The Clinical Significance of Binge Eating Disorder

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Abstract: Objective: Current controversy exists regarding the status of binge eating disorder (BED) as a diagnostic entity. A critique of the literature is provided to address the question of whether BED represents a clinically significant syndrome. Method: The scientific evidence is considered through addressing five questions that are key in evaluating the clinical utility of any mental disorder. Results: Individuals with BED meaningfully differ from individuals without eating disorders, and share important similarities to, yet are distinct from, individuals with anorexia nervosa (AN) and bulimia nervosa (BN). BED is associated with co-occurring physical and mental illnesses, as well as impaired quality of life and social functioning. Questions about the course of the disorder and the optimal treatment regimen for the syndrome need to be explored further. Discussion: BED’s distinctive combination of core eating disorder psychopathology, and other co-occurring physical and psychiatric conditions, impaired psychosocial functioning, and overweight constitute an eating disorder of clinical severity and a significant public health problem. © 2003 by Wiley Periodicals, Inc. Int J Eat Disord 34: S96–S106, 2003.

Key words: binge eating disorder; anorexia nervosa; bulimia nervosa; psychopathology

INTRODUCTION

The question of whether binge eating disorder (BED) is a syndrome of clinical significance has been debated since 1994, when BED first appeared in the 4th ed. of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) as a disorder with research criteria requiring further study (American Psychiatric Association, 1994; Fairburn, Welch, & Hay, 1993). The advancement of the diagnostic criteria has led to a proliferation of research over the past decade. We consider the scientific evidence pertaining to the value of BED as a diagnostic category by addressing five questions...
that are key in evaluating the clinical utility of any mental disorder (Brody, Walsh, & Devlin, 1994; Wakefield, 1997; Widiger & Clark, 2000). We also note areas of further inquiry that are needed before definitive conclusions can be drawn about the importance of BED as a diagnostic entity.

**QUESTION ONE: DO INDIVIDUALS WITH BED DIFFER FROM INDIVIDUALS WITHOUT EATING DISORDERS?**

BED is associated with overweight and obesity, as evidenced by findings from clinic, community, and population-based studies (Bruce & Agras, 1992; Fairburn, Cooper, Doll, Norman, & O’Connor, 2000; Smith, Marcus, Lewis, Fitzgibbon, & Schreiner, 1998; Spitzer et al., 1992, 1993; Striegel-Moore, Wilfley, Pike, Dohm, & Fairburn, 2000). For instance, in the largest population-based study of BED to date, the prevalence of BED among overweight participants (2.9%) was almost double that of the overall cohort (1.5%; Smith et al., 1998). Compared with their counterparts without BED, individuals with BED had significantly higher body mass index values (BMI). Most studies have shown that frequent binge eating is linked to obesity (Yanovski, 2002). However, obese individuals with BED differ significantly from obese persons without BED.

A number of experimental and clinical studies have demonstrated robust differences between obese individuals with and without BED (Marcus, 1993; Yanovski, 1993). Laboratory studies have shown that persons with BED consume more calories at both binge meals and nonbinge meals than weight-matched control participants without BED (Guss, Kissileff, Devlin, Zimmerli, & Walsh, 2002; Yanovski, 2002). Guss et al. (2002) concluded that “the diagnosis of BED is consistently associated with disturbances in eating behavior that can be quantified in a laboratory setting” (p. 1028). During a 24-hour observation period, obese participants with BED, compared with obese participants without BED, consumed significantly more of a liquid meal overall and at each 8-hr period (Hsu et al., 2002). They also display more chaotic eating habits, exhibit higher levels of eating disinhibition (i.e., eating in response to emotional states), and suffer from significantly higher levels of eating disorder psychopathology (Brody et al., 1994; Eldredge & Agras, 1996; Hsu et al., 2002; Wilfley, Schwartz, Spurrell, & Fairburn, 2000; Yanovski et al., 1992). Both community and treatment-seeking samples of individuals with BED, compared with non-BED obese individuals, showed substantially higher rates of psychiatric comorbidity (Grilo, 2002; Wilfley, Pike, Striegel-Moore, & Fairburn, 2000; Yanovski, Nelson, Dubbert, & Spitzer, 1993). For example, relative to an overweight non–eating-disordered sample, individuals who suffer from BED are three times more likely to suffer from current major depressive disorder (Telch & Stice, 1998). They also report impairment in work and social functioning and poorer quality of life, than the non-BED obese (Hsu et al., 2002; Rieger, Wilfley, Marino, Stein, & Crow, 2002; Spitzer et al., 1993). These findings underscore the pervasive impact of BED in obese individuals, across a variety of aspects of quality of life, as the eating disorder is associated with significantly more impairment compared with obesity alone.

Persons with BED are not simply obese individuals with comorbid psychiatric disorders. The increased psychiatric comorbidity among individuals with BED is accounted for by the severity of binge eating rather than by the degree of obesity (Telch & Agras, 1994). Comorbid Axis II disorders are significantly related to binge eating severity and general eating psychopathology in individuals with BED (Wilfley, Friedman, et al., 2000). The psychologically distressing shape and weight concerns among individuals with BED
cannot be attributed to the obesity that so frequently accompanies BED (Hsu et al., 2002; Masheb & Grilo, 2000; Wilfley, Schwartz, et al., 2000). Rather, these dysfunctional attitudes regarding weight and shape reflect the core eating disorder psychopathology of BED. In summary, individuals with BED are a distinctive subset of the obese population.

QUESTION TWO: IS BED A CLINICAL DISORDER THAT CAUSES SIGNIFICANT DISTRESS OR IMPAIRMENT IN SOCIAL, ACADEMIC, OR OCCUPATIONAL FUNCTIONING?

BED constitutes a clinical disorder on several counts. First, it is a syndrome with core eating disorder psychopathology that overlaps with anorexia nervosa (AN) and bulimia nervosa (BN). Individuals with BED are indistinguishable from those with AN and BN in terms of preoccupation with shape and weight concerns and the degree to which self-worth is influenced by shape and weight concerns (Crow, Agras, Halmi, Mitchell, & Kraemer, 2002; Masheb & Grilo, 2000; Striegel-Moore et al., 2001; Wilfley, Schwartz, et al., 2000). These features are what Fairburn (1997) has called the “core” or “specific” psychopathology of eating disorders and data suggest that these concerns are important underlying factors across AN, BN, and BED. Other important commonalities among AN, BN, and BED include low self-esteem and poor social adjustment in addition to high rates of past and present Axis I and Axis II disorders (Crow et al., 2002; Johnson, Spitzer, & Williams, 2001). Striegel-Moore et al. (2001) did not find a difference between individuals with BED and individuals with either the purging or nonpurging subtypes of BN on current or lifetime prevalence of nine major mental disorders. Eating, mood, and anxiety disorders also aggregate in the families of women with BED compared with non-BED controls (Fairburn et al., 1998; Fowler & Bulik, 1997; Lilenfeld, Marcus, Ringham, & Kalarchian, 1999; Striegel-Moore, 1999), suggesting that BED might share a common genetic diathesis with these other disorders. On the dimensions noted above, BED is, as much as BN, an eating disorder of clinical severity (i.e., a major source of distress or disability; American Psychiatric Association, 1994).

Second, BED is associated with impaired functioning and poor physical health. In a sample of women in primary care and obstetric gynecology clinics, patients with either BN or BED reported poorer social functioning, higher levels of disability, and more health problems than women without eating disorders even when comorbid psychiatric disorders were statistically controlled (Johnson et al., 2001). A recent community-based study found that women suffering from BED were significantly more likely to have used health care services for treatment of emotional and physical problems than healthy controls, and at a comparable rate to psychiatric control women (Dohm et al., 2001). These increased rates of treatment utilization among individuals with BED highlight the clinical significance and economic impact of having BED.

Finally, as summarized in the preceding section, BED is linked with overweight and obesity, the adverse health consequences and psychosocial hardships of which are well documented (National Heart, Lung, and Blood Institute, 1998). Recent BED treatment outcome studies indicate that binge eating is linked to weight gain and that cessation of binge eating is associated with weight loss (Agras et al., 1994; Devlin, 2002; Grilo, Masheb, Heninger, & Wilson, 2002; Smith, Marcus, & Kaye, 1992; Wilfley et al., 2002). In addition, the presence of binge eating or BED might further complicate the treatment of obesity (Mitchell, de Zwaan, Roerig, Wonderlich, & Lancaster, 2002; Sherwood, Jeffery, & Wing, 1999; Yanovski, 2002; Yanovski, Gormally, Lesser, Gwirtsman, & Yanovski, 1994). In sum, BED’s distinctive combination of core eating disorder psychopathology,
comorbid psychiatric disorders, and association with obesity mark it as a significant clinical disorder.

**QUESTION THREE: IS BED A DISTINCT EATING DISORDER?**

The basic question here is whether BED is a syndrome separate from the other eating disorders, particularly BN. Available evidence is generally supportive of the conclusion that BED is a distinct syndrome. First, the populations affected by BED are different from those affected by AN and BN. Whereas AN and BN primarily affect women and rarely affect men, the male-to-female ratio among BED individuals is 2:3 (Spitzer et al., 1992, 1993). BED occurs across ethnically diverse samples (Smith et al., 1998), whereas most AN and BN individuals are Caucasians (Wilfley, Pike, & Striegel-Moore, 1997).

Second, the eating patterns and the characteristics of binges among individuals with BED differ from those in individuals with BN (Cooke, Guss, Kissileff, Devlin, & Walsh, 1997; Mitchell, Crow, Peterson, Wonderlich, & Crosby, 1998). Individuals with BN consume more calories during a binge meal than do individuals with BED, but their caloric intake is far less during nonbinge meals. During binges, individuals with BN eat primarily dessert foods whereas BED participants eat a full range of foods. In addition, BN patients consistently report significantly higher levels of restraint than do BED patients (Masheb & Grilo, 2000; Wilfley, Schwartz, et al., 2000). In a direct comparison of participants with BED with participants with the purging and nonpurging subtypes of BN in a community sample, Striegel-Moore et al. (2001) replicated previous research and found that BED participants had significantly less dietary restraint and much higher rates of obesity than BN participants. Unlike individuals with BN whose binge eating occurs against a background of extreme dietary restraint, binge eating among individuals with BED is part of a pattern of chaotic eating and general overeating (Wilfley, Schwartz, et al., 2000).

Third, available evidence suggests that distinct risk factors are involved in the development of BED compared with BN (Fairburn et al., 1998). For instance, retrospective studies have consistently found that dieting plays a more significant role in the onset of BN than in the onset of BED (Wilfley et al., 1997). For example, 90% of BN participants reported dieting before the onset of the disorder, whereas less than 50% of BED participants reported that dieting preceded the onset of BED. In one study (Wilson, Nonas, & Rosenblum, 1993), only 8.7% of participants with BED reported having been on a strict diet before the onset of binge eating. Given that so few BED participants, compared with BN participants, reported dieting before binge eating, the role of dieting in the etiology of BED is clearly less central than it is for BN.

Fourth, naturalistic studies indicate that BED and BN are characterized by different courses and outcomes and that few persons move across the diagnostic categories (Agras, 1999; Crow, 2002; Fairburn et al., 2000; Striegel-Moore et al., 2001). Treatment outcomes are also different for the two syndromes. BED is generally more responsive to treatment than BN, and differences have emerged in the patterns of response to specific treatments (Wilson & Fairburn, 2002). For example, in contrast to BN (Agras, Walsh, Fairburn, Wilson, & Kraemer, 2000; Fairburn, Jones, Peveler, Hope, & O’Connor, 1993), cognitive-behavioral therapy (CBT) and interpersonal psychotherapy (IPT) have produced highly similar short-term results in the treatment of BED (Wilfley et al., 1993, 2002).

Finally, several analytic studies have found empirical support for conceptualizing BN and BED as distinct syndromes. Bulik, Sullivan, and Kendler (2000) found that when they applied latent class analysis to nine eating disorder symptoms, three categories were generated that resembled current classifications of AN, BN, and BED. The factor analytic
and taxometric study of Williamson et al. (2002) also revealed findings that support conceptualizing BN and BED as discrete syndromes. In addition, Crow et al. (2002) used discriminant analysis with a large data set of eating disorder patients and demonstrated clear differences between AN, BN, and BED. Specifically, 64% of BN cases were correctly classified with some overlap between both AN and BN. Conversely, 82% of BED cases were correctly classified, with no overlap with AN and with some overlap with BN. These findings confirm the difference between BED and BN as syndromes. Hence, the evidence from a variety of perspectives suggests that there are considerable differences between BN and BED and that it is reasonable to consider the syndromes as separate entities.

**QUESTION FOUR: WHAT IS THE COURSE OF BED?**

Evidence on the natural course of BED is mixed. A 5-year prospective study, in which binge eating was assessed every 15 months, indicated that the disorder appeared to remit over time (Fairburn et al., 2000), with only 18% of individuals having any form of eating disorder at the end of follow-up. In addition, the recurrence rate was low. A far greater proportion of individuals with BN had some form of eating disorder at every assessment point during the study. These data suggest that BED tends to remit spontaneously. In contrast, data from the McKnight longitudinal study of the course of eating disorders (Agras, 1999; Crow, 2002) has found different results. In this study, which will be carried out over 4 years, only about 7% of those diagnosed with BED were recovered at the end of 1 year. Thirty-eight percent of BED patients still met full criteria for the syndrome at the 1-year follow-up and an additional 55% met criteria for other eating disorders within the eating disorder not otherwise specified (EDNOS) category (Crow, 2002). Thus, at the Year 1 assessment, a majority of the cohort suffered from an eating disorder of clinical severity, with only a small proportion being fully recovered (Agras, 1999; Crow, 2002). These data indicate that the eating disorder psychopathology which characterizes BED does not simply disappear over time.

Reasons for the discrepant results between the two aforementioned natural course studies are unclear. One difference is that the Fairburn et al. (2000) study included subthreshold BED cases in their sample. The inclusion criteria in the McKnight study (Agras, 1999; Crow, 2002) were more stringent as they included individuals with full-syndrome BED. A second difference was that participants in the Fairburn et al. (2000) study were younger and less obese than those in the McKnight study, and exclusively female. Fairburn et al. (2000) themselves concluded that, “Caution is therefore warranted in generalizing from this community sample to patients with binge eating disorder and to men with the condition” (p. 664). The individuals in the McKnight study more closely resemble the typical patient who seeks treatment in the United States (Wilfley et al., 2002). The Fairburn et al. (2000) data are at odds with patient reports of having experienced BED for a number of years when they present for treatment. For example, the mean age at which participants present for treatment is often about 45 years old and they report having experienced the onset of the syndrome two decades earlier (Mussell et al., 1995; Spurrell, Wilfley, Tanofsky, & Brownell, 1997). Clearly, future natural course studies of BED are required that include frequent ongoing assessments to capture a complete diagnostic picture over time. Perhaps individuals who do experience a remission of BED may also experience a resurgence of symptoms or a fluctuating course of symptoms over time, similar to other serious mental disorders such as major depressive disorder.
Suggestive evidence for the relative stability of BED among treatment-seeking samples is derived from controlled outcome studies. BED has been proven to be stable and persistent during the wait-list control period, which has ranged from 2 to 6 months (Agras et al., 1995; Carter & Fairburn, 1998; Eldredge et al., 1997; Marcus, Wing, & Fairburn, 1995; Peterson et al., 1998; Telch, Agras, Rossiter, Wilfley, & Kenardy, 1990; Wilfley et al., 1993). Wait-list conditions exhibit weighted mean binge eating percent reductions of less than 15% (range, −38 to +34) and abstinence rates of less than 5% (range, 0%–12.5%).

**QUESTION FIVE: DOES A DIAGNOSIS OF BED ADVANCE CLINICAL DECISION-MAKING OR TREATMENT PLANNING?**

Specificity of Treatment Effects

Overall, research has shown that BED is responsive to a variety of procedurally and conceptually different psychological treatments that appear to be comparably effective in reducing binge eating (Wilson & Fairburn, 2002). CBT and IPT have produced highly similar short-term and long-term results in the treatment of BED (Wilfley et al., 1993, 2002). Several studies have shown that CBT for BED is no more effective than conventional behavioral weight loss treatment (BWL) in the short term as summarized below. Other treatments that have been shown to be effective in treating BED include dialectical behavior therapy (DBT; Telch, Agras, & Linehan, 2001) and guided self-help based on cognitive-behavioral principles (Carter & Fairburn, 1998). These procedurally distinctive therapies either are affecting some common factor or the response is largely due to the commonality of nonspecific factors among these different therapies.

Studies that have directly compared BWL with a specialized treatment for BED (CBT) have shown comparable effects on binge eating at posttreatment (Agras et al., 1994; Marcus et al., 1995; Nauta, Hospers, Kok, & Jansen, 2000). According to this view, the diagnosis does little or nothing to guide treatment of the overweight or obese individual (Stunkard, 2002). It should be noted, however, that 6 and 12-month follow-ups showed that CBT was superior to BWL in terms of abstinence from binge eating (Nauta, Hospers, & Jansen, 2001). In addition, CBT was significantly more effective than BWL in reducing shape, weight, and eating concerns. Adequate follow-up data are not available in the Marcus et al. (1994) or Agras et al. (1995) studies.

Some studies of BWL for weight reduction in obese patients have included a measure of binge eating (Foster, Wadden, Kendall, Stunkard, & Vogt, 1996; Porzelius, Houston, Smith, Arfken, & Fisher, 1995). To summarize, the results of these studies have shown that BWL is effective in reducing binge eating in obese patients in the short term (National Task Force on the Prevention and Treatment of Obesity, 2000). A caveat that must be issued is that assessment of binge eating in these studies typically relied on self-report measures of overeating (e.g., the Binge Eating Scale [BES; Gormally, Black, Daston, & Rardin, 1982]). Such assessment methodology is problematic because it does not assess binge eating frequency and has low convergence with more reliable measures of binge eating such as the interview-based Eating Disorder Examination (EDE; Greeno, Marcus, & Wing, 1995).

BWL has shown positive effects on general psychiatric symptoms and depressive symptomatology among BED individuals in the short term (de Zwaan & Mitchell, 1992; Gladis et al., 1998; Sherwood et al., 1999; Yanovski et al., 1994). However, some research has indicated that weight regain over follow-up often includes increased depressive symptomatology and decreased self-esteem (Wadden, Stunkard, & Liebschutz,
1988), although a prospective study found that treatment-induced improvement in mood was maintained at follow-up despite total weight regain (Foster et al., 1996). With respect to weight loss, most studies have shown that obese binge eaters and obese non-binge eaters respond equally well to BWL treatment in terms of short-term weight loss (Gladis et al., 1998; Sherwood et al., 1999), whereas others have found that comorbid BED might result in a less favorable outcome (Yanovski, 2002).

It makes sense that BWL would be effective in reducing binge eating. The irregular and disorganized quality of eating is a distinguishing clinical feature in BED patients (Marcus, 1993) and is hypothesized to play a major role in promoting binge eating (Castonguay, Eldredge, & Agras, 1995). BWL is designed explicitly to alter eating behavior directly, to reduce disorganization, and produce a more regular eating pattern comprising moderate caloric restriction. Unlike normal-weight BN patients, overweight and obese BED patients do not show high levels of dietary restraint (National Task Force on the Prevention and Treatment of Obesity, 2000). Hence, there are limited reasons to expect that the dietary restriction that is an integral part of BWL triggers or exacerbates binge eating (Howard & Porzelius, 1999).

Based on available research, BWL is as effective as specialized psychological treatment (i.e., CBT and IPT) in reducing binge eating. It has two advantages over CBT and IPT: (1) It produces clinically significant amounts of weight loss, at least in the short term; and (2) it is more disseminable than either CBT or IPT because it does not require the same professional training and expertise. BWL can be administered by a wider range of different health care professionals. It would be premature, however, to conclude that BWL is the treatment of choice for overweight and obese BED patients.

First, longer-term evaluation with adequate assessment of binge eating and core eating disorder psychopathology is essential. Given that initial short-term weight loss will be regained to varying levels over the course of follow-up, it remains to be seen what effect this weight regain will have on binge eating and associated core eating and general psychopathology. Future research on the effects of this regain on binge eating not only has practical clinical implications, but also theoretical implications for understanding the relationship between binge eating, dietary restriction, depression, and weight fluctuation.

Second, several studies have indicated that there are replicable subtypes of BED characterized by low or high negative affect. The latter is marked by significantly greater eating, weight, and shape concerns, as well as significantly higher levels of associated psychiatric disturbance and social maladjustment (Grilo, Masheb, & Wilson, 2000; Stice et al., 2001). The high negative affect subtype does not respond as well to treatment (Loeb, Wilson, Gilbert, & Labouvie, 2000; Stice et al., 2001). Whether the presence of high negative affect is simply a nonspecific predictor of outcome or possibly a moderator of treatment effects (Kraemer, Wilson, Fairburn, & Agras, 2002) remains to be determined. If it were the latter, it might be hypothesized that BWL would be less effective with the high negative affect subtype than a specialty psychological treatment such as CBT or IPT that can directly address negative affect.

Consistent with the nonspecificity thesis, some studies have shown a high placebo response rate that can be interpreted as indicating that BED has a tendency to remit, at least in the short term, with minimal intervention (Stunkard, 2002). However, although the variability across studies may be greater, the mean placebo response rate in the treatment of BED is no higher than the mean placebo response rate in the treatment of depression (Schatzberg & Kraemer, 2000; Walsh, Seidman, Sysko, & Gould, 2002).

Despite these findings on the apparent nonspecificity of treatment response in BED, it would be premature to conclude that patients with BED respond equally well to all
interventions. The results of a small number of initial studies may point to possible treatment differences. Kenardy, Mensch, Bowen, Green, & Walton (2002) reported no difference between CBT and a nonprescriptive therapy (NPT) comparison condition at the end of treatment for binge eating in patients with Type 2 diabetes. However, consistent with results demonstrating better maintenance of change for CBT compared with BWL (Nauta et al., 2001), CBT was superior to NPT at follow-up in the Kenardy et al. study (2002). Comparisons between CBT and pharmacologic treatment may also indicate differential treatment effects. Grilo et al. (2002) found that CBT was significantly more effective than fluoxetine. Similarly, Ricca et al. (2001) showed that CBT was significantly superior to both fluoxetine and fluvoxamine in reducing binge eating. Finally, Devlin (2002) reported that the addition of CBT to group BWL treatment significantly improved treatment outcome. In contrast, adding fluoxetine to the weight loss treatment failed to augment reduction in binge eating. Future research on the treatment of BED should control for nonspecific influences. Longer-term evaluations of specific therapies versus appropriate comparison or minimal treatment conditions are essential in determining the optimal treatment for this disorder.

**Treatment of Obesity**

Most studies have shown that obese binge eaters and obese non-binge eaters respond equally well to BWL treatment in terms of short-term weight loss (Gladis et al., 1998). However, there are some indications that obese binge eaters may be more likely to drop out of treatment and to regain lost weight more quickly (Yanovski, 2002). Additional research is required to determine whether obese patients with BED require different treatment from obese patients without BED.

**CONCLUSIONS**

Existing research supports the concept of the BED diagnosis as significant and important. Individuals with BED meaningfully differ from individuals without eating disorders, and share important similarities to, yet are distinct from, individuals with AN and BN. BED is associated with co-occurring physical and mental illnesses, as well as impaired quality of life and social functioning. Questions about the course of the disorder and the optimal treatment regimen for the syndrome need to be explored further. Nonetheless, BED's distinctive combination of core eating disorder psychopathology, other co-occurring physical and psychiatric conditions, impaired psychosocial functioning, and overweight constitute an eating disorder of clinical severity and a significant public health problem.

**REFERENCES**


De Vlue et al.


