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An examination of the relationship between childhood emotional abuse and borderline personality disorder features: The role of difficulties with emotion regulation

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ABSTRACT

Childhood abuse has been consistently linked with borderline personality disorder (BPD) and recent studies suggest that some forms of childhood abuse might be uniquely related to both BPD and BPD features. In addition, difficulties with emotion regulation have been found to be associated with childhood abuse, BPD, as well as BPD features. The present study examined (1) whether frequency of childhood emotional abuse is uniquely associated with BPD feature severity when controlling for other forms of childhood abuse and (2) whether difficulties with emotion regulation accounts for the relationship between childhood emotional abuse and BPD feature severity. A sample of undergraduates ($n = 243$) completed the Childhood Trauma Questionnaire – Short Form, Difficulties in Emotion Regulation Scale, and Borderline Symptom List-23. Multiple regression analyses and Structural Equation Modeling were conducted. Results indicated that frequency of childhood emotional abuse (and not sexual or physical abuse) was uniquely associated with BPD feature severity. In addition, while there was no direct path between childhood emotional abuse, childhood physical abuse, or childhood sexual abuse and BPD features, there was an indirect relationship between childhood emotional abuse and BPD features through difficulties with emotion regulation. These findings suggest that, of the different forms of childhood abuse, emotional abuse specifically, may have a developmental role in BPD pathology. Prevention and treatment of BPD pathology might benefit from the provision of emotion regulation strategies.

Introduction

Borderline personality disorder (BPD) is a severe and debilitating disorder that represents 20–40% of psychiatric inpatient admissions (Geller, 1986; Grant et al., 2008; Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004). Approximately 84% of individuals with BPD engage in suicidal behavior (Soloff, Lynch, & Kelly, 2002), and 8% die by suicide (Pompili, Girardi, Ruberto, & Tatarelli, 2005). BPD is not only problematic in clinical populations, but also in the general population, where BPD features exist along a continuum (Trull, 2001). Higher BPD features in the general population are associated with significant negative outcomes such as academic dysfunction, meeting lifetime criteria for a mood disorder, relationship dysfunction, and alcohol use problems (e.g., Stepp et al., 2005; Trull, 2001). Thus, BPD features pose a significant problem not only for those

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with BPD diagnoses, but among individuals in the general population as well. Indeed, examination of key factors associated with the development of BPD features serves significant clinical utility, as it would provide important implications for both prevention and intervention efforts.

Several developmental models suggest that BPD pathology (i.e., BPD or BPD-features) is shaped by a combination of biological and environmental mechanisms, the latter of which includes social and attachment-related disturbances. Perhaps one of the most prominent models of BPD pathology is Linehan's (1993) biosocial model, which proposes that BPD is the result of a transaction between an individual's biological predisposition to difficulties with emotion regulation and an invalidating social rearing environment, or one that communicates that "the individual's private experiences and emotional expressions are not [. . .] valid responses to events" (Linehan, 1993, p. 50). Other models similarly emphasize the critical role of the individual's social rearing environment in the development of BPD. Zanarini and Frankenburg (1997) have proposed a multifactorial model, the first of which consists of a traumatic home environment. These traumas include a variety of factors, ranging from prolonged early parental separation to emotional and sexual abuse. Recently, Hughes, Crowell, Uyeji, and Coan (2012) proposed a developmental model nested within the social baseline theory (Coan, 2008), which suggests that the development of BPD might be due to a child's lack of social proximity to or responsiveness from relevant caregivers, which subsequently disrupts the individual's ability to effectively regulate their emotions. Thus, a common theme across various developmental models of BPD is an emphasis on a disrupted social rearing environment that is likely characterized by different forms of childhood abuse. Consistent with this model, there is a robust body of literature indicating an association between BPD pathology and a history of childhood abuse. Up to 91% of individuals with BPD diagnoses report experiencing some form of childhood abuse (Zanarini et al., 1997), including elevated levels of childhood sexual, emotional, and physical abuse (Davidson, Devaney, & Spratt, 2010; Spatz Widom, Czaja, & Paris, 2009; Zanarini et al., 2002). In addition, individuals with BPD diagnoses report abuse by more than one person and multiple forms of abuse compared to clinical and nonclinical samples (Bierer et al., 2003; Brown & Anderson, 1991; Herman, Perry, & Van, 1989; Hernandez, Arntz, Gaviria, Labad, & Gutiérrez-Zotes, 2012; Ogata et al., 1990; Pietrek, Elbert, Weierstall, Müller, & Rockstroh, 2013). Further, females with BPD experience higher levels of emotional and physical abuse than their non-BPD sisters, suggesting that the severity of abuse within the family environment may be associated with the disorder (Laporte, Paris, Guttman, Russell, & Correa, 2012).

Different forms of abuse rarely occur in isolation (Bierer et al., 2003; Briere & Elliott, 2003; Pérez-Fuentes et al., 2013). Notably, childhood sexual abuse is unlikely to occur in the absence of emotional abuse (Bagley, 1991; Sørbø, Grimstad, Bjørngaard, Schei, & Mirjam Lukasse, 2013) and childhood emotional abuse is the most likely to occur independent of other forms of abuse (Moeller, Bachmann, & Moeller, 1993). Accordingly, though sexual, physical, and emotional abuse are consistently associated with BPD, a smaller body of literature has examined whether a specific subtype of abuse might uniquely account for the disorder. Briere and Elliott (2003) found that childhood emotional abuse—and not physical or sexual abuse, or any form of neglect—predicted a BPD diagnosis among male participants. Similarly, in a sample of inner city substance users in which childhood abuse and neglect were examined as risk factors for BPD diagnoses, Bornovalova, Gratz, Delany-Brumsey, Paulson, and Lejuez (2006) reported that only emotional abuse was predictive of BPD diagnostic status. Emotional abuse is also relevant to BPD features more broadly; different facets of emotional abuse (i.e., degradation and ignoring), but not physical abuse, uniquely predict BPD features (Allen, 2008). Similarly, emotional abuse and neglect, compared to other forms of abuse and neglect, are most strongly associated with dissociative symptoms among individuals with BPD diagnoses (Watson, Chilton, Fairchild, & Whewell, 2006). Thus, extant evidence provide support for the disruption of the child's social rearing environment specified across several models, and further suggest that emotional abuse, specifically, may be a core facet of the social environment. This is theoretically concordant with Linehan (1993) and Hughes et al. (2012) theories, which propose the invalidating environment and lack of responsiveness, respectively, as hallmarks of the social rearing environment. Linehan's model, specifically, notes that an invalidating environment is characterized by a response to the individual's internal or private experiences (i.e., emotions). Thus, both theory and recent research have indicated emotional abuse as a potential "core" feature of the one's social environment that leads to the development of BPD pathology.

Given the established association between childhood abuse and BPD pathology, recent studies have aimed to delineate the specific mechanisms accounting for this relationship. Consistent with theories proposed by Linehan (1993) and Hughes et al. (2012), a handful of studies have identified difficulties with emotion regulation as an explanatory link between childhood abuse and BPD pathology. Difficulties with emotion regulation is a multi-faceted construct, and has been proposed to constitute a lack of awareness and acceptance of emotions, as well as failures to have access to and/or engage in emotion regulation strategies (Gratz & Roemer, 2004). Developmental theories identify the ability to regulate emotions as a major developmental milestone of childhood (see Cole, Michel, & Teti, 1994; Southam-Gerow & Kendall, 2002; Thompson, 1994), its acquisition of which is heavily reliant on parental guidance and support (e.g., Feng et al., 2008; Kopp, 1989). Given that individuals constituting the child's rearing environment (i.e., family members and others close to the family) are often perpetrators of childhood abuse, the development of these skills is likely disrupted among victims of childhood abuse. Consequently, rather than acquiring the skills necessary to tolerate and modify their emotions, these individuals experience increased emotional arousal, and have difficulties tolerating emotional distress and developing emotional awareness and understanding (Linehan, 1993; Thompson & Calkins, 1996).

Studies suggest that children with a history of childhood abuse are more likely to have difficulties with emotion regulation compared to children without (Shields & Cicchetti, 1998; Shipman, Schneider, & Sims, 2005; Shipman, Zeman, Penza, & Champion, 2000). Childhood abuse is also correlated with higher levels of emotional nonacceptance (Gratz, Bornovalova, Delany-Brumsey, Nick, & Lejuez, 2007) and lower levels of emotional understanding (Shipman et al., 2000). Moreover,

recent evidence suggests that emotional abuse uniquely predicts difficulties with emotion regulation when sexual abuse is controlled for Burns, Jackson, and Harding (2010) and a composite of emotional abuse and neglect predict difficulties with emotion regulation after controlling for physical abuse, sexual abuse, and physical neglect (Bradbury & Shaffer, 2012). Thus, while data suggest a relation between childhood abuse and difficulties with emotion regulation, emerging evidence suggests that this relationship might be largely accounted for by emotional abuse specifically.

Similarly, a robust body of research also indicates a link between difficulties with emotion regulation and BPD pathology. Individuals with BPD diagnoses report having general difficulties with emotion regulation (Kuo & Linehan, 2009), are less willing to endure distress in the pursuit of goal-directed behavior (Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2006), and have higher emotional avoidance (Bijttebier & Vertommen, 1999) than non-clinical controls. Further, higher BPD features are associated with lower emotional awareness (Leible & Snell, 2004) and elevated fear of emotions (Yen, Zlotnick, & Costello, 2002). Recent neuroimaging findings also corroborate these data, suggesting that, relative to non-clinical controls, individuals with BPD diagnoses have deficits in their ability to implement specific emotion regulation strategies such as cognitive reappraisal (Koenigsberg et al., 2009; Lang et al., 2012).

Only one study has evaluated whether difficulties with emotion regulation is a potential mechanism explaining the link between childhood abuse and BPD features. Among a sample of 450 psychiatric inpatients, van Dijke, Ford, van Son, Frank, and van (2013) reported a positive correlation between the presence of a traumatizing event by a primary caregiver (TPC) and severity of BPD features. Moreover, when testing for the indirect effect of both over and underregulation of affect, results indicated that underregulation (and not overregulation) partially mediated the relationship between TPC and BPD feature severity. While this study provides greater clarity into the relationship between childhood abuse, emotion dysregulation, and BPD features, what remains unknown is whether there are unique and specific relations between different subtypes of childhood abuse, emotion dysregulation, and BPD features.

Thus, the current study aims to delineate the specificity of these relations by examining (1) whether childhood emotional abuse is uniquely associated with BPD feature severity when other forms of abuse are controlled for, and (2) whether difficulties with emotion regulation is a factor specifically associated with childhood emotional abuse (and not other forms of abuse), that links its relationship with BPD feature severity. In order to build directly upon extant literature which has predominantly examined the relationship between childhood abuse (versus neglect) and BPD pathology, only subtypes of childhood abuse (i.e., sexual abuse, physical abuse, and emotional abuse) were examined. Consistent with the literature to date, we hypothesized that, when controlling other forms of abuse, frequency of childhood emotional abuse would be uniquely associated with severity of BPD features. Moreover, we also hypothesized that the relationship between childhood emotional abuse and BPD feature severity would be explained by difficulties with emotion regulation.

Methods

Participants

A total of 243 participants were recruited from an Introductory Psychology class through an undergraduate university's subject pool. Each participant was given 1% class credit in return for participation (i.e., participation consisted of 1% of their final grade). The sample was young in age ($M = 20.10$, $SD = 4.74$) and the majority of participants reported secondary school as the highest level of education completed (77.0%). The sample was largely female (85.6%) and single/never married (95.1%). Ethnic breakdown was as follows: Caucasian (40.7%), Asian-Canadian/Asian (32.1%), Black-Canadian/Black (7.4%), Middle Eastern (6.2%), Bi-racial/Multi-racial (2.1%), and Other (11.2%).

Procedure

This study was approved by the University's research ethics board. After providing informed consent, participants completed an online battery of questionnaires assessing demographics, childhood trauma, borderline feature severity, and difficulties with emotion regulation. Participants were debriefed electronically at the end of the questionnaire battery.

Measures

The Childhood Trauma Questionnaire – Short Form (CTQ-SF). The CTQ-SF (Bernstein & Fink, 1998) is a 28-item retrospective self-report questionnaire that provides a subjective assessment of a participant's general childhood environment. Items begin with the phrase, "When I was growing-up. . ." and are rated on a 5-point Likert scale ranging from "never true" to "very often true." The CTQ-SF measures exposure to five domains of childhood trauma: sexual abuse, emotional abuse, emotional neglect, physical abuse, and physical neglect. Only the sexual, physical, and emotional abuse subscales were included in this study. Internal consistency of the three subscales is moderate to high (alphas between .61 and .92) in a community sample (Bernstein et al., 2003). The CTQ has high convergent and discriminant validity in adolescent and undergraduate populations (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997; Paivio & Cramer, 2004). Internal consistency of the three subscales for the current sample was as follows: childhood sexual abuse ($\alpha = .95$); childhood physical abuse ($\alpha = .80$); and childhood emotional abuse ($\alpha = .86$).

Table 1
Descriptive statistics for variables included in primary analyses.

Variable	Mean (SE)	Range
Childhood emotional abuse	9.00 (.28)	4.00–25.00
Childhood sexual abuse	5.97 (.20)	3.00–25.00
Childhood physical abuse	6.70 (.19)	3.00–25.00
Non-acceptance of negative emotions	12.83 (.36)	6.00–30.00
Lack of emotional awareness	15.25 (.33)	5.00–30.00
Lack of emotional clarity	11.47 (.26)	3.00–25.00
Difficulties engaging in goal-directed behaviors when distressed	15.77 (.31)	5.00–25.00
Difficulties controlling impulsive behaviors when experiencing negative emotions	12.45 (.35)	6.00–30.00
Limited access to emotion regulation strategies perceived as effective	17.75 (.46)	7.00–40.00
BPD severity	.70 (.04)	0–3.04

Note. Childhood abuse subtypes reflect summed totals from the emotional, sexual, and physical abuse subscales of the Childhood Trauma Questionnaire – Short Form (CTQ-SF). Difficulties with emotion regulation subscales reflect summed totals from each subscale of the Difficulties with Emotion Regulation Scale (DERS). BPD severity reflects the mean score on the Borderline Symptom List-23 item (BSL-23).

The Borderline Symptom List-23 (BSL-23). The BSL-23 (Bohus et al., 2009) is a self-report questionnaire that assesses severity of BPD features. Participants rate 23-items (e.g., "I thought of hurting myself") on a 5-point Likert scale ranging from "not at all" to "very strong". The BSL-23 was derived from the 95-item Borderline Symptom List (BSL-95), and is comprised of the 23 items from the BSL-95 with the highest sensitivity to change and discriminant validity. The BSL-23 has strong discriminant validity and high internal consistency in both clinical and college populations ($\alpha = .97$; Bohus et al., 2009; Glenn, Weinberg, & Klonsky, 2009). Internal consistency for the current sample was $\alpha = .95$.

The Difficulties in Emotion Regulation Scale (DERS). The DERS (Gratz & Roemer, 2004) is a self-report questionnaire that assesses both individuals' overall difficulties in emotion regulation and their difficulties across six dimensions: nonacceptance of negative emotions; difficulties engaging in goal-directed behaviors when distressed; difficulties controlling impulsive behaviors when experiencing negative emotions; limited access to emotion regulation strategies perceived as effective; lack of emotional awareness; and lack of emotional clarity. Participants rate 36-items (e.g., "I am confused about how I feel") on a 5-point Likert scale ranging from "almost never" to "almost always". The DERS has high overall internal consistency ($\alpha = .93$), and strong internal consistency within each subscale ($\alpha > .80$ for each subscale; Gratz & Roemer, 2004). Internal consistency of the subscales for the current sample ranged from $\alpha = .65$ (difficulties engaging in goal-directed behaviors) and $\alpha = .91$ (nonacceptance of negative emotions).

Data analyses

To test hypothesis 1 (i.e., frequency of childhood emotional abuse uniquely accounts for BPD feature severity), a multiple regression was conducted where childhood sexual, physical, and emotional abuse were entered as predictors and BPD feature severity was entered as the outcome. To test hypothesis 2, Structural Equation Modeling (SEM) was used to assess the goodness of fit of our hypothesized model (i.e., that there is a unique relationship between frequency of childhood emotional abuse and BPD features, via the latent variable of difficulties with emotion regulation). SEM was chosen over the Preacher and Hayes (2004) model of indirect effects using bootstrapping because it is robust with non-normal samples (Hox & Bechger, 1998) and allows the effect of multiple predictors to be assessed with a single test, thus reducing the likelihood of family-wise error (Ullman & Bentler, 2003).

SPSS Amos 20 (Arbuckle, 2006) was used to model our analyses. Chi-squared tests and other fit-indices (e.g., RMSEA) were used to evaluate model fit. We included the sexual, physical, and emotional abuse CTQ subscales as predictors, all six subscales of the DERS as mediators to load onto the latent variable of difficulties with emotion regulation, and BSL-23 score as the outcome variable. At each step of the SEM analysis model parsimony was improved by removing nonsignificant variables and controlling for significant residual covariance.

Results

Descriptive statistics and preliminary analyses

See Table 1 for means, standard deviations, and ranges for all variables and Table 2 for correlations among all variables in the analyses. Gender (Pearson's $r = .09$, $p = .18$), age (Pearson's $r = -.11$, $p = .12$), and level of education (Pearson's $r = .01$, $p = .85$) were not significantly associated with BPD severity and therefore, were not entered as covariates in the primary analyses.

We applied cut-off scores that have been previously used in the literature in order to examine the presence/absence of each abuse subtype (Bernstein & Fink, 1998): sexual abuse $\geq$6, physical abuse $\geq$8, and emotional abuse $\geq$9. Among the sample, 11.8% ($n = 4$) of males and 20% ($n = 42$) of females endorsed the presence of sexual abuse, 26.5% ($n = 9$) of males and 23.6% ($n = 49$) of females endorsed the presence of physical abuse, and 38.2% ($n = 13$) of males and 42.3% ($n = 88$) of females

Table 2
Pearson correlations between BPD severity, childhood abuse subtypes, and difficulties with emotion regulation subscales.

	1	2	3	4	5	6	7	8	9	10
1. BPD severity	–									
2. Childhood emotional abuse	.42**	–								
3. Childhood sexual abuse	.11	.28**	–							
4. Childhood physical abuse	.13*	.55**	.23**	–						
5. Nonacceptance of negative emotions	.60**	.36**	.10	.11	–					
6. Lack of emotional awareness	.12	.09	.06	.15*	.08	–				
7. Lack of emotional clarity	.46**	.20**	.11	.11	.42**	.53**	–			
8. Difficulties engaging in goal-directed behaviors when distressed	.49**	.24**	.06	.04	.47**	.08	.39**	–		
9. Difficulties controlling impulsive behaviors when experiencing negative emotions	.67**	.46**	.20**	.24**	.62**	.18**	.47**	.52**	–	
10. Limited access to emotion regulation strategies perceived as effective	.69**	.41**	.15*	.18**	.73**	.17**	.51**	.66**	.73**	–

Note. BPD, borderline personality disorder.
* $p < .05$.
** $p < .01$.
*** $p < .00$.

endorsed the presence of emotional abuse. Although BSL cut-offs do not exist, Bohus et al. (2009) reported a mean score of 2.05 ($SD = .90$) in a clinically diagnosed BPD sample. Though the mean score of our study suggests that this group was not similar to that of Bohus and colleagues ($M = .70$, $SD = .68$), participants' BSL scores (0–3.04) suggest that the sample included individuals ranging in BPD feature severity.

Relationship between childhood sexual abuse, physical abuse, emotional abuse, and BPD feature severity

Inspection of the residual versus predicted values plot indicated a violation of the assumption of linearity between the dependent and independent variables; thus a log transformation was employed for all variables in the model, after which the assumption of linearity was no longer violated. Results from the regression indicated that, as hypothesized, only childhood emotional abuse uniquely predicted BPD feature severity ($\beta = .36$, $t\ (239) = 6.35$, $p < .001$). Neither childhood sexual abuse ($\beta = -.02$, $t\ (239) = -.35$, $p = .73$) nor childhood physical abuse ($\beta = -.09$, $t\ (239) = -1.25$, $p = .21$) significantly accounted for variance in BPD feature severity.

Relationship between childhood emotional abuse, difficulties with emotion regulation, and BPD feature severity

The hypothesized model included childhood sexual, physical, and emotional abuse as three exogenous variables. The model had one latent construct—difficulties with emotion regulation—which was composed of 6 observed indicators, one for each subscale of the DERS. Together these variables were hypothesized to be associated with severity of BPD features. The initial model had acceptable fit, $\chi^2\ (26) = 26.44$, $p = .44$, RMSEA = .008. However, inspection of the model indicated high correlation of residuals between: (1) difficulties engaging in goal-directed behaviors when distressed with limited access to emotion regulation strategies perceived as effective, (2) nonacceptance of negative emotional states with limited access to emotion regulation strategies perceived as effective, and (3) lack of emotional clarity with lack of emotional awareness. Additionally, the lack of emotional awareness, difficulties engaging in goal-directed behaviors when distressed, and lack of emotional clarity subscales did not load onto the latent variable (standardized $\beta = .18$, .62, and .57, respectively). Thus, a second model was constructed which controlled for the correlation of residuals for the observed indicators, and removed the lack of emotional awareness, difficulties engaging in goal-directed behaviors when distressed, and lack of emotional clarity subscales of the DERS. The resulting model had good fit, $\chi^2(12) = 11.90$, $p = .45$, RMSEA < .001. Results indicated no direct path from childhood sexual abuse (standardized $\beta = -.04$, $p = .38$), childhood physical abuse (standardized $\beta = -.09$, $p = .11$) or childhood emotional abuse (standardized $\beta = .08$, $p = .19$) to BPD feature severity (see Fig. 1). However, a significant indirect relationship was found between childhood emotional abuse and BPD feature severity through difficulties with emotion regulation (emotional abuse and difficulties with emotion regulation, standardized $\beta = .52$, $p < .001$; difficulties with emotion regulation and BPD feature severity, standardized $\beta = .78$, $p < .001$). No relationship was found between childhood sexual abuse (standardized $\beta = .06$, $p = .36$) or childhood physical abuse (standardized $\beta = -.07$, $p = .34$) and difficulties with emotion regulation.

Discussion

Consistent with our first hypothesis, our findings indicate that, when controlling for other types of childhood abuse, childhood emotional abuse is uniquely associated with BPD feature severity. Our findings are theoretically congruent with developmental models of BPD pathology (Hughes et al., 2012; Linehan, 1993) and consistent with recent investigations (Bierer et al., 2003; Bornovalova et al., 2006; Gratz, Tull, Baruch, Bornovalova, & Lejuez, 2008). Although different forms of childhood abuse likely capture the essence of the disrupted social environments specified across various developmental

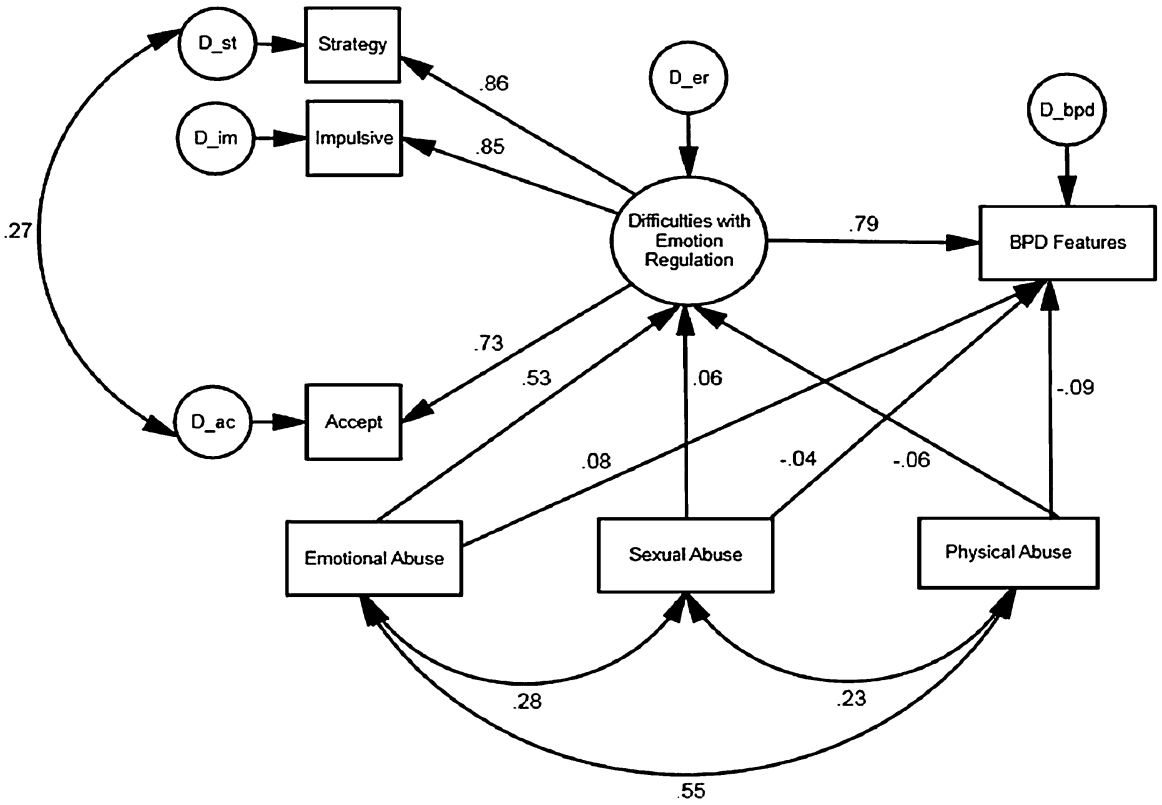

Fig. 1. Standardized regression weights for the relationship between childhood emotional, sexual, and physical abuse with severity of BPD features. The direct relation between emotional abuse and BPD features, sexual abuse and BPD features, and physical abuse and BPD features yields standardized coefficients of .08, −.04, and .09, respectively, indicating no direct path emotional abuse, sexual abuse, and physical abuse with BPD features. The relation between emotional abuse and difficulties with emotion regulation, and difficulties with emotion regulation and BPD severity yields significant standardized coefficients of .53 and .79, respectively, indicating an indirect path between emotional abuse and BPD features through difficulties with emotion regulation.

models (Hughes et al., 2012; Linehan, 1993; Zanarini & Frankenburg, 1997), emotional abuse might specifically function as the fundamental feature of this environment. Sexual and physical abuse may arguably be inherently emotionally abusive as well, but the opposite is not true (emotionally abuse is not necessarily physical nor sexual). Thus, while associations between childhood sexual, physical, and emotional abuse are commonly reported in the literature (and corroborated by the current study), our findings indicate that emotional abuse, specifically, is likely the critical "ingredient" that is responsible for BPD pathology. Of note, in our preliminary analyses where we examined the association between all variables included in the study, sexual abuse was not associated with BPD feature severity, a finding inconsistent with a majority of BPD research to date. Given that a non-clinical sample was used in the current investigation, this discordance may potentially reflect a conceptual distinction between individuals with BPD features versus those with BPD diagnoses. While investigation of BPD features has meaningful implications for both nonclinical and clinical groups, it is possible that there are core developmental distinctions between these two groups, one of which may include presence and/or severity of sexual abuse.

Second, our study is the first to indicate that the relationship between emotional abuse and BPD feature severity is explained through difficulties with emotion regulation. There were no significant direct paths from childhood emotional, sexual, or physical abuse to BPD feature severity; however there was a significant indirect path between emotional abuse and BPD, through the latent construct difficulties with emotion regulation. Our findings are consistent with recent reports by van Dijke and colleagues (2013) who found that underregulation of affect partially mediated the relationship between childhood trauma inflicted by a primary caregiver and BPD severity. However, our findings build upon this investigation by suggesting that difficulties with emotion regulation are likely specific to emotional, rather than other forms, of abuse.

Importantly, in our final model, only three subscales of the DERS (nonacceptance of negative emotions, difficulties controlling impulsive behaviors when experiencing negative emotions, and limited access to emotion regulation strategies perceived as effective) loaded significantly onto the difficulties with emotion regulation latent variable, suggesting that there may be specific difficulties with emotion regulation that are primarily responsible for the child abuse and BPD relationship. Interestingly, two of these three subscales (difficulties controlling impulsive behaviors and limited access to emotion regulation strategies) represent the "underregulation" of affect construct examined by van Dijke and colleagues (2013). Thus, our findings suggest that a composite of both underregulation and nonacceptance of negative emotions may largely explain the childhood emotional abuse and BPD relationship. It is logical that the emotionally abusive rearing environment confers

these specific difficulties with emotion regulation as healthy, predictable, or consistent emotional expressions are likely not modeled by caregivers. It is unsurprising, then, that individuals in this environment subsequently reject (or fail to accept) their own emotional responses and fail to accumulate the skills necessary to regulate affect.

Limitations, implications, and future directions

The current study is not without limitations. Most notably, we examined a non-clinical sample using a cross-sectional design. While BPD feature severity was our outcome of interest, it is unknown whether the relationships found in the current study would hold among individuals with a BPD diagnosis. Indeed, this study warrants replication in a clinical sample. Additionally, though the current study provides implications for the relationship between childhood abuse, emotion dysregulation, and BPD features, prospective longitudinal studies are required to more effectively establish the causal links between these variables. Moreover, given that different forms of childhood abuse are associated with several clinical populations (Kuo, Goldin, Werner, Gross, & Heimberg, 2011; Shapero et al., 2014; Simpson and Miller, 2002), future research should aim to delineate which facets of childhood abuse are unique to BPD pathology and which are shared factors across psychopathologies. This study also exclusively used self-report measures and thus, future research should utilize a greater variety of measurement tools (e.g., structured diagnostic interviews, behavioral measures) to capture these constructs of interest.

Despite these limitations, the current study provides some meaningful directions for treatment and prevention efforts. First, our findings suggest that individuals with histories of childhood emotional abuse might benefit from specific forms of emotion regulation training (e.g., strategies directed toward decreasing impulsive behaviors and accepting negative emotional experiences). In addition, given our findings that difficulties with emotion regulation serve as a critical link between childhood emotional abuse and BPD features, prevention studies should examine whether victims of childhood emotional abuse might benefit from training in different emotion regulation strategies.

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