Should Binge Eating Disorder Be Included in the DSM-V? A Critical Review of the State of the Evidence

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diagnostic criteria, reliability, validity, classification, clinical utility

**Abstract**

Binge eating disorder (BED) was introduced in 1994 as a provisional eating disorder diagnosis. The core symptom is recurrent binge eating in the absence of inappropriate compensatory behaviors and/or extreme dietary restraint. This review examines the status of the literature on BED, according to five criteria that have been proposed to determine whether BED warrants inclusion in the psychiatric nomenclature as a distinct eating disorder. We conclude that each of these criteria was met. There is a commonly accepted definition of and assessment approach to BED. The clinical utility and validity of BED have been established, and BED is distinguishable from both bulimia nervosa and obesity. BED should be included in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders*. 

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INTRODUCTION

The behavior of binge eating, defined as consuming an unusually large amount of food in a short time while experiencing lack of control over eating during the eating episode, is of clinical and public health interest because it is associated with psychological distress and physical health problems (Johnson et al. 2001, Mond et al. 2006) and an increased risk for weight gain and the development of obesity (Devlin 2007, Keski-Rahkonen et al. 2007). The behavior of binge eating—studied initially almost exclusively in the context of bulimia nervosa (BN), where it represents the core symptom, or in anorexia nervosa (AN), where it is one of two defining symptoms of a subtype (binge-purge type)—is far more common than BN or AN, binge-purge type (Ackard et al. 2007, Hudson et al. 2007, Johnson et al. 2001, Striegel-Moore et al. 2003).

Binge eating disorder (BED) was introduced in 1994 in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, Am. Psychiatr. Assoc. 1994) as a provisional eating disorder diagnosis. The core symptom is recurrent binge eating in the absence of inappropriate compensatory behaviors and/or extreme dietary restraint. At the time, the DSM-IV recognized two main eating disorders: AN (characterized by a refusal to maintain a minimum adequate weight and body image disturbance) and BN (characterized by episodic binge eating and compensatory behaviors and by overvaluation of body weight or shape). As with all major mental disorder categories, the DSM provides a “NOS” category, i.e., Eating Disorders Not Otherwise Specified (EDNOS), to be used for diagnosis of individuals who experience clinically significant eating disturbances that do not meet the specific diagnostic criteria for AN or BN. A key criticism of the eating disorder classification in the DSM is that rather than representing a minority of individuals with an eating disorder, EDNOS comprises the majority of individuals seeking treatment or individuals recruited for epidemiological studies meeting research criteria for an eating disorder (Ackard et al. 2007, Chamaray-Weber et al. 2005, Fairburn et al. 2007, Grilo et al. 2007, Machado et al. 2007, Wade et al. 2006). A greater differentiation of the EDNOS population into distinct subgroups will aid clinical decision making. For example, a person with recurrent purging in the absence of binge eating may require different treatment than would a person with recurrent binge eating in the absence of purging, yet currently both individuals would be given the same diagnosis of EDNOS. BED is one of six specific
(BED), where it represents one of six specific examples of EDNOS described in DSM-IV, and of the six, BED has received by far the most empirical attention, aided by the designation of a diagnosis in need of further study.

The early literature preceding the introduction of BED as a provisional diagnosis asserted the face validity of BED (for review, see Devlin et al. 2003). Obesity and eating disorder experts would encounter patients or research participants who reported recurrent binge eating but would not otherwise meet criteria for bulimia nervosa. A practical implication of the lack of a diagnosis for individuals presenting with this clinical picture was that these individuals would be excluded from treatment trials or ineligible for insurance reimbursement for their treatment (either of which typically required a full-syndrome diagnosis). Recent studies in the United States have found that individuals with BED make up a large share of the population with EDNOS. Although the specific distribution of individuals with EDNOS into subcategories varies across studies (and these variations likely reflect differences in sampling frames), BED is either the most common or second most common (following “purging disorder” characterized by recurrent purging in the absence of recurrent binge eating) form of EDNOS found among individuals seeking eating disorder treatment (Crow et al. 2002, Mitchell et al. 2007, Rockert et al. 2007).

The introduction of BED in the DSM, even simply as a provisional diagnosis in need of further study, attracted criticism because of the limited evidence in support of the specific diagnostic criteria for the disorder, the potential overlap with BN, and concerns about the proliferation of diagnostic categories (Striegel-Moore & Marcus 1995). These concerns notwithstanding, a rapidly growing number of studies have been conducted focusing specifically on individuals with BED. The fact that numerous studies have been conducted does not “prove” the need for or validity of BED as a diagnostic category. It does illustrate, however, the power of naming and defining a phenomenon: doing so is essential to scientific inquiry. Although such naming and defining make it possible for researchers to study a phenomenon in a manner that permits verification and replication of findings, it does not tell us whether alternative ways of classification might be more clinically useful, the ultimate yardstick for whether to include a diagnosis in the DSM (Walsh 2007).

In anticipation of revisions in the fifth edition of the DSM (expected to appear in 2012), the National Institute of Mental Health convened a workshop in 2006 to consider the status of eating disorder classification, and the question of whether BED should be added as a distinct eating disorder was a major point of discussion (Wilfley et al. 2007). In the subsequent Special Issue of the International Journal of Eating Disorders on Classification of Eating Disorders (Striegel-Moore & Wonderlich 2007), some experts expressed support for moving BED from representing an example of EDNOS to a “named” disorder in its own right (Wilfley et al. 2007), whereas others maintained that such a designation continues to be premature (Fairburn & Cooper 2007).

This debate about the status of BED as a distinct and valid diagnosis mirrors the debate of the validity of mental disorders more generally. Problems with the psychoanalytic explanations of mental disorders that had influenced earlier classification efforts were addressed beginning with the third revision, when the DSM began to use an explicitly descriptive approach to classification. The advantage of a standardized diagnostic nomenclature that is based on observable symptoms was that clinicians and researchers “could compare experience, debate treatments, and demand equity for their patients in the health system” (McHugh 2005, p. 2526). Indeed, a major criterion for inclusion of a syndrome into the DSM has been its “clinical utility,” which is synonymous with validity, according to Spitzer (2001), the main architect of DSM-III. Although other experts differentiate clinical utility from validity (for a comprehensive discussion, see First et al. 2004, Kendell & Jablensky 2003), clinical utility will remain a...
DIAGNOSTIC CRITERIA FOR BED AS PROPOSED IN APPENDIX B OF THE DSM-IV ARE AS FOLLOWS:

- Recurrent episodes of binge eating that occur at least twice a week for at least 12 months, and that are associated with a sense of loss of control during the binge.
- Each binge episode must be associated with at least three of the following: (a) eating rapidly even though not hungered; (b) eating in secret; (c) eating to the point of nausea; (d) eating to the point of vomit; (e) eating when not hungry; (f) eating for emotional reasons; and (g) eating until feeling extremely full, uncomfortable, or guilty.
- A marked distress regarding binge eating is present.
- Binge eating occurs at least two days a week for a minimum period of three months.
- The binge eating is not associated with the regular use of inappropriate compensatory behaviors such as self-induced vomiting, fasting, or excessive exercise and does not occur exclusively during the course of another psychiatric or eating disorder.

key criterion for the fifth edition of the DSM (Regier 2007, Walsh 2007).

A problem with the descriptive approach, however, is that it has led to a proliferation of disorders. Some have called for efforts to synthesize the vast information that has accumulated as a result of the availability of clearly defined categories and explanation of disorders in etiologic terms (McHugh 2005). As Blashfield et al. (1990) have cautioned, once added, diagnostic categories are difficult to remove, and they proposed that five criteria should be considered when deciding whether to introduce a disorder in the DSM. One, there should be ample literature about the proposed syndrome. Two, the diagnostic criteria should be articulated clearly and assessment instruments should exist that may be used for determining whether an individual meets the criteria. Three, the proposed syndrome should be diagnosable with a high degree of reliability by two or more assessors. Four, evidence should be available that the proposed syndrome can be differentiated from other (similar) syndromes. And five, evidence should be provided regarding the coherence and validity of the syndrome. The present review explores the status of BED according to these five criteria based on a search of the literature since the publication of a special issue on BED in 2003 (see Walsh 2003).

IS THERE AN AMPLE LITERATURE ON BINGE EATING DISORDER?

Blashfield and colleagues (1990) recommended that, in the 10 years preceding the proposal to include the diagnosis into the DSM, there be a minimum of 50 journal articles, including at least 25 empirical papers, published about a proposed category. Although this criterion was not met at the time DSM-IV was published, a PubMed database search in 2007 for articles on binge eating disorder identified more than 1000 titles, including 21 review papers. Given these PubMed search results, Blashfield and colleagues' first criterion for the recognition of BED as a distinct category in the DSM clearly has been met. This literature provides a rich base for evaluating the merit of BED as a diagnostic category in light of the remaining four criteria.

IS BINGE EATING DISORDER CLEARLY DEFINED, AND ARE RELIABLE MEASUREMENT TOOLS AVAILABLE?

The second criterion proposed by Blashfield et al. is that "the diagnostic criteria should be articulated clearly," indicating that there should be a common set of diagnostic criteria across the literature. In addition, assessment instruments, such as structured interviews and self-report scales, should be available to adequately measure the diagnostic features of the syndrome.

In contrast with other forms of EDNOS, such as purging disorder or night eating syndrome, where so far no uniformly accepted definitions have emerged (Keel 2007, Striegel-Moore et al. 2006b), most studies
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OLLEAGUES (1990) recommend ten years preceding the diagnosis as a minimum of 50 journal articles with 25 empirical papers to a proposed category. All were not met at the time, a PubMed database search on binge eating disorders from 1990 to 2003, including: Given these PubMed searches and colleagues’ first cognition of BED as a distinct DSM clearly has been, it provides a rich base for the rest of BED as a diagnostic category of the remaining four

BED have adopted the DSM-IV criteria. Questions have been raised about the operationalization of the core symptom “binge eating,” however, such as how best to demarcate “extremely large” amounts of food or how to define loss of control (Ackard et al. 2007, Wilfley et al. 2007). It is worth noting that this criticism affects not only the definition of BED but also of BN and of AN, binge-purge type. Concern also has been raised about the behavioral indicators of loss of control (e.g., eating more rapidly than usual—how rapid is more rapidly than usual?), but there has been little empirical effort at further refining these indicators, possibly because they are seen as redundant. Specifically, most individuals who report binge eating also experience at least three of these associated features (Ackard et al. 2007, Striegel-Moore & Marcus 1995). It also is unclear how “marked” distress regarding binge eating is to be operationalized.

Two structured interviews, the Structured Clinical Interview for DSM-IV (SCID-IV; Spitzer et al. 1992) and the Eating Disorder Examination (EDE; Fairburn & Cooper 1993), have been the primary assessment instruments for BED and have shown good psychometric properties across several studies (Grilo et al. 2001, Striegel-Moore et al. 2003). A number of self-report questionnaires have also been used to assess BED, and most studies indicate adequate reliability and validity, with some variability among measures (Celio et al. 2004, Reas et al. 2006, Stice et al. 2000). Specifically, Grilo and colleagues assessed the reliability of the EDE interview (Grilo et al. 2004) and the EDE questionnaire (Reas et al. 2006) when administered to patients with BED. Inter-rater reliabilities were very good for both objective binge eating (episode = .98, days = .91) and subjective binge eating (episode = .91, days = .91). The EDE subscale values ranged from .65 (weight concerns) to .96 (restraint), with the other two subscales falling between those values (eating concerns = .90, shape concerns = .84). The total EDE score agreement was .72. Test-retest reliability was .79, indicating a high level of reliability.

Although the criteria have been articulated clearly and consistently in the literature, they have been the subject of some debate (Wonderlich et al. 2007b). In particular, questions have been raised about the time-related terms in the criteria (Franko et al. 2004), including (a) the amount of time spent binge eating, (b) the occurrence of binges on at least two days per week, and (c) the six-month duration period for the binge eating pattern. Few studies have examined the validity of these time-related criteria. One study examined differences in women diagnosed with BED who binge twice a week and those who binged once a week in relation to matched normal controls. BED and subthreshold BED participants did not differ on BMI, EDE, or psychological distress (Striegel-Moore et al. 2000), and both differed from participants without an eating disorder. Similarly, Crow and colleagues (2002) were not able to distinguish between full-syndrome and partial-syndrome BED. As pointed out by Stunkard & Allison (2003, p. S108), researchers have focused more on the number of binge days than on the binge duration in studies of BED. Furthermore, there has been some discussion about the shift from the duration criterion of three months (as in bulimia nervosa) to six months for BED. The rationale for the duration criterion of six months was not articulated in the DSM-IV, but recent epidemiologic data find that BED is a stable syndrome (Pope et al. 2001), with mean lifetime duration for adults of 14.4 years, suggesting that BED often has a chronic course.

Recently, researchers have proposed adding a criterion to the diagnostic requirements for BED. “Undue influence of weight or shape on self-evaluation” is required for a diagnosis of both AN and BN, but not for BED. In an Australian sample, Mond
et al. (2007) compared individuals from the community with BED who did have extreme weight or shape concerns with those who did not have such concerns. BED cases were found to have significantly higher levels of eating disorder psychopathology and functional impairment relative to those without extreme weight and shape concerns. Furthermore, the BED patients were more likely to have sought treatment for an eating or weight-related problem. Similarly, a study based in the United States found that shape and weight overvaluation was strongly associated with measures of eating pathology and psychological distress (e.g., more depression and lower self-esteem) (Hrabosky et al. 2007). Both sets of authors concluded that undue influence of weight or shape on self-evaluation should be added to the diagnostic criteria for BED.

Additional studies are needed to determine whether prevalence estimates or treatment response would differ if the diagnostic criteria related to frequency and duration were relaxed or a criterion about weight and shape concerns was added. However, to date there has been considerable consistency among researchers in the articulation of the diagnostic criteria for BED, with one recent exception that used a three-month rather than a six-month duration criterion (Hudson et al. 2007). Overall, based on the consistent use of the diagnostic criteria and the multiple psychometrically sound assessment instruments, we find that the second criterion of Blashfield et al. (1990) has been met.

CAN DIFFERENT CLINICIANS DIAGNOSE BINGE EATING DISORDER RELIABLY?

The diagnostic reliability criterion requires that there be at least two empirical studies by independent research groups where inter-clinician agreement levels have kappa values of 0.70 or better. We were unable to find any studies specifically addressing this crite-

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a reliable diagnosis of BED has 
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**Binge Eating Disorder (BED) vs. BN**

A large body of research has suggested (1990) recom-
beds to be established dif-
ically, this criterion for BED to be recog-
ned must be shown that its 
symptomatology is distinct from other 
syndromes, especially other eating disorders. The 
original proposal for BED involved a different 
name and definition of the core symptom. As described by Devlin & Walsh 
(1997), the term pathological overeating dis-
order was meant to capture a syndrome with the 
core behavioral symptom of pathological 
overeating (rather than binge eating, which, by 
definition, involves loss of control). Out of 
concern that introduction of the term pathological 
overeating disorder might result in the 
pathologizing of overweight individuals who did 
not experience psychiatric problems, the 
behavioral symptom was changed from pathological 
overeating to binge eating. Hence, in 
an effort to ensure that a clear distinction 
was made between normal and abnormal eating, 
overeating with loss of control (i.e., binge 
eating) became the core feature of BED. Al-
though the redefinition of the core symptom 
sharpened the distinction between normal and 
abnormal overeating, it introduced the ques-
tion of whether BED is sufficiently distinct 
from BN.

BN and BED share the core symptom of 
recurrent binge eating by definition, 
individuals with BED may not report recurrent 
use of inappropriate compensatory behaviors 
to counteract the effects of binge eating on 
weight (e.g., vomiting, laxative use, fasting, or 
excessive exercise). In a recent review, 
Holm-Denoma et al. (2007) found that research has 
shown that individuals with BED differ from 
individuals with bulimia nervosa in clinical 
presentation and comorbidity, demographic 
correlates, and response to treatment. The 
gender ratio is far less skewed in BED than in 
BN (Hudson et al. 2007), and BED has been 
shown to affect females representing racial or 
ethnic minority groups in numbers that are 
comparable to those that have been reported for white females (for review, see Striegel-
Moore et al. 2006a). In contrast, BN and AN 
both appear to be disorders found predominantly among white girls or women (Striegel-
Moore & Bulik 2007). Individuals with BED 
typically are older than those with BN 
or AN (Johnson et al. 2001), although this 
finding (observed in cross-sectional prevalence 
studies) in part may reflect chronicity of the 
disorder (Fichter & Qureshi 2007). In 
addition, Wilfley et al. (2003) reviewed compelling 
evidence that BED is a distinct syndrome from BN in regard to binge characteristics 
(e.g., caloric intake, types of binge food, 
levels of restraint) and course and outcome of the two disorders.

Some concern has been raised about the distinction between BED and obesity, based on the association between the two. The 
prevalence of BED is higher in overweight 
populations (2.9%) than in the general population (1.5%). However, clear differences exist 
between obese persons with BED and without 
BED (Devlin 2007, Yanovski 2003). Obese 
individuals with BED have greater caloric in-
take during both binge-eating and nonbinge-
eating episodes, more eating pathology (i.e., 
chaotic eating habits, more emotional eating), 
and higher rates of comorbid psychiatric illness (e.g., major depression; Wilfley et al. 2000). A family study reported that BED 
aggregates in families, and this association is 
independent of obesity (Hudson et al. 2006). 
The available evidence points to BED as a dis-
tinct subgroup within the obese population 
and strongly supports that BED is separate 
from obesity.

In light of these findings, we concur with 
Holm-Denoma et al. (2007), who wrote, 
"Many lines of evidence have converged to 
suggest that BED is a distinct clinical entity" 
(p. 132), and we conclude that the fourth cri-
terion has been met.

**Is Binge Eating Disorder a Valid Syndrome?**

According to Blashfield et al. (1990), the 
symptoma criterion requires that at 
least two independent empirical studies di-
icate that if a patient exhibits one diagnostic 
symptom, there is at least a 0.50 prob-
ability that the same patient will exhibit 
another symptom of the disorder. Hence, this
criterion requires that the proposed disorder represent a constellation of frequently co-occurring symptoms rather than simply a single symptom or a collection of symptoms that do not co-occur consistently. We are unaware of any studies in the literature that have examined syndrome validity in exactly this way. However, there is an emerging literature of studies using statistical approaches such as latent class analysis (LCA) or taxometric analysis to develop an empirical classification of eating disorders and an extensive literature on BED exploring other commonly proposed indicators of validity of a psychiatric disorder such as face validity, boundary with normality (“zones of rarity,” Kendell & Jablensky 2003), presence of impairment or distress, predictable course and outcome, and response to treatment (Kendell & Jablensky 2003, Kendler 1990, Widiger & Clark 2000). Experts have emphasized that, ultimately, many symptoms that are used to define psychiatric syndromes occur along continua rather than categories, raising the question of whether one can indeed “carve nature at its joints” (Kendler 2006). Moreover, the relative validity of different criterion sets depends, in part, on the validators chosen to establish validity (Kendler 1990).

Walsh (2007) stressed the importance of the clinical utility of the DSM as a guiding principle for defining and including syndromes in this nosological system and proposed that prediction of clinical outcome as a key element of clinical utility should be given considerable weight in determining validity of a syndrome. With these considerations in mind, we briefly summarize efforts toward empirical classification of eating disorders with the question in mind of whether a “natural” class or type has been identified that resembles what was defined a priori as BED in DSM-IV. We then review studies documenting the public health and clinical significance of BED, followed by a review of evidence concerning course and treatment outcome among individuals with BED.

Empirical Classification Studies as a Test of Syndrome Validity

The logic underlying empirical classification techniques such as LCA or latent profile analysis (LPA) is to assess a range of eating disorder symptoms (using categorical indicator variables, LCA, and/or continuous indicators, LPA) and then examine whether classes or types can be identified based on latent similarities among individuals within a class rather than grouping individuals based on a priori defined categories.

To date, nine studies have been reported (Buik et al. 2006; Duncan et al. 2005, 2007; Keel et al. 2006; Mitchell et al. 2007; Rockert et al. 2007; Striegel-Moore et al. 2005; Sullivan et al. 1998; Wade et al. 2006), each using different approaches to specifying indicator variables (i.e., the symptoms to be used for classification), samples (i.e., the criteria used for inclusion into the LCA or LPA, with some studies focusing only on individuals with an eating disorder and some recruiting large community samples that included both eating disorder cases and nondisordered individuals), or validators (i.e., the variables used for examining validity of classes that resulted from the classification effort). One of these studies (Duncan et al. 2005) focused only on bulimia nervosa and therefore is not informative concerning the validity of BED. Given the methodological heterogeneity, it is not surprising that varying numbers and types of classes have been identified, although there are some common themes. For example, all but two of these studies (exceptions: Duncan et al. 2007, Wade et al. 2006) identified a class or profile of individuals who purge but do not binge, and those studies that included criteria for anorexia nervosa identified a class resembling restricting AN. Importantly, all but two (Duncan et al. 2007, Keel et al. 2006) identified a class or profile that resembled BED. Keel and colleagues (2006) used LCA to identify empirically derived eating disorder types in both eating disorder probands and their family members, yet the sample was
Table 1 Lifetime prevalence estimates for binge eating disorder in the United States

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restricted to individuals with a diagnosis of AN or BM and their first-degree relatives. BED did not emerge as a class in this study, and it is possible that this is a function of the sampling approach. Duncan and colleagues (2007) recruited an adolescent sample. Given the relatively late age of onset of BED (Striegel-Moore et al. 2003), it is possible that there were no BED cases in this community sample. Although there appears to be some support for BED as distinct from other forms of eating disorders in these LCA or LPA studies, as discussed by Crow (2007), this literature is limited by the lack of consistent sampling approaches (e.g., the exclusion of individuals with BED in some studies), the reliance of homogenous samples in terms of demographic characteristics (e.g., only young women), and the wide range of external validators used in these studies, making comparisons across studies difficult.

Prevalence of Binge Eating Disorder

Prevalence studies may be viewed as providing one form of indication of the public health significance of a disorder. Widely prevalent conditions may be seen as significant (although we hasten to add that rare conditions may have high public health significance if they contribute to high social burdens or costs). We reviewed above evidence that BED represents a considerable subset of individuals within the diagnostic category of EDNOS. Of the studies that have been conducted to estimate the prevalence of BED, few meet rigorous standards for epidemiological studies including use of representative samples and reliable, interview-based assessments instruments (for reviews, see Striegel-Moore & Bulik 2007, Striegel-Moore et al. 2006a). In a representative community sample of 1785 women and

Clinical Significance of Binge Eating Disorder

The clinical significance of BED has been studied in at least two ways: personal suffering and societal costs. Studies of personal suffering encompass research of psychiatric comorbidity, social functioning, quality of life, and impaired physical health. Societal costs have been examined in terms of health services utilization and health care costs.

Based on an extensive literature review, Wilfley et al. (2003) concluded that poor social adjustment, psychiatric comorbidity, and impaired functioning are common in individuals with BED. More recent studies have shown that the impairments in psychosocial functioning also are evident in adolescent samples (e.g., Glasser et al. 2007). A number of recent studies have included measures of health impairments (in addition to...
psychosocial impairments), and these studies consistently have found that individuals with BED report to be in worse physical health than do individuals who do not meet criteria for BED. For example, Rieger and colleagues (2001) found that obese individuals with BED (relative to obese individuals with no BED diagnosis) had a greater degree of impairment on a multidimensional measure of quality of life, covering both psychosocial aspects and physical functioning. Masheb & Grilo (2004) found that BED patients reported significantly poorer functioning in relation to U.S. norms on a self-report measure of the Health-Related Quality of Life scale. In a comparison of obese BED patients and nonobese BED patients, the former had worse physical impairment scores. In a small study that included only 10 BED patients, Mond and colleagues (2005) reported that impairment was found in both health-related and subjective quality-of-life scores relative to normal controls.

BED has been closely linked to considerable health-related morbidity, likely due to the association with obesity (Guerdjikova et al. 2007), although one review (Bulik & Reichborn-Kjennerud 2003) suggested that medical morbidity in BED may be independent of the effects of comorbid obesity. Overall, the literature supports the notion that quality of life, whether defined in terms of health or psychosocial functioning, is negatively affected by the presence of BED and may be even more so if BED occurs in obese individuals.

Health Services Use Studies

Health services use is an important indicator of clinical significance because it reflects distress or impairment (patients typically seek help because they experience pain or distress about a symptom) and is associated with personal (e.g., time spent traveling to or in meetings with health care providers, out-of-pocket expenses for services received) and societal costs. Despite evidence of considerable disease burden of eating disorders (e.g., Mathers et al. 1999), few studies have examined health services use among individuals with an eating disorder (Garvin & Striegel-Moore 2001, Simon et al. 2005) and only two studies have reported on health services use specifically among individuals with BED. In a sample of women recruited at a primary care clinic or obstetric-gynecology clinic, patients with a diagnosis of BED reported significantly more health problems and more visits to their physician during the previous three months than did patients without an eating disorder (Johnson et al. 2001). A community sample of 162 women with BED reported significantly more health services use over the past 12 months than a matched sample of women (using age, race, and education as matching variables) without a current psychiatric diagnosis (Striegel-Moore et al. 2004). Not surprisingly, the difference in health services use was attributable in large part to a greater number of visits to outpatient psychotherapy among women with BED than among women with no psychiatric diagnosis. Health services use among women with BED was as high as that reported by women with a (noneating) psychiatric disorder. It is of note, however, that women with BED reported fewer psychotherapy visits than a matched comparison sample of women with a current psychiatric disorder (but no eating disorder). We caution against the interpretation of the lower health services use among women with BED compared to women with BN as indicative of lesser clinical severity of BED, for at least two reasons. One, any comparison of health services use needs to be adjusted for potential group differences in variables known to affect health services use, including demographic characteristics (e.g., young individuals use health services less than do older individuals, and BED cases typically are older than BN cases). For example, in a matched comparison of members of a large health care organization, comparison of health services use (based on objective measures of services utilized in the 12 months following diagnosis of an eating
few studies have examined the incidence of BED among individuals with eating disorders (Garvin & Simonsen, 2005) and reported that BED is more common among women recruited from specialty treatment programs than among women recruited from the general population. In a study of women with BED and AN or BN, the rate of BED was significantly higher among women with BED than among women with AN or BN (Strober et al., 2007). These findings suggest that the diagnosis of BED may be more common among women with eating disorders.

Natural Course and Outcome of Binge Eating Disorder

Course, outcome, prognosis, and crossover to other diagnoses are all important areas of clinical inquiry. Fairburn and colleagues (2000) found that 48 women with BED (21% of whom were morbidly obese) had a five-year follow-up assessment and reported that only 18% had any clinical eating disorder at the last assessment. The rate of treatment seeking was low, but significant weight gain occurred (39% met criteria for obesity at the five-year follow-up). However, data from several more recent studies are consistent with these results, which suggest that BED has a fairly protracted course (see Wilfley et al., 2007). A longitudinal study conducted in the United States found that 38% of BED patients continued to meet criteria for the diagnosis at one-year follow-up, and an additional 55% met criteria for an EDNOS diagnosis (Crow et al., 2002, Wilfley et al., 2003). Wilfley et al. (2007) suggest that the discrepancies between these two studies are most likely related to the stringency of the criteria for BED. These findings suggest that BED may take a long time to resolve. Given the adverse impact of binge eating on body weight and taking into consideration the adverse health consequences, the high treatment resistance of obesity, the fact that BED appears to last for years underscores its clinical significance.

Randomized Clinical Trial Studies

Treatment for BED has been an area of great interest, and three recent reviews have led to similar, although not identical, conclusions (Brownley et al., 2007, Grilo 2007, Wilson et al., 2007). Psychological treatments are summarized first, followed by drug treatments.

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Psychosocial treatments for BED. Studies of psychosocial treatment for BED have primarily examined cognitive behavior therapy (CBT) and interpersonal psychotherapy and have found that CBT is the most effective intervention (Grilo 2007). In addition, two recent studies indicate that guided self-help CBT shows great promise (Grilo & Masheb 2005, Grilo et al. 2005a). Most controlled studies show that CBT leads to decreases in binge eating and associated problems (e.g., dietary restraint, depression), and the two studies of guided self-help resulted in similar findings. Generally, positive treatment effects have been maintained over a one-year follow-up period. Consistent across the treatment literature is that weight loss is generally not a treatment effect in studies of CBT with BED patients. Moreover, CBT has been found to be more effective than fluoxetine or placebo in several studies (Grilo et al. 2005b, Ricca et al. 2001). One study (Grilo et al. 2005b) that compared fluoxetine, CBT, and their combination found that remission rates were significantly higher in the CBT group (50% for CBT + fluoxetine; 61% for CBT + placebo) than in the fluoxetine (22%) or placebo (26%) groups. Findings were consistent on measures of eating disorder pathology and associated psychological distress, and weight loss was modest but not different among treatments.

Of note, participants who respond quickly (reduction of >65% in binge eating by fourth treatment week) were more likely to achieve remission and had greater weight loss in one CBT trial (Grilo et al. 2006). Exercise has also been found to be of benefit for binge eating reduction when added to CBT (Pendleton et al. 2002). A recent innovation, Internet-assisted CBT, yielded positive findings relative to wait-list controls (Ljösson et al. 2007). Brownley et al. (2007) concluded that CBT is an effective treatment for BED, and the National Institute for Clinical Excellence (NICE 2004) guidelines from the United Kingdom also state that CBT is the treatment of choice for BED. Although two other treatments, interpersonal psychotherapy and dialectical behavior therapy, have been studied and have yielded positive results, fewer studies have been conducted with these treatments (Telch et al. 2001, Wilfley et al. 2002). CBT has been shown to be helpful for ameliorating numerous psychiatric conditions. Although the findings from the psychosocial treatment trials for BED are promising, they do not provide compelling evidence for BED as a valid diagnostic category in terms of the question of whether there is a unique treatment for BED.

Pharmacological treatments for BED. Drug treatment for BED has focused primarily on the use of antidepressant medications, and efforts have been made recently to find medications that work specifically for BED by targeting the mechanisms hypothesized to underlie loss of control of eating and/or overeating. Based on two reviews of the pharmacotherapy literature, there is limited evidence that medication and placebo differentially affect either binge eating or weight loss in patients with BED (Grilo 2007, NICE 2004). Since that time, four trials have found benefit over placebo using two antibiotic drugs [sibutramine (Appolinaro et al. 2003, Leonbruni et al. 2006), atomoxetine (McElroy et al. 2007)] and an anticonvulsant medication [topiramate (Kotwal et al. 2003)]. Both drugs resulted in greater reductions in both binge eating and weight, but these drugs have not yet been compared with CBT or used in combination; definitive conclusions await large sample randomized controlled trials.

CONCLUSIONS
Unmistakably, the introduction in the DSM-IV of BED as a provisional diagnosis in need of further study has had the intended effect of stimulating a large body of research into this proposed syndrome. There is ample literature on BED; thus, criterion one clearly has been met. Furthermore, the BED
and dialectical-behavioral treatment studies have been conducted and have yielded mixed results. CBT has been noted to be effective for BED patients.

The fourth criterion for BED, which is more recently met, is that independent assessors using well-designed instruments can reliably diagnose BED, and that the psychosocial impairment and psychiatric comorbidity observed among BED cases is comparable to the level of impairment or comorbidity of individuals with other psychiatric disorders. Moreover, BED is a distinct clinical syndrome, yet clinical significance is not enough to warrant designation of a distinct disorder.

Blashfield et al. (1990) articulated two critical additional criteria that speak to the question of whether BED is a valid syndrome. Do individuals with BED differ from those with another disorder, especially eating disorders, and do the symptoms used for defining BED actually co-occur with high probability? To answer the former question, researchers have compared individuals with a diagnosis of BED and those with a diagnosis of bulimia nervosa, the eating disorder most similar in definition. To answer the latter question, researchers have examined the naturally occurring clustering of eating disorder symptoms and then compared the resulting classes of individuals based on DSM-IV diagnostic criteria and/or with demographically limited samples that preclude generalizability to more diverse populations. Furthermore, these classification studies have utilized narrow sets of external validators, usually restricting their focus on demographic and clinical correlates, and have not examined the clinical utility of newly derived criteria sets to predict course and outcome. These concerns notwithstanding,
based on an application of the five Blashfield criteria, we conclude that a case can be made for recognizing BED as a formal eating disorder diagnosis in the DSM-V.

**SUMMARY POINTS**

1. Binge eating disorder (BED) was introduced in 1994 in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV, Am. Psychiatr. Assoc., 1994) as a provisional eating disorder diagnosis. The question of whether BED should be added in the next edition of the DSM has been hotly debated, with some experts expressing support for moving BED from representing an example of an Eating Disorder Not Otherwise Specified to a “named” disorder in its own right and others maintaining that such a designation continues to be premature.

2. Blashfield et al. (1990) proposed that five criteria should be considered when deciding whether to recognize a disorder as a legitimate category of pathology in the DSM. One, there should be ample literature about the proposed syndrome. Two, the diagnostic criteria should be articulated clearly. Three, the proposed syndrome should be differentiated from other (similar) syndromes. Four, evidence should be available regarding the reliability of the diagnosis. And five, evidence should be provided regarding the validity of the syndrome.

3. Although the diagnostic criteria have been clearly and consistently articulated in the literature, they have been the subject of some debate, such as questions about the time-related terms in the criteria, including (a) the amount of time spent binge eating, (b) the occurrence of binges on at least two days per week, and (c) the six-month duration period for the binge eating pattern.

4. Prevalence estimates for BED are consistently higher than estimates for anorexia nervosa or bulimia nervosa. The gender ratio is far less skewed in BED than in bulimia nervosa, and BED has been shown to affect females representing racial or ethnic minority groups in numbers that are comparable to those that have been reported for white females.

5. Research has shown that individuals with BED differ from individuals with bulimia nervosa in clinical presentation and comorbidity, demographic correlates, and response to treatment. BED is a syndrome distinct from bulimia nervosa in regard to binge characteristics (e.g., caloric intake, types of binge food, levels of restraint) and course and outcome of the two disorders.

6. Poor social adjustment, psychiatric comorbidity, and impaired health and psychosocial functioning are common in individuals with BED. BED is a very stable syndrome, with an average duration of illness of 14.4 years, significantly longer than the duration of anorexia nervosa or bulimia nervosa.

7. Cognitive-behavior therapy is the treatment of choice for BED, but there is limited evidence that medication and placebo differentially affect either binge eating or weight loss in patients with BED.

8. Based on an application of Blashfield’s five criteria, we conclude that a case can be made for recognizing BED as a formal eating disorder diagnosis in the DSM-V, although further classification studies are needed using wider sets of external validators to examine the clinical utility of newly derived criteria sets to predict course and outcome.
DISCLOSURE STATEMENT

The authors are not aware of any biases that might be perceived as affecting the objectivity of this review.

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