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Eating Disorder Symptomatology in Normal-Weight vs. Obese Individuals With Binge Eating Disorder

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Abstract

Although normal-weight individuals comprise a substantial minority of the binge eating disorder (BED) population, little is known about their clinical presentation. This study sought to investigate the nature and severity of eating disturbances in normal-weight adults with BED. We compared 281 normal-weight ($n = 86$) and obese ($n = 195$) treatment-seeking adults with BED (mean age = 31.0; s.d. = 10.8) on a range of current and past eating disorder symptoms using ANOVA and ² analyses. After controlling for age and sex, normal-weight participants reported more frequent use of a range of healthy and unhealthy weight control behaviors compared to their obese peers, including eating fewer meals and snacks per day; exercising and skipping meals more frequently in the past month; and avoiding certain foods for weight control. They also endorsed more frequent attempts at dieting in the past year, and feeling more frequently distressed about their binge eating, at a trend level. There were no group differences in binge eating frequency in the past month, age at onset of binge eating, overvaluation of shape/weight, or likelihood of having used certain weight control behaviors (e.g., vomiting, laxative use) or having sought treatment for an eating disorder in the past. Based on our findings, normal-weight individuals appear to be a behaviorally distinct subset of the BED population with significantly greater usage of both healthy and unhealthy weight control behaviors compared to their obese peers. These results refute the notion that distress and impairment in BED are simply a result of comorbid obesity.

Binge eating disorder (BED) is characterized by recurrent binge eating (i.e., consumption of an unambiguously large amount of food accompanied by loss of control while eating) in the absence of the regular use of inappropriate compensatory behaviors (1). Individuals with BED are typically overweight or obese (2), yet a substantial minority fall within a healthy weight range (3). As most studies of BED have been conducted in overweight or obese

samples, little is known about the clinical presentation of normal-weight individuals with BED.

Since its inclusion as a provisional diagnosis in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), BED has been subject to much empirical research and considerable controversy. While some researchers have argued that individuals with BED are simply a subset of the obese population with comorbid psychopathology (4), others have suggested that BED is a distinct psychiatric disorder (5). Although BED is associated with weight gain and obesity (3,6), impairment and distress in BED appear to be best accounted for by eating disorder (ED) symptom severity rather than the degree of obesity (6). Treatment-seeking in those with BED is uncommon and often occurs many years after the onset of binge eating (7,8). Research participants with BED frequently present with a long history of the illness (2), which may explain why study samples tend to be biased toward obesity. Taken together, while ample literature describes the nature of BED and its relation to obesity, much of our understanding of the disorder may not generalize to healthy-weight individuals.

The few studies of BED including normal-weight individuals reported minimal differences in psychological functioning on the basis of weight status (9,10); indeed, obese and nonobese adults with BED displayed similar levels of eating-related and general psychopathology, with the exception of drive for thinness, which was higher in nonobese participants (9). However, both of these studies pooled normal-weight and overweight participants; thus, it remains unclear whether normal-weight individuals with BED differ clinically from their overweight or obese counterparts.

It is important to study eating disturbances in normal-weight individuals with BED to determine appropriate interventions for reducing problematic eating patterns and perhaps preventing obesity onset. Hence, the current study sought to compare normal-weight and obese adults with BED on measures of current and past eating-related psychopathology. Based on evidence that nonobese adults with BED endorse greater drive for thinness than their obese peers (9), we predicted that in this study normal-weight individuals would employ more frequent usage of both healthy/moderate (i.e., exercise, food avoidance) and unhealthy/extreme weight control strategies (i.e., vomiting; ipecac, laxative, diuretic, or diet pill use; skipping meals; chronic dieting). Between-group differences were not expected on any other measure of eating-related psycho-pathology (9,10). This is the first study, to our knowledge, to characterize a purely normal-weight subset of individuals with BED, thus filling an important gap in the literature.

METHOD

Participants

Participants were 281 normal-weight ($18.5 < \text{BMI (kg/m}^2) < 24.9$; $n = 86$; 30.6%) or obese ($\text{BMI} \geq 30$; $n = 195$; 69.4%) treatment-seeking adults with BED. Overweight individuals ($25.0 \leq \text{BMI} < 29.9$) were excluded from the study to ensure that comparison groups were distinct. Participants were 31.0 years old (s.d. = 10.8), on average; most were female ($n = 250$; 89.0%) and white ($n = 247/259$ participants with valid race/ethnicity data; 95.4%).

Procedures

Data were collected as part of the initial psychological evaluation at five ED treatment centers (Department of Psychiatry, University of Chicago, Chicago, IL; Department of Psychiatry, University of South Florida, Tampa, FL; Department of Psychiatry, University of Minnesota School of Medicine, Minneapolis, MN; Center for Eating Disorders and Psychotherapy, Worthington, OH; and Eating Disorder Institute/Neuropsychiatric Research

Institute, Fargo, ND). Data were collected before participants initiated treatment. Each data collection center received institutional review board approval for the study.

Measures

Participants self-reported their current height and weight, and past and current ED symptoms, on the Eating Disorder Questionnaire (EDQ; 11), a measure of ED behaviors and attitudes. Although the EDQ is not a diagnostic instrument, DSM-IV-TR criteria (e.g., binge eating ≥ 2 times per week; absence of regular use of compensatory behaviors) were used to generate BED diagnoses. EDQ-generated ED diagnoses show good agreement with those derived from a semi-structured interview (12).

statistical analysis

Pearson χ^2 and independent samples *t*-tests were used to evaluate demographic differences. Because few participants belonged to a racial/ethnic minority group ($n = 12$), we re-coded race/ethnicity data as “white” or “other.” Normal-weight and obese participants were compared on current and past eating-related symptoms using ANOVA and χ^2 analyses. Specific EDQ items included current number of meals and snacks eaten per day; exercise frequency; frequency of skipping meals; past use of extreme weight control behaviors; current food avoidance; number of dieting attempts in the past year; frequency of binge eating episodes in the past month; age of onset for binge eating episodes; duration of binge eating problems; average frequency of experiencing distress about binge eating; overvaluation of shape and weight; and previous ED treatment. Due to the large number of statistical tests, α was set at 0.01 to reduce the possibility of type I error.

RESULTS

Participant characteristics

The normal-weight group was significantly younger ($P < 0.001$) and included slightly more females ($P = 0.06$) than the obese group. Groups did not differ on race/ethnicity ($P = 0.08$; see Table 1).

ED symptoms

After controlling for age and sex, normal-weight participants reported eating fewer meals and snacks per day, and exercising and skipping meals more frequently in the past month ($P_s < 0.01$). They were more likely to avoid certain foods for weight control, and also exhibited a shorter duration of binge eating than their obese peers ($P_s < 0.001$). They tended to endorse more frequent dieting attempts in the past year, and to feel more frequently distressed about their binge eating, although only at a trend level ($P_s = 0.02$). There were no between-group differences in binge eating frequency in the past month, binge eating age of onset, overvaluation of shape/weight, or likelihood of having used extreme weight control behaviors (e.g., vomiting, laxative use) or having sought ED treatment in the past ($P_s > 0.05$; see Table 1).

DISCUSSION

In this investigation of eating-related disturbances among normal-weight adults with BED, normal-weight participants endorsed greater usage of healthy and unhealthy weight control behaviors than their obese peers. However, normal-weight and obese participants reported similar levels of ED cognitions and treatment-seeking behavior. Results suggest that normal-weight individuals are a behaviorally distinct subset of the BED population, and support the notion that distress and impairment in BED are not simply a result of comorbid obesity.

It is perhaps not surprising that normal-weight participants reported increased usage of weight control behaviors compared to their obese peers. Some of these strategies (e.g., exercise) can be part of a healthy lifestyle that promotes appropriate weight maintenance, while others (e.g., chronic dieting) may promote binge eating (13). Thus, clinicians are advised to assess thoroughly for these behaviors in normal-weight BED patients.

Normal-weight individuals with BED were just as likely as their obese peers to have sought ED treatment in the past. Insofar as treatment-seeking may be a marker for underlying distress (14), these results imply that normal-weight individuals with BED suffer from as much ED-related functional impairment as their obese counterparts; indeed, the two groups endorsed similar levels of distress about binge eating and shape and weight overvaluation, two important cognitive features of EDs. Moreover, given that in some studies BED predicts weight gain over time (3), normal-weight individuals with BED may be at risk for obesity as they age. This is supported by our finding that obese participants were older and exhibited a longer duration of binge eating relative to normal-weight participants, and underscores the need for early detection and interventions focused on modifying eating patterns contributing to binge eating and weight gain (13). Future studies should examine other psychosocial factors (e.g., depressive symptoms) in normal-weight individuals with BED to inform intervention efforts.

This study has several limitations. ED symptoms and BED diagnoses were determined by self-report questionnaire, which may yield higher rates of eating pathology (12); thus, replication using investigator-based interviews is needed. Height and weight were also self-reported; however, previous studies have found very modest discrepancies between self-reported and measured height and weight in adults with BED (15), thus minimizing concerns about reporting errors. All participants in this study were seeking treatment, and most were female and white, which may limit the generalizability of our findings; indeed, the low rates of nonwhites in the sample could have obscured a relation between race/ethnicity and obesity. Strengths include the relatively large sample, and the exploration of a range of ED behaviors and attitudes.

In summary, normal-weight individuals with BED appear to have a unique clinical profile compared with their obese counterparts. Findings have important implications for classification and treatment of EDs. Specifically, similarities between normal-weight and obese individuals with BED in terms of ED cognitions and other markers of distress provide support for BED's status as an ED that is distinct from obesity. Interventions for normal-weight patients should focus on encouraging the use of healthy weight control techniques. Replication studies including a larger range of psychosocial measures are warranted to extend these important findings.

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Table 1

Demographic variables and eating-related symptoms among normal-weight and obese individuals with binge eating disorder

Variable	Normal-weight (n = 86)	Obese (n = 195)	Test statistics
<i>Demographics</i>			
Age, years	27.7 (8.6)	32.5 (11.4)	$t(279) = 3.88; P < 0.001$
Female, % (n) ^a	94.2 (81/86)	86.7 (169/195)	² (1, N = 281) = 3.44; P = 0.06
BMI, kg/m ²	22.0 (1.9)	42.2 (8.6)	$t(279) = 31.19; P < 0.001$
<i>Race, % (n)^a</i>			
White	98.8 (79/80)	93.9 (168/179)	² (1, N = 259) = 3.00; P = 0.08
Other	1.3 (1/80)	6.1 (11/179)	
<i>Eating disorder symptoms</i>			
Meals and snacks per day	4.8 (2.0)	7.3 (7.1)	$F(3,228) = 6.42; P = 0.01$
Exercise frequency ^b	5.2 (2.3)	2.6 (2.0)	$F(3,274) = 79.35; P < 0.001$
Skipping meals frequency ^b	4.3 (2.5)	3.2 (2.4)	$F(3,269) = 7.25; P = 0.008$
Engaged in extreme weight control behaviors, % (n) ^a	82.9 (68/82)	71.6 (139/194)	² (1, N = 276) = 3.91; P = 0.05
Food avoidance, % (n) ^a	88.1 (52/59)	53.4 (94/176)	² (1, N = 235) = 22.65; P < 0.001
Previous dieting attempts ^c	29.1 (59.6)	11.8 (38.3)	$F(3,201) = 5.79; P = 0.02$
Binge eating frequency ^b	6.5 (0.8)	6.4 (0.9)	$F(3,281) = 0.73; P = 0.39$
Binge eating age of onset	17.2 (4.7)	17.1 (9.4)	$F(3,243) = 0.25; P = 0.62$
Duration of binge eating, y	8.1 (7.1)	17.4 (10.9)	$F(3,190) = 33.33; P < 0.001$
Distress about binge eating, frequency	4.6 (0.8)	4.1 (1.0)	$F(3,231) = 6.00; P = 0.02$
Shape and weight overvaluation	4.3 (0.8)	4.3 (0.9)	$F(3,152) = 0.00; P = 0.96$
Previous treatment for an eating disorder, % (n) ^a	80.6 (25/31)	73.3 (110/150)	² (1, N = 181) = 0.73; P = 0.40
Psychotherapy, % (n) ^a	35.7 (5/14)	21.3 (23/108)	² (1, N = 122) = 1.46; P = 0.23
Medication, % (n) ^a	21.4 (3/14)	36.8 (42/114)	² (1, N = 128) = 1.30; P = 0.25
Nutrition counseling, % (n) ^a	30.8 (4/13)	40.0 (52/130)	² (1, N = 143) = 0.42; P = 0.52
Self-help treatment, % (n) ^a	58.1 (18/31)	45.8 (66/144)	² (1, N = 175) = 1.53; P = 0.22

Range for exercise frequency, skipping meals frequency, and binge eating frequency = 1 to 8 (1 = never; 2 = once a month or less; 3 = several times a month; 4 = once a week; 5 = twice a week; 6 = three to six times a week; 7 = once a day; 8 = more than once a day); range for distress about binge eating frequency = 1 to 5 (1 = never; 2 = rarely; 3 = sometimes; 4 = often; 5 = always); range for shape and weight overvaluation = 1 to 5 (1 = not at all important; 2 = slightly important; 3 = moderately important; 4 = very important; 5 = extremely important).

^aDenominator indicates total number of available participants.

^bRefers to the past month only.

^cRefers to the past year only.