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Publication Details

Personality Disorders: Theory, Research, and Treatment

Repository Citation

Rosenstein, L. K., Ellison, W. D., Walsh, E., Chelminski, I., Dalrymple, K., & Zimmerman, M. (2018). The role of emotion regulation difficulties in the connection between childhood emotional abuse and borderline personality features. *Personality Disorders: Theory, Research, and Treatment*, 9(6), 590-594. doi: 10.1037/per0000294

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Accepted manuscript, to appear in *Personality Disorders: Theory, Research, and Treatment*.

The Role of Emotion Regulation Difficulties in the Connection between Childhood Emotional Abuse and Borderline Personality Features

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Abstract

In the present report from the Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS) project, we examined the role of emotion dysregulation as a mediator between childhood abuse and borderline personality disorder (BPD) feature severity among a sample of 964 adults presenting for treatment at an outpatient clinic. A structural equation model suggested that emotional abuse relates to BPD features both directly and through difficulties with emotion regulation, whereas physical abuse showed only a weak indirect relation with BPD features. There was no link between sexual abuse and BPD feature severity in the model. Results add specificity to etiological theories of BPD and suggest that future research in treatment should focus on developing and strengthening emotion regulation strategies in clinical populations with a history of emotional abuse. Clinicians should be sure to assess the presence of childhood emotional abuse in addition to sexual and physical abuse.

Key words: borderline personality disorder; childhood abuse; emotional abuse; emotion regulation

The Role of Emotion Regulation Difficulties in the Connection between Childhood Emotional Abuse and Borderline Personality Features

Borderline personality disorder (BPD) is a severe psychiatric disorder predominantly characterized by instability in identity, relationships, and affect (American Psychiatric Association, 2013). BPD is estimated to occur in 2.7% of the general population (Trull, Jahng, Tomko, Wood & Sher, 2010) and 10% of outpatient cases (Zimmerman, Rothschild & Chelminski, 2005), and it has substantially high rates of comorbidity (Zanarini et al., 1998).

Numerous models regarding the etiology of BPD have been discussed in the literature. Linehan (1993) posited that BPD may be the product of a complex interaction between biological vulnerabilities to emotion dysregulation and early exposure to an unstable, invalidating environment. Investigation has confirmed several common temperamental factors at the core of BPD, including impulsive tendencies, affective instability, and interpersonal instability (Bornovalova, Gratz, Delany-Brumsey, Paulson, & Lejuez, 2006). Similarly, Zanarini and Frankenburg (1997) proposed that BPD may develop from the interplay of a temperamental predisposition to seek validation of emotional discomfort and exposure to a broad array of traumatic experiences in childhood (including physical, emotional, or sexual abuse, neglect, or having caregivers with severe mental illness). Other etiological theories of BPD also focus on the contribution of inadequate early caregiving to the development of poor emotion regulation skills, for example from an attachment theoretical framework (Blatt & Levy, 2003).

Exposure to an invalidating, often traumatic environment is central to these theories and has been supported by research as a contributor to the development of BPD. For example, Johnson et al. (1999) found that childhood emotional, physical, and sexual abuse increased risk

for developing personality disorders, but only BPD was significantly related to childhood abuse after controlling for comorbid personality disorders. Likewise, McFetridge et al. (2015) found that in a sample of women with BPD, 75% reported a history of childhood sexual abuse, with more than half of these individuals reporting abuse prior to the age of six.

While much attention has been paid to the importance of childhood sexual abuse, Teicher et al. (2006) found that emotional abuse, such as witnessing domestic violence, had a greater impact on emotional distress in adulthood than the experience of sexual or physical abuse. These findings are consistent with previously established models of BPD development, which highlight the impact of a disrupted social rearing environment on a child's later functioning.

Some authors have suggested that difficulties in emotion regulation may account for the link between childhood abuse and the development of BPD symptoms (van Dijke, Ford, van Son, Frank, & van der Hart, 2013). Emotion regulation is a multidimensional construct involving awareness, understanding, and acceptance of emotions, as well as a willingness to experience emotional distress and engage in self-modulating strategies (Gratz & Roemer, 2004). Deficits in emotion regulation lead to intense emotional instability and expression, both core components of BPD pathology (van Dijke et al., 2011). Developing emotion regulation skills as a child is often a product of caregiver modeling, observational learning, and general family dynamics such as emotional expressiveness within family relationships and parenting style (Morris, Silk, Steinberg, Myers & Robinson, 2007). For individuals raised in a disrupted family environment with abusive caregivers, the formation of these skills is more likely to be impaired. These individuals are more likely to experience heightened emotional arousal, aggression, and emotional reactivity (Shields & Cicchetti, 1998) and may be less willing to tolerate

uncomfortable emotions and distress (Gratz, Rosenthal, Tull, Lejuez & Gunderson, 2006), all characteristic of people with BPD.

A test of the link between childhood maltreatment and BPD symptoms via emotion regulation difficulties was recently conducted by Kuo et al. (2015). Using cross-sectional data from an undergraduate sample and structural equation modeling (SEM), they found an indirect path between childhood emotional (but not physical or sexual) abuse and BPD features through difficulties in emotion regulation, suggesting that emotional abuse and emotion regulation may uniquely contribute to BPD etiology.

However, it remains to be seen whether Kuo and colleagues' (2015) findings hold in a clinical sample. Having a sample with a broader range of abuse experiences, BPD symptoms, and emotional regulation difficulties may provide a more convincing test of these associations, as undergraduate students represent a relatively high functioning population of individuals with lower levels of abuse, BPD pathology, and difficulties with emotion regulation. Thus, the relationships among these variables may not look the same in a clinical population. In the present report from the Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS) project we utilized the methodology employed by Kuo and colleagues and applied their model to a large outpatient clinical sample. Following the findings of Kuo and colleagues, we anticipated that greater frequency of childhood emotional abuse would be associated with more severe BPD symptoms and that difficulties with emotion regulation would account for this relationship among psychiatric outpatients.

Method

Participants

The MIDAS project at the Department of Psychiatry at Rhode Island Hospital predominantly treats individuals with medical insurance on a fee-for-service basis and is distinct from the hospital's outpatient residency training clinic that serves more lower income, uninsured, and medical assistance patients. As part of the current project, 3,800 individuals seeking outpatient psychiatric care were interviewed and completed self-report questionnaires. This research was approved by the local Institutional Review Board, and all participants were at least 18 years old and provided informed consent. Individuals were excluded if they had a history of developmental disabilities or had difficulties communicating in English.

As the battery of self-report questionnaires and diagnostic assessments has changed over the duration of the study, the present report is based on the 964 participants interviewed with the Structured Interview for DSM-IV Personality (SIDP-IV; Pfohl, Blum, & Zimmerman, 1997). The majority of the sample was female (57.1%) and Caucasian (90.5%), with 40.2% having completed education beyond high school. About 41% of the participants were married and 32% identified as single. The average age of the sample was 39.7 ($SD=14.4$). A total of 94 individuals (9.7%) met full diagnostic criteria for BPD.

Measures

Diagnostic Assessments. Participants were administered the BPD section of the SIDP-IV by Ph.D.-level psychologists or research assistants. Each criterion is rated on a scale of 0 to 3; 0=absent, 1=subthreshold, 2=present, 3=strongly present. All diagnostic interviewers underwent extensive training; psychologists observed five interviews and conducted 15 to 20 supervised interviews and research assistants observed 20 interviews and conducted 20 supervised interviews. At the end of the training period, all interviewers were required to show exact, or

near exact, reliability with a senior rater on five evaluations. All individual item ratings were reviewed by the senior author.

Diagnostic reliability was collected on 47 participants using a joint-interview design in which one rater observed another conducting the interview and both made independent ratings. The interclass correlation coefficient (ICC) of the BPD criterion count dimensional score was high (ICC=0.95).

Childhood Trauma Questionnaire- Short Form (CTQ-SF; Bernstein et al., 2003).

The CTQ-SF is a 25-item self-report version of the original 53-item Childhood Trauma Questionnaire (Bernstein et al., 1994) that assesses childhood and adolescent maltreatment. The measure is comprised of five subscales for physical, emotional, and sexual abuse as well as physical and emotional neglect. Items reflect childhood and adolescent experiences, such as “People in my family hit me so hard that it left me with bruises or marks,” and participants are asked to rate each item on a 5-point Likert scale ranging from “never true” to “very often true.” Consistent with the methods of Kuo et al. (2015), we limited our analyses to the physical, sexual, and emotional abuse subscales. The CTQ has high convergent and discriminant validity, and internal consistency for the physical, emotional, and sexual abuse subscales were moderate to high, ranging from .61 and .92 (Bernstein et al., 2003).

Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The DERS is a 36-item self-report measure assessing difficulties in emotion regulation across six dimensions: 1) Non-acceptance of emotional response, 2) Difficulty engaging in goal-directed behavior, 3) Impulse control difficulties, 4) Lack of emotional awareness, 5) Limited access to emotion regulation strategies, and 6) Lack of emotional clarity. Participants are asked to rate

each item (e.g. “When I am upset, I feel out of control”) on a 5-point Likert scale ranging from “almost never” to “almost always.” The DERS has high overall internal consistency ($\alpha = .93$), and Cronbach’s $\alpha > .80$ for each subscale (Gratz & Roemer, 2004).

Data Analysis

Regression analyses examining childhood abuse as a predictor of BPD were conducted using SPSS (IBM SPSS Statistics for Windows, Version 22.0.) and all SEM analyses were conducted using Mplus, version 6 (Muthén & Muthén, 2007). Because individual BPD features were measured using a noncontinuous response scale, maximum likelihood estimation (for which normal data are assumed) may not be appropriate. Therefore, we used robust weighted least squares (WLSMV) estimation, which a simulation study has suggested handles categorical data well in SEM (Flora & Curran, 2004).

Our baseline model considered was based on that of Kuo et al. (2015), in which a latent difficulties in emotion regulation variable (composed of the 6 DERS subscales) mediates the relationship between childhood emotional, sexual, and physical abuse and BPD features. The fit criteria of Hu and Bentler (1999) were used to judge model fit, and modification indices were used to guide stepwise modifications of the baseline model in cases of misfit.

Results

Sexual, physical, and emotional abuse were all positively correlated with number of BPD features and all subscales measuring difficulties with emotion regulation. However, the relationship between physical abuse and non-acceptance of negative emotions was not significant (Table 1). As observed by Kuo et al. (2015), regression analyses indicated that only childhood emotional abuse predicted BPD features when controlling for other forms of abuse, β

= .26, $t(964) = 6.22$, $p < .001$. Childhood physical abuse, $\beta = .003$, $t(964) = .07$, $p = .94$, and sexual abuse, $\beta = .02$, $t(964) = .55$, $p = .59$, did not account for variance in BPD feature severity when controlling for other forms of abuse.

The baseline SEM model showed inadequate fit, $\chi^2(29) = 261.849$, $p < 0.001$, CFI = .878, TLI = .810, RMSEA = .091. An examination of modification indices suggested that fit could be improved by adding the residual covariance of two DERS items (*awareness* and *clarity*) to the measurement model for the DERS. After applying this modification, fit was acceptable, $\chi^2(28) = 90.726$, $p < 0.001$, CFI = .967, TLI = .947, RMSEA = .048.

The final model, very similar to that of Kuo et al. (2015), suggested that emotional abuse (and to a lesser extent, physical abuse) largely related to BPD features through difficulties in emotion regulation (Figure 1). There was also a weak but significant direct path between emotional abuse and BPD features, but no significant direct path between physical abuse or sexual abuse and BPD features. As Kuo et al. (2015) found, there was a distinct indirect path between emotional abuse and BPD through difficulties with emotion regulation. In contrast to Kuo and colleagues' results, however, we found a weak indirect path between physical abuse and BPD features through difficulties with emotion regulation. However, the regression coefficient between physical abuse and emotion dysregulation was weak (and negative). Sexual abuse did not relate to the latent difficulties with emotion regulation construct.

Discussion

This study is the first to use a clinical sample to illustrate that emotional abuse, but not sexual or physical abuse, independently relates to variance in BPD features when controlling for other types of childhood abuse. These findings are consistent with previous research that

suggests that BPD develops from an unstable, invalidating childhood environment that may be specifically characterized by emotional abuse. Given these findings, it is pressing that clinicians assess not only for the presence of childhood sexual and physical abuse, but also ask patients about childhood emotional abuse and unstable family dynamics, as it has significant clinical implications that may not be immediately apparent.

We found that emotion dysregulation accounted for the relationship between childhood emotional abuse and BPD features. It is possible that there could be a heritable, genetic, temperamental predisposition to struggles with tolerating negative emotions and resisting impulsive behaviors (Bornovalova et al., 2013). As Bornovalova et al. suggest, it is logical that a parent with such traits may create an invalidating environment characteristic of emotional abuse with behaviors such as unpredictable mood swings, impulsivity, anger directed towards the child, or unstable parental discord. While the child may then inherit these biological markers, they also may learn these behaviors through modeling and be more susceptible to develop difficulties with emotion regulation that then contribute to the development of further BPD features.

The current results also provide greater specificity to findings by van Dijke et al. (2013), who found that affect under-regulation partially mediates the relationship between childhood trauma and the presence of BPD symptoms in adulthood. These authors suggest that difficulties with emotion regulation is not only a symptom of BPD but also as a byproduct of childhood trauma, and they highlight the need for treatments that emphasize emotion regulation strategies for individuals who have experienced childhood abuse. More broadly speaking, emotion dysregulation is thought to be a mediator between childhood maltreatment more generally and adult psychopathology (Nickel & Egle, 2006). The present findings are consistent with these

ideas and suggest that emotion regulation strategies may be of particular importance for those with a history of childhood *emotional* abuse.

Some aspects of the current findings are at odds with findings of Kuo et al. For example, they did not find an association between childhood sexual abuse and BPD feature severity in their non-clinical sample, whereas in the current study BPD features showed a small but significant positive relationship with both childhood sexual and childhood physical abuse. This discrepancy may be due to the fact that the current sample of treatment-seeking outpatients was comprised of individuals with relatively higher levels of borderline personality pathology (9.7% of the sample) and was also larger than that of Kuo et al., which afforded greater power to detect effects. Notably, an association between BPD features and childhood sexual abuse is consistent with the majority of BPD literature (Fossati, Madeddu, & Maffei, 1999; Lobbestael, Arntz, & Bernstein, 2010), although twin studies (Berenz et al., 2013; Bornovalova et al., 2013) suggest that this link is best accounted for by shared genetic or environmental influences rather than a causal relation between abuse and BPD. Given these findings, the results of the current SEM model suggest that emotion regulation deficits do not account for overlap between physical and sexual abuse and BPD features.

The current study has several important limitations to consider. Our sample was comprised of treatment seeking outpatients, the majority of whom were Caucasian and insured. We must therefore be cautious of widely generalizing these findings until this model can be investigated in a more diverse population. Furthermore, the use of a cross-sectional design presents several limitations. Limited claims about causality can be made when testing a mediation model in cross-sectional data, which cannot establish temporal precedence. This

research relied on retrospective self-reports of childhood abuse, a particular limitation as emotional abuse can be difficult to operationalize and is subject to biased recall. Individuals with BPD often have difficulty representing the self and others in a consistent and accurate manner and, as such, it is possible that they have distorted or misperceived a history of emotional abuse. Future research should longitudinally follow individuals who experienced childhood abuse and track the development of difficulties with emotion regulation and BPD pathology over time.

Despite these limitations, this study has a number of strengths. Perhaps the most notable strength is our use of a large, clinical sample and a combination of both self-report and clinician rated measures. Our sample also included males and females, while many previous BPD studies focus solely on female samples. The application of Kuo and colleagues' model in a typical outpatient population suggests that particular attention should be paid to affect regulation when working with patients with BPD features and a history of childhood trauma, especially emotional abuse. Future research in treatment and prevention efforts might focus on developing and strengthening emotion regulation strategies in this population.

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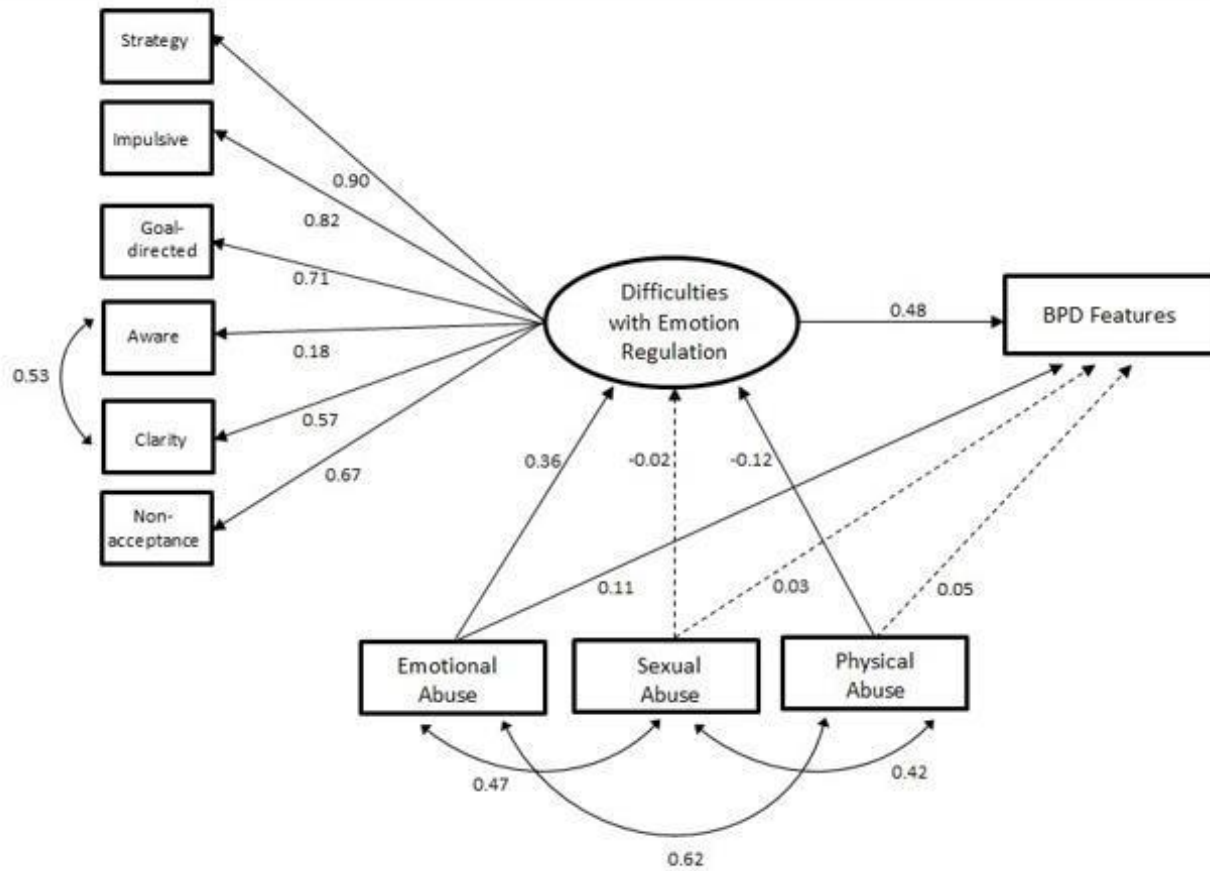
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Figure 1. Final Structural Equation Model



Note. Solid line signifies significance at $p < .01$.

EMOTIONAL ABUSE AND BPD

Table 1. Pearson correlations between BPD features, childhood abuse, and difficulties with emotion regulation ($N = 964$)

	1	2	3	4	5	6	7	8	9	10
1. BPD features	--									
2. Childhood emotional abuse	.27***	--								
3. Childhood sexual abuse	.15***	.47***	--							
4. Childhood physical abuse	.17***	.62***	.42***	--						
5. Nonacceptance of negative emotions	.21***	.21***	.08*	.06	--					
6. Lack of emotional awareness	.13***	.12***	.10**	.09**	.11**	--				
7. Lack of emotional clarity	.30***	.15***	.09**	.06*	.43***	.53***	--			
8. Difficulties engaging in goal-directed behaviors when distressed	.30***	.20***	.08**	.07*	.51***	.07*	.37***	--		
9. Difficulties controlling impulsive behaviors when experiencing negative emotions	.48***	.22***	.07*	.10**	.52***	.16***	.44***	.59***	--	
10. Limited access to emotion regulation strategies perceived as effective	.41***	.25***	.08**	.11**	.67***	.14***	.48***	.70***	.71***	--

* $p < .05$ ** $p < .01$ *** $p < .001$