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Overvaluation of shape and weight in binge eating disorder, bulimia nervosa, and sub-threshold bulimia nervosa☆

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ABSTRACT

Increasing empirical evidence supports the validity of binge eating disorder (BED), a research diagnosis in the appendix of DSM-IV, and its inclusion as a distinct and formal diagnosis in the *DSM-V*. A pressing question regarding the specific criteria for BED diagnosis is whether, like bulimia nervosa (BN), it should be characterized by overvaluation of shape and weight. This study compared features of eating disorders in 436 treatment-seeking women comprising four groups: 195 BED participants who overvalue their shape/weight, 129 BED participants with subclinical levels of overvaluation, 61 BN participants, and 51 participants with sub-threshold BN. The BED clinical overvaluation group had significantly higher levels of specific eating disorder psychopathology than the three other groups which did not differ significantly from each other. Findings suggest that overvaluation of shape and weight should not be considered as a required criterion for BED because this would exclude a substantial proportion of BED patients with clinically significant problems. Rather, overvaluation of shape and weight warrants consideration either as a diagnostic specifier or as a dimensional severity rating as it provides important information about severity within BED.

Binge eating disorder (BED), a research category in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association [APA], 1994), is characterized by recurrent binge eating without inappropriate compensatory weight-control behaviors. BED is more prevalent than the two formal eating disorders (ED), bulimia nervosa (BN) and anorexia nervosa (AN) (Hudson, Hiripi, Pope, & Kessler, 2007). A recent critical review of the literature concluded that sufficient empirical evidence exists for BED to warrant its inclusion as a distinct and formal ED in the *DSM-V* (Striegel-Moore & Franko, 2008).

As we move toward the *DSM-V* (Brown & Barlow, 2005; Wilfley, Bishop, Wilson, & Agras, 2007), a pressing question regarding BED is whether revisions to its criteria would improve the construct (Masheb & Grilo, 2000). *DSM-IV* criteria for BN and AN, but not for BED, require the presence of overvaluation of shape or weight, or the "undue influence of body weight or shape on self-evaluation" (APA, 1994, p. 545). The few available data suggest that patients with BED are similar to those with BN and AN in their shape/weight concerns (Masheb & Grilo, 2000; Wilfley, Schwartz, Spurrell, & Fairburn, 2000). Hrabosky, Masheb, White, and Grilo (2007), in a study of 399 patients with BED assessed with the Eating Disorder Examination (EDE; Fairburn & Cooper, 1993), found that overvaluation levels were strongly associated with ED psychopathology and that patients categorized with clinical overvaluation (i.e., shape/weight high on the list of things that influence self-evaluation) reported significantly greater eating-related and general psychological disturbances than those with subclinical overvaluation. Masheb and Grilo (2008) reported that baseline levels of overvaluation of shape/weight significantly predicted treatment outcomes for BED patients participating in a controlled trial.

Collectively, the above findings suggest the importance of overvaluation in BED but do not address whether this body-image-related cognitive feature should be a required criterion. If BED patients who do not overvalue their shape/weight differ little from persons without eating disorders that would suggest the importance of this cognitive feature as a required criterion as is the case for BN. However, if overvaluation of shape/weight were

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required this might eliminate clinically-meaningful cases of BED and broaden even further the troublesome eating disorder not otherwise specified (EDNOS) category (Fairburn & Bohn, 2005; Wilfley et al., 2007). Alternatively, overvaluation of shape/weight could be used in some other fashion (e.g., as a dimensional severity rating or as a diagnostic specifier) to convey additional information about BED. For example, several mood disorder diagnoses include severity ratings and diagnostic specifiers to inform clinicians about important features (Brown & Barlow, 2005).

Two recent studies have produced data specifically relevant to whether overvaluation of shape/weight should receive consideration as a required criterion or as a dimensional severity rating or specifier. Mond, Hay, Rodgers, and Owen (2007), in a community-based sample assessed using the self-report Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994), found that participants with BED with overvaluation had significantly higher levels of ED psychopathology and impairment than participants with BED without overvaluation. BED cases without overvaluation, however, differed little from obese individuals who did not report binge eating. Mond et al. (2007) concluded that overvaluation be considered as a required criterion for BED. Grilo, Hrabosky, Allison, Stunkard, and Masheb (2008), in a clinical sample of 210 overweight patients assessed using the interview version of the Eating Disorder Examination (EDE; Fairburn & Cooper, 1993), found that participants with BED with overvaluation had significantly greater ED psychopathology and depression levels than BED participants with subclinical overvaluation. Importantly, and in contrast to Mond et al. (2007),[1] both BED groups (regardless of degree of overvaluation) had significantly greater levels of ED psychopathology and depression than the overweight comparison group of those who did not binge eat. Grilo et al. (2008) also found that the group differences existed despite similar body mass index (BMI) across the three groups and even after controlling for group differences in depression levels. Grilo et al. (2008) noted that these findings, which provide further support for the validity of the BED diagnosis (see Striegel-Moore & Franko, 2008), suggest the possible importance of shape/weight overvaluation as a diagnostic specifier. That is, in contrast to Mond et al. (2007), Grilo et al. (2008) argued that overvaluation should not be a required criterion for BED, as this would exclude a substantial proportion of individuals with clinically significant problems who differ from overweight patient controls.

The present study aims to more definitively address the significance of overvaluation of shape/weight for the diagnosis of BED by comparing BED patients who overvalue their shape/weight, BED patients with subclinical levels of overvaluation, bulimia nervosa (BN) patients, and patients with sub-threshold BN (technically diagnosed with EDNOS). The previous studies (Grilo et al., 2008; Mond et al., 2007) focused on BED groups compared to overweight comparison groups. The present analysis directly compares BED groups to BN patients since the BN diagnosis requires the presence of overvaluation. We also included sub-threshold BN as a fourth study group for several reasons. Sub-threshold BN is a common form of EDNOS, the most common ED diagnosis across clinical settings, yet the most poorly understood and (except for BED) neglected topic of study (Fairburn & Bohn, 2005).Sub-threshold BN is of much interest to the *DSM-V* ED Work Group (Wilfley et al., 2007) as this form of "atypical" ED has demonstrated clinical significance and severity comparable to BN (Fairburn et al., 2007; Grilo et al., 2007). Thus, sub-threshold BN represents an additional relevant treatment-seeking comparison group as context for evaluating the clinical significance of BED groups with and without overvaluation. Inclusion of this "homogenous" sub-threshold BN group (i.e., below BN thresholds for binge/purge frequency or for size of binge episodes) will also yield further data relevant to the important issue of whether such cases should be re-classified as BN in the *DSM-V* by broadening those individual *DSM-IV* diagnostic criteria which were never validated. Finally, we note that our design minimized potential confounds due to differences in treatment-seeking and various clinic biases (Fairburn, Welch, Norman, O'Connor, & Doll, 1996; Grilo, Lozano, & Masheb, 2005) because of the similar recruitment methods for BED and BN patients who were seeking treatment and responded to ads at specialty university research clinics. Thus, the present analysis of BED patient groups with and without overvaluation to patients with BN and sub-threshold BN will address whether overvaluation of shape/weight should be considered as a required criterion for BED.

Method

Participants

Participants were 436 women evaluated for treatment studies at the department of psychiatry at Yale University and the Neuropsychiatric Research Institute at the University of North Dakota (NRI/UND). These advertisements specifically targeted patients with BED (Yale University) or BN (NRI/UND). Study inclusion criteria required meeting *DSM-IV* full research criteria for BED, full criteria for BN, or sub-threshold criteria for BN. Sub-threshold BN was defined as either full BN criteria except with binge eating/purging at a minimum of once weekly or full BN criteria except with "subjective" binge eating episodes (i.e., loss of control but not unusually large quantity of food). Exclusion criteria included pregnancy, current treatment for eating or weight problems, specific medical problems (diabetes, thyroid disease), or severe comorbid psychological conditions (bipolar, psychosis, current drug dependence, suicidality). All participants provided written informed consent and study protocols were IRB approved.

Of the 436 participants, 324 met full research criteria for BED, 61 met full criteria for BN, and 51 were sub-threshold BN. The 324 BED participants are a consecutive series that included all of the 304 female BED participants from the Hrabosky et al. (2007) study. Overall, participants had a mean age of 40.2 years ($SD = 11.8$) and a mean BMI of 33.5 kg/m^2 ($SD = 8.9$). Most participants ($n = 370$, 84.9%) were White, while 40 (9.2%) were Black, 16 (3.7%) were Hispanic, 10 (2.3%) were of other or unspecified minority/ethnic groups. Consistent with both the geographic locations of the two universities and the established differences in the distribution of BED and BN (Hudson et al., 2007), relative to the BN/EDNOS group the BED group had a significantly lower proportion of White participants (81.2% vs. 95.5%, Fisher's Exact Test $p < .001$), was significantly older ($M = 44.3$ ($SD = 9.4$) vs. $M = 28.5$ ($SD = 10.4$), t (434) $= 14.91$, $p < .001$), and had a significantly higher BMI ($M = 36.7$ ($SD = 7.4$) vs. $M = 24.0$ ($SD = 5.2$), t (434) $= 16.85$, $p < .001$).

Assessment and measures

Assessments were administered by experienced research-clinicians who were trained in the administration of the study instruments. ED diagnoses were determined using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I/P; First, Spitzer,

[1] The discrepancy between the two studies is likely, at least in part, due to Mond et al. (2007) reliance on the EDE-Q (Fairburn & Beglin, 1994) to determine the BED diagnosis and to assess the degree of overvaluation. Studies consistently find that scale scores tapping cognitive features are significantly higher when the self-report EDE-Q is used versus the interview version of the EDE (Grilo et al., 2001a, 2001b). Differences in recruitment and sampling (community versus clinical) may also account for some of the discrepancy.