

# A Comparison of Quality of Life in Obese Individuals with and without Binge Eating Disorder

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## ABSTRACT

**Objective:** This study investigates whether binge eating disorder (BED) in obese individuals is associated with a greater degree of impairment in quality of life (QOL) than obesity alone.

**Method:** Treatment-seeking obese individuals with and without BED were compared on QOL scores using the Impact of Weight on Quality of Life (IWQOL-Lite) questionnaire.

**Results:** With the exception of the Physical Function subscale, obese individuals with BED scored significantly higher than non-BED participants on each of the subscales and on the total scale of the IWQOL-Lite. For all participants, body mass index

(BMI) was related significantly to scores on the Physical Function and Public Distress subscales of the IWQOL-Lite.

**Discussion:** Obese individuals with BED have impaired functioning on psychosocial aspects of QOL in addition to poorer physical functioning associated with obesity. These findings underscore the pervasive impact of BED in obese individuals, as BED is associated with more impairment than obesity alone.  
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**Keywords:** binge eating disorder; obesity; treatment seeking; Impact of Weight on Quality of Life questionnaire

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## Introduction

Binge eating disorder (BED) is characterized by recurrent episodes of binge eating in the absence of regular extreme compensatory strategies designed to prevent weight gain (American Psychiatric Association [APA], 1994). Given the combination of recurrent binge eating episodes and the absence of compensatory behaviors, it is perhaps not surprising that the prevalence of obesity is much higher among BED compared with non-BED individuals (Smith, Marcus, Lewis, Fitzgibbon, & Schreiner, 1998;

Striegel-Moore et al., 2001). For instance, Striegel-Moore et al. (2001) found that the prevalence of obesity among individuals with BED (65.3%) was approximately twice that found among individuals with bulimia nervosa (33.5%).

Despite the association between BED and obesity, research indicates that obese individuals with and without BED are distinguishable in their psychological and physical characteristics. Those with BED tend to exhibit higher levels of eating disorder symptomatology and body image disturbance (Wilfley, Schwartz, Spurrell, & Fairburn, 2000), general psychopathology (Fassino, Leombruni, Piero, Abbate-Daga, & Giacomo Rovera, 2003; Spitzer, Yanovski, Wadden, et al., 1993; Yanovski, Nelson, Dubbert, & Spitzer, 1993), and severity of obesity (Spitzer et al., 1992; Spitzer, Yanovski, Wadden, et al., 1993) compared with non-BED obese individuals. Of interest is whether the generally greater degree of disturbance experienced by obese individuals with BED compared with obese individuals without the disorder extends to their quality of life (QOL).

As a construct, QOL refers to an individual's overall satisfaction with his/her life (Kushner & Foster, 2000). It encompasses a broad range of dimensions, including the individual's physical, emotional, social, sexual, and occupational functioning. This breadth renders the QOL construct ideally suited for assessing the scope of impairment associated with a particular condition such as BED within the obese population.

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QOL has been investigated much more thoroughly in the context of obesity than that of BED. A large body of research attests to the fact that obesity is associated with poorer physical functioning (Kolotkin, Meter, & Williams, 2001). Obese individuals experience elevated physical morbidity compared with nonobese controls (Doll, Petersen, & Stewart-Brown, 2000; Ford, Moriarty, Zack, Mokdad, & Chapman, 2001; Le Pen, Levy, Loos, Banzet, & Basdevant, 1998; Schwimmer, Burwinkle, & Varni, 2003), whereas within the obese population, physical morbidity increases as body mass index (BMI = kg/m<sup>2</sup>) increases (Kolotkin, Head, Hamilton, & Tse, 1995; Mannucci et al., 1999). Compared with physical functioning, the findings from studies investigating the relation between obesity and the psychosocial domains of QOL are less consistent. Conflicting results on the association between obesity and psychosocial functioning have been reported when comparing obese and nonobese individuals (Doll et al., 2000; Kolotkin, Crosby, Kosloski, & Williams, 2001; Le Pen et al., 1998; Schwimmer et al., 2003) and when comparing levels of obesity within the obese population (Kolotkin, Crosby, Williams, Hartley, & Nicol, 2001; Kolotkin, Head, & Brookhart, 1997; Mannucci et al., 1999).

Heterogeneity within the obese population may be one factor contributing to the conflicting findings on psychosocial functioning, as subgroups of obese individuals (such as those with BED vs. those without the disorder) likely vary in their level of functioning (Friedman & Brownell, 2002). Individuals with obesity may be vulnerable to experiencing poorer physical functioning, yet the presence of a comorbid condition (such as BED) may confer an additional burden in terms of impaired psychosocial functioning. For example, an investigation of the impact of comorbid medical conditions on QOL in obese individuals found that obese individuals with an accompanying medical illness reported significantly poorer psychosocial functioning compared with obese individuals without such an illness (Doll et al., 2000). Indeed, the latter group did not differ significantly from nonobese controls. Therefore, it may be primarily obese individuals with accompanying conditions who experience decrements in the psychological and social aspects of QOL. Although Doll et al. (2000) investigated comorbid physical conditions, their findings may extend to comorbid psychological conditions such as BED.

Although few studies have investigated QOL in the context of BED, existing results suggest that BED may indeed be associated with decrements in QOL (Crow, Kendall, Praus, & Thuras, 2001; de Zwaan et al., 2002; Hay, 2003; Johnson, Spitzer, & Williams, 2001; Mannucci et al., 1999; Spitzer, Yanovski, Wadden, et al., 1993). For instance, in a study of 110 obese patients being evaluated for gastric bypass surgery,

individuals with BED (as diagnosed via self-report) evidenced significantly poorer QOL compared with those without BED, particularly in the psychosocial compared with the physical domain (de Zwaan et al., 2002).

Unfortunately, the studies examining QOL in BED are hindered by several methodologic limitations. For instance, methods for the diagnosis of BED vary across studies and include the use of self-report questionnaires such as the Binge Eating Scale (BES; Gormally, Black, Daston, & Rardin, 1982) and the Questionnaire on Eating and Weight Patterns (QEWP-R; Spitzer, Yanovski, & Marcus, 1993). However, the validity of such self-report measures of binge eating has been questioned, leading researchers to advocate the use of interview-based methods for the assessment of binge eating and, ultimately, BED (Gladis, Wadden, Foster, Vogt, & Wingate, 1998; Tanofsky-Kraff et al., 2003; Timmerman, 1999). Additional limitations in the research of QOL in BED include the utilization of highly truncated tools for the assessment of QOL, a failure to control for the degree of overweight, and the absence of comparison groups. As a result of these limitations, findings of poorer QOL among individuals with BED remain suggestive.

The current study sought to overcome the limitations in previous research and thus further clarify the relation between BED and QOL among the obese by comparing QOL in BED versus non-BED obese individuals. The diagnosis of BED was made using a semi-structured clinical interview specific to eating disorders, and QOL was assessed using a comprehensive, psychometrically sound instrument. Given that previous research supports an association between obesity and impaired physical functioning, it was hypothesized that BED and non-BED individuals with equivalent levels of obesity would report comparable levels of physical functioning and that, for both groups, a higher level of obesity would be associated with lower physical functioning. However, because previous studies have demonstrated a greater disturbance among obese individuals with BED in terms of psychopathology and possibly the psychosocial aspects of QOL, it was hypothesized that obese individuals with BED would report a reduced level of QOL in the psychosocial domains compared with non-BED obese individuals. No association was expected between level of obesity and the psychosocial aspects of QOL.

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## Method

### *Participants*

Two samples of treatment-seeking obese individuals were recruited for the study. The BED sample consisted

of individuals from two sites (i.e., San Diego and Minneapolis) who were enrolled in a multisite, randomized controlled treatment trial assessing the effectiveness of a weight loss medication in the treatment of BED (Knoll Pharmaceutical Company, 1999, now Abbott Laboratories). The participants met research criteria for BED as suggested in the 4th ed. of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; APA, 1994). The non-BED sample consisted of adults from San Diego who were taking part in a randomized, controlled treatment trial investigating the effectiveness of various psychological interventions for the maintenance of weight loss in children and their parents. The participants in both samples were required to have a BMI of at least 30 kg/m<sup>2</sup>, and potential participants were excluded if they had a current or past diagnosis of severe psychiatric illness or a serious medical condition.

The characteristics of the participants are shown in Table 1. The BED sample consisted of 56 participants; 6 were male and 50 were female. The non-BED sample consisted of 62 participants; 12 were male and 50 were female. *T*-test analyses revealed that there were no significant differences in age or BMI between the BED and non-BED participants.

**Measures**

The Eating Disorder Examination (EDE, 12th ed.; Fairburn & Cooper, 1993), the Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 1994), the Primary Care Evaluation of Mental Disorders (PRIME-MD; Spitzer et al., 1994), and the Impact of Weight on Quality of Life Questionnaire (IWQOL-Lite; Kolotkin, Crosby, Kosloski, et al., 2001) were administered before the commencement of treatment.

In the BED sample, a modified version of the EDE, which includes items pertaining to the diagnostic criteria for BED, was administered to diagnose BED. The EDE is a semistructured interview that allows for the diagnosis of eating disorders while also assessing the severity of eating-disordered symptomatology. An extensive body of research supports the psychometric soundness of the EDE (Fairburn & Cooper, 1993), including the fact that the EDE is superior to general semistructured clinical interviews in the assessment of binge eating (Wade, Tiggemann, Martin, & Heath, 1997).

In the non-BED sample, participants completed the EDE-Q as a screening instrument for BED. The EDE-Q

is a self-report version of the EDE and constitutes an adequate substitute for the EDE in the assessment of most eating disorder symptoms (Fairburn & Beglin, 1994; Luce & Crowther, 1999; Wilfley, Schwartz, Spurrell, & Fairburn, 1997). Disagreement between the EDE-Q and the EDE tends to be higher for the more complex symptom of binge eating, with the EDE-Q tending to result in an overestimation of binge eating (Fairburn & Beglin, 1994; Wilfley et al., 1997). To minimize any inaccuracies stemming from self-report in the current study, any endorsement of overeating or loss of control on the EDE-Q, as well as high scores on any of the items (i.e., greater than 3 on a 7-point scale), was followed up by clinical interview. If there was any ambiguity regarding the possible diagnosis of BED, the EDE was administered.

The PRIME-MD was administered to identify individuals with psychiatric illness and comprises two components: a self-administered screening component and, for those individuals identified from the screen as requiring further evaluation, a diagnostic component consisting of a structured clinical interview. Research demonstrates that the PRIME-MD has acceptable psychometric properties (Hahn, Kroenke, Williams, & Spitzer, 1999), including good agreement between PRIME-MD diagnoses and those made by mental health professionals using a structured interview (e.g., for a PRIME-MD diagnosis of any disorder, the kappa value was .71 and the overall accuracy rate was 88%; Spitzer et al., 1994).

The IWQOL-Lite is a 31-item, self-report questionnaire that assesses the effect of being overweight on five domains of QOL: Work, Public Distress, Sexual Life, Physical Function, and Self-Esteem. The four items on the Work subscale concern the perceived impact of weight on the individual’s work performance (e.g., “Because of my weight I don’t receive appropriate raises, promotion or recognition at work”). The Public Distress subscale includes five items referring to negative reactions by others regarding one’s weight, as well as public activities that may be affected adversely by being overweight (e.g., “Because of my weight I worry about fitting into seats in public places”). The four-item Sexual Life subscale assesses sexual limitations related to weight (e.g., “Because of my weight, I have little or no sexual desire”). The 11-item Physical Function subscale measures the impact of weight on physical health and mobility (e.g., “Because of my weight, I have trouble picking up objects”). Finally, the seven-item Self-Esteem subscale assesses the degree to which an individual’s self-evaluation is affected by his/her weight (e.g., “Because of my weight, I don’t like myself”). Scores on each subscale are summed to yield a total scale score, with higher scores indicating greater impairment.

A specific (rather than a generic) QOL measure was selected because such instruments are designed to

**TABLE 1. Age and BMI of the BED and non-BED participants**

	BED	Non-BED
	<i>M (SD)</i>	<i>M (SD)</i>
Age (in years)	42.0 (10.0)	36.6 (5.1)
BMI	36.6 (5.1)	37.0 (4.9)

Note: BMI = body mass index; BED = binge eating disorder.

capture more fully the information that is relevant to a particular condition (Kushner & Foster, 2000). The IWQOL-Lite is a reduced version of the 74-item IWQOL (Kolotkin et al., 1995). Kolotkin, Crosby, Kosloski, et al. (2001) recommend administering the IWQOL-Lite because it has even stronger psychometric properties than the IWQOL. Specifically, there is strong support for the scale's reliability (with internal consistency coefficients ranging from .90 to .94), construct validity (e.g., factor analysis supports the five-factor model and the existence of a higher-order factor of QOL), and sensitivity to change (e.g., significant correlations between changes in the IWQOL-Lite subscale and total scores and changes in weight over a 1-year period).

### Statistical Analyses

Analysis of variance (ANOVA) was used to examine differences between groups on the IWQOL-Lite subscales and total scale. Specifically, six one-way ANOVAs (two tailed) were conducted. The relation between BMI and the five IWQOL-Lite subscales and total scale was assessed using one-tailed bivariate Pearson correlations.

## Results

### Comparisons of QOL between Obese Individuals with and without BED

Mean scores obtained by the BED and non-BED participants on the IWQOL-Lite subscales and total scale, together with the ANOVA results and effect sizes, are shown in Table 2. BED participants obtained significantly higher scores on the Work, Public Distress, Sexual Life, and Self-Esteem subscales and total scale of the IWQOL-Lite compared with the non-BED participants. The results indicate greater decrements among obese individuals with BED compared with those without BED across these four domains of QOL as well as overall QOL. There was no significant difference between the two groups on the Physical Function subscale of

**TABLE 2. Comparison of IWQOL-Lite subscale and total scores for the BED and non-BED participants**

IWQOL-Lite Subscales	BED		Non-BED	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>p</i> value	$\eta^2$
Work	7.75 (3.16)	6.53 (2.75)	.027	.041
Public Distress	10.13 (4.08)	8.48 (3.72)	.024	.043
Sexual Life	9.14 (3.57)	7.61 (3.51)	.021	.045
Physical Function	25.23 (10.02)	20.98 (16.27)	.095	.024
Self-Esteem	21.79 (6.74)	17.53 (6.65)	.001	.093
Total	74.04 (19.29)	61.15 (26.31)	.003	.072

Note: IWQOL-Lite = Impact of Weight on Quality of Life Questionnaire-Lite; BED = binge eating disorder.

**TABLE 3. Correlation coefficients between BMI and IWQOL-Lite subscale and total scores for the BED and non-BED participants**

IWQOL-Lite Subscales	BED	on-BED
	<i>r (p)</i>	<i>r (p)</i>
Work	.17 (.11)	.26 (.019)
Public Distress	.29 (.016)	.22 (.044)
Sexual Life	-.20 (.07)	-.01 (.47)
Physical Function	.34 (.006)	.23 (.035)
Self-Esteem	-.13 (.16)	.11 (.19)
Total	.18 (.09)	.23 (.037)

Note: BMI = body mass index; IWQOL-Lite = Impact of Weight on Quality of Life Questionnaire-Lite; BED = binge eating disorder.

the IWQOL-Lite. Comparisons between the BED and non-BED participants on the IWQOL-Lite subscales and total scale were associated with effect sizes ranging from small (.024 for the Physical Function subscale) to medium (.093 for the Self-Esteem subscale).

### Correlations between BMI and QOL

The correlation coefficients obtained between BMI and the IWQOL-Lite subscale and total scores are shown in Table 3. For BED and non-BED participants, there was a significant positive correlation between BMI and both the Public Distress and Physical Function subscales of the IWQOL-Lite. Thus, a higher BMI value was associated with greater decrements in weight-related public distress and physical functioning in both groups of participants. There were no other significant correlations between BMI and the IWQOL-Lite subscale or total scores for the BED participants. However, for the non-BED participants, significant positive correlations also were obtained between BMI and both the Work subscale and the total scale of the IWQOL-Lite.

## Discussion

As predicted, the presence of BED among obese individuals was associated with greater impairment in the psychosocial domains of work, public distress, sexual life, and self-esteem. Because the BED and non-BED groups were comparable in terms of BMI, the poorer psychosocial functioning of individuals with BED cannot be attributed to elevated levels of obesity in the BED participants. Thus, although research consistently demonstrates that obesity is associated with decrements in physical functioning, the current findings suggest that BED among obese individuals results in even further impairment in terms of decreased psychosocial

functioning. For obese individuals with BED, it would appear that deficiencies in their QOL are pervasive, affecting both the physical and the psychosocial dimensions. The current finding of an association between BED and poorer psychosocial functioning may, in part, account for inconsistencies in the obesity research regarding whether psychosocial functioning is impaired among the obese. Differing rates of participants with BED across samples may account for the discrepant results.

In contrast to the observed association between BED and the psychosocial dimensions of QOL, the correlational data support the suggestion that obesity with or without an eating disorder tends to be associated with changes in physical, rather than psychosocial, functioning. Specifically, whereas BMI was related significantly to physical functioning among the BED participants, there were no significant associations between BMI and the psychosocial domains of work, sexual life, and self-esteem. The significant association between BMI and the Public Distress subscale of the IWQOL-Lite may be partially explained by the content of this subscale pertaining to both the physical and psychosocial aspects of QOL (e.g., the Public Distress subscale item "Because of my weight I worry about fitting through aisles" also loads on the Physical Function subscale; Kolotkin, Meter, et al., 2001).

The current study had several limitations. First, the samples were drawn from two separate treatment studies and two different geographic regions, which may have reduced the comparability of the BED and non-BED groups. However, within the BED sample, there were no significant differences between the San Diego and Minneapolis participants on any of the study measures, thus supporting the similarity of the two samples. The BED and non-BED samples were also comparable in terms of age, BMI, and gender composition, and both studies comprised treatment-seeking individuals. However, the finding that the participants had sought treatment raises a second potential limitation of the study in that the findings may be limited in their applicability to community samples. Arguing for the generalizability of the current findings is research demonstrating that treatment-seeking and community BED samples report equivalent levels of psychopathology (Wilfley, Pike, Striegel-Moore, & Fairburn, 2001). However, several studies have found significantly greater decrements in QOL among obese individuals attending weight loss programs versus obese individuals not currently attempting to lose weight (Fontaine, Bartlett, & Barofsky, 2000; Kolotkin,

Crosby, & Williams, 2002). In combination, these studies suggest that even greater disparities may exist between the QOL of BED and non-BED obese individuals in the community compared with the findings obtained using treatment-seeking samples in the current study. Future research is needed to investigate QOL in BED and non-BED obese individuals in the community.

Because the current study was cross-sectional, future longitudinal research would be helpful to examine whether QOL diminishes before or after the onset of BED. Also of interest is whether QOL in individuals with BED improves after treatment for BED and/or obesity. For instance, one study found that QOL (including both the physical and the psychosocial components) improved with weight loss in obese individuals (Kolotkin, Crosby, Williams, et al., 2001). The impact of treatment—and different types of treatment—on QOL in individuals with BED remains to be investigated (Wonderlich, de Zwaan, Mitchell, Peterson, & Crow, 2003). It is possible, for instance, that weight loss in BED individuals will be associated with improvements in only the physical aspect of QOL and may not extend to the psychosocial dimensions, given that obesity appears to be associated primarily with the physical component.

The finding in the current study that obese individuals with BED experience impairment in the psychosocial domains of QOL—in addition to the poorer physical functioning experienced by obese individuals generally—has several implications. The pervasive impairment in QOL reported by obese individuals with BED suggests that QOL should be assessed routinely in treatment outcome research on BED. The current results may also be relevant to the question of whether BED warrants inclusion as a DSM diagnostic category (Devlin, Goldfein, & Dobrow, 2003; Wilfley, Wilson, & Agras, 2003; Wonderlich et al., 2003). The finding that BED is associated with decrements in QOL beyond those already conferred by obesity provides additional support for the severity and distinctiveness of the disorder.

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