Does the Size of a Binge Matter?

Elizabeth M. Pratt,¹* Sara H. Niego,² and W. Stewart Agras³

¹ Department of Psychology, Rutgers University, Piscataway, New Jersey
² Columbia University School of Medicine, New York, New York
³ Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California

Accepted 7 March 1997

Abstract: Objective: The aim of this study was to examine whether objective and subjective binges differ significantly from each other in relation to measures of psychopathology in a sample of women who meet DSM-IV diagnostic criteria for bulimia nervosa. Method: Baseline data from the Eating Disorder Examination (EDE) were analyzed and the average of the sum of and the difference between objective and subjective binge episodes were converted to z scores. Regressions were run with other baseline measures including the Structured Clinical Interview for Diagnosis of DSM-III-R (SCID) I and II disorders, EDE subscales, and psychological measures. Results: We found no significant difference between the two types of binges on all but one measure, the “Can Do” subscale of the Self-Efficacy Questionnaire, in a regression with the z score of total binges. Discussion: The lack of significant findings questions the diagnostic validity of the “large amount of food” criterion used to define binge eating in the DSM-IV. © 1998 by John Wiley & Sons, Inc. Int J Eat Disord 24: 307–312, 1998.

Key words: objective binge; subjective binge; bulimia nervosa

INTRODUCTION

The presence of binge eating is a core criterion for the diagnosis of bulimia nervosa and binge eating disorder. According to the 4th ed. of the Diagnostic and statistical manual of mental disorders (DSM-IV; American Psychiatric Association [APA], 1994), it is defined by both (a) eating a large amount of food during a discrete period of time and (b) a sense of lack of control over eating during the episode. However, the definition of binge eating has been and continues to be the subject of investigation. In recent years, researchers have questioned the requirement that a binge eating episode consist of a large amount of food (Wilson, 1992; Pryor, 1995; Rossiter & Agras, 1990) where “large” is defined as “an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances” (APA, 1994). Patients who do not con-

*Correspondence to: Elizabeth M. Pratt, B.A., The Rutgers Eating Disorders Clinic, 41 C Gordon Road, Piscataway, NJ 08854.

© 1998 by John Wiley & Sons, Inc.

CCC 0276-3478/98/030307-06
sume an unusually large amount of food during binge eating are often not considered to meet a full clinical eating disorder diagnosis because they do not report large binges. More often they do not meet the frequency criterion for large binges (two large binges per week on average for the past 3 months) and are therefore excluded from research studies.

However, Rossiter and Agras (1990) found that nearly one third (28%) of all binges in bulimics consisted of fewer than 500 kcal. This replicated findings of an earlier study (Rossiter, Agras, & Losch, 1986). Other researchers found that some of the variability in the amount of calories consumed in a binge could be explained by the type of food eaten and subjective feelings of loss of control (Rosen, Leitenberg, Fisher, & Khazam, 1986; Gleaves, Williamson, & Barker, 1993; Telch & Agras, 1996). Some felt these results indicated that revisions in the definition of binge eating, and hence in the diagnostic criteria for bulimia nervosa and binge eating disorder, should be considered (Garner, Shafer, & Rosen, 1992).

In a recent exploratory study of binge eating disorder, we found no significant differences in the relationships of large or small binges to several measures of psychopathology and demographics (Niego, Pratt, & Agras, 1997). However, we relied solely on self-reported food diaries to identify the presence and type of binge episodes. Hence, in the present study, the Eating Disorder Examination (EDE; Cooper & Fairburn, 1987) was used to distinguish objective (in which an objectively large amount of food is consumed) and subjective (in which the amount of food consumed is not large but is viewed by the subject as excessive) bulimic episodes. We felt the EDE would produce a more accurate measure of binge eating, as it is an investigator-based interview in which the assessor classifies binges as objective or subjective according to specific guidelines after obtaining a detailed picture of the amount of food eaten by the subject in each binge episode. The EDE has been shown to produce high interrater reliability in past studies (Cooper & Fairburn, 1987). The aim of the present study was to examine whether objective and subjective binges were significantly different from each other in relation to measures of psychopathology, personality disorders, and other descriptive measures in a sample of women meeting the DSM-IV diagnostic criteria for bulimia nervosa.

METHOD

Subjects

Subjects were 174 women who participated in an ongoing multicenter treatment study for bulimia nervosa that offered 20 weeks of either cognitive-behavioral therapy or interpersonal therapy for bulimia nervosa. Collaborating treatment centers were Columbia University in New York City and Stanford University in Palo Alto, California. After a complete description of this multicenter study to the subjects, written informed consent was obtained. At the time that the current study was initiated, 174 women had completed the baseline assessments. To be eligible for the treatment study, participants had to satisfy the diagnostic criteria for bulimia nervosa of the 3rd Rev. ed. of the Diagnostic and statistical manual of mental disorders (DSM-III-R; APA, 1987) which was the version in use at the start of the study. However, all of the subjects also met the diagnostic criteria for the DSM-IV. To satisfy the "large amount of food" criterion for the DSM diagnosis, binges had to meet the amount requirements of objective bulimic episodes as defined by the EDE. Hence, if a subject did not report an average of at least two objective bulimic episodes per week, she was excluded from the treatment study. Other exclusion criteria included
Size of a Binge

309

diagnoses of bipolar disorder, current suicidal ideation, current alcohol or drug dependence, and current psychosis.

Subjects’ ages ranged from 18 to 49 years (M = 28.40, SD = 7.06) and the sample mean body mass index (BMI) was 22.82 (SD = 4.40). Seventy-nine percent (79.9%) of subjects were white (non-Hispanic), 8.6% were Hispanic, 6.3% were African American, 4.6% were Asian or Pacific Islander, and .6% (1 subject) was Native American. The mean duration of binge eating was 11.82 (SD = 7.46) years and the mean duration of purging was 10.32 (SD = 6.94) years. Eighty-one percent were employed, 27.7% had a 4-year college degree, 5.2% had a 2-year college degree, 20.2% had attended graduate school, 35.3% had attended college but did not obtain a degree, and the remainder had either graduated from high school or attended high school. One subject was excluded from analysis (n = 173) for education status because she was the first participant and entered the study at a time when that question was not asked as part of the demographic data. 20.7% had a previous psychiatric hospitalization and 81.6% had received psychological treatment in the past.

**Measures**

The baseline assessments consisted of the Structured Clinical Interview for Diagnosis of the DSM-III-R, the EDE, and a predictive factors questionnaire consisting of questions about age of binge onset, highest and lowest weight, and family history of eating disorders and alcohol use. In addition, subjects completed the following questionnaires: the Symptom Checklist-90 (SCL-90), the Inventory of Interpersonal Problems (IIP), the Rosenberg Self-Esteem Scale, the Self-Efficacy Questionnaire, and the Social Adjustment Self-Report Questionnaire.

**The SCL-90**

The SCL-90 (Derogatis, Lipman, & Colvi, 1973) is a standard instrument used to assess psychiatric symptomatology in outpatients. It consists of 90 items reflecting psychiatric symptomatology which subjects rate on a 5-point scale of distress (0 to 4) ranging from not at all to extremely. The SCL-90 provides scores on nine subscales as well as an overall index of distress (General Symptomatic Index [GSI]) and has high internal consistency and high test-retest reliability. The GSI was the measure used in this study.

**The IIP**

The IIP (Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988) is a self-report inventory that describes interpersonal problems that people experience and the level of distress arising from interpersonal sources. It contains 127 items and asks the subject to consider each interpersonal problem described and to rate how distressing that problem has been on a scale ranging from 0 (not at all) to 4 (extremely). The IIP contains six subscales and an overall mean rating of interpersonal distress is derived from the mean self-rating across all items. We used the total score on the IIP as the measure of interpersonal distress in this study.

**The Rosenberg Self-Esteem Scale**

This 10-item self-report questionnaire (Rosenberg, 1965) was included as a standard measure for evaluating the level of self-esteem. A higher score reflects lower self-esteem.

**The Self-Efficacy Questionnaire**

This item is based on a list of 24 situations or events that tend to trigger binge eating. The “Can Do” subscale measures participants’ ability to successfully resist binge eating in
the given situation. The "Confidence" subscale measures the degree of confidence that a participant feels she can resist binge eating (Schneider, O'Leary, & Agras, 1987).

**The Social Adjustment Self-Report Questionnaire**

This is a 54-item questionnaire that asks questions about work and family life in the past few days (Weissman, Prusoff, Thompson, Harding, & Myers, 1978).

**Procedure**

To determine how much of the variance in the baseline measures listed above was due to the type of binge versus binge eating in general, we calculated the difference between the two types (subjective – objective) and the average of the sum of both types of binges. To separate these highly correlated ($r = -.44, p < .01$) variables, we first converted the sum and difference scores to $z$-scores. The correlation coefficient for the $z$-scores was $-.15$ (ns). We used these measures as the independent variables in multivariate and logistic regressions to ascertain whether the variance on any of the measures was accounted for by the sum of or the difference between subjective and objective binges. We chose to run regressions only with measures that were commonly occurring. For example, 25% of the participants had a Cluster B personality disorder at baseline. We did not run analyses on the more rarely occurring SCID I and II diagnoses.

**RESULTS**

The results of these analyses are summarized in Table 1. We found that the difference between the type of binge did not account for the variance on any of the measures. The result of the regression run with total binges and the Self-efficacy Can Do scores was significant. However, on the same measure, the regression run with the difference was not. Importantly, the two types of binges did not relate differently to the SCL-90, a measure of global psychological functioning, or to any of the SCID I or II diagnoses. Nor did the sum or the difference $z$-score measures predict differences in subjects’ weight, shape, and restraint scores as measured by the EDE. Also noteworthy is the lack of a significant difference in subjects’ BMI measures in relation to the subjective versus objective binge measures.

**DISCUSSION**

This exploratory study presents some interesting findings. A lack of significant findings on nearly all of the regressions run with total binges and the difference between the two types merit attention. As Table 1 shows, of the 28 measures, including SCID I and II, demographics, and predictive factors, the variance in only one was accounted for by one of the independent variables (sum of the two types of binges). It would be expected that were subjective and objective binges distinct types of eating episodes they would predict different scores on some of the measures. The one significant finding tells us only that it is the cumulative number of binges rather than the difference between the types of binges that explains the variance in Self-efficacy Can Do scores. This suggests that an increase in the total number of binge episodes is more likely to predict clinical findings than the difference between subjective and objective binges.
Table 1. Regressions of Baseline Measures

<table>
<thead>
<tr>
<th>Baseline Measure</th>
<th>Subjective + Objective</th>
<th>Subjective - Objective</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta ± Standard Error</td>
<td>Beta ± Standard Error</td>
<td></td>
</tr>
<tr>
<td>SCID I diagnoses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past anorexia</td>
<td>.0493 ± .2419</td>
<td>-.0361 ± .1193</td>
<td>ns</td>
</tr>
<tr>
<td>Current major depression</td>
<td>.2940 ± .2672</td>
<td>.0203 ± .1313</td>
<td>ns</td>
</tr>
<tr>
<td>SCID II diagnoses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of Cluster B diagnosis</td>
<td>.0559 ± .2562</td>
<td>-.0259 ± .1264</td>
<td>ns</td>
</tr>
<tr>
<td>EDE subscales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight concern</td>
<td>.0665 ± .1564</td>
<td>.1351 ± .0770</td>
<td>ns</td>
</tr>
<tr>
<td>Shape concern</td>
<td>.1758 ± .2815</td>
<td>.0446 ± .1387</td>
<td>ns</td>
</tr>
<tr>
<td>Restraint</td>
<td>-.0272 ± .1370</td>
<td>.0494 ± .0675</td>
<td>ns</td>
</tr>
<tr>
<td>Psychological assessments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rosenberg Self-Esteem Scale</td>
<td>.1214 ± .6184</td>
<td>.0203 ± .3046</td>
<td>ns</td>
</tr>
<tr>
<td>Symptom Checklist-90 (GSI)</td>
<td>.1936 ± .0692</td>
<td>-.0260 ± .0341</td>
<td>ns</td>
</tr>
<tr>
<td>Inventory of Interpersonal Problems</td>
<td>.1586 ± .0628</td>
<td>.0265 ± .0309</td>
<td>ns</td>
</tr>
<tr>
<td>Social Adjustment Scale</td>
<td>.1603 ± .0506</td>
<td>.0406 ± .0249</td>
<td>ns</td>
</tr>
<tr>
<td>Self-Efficacy Confidence</td>
<td>-.1806 ± 1.9475</td>
<td>-.0379 ± 1.001</td>
<td>ns</td>
</tr>
<tr>
<td>Self-Efficacy Can Do</td>
<td>-.2360 ± .6943*</td>
<td>.1966 ± .3421</td>
<td>&quot;corrected p &lt; .0002&quot;</td>
</tr>
<tr>
<td>Duration of binge eating (years)</td>
<td>.0444 ± .8080</td>
<td>-.0967 ± .3980</td>
<td>ns</td>
</tr>
<tr>
<td>Duration of purging (years)</td>
<td>.0354 ± .7547</td>
<td>-.0627 ± .3718</td>
<td>ns</td>
</tr>
<tr>
<td>Body mass index</td>
<td>-.0673 ± .4771</td>
<td>.0832 ± .2350</td>
<td>ns</td>
</tr>
<tr>
<td>Age</td>
<td>.0109 ± .7663</td>
<td>-.0860 ± .3775</td>
<td>ns</td>
</tr>
<tr>
<td>Past psychological treatment</td>
<td>-.3112 ± .3185</td>
<td>-.0814 ± .1553</td>
<td>ns</td>
</tr>
</tbody>
</table>

Note: SCID = Structured Clinical Interview for Diagnosis of DSM-III-R; EDE = Eating Disorders Examination; GSI = General Symptomatic Index.

A possible point of criticism for this study is that we chose to examine two types of binges in a group of subjects who all displayed both types rather than to compare one cohort with only objective binges to another cohort with only subjective binges. We did not conduct the latter study for two reasons. First, it would be extremely difficult to find large numbers of women who report only unequivocally large or small binges. Second, instead specific steps were taken to separate the two types of binges statistically, by converting them first into z-scores. Another issue related to the use of participants in a clinical trial is that of the criteria used to determine the subject group. Lack of significant differences in psychopathology due to binge type can potentially be an artifact of very stringent exclusion criteria. However, there were very few exclusion criteria for psychiatric comorbidity in the treatment study. Therefore, few subjects with bulimia nervosa were excluded from the treatment study due to coexisting psychiatric disorders.

The results of our analyses call into question the current reliance on the large amount of food criterion to diagnose clinical binges. While not an end in themselves, these findings raise a major classification issue and call for further exploration into the factors that should be emphasized in the diagnostic criteria for binge eating. As the DSM criteria for eating disorders have been revised over the years, researchers have constantly worked to create diagnostic measures which are neither over inclusive nor under inclusive. This goal becomes all the more relevant in the present environment of managed care, where lack of a clinical diagnosis may have implications for treatment coverage. Diagnostic criteria not only determine who is considered to have a disorder of clinical significance, they also impose an agenda for future research. Given that "we study what we define" (Walsh, 1996), eating disorders researchers must continually investigate whether current diagnostic criteria are as accurate as possible.
We thank W. Stewart Agras, M.D., Christopher G. Fairburn, D.M.RCPsych., B. Timothy Walsh, M.D., and G. Terence Wilson, Ph.D., for providing access to the multicenter database. The authors also thank Helen Kraemer, Ph.D., and Susan Bryson, M.S., for their assistance in statistical analysis.

REFERENCES


