ORIGINAL RESEARCH PAPER

Eating disorder symptoms and borderline personality symptomatology

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ABSTRACT. *According to the empirical literature, there are high rates of borderline personality disorder (BPD) among individuals with formal diagnoses of eating disorders, and high rates of eating disorders among individuals with BPD. In this study, we examined relationships between three eating disorder symptoms (i.e., binge eating, starving oneself, abusing laxatives) and borderline personality symptomatology according to two self-report measures (the borderline personality scale of the Personality Diagnostic Questionnaire-4 and the Self-Harm Inventory) in a sample of psychiatric inpatients (N=126) and in a sample of internal medicine outpatients (N=419). Each individual eating disorder item, as well as a composite score of all three items, demonstrated statistically significant correlations with both measures of borderline personality symptomatology in both samples. In addition, endorsement of all three symptoms was invariably associated with borderline personality symptomatology on both measures. Specific eating disorder symptoms, alone, may predict for borderline personality symptomatology.*

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INTRODUCTION

According to available empirical data, a significant minority of individuals with formal diagnoses of eating disorders suffers from comorbid borderline personality disorder (BPD) (1). BPD appears to be particularly prevalent among individuals with impulsive eating pathology (e.g., binge eating and/or purging behavior). For example, approximately 25% of individuals with anorexia nervosa, binge-eating purging type, and approximately 28% of individuals with bulimia nervosa suffer from BPD (1). In turn, a significant proportion of individuals with BPD suffer from eating disorders (2-8). Explicitly, findings in both US and international studies indicate that among individuals with BPD, rates of eating disorders vary from 10 to 54%, with rates being consistently lowest for anorexia nervosa and consistently highest for eating disorder not otherwise specified, with bulimia nervosa being in-between. Given a lifetime prevalence rate for anorexia and bulimia nervosa in the general population of 1.2 and 2.0%, respectively (9), the rates of eating disorders in individuals with BPD are phenomenally higher. Given these high rates of association, we wondered if eating disorder symptoms alone, rather than formal diagnoses of eating disorders, would correlate with the symptoms of borderline personality, either in an inpatient psychiatric population or in an outpatient internal medicine population. Our hypothesis was that eating disorder symptoms would predict for borderline personality symptomatology in both settings.

MATERIALS AND METHOD

The characteristics of these two study samples are shown in Table 1.

For both samples, exclusion criteria were cognitive (e.g., dementia), medical (e.g., pain), intellectual, and/or psychiatric impairment (e.g., psychosis) that would preclude the completion of a research booklet. All participants were asked to complete a research booklet, which took about 15 minutes. The cover page of the research booklet contained the various elements of informed consent and completion of the research booklet was assumed to be implied consent.

Key words:
Borderline personality, borderline personality disorder, eating disorder symptoms, eating disorders, eating pathology, personality disorder.

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TABLE 1
Characteristics of the two study samples.

Characteristic	Sample 1	Sample 2
Sample composition	Psychiatric inpatients	Internal medicine outpatients
Sample collection	Convenience	Consecutive
Gender	Female	Male (130)/female (287)/? (2)
Number (response rate)	126 (81.8%)	419 (85.2%)
Age (≥18 yr)	18-74 yr (M=34.84, SD=12.19)	18-65 yr (M=49.48, SD=15.26)
Race		
White	81.0%	85.4%
African-American	10.3%	8.3%
Native American	5.6%	1.9%
Hispanic	1.6%	0.5%
Asian	0.0%	1.0%
"Other"	0.8%	2.6%
Education		
Not graduated high school	15.1%	7.9%
Four-year college degree	24.4%	26.3%
Graduate degree	5.9%	

The research booklet queried participants about demographic information (i.e., age, race, highest level of completed education) as well as borderline personality symptomatology, using two self-report measures for BPD, and three eating disorder symptoms (see below).

The borderline personality scale of the Personality Diagnostic Questionnaire-4 (PDQ-4)

The borderline personality scale of the PDQ-4 (10) is a 9-item, true/false, self-report measure which consists of the diagnostic criteria for BPD that are listed in the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) (11). A score of 5 or higher is highly suggestive of BPD. Previous versions of the PDQ have been found to be useful screening tools for BPD in both clinical (12, 13) and non-clinical settings (14), including the use of the freestanding BPD scale (15). In this study, one item pertaining to eating binges was removed from scoring because it was used as an eating disorder symptom as described below.

Self-Harm Inventory (SHI)

The SHI (16) is a 22-item, yes/no, self-report inventory for BPD 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. In comparison with the Diagnostic Interview for Borderlines (17), the gold standard for the diagnosis of BPD in research settings, the SHI demonstrates an accuracy in diagnosis of 84% (16). In this study, two items (i.e., one pertaining to starving oneself and another to abusing laxatives) were removed from the total score because each was used as an eating disorder symptom as described below.

Eating disorder symptoms

Embedded within the two measures of BPD are three individual items pertaining to disordered eating. One item in the PDQ-4 inquires whether the respondent has done things on impulse that could get them into trouble; one such item for possible endorsement is "eating binges". As for the SHI, one item inquires about whether respondents have ever intentionally "starved" themselves and another about "ever abused laxatives". These three items were used as the eating disorder symptoms for analysis.

This project was approved by the Institutional Review Boards of the hospital site as well as the university.

RESULTS

In the psychiatric sample, 38.1% of respondents endorsed having engaged in eating

binges, 31.7% having intentionally starved themselves, and 9.5% having intentionally abused laxatives. We computed a composite score based on the endorsement of these three items, with possible scores ranging from 0 to 3, depending on the number of different items each individual endorsed. Approximately half (50.4%) of the respondents endorsed none of the disordered eating items, 24.8% endorsed one, 19.2% endorsed two, and 5.6% endorsed all three. Scores on this 3-item measure of disordered eating were not statistically significantly correlated with age ($r=-0.04$, $p<0.68$). In the internal medicine sample, 20.7% of respondents endorsed having engaged in eating binges, 4.1% having intentionally starved themselves, but only 2 respondents having intentionally abused laxatives. We computed a composite score based on the endorsement of these three items, with possible scores ranging from 0 to 3, depending on the number of different items each individual endorsed. Most (76.6%) respondents endorsed none of the disordered eating items, 21.2% endorsed one, 1.9% endorsed two, and 0.3% endorsed all three. Scores on this 3-item measure of disordered eating were not statistically significantly correlated with age ($r=-0.07$, $p<0.20$).

The relationships between the endorsement of disordered eating items and overall scores on the adjusted measures of borderline personality symptomatology are presented in Table 2. Because only 2 respondents in the internal medicine sample indicated having abused laxatives, individual analyses with this item were not performed. Note that scores on each of the two measures of borderline personality symptomatology were consistently related to increased likelihood of having engaged in each form of disordered eating.

Last, we calculated the proportions of respondents who exceeded the clinical cut-off score on each measure of borderline personality symptomatology as a function of endorsement of the three eating disorder symptoms. We retained the traditional cut-off score of 5 or greater on both the PDQ-4 and SHI, even though we did not include the three eating disorder items in these scores. In this way, rates of borderline personality symptomatology were more conservative than would usually be the case with these measures. The results are presented in Table 3. Note that with an increasing number of eating disorder symptoms, the likelihood of borderline personality symptomatology increased, accordingly.

DISCUSSION

In this study, we found that both samples of participants, one from an inpatient psychiatric setting and another from an outpatient internal medicine setting, evidenced identical findings—the endorsement of any or combinations of eating disorder symptoms were consistently associated with borderline personality symptomatology. Given the reasonably good sample sizes and the examination of patients from two different treatment settings, findings suggest that the presence of any one of these three eating disorder symptoms (i.e., eating binges, intentional self-starvation, laxative abuse) heightens the probability of borderline personality symptomatology. In addition, the endorsement of all three symptoms is highly associated with borderline personality symptomatology. To our knowledge, this is the first study to examine the relationship between eating pathology and borderline personality symptomatology from an eating-disorder symptom perspective rather than an eating-disorder diagnostic perspective. Findings indicate that symptoms, alone, are powerful predictors of borderline personality symptomatology.

While clinicians in eating disorder treatment settings are likely to screen patients for BPD

TABLE 2
Correlations between items indicating a history of eating pathology and scores on two measures of borderline personality disorder within two samples.

History of eating pathology	Psychiatric sample (N=126)		Internal medicine sample (N=419)	
	PDQ-4	SHI	PDQ-4	SHI
Eating binges (from PDQ-4)	0.37**	0.48**	0.41**	0.31**
Starved oneself (from SHI)	0.32**	0.47**	0.31**	0.49**
Abused laxatives (from SHI)	0.19*	0.23*	-	-
Composite score of the three behaviors	0.41**	0.56**	0.49**	0.50**

*$p<0.05$, **$p<0.001$. PDQ-4: borderline personality scale of the Personality Diagnostic Questionnaire-4 (10); SHI: Self-Harm Inventory (16).

TABLE 3
Rates of borderline personality disorder (BPD) as a function of different forms of eating pathology endorsed within two samples.

Forms of eating pathology	Psychiatric sample (N=126)		Internal medicine sample (N=419)	
	PDQ-4	SHI	PDQ-4	SHI
Eating binges (from PDQ-4)	68.8%	95.8%	22.4%	31.9%
Starved oneself (from SHI)	70.0%	95.0%	53.3%	64.3%
Abused laxatives (from SHI)	91.7%	91.7%	-	-
Composite score of the three behaviors:				
0	36.5%	41.3%	5.6%	8.7%
1	54.8%	90.3%	25.0%	31.5%
2	70.8%	95.8%	42.9%	66.7%
3	100.0%	100.0%	100.0%	100.0%

PDQ-4: borderline personality scale of the Personality Diagnostic Questionnaire-4 (10); SHI: Self-Harm Inventory (16)

due to the high rate of comorbidity, it is likely that mental health clinicians in other types of treatment settings do not necessarily associate relatively meager evidence of eating pathology with borderline personality symptomatology. These findings strongly suggest that common types of eating disorder symptoms, as opposed to formal diagnoses of eating disorders, are also a potential trigger for an evaluation of comorbid BPD.

In examining these data from a personality-profile perspective, a number of investigators have empirically classified eating into various categories such as constricted/over-controlled, emotionally dysregulated/under-controlled, and high-functioning/perfectionistic (18, 19). It is likely that our identified subgroups with borderline personality symptomatology are mirroring the specific personality profile of emotionally dysregulated/under-controlled. According to some researchers, these categorizations may have longitudinal implications (20). For example, behavioral dysregulation may be associated with poor baseline functioning but not necessarily with eating disorder or global outcome (20).

This study has a number of potential limitations including the self-report nature of the data (e.g., eating pathology, borderline personality symptomatology), use of a sample of convenience in the psychiatric cohort, and small sample size of the psychiatric cohort. In contrast, the novel aspects of this study include the predictability of three general questions of eating pathology with regard to BPD symptoms, the use of two different measures for borderline personality symptomatology, and the use of two different clinical samples, both with the same findings. Clearly, there are relevant associations between the presence of binge eating, starving oneself, and laxative abuse, and borderline personality symptomatology, and these data provide evidence of this symptomatic association in two different clinical populations.

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