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Binge or control? : assessment of the validity, treatment and underlying mechanisms of Binge Eating Disorder

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Chapter 2

Binge Eating Disorder: A review

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Summary

Binge eating disorder (BED) is a new proposed eating disorder in the DSM-IV. BED is not a formal diagnosis within the DSM-IV, but in day-to-day clinical practice the diagnosis seems to be generally accepted. People with the BED-syndrome have binge eating episodes as do subjects with bulimia nervosa, but unlike the latter they do not engage in compensatory behaviours. Although the diagnosis BED was created with the obese in mind, obesity is not a criterion. This paper gives an overview of its epidemiology, characteristics, aetiology, criteria, course and treatment. BED seems to be highly prevalent among subjects seeking weight loss treatment (1.3-30.1%). Studies with compared BED, BN and obesity indicated that individuals with BED exhibit levels of psychopathology that fall somewhere between the high levels reported by individuals with BN and the low levels reported by obese individuals. Characteristics of BED seemed to bear a closer resemblance to those of BN than to those of obesity.

A review of RCT's showed that presently cognitive behavioural treatment is the treatment of choice but interpersonal psychotherapy, self-help and SSRI's seem effective. The first aim of treatment should be the cessation of binge eating. Treatment of weight loss may be offered to those who are able to abstain from binge eating.

Introduction

In the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) binge eating disorder (BED) is proposed as a new diagnostic category within the spectrum of eating disorders (American Psychiatric Association, 1994). The disorder falls into the category 'eating disorders not otherwise specified' (EDNOS). BED is not a formal diagnosis, the criteria described in Appendix B of the manual require further research.

In 1991 Spitzer and others suggested that BED should be included in the DSM-IV. Their rationale for this proposal was that many individuals with marked distress about binge eating could not be diagnosed with bulimia nervosa (BN). People with the BED-syndrome have episodes of binge eating as do patients with bulimia nervosa but unlike the latter they do not engage in compensatory behaviours such as self-induced vomiting, the misuse of laxatives, diuretics or diet pills, fasting and excessive exercise. They indicated that such patients are common among the obese in weight control programs. Although the diagnosis BED was created with the obese in mind, obesity is not a criterion for BED. An overview of the proposed diagnostic criteria can be found in table 1.

Table 1. Research criteria for binge eating disorder (American Psychiatric Association, 1994)

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- A. Recurrent episodes of binge eating. An episode of binge eating is characterised by both of the following:
1. Eating, in a discrete period of time (e.g. within any 2-hour period), an amount of food that is definitely larger than most people would eat in a similar period of time under similar circumstances
 2. A sense of lack of control over eating during the episodes (e.g. a feeling that one cannot stop eating or control what or how much one is eating)
- B. The binge-eating episodes are associated with three (or more) of the following:
1. Eating much more rapidly than usual
 2. Eating until feeling uncomfortably full
 3. Eating large amounts of food when not feeling physically hungry
 4. Eating alone because of being embarrassed by how much one is eating
 5. Feeling disgusted with oneself, depressed, or very guilty after overeating
- C. Marked distress regarding binge eating is present
- D. Binge eating occurs, on average, at least 2 days a week for 6 months
- E. The binge eating is not associated with regular use of inappropriate compensatory behaviours (e.g. purging, fasting, excessive exercise) and does not occur exclusively during the course of anorexia nervosa or bulimia nervosa.
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Although BED is not a formal diagnosis within the DSM-IV, in day-to-day clinical practice binge eating disorder is a generally accepted category. However, amongst clinicians there is considerable controversy about if and how the treatment demands of these patients

should be met. Nevertheless, eating disorder clinics have reluctantly begun treating patients with binge eating disorder. One reason for this reluctance is that subjects with binge eating disorder presenting for treatment in eating disorder services are in general obese. Consequently these subjects have two problems: obesity and binge eating. Eating disorder practitioners are trained to treat psychiatric eating disorders and are inclined to leave the treatment of obesity to other specialists. The inverse seems to be true in the field of obesity. The identification of BED within patients presenting at an obesity clinic is important, because of the implications for treatment.

This paper will provide an overview of the research that has been done on BED in the decade following the first proposal of the diagnostic criteria by Spitzer and others in 1991. First of all, the epidemiological studies will be reviewed. Secondly, the aetiology will be discussed and the characteristics of patients with binge eating disorder will be compared to those of patients with obesity and to those of patients with bulimia nervosa. The differences and similarities will be discussed. Recommendations for improving the classification of BED will be given. Finally, the treatment and course of binge eating disorder will be reviewed.

Methods

The relevant literature was identified by a search of computerised databases (including MEDLINE, EMBASE, PsycLIT, Science Citation Index Expanded (SCI-EXPANDED) and Social Science Citation Index (SSCI)) and cross-referencing.

Results

Epidemiology

Only a few epidemiological studies have investigated the prevalence of BED in different populations i.e. in general populations and in specific populations (e.g. male, female, adolescent and obese populations). Three studies have examined the prevalence of BED in the general population (Spitzer et al., 1992; Spitzer, Yanovski, Wadden, & Wing, 1993; Hay, 1998). Spitzer and others (1992; 1993) reported a prevalence of 3.3% in their first study and 2% in their second study. In an Australian community-based survey 1% of the population had BED (Hay, 1998).

Other studies examined random samples of women in France (Basdevant et al., 1995), Norway (Gøtestam & Agras, 1995) and Austria (Kinzl, Traweger, Trefalt, Mangweth, & Biebl, 1999) and found that 0.7%, 3.2% and 3.3% respectively met the criteria for BED. Two studies investigated the prevalence of eating disorders among young female students and found that 1.0% (Rosenvinge, Borgen, & Borresen, 1999) and 0.2% (Cotrufo, Barretta, Monteleone, & Maj, 1998) satisfied the BED criteria. Kinzl et al. (1999) reported a prevalence of 0.8% in an all male community sample. BED seems to be distributed equally among the sexes (Spitzer et al., 1993; Hay, 1998; Striegel-Moore, 1995).

The population that has been investigated most consists of obese adults seeking weight loss treatment. The reported prevalence rates vary greatly and range from 1.3% to 30.1% (Spitzer et al., 1992; Spitzer et al., 1993; Ramacciotti et al., 2000; Basdevant et al., 1995; Ricca et al., 2000; Varnado et al., 1997). BED is associated with obesity and unstable weight (Fairburn et al., 1998; Spitzer et al., 1993). Also, BED seems to be more prevalent as the degree of obesity increases (Telch, Agras, & Rossiter, 1988; Hay, 1998; Hay & Fairburn, 1998). Probably the degree of obesity is different in the populations that have been investigated.

Prevalence rates of eating disorders have also been investigated in patients with diabetes mellitus. Herpertz et al. (2000) found that 10% of the type II diabetic sample they studied, had an eating disorder, which was characterized by binge eating (5.9 to 7.8% had a lifetime diagnosis of BED). All these patients were overweight or obese. Mannucci et al. (1997) found a prevalence of 5.7% for BED in type II diabetics. BED seems to precede type II diabetes in most patients and could be one of the causes of obesity that often precedes type II diabetes (Herpertz et al., 1998). There does not seem to be an increase of eating disorders in type I diabetes mellitus and vice versa (Nielsen & Molbak, 1998).

In all studies but one, the diagnosis of BED was determined solely on the basis of answers to questionnaires. Furthermore, most samples were relatively small. The study by Hay (1998) was the only study with a reasonably large sample (N=3000) and was the only one, which used both a questionnaire and an interview.

Aetiology

In a community-based, retrospective case-control study Fairburn and others (1998) aimed to identify specific risk factors for BED. They compared subjects with BED with healthy controls, subjects with other psychiatric disorders and subjects with bulimia nervosa. The findings support the prediction that BED would be associated with exposure to risk factors that increase the risk for psychiatric disorder in general and with those that increase the risk for obesity.

Little is known about the family characteristics of BED patients. One study found that BED subjects rated their family environment as less supportive and cohesive, and less engendering of direct and open expression of feelings than healthy controls. The BED group scored worse than other eating disorder groups (Hodges, Cochrane, & Brewerton, 1998). One study investigated familial tendency for BED and the risk for other psychiatric disorders, but failed to show this (Lee et al., 1999b).

In BN most individuals start dieting prior to the onset of binge eating (Mussell et al., 1997; Marcus et al., 1995; Haiman & Devlin, 1999). However, a fairly large subgroup of the individuals with BED start binge eating prior to the onset of dieting (35-54%)(Grilo et al., 2000; Abbott et al., 1998; Spurrell et al., 1997; Mussell et al., 1995). Dieting seems to play a role in the aetiology of BED, but research does not indicate that dieting is always a key factor in BED, as it seems to do in BN (Howard & Porzelius, 1999). The binge-first group seems to diet

because they binge, not binge because they diet (Abbott et al., 1998). For subjects who start binge eating before dieting, binge eating seems to be the primary symptom that leads to weight gain. Obesity is found to develop several years after the onset of binge eating (Haiman et al., 1999; Mussell et al., 1995).

Characteristics of binge eating disorder

The characteristics of BED are similar to those of both obesity and bulimia nervosa. The central criterion for BED is the occurrence of episodes of binge eating which is also an essential criterion for bulimia nervosa.

Obesity with and without binge eating disorder - Obese patients with BED have less self-esteem and greater depressive symptomatology than obese persons without BED; they also have more comorbid psychiatric disorders, in particular affective disorders and personality disorders (de Zwaan & Mitchell, 1992; Mitchell & Mussell, 1995; Yanovski et al., 1993; Kuehnel & Wadden, 1994; Striegel-Moore, Wilson, Wilfley, Elder, & Brownell, 1998; Telch et al., 1998). Individuals with BED are more likely to report dietary disinhibition (Marcus, Wing, & Lamparski, 1985; Wadden, Foster, & Letizia, 1992), excessive concern with shape and thinness and difficulty in interpreting visceral sensations related to hunger and satiety (Marcus et al., 1990; Kuehnel et al., 1994). Furthermore, subjects with BED have a tendency to experience negative affect in response to perceived evaluation by others of weight-related behaviour (Eldredge & Agras, 1997). They are more likely than obese persons without BED to become overweight at a younger age (Spitzer et al., 1993), to start dieting at a younger age and to spend more time on fruitless attempts to lose weight (de Zwaan et al., 1994; Kuehnel et al., 1994; Grissett & Fitzgibbon, 1996; Howard et al., 1999). Overweight subjects with BED consider themselves more overweight and fatter than non-binge subjects with a comparable weight (Mussell et al., 1996a). Others (Masheb & Grilo, 2001) found that individuals with BED are accurate reporters of weight. There is even a tendency for underreporting weight.

Two studies have recorded food intake in a laboratory (Goldfein, Walsh, LaChaussee, & Kissileff, 1993; Yanovski et al., 1992). Subjects with BED and obesity had a higher energy intake than subjects with obesity alone. Also, the recorded energy intake of subjects with BED on non-binge days was greater than that recorded by subjects without the disorder. Subjects with BED consumed more dessert and more snack foods (more fat and less protein) than did obese control subjects. The total intake was larger and duration of the episodes was longer in subjects with BED. Furthermore, for both subjects with and without BED, it seems that energy intake increases with the degree of obesity (Mitchell, Crow, Peterson, Wonderlich, & Crosby, 1998; Telch et al., 1994a). The degree of the psychopathology seems to be related to the degree of binge eating and not to the degree of obesity (Hay et al., 1998). Also, obese BED patients seem to be significantly older than normal-weight BED patients which suggests that binge eating may represent a risk factor for weight gain or obesity (Masheb & Grilo, 2000).

Binge eating disorder compared to bulimia nervosa - The criteria for BED are derived from the criteria for bulimia nervosa (BN). Most studies that compare BED and BN use the criteria for BN in the DSM-III-R, which makes no distinction between the purging and non-purging subtypes of BN. The DSM-IV does make a distinction between these subtypes. Purging bulimics engage in self-induced vomiting, misuse of laxatives, diuretics or enemas to compensate for binge eating. Nonpurging bulimics use inappropriate compensatory behaviours like fasting or excessive exercise. Several studies have compared BED patients with purging bulimics (Marcus, Smith, Santelli, & Kaye, 1992; Kirkley, Kolotkin, Hernandez, & Gallagher, 1992; Fichter, Quadflieg, & Brandl, 1993; Raymond, Mussell, Mitchell, & de Zwaan, 1995; Tobin, Griffing, & Griffing, 1997; Mitchell et al., 1999; LaChaussee, Kissileff, Walsh, & Hadigan, 1992; Goldfein et al., 1993; Mussell et al., 1995), and a few studies have compared BED patients to non-purging BN patients (Tobin et al., 1997; Hay et al., 1998; Santonastaso, Ferrara, & Favaro, 1999). In order to interpret the results of these studies correctly it is important to know which version of the DSM was used.

Compared to subjects with BN (DSM-III-R) subjects with BED seem less anxious about their eating patterns and bodyweight, feel less guilty about being overweight, are less preoccupied with their eating behaviour, have a better overall opinion of themselves, are able to perceive internal states more accurately, are more socially adjusted, and are more comfortable in maintaining interpersonal relationships (Raymond et al., 1995). BED subjects have lower levels of dietary restraint than BN subjects (Masheb et al., 2000). BED patients seem to show fewer comorbid psychiatric symptoms than BN purging or non-purging patients (DSM-IV)(Tobin et al., 1997). However, Marcus et al. (1992) found that obese women seeking treatment for binge eating reported levels of eating disorder psychopathology that were comparable to those of normal weight bulimia nervosa patients (DSM-III-R). Nonpurging bulimics and BED subjects do not seem to differ in clinical and psychological characteristics, such as psychiatric symptoms, frequency of bingeing, and impulsiveness traits. However, on many of the variables, the BED group showed a significantly greater variance (Santonastaso et al., 1999).

Energy intake during an episode of binge eating seems to be different in BN (DSM-III-R) and BED. In a laboratory subjects were asked to binge on ice cream. Subjects with BN (DSM-III-R) consumed four times as much as normal weight healthy controls (LaChaussee et al., 1992). The same research group reported that subjects with BED ate only half the amount of ice cream eaten by subjects with BN (Goldfein et al., 1993). One study compared the quality and quantity of binges reported in individuals with BED and BN (Fitzgibbon & Blackman, 2000). Binges of subjects with BN were higher in carbohydrates and sugar content than those of subjects with BED. No difference was observed in the mean number of consumed calories.

Studies which compared BED, BN and obesity (Fichter et al., 1993; Kirkley et al., 1992; Howard et al., 1999) indicate that individuals with BED exhibited levels of

psychopathology that fell somewhere between the high levels reported by individuals with BN and the low levels reported by obese individuals without binge eating. However, the characteristics of subjects with BED seemed to bear a closer resemblance to those of subjects with BN than to those of obese individuals.

It has also been suggested that bulimic eating disorders exist on a continuum of clinical severity, which starts with bulimia nervosa purging type (most severe), passes through bulimia nervosa nonpurging type (intermediate severity), and finishes with binge eating disorder (least severe)(Hay et al., 1998).

Classification

The definition of binge eating (criterion A) is identical for BED and bulimia nervosa. The operationalisation of the binge eating criteria in BED poses several problems (see also table 1). By comparison, episodes of binge eating are easier to define in bulimia nervosa because the binge eating is followed by compensatory behaviour like vomiting. In BED both the beginning and ending of an episode of binge eating are less clear. Also, there is no consensus about the best method for assessing binge behaviour, i.e. is it better to count the number of binge days or the number of binge episodes. This is also reflected in the discrepancy between criterion A1 and D. There is still a considerable debate about how to classify a binge episode in general, regardless of the diagnosis. The criteria that are most salient in identifying binges are the amount of food eaten, the time frame of the eating episode and loss of control. Of these variables, the impact of quantity and loss of control criteria are more apparent than the temporal criterion (Johnson, Boutelle, Torgrud, Davig, & Turner, 2000). It is important that the criteria of these binges should be well described first since we would not wish normal gluttony to be classed as a psychiatric illness (Fairburn et al., 1993b). The EDE (Eating Disorder Examination) scheme for classifying episodes of overeating (Cooper & Fairburn, 1987; Fairburn & Wilson, 1993c), which distinguishes between objective and subjective bulimic episodes, can also be helpful (see table 2).

Table 2: The EDE scheme for classifying episodes of overeating (Cooper et al., 1987)

	Large (EDE definition)	Not 'large' but viewed by subject as excessive
'Loss of control'	Objective bulimic episodes	Subjective bulimic episodes
No 'loss of control'	Objective overeating	Subjective overeating

Criterion B does not seem to represent a distinct criterion since B1, B2 and B3 refer to aspects of binge eating behaviour already described in criterion A and B4 and B5 refer to

aspects of distress mentioned in criterion C. It might be more correct to discuss these features not as a separate criterion but included respectively in criteria A and C.

What is meant with 'marked distress regarding binge eating' in criterion C is also not entirely clear. Distress might refer to an emotional state or it might describe impairment of the patient's functioning in social situations or at work due to binge eating (de Zwaan, Mitchell, Specker, & Pyle, 1993).

According to criterion E, a person should not be diagnosed as having BED if he/she engages in regular inappropriate compensatory behaviour. However, it is unclear what kind of compensatory behaviour is regarded as inappropriate. For instance nonpurging compensatory behaviours, like excessive exercise and misuse of diet pills, have never been clearly defined (Fairburn et al., 1993b; de Zwaan, Mitchell, Raymond, & Spitzer, 1994). Furthermore, there is no definition of the term regular. The term regular implies that some compensatory behaviour is permitted for the diagnosis BED. In DSM-IV fasting has replaced the phrase dieting to facilitate the distinction between BED and nonpurging BN (de Zwaan, 1997).

Although these criteria obviously need further study, there is considerable evidence that BED represents a valid eating disorder category. Researchers still use slightly different criteria for BED in their separate studies. Future research should refine the criteria, which should eventually lead to a more reliable determination of the diagnosis BED.

Randomised controlled clinical trials for Binge Eating Disorder

The treatment of BN has been researched extensively and there have also been numerous controlled treatment studies (Schmidt, 1998), however far less attention has been paid to BED (Wilfley & Cohen, 1997). Because BED is more similar to BN than to obesity without binge eating, the first generation of BED treatment research focused on examining the efficacy of those treatments that had been shown to be effective for BN: cognitive behavioural therapy (CBT), interpersonal psychotherapy (IPT) and antidepressant medication. CBT is the most widely investigated treatment for both BN and BED and has emerged as the treatment of choice for both disorders; it has become the gold standard to which other treatments are compared (Wilfley et al., 1997). Many individuals with BED seek help for overweight. Treatment of obesity focuses on the reduction of caloric intake, encourages a shift to a low fat diet, addresses any medical contribution to the condition and initiates exercise. However, the underlying behavioural disturbances or the social and psychological consequences of obesity are often neglected. If the treatment of obese subjects with BED focuses only on reduction of bodyweight and does not address binge eating or underlying problems, binge eating continues or even worsens (Romano & Quinn, 1995; Howard et al., 1999). Weight-loss programmes seem to have little effect on the reduction of binge eating in obese subjects with BED (Kirkley et al., 1992).

The studies under discussion in this review are those in which BED is classified by means of the DSM-IV. These treatment studies have focused only on overweight women with

BED. Unfortunately, short-term data are very limited and there are almost no long-term data. Finally, the studies are inconsistent in their definitions of the disorder and do not use the same outcome measures for success.

Psychological clinical trials

To date there have been seven controlled clinical trials in which CBT was evaluated in BED patients (Telch, Agras, Rossiter, Wilfley, & Kenardy, 1990; Wilfley et al., 1993; Agras et al., 1994a; Agras et al., 1995; Eldredge et al., 1997; Peterson et al., 1998; Carter et al., 1998). CBT has been compared to interpersonal therapy, weight loss therapy and antidepressant medication. These studies are summarized in table 3.

Table 3: Controlled clinical psychological trials for binge eating disorder

Authors	Subjects & Design	Primary outcome measures	Outcome
Telch et al., 1990	44 obese women with nonpurging bulimia nervosa (DSM-III-R) 1. Group CBT, 10 sessions, (N=23) 2. Waiting list (N=21)	frequency binge of eating episodes	CBT > waiting list (CBT: 94% reduction in binge eating episodes, 79% abstinent; waiting list no reduction)
Wilfley et al., 1993	56 obese women with nonpurging bulimia nervosa (DSM-III-R) 1. Group CBT, 16 sessions (N=18) 2. Group IPT, 16 sessions (N=18) 3. Waiting list (N=20)	frequency of binge days	CBT = IPT > waiting list Abstinence: CBT:28%; IPT: 44%; Reduction in binge eating episodes: CBT: 48%; IPT:71% → neither is statistically significant At 1 year follow-up 50% reduction in binge eating in both CBT-treated and IPT-treated patients. No significant weight loss
Telch et al., 1994a	108 obese women with binge eating disorder (DSM-IV) 1. WLT, 30 sessions, (N = 37) 2. Group CBT, 12 sessions, followed by WLT, 18 sessions (N=36) 3. Group CBT, 12 sessions, followed by WLT, 18 sessions, plus desipramine, 6 months (N=36)	1.weight 2. frequency binge eating episodes	WLT = CBT/WLT = CBT/WLT/desipramine Abstinence: respectively 19%, 37%, 41% no statistical significance Weight loss res. 6.0 kg, 1.6 kg and 3,7 kg

Authors	Subjects & Design	Primary outcome measures	Outcome
Agras et al., 1995	50 obese subjects (43 women/7 men) with binge eating disorder (DSM-IV) 1. Group CBT 12 sessions (N=39) plus weekly weighings, an exercise programme and information about low fat food If successful: WLT, 12 sessions If not successful: group IPT, 12 sessions 2. Waiting list (N=11)	1. Frequency of binge days 2. Weight	Reduction in binge days: CBT 77%; waiting list 22%. IPT did not add to the effect of CBT Weight: significant weight loss in CBT/WLT, no differences in weight in CBT/IPT
Eldredge et al., 1997	46 obese subjects (44 women / 2 men) with BED (DSM-IV) 1. Group CBT, 12 weeks (N=36) If successful: WLT, 12 sessions (N=18) If not successful: group CBT, 12 sessions (N=18) 2. Waiting list (N=10)	Frequency of binge eating episodes	After 12 weeks: CBT: 50% abstinent and 68.2% reduction in binge eating; Waiting list: 19.8% reduction in binge eating. No reduction in weight After 24 weeks: CBT: 67% abstinent
Peterson et al., 1998	61 women with BED (DSM-IV), self-help based on CBT techniques. Each session: psycho-education and group discussion (14 sessions). 1. Therapist-led (TL) (N=16) 2. Partial self-help (PSH) (N=19) 3. Self-help (SH) (N=15) 4. Waiting list (WL) (N=11)	1. Frequency of binge eating episodes 2. Duration of binge eating episode	TL=PSH=SH>WL (abstinence 69%, 68%, 87%, 13% respectively) Significant reduction in frequency and duration of binge eating episodes
Carter et al., 1998	72 subjects with BED (DSM-IV), self-help based on CBT techniques (12 weeks). 1. Pure self-help (PSH) (N=24) 2. Guided self-help (GSH) (N=24) 3. Waiting list (WL) (N=24) (after 12 weeks these subjects were randomly assigned to one of the two conditions)	Frequency of binge eating episodes	Abstinence form binge eating: GSH>PSH>WL (50%, 43% and 8% respectively) 6 months follow-up: abstinence form binge eating: GSH>PSH (50% and 40% respectively)

CBT=Cognitive Behavioural Therapy; IPT=Interpersonal Psychotherapy; WLT=Weight Loss Treatment; WL=Waiting list

CBT is a semi-structured and problem-oriented therapy. It is concerned mainly with the patients' present and future rather than with their past (Fairburn, 1993). The focus is on the factors and processes that maintain the eating problem rather than on those that operated earlier in its evolution. Fairburn (1981) was the first to describe CBT as a useful therapy for bulimia nervosa. Three stages in the treatment can be distinguished. The first is to identify the rationale underlying the cognitive-behavioural treatment approach, and the second is to replace

binge eating with a stable pattern of regular eating. In stage two there is continuing emphasis on regular eating and the use of alternative behaviour, but in addition the focus broadens to address all forms of dieting, concerns about shape and weight, and more general cognitive distortions. The aim of the third and final stage is to ensure that progress is maintained in the future.

Klerman and colleagues were responsible for developing IPT (Klerman, Weissman, Rounsaville, & Chevron, 1984). It was designed for the treatment of depressed outpatients and is based on an interpersonal view of the maintenance of depression. The treatment was modified to suit patients with bulimia nervosa (Fairburn et al., 1991). Later Wilfley and colleagues (1993; 2000) modified IPT to a group format so that it could be used to treat groups of persons with BED. IPT uses techniques derived from psycho-dynamically oriented therapies, but the focus is on the patient's current circumstances and relationships. It is based on the assumption that psychiatric disorders are intimately related to disturbances in social functioning, which, in turn, may be associated with the onset and/or maintenance of the disorder. IPT involves well-defined treatment strategies, techniques, and a therapeutic approach to the resolution of problems within four social domains: grief, interpersonal disputes, role transitions, and interpersonal deficits. IPT is especially well-suited for binge eating disorder patients because it teaches: 1) the requisite skills for developing and sustaining satisfying relationships and 2) more effective strategies (than binge eating) for coping with social and interpersonal problems (Wilfley, Frank, Welch, Borman Spurrell, & Rounsaville, 1998).

Psychological treatment in general seems to cause a statistically significant reduction in binge eating compared to no treatment (reduction in number of episodes: 68-77%; abstinence from binge eating: 40-87%). Two studies combined psychological treatment with a weight loss program (Agras et al., 1995; Eldredge et al., 1997). Treatment of obese subjects with BED seems to be more successful if binge eating is treated before any attempts are made to lose weight. Agras and others (1995) investigated the effectiveness of IPT in treating overweight patients with binge eating disorder who did not stop binge eating after 12 weeks of CBT. IPT did not lead to further improvement in those who did not improve with CBT.

Two studies (Peterson et al., 1998; Carter et al., 1998) examined the effectiveness of a self-help format (CBT) in the treatment of BED. Self-help formats seem to be effective. However, some caution is needed with the interpretation of the high abstinence rates, because the participants in these 'self-help' studies were probably less severely ill than those in the other studies (for example, subjects in the study by Carter and others (1998) had not received any prior treatment).

Pharmacological clinical trials

The number of double-blind placebo-controlled pharmacological trials is also small (see table 4). Drugs which have been examined are three selective serotonin reuptake

inhibitors (SSRI's; fluoxetine, fluvoxamine, sertraline)(Greeno & Wing, 1996; Hudson et al., 1998; McElroy et al., 2000) and an appetite suppressant with serotonin-enhancing properties (d-fenfluramine)(Stunkard, Berkowitz, Tanrikut, Reiss, & Young, 1996).

Fluoxetine seemed to reduce dietary intake but did not affect the frequency of binge episodes. This finding suggests that fluoxetine affects satiety, not hunger (Greeno et al., 1996). Fluvoxamine was found to be effective in reducing the frequency of binge episodes and in lowering Clinical Global Impression (CGI) severity scores (Hudson et al., 1998). Finally, sertraline seemed to be effective and well tolerated, although the number of participants in that study was low (McElroy et al., 2000).

D-Fenfluramine reduced the frequency of binge eating in obese women with BED, but failed to reduce their bodyweight (Stunkard et al., 1996).

A striking finding in these pharmacological studies is a high placebo-effect. All studies had a single-blind lead-in period from 1 to 4 weeks. After this lead-in period 42 to 44% of the participants no longer met the DSM-IV-criteria for BED.

In all studies the drugs under investigation seemed to be more effective than placebo with regard to the primary outcome measures. However, no long-term effects were found. Further, drugs did not seem to bring about a reduction in bodyweight. Disadvantages of these studies were the small number of participants and the short duration of the trials.

Course of binge eating disorder

Two studies investigated the natural course of BED in the general population. Fairburn et al. (2000) followed 102 subjects with BED for five years. After five years only 10% of these subjects still fulfilled the criteria for BED (1 subject (3%) fulfilled the criteria for bulimia nervosa and 2 subjects (5%) for 'eating disorders, not otherwise specified'. In total 18% had an eating disorder of clinical severity. At the 5 year follow-up 77% of the group was abstinent (i.e. no objective bulimic episodes). However, the group as a whole became heavier during the five years and a large proportion tended to have a BMI over 30 (obesity) (22% at recruitment compared to 39% at follow-up). Striking was the finding that only 8% had been treated for an eating disorder during these five years.

Cachelin and others (1999) examined women with BED in the general population for a period of six months. At the six-month follow-up 52% of these women suffered from full-syndrome BED, whereas 48% appeared to be in partial remission. Treatment seeking in general did not appear to be associated with improvement in BED over a relatively short time period.

Table 4: Double- blind placebo-controlled clinical trials

Authors	Subjects & Design	Primary outcome measures	Outcome
Greeno et al., 1996	38 overweight women with BED (DSM-IV) and 32 without BED (6 weeks) 1. Fluoxetine 60 mg / day (N=34) 2. placebo (N=36)	dietary intake	Fluoxetine > placebo for both groups Fluoxetine did not affect frequency of binge episodes or mood
Stunkard et al., 1996	24 subjects with BED (DSM-IV) (8 weeks) 1. d-Fenfluramine 30 mg/day (N=12) 2. placebo (N=12)	frequency of binge episodes	d-Fenfluramine > placebo no effects left after follow-up at 1 and 4 months no reduction in weight
Hudson et al., 1998	67 subjects with BED (DSM-IV) (9 weeks) 1. Fluvoxamine 50-300 mg/day (N=29) 2. placebo (N=38)	1. frequency of binge episodes 2. Clinical Global Impression (CGI)	Fluvoxamine > placebo (also BMI) more drop-outs in Fluvoxamine-group because of adverse medical event
McElroy et al., 2000	34 subjects with BED (DSM-IV) (6 weeks) 1. Sertraline 50-200 mg/day (N=18) 2. Placebo (N=16)	1. frequency of binge episodes 2. severity 3. global improvement 4. BMI	Sertraline > placebo

Fichter and others (1998) assessed the course and outcome of 68 women with BED over a period of six years after intense inpatient treatment. In general, the majority of these patients showed substantial improvement during treatment, a slight (in most cases non-significant) decline during the first 3 years after treatment ended and further improvement and stabilization in the 4, 5 and 6 years following treatment. At the six year follow-up only 6% fulfilled the criteria for BED. In total 20% met the criteria for some eating disorder according to the DSM-IV.

The studies mentioned above could be taken to indicate that treatment worsens the course of BED, since a higher percentage of subjects improved without treatment. However, subjects seeking help for BED seem to have more severe problems than subjects with BED in the general population (Fairburn, Welch, Norman, O'Connor, & Doll, 1996).

Discussion

Binge eating disorder and obesity are obviously associated with each other. The prevalence of BED seems to increase with the degree of obesity. In almost half of the obese subjects with BED the onset of binge eating is prior to the onset of obesity. This implicates

that binge eating might be a primary symptom that leads to weight gain and obesity. How overweight plays a part in the development and maintenance of BED needs to be investigated more precisely.

Most studies have investigated BED in populations of obese women. However, the majority of the subjects with BED identified in community samples are not obese. Further, BED seems to be equally distributed between the sexes. Perhaps women with BED and obesity seek help more readily than men. Another possible explanation is that women are more easily diagnosed with BED than men are. More men should be included in future research studies. Also practitioners should be more aware of the possible existence of binge eating in men.

A striking finding is the improvement of BED in untreated subjects in the general population. However, these patients showed a considerable increase in (over)weight. Binge eating engenders an increase in bodyweight in normal weight subjects. Both the shame associated with binge eating and the increase in bodyweight may lead to a negative self-evaluation. Subsequently, a vicious spiral may develop. The development of obesity with its personal, social and health consequences may be a better predictor for help-seeking behaviour than the occurrence of binge eating.

BED holds an intermediate position between bulimia nervosa and obesity with regard to the severity of the psychopathology. However, the characteristics of obese BED patients seem to be more similar to the characteristics of BN patients than to those of obese subjects.

Patients with BED often suffer from two problems: binge eating and obesity. The identification of BED amongst patients presenting at obesity services is important. The first aim of treatment should be the cessation of binge eating. Treatment directed at weight loss may be offered to those patients who are able to abstain from binge eating.

Cognitive behavioural psychotherapy is currently the treatment of choice for binge eating. However, interpersonal psychotherapy, self-help based on techniques of CBT and selective serotonin reuptake inhibitors also seem to be promising forms of treatment.

Binge Eating Disorder: A review

