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POSTTRAUMATIC STRESS DISORDER IN WOMEN WITH BINGE EATING DISORDER IN PRIMARY CARE

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Abstract

Background—To examine the frequency and significance of comorbid posttraumatic stress disorder (PTSD) in ethnically diverse obese patients with binge eating disorder (BED) seeking treatment for obesity and binge eating in primary care.

Methods—Participants were a consecutive series of 105 obese women with BED; 43% were African-American, 36% were Caucasian, and 21% were Hispanic-American/other. Participants were evaluated with reliable semi-structured interviews and established measures.

Results—Of the 105 women, 25 (24%) met criteria for PTSD. PTSD was associated with significantly elevated rates of mood, anxiety, and drug use disorders, significantly elevated eating disorder psychopathology (Eating Disorder Examination global score and scales), greater depressive affect, and lower self-esteem, even though the patients with comorbid PTSD did not have higher body mass indexes (BMIs) or greater frequency of binge eating. The heightened eating disorder psychopathology and depression and the lower self-esteem among patients with comorbid PTSD persisted even after controlling for anxiety disorder comorbidity.

Conclusions—Our findings suggest that among ethnically/racially diverse obese women with BED who present for obesity and binge eating treatment in primary care settings, PTSD is common and is associated with heightened psychiatric comorbidity, greater eating disorder psychopathology, and poorer psychological functioning.

Keywords

anxiety disorders; eating disorders; comorbidity; depression; self-esteem

INTRODUCTION

Binge eating disorder (BED) is a prevalent problem that is strongly associated with obesity and psychosocial impairment,¹ although it is distinct in various ways (e.g., eating patterns, dieting behaviors, and body image features) from other eating disorders.² Research has found elevated rates of psychiatric comorbidity in obese subjects with BED compared with obese individuals without BED,¹ but less is known about the significance of psychiatric comorbidity in BED. The population-based National Women's Study reported that 21% of women with BED met criteria for PTSD compared with 12% of women without eating disorders.³ Using data from the National Comorbidity Survey Replication Study,

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Mitchell and colleagues reported that 26% of women with BED met criteria for PTSD, and they highlighted the need for research to examine the significance of this form of comorbidity among patients with eating disorders.⁴

The study presented here examined the frequency and significance of PTSD comorbidity in an ethnically diverse sample of obese patients with BED seeking treatment for obesity and binge eating in primary care. In addition to being the first study to examine the clinical significance of PTSD comorbidity in BED, this recruitment method is important for several reasons and may increase the generalizability of the findings. Much of the literature on BED is based on predominately Caucasian samples, so that findings may not generalize to more diverse groups with different ethnic/racial compositions.^{5,6} Epidemiological studies have reported similar rates of binge eating⁷ and PTSD-BED comorbidity⁴ across different ethnic/racial groups, but, in sharp contrast to such prevalence data, ethnic/racial minority groups have been vastly under-represented in clinical studies of BED.⁶ Second, epidemiological studies have also found that minority groups with binge eating problems have lower rates of mental health utilization than Caucasians and receive most of their health care in general primary care rather than specialist settings.⁷

METHODS

Participants

Participants were a consecutive series of 105 obese (body mass index [BMI] ≥ 30) women with BED (who met proposed *DSM-5* criteria for BED⁸ but with a longer *DSM-IV*-based 6-month duration requirement). They were respondents to requests and recruitment advertisements for a treatment study in primary care centers in an urban setting for obese persons who binge eat. Exclusion criteria included current antidepressant therapy (exclusion due to possible allocation to study medication as part of the treatment study), severe psychiatric problems (schizophrenia, bipolar disorders, and current substance dependence), severe medical problems (cardiac or liver disease), and uncontrolled hypertension, thyroid conditions, or diabetes. Participants had a mean age of 42.7 years (standard deviation [SD] = 11.6 years) and a mean BMI of 38.4 (SD = 5.6). In terms of ethnicity/race, 43% ($n = 45$) were African-American, 36% ($n = 38$) were Caucasian, 14% ($n = 15$) were Hispanic-American, and 7% ($n = 7$) were of "other" minority/ethnic groups.

Assessments and Measures

The study was approved by the Yale University School of Medicine Institutional Review Board and all participants provided written informed consent. Participants were assessed by doctoral level research clinicians who were trained in the administration of the measures. BED, PTSD, and other psychiatric diagnoses were determined using the Structured Clinical Interview for *DSM-IV* Axis I Disorders (SCID-I/P),⁹ and the Eating Disorder Examination (EDE)¹⁰ was used to assess eating disorder psychopathology. The BED diagnosis was based on proposed *DSM-5*⁸ criteria, except that we required a longer (*DSM-IV*-based) 6-month duration of the once weekly binge eating frequency. Participants completed a battery of self-report measures. Measurements of weight and height were obtained using a high capacity digital scale.

The EDE interview,¹⁰ an established method for assessing eating disorders,¹¹ has good test-retest reliability in BED¹² and in diverse ethnic groups.¹³ The EDE assesses the frequency of objective bulimic episodes (OBEs), corresponding to *DSM*-based definitions of binge eating and comprises four subscales (Restraint, Eating Concern, Shape Concern, and Weight Concern) and a Global score. The Beck Depression Inventory (BDI) is a well-established

and widely used 21-item measure of depression levels.¹⁴ The Rosenberg Self-Esteem Scale (RSES) is a well established and widely used 10-item measure of global self-esteem.¹⁵

RESULTS

Of the 105 participants, 25 (24%) met criteria for PTSD (either lifetime or current) and 80 (76%) did not. Table 1 summarizes the demographic and psychiatric characteristics of the subjects with BED categorized as with PTSD versus without PTSD, along with statistical tests (analyses of variance [ANOVAs] for continuous variables and χ^2 tests for categorical variables, as well as relevant effect sizes [i.e., phi coefficients and partial eta-squared, respectively]). The two groups did not differ significantly in age, age at onset of BED, or ethnicity. The PTSD group had significantly higher rates of mood disorders, anxiety disorders (*excluding* PTSD), and drug use disorders than the group without PTSD.

Table 2 summarizes descriptive statistics and statistical analyses comparing the two groups on clinical measures. ANOVAs revealed that the groups did not differ significantly in either BMI or frequency of binge eating, but the PTSD group had significantly higher EDE global and scale scores on three of the four EDE scales, higher BDI scores, and lower RSES scores. Table 2 also summarizes findings from the analyses of covariance (ANCOVAs) controlling for group differences in comorbid anxiety disorders (excluding PTSD), which seemed indicated given the observed significant comorbidity findings noted above, which are consistent with the literature.¹⁶ ANCOVAs revealed essentially the same pattern—the PTSD group had significantly higher EDE global scores, higher Shape- and Weight-Concern scores, higher BDI scores, and lower RSES scores than the group without PTSD even after controlling for comorbid anxiety disorders.

DISCUSSION

In this study of ethnically/racially diverse obese women with BED who presented consecutively for treatment for obesity and binge eating in primary care settings, 24% met criteria for PTSD. This rate of PTSD in obese women with BED is roughly three-fold the rate of PTSD observed in two recent epidemiological studies of the prevalence of anxiety disorders,^{16,17} which reported PTSD rates of 5.6%-7.0% among Hispanic-Americans, 6.5%-7.4% among Caucasian groups, and 8.6%-8.7% among African-Americans. Our observed 24% rate of PTSD is quite similar to the 21% and 26% rates of PTSD in BED reported by the National Women's Study³ and National Comorbidity Survey Replication,⁴ respectively.

The reasons for the observed elevated rates of PTSD and comorbid psychiatric disorders in our study group of obese patients with BED are unclear. The elevated rates could reflect, in part, treatment-seeking confounds. For example, our study group had a high rate of ethnic/racial minority group members and research has found that minority groups with eating disorders appear to obtain most of their mental health care from primary care (generalist) providers.⁷ Alternatively, the elevated rates of PTSD in BED observed in our study echo those found in epidemiologic research,^{1,4} suggesting some possible psychopathologic association. Researchers have noted, for example, possible links between trauma and various forms of maltreatment and PTSD and binge eating.^{3,4,18} Further research is needed to determine possible mechanisms that might account for the elevated comorbidity of BED and PTSD,³ particularly in ethnically diverse samples that may differ in associated forms of environmental and cultural stressors.¹⁶

Our results, based on semi-structured interviews, suggest that PTSD is associated with heightened levels of psychiatric comorbidity (significantly elevated rates of mood, anxiety,

and drug use disorders), which echoes findings common in epidemiological and clinical studies.¹⁹ Our study presents new findings that, among women with BED, PTSD is associated with significantly elevated eating disorder psychopathology (EDE global score and EDE scales), greater depressive affect (BDI score), and lower self-esteem (RSES score), even though the patients with comorbid PTSD did not have higher BMIs or greater frequency of binge eating. Thus, those elevations in eating psychopathology and psychological difficulties are not merely commensurate with having greater excess weight or binge eating. Moreover, we found that the heightened eating disorder psychopathology and depression and the lower self-esteem persisted even after controlling for comorbid anxiety disorders.

Collectively, our findings suggest that, among women with BED, PTSD comorbidity appears to signal a more severe current presentation of BED and associated psychological functioning. Clinicians should be aware that psychiatric comorbidity is common among patients with BED and should systematically assess for additional forms of psychopathology in order to arrive at comprehensive treatment plans. Our findings here also specifically highlight the potential importance of PTSD; it is fairly common (24%) and, if present, signals greater current disturbance. Future research should examine the prognostic significance of PTSD for the course and outcomes of BED. The few studies that have examined psychiatric comorbidity as predictors or moderators of treatment outcomes have not reported negative prognostic findings when evidence-based treatments are delivered,^{20,21} but no study has yet examined PTSD specifically as a predictor.

Several potential limitations of this study should be noted. Participants were respondents to recruitment flyers placed in primary care centers advertising a treatment study for overweight persons with binge eating concerns. Thus, findings may not generalize to obese BED patients in primary care who do not choose to seek treatment for eating/weight issues or who are uninterested in or unwilling to participate in research studies. Although we adopted relatively few exclusionary criteria (notably current antidepressant therapy, cardiac and liver disease, and uncontrolled hypertension, thyroid conditions, or diabetes), our findings may not generalize to men with BED or to obese groups with different clinical characteristics. Since we excluded potential participants if they were currently taking antidepressant medications in the treatment study, it is possible that our observed rates of PTSD—as well as the rates of mood and other anxiety disorders—might underestimate actual rates among obese persons with BED in primary care. Finally, our cross-sectional analysis precludes any statements regarding the prognostic significance of PTSD for either obesity or BED outcomes. Future research should examine the utility of PTSD as a predictor/moderator of help-seeking, treatment-engagement, and diverse health outcomes in obese patients with BED.

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Table 1
Demographic and psychiatric characteristics of subjects with BED with and without PTSD

	With comorbid PTSD (<i>n</i> = 25)	Without comorbid PTSD (<i>n</i> = 80)	Test statistic ^a	<i>p</i> value ^a	Effect size ^a
Age, mean (SD) yrs	41.0 (12.5)	43.2 (11.4)	<i>F</i> (1, <i>N</i> = 105) = 0.63	0.48	0.006
Age of BED onset, mean (SD) yrs	23.6 (12.5)	25.6 (12.7)	<i>F</i> (1, <i>N</i> = 105) = 0.49	0.48	0.005
Ethnicity, <i>n</i> (%) ^a			χ^2 (2, <i>N</i> = 105) = 2.58	0.28	0.160
Caucasian	7 (28.0%)	31 (38.8%)			
African-American	10 (40.0%)	35 (43.7%)			
Hispanic-American/Other	8 (32.0%)	14 (17.5)			
DSM-IV diagnoses, lifetime, <i>n</i> (%)					
Mood disorders ^b	20 (80.0%)	32 (40.0%)	χ^2 (1, <i>N</i> = 105) = 12.19	0.001	0.340
Anxiety disorders ^b	16 (64.0%)	22 (27.5%)	χ^2 (1, <i>N</i> = 105) = 10.99	0.001	0.320
Alcohol use disorders	4 (16.0%)	7 (8.8%)	χ^2 (1, <i>N</i> = 105) = 1.07	0.300	0.100
Drug use disorders	8 (32.0%)	7 (8.8%)	χ^2 (1, <i>N</i> = 105) = 8.41	0.004	0.280

BED: binge eating disorder, PTSD: posttraumatic stress disorder, SD: standard deviation

^aTest statistic = χ^2 for categorical variables and analyses of variance (*F* values) for dimensional variables. *p* values are for two-tailed tests. Effect size measures are *phi* coefficients for categorical variables and *partial eta-squared* for dimensional variables.

^bThe mood disorders category includes major depressive disorder, dysthymic disorder, and depressive disorder not otherwise specified (NOS). The anxiety disorders category includes panic disorder, social phobia, obsessive-compulsive disorder, generalized anxiety disorder, specific phobia, and anxiety disorder NOS. PTSD was excluded from the analyses comparing the two study groups.

Table 2

Descriptive statistics and ANOVAs comparing the subjects with BED with PTSD ($n = 25$) and without PTSD ($n = 80$) on clinical measures

Clinical measure	With comorbid PTSD		Without comorbid PTSD		ANOVA		ANCOVA	
	M	SD	M	SD	F	Partial η^2	F	Partial η^2
Eating Disorder Examination								
Global Score	3.18	0.97	2.41	0.85	14.58***	0.12	7.71**	0.07
Shape Concern	4.41	1.03	3.26	1.25	17.25***	0.14	9.08**	0.08
Weight Concern	3.87	1.08	3.03	1.04	12.24***	0.11	5.96*	0.06
Restraint	2.08	1.52	1.60	1.30	2.41	0.02	1.57	0.02
Eating Concern	2.05	1.25	1.30	1.09	4.39*	0.04	1.52	0.02
Monthly Binge Eating	19.04	12.62	16.43	13.00	0.78	0.01	0.00	0.00
Body mass index	38.42	5.88	38.42	5.61	0.00	0.00	0.03	0.00
Beck Depression Inventory	23.73	11.80	12.71	8.23	24.93***	0.20	15.63***	0.14
Rosenberg Self-Esteem Scale	25.27	7.09	30.91	6.05	13.78***	0.12	7.23**	0.07

BED: Binge eating disorder; ANOVA: analysis of variance; ANCOVA: analysis of covariance; SD: standard of deviation

Partial η^2 is an effect size measure (cutoff conventions are 0.01–0.09 for small effects and 0.10–0.24 for medium effects).

ANCOVA was performed to control for group differences in comorbid anxiety disorders (other than PTSD).

* $p < .05$

** $p < .01$

*** $p < .001$ are for two-tailed tests.