The EDE-Q, BULIT-R, and BEDT as self-report measures of binge eating disorder

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A B S T R A C T
Binge eating disorder, currently classified as an eating disorder not otherwise specified, is a valid and clinically useful psychiatric diagnosis. Given its probable inclusion in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), identification of self-report measures with high levels of diagnostic utility should improve the likelihood and accuracy of screening. The aim of the current study was to assess the diagnostic utility of two widely used measures of eating disorder symptoms, namely the Eating Disorder Examination-Questionnaire (EDE-Q) and the Bulimia Test-Revised (BULIT-R), as well as a factor of the BULIT-R (coined the Binge Eating Disorder Test or BEDT), newly created specifically for the assessment of BED. Participants included 15 individuals with BED and 26 non-BED controls, as determined via the diagnostic section of the Eating Disorder Examination, who met criteria for being overweight or obese. Results showed that the BEDT achieved 100% sensitivity, specificity, positive and negative predictive values. The BULIT-R and Eating Concern subscale of the EDE-Q evidenced strong sensitivity (100 vs 87), specificity (96 vs 100), positive predictive values (94 vs 100), and negative predictive values (100 vs 93), respectively. Results suggest that the BEDT is an excellent overall measure of BED in obese populations. The BULIT-R affords the advantage of ruling out compensatory behaviors, particularly of the non-purging variety (e.g., severe restriction outside of binges), while the brevity of the Eating Concern subscale of the EDE-Q makes it optimal for use in brief screening situations.

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1. Introduction
Binge eating disorder (BED) is currently listed as a provisional diagnosis in the Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000), and recent reviews (Striegel-Moore & Franko, 2008; Wonderlich, Gordon, Mitchell, Crosby, & Engel, 2009) have attested to the validity and clinical utility of BED as a psychiatric diagnosis. Further, a preliminary report from the DSM-V eating disorders work group (American Psychiatric Association, 2010) concurred with these reviews and recommended that BED should be included in the DSM-V. Given the probable addition of BED to the next edition of the DSM, it seems likely that even more attention will be paid to this already well-researched disorder. Thus, valid instruments for the assessment of BED must continue to be developed, evaluated, and refined.

Semi-structured interviews, such as the Eating Disorder Examination (EDE; Cooper & Fairburn, 1987) or the Interview for Diagnosis of Eating Disorders IV (IDE-D; Kutlesic, Williamson, Gleaves, Barbin, & Murphy-Eberenz, 1998), are considered by many as the “gold standard” for the assessment of BED (e.g., Grilo, Masheb, & Wilson, 2001a). However, the use of semi-structured interviews is often burdensome, as these assessments typically require substantial training and administration time. Consequently, the development and validation of self-report measures of BED would represent a more feasible alternative for the assessment of the disorder for many professionals working with this population.

Several currently available self-report instruments have been used to assess BED symptomatology, including the Binge Eating Scale (BES; Gormally, Black, Datson, & Rardin, 1982), Eating Disorder Diagnostic Scale (EDDS; Stice, Telch, & Rizvi, 2000), Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 1994), and the Questionnaire for Eating and Weight Patterns-Revised (QEW-P; Spitzer, Yanovski, & Marcus, 1993). Of critical importance is the ability to accurately detect the presence (sensitivity) and absence of BED (specificity) as well as the probability that a patient who scores above a designated cut-point has BED (positive predictive value) or who scores below a designated cut-point does not have BED (negative predictive value). Although each of
the aforementioned measures brings strengths to the assessment of BED; they also include notable limitations, as described below, which make them less than ideal for the classification of individuals with BED.

The most widely researched self-report measure for assessing BED is the EDE-Q, the questionnaire version of the gold-standard EDE interview. Several published reports have investigated the relation between the EDE-Q and the EDE (e.g., Barnes, Masheb, White, & Grilo, 2011; Celio, Wilfley, Crow, Mitchell, & Walsh, 2004; Goldfein, Devlin, & Kamenetz, 2005; Grilo et al., 2001a; Kalarchian, Wilson, Brolin, & Bradley, 2000). Most investigators find these two assessment approaches to be correlated, yet significant differences in mean scores between the EDE and the EDE-Q are also evidenced (Barnes et al., 2011; Celio et al., 2004; Goldfein et al., 2005; Grilo, Masheb, & Wilson, 2001b; Kalarchian et al., 2000). Typically, the questionnaire version results in over-diagnosis compared to the interview version. Additionally, information on the sensitivity and specificity of the EDE-Q has not yet been established for a diagnosis of BED, leaving investigators without a critical piece of evaluative information.

The QEWP-R has also received attention in the literature examining the assessment of BED. The sensitivity and specificity of the QEWP-R (when compared with the structured clinical interview for the DSM-III-R [SCID]) were 72% and 84%, respectively (de Zwaan et al., 1993). In more recent work, Celio et al. (2004) found sensitivity and specificity rates (when compared to the EDE) of 74% and 35%, respectively. Although Barnes et al. (2011) did not conduct sensitivity and specificity analyses, their findings did reveal modest correlations between the QEWP-R and EDE (on four of five items that assessed objective binge eating over the past 6 months). The QEWP-R has also been compared to the eating disorder module of the Structured Clinical Interview for the DSM-IV (ED-SCID) and has been found to have sensitivity and specificity values of 73% and 70%, respectively (Dymek-Valentine, Rienecke-Hoste, & Alverdy, 2004). The confluence of these findings has led some researchers to suggest that the use of the QEWP-R should be limited to screening purposes, given its high percentage of misclassifications (Celio et al., 2004).

Another instrument which has been used to assess BED is the Binge Eating Scale (BES). Brody, Walsh, and Devlin (1994) assessed the sensitivity and specificity of the BES using a cutoff score of 27. Results yielded sensitivity and specificity rates of 39% and 98%, respectively. Also using a cutoff score of 27, Greeno, Marcus, and Wing (1995) found sensitivity and specificity rates of 93% and 49%, respectively (using the EDE as a comparison). In the most recent analysis of the BES, Celio et al. (2004) found sensitivity and specificity values at 85% and 20%, respectively. Again, as noted with the QEWP-R, these suboptimal classification rates lead some to believe that the BES is less than ideal for assessing BED (Celio et al., 2004).

The most recently created measure to assess BED is the EDDS. Stice et al. (2000) examined the agreement between the BES items from the EDDS and the EDE, and found sensitivity and specificity rates of 77% and 96%, respectively. In a follow-up study, Stice, Fisher, and Martinez (2004) reported sensitivity and specificity values of 88% and 98%; however, these values were collapsed across all eating disorder diagnostic groups, making it impossible to determine the EDDS’s relative agreement with the EDE specifically for BED diagnosis in the Stice et al. (2004) sample. Despite displaying strong specificity, the EDDS still yields a sensitivity rate that overlooks 33% of those with a BED diagnosis (Stice et al., 2000).

1.1. The current study

Given the unknown or substandard sensitivity and specificity of established self-report measures for the detection of BED, the aim of the present study was to assess the diagnostic utility of two widely used measures of eating disorder symptoms, namely the EDE-Q and a test originally developed for the assessment of bulimia nervosa (BN), the Bulimia Test-Revised (BULIT-R; Thelen, Farmer, Wonderlich, & Smith, 1991) for the detection of BED within a sample of obese individuals. In addition, the diagnostic utility of a newly-created factor of the BULIT-R (coined the Binge Eating Disorder Test [BEDT]; see Methods section), specific to the diagnosis of binge eating and body dissatisfaction, was assessed. It was hypothesized that the BEDT, which assesses the core characteristics of BED, would evidence the strongest diagnostic capability, followed by the full BULIT-R, which incorporates compensatory behaviors, followed by the EDE-Q, the broadest measure of eating disorder pathology.

2. Methods

2.1. Participants

Recruitment methods included use of a university research participation registry, referral from other studies related to obesity and BED, physician referrals, and flyers distributed at multiple university and community locations. Participants included 15 individuals diagnosed with BED (meeting DSM-IV-TR criteria; American Psychiatric Association, 2000) and 26 assessed as having neither full-syndrome nor even subclinical BED according to the diagnostic section of the Eating Disorder Examination (12.0D; Fairburn & Cooper, 1993). All participants met criteria for overweight or obesity, defined as a body mass index (BMI; weight in kg/height in m^2) greater than 25 and 30 respectively. Participant characteristics are presented in Table 1.

2.2. Measures

2.2.1. Demographic characteristics

Age, gender, ethnicity (Hispanic/Latino or non-Hispanic/Latino), race, marital status, educational level, and occupation were self-reported. BMI (kg/m^2) was calculated from weight, measured to the nearest 0.1 kg using a digital platform scale, with shoes and outer clothing removed, and height, measured to the nearest 0.01 m using a wall-mounted stadiometer (Seca, Hanover, MD).

2.2.2. The Eating Disorder Examination-Questionnaire

The EDE-Q (Fairburn & Beglin, 1994; Fairburn & Beglin, 2008) is a 39-item self-report version of the EDE interview (Fairburn & Fairburn, 1987; Fairburn & Cooper, 1993), a widely used semi-structured interview for the diagnosis of eating disorders. In addition to a total Global Score (α = .90), the EDE-Q includes the subscales of Dietary Restraint (α = .56), Eating Concern (α = .80), Weight Concern (α = .73), and Shape Concern (α = .84; reported values are from the present study). The EDE-Q subscales are correlated with the EDE subscales, but typically result in higher overall scores (Grilo et al., 2001a, 2001b; Wilfley, Schwartz, Spurrell, & Fairburn, 1997).

2.2.3. The Bulimia Test-Revised

The BULIT-R (Thelen et al., 1991) is a 36-item self-report, Likert-type scale used to assess degree of bulimic symptomatology according to the DSM-III-R (American Psychiatric Association, 1987). Scores, based on a summation of 28 items, can range from 28 (no symptoms) to 140 (elevated symptoms). The BULIT-R has been validated in both non-clinical and clinical samples, achieving high levels of reliability, internal consistency, and concurrent validity (Breifgaard, Hummel, & Barrios, 1992; Welch, Thompson, & Hall, 1993). In a validation study using DSM-IV diagnostic criteria for BN (American Psychiatric Association, 1994), the BULIT-R demonstrated a sensitivity of 91%, specificity of 96%, positive predictive value of 81%, and a negative predictive value of 98% by using a cutoff score of 104 in a sample of 147 women (Thelen, Mintz, & Vander Wal, 1996). In the present study, internal consistency was high (α = .96).

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