

Dysregulated Eating Behaviors in Borderline Personality Disorder: Are Rejection Sensitivity and Emotion Dysregulation Linking Mechanisms?

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ABSTRACT

Objective: Individuals with borderline personality disorder (BPD) often engage in dysregulated eating behaviors, such as binge-eating and purging. Rejection sensitivity, or the tendency to worry about and expect rejection in most situations, may be involved in this relationship by increasing the intensity and frequency of emotion dysregulation.

Method: Using a sample which included individuals diagnosed with BPD, a structural equation model was constructed using BPD symptoms and measures of rejection sensitivity, emotion dysregulation, and dysregulated eating behaviors.

Results: The hypothesized model was supported in which BPD symptoms predicted high levels of rejection sensitivity, which then led to increased problems with emotion dysregulation and subse-

quent dysregulated eating behaviors. A significant indirect effect for rejection sensitivity on dysregulated eating behaviors, through emotion dysregulation, was found. This model also provided better fit than alternative models.

Discussion: The results of this study indicate that those with BPD may be more sensitive to rejection, and these fears of rejection may result in increased emotion dysregulation and subsequent dysregulated eating behaviors. Appearance-relevant rejection sensitivity may be an important factor to explore in future research. © 2009 by Wiley Periodicals, Inc.

Keywords: borderline personality disorder; binge-eating; purging; rejection sensitivity; emotion dysregulation

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Introduction

The relationship between borderline personality disorder (BPD) and dysregulated eating behaviors is quite strong, with binge-eating and purging frequently found in individuals with BPD both with,¹ and without,² diagnoses of anorexia nervosa and bulimia nervosa. Yet, the mechanisms linking these two phenomena are less well known. One potential mechanism is the dysregulation of negative affect, which has been linked to both BPD³ and dysregulated eating.^{4,5} These findings indicate that dysregulated eating behaviors may arise from fluctua-

tions in negative affect, as well as difficulty tolerating negative emotions.^{6–8} There is also evidence indicating that dysregulated eating behaviors may reduce negative affect.⁹

One factor that may contribute to emotion dysregulation in both BPD and dysregulated eating behaviors is rejection sensitivity. Rejection sensitivity refers to the disposition to defensively or anxiously expect, readily perceive, and intensely react to situations where rejection is possible.¹⁰ Essentially, a person with high rejection sensitivity is constantly anticipating rejection, and he or she likely has a low threshold for identifying what are perceived as legitimate signs of rejection. Research on those with high levels of rejection sensitivity has indicated that they are more ready to perceive intentional hurt by significant others, even if the behavior of that significant other is ambiguous or innocuous.¹¹

Importantly, no studies to our knowledge have linked rejection sensitivity to dysregulated eating behaviors, although rejection sensitivity has been

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linked to BPD.¹² Rejection sensitivity may induce emotion dysregulation and be particularly relevant to dysregulated eating behaviors in BPD. Appearance-related rejection sensitivity, for example, may contribute to purging behaviors in BPD as a method of simultaneously attempting to change appearance and regulate emotion. The purpose of this study is to test the roles of rejection sensitivity and emotion dysregulation in the relationship between BPD and dysregulated eating behaviors.

Method

Participants

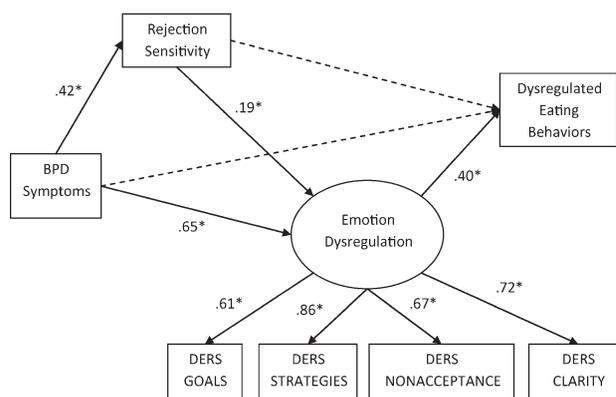
Participants were 94 college students (20 male and 74 female participants); 26 participants in the present sample (~27%) met diagnostic criteria for BPD. The large percentage of individuals diagnosed with BPD in the sample was the result of an intensive screening process that covered more than 5,000 students to identify those with high levels of BPD symptomatology. All participants were interviewed with the BPD module of the Structured Clinical Interview for Axis II Personality Disorders.¹³ More detailed information about the sample and diagnostic assessment procedures can be found in Selby et al.⁵ Individuals were assigned a diagnosis of BPD if they met five or more criteria for BPD, but in this study a dimensional measure of BPD symptoms was created by summing the threshold rating for each symptom. Age of participants ranged from 18 to 24 with the average age of participants being 18.75 (SD = 1.05). The ethnic composition of the sample was 69% Caucasian, 14.1% Hispanic, 10.6% African-American, 2.8% Asian, 2.1% Native American, and 1.4% other ethnicity.

Measures

The Eating Disorder Inventory (EDI). In this study, only the Bulimia subscale (EDI-BUL) was used, a scale that determines the degree to which individuals engaged in dysregulated eating behaviors such as binge-eating and purging, with higher scores indicative of more severe eating pathology.¹⁴ The alpha for the EDI-BUL in the present sample was $\alpha = 0.84$.

The Difficulties in Emotion Regulation Scale. The difficulties in emotion regulation scale (DERS)¹⁵ is a 36-item measure that assesses problems with nonacceptance of negative emotions (NONACCEPTANCE), an inability to engage in goal-directed behaviors when experiencing negative emotions (GOALS), difficulties controlling impulsive behaviors when experiencing negative emotions (IMPULSE), limited access to emotion regulation strategies perceived as effective (STRATEGIES), lack of

FIGURE 1. Hypothesized Model Linking BPD to Dysregulated Eating Behaviors through Rejection Sensitivity and Emotion Dysregulation. Note: * indicates path significant at $p < .05$; dashed lines indicate nonsignificant paths; DERS refers to the Difficulties with Emotion Regulation Scale.



emotional awareness (AWARENESS), and lack of emotional clarity (CLARITY). The AWARENESS and IMPULSE subscales were not used in this study because of poor fit in the measurement model and potential behavioral overlap, respectively. All subscales were scored such that higher scores reflected greater difficulties with emotion dysregulation. Internal consistency for the DERS subscales within this sample ranged from 0.85 to 0.91.

The Rejection Sensitivity Questionnaire. The rejection sensitivity questionnaire (RSQ)¹⁰ assesses an individual's concern about, and anticipation of, rejection through self-report. It consists of 18 hypothetical interpersonal situations in which rejection by a significant other is possible. For each situation, people were first asked to indicate their degree of anxiety about the outcome of each situation and the likelihood that the other person would respond favorably. The outcome expectation ratings were reverse-coded, then they were multiplied with anxiety ratings; finally, they were averaged across scenarios for an overall rejection sensitivity score. The RSQ demonstrated an alpha of 0.83.

Data Analytic Strategy

Structural equation modeling with AMOS¹⁶ was used to test the model displayed in Figure 1. The latent variable in this model was named Emotion Dysregulation, and it was created from the DERS subscales. We hypothesized that the flow of the model would be such that high BPD symptoms would lead to high levels of rejection sensitivity, which would then lead to high levels of emotion dysregulation and subsequently high levels of dysregulated eating behaviors. Sex was used as a covariate in the model. The fit of the model was evaluated with standard criteria: nonsignificant chi-square statistic (χ^2), comparative fit index (CFI > 0.95), and root-mean-square error of

TABLE 1. Means, standard deviations, range, and intercorrelations between all variables

Variable	1	2	3	4	5	6	7	8
1. BPD Symptoms	–							
2. Binge-Purge	.35 ^a	–						
3. Rej-Sensitivity	.44 ^a	.29 ^a	–					
4. NONACCEPT	.49 ^a	.26 ^b	.25 ^b	–				
5. GOALS	.41 ^a	.34 ^a	.28 ^a	.36 ^a	–			
6. CLARITY	.60 ^a	.34 ^b	.35 ^a	.56 ^a	.41 ^a	–		
7. STRATEGIES	.67 ^a	.35 ^a	.46 ^a	.60 ^b	.58 ^a	.58 ^a	–	
8. Sex	.37 ^a	.26 ^b	.20	.26 ^b	.32 ^a	.38 ^b	.24 ^b	–
Mean	14.37	15.26	8.39	10.57	15.54	11.27	18.48	23.2 ^c
St. Dev.	4.88	6.98	3.28	4.81	4.90	4.24	7.74	N/A

Notes: $N = 94$.

Binge-Purge refers to the bulimia subscale of the EDI; Rej-Sensitivity refers to rejection sensitivity; NONACCEPT refers to the NONACCEPTANCE scale of the DERS.

^a Correlation is significant at $p < .001$.

^b Correlation is significant at $p < .05$.

^c Percent of male participants.

approximation (RMSEA < 0.08).¹⁷ Akaike information criterion (AIC) values with lower AIC values of 10 or more units were used to indicate significantly better fitting models.¹⁸

Results

Structural Equation Model

The intercorrelations, means, and standard deviations of all variables used in the SEM model are displayed in **Table 1**. The final measurement model provided adequate fit to the data ($\chi^2 = 4.46$, $df = 2$, $p = .10$, CFI = 0.98, RMSEA = 0.10), and all indicators loaded significantly onto the latent variable (NONACCEPTANCE = 0.70, STRATEGIES = 0.86, GOALS = 0.63, and CLARITY = 0.70; all $ps < .01$). The structural model (displayed in **Fig. 1**) fit the data well ($\chi^2 = 21.08$, $df = 16$, $p = .18$, CFI = 0.98, RMSEA = 0.06, AIC = 77.08). A model with direct paths from both BPD and rejection sensitivity to dysregulated eating behaviors did not significantly improve the fit of the model ($\chi^2 = 20.24$, $df = 14$, $p = .12$, CFI = 0.97, RMSEA = 0.07, $\chi^2_{diff} = .84$, $df = 2$, $p = ns$). As expected, there was a significant correlation between BPD and sex ($r = .37$, $p < .05$), but sex did not significantly predict any of the other variables in the model. The path from BPD symptoms to rejection sensitivity was significant ($\beta = 0.42$, $p < .01$), as was the path from BPD symptoms to emotion dysregulation ($\beta = 0.65$, $p < .01$). Furthermore, the path from rejection sensitivity to emotion dysregulation was significant ($\beta = 0.19$, $p < .05$). Finally, the path from emotion dysregulation to dysregulated eating behaviors was significant ($\beta = 0.40$, $p < .01$).

The Role of Rejection Sensitivity

There was a significant indirect effect of rejection sensitivity on dysregulated eating behaviors ($\beta = 0.08$, $z = 1.85$, $p < .05$, one-tailed Sobel test). Furthermore, the indirect effect of BPD on emotion dysregulation, flowing through rejection sensitivity, was significant ($\beta = 0.08$, $z = 1.93$, $p < .05$, one-tailed). Thus, rejection sensitivity may initiate emotion dysregulation in those with BPD, and then contribute to subsequent dysregulated eating behaviors.

Comparisons to Alternative Models

Alternative models in which BPD symptoms lead to emotion dysregulation, followed by dysregulated eating and then resulting in rejection sensitivity ($\chi^2 = 33.97$, $df = 16$, $p > .01$, CFI = 0.92, RMSEA = 0.11, AIC = 89.97, AIC_{diff} = 12.89) and in which BPD lead to rejection sensitivity, then dysregulated eating, and finally resulted in emotion dysregulation ($\chi^2 = 69.21$, $df = 16$, $p < .01$, CFI = 0.78, RMSEA = 0.19, AIC = 125.21, AIC_{diff} = 48.13) provided significantly worse fit to the data.

Discussion

The findings of this study highlight the roles of rejection sensitivity and emotion dysregulation in the relationship between BPD and dysregulated eating behaviors. Importantly, this study replicates the finding that BPD is associated with rejection sensitivity¹² and, furthermore, it provided novel evidence that rejection sensitivity may play a role in dysregulated eating through emotion dysregulation. An important direction for future research may be to determine what specific forms of rejection individuals with BPD are most sensitive to, and which may have the most influence on dysregulated eating behaviors. Further evaluation of differences in the emotional coping effects of bingeing versus purging is also warranted.

There are some limitations that must be taken into account when evaluating the findings of this study: (1) this was not a clinical sample, (2) the measure of dysregulated eating behaviors may not have been representative of clinically impairing levels of dysregulated eating, and (3) use of a cross-sectional design. Regarding clinical implications, therapeutic interventions may benefit from identifying and correcting rejection-based maladaptive thoughts and beliefs in those with BPD and/or dysregulated eating behaviors. Doing so may decrease

emotion dysregulation and, therefore, subsequent dysregulated eating.

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