	.06	aaab
TFEQ Disinhibition	7.1 _a	3.3	11.5 _b	2.4	12.3 _{bc}	2.3	13.4 _c	1.6	104.32	.00	68.00	.00	.42	abbb
TFEQ Hunger	5.9 _a	3.5	9.1 _b	3.6	10.0 _b	3.1	10.9 _b	3.1	39.78	.00	20.60	.00	.18	abbb

Note. BED = binge eating disorder; BN = bulimia nervosa; BDI = Beck Depression Inventory; EDEQ = Eating Disorder Examination Questionnaire; TFEQ = Three Factor Eating Questionnaire.

¹ For the ANOVAs, row means that do not share subscripts differ significantly at $p < .05$ or less using Scheffé post hoc comparisons.

² For ANCOVAs (controlling for BDI), we utilized bonferroni correction on the BDI-adjusted contrasts and these revealed a similar pattern to the ANOVA Scheffé post-hoc (see the last column).

³ The EDE-Q Shape Concern and Weight Concern scale scores were calculated without their respective overvaluation items included in the interview's standard scoring methods. If the overvaluation items were included, the means and standard deviations of these scales would be as follows: 3.0 ± 1.3 (Shape Concern) and 2.6 ± 1.1 (Weight Concern) for the overweight group, 3.9 ± 1.3 (Shape Concern) and 3.1 ± 1.2 (Weight Concern) for the BED without overvaluation group, 5.1 ± 0.9 (Shape Concern) and 4.7 ± 0.9 (Weight Concern) for the BED with overvaluation group, and 5.5 ± 0.6 (Shape Concern) and 5.0 ± 0.7 (Weight Concern) for the BN group.