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Binge Eating in an Obese Community Sample

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Abstract: Objective: The present study sought to examine the validity and utility of diagnostic criteria for binge-eating disorder (BED) by replicating and extending a study reported by de Zwaan and colleagues (International Journal of Eating Disorders, 15, 43–52, 1994). Method: Four groups of obese individuals were selected from a large community-based sample of men and women: 33 women and 20 men with BED, 79 women and 40 men with subthreshold BED, 21 women and 39 men who reported recurrent overeating, and 80 female and 80 male normal controls. The groups were compared on measures of body image concern, dieting behavior, and associated psychological distress. Results: Individuals with BED were distinguishable from overeaters and normal controls on a number of psychological and behavioral variables. Few differences were found between subthreshold and full-syndrome BED, raising questions about the diagnostic validity of the frequency threshold. Men with BED did not differ from women with BED above and beyond the gender-related differences observed across all four groups. Discussion: Our findings support the view of BED as a distinct syndrome. © 1998 by John Wiley & Sons, Inc. Int J Eat Disord 23: 27–37, 1998.

Key words: binge eating; obesity; sex differences

INTRODUCTION

Binge-eating disorder (BED) is included in the 4th ed. of the Diagnostic and statistical manual of mental disorders (DSM-IV; American Psychiatric Association [APA], 1994) as an example of eating disorder not otherwise specified (EDNOS). Although the diagnosis of BED is not linked to weight, the evidence is consistent in showing that the majority of patients in clinical samples are overweight (Spitzer et al., 1993a). Several studies have reported rates of BED as high as 30% among obese patients seeking treatment for weight loss (Spitzer et al., 1992; Yanovski, 1993), although more recent studies have yielded much lower numbers (Basdevant et al., 1995, Stunkard et al., 1996). The prevalence of recurrent

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binge eating in a community sample has been assessed as approximately 2.5% (Fairburn, Hay, & Welch, 1993).

Obese binge eaters appear to be a distinctive subgroup among obese patients seeking treatment. Compared with obese patients who do not binge, those who binge show significantly higher levels of psychiatric comorbidity (Yanovski, Nelson, Dubbert, & Spitzer, 1993) and eating and weight-related disturbance. The latter includes greater average food intake than nonbingers on both a total (2,707 vs. 1,869 kcal per day) and weight-adjusted basis, with higher intake even on nonbinge days (Yanovski & Sebring, 1994); significantly higher scores on the Disinhibition subscale (but not the Restrained subscale) of the Eating Inventory (EI; Stunkard & Messick, 1985; Yanovski & Sebring, 1994); and a history of more frequent weight fluctuations and amount of time spent dieting (Brody, Walsh, & Devlin, 1995; Yanovski, 1993).

Although obese binge eaters are a distinctive subgroup among the obese, there is a debate about whether BED should be a diagnosis of a separate eating disorder (Fairburn, Welch, & Hay, 1993; Spitzer, 1993b; Striegel-Moore & Marcus, 1995). In order to characterize more clearly the distinctive psychopathology of BED among obese patients, de Zwaan et al. (1994) compared four groups of women participating in a weight loss treatment program. Group 1 met the full diagnostic criteria for BED; Group 2 did not meet all the criteria for BED and were classified as partial syndrome patients; Group 3 were overeaters, reporting regular episodes of unusually large amounts of food, but without the sense of loss of control that defines binge eating; and Group 4 were obese patients who were neither bingers nor overeaters as defined above. All diagnoses were made using an expert clinical interview based on the Questionnaire on Eating and Weight Patterns (QEWP; Spitzer et al., 1992). The results showed significant positive associations between severity of binge eating and a number of eating-related variables, including dieting history, current weight, and scores of several standardized self-report inventories measuring eating disorder symptoms. de Zwaan et al. (1994) concluded that these differences support the proposed diagnostic criteria for BED.

Research on the validity and utility of diagnostic criteria must go beyond the use of clinical samples as in the de Zwaan et al. (1994) investigation to the study of community samples. It is also important to include both males and females (Castonguay, Eldredge, & Agras, 1995). Available findings indicate that BED occurs in a substantial minority of men seeking treatment for obesity (Yanovski, 1993). This finding is important in that it is very different from the epidemiology of bulimia nervosa, a disorder which is largely confined to women (Fairburn et al., 1993).

A third limitation of the de Zwaan et al. (1994) study concerns their choice of a partial BED syndrome group. The precise way in which this group of patients failed to meet the full BED criteria was unspecified. The frequency threshold for binge eating appears not to have been one of the unmet criteria. On average, Group 2 patients binge 3.1 times a week and Group 1 patients reported an average 4.7 binges per week. Nevertheless, examination of the validity of the frequency threshold is called for. The provisional diagnostic criteria for BED, listed in the Appendix of DSM-IV, specify a frequency criterion for binge eating of at least 2 days a week, on average, for a 6-month period. This threshold was adopted from the diagnostic criteria for bulimia nervosa. The problem is that there is accumulating evidence that the twice weekly frequency threshold for bulimia nervosa has little clinical validity (Garfinkel et al., 1995; Kendler et al., 1991; Wilson, 1992; Wilson, Nonas, & Rosenblum, 1993). No study has directly assessed the validity of this threshold in BED.

The present study was designed to replicate and extend the de Zwaan et al. (1994) investigation. We assessed binge eating in a community sample of obese individuals,
including both men and women. Furthermore, we directly evaluated the validity of the
twice a week frequency threshold for binge eating in BED.

METHODS

Study Participants

Participants for this study were selected from the 3,287 obese men and women who
were among a sample of over 20,000 men and women who had responded to a survey
about body image and eating behaviors conducted by the Consumer Union among sub-
scribers to Consumer Reports. To be included in the present study, subjects had to meet
criteria for one of four mutually exclusive groups. Group 1 (BED) comprised 33 women
and 20 men who reportedly engaged in recurrent binge eating (overeating a large amount
of food accompanied by a sense of loss of control over the eating episode) on average at
least twice per week over the past 6 months. Group 2 (subthreshold BED) included 79
women and 40 men who reported recurrent episodes of binge eating, yet the frequency of
these episodes was, on average, at least once a week over the past 6 months but less than
twice per week. Group 3 (overeaters) consisted of 21 women and 39 men who, over the
past 6 months, had recurrent (at least twice per week) episodes of overeating but denied
loss of control over these eating episodes. The fourth group (controls) of 80 men and 80
women was identified by randomly sampling from among a pool of 2,476 men and
women who reported fewer than one overeating episode per month during the 6 months
preceding the survey. Individuals who engaged in regular extreme efforts to control their
weight (e.g., starvation, vomiting, laxative, or diuretic abuse) were excluded from the
study.

Procedure

Participants were recruited as part of a two-wave survey conducted by Yale University
and Consumer Reports magazine. In Wave 1, a series of questions evaluating commercial
diet programs was included in the 1992 annual survey. Consumer Reports magazine dis-
tributed the survey to its subscribers to evaluate various consumer products and services.
The results of the initial survey have been published elsewhere (Anonymous, 1993). At the
end of this initial survey, subscribers were asked to indicate whether they would be
willing to participate in a second survey. To be eligible, respondents had to have tried to
lose weight within 3 years prior to the survey. Over 20,000 individuals completed this
second survey.

Instrument

The Wave 2 survey consisted of extensive questions about body image, weight and
dieting history, attitudes about dieting, diagnostic questions about binge eating, and
demographic information. Survey items were derived in part from published inventories
(Fairburn & Cooper, 1993; Garner & Olmsted, 1984; Garner, Olmsted, & Polivy, 1983), and
new questions were developed as needed for the purpose of this study. The Wave 2
questions of interest to this study are described below. (The complete survey is available
upon request.)
Demographic Information
Demographic variables were gender, race, age, total household income, and level of education.

Body Image Concerns
Current body size and desired ideal size were determined using nine silhouettes of increasing size (1 = severely emaciated to 9 = severely obese; Stunkard, Sorensen, & Schulsinger, 1982). An Importance of Weight scale was constructed by summing across three items (each rated from 1 = not at all to 5 = extremely) tapping the importance of weight for self-evaluation (Chronbach’s alpha = .88). A Weight Dissatisfaction scale was devised by summing responses to five questions about dissatisfaction with one’s current weight (each rated from 1 = not at all to 5 = extremely; Chronbach’s alpha = .87).

Weight, Dieting History, and Disordered Eating
Body mass index (BMI) was calculated based on subjects’ self-reported height and weight (kilograms/meters squared). Research has shown that self-reports are highly correlated with actual heights and weights and are sufficiently valid to use in epidemiological and survey studies (Nieto-Garcia, Bush, & Deyl, 1990). Participants answered questions about age of onset of dieting, highest and lowest adult weight, weight cycling, and social pressure encountered about losing weight. Several items elicited information about overeating, binge eating (defined as overeating with a sense of loss of control during the eating episode), and purging (vomiting, laxative abuse, diuretics abuse).

Self-Esteem and Negative Affect
The Rosenberg Self-Esteem scale (Rosenberg, 1979) was administered. In addition, participants rated how sad they felt over the past 24 hr and during the past 6 months, with scores ranging from 1 (not at all) to 10 (extremely). Similarly, participants rated how stressed they had felt during the past 24 hr and the past 6 months, respectively.

Data Analyses
Dependent variables were grouped into sets of conceptually related variables and entered into 2 (sex) × 4 (group) multivariate analyses of variance (MANOVAs). In the event of a significant main effect for group, planned post-hoc Tukey tests were calculated to determine further significant differences between groups.

RESULTS

Sample Description
Participants were predominately Caucasian (92%), well educated (median education level: college graduate), and reported a median income of $30,000–40,000 among women, or $40,000–50,000 among men. As shown in Table 1, female participants were significantly younger than male participants ($F = 14.16, p < .0002$), and a significant main effect was found for group ($F = 3.43, p < .02$). Planned post-hoc comparisons found that men and women with BED were significantly younger than men or women in any of the other groups. Women were significantly more overweight than men, as reflected in higher BMIs ($F = 25.02, p < .0001$); the main effect for group was not significant ($F = 2.51, p < .08$).
Table 1. Descriptive information

<table>
<thead>
<tr>
<th>Group</th>
<th>BED</th>
<th>Subthreshold BED</th>
<th>Overeaters</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>Agea</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>42.63</td>
<td>42.79</td>
<td>43.20</td>
<td>47.85</td>
</tr>
<tr>
<td>SD</td>
<td>11.52</td>
<td>9.67</td>
<td>11.84</td>
<td>13.18</td>
</tr>
<tr>
<td>BMIb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>39.70</td>
<td>35.23</td>
<td>38.59</td>
<td>37.16</td>
</tr>
<tr>
<td>SD</td>
<td>5.91</td>
<td>3.87</td>
<td>5.87</td>
<td>6.51</td>
</tr>
</tbody>
</table>

Note: BED = binge-eating disorder; BMI = body mass index.
aIndividuals with BED differ significantly from all other groups (p < .05).
bWomen differ significantly from men (p < .0001).

Because age and BMI may contribute to group differences on the variables of interest, all subsequent analyses utilized age and BMI as covariates.

**Body Image Disturbance**

The multivariate analysis of covariance (MANCOVA) testing for sex and group differences in measures of body image disturbance found significant main effects for sex (F = 31.70, p < .0001) and group (F = 3.30, p < .0001). The interaction term was not significant (F = 0.59, p = .85). As shown in Table 2, men selected larger silhouette figures to describe their current body size (F = 25.53, p < .0001) and to describe their ideal body size (F = 95.44, p < .0001), compared to women. The degree of discrepancy between the ideal figure size and the current body size was smaller for men than for women (F = 9.40, p < .002). Women reported significantly more weight dissatisfaction than men (F = 16.27, p < .0001). Men and women did not differ significantly on the Importance of Weight/Shape scale (F = 0.07, p = .66).

Group status did not relate to ratings of current (F = 1.12, p = .34) or desired body size (F = 1.43, p = .23); however, the main effect for group status was significant for the current-ideal discrepancy index (F = 2.95, p < .03). Planned post-hoc comparisons found that individuals with BED and with subthreshold BED reported a significantly greater gap between their current and their ideal shape than did controls (p < .05). A significant main effect was found for group (F = 9.06, p < .0001) on the Weight Dissatisfaction scale: BED and subthreshold BED cases reported significantly greater weight dissatisfaction than overeaters and controls (p < .05). The main effect for group (F = 6.78, p < .0002) was significant for Importance of Weight/Shape. Individuals with BED obtained significantly greater importance scores than all other groups (p < .05).

**Dieting History**

Table 3 summarizes sex and group differences on variables pertaining to dieting history, weight cycling, and social pressure to lose weight. A MANCOVA (entering age and BMI as covariates) found a significant main effect for sex (F = 3.67, p < .002), but not for group (F = 1.55, p = .07). The interaction term (Sex × Group) was not significant (F = 0.47,
Table 2: Body image disturbance

<table>
<thead>
<tr>
<th>Group</th>
<th>BED</th>
<th>Subthreshold BED</th>
<th>Overeaters</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women (n = 33)</td>
<td>Women (n = 79)</td>
<td>Women (n = 21)</td>
<td>Women (n = 80)</td>
</tr>
<tr>
<td></td>
<td>Men (n = 20)</td>
<td>Men (n = 40)</td>
<td>Men (n = 39)</td>
<td>Men (n = 80)</td>
</tr>
<tr>
<td>Current shape</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>6.97 (0.90)</td>
<td>6.75 (0.98)</td>
<td>6.81 (1.29)</td>
<td>6.67 (0.97)</td>
</tr>
<tr>
<td>SD</td>
<td>7.00 (0.88)</td>
<td>6.97 (0.90)</td>
<td>6.90 (1.17)</td>
<td>6.65 (0.80)</td>
</tr>
<tr>
<td>Desired shape</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.88 (0.66)</td>
<td>3.83 (0.69)</td>
<td>3.86 (0.48)</td>
<td>3.94 (0.58)</td>
</tr>
<tr>
<td>SD</td>
<td>4.42 (0.51)</td>
<td>4.54 (0.76)</td>
<td>4.64 (0.78)</td>
<td>4.66 (0.50)</td>
</tr>
<tr>
<td>Differences between current and ideal size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.09 (1.06)</td>
<td>2.91 (1.03)</td>
<td>2.95 (1.40)</td>
<td>2.73 (0.89)</td>
</tr>
<tr>
<td>SD</td>
<td>2.58 (0.90)</td>
<td>3.44 (0.99)</td>
<td>2.26 (1.14)</td>
<td>1.99 (0.85)</td>
</tr>
<tr>
<td>Weight dissatisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>4.94 (0.37)</td>
<td>4.81 (0.44)</td>
<td>4.77 (0.58)</td>
<td>4.51 (0.60)</td>
</tr>
<tr>
<td>SD</td>
<td>4.68 (0.42)</td>
<td>4.53 (0.56)</td>
<td>4.24 (0.93)</td>
<td>4.17 (0.70)</td>
</tr>
<tr>
<td>Weight importance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>4.06 (0.70)</td>
<td>3.77 (0.73)</td>
<td>3.79 (0.93)</td>
<td>3.53 (0.80)</td>
</tr>
<tr>
<td>SD</td>
<td>4.19 (0.69)</td>
<td>3.59 (0.73)</td>
<td>3.61 (0.67)</td>
<td>3.53 (0.79)</td>
</tr>
</tbody>
</table>

Note: BED = binge-eating disorder.
Men, more than women, selected larger current and desired figures and reported less discrepancy between current and ideal figure. Women reported more weight dissatisfaction than men.
BED and subthreshold BED > overeaters and controls.
BED > subthreshold BED > overeaters and controls.

Controlling for age and BMI, women initiated dieting at a significantly younger age than men ($F = 18.36, p < .0001$). Men did not differ from women in terms of the greatest amount of weight loss ever achieved ($F = 0.44, p = .91$), the number of weight cycles experienced ($F = 1.42, p = .23$), the extent to which they described themselves as a "yo-yo dieter" ($F = 3.19, p = .08$), the frequency of dieting before puberty ($F = 0.20, p = .66$), or the degree to which they had experienced social pressure to lose weight ($F = 0.26, p = .61$). In this sample of dieters, binge eaters or overeaters did not differ from nonbinge eaters on a range of variables pertaining to their dieting history.

Negative Affect and Low Self-Esteem

A MANCOVA of measures of negative affect and self-esteem found a significant main effect for sex ($F = 3.63, p < .01$) and for group ($F = 4.37, p < .0001$). The interaction term was not significant ($F = 0.92, p = .51$). Specifically, compared to men, women obtained lower scores on self-esteem ($F = 7.56, p < .006$) and reported higher levels of feeling sad ($F = 6.07, p < .01$). Ratings of stress were comparable for men and women ($F = 0.05, p = .83$).

The main effect for group was significant for self-esteem ($F = 7.68, p < .0001$), ratings of sadness ($F = 8.68, p < .0001$), and ratings of stress ($F = 3.18, p < .02$). Specifically, individuals with BED reported significantly lower self-esteem than all other groups, and individuals with subthreshold BED differed from controls (but not from overeaters) on self-esteem (Table 4). Individuals with BED reported greater levels of sadness than all other groups, and individuals with subthreshold BED reported significantly more sadness than controls. Lastly, individuals with BED reported more stress than overeaters or controls (all $p < .05$).
Table 3. Dieting history

<table>
<thead>
<tr>
<th>Group</th>
<th>Women (n = 33)</th>
<th>Men (n = 20)</th>
<th>Women (n = 79)</th>
<th>Men (n = 40)</th>
<th>Women (n = 21)</th>
<th>Men (n = 39)</th>
<th>Women (n = 80)</th>
<th>Men (n = 80)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age at first diet</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>18.00</td>
<td>25.75</td>
<td>19.05</td>
<td>25.94</td>
<td>18.88</td>
<td>25.17</td>
<td>20.67</td>
<td>30.44</td>
</tr>
<tr>
<td>SD</td>
<td>(9.06)</td>
<td>(10.82)</td>
<td>(9.49)</td>
<td>(13.86)</td>
<td>(5.48)</td>
<td>(10.82)</td>
<td>(10.31)</td>
<td>(13.98)</td>
</tr>
<tr>
<td><strong>Weight range (lb)</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>101.33</td>
<td>90.56</td>
<td>101.58</td>
<td>92.66</td>
<td>110.78</td>
<td>94.43</td>
<td>99.80</td>
<td>83.68</td>
</tr>
<tr>
<td>SD</td>
<td>(38.11)</td>
<td>(33.42)</td>
<td>(36.24)</td>
<td>(39.16)</td>
<td>(41.08)</td>
<td>(36.21)</td>
<td>(37.08)</td>
<td>(34.34)</td>
</tr>
<tr>
<td><strong>Number of times lost and regained 10 lb (1 = one time to 6 = more than 15 times)</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.67</td>
<td>3.18</td>
<td>3.23</td>
<td>2.54</td>
<td>3.50</td>
<td>3.37</td>
<td>2.66</td>
<td>2.47</td>
</tr>
<tr>
<td>SD</td>
<td>(1.36)</td>
<td>(1.68)</td>
<td>(1.67)</td>
<td>(1.12)</td>
<td>(1.47)</td>
<td>(1.43)</td>
<td>(1.36)</td>
<td>(1.45)</td>
</tr>
<tr>
<td><strong>Frequency of dieting before puberty (1 = never to 5 = always)</strong></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>1.78</td>
<td>1.44</td>
<td>1.64</td>
<td>1.66</td>
<td>1.44</td>
<td>1.47</td>
<td>1.73</td>
<td>1.69</td>
</tr>
<tr>
<td>SD</td>
<td>(0.81)</td>
<td>(1.00)</td>
<td>(1.00)</td>
<td>(0.94)</td>
<td>(1.15)</td>
<td>(0.94)</td>
<td>(1.07)</td>
<td>(1.21)</td>
</tr>
<tr>
<td><strong>Social pressures experienced regarding the need to lose weight</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>2.76</td>
<td>2.41</td>
<td>2.65</td>
<td>2.33</td>
<td>2.49</td>
<td>2.30</td>
<td>2.43</td>
<td>2.10</td>
</tr>
<tr>
<td>SD</td>
<td>(0.98)</td>
<td>(1.02)</td>
<td>(1.13)</td>
<td>(0.93)</td>
<td>(0.98)</td>
<td>(0.98)</td>
<td>(0.96)</td>
<td>(1.03)</td>
</tr>
<tr>
<td><strong>I am a “yo-yo dieter” (1 = strongly disagree to 5 = strongly agree)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>4.44</td>
<td>3.94</td>
<td>4.42</td>
<td>3.80</td>
<td>4.00</td>
<td>3.97</td>
<td>3.98</td>
<td>3.64</td>
</tr>
<tr>
<td>SD</td>
<td>(1.05)</td>
<td>(1.29)</td>
<td>(1.08)</td>
<td>(1.39)</td>
<td>(1.32)</td>
<td>(1.16)</td>
<td>(1.34)</td>
<td>(1.86)</td>
</tr>
</tbody>
</table>

Note: BED = binge-eating disorder.
*Men differed significantly from women.

**DISCUSSION**

In this community-based sample of obese men and women, obese individuals with BED were distinguishable from obese nonbingers on a number of psychological and behavioral variables. We realize that although BED is more common among the obese, BED may also occur in nonobese individuals (Yanovski, 1993). In the present study, the BED group differed significantly from the controls on measures of negative affect. This finding is consistent with results of previous studies showing that obese BED patients are characterized by a greater degree of psychiatric comorbidity and psychopathology than nonbingers (Telch & Agras, 1995; Yanovski et al., 1993). The BED group also reported significantly lower self-esteem than all comparison groups. Lower self-esteem among obese binge eaters versus nonbingers has been a consistent finding in the literature (de Zwaan et al., 1994; Hawkins & Clement, 1980; Lowe & Caputo, 1991).

In the present study, the BED group differed from the controls on several weight-related measures. Compared with controls, the BED group attached significantly greater importance to their weight, expressed more dissatisfaction with weight, and reported a bigger difference between their current and ideal body size. Previous studies have not shown greater body dissatisfaction in BED subjects (de Zwaan et al., 1994; Wilson et al., 1993), although the different measures used to assess dissatisfaction in these studies makes comparison across studies difficult.

Comparison of respondents who met the full DSM-IV criteria for BED with their subthreshold counterparts revealed greater similarities than differences. The two groups did not differ on any of the dieting and weight history questions. BED subjects attached significantly greater importance to weight, but responded in comparable fashion to the
four other body image disturbance questions. The one area of difference was the assessment of negative affect and self-esteem. BED subjects reported significantly more sadness and lower self-esteem than subthreshold subjects. Moreover, only the BED group reported significantly more stress than the controls. However, the subthreshold BED group in turn reported lower self-esteem and more sadness than controls, suggesting a continuum, where the magnitude of emotional distress is less severe than that observed in BED cases yet elevated when compared to controls.

We conclude that there is no sharp demarcation between the full syndrome and subthreshold groups. Our findings regarding the frequency criterion for the diagnosis of BED are consistent with those for bulimia nervosa. In a large community study, Garfinkel et al. (1995) found that individuals who met the full DSM-III-R criteria were similar to a partial syndrome sample who met all criteria, except the frequency of binge eating (Diagnostic and statistical manual of mental disorders, 3rd Rev. ed., APA, 1987). Kendler et al. (1991) similarly reported few differences between full and partial syndrome bulimia nervosa subjects. The evidence suggests that for binge eating in the obese, as well as for bulimia nervosa, there exists a continuum of vulnerability with a higher frequency of binge eating reflecting greater severity. de Zwaan et al. (1994) similarly concluded that a continuum of severity exists, rather than a dichotomy between binge eaters and nonbinge eaters among the obese. Neither the present data nor the de Zwaan et al. (1994) findings allow a determination of whether there is a more valid frequency threshold for the diagnosis of BED.

Evidence of an association between BMI and severity of binge eating has been mixed. Several studies using clinical samples have reported a positive association (de Zwaan et al., 1994; Lowe & Caputo, 1991; Spitzer et al., 1993a; Telch et al., 1988), whereas others have found no association (Brody et al., 1995; de Zwaan, Nutzinger, & Schoenbeck, 1992; Goldfein, Walsh, LaChaussee, Kissileff, & Devlin, 1993; Wilson et al., 1993). The present study of a community sample found no statistically significant association. Perhaps this is due to the fact that we limited our sample to obese individuals, thus reducing the range of BMI values.

In contrast to anorexia nervosa and bulimia nervosa, BED is prevalent in both men and

Table 4. Negative affect/self-esteem

<table>
<thead>
<tr>
<th>Group</th>
<th>BED (n = 33)</th>
<th>Subthreshold BED (n = 79)</th>
<th>Overeaters (n = 21)</th>
<th>Controls (n = 80)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women (n = 20)</td>
<td>Men (n = 20)</td>
<td>Women (n = 40)</td>
<td>Men (n = 39)</td>
</tr>
<tr>
<td>Stress*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>13.84</td>
<td>14.58</td>
<td>12.45</td>
<td>11.75</td>
</tr>
<tr>
<td>SD</td>
<td>(3.88)</td>
<td>(3.88)</td>
<td>(4.66)</td>
<td>(4.78)</td>
</tr>
<tr>
<td>Sad**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>12.13</td>
<td>11.68</td>
<td>9.99</td>
<td>8.00</td>
</tr>
<tr>
<td>SD</td>
<td>(4.79)</td>
<td>(5.13)</td>
<td>(5.06)</td>
<td>(4.53)</td>
</tr>
<tr>
<td>Self-esteem*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>25.80</td>
<td>28.84</td>
<td>28.44</td>
<td>30.93</td>
</tr>
<tr>
<td>SD</td>
<td>(4.30)</td>
<td>(3.80)</td>
<td>(5.55)</td>
<td>(4.85)</td>
</tr>
</tbody>
</table>

Note: BED = binge-eating disorder.
*BED > overeaters and controls.
*Women differ significantly from men (p < .01).
**BED > subthreshold BED > overeaters and controls.
***BED > all other groups; subthreshold BED > controls.
women (Yanovski, 1993). In the present study, 36% of the BED group and 50% of the subthreshold BED group were men. Importantly, there were no significant Sex × Group interactions; this suggests that men who experience problems with recurrent binge eating do not differ from female binge eaters on a wide range of indices of body image concerns, dieting behavior, and associated psychological distress, above and beyond what would be expected in light of gender-related differences on these variables.

Consistent with the literature of sex differences in body image concerns, we found that men chose a less thin body ideal than women and experienced less of a discrepancy between their ideal and current body size. Similarly, men reported less weight dissatisfaction than women. It is important to note, however, that these differences should not be interpreted to mean that the men in this study were free from body image concerns. While they differed from the women in the degree of discontent about their weight and shape, the ratings suggest that these men did experience body image dissatisfaction. Moreover, in this sample of obese men and women who had all, by definition, attempted at least one weight loss diet within the past 3 years, weight was important to their sense of self.

An interesting finding concerns the differences between respondents with BED and respondents with recurrent overeating. Even though they reported to engage in recurrent overeating, overeaters did not appear to experience the host of body image concerns and psychological distress acknowledged by men and women with BED. Indeed, many more differences were observed between individuals with BED and the overeaters than between the BED group and the subthreshold BED group. Our data suggest that loss of control is an important criterion for binge eating and may be more related to psychological problems than the overall amount of food consumed.

The limitation of the present study is the reliance on responses to a previously tested self-report questionnaire. The evidence on the accuracy of self-report questionnaires in diagnosing BED is conflicting. On the one hand, Spitzer and his colleagues (1993) reported good agreement (a kappa of .60) between their QEWP and a structured clinical interview based on the QEWP. Similarly, de Zwaan et al. (1993) found good agreement between patient self-report and expert clinicians in diagnosing BED. Compared with the clinical interview, their self-report questionnaire did not result in a higher estimate of the frequency of BED in their sample of 100 obese female patients. On the other hand, Stunkard et al. (1996) reported a striking disagreement between patient self-report and clinical interviews. The latter reduced by roughly 80% the rate of BED obtained from self-report. However, inaccuracy in the form of assigning a false-positive diagnosis of BED or subthreshold BED renders our comparisons more conservative in that the binge eater groups may have included individuals who, based on clinical interviews, might have been reassigned to the overeaters group or control group. The validity of different self-report questionnaires for assessing binge eating in community samples of obese individuals remains to be determined.

In conclusion, the present study further supports the call for more research of the clinical validity of the threshold criterion for frequency of binge eating. It also supports the need for more research of men with binge eating.

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