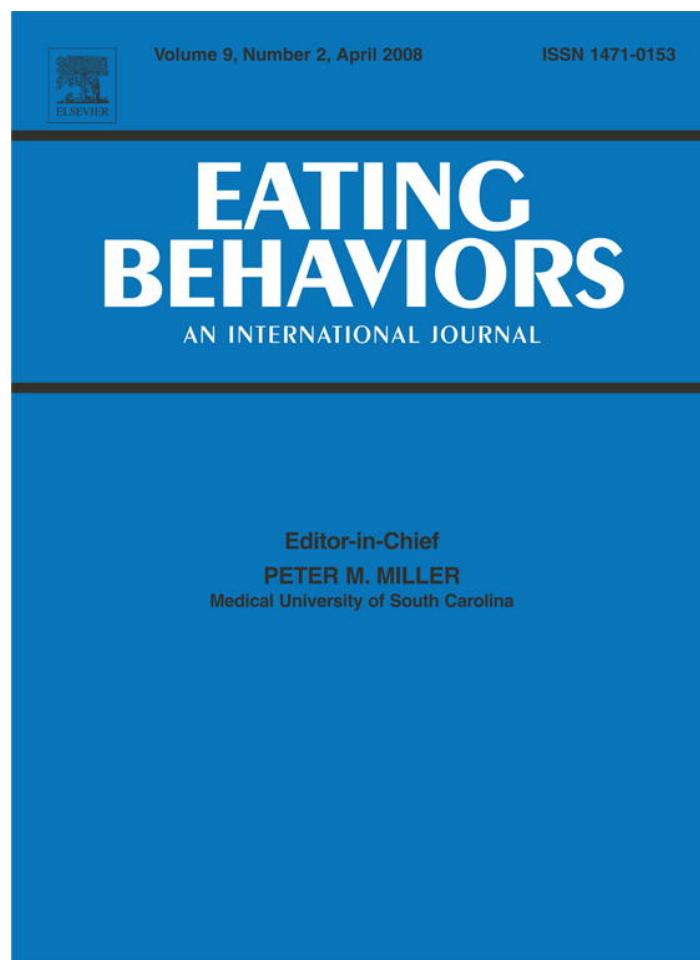


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The prevalence of binge eating disorder and borderline personality symptomatology among gastric surgery patients

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Received 15 March 2007; received in revised form 12 July 2007; accepted 14 August 2007

Abstract

In this study, we examined the prevalence of binge eating disorder (BED) and borderline personality disorder (BPD) in a sample of 121 candidates seeking surgery for obesity. In this predominantly female sample (85.9%), according to the Questionnaire on Eating and Weight Patterns-Revised (QEWP-R), the prevalence of BED was 6.5%. As for the prevalence of BPD, 14.0% exceeded the clinical cut-off score on the Self-Harm Inventory (SHI), 14.0% exceeded the clinical cut-off score on the borderline personality scale of the Personality Diagnostic Questionnaire-4 (PDQ-4), and 7.4% exceeded the clinical cut-off score on the McLean Screening Inventory for Borderline Personality Disorder (MSI-BPD). Overall, 24.8% of the sample exceeded the clinical cut-off on at least one measure of BPD whereas only 3.3% exceeded the clinical cut-off on all three measures. In addition, there was a significant inverse relationship between the discrepancy between highest and lowest adult body mass index, and scores on the PDQ-4 and the MSI-BPD. The authors discuss the implications of these findings.

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Keywords: Binge eating disorder; Obesity; Borderline personality

Borderline personality is an Axis II disorder that is characterized by chronic self-regulation difficulties and recurrent self-destructive behavior (Kolb & Gunderson, 1980). According to the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition, text revision (DSM-IV-TR; American Psychiatric Association, 2000)*, the inherent self-regulation difficulties among individuals with this disorder may include binge eating. As for the self-destructive behaviors encountered in borderline personality disorder (BPD), among obese individuals, this may manifest as a medically self-destructive lifestyle (Sansone & Sansone, *in press*). Given the role of self-regulation difficulties in the

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construct for borderline personality and the difficulties with the regulation of food intake in many cases of obesity, we wondered whether there might be an association between these two phenomena, at least among some individuals.

With regard to the literature, we previously summarized the findings relating to the prevalence of BPD among the obese in a review article (Sansone, Wiederman, & Sansone, 2000). Among the seven published empirical studies in this review, sample sizes varied from 17 to 150 individuals, were predominantly female, and ranged across socioeconomic classes. Three samples consisted of gastric surgery candidates whereas the remaining samples were from primary care, weight-management, eating disorder, and mental health settings. Among these various samples of obese individuals, the prevalence of borderline personality ranged from 2.2% to 94.1%, compared to an estimated 2% in the general population (American Psychiatric Association, 1994). More specifically, we noted that among the 15 measures used for the assessment of borderline personality, 10 detected this Axis II disorder in their samples at rates of 25% or higher. The highest prevalence rates were among individuals from the eating disorder and mental health samples (i.e., psychological settings) whereas the lowest prevalence rates were among individuals seeking weight control in non-psychological settings (i.e., participants from primary care settings). This suggests that the nature of the treatment setting has a strong influence on the prevalence of BPD in a given obese study population (Sansone, Sansone, & Morris, 1996).

To further complicate this area of research, there is the phenomenon of binge eating disorder (BED). As a proposed psychiatric diagnosis designated for further study in the appendices of the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition* (American Psychiatric Association, 1994), this eating disorder is characterized by impulsive binge eating with no compensatory behavior such as exercise, the use of laxatives, self-induced vomiting, or fasting. BED is highly prevalent in individuals with body mass indices (BMIs) ≥ 40 (i.e., up to 50%; McElroy et al., 2002). Therefore, it is commonly encountered among individuals suffering from obesity. The impulsivity associated with BED suggests the possibility of borderline personality features. Likewise, one of the types of impulsivity described for borderline personality in the *DSM-IV* is binge eating behavior.

In the existing literature, researchers have found prevalence rates for BPD among those with BED from less than 1% to 30% (Abbott et al., 1998; Grilo & McGlashan, 2000; McCann, Rossiter, King, & Agras, 1991; Picot & Lilienfeld, 2003; Raymond, Mussell, Mitchell, de Zwaan, & Crosby, 1995; Specker, de Zwaan, Raymond, & Mitchell, 1994; Telch & Stice, 1998; van Hanswijck de Jonge, van Furth, Lacey, & Waller, 2003; Yanovski, Nelson, Dubbert, & Spitzer, 1993). Among the 652 participants in the preceding nine investigations, 103 (16%) met the study criteria for borderline personality symptomatology. For the two studies using self-report measures for the diagnosis of BPD (i.e., for both, the borderline personality scale of the Personality Diagnostic Questionnaire-Revised), 30% of 78 participants met the criteria (Raymond et al.; Specker et al.). While useful, the ability to generalize findings from these previous studies is potentially limited by diverse recruitment strategies (e.g., advertisements versus recruitment among treatment-seeking individuals), predominantly female samples, and most importantly, the use of a single measure for the assessment of borderline personality.

In the present study, we examined the prevalence of binge eating disorder and, using three measures, borderline personality symptomatology in a sample of subjects seeking gastric surgery for obesity. In addition, we planned to compare the prevalence of borderline personality symptomatology among those with versus without BED.

1. Method

1.1. Participants

Participants, both males and females, were 18 years of age or older and undergoing consultation for gastric surgery for obesity (either a lap banding or bypass procedure). Exclusion criteria were medical, cognitive, or psychiatric impairment that would preclude the successful completion of a survey. Of the 124 individuals who were approached, 121 agreed to participate for a response rate of 97.6%.

The resulting sample consisted of 104 women and 17 men, ranging in age from 20 to 70 years (Mean = 44.6, SD = 11.8). The majority of respondents had attained a high school diploma as their highest level of completed education (77.5%); only 19.2% of the sample had attained a college degree. The majority (82.6%) was White; 14.0% were African-American, 1 respondent was Native American, 2 respondents were Asian, and 1 respondent was Hispanic. Respondents' BMIs ranged from 27.2 to 92.1 (Mean = 47.2, SD = 9.7).

1.2. Procedure

All participants were seeking evaluation from one surgeon and each was recruited by the program's social worker as time permitted (i.e., a sample of convenience). Following an introduction to the project and successful recruitment, participants were

given a survey booklet to complete. The survey booklet explored demographic information as well as height, weight history, binge eating behavior, and borderline personality symptomatology. All participants in this study signed a consent form for participation. This project was approved by the hospital as well as university Institutional Review Boards.

1.2.1. Binge eating assessment

For the assessment of BED, we used the Questionnaire on Eating and Weight Patterns-Revised (QEWP-R) (Spitzer, Yanowski, & Marcus, 1994; Yanovski, 1993). The QEWP-R is a 27-item, self-report measure that explores weight and dieting history, binge-eating behavior, and purging behavior. Previous studies indicate that the QEWP-R identifies individuals with clinically meaningful BED (Elder et al., 2006) and is a useful screening measure for the disorder (Borges, Morgan, Claudino, & da Silveira, 2005; Celio, Wilfley, Crow, Mitchell, & Walsh, 2004). In addition, the QEWP has been used in previous studies of gastric surgery patients (Bocchieri-Ricciardi et al., 2006; de Zwaan et al., 2003; Dymek-Valentine Rienecke-Hoste, & Alverdy, 2004; Elder et al., 2006). In this study, we excerpted from the QEWP-R the five key items relating to the diagnosis of BED and included a list of exclusionary purging behaviors. All five items were required for the diagnosis of BED as well as the absence of any purging behavior.

1.2.2. Borderline personality symptomatology assessments

We used three self-report measures for the assessment of borderline personality symptomatology. We elected these particular self-report measures not only because of our empirical familiarity with them from previous studies, but also because they: (a) provide a categorical rather than a dimensional approach to diagnosis; (b) do not require a fee for usage, which might be encountered with formal psychological tests that assess for BPD; and (c) are contemporary but not new measures for the diagnosis of borderline personality symptomatology. In addition, we wanted measures with distinctly different constructs for the assessment of borderline personality symptomatology (e.g., self-harm behaviors versus psychological characteristics of the disorder) to provide diagnostic diversity. However, we did not have any hypotheses or suspicions regarding whether specific items on these measures would exhibit potential correlations with BED symptoms.

The first of these, the Self-Harm Inventory (SHI) (Sansone, Wiederman, & Sansone, 1998), is a 22-item, yes/no, self-report measure that explores participants' histories of self-harm behavior. Each item in the inventory is preceded by the statement, "Have you ever intentionally, or on purpose,..." and items include, "overdosed, cut yourself on purpose, burned yourself on purpose," and "hit yourself." Each endorsement is in the pathological direction and the SHI total score is the summation of "yes" responses. SHI total scores of 5 or higher are highly suggestive of the diagnosis of BPD. Based on the Diagnostic Interview for Borderlines (Kolb & Gunderson, 1980) as the criterion, the SHI demonstrates an accuracy of 84% in diagnosis (Sansone et al., 1998).

The second measure was the borderline personality scale of the Personality Diagnostic Questionnaire-4 (PDQ-4) (Hyler, 1994), which is a 9-item, true/false, self-report measure that consists of the diagnostic criteria for borderline personality that are listed in the *DSM-IV*. A score of 5 or higher is highly suggestive of the diagnosis of BPD. Previous versions of the PDQ have been found to be useful screening tools for BPD in both clinical (Dubro, Wetzler, & Kahn, 1988; Hyler et al., 1990) and non-clinical (Johnson & Bornstein, 1992) samples, including the use of the freestanding borderline personality scale (Patrick, Links, Van Reekum, & Mitton, 1995).

The third measure was the McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD) (Zanarini et al., 2003), which is a 10-item, yes/no, self-report questionnaire that explores borderline personality symptomatology. All endorsements are in the pathological direction and scores of 7 or higher are suggestive of the disorder. This measure has undergone limited clinical study and is recommended by the authors as a screening measure for BPD.

2. Results

2.1. Prevalence of BED in the sample

In this sample of patients, the prevalence of BED was 6 out of the 92 participants who completed the QEWP-R, or 6.5%. Because of the low prevalence rate, we were not able to perform comparative analyses between those with versus without BED.

2.2. Prevalence of borderline personality symptomatology

Among the total sample, 14.0% exceeded the clinical cut-off score on the SHI, 14.0% exceeded the clinical cut-off score on the PDQ-R, and 7.4% exceeded the clinical cut-off score on the MSI-BPD. Overall, 24.8% of the sample exceeded the clinical cut-off score on at least one of the three measures of BPD. However, only 3.3% exceeded the cut-off on all 3 measures of BPD. Only one of 6 respondents who exceeded the cut-off for BED on the QEWP-R also exceeded the cut-off on any of the measures for BPD.

Given the substantial rates of borderline personality symptomatology in the current sample, we examined whether such symptomatology was related to current body weight as well as maximum weight fluctuation during adulthood. Using the criterion of having exceeded the clinical cut-off score on at least one measure of BPD, those participants were compared to participants who did

not exceed the clinical cut-off score on any of the 3 measures of BPD. These two groups did not differ with regard to mean BMI: $F(1,113) = .66, p < .42$. Similarly, BMI was uncorrelated with scores on the SHI ($r = .00, p < 1.0$), the PDQ-R ($r = -.09, p < .31$), or the MSI-BPD ($r = -.14, p < .15$). However, computing the discrepancy between highest and lowest adult BMI (i.e., the maximum weight fluctuation during adulthood) correlated with scores on the PDQ-R ($r = -.32, p < .01$) and the MSI-BPD ($r = -.28, p < .01$). This discrepancy was unrelated to scores on the SHI ($r = -.11, p > .05$).

3. Discussion

3.1. The prevalence of BED

In this sample of patients seeking gastric surgery for obesity, the prevalence of BED was surprisingly low (6.5%). According to the literature, the prevalence of BED in the community is around 5%, in weight-loss clinics up to 30%, and in those with BMIs greater than 40, up to 50% (Walsh, Wilfley, & Hudson, 2003). In addition, among pre-surgical candidates seeking gastric surgery for obesity, prevalence rates for BED range from 2% to 49%, with retrospective inquiries indicating prevalence rates between 37.5% and 49% (see Niego, Kofman, Weiss, & Geliebter, 2007). The mean BMI for participants in this study was 47.2, suggesting that a sizeable proportion of participants might suffer from BED. What might explain this disparity?

First, participants may have been hesitant to acknowledge BED behaviors for fear of being denied the surgery (note that of the 121 participants, only 92 or 76% of the sample completed the QEWP-R). Second, it is possible that as gastric surgery for obesity becomes increasingly commonplace, there is a more diluted association between the seeking of surgery and suffering from eating pathology (i.e., BED). In support of these impressions, Kalarchian et al. (2007) found a relatively low prevalence of BED (16.0%) among 288 gastric surgery candidates.

3.2. The prevalence of BPD

In this study, the three measures for borderline personality symptomatology had very little overlap with each other. This may have occurred because each of the measures assesses a different construct for BPD, which was our intent during their initial selection. Among the measures, the highest prevalence of borderline personality symptomatology was 14%. Given that these measures tend to be over-inclusive (i.e., more false positives than false negatives), the actual prevalence of BPD is likely to be lower than this percentage. However, these findings indicate that BPD psychopathology appears to affect a meaningful minority of surgery-seeking patients.

In re-examining the data from three earlier studies of gastric surgery patients (Black, Goldstein, & Mason, 1992; Black et al., 1989; Grana, Coolidge, & Merwin, 1989), among the 234 participants, 33 (14.1%) met the criteria for BPD on either a self-report measure or interview. This percentage corresponds identically to the percentage determined by two of our measures (i.e., the SHI and the PDQ-4). With regard to a more recent study by Kalarchian et al. (2007), using an interview approach, the prevalence of BPD was 4.9%. The differences between these findings might be readily explained by the assessment instruments. Again, given that self-report measures for personality disorders tend to be over-inclusive, the SHI and PDQ-4 are likely to be over-estimating the actual prevalence rate of BPD in this sample, but are capturing the symptoms of the disorder. That the MSI-BPD evidenced far lower rates of BPD is notable. It may be that the established scoring of this measure genuinely restricts the latitude of the diagnostic symptomatology such that only individuals with formal BPD diagnoses evidence positive scores.

Collectively, these findings indicate that, among gastric surgery populations, the prevalence of BPD is relatively low, but clearly higher than rates found in the general population. When the disorder is present, there may be some meaningful clinical implications. Specifically, if the surgeon and patient are intent upon a gastric banding procedure, an individual with BPD might impulsively over-eat and over-extend the newly devised small gastric reservoir. Such individuals may be better candidates for procedures that entail a degree of malabsorption (e.g., gastric bypass). However, impulsive overeating might also have devastating consequences after gastric bypass surgery, as well. Therefore, the surgical treatment of obesity in those with BPD should be approached with caution. Indeed, it may be the degree of borderline personality psychopathology that determines the feasibility of surgical intervention.

Finally, in this study, for two of the measures of BPD (i.e., PDQ-R, MSI-BPD), the higher the discrepancy between highest and lowest adult BMIs, the lower the BPD score. This finding suggests that weight fluctuation in adulthood actually predicts less likelihood of BPD whereas static weights may be more indicative of the unrelenting impulsivity

associated with BPD. Weight fluctuation and its relationship to BPD warrants further study, as the *lack* of weight fluctuation might be a clinical indicator for conducting an in-depth assessment for this Axis II disorder.

4. Conclusions

In contemporary samples of patients seeking gastric surgery for obesity, the prevalence rate of BED may be decreasing. While other studies have examined the prevalence of BPD in gastric surgery candidates and populations, this is the first to use three measures for assessment and prevalence rates of this Axis II disorder continue to be clinically meaningful. In addition, this is the first study, to our knowledge, to find that the lack of weight fluctuation is suggestive of BPD among the obese seeking gastric surgery. The potential limitations of this study include the use of self-report measures, a sample of convenience, and a unique sample such that findings may not generalize to non-surgical obese populations. However, this study confirms that the prevalence of BPD is meaningful, but relatively low, among individuals seeking gastric surgery for the treatment of obesity and that minimal weight fluctuation during adulthood may be particularly suggestive of this Axis II disorder.

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