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The Moderating Role of Rejection Sensitivity in the Relationship Between Emotional Maltreatment and Borderline Symptoms

Jeanne Goodman¹, Eric Fertuck^{2,3}, Megan Chesin^{2,3}, Sarah Lichenstein^{2,3}, Barbara Stanley^{2,3}

¹New York University School of Medicine, Department of Child and Adolescent Psychiatry, New York, NY, United States

²Columbia University, Department of Psychiatry, New York, NY, United States

³New York State Psychiatric Institute, Molecular Imaging and Neuropathology Division, New York, NY, United States

Abstract

Borderline Personality Disorder (BPD) is theorized to develop from a combination of dispositional and environmental risk factors. Among these risk factors, both childhood emotional neglect and abuse (ENA) and rejection sensitivity (RS) have been independently associated with BPD symptomatology. However, to our knowledge, no studies have examined the interaction between these variables as they relate to BPD symptoms. In the current study, greater ENA and RS were independently associated with more BPD symptoms in a sample of undergraduate students ($n=133$). In addition, there was an interaction such that RS was more strongly correlated with BPD symptoms at moderate and low levels of ENA. Our findings suggest dispositional and environmental factors combine to instantiate BPD symptoms and thus suggest RS and ENA merit investigation in clinical samples.

Keywords

rejection sensitivity; emotional maltreatment; Borderline Personality Disorder symptoms

Borderline Personality Disorder (BPD) is a serious mental illness affecting up to 1% of the adult population (Grant et al., 2008; Lenzenweger et al., 2007). Despite the proliferation of theories (i.e., Linehan, 1993; Kernberg, 1975; Clarkin et al., 2006; Bateman & Fonagy, 2004) supporting the interaction of predisposition and environment in the development of BPD, most studies have not examined how disposition and environment interact in BPD (Paris, 2008).

Rejection Sensitivity and BPD

Interpersonal dysfunction is prominent in a broad range of mental health disorders (e.g. Major Depressive Disorder [MDD], BPD, Social Anxiety Disorder [SAD]). Interpersonal

stressors are also common precipitants of suicidal behavior (Brodsky, Groves, Oquendo, Mann, & Stanley, 2006). A key risk factor for interpersonal dysfunction is rejection sensitivity (RS), defined as a tendency to defensively expect, readily perceive, and overreact to interpersonal rejection (Downey & Feldman, 1996; Romero-Canyas, Downey, Berenson, Ayduk, & Kang, 2010). RS reduces the stability of interpersonal relationships (Downey & Feldman, 1996; Downey, Freitas, Michaelis, & Khouri, 1998) and is elevated in several prevalent mental health disorders (Gunderson & Lyons-Ruth, 2008; Harb, Heimberg, Fresco, Schneier, & Liebowitz, 2002; Holt-Lunstad, Smith, & Layton, 2010; King-Casas & Chiu, 2012; Miano, Fertuck, Arntz, & Stanley, 2013; Staebler, Helbing, Rosenbach, & Renneberg, 2011). In particular, high RS is strongly associated with BPD (Downey, Khouri, & Feldman, 1997; Selby, Ward, & Joiner, 2010; Staebler, Herlbing, Rosenbach, & Renneberg, 2010), and individuals with BPD have greater RS than healthy volunteers and psychiatric patients without BPD (Selby et al., 2010; Staebler et al., 2010). Furthermore, positive associations between BPD symptoms and RS have also been observed in non-clinical samples (Ayduk et al., 2008; Berenson, et al., 2009; Miano et al., 2013). Individuals who have BPD exhibit the interpersonal instability, sensitivity to abandonment, and self-destructive and suicidal behavior associated with extreme levels of RS, so BPD is a disorder in which the impact of high RS can be investigated in a clinical context.

Emotional Neglect and Abuse and BPD

Childhood abuse, particularly physical and sexual abuse, is also associated with borderline pathology (Afifi et al., 2010; Battle et al., 2004; Bierer et al., 2003; Gibb, Wheeler, Alloy, & Abramson, 2001; Johnson, Cohen, Chen, Kasen, & Brook, 2006; Tyrka, Wyche, Kelly, Price & Carpenter, 2009; Widom, Czaja, & Paris, 2009). Recent studies have begun to examine the importance of emotional neglect and abuse (ENA), defined as “verbal assaults on a child’s sense of worth or well-being or any humiliating or demeaning behavior directed towards a child by an adult or older person” (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997, p. 341) and “the failure of caretakers to meet children’s basic emotional and psychological needs, including love, belonging, nurturance and support” (Bernstein et al., 1994), in BPD pathology. Associations between BPD and greater ENA have been reported (Sar, Akyuz, Kugu, Ozturk, & Ertem-Vehid, 2006), with Gratz and colleagues (2008) finding emotional abuse to be a more robust predictor of co-morbid BPD among substance users than any other type of childhood maltreatment.

While childhood trauma appears to be associated with BPD, many people with trauma histories do not manifest maladaptive behavioral and emotional patterns (Dumont, Widom, & Czaja, 2007). Thus, trauma alone is likely not sufficient for the manifestation of BPD. A few recent studies support the perspective that BPD results from the combination of environmental and individual risk factors. Emotional abuse has been found to moderate the effect emotional lability, sensitivity, intensity, and reactivity in BPD (Gratz, Latzman, Tull, Reynolds, & Lejuez, 2011). Further, among those with greater affective dysfunction, emotional abuse is a more potent predictor of BPD features (Gratz et al., 2011). Meanwhile, findings from studies of clinical populations are mixed. Minzenberg et al. (2008) found childhood abuse interacted with memory dysfunction to predict attachment anxiety among BPD patients. Gratz et al. (2008), however, found childhood maltreatment did not moderate

the effect of affective dysfunction in the prediction of co-morbid BPD among substance users in treatment.

This study aimed to determine the independent and combined importance of environment by disposition interactions in the manifestation of BPD symptoms by investigating the interaction of RS and ENA in the manifestation of BPD symptomatology. We hypothesized that RS would moderate the relationship between ENA and BPD symptoms such that individuals exposed to minimal ENA might manifest significant BPD symptomatology in the context of high RS. Additionally, we hypothesized both RS and ENA would be independently associated with a greater number of BPD symptoms.

Method

Participants & Procedures

Data was collected from 133 undergraduate students enrolled in a racially and ethnically diverse public university in New York City. All participants gave informed consent prior to beginning the study. Students completed a series of self-report questionnaires for course credit and did not receive compensation. Approval for the study was granted by the University's Institutional Review Boards (IRB).

The median age of participants was 19 years. Sixty-seven percent ($n=84$) of participants were female. Almost 50% of participants who reported their race or ethnicity identified themselves as Hispanic (47.2%, $n=59$), 21% ($n=26$) as Black, 17% ($n=21$) as White, and 10% ($n=12$) as Asian. The majority of participants (95.2%, $n=118$) were single at the time of their participation.

Measures

Adult Rejection Sensitivity Questionnaire (RSQ; Downey & Feldman, 1996).—

The RSQ is an 18-item, self-report instrument that assesses expectations for and anxiety surrounding interpersonal rejection. Higher scores indicate a tendency towards greater and more generalized rejection concern and expectancy. The RSQ has been found to have high internal consistency, test-retest reliability and criterion-related validity (Downey & Feldman, 1996). The scale had high internal reliability within our sample ($\alpha = .88$).

Structured Clinical Interview for DSM-IV Axis II Personality Disorders-Self Report (SCID-II-Self Report; First, Gibbon, Spitzer, Williams, & Benjamin, 1997).—

The SCID-II self-report is a screening questionnaire for DSM-IV Axis II personality disorders (Huprich, 2005). We administered the 14-item SCID-II BPD screening questionnaire and collapsed information across items measuring the same symptom so we could understand which of the 9 DSM-IV BPD diagnostic criteria participants endorsed. Information obtained from the screening questionnaire has good concurrent validity with clinician-administered assessments (Jacobsberg, Perry, & Frances, 1995). In this study, the internal consistency for the SCID-II BPD items was acceptable ($\alpha = .77$).

Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998).—The CTQ is a 28-item self-report measure of childhood traumatic experience. Six subscales comprise

the measure: the emotional abuse, emotional neglect, physical abuse, physical neglect, and sexual abuse subscales and the minimization subscale (a validity index). Higher scores indicate more frequent childhood experience with abuse and/or neglect. The CTQ has been found to have good internal consistency and test-retest reliability as well as good convergent validity (Bernstein et al., 1994). In this study, the internal consistencies across subscales were found to be adequate to high and were as follows: $\alpha = .63$ (for the physical neglect subscale), $.78$ (for the emotional abuse subscale), $.85$ (for the emotional neglect subscale), $.87$ (for the physical abuse subscale), and $.90$ (for the sexual abuse subscale). Given our particular interest in the effects of emotional maltreatment, we focused on the emotional abuse and emotional neglect subscales. Sample items from these subscales include “people in my family called me things like ‘stupid,’ ‘lazy,’ or ‘ugly’” and “I felt loved” (reverse coded). We summed scores on these subscales to obtain a measure of emotional maltreatment (ENA). van Harmelen et al. (2010) also used a combination of scores from the emotional abuse and neglect subscales of the CTQ to quantify emotional maltreatment.

Demographic information was also collected via questionnaire.

Statistical Analysis

All analyses were conducted using SAS software, Version 9.2 (SAS Institute Inc., Cary, NC, USA, www.sas.com). Prior to conducting the analyses, we examined the univariate and multivariate normality of the variables of interest. Pearson’s product moment and Spearman’s Rho correlation coefficients were calculated to determine bivariate relationships between RS, childhood maltreatment types, and borderline symptoms. For the multivariate analysis, the predictor variables were mean-centered, and Poisson regression analysis was performed. To test our hypothesis that ENA would moderate the effect of RS on BPD symptoms, an interaction term (RS*ENA) was also included in the model. To improve the accessibility and interpretability of multivariate findings, data are presented in graphical form. Specifically, observed means for nine groups (e.g., low ENA, low RS; low ENA, medium RS) are presented. In these presentations, low, medium, and high levels of the parent variables represent the bottom, middle, and top third of the distributions, respectively.

Results

Descriptive statistics on early childhood maltreatment, RS, and borderline symptoms are presented in Table 1. Participants endorsed similar levels of RS as community-based samples in prior studies (Downey, 2008), and they reported an average of three BPD symptoms. The proportion of individuals in our sample endorsing any one symptom of BPD ranged from 18% for non-suicidal self-injury or suicidal behavior to 45% for intense and inappropriate anger. Roughly one-quarter of our sample endorsed chronic emptiness (23%), one-third reported mood instability (34.6%) and/or impulsivity (36.1%), and approximately 40% endorsed frantic efforts to avoid abandonment (38.3%), identity disturbance (42.1%), unstable relationship patterns (42.9%), and/or paranoid stress-related ideation (42.9%). Thirty percent ($n=40$) of participants endorsed 5 or more symptoms of BPD. Most participants endorsed some childhood ENA. Participants reported relatively

infrequent physical abuse and childhood physical neglect. The majority of participants ($n=104$, 78%) endorsed no childhood sexual abuse (CSA). Only twelve percent ($n=16$) of the sample endorsed serious CSA and, therefore, CSA was excluded from further analyses.

Correlations between RS, ENA, physical abuse, physical neglect, and BPD symptoms are presented in Table 2.

The Poisson regression model predicting borderline symptoms from RS, ENA and the interaction of RS and ENA was statistically significant (change in likelihood ratio between full and null models: $X^2=6.40$, $df=1$, $p<.05$). The addition of physical abuse and physical neglect to the model did not improve the prediction of BPD symptoms (change in likelihood ratio: $X^2=2.88$, $df=2$, $p>.05$). Thus, physical abuse and neglect were dropped and results of the more parsimonious model including only RS, ENA and the interaction of RS and ENA are reported. Figure 1 provides a visual representation of observed BPD symptoms across individuals with different ENA and RS. For these data, the expected change in log count for a one-unit increase in RS was .04 [95% CI (.01, .07), $se(B)=.02$, $RR=1.04$, $X^2(1)=8.40$, $p=.004$], and the expected change in log count for a one-unit increase in ENA was .02 [95% CI (.002, .03), $se(B)=.007$, $RR=1.02$, $X^2(1)=5.30$, $p=.02$]. The interaction term was also a significant predictor of BPD symptom count ($B=-.003$, 95% CI (-.005, -.001), $se(B)=.001$, $RR=.997$, $X^2(1)=7.95$, $p=.005$). Taken together, these results show that ENA and RS independently predict the number of BPD symptoms. Furthermore, the association between ENA and BPD symptoms also depends on RS.

Discussion

Our findings support the independent effects of ENA and RS, as well as their interaction, in the manifestation of greater BPD symptomatology in a college student population. When RS and ENA are considered separately, they are both positively associated with BPD symptoms. However, the magnitude of the relationships between RS and ENA with BPD symptoms changes when intra-individual levels of RS and ENA are considered in combination. Among individuals who report less than average ENA, there is a stronger relationship between RS and BPD symptoms. When ENA is high, the relationship between higher RS and BPD symptoms is attenuated. Essentially, the strength of the relationship between RS and BPD varies at different levels of ENA. The findings of the present study are concordant with theories that posit a transaction between dispositional and environmental risk factors in the development of BPD.

A few previous studies found interaction effects between disposition and environmental factors in BPD symptoms in community samples. Gratz and colleagues (2011) found that affective dysfunction moderated the effect of emotional abuse on BPD features among adolescent community members such that the effect of affective dysfunction on BPD features was greater among those adolescents with more emotional abuse. In two other studies (Ayduk et al., 2008; Chriki, 2012), executive control was found to moderate the effect of RS on BPD features such that greater executive control buffered the deleterious effects of RS on personality functioning.

Taken together, the results from the present study and others suggest that BPD symptoms can emerge from multiple pathways and that BPD may be a disorder which develops from multiple interacting risk factors over the course of development (Cicchetti & Rogosch, 1996). Future research could incorporate impaired executive control into the study of RS, ENA and BPD, given the relevancy of executive control to RS, early maltreatment, and BPD symptoms (Ayduk et al., 2008; Chriki, 2012; Fertuck et al., 2012; Zerkowicz et al., 2001). Other avenues for research would extend into the social cognitive domain. We have shown that RS and BPD features are predictive of the perception of untrustworthiness and related traits in neutral human faces (Cacioppo et al., 2013; Miano et al., 2013). So, RS and ENA may influence the nature of social appraisals, which then may influence the instability of interpersonal relations and emotions in BPD.

Our results suggest that clinicians should not assume that all BPD patients have been exposed to childhood maltreatment. A subset of individuals with BPD symptoms reporting high RS may report minimal experience with childhood maltreatment. On the other hand, our findings highlight the importance of screening for childhood ENA in patients. In medical settings, inquiries about childhood maltreatment are often vague, consisting of broad, labeling questions such as “have you ever been physically, sexually or emotionally abused?.” Studies have shown that the use of specific behaviorally-oriented questions, as opposed to broad questions, correctly identify twice as many individuals with a history of childhood abuse (Thombs et al., 2006). Furthermore, the observed moderating role of RS on the effect of ENA on BPD symptoms suggests RS is a promising target for BPD intervention and prevention efforts.

Limitations & Future Directions

One limitation of our study is that we examined BPD symptomatology and ENA in a nonclinical college sample. Even though our nonclinical sample displayed significant symptomatology, with an average of three BPD symptoms reported by participants, the range of scores on predictor and outcome variables is more limited than in clinical populations. In moderated regression analysis, in particular, such restrictions in range are troublesome as they limit power (Aguinis, 1995). We (Chesin et al., *in press*) have recently replicated this finding in a clinical sample of mood-disordered patients, showing RS and ENA interact to predict co-occurring BPD.

Because our measures were self-report, they may be subject to a variety of psychometric limitations, including impaired recall, social desirability biases, and variability in accuracy of self assessment due to affective arousal and severity of psychopathology (Nisbett & Wilson, 1977). There may be limits especially to the validity of retrospective self-reports of childhood trauma (e.g., Widom & Shepard, 1996). The validity of our measure of physical neglect was also limited by low internal reliability. Also, because the clinician-administered SCID-II was not done, we do not know which participants would have received a BPD diagnosis.

Additionally, prospective studies in clinical samples are needed to confirm these findings and the importance of RS and ENA in the development of BPD. Only with prospective data can the relationship between RS and ENA be clarified. Downey suggests ENA leads

to RS (G. Downey, personal e-mail communication, November 23, 2010). We chose to consider a different relationship between RS and ENA, one which is more consistent with conceptualizations of trait vulnerabilities. Conceptualization of RS as a trait is supported by studies showing a genetic component to RS (Way et al., 2009) and stability in RS over time (Berenson et al., 2011). These prospective studies should include Ecological Momentary Assessment (EMA) (Trull et al., 2008), which could measure dynamic changes in emotional and cognitive states in reaction to specific rejection experiences in real world contexts and further specify the nature of maladaptive RS.

Finally, future research needs to investigate the specificity of RS to BPD. RS is elevated in several disorders (Premkumar et al., 2012), and may be a trait that confers vulnerability across different forms of psychopathology. Further, when ENA loading was high, RS was less strongly associated with BPD. It is an open question whether this reflects resilience to RS or simply that ENA is a more potent risk factor when it is severe. This is an area for future research, which may be particularly relevant when investigating individuals with low socioeconomic status and high exposure to environmental risk factors. RS may be less relevant in such high risk and stressful environments.

Conclusion

Our findings support earlier research indicating that greater RS and ENA are independently associated with greater borderline symptomatology. We also present the novel finding that these two factors interact such that RS in conjunction with low to moderate ENA is also associated with a greater number of BPD symptoms. These findings suggest that individuals with greater RS are especially vulnerable to manifesting symptoms of BPD. Our findings also suggest that for some, childhood trauma may not be part of the etiology of BPD symptoms.

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Figure 1. Borderline Symptoms as a Function of Emotional Neglect & Abuse and Rejection Sensitivity

Note. Low RSQ, Low ENA: $n=20$; Low RSQ, Medium ENA: $n=13$; Low RSQ, High ENA: $n=9$; Medium RSQ, Low ENA: $n=15$; Medium RSQ, Medium ENA: $n=17$; Medium RSQ, High ENA: $n=10$; High RSQ, Low ENA: $n=6$; High RSQ, Medium ENA: $n=14$; High RSQ, High ENA: $n=22$. Findings from simple slope analyses (conducted but not shown) showed $b=.15$ and $=.12$ at -2 and $+2$ standard deviations below and above mean ENA, respectively.

Table 1

Clinical Characteristics of Participants

Characteristic	n=133	Range
BPD Symptoms	3.2 (2.43)	0–9
RSQ	8.8 (3.95)	1–24
CTQ-Emotional Neglect & Abuse	19.1(.74)	10–45
CTQ-Emotional Abuse	8.7(.36)	5–24
CTQ-Emotional Neglect	10.3(.44)	5–23
CTQ-Physical Abuse	8.8(.41)	5–25
CTQ-Physical Neglect	7.2(.28)	5–18
CTQ-Sexual Abuse	7.0(.34)	5–25

Table 2

Correlations between Clinical Characteristics

Clinical Variable	BPD Symptom Count	Rejection Sensitivity	Emotional Neglect & Abuse	Physical Abuse	Physical Neglect
BPD Symptom Count (Range 0–9)		.229 **	.282 **	.249 **	.059
Rejection Sensitivity			.365 **	.126	.222 **
Emotional Neglect & Abuse				.616 **	.554 **
Physical Abuse					.463 **
Physical Neglect					

Note

**
 $p < .01$ *
 $p < .05$.

All p values represent two-tailed probability values of the test. All correlation coefficients are spearman's rho excepting the correlation between BPD symptom count and Rejection Sensitivity.