Original Article

Emotion Dysregulation and Early Trauma in Borderline Personality Disorder: An Exploratory Study

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ABSTRACT

Background: Borderline personality disorder (BPD) research is in its nascent stage in India though studies have estimated its prevalence in psychiatric conditions. Trauma experiences and emotion regulation difficulties are well documented in BPD in the international literature. Thus, it is imperative to examine the role of trauma experiences and their relation to emotion dysregulation in BPD in the Indian context. **Materials and Methods:** This study used both self-report and semistructured interview data from 34 adults with BPD who presented for outpatient or inpatient psychiatric treatment and compared them with a gender-matched control group. The tools used were the International Personality Disorder Examination, Kessler-10, Early Trauma Inventory Self Report-Short Form, modified-Positive And Negative Affect Scale, Cognitive Emotion Regulation Questionnaire, and Difficulties in Emotion Regulation Scale (DERS). **Results:** The BPD group reported higher negative affect, increased use of maladaptive emotion regulation strategies and a deficit of adaptive strategies, after depression scores were controlled for. General abuse, physical punishment, and emotional abuse were significantly higher in the BPD group. The high occurrence of childhood emotional abuse and negative affect in BPD patients emerged as a major correlate accounting for 68.4% of the variance in DERS scores. **Conclusions:** Although we obtained results similar to the western literature on BPD pathology, sociocultural factors such as family and economic conditions, cultural differences in symptom expression of BPD, and treatment forms used in India warrant further research.

Key words: *Borderline personality, culture, early trauma, emotion dysregulation, emotional abuse*
Key messages: *1. Higher levels of childhood emotional abuse lead to severe emotion dysregulation. 2. BPD group experiences higher negative affect, use greater maladaptive strategies and report a deficit of adaptive strategies. 3. Socioeconomic factors, cultural differences in symptom expression and treatment of BPD in India warrant further research.*

Borderline personality disorder (BPD) is present in 1–3% of the general population. Clinically, it is the

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most commonly diagnosed personality disorder, present in 10% of patients in outpatient settings, 15–20% of patients in inpatient settings, and 30–60% of patients diagnosed with personality disorders (PDs).[1,2] In the Asian subcontinent, especially in India, there are few studies on the prevalence of BPD and they have methodological limitations. Thus, the prevalence is inconsistent and unclear (0.6–1% or even higher).[3,4]

The first clinical study in Asia on BPD was carried out in Japan (1993) and involved 85 female outpatients aged 18–30 years. The clinical picture was similar to the West, except for a low co-morbidity with substance use disorders, and stormy relationships with the family rather than the romantic partners.[5] This is relevant to the context in Asia, which has a collectivist culture and most individuals have deep ties with families and live with them during the early adulthood.

It can be said with some certainty that BPD is common in the Indian subcontinent,[3-5] with a high prevalence of psychiatric and personality comorbidity.[6,7] Studies have estimated high rates of BPD in Axis-1 conditions such as eating disorders,[8] deliberate self-harm,[9] attempting suicide,[10,11] internet addiction,[12] and substance use disorders.[13] Because most patients seek treatment for co-morbid Axis-1 issues, the distress stemming from BPD may not be addressed, thereby compromising the quality of care and a complete recovery from the clinical symptoms.

Traumatic separation from one or both parents, or loss of parental figures during childhood are etiologically relevant in almost 20–40% of individuals with BPD.[14] A high percentage of individuals with BPD report a history of neglect (92%), physical abuse (25%–73%), or sexual abuse (40%–76%) within the family context.[15] In a study conducted at Massachusetts, child sexual abuse was reported in more than 50% in those with BPD, and the severity of the abuse was significantly related to the BPD severity and psychosocial impairment.[16] Some studies report that, along with sexual abuse, emotional abuse and neglect are also associated with symptoms of BPD.[17,18] Other studies have found that emotional abuse is the only form of maltreatment that had an association with BPD above and beyond other forms of abuse and neglect.[19,20] In most studies, emotional and (or) sexual abuse are associated with the severity of BPD symptoms. These inconsistent findings could be due to the use of self-report questionnaires or an inclusion of all PDs. Thus, in the development of BPD, abuse is seen as a central etiological variable and a critical risk factor.[21]

In those with BPD, a symptom requiring immediate clinical attention, after self-harm, is emotion dysregulation.[22-24] These patients have difficulties in recognizing and labeling their own emotions and in employing emotion regulation strategies.[23,25] Negative affect and emotion dysregulation are highly correlated in BPD.[26] In order to reduce the negative affect, they may employ maladaptive cognitive strategies such as rumination[27,28] and thought suppression,[29] which often increase, rather than decrease, the negative affect. Individuals with BPD avoid potentially distressing situations[29-32] and have low distress tolerance,[21] which contributes further to emotion dysregulation.

The available literature compares individuals with BPD with diverse control groups (e.g., patients with depression or other personality disorders, or mixed samples of psychiatric patients).[33,34] One of the concerns in comparing such groups would be the difficulty in establishing the absence of emotion dysregulation in the comorbid Axis-I disorders such as depression and anxiety disorders.

Therefore, the overall objectives of this study were to explore the nature of early trauma experiences and its relation to emotion regulation in individuals with BPD and to examine the correlates of the severity of emotion dysregulation. This would help in understanding culturally relevant aspects of BPD pathology in India and provide future directions with respect to BPD research.

MATERIALS AND METHODS

Individuals with BPD presenting for outpatient or inpatient psychiatric care, to the Department of Psychiatry, National Institute of Mental Health And Neurosciences (NIMHANS), Bengaluru between August 2015 to February 2016 were recruited. The institute is the largest training center for mental health and neuroscience professionals in the country. It provides post-graduate training and imparts advanced technical knowledge to medical, para-medical, and nursing professionals.

G*Power software version 3.1.9.4 was used to estimate the sample size for cross-sectional exploratory study design, based on the data from a pilot phase ($n = 10$). The α level was set at 0.05, with a power of 0.95 and an effect size of 0.9. The sample size was estimated to be 34 in each group (study and control).

Participants were selected into the BPD group after establishing the diagnosis. Individuals with a diagnosis of BPD given by a psychiatrist after evaluation were included. In addition, international personality disorder examination (IPDE) was also done by the researcher to corroborate the diagnosis. The control

group was selected, using convenience sampling, from acquaintances residing around the hospital.

Participants in both the BPD and control groups were interviewed by the investigator AJ using IPDE[35] to establish a diagnosis of BPD. The inclusion criteria for both groups were age 18–35 years, educated up to Class X, and a working knowledge of English. Participants with a history of developmental disabilities or difficulty communicating in English were excluded. Participants in the control group were excluded if they met criteria for any PD on IPDE and/or scored above the cut-off (20 and above) either on the Kessler-10 (K-10, a 10 item screening questionnaire)[36] or above 13 on Beck's Depression Inventory-II (BDI-II), to ensure that they had no Axis-1 disorders.

Tools used
All the tools were administered in English. In both the groups, various dimensions of emotion dysregulation were assessed using self-report tools. These tools have been used primarily with psychiatric population and also used with normal populations.

Modified positive and negative affect schedule (m-PANAS)[37] assessed current levels of positive and negative affect by rating the degree to which they experienced a particular mood descriptor on a 5-point scale. Cronbach's alpha coefficients for the happiness, sadness, and anger subscales were .90, .80, and .74.

The difficulties in emotion regulation scale (DERS, a brief, 36-item, self-report questionnaire) assessed six aspects of emotion dysregulation (derived through factor analysis). As for the test-retest reliability, 194 subjects completed the test and 21 agreed to complete DERS between weeks 4 and 8. The correlation coefficient on total DERS was. 88 with an internal consistency of. 93 (DERS total). Only the overall score was taken for the analyses.

The cognitive emotion regulation questionnaire-short (CERQ), an 18-item multidimensional questionnaire, identified the cognitive emotion regulation strategies (or cognitive coping strategies) one uses after having experienced negative events. It has nine conceptual scales, grouped into maladaptive strategies (other-blame, rumination, catastrophizing, and self-blame; higher scores on this indicates greater use) and adaptive strategies (positive refocusing, planning, positive reappraisal, putting into perspective, and acceptance; lower score indicates lesser use). Reliability alpha coefficients for the subscales had ranged from. 67 to. 81.[38]

Early trauma inventory self report-short form (ETISR-SF),[39] a 27-item semistructured interview,

assessed the four domains of physical, emotional or sexual abuse, and general traumatic experience, and then, in an additional question, explored the most serious trauma before the age of 18 years. This was used as a predictor variable in the current study. All domains showed high internal consistency (Cronbach coefficient α >0.7).

Beck's depression inventory-II (BDI-II, a four-point rating scale) looked at the current level of depression, and the scores were controlled for in the regression analyses. Reliability coefficients range from. 90 to. 95.[40]

The study protocol was reviewed and approved by the Institute Ethics Review Board. Both the groups provided informed, written consent to participate.

For the study group, 50 participants with a case file diagnosis of BPD and seeking treatment at the inpatient or outpatient departments were approached for the study. Out of the 50, 4 did not meet the IPDE criteria for BPD, 13 did not consent to participate in the study, and finally, 33 participants were recruited for the study. One participant from the control group met criteria for BPD and was included, to reach a final number of 34.

For the control group, 43 participants matched by gender were approached. Following a debriefing session, one participant refused consent. One participant reported obsessive compulsive symptoms that were diagnosable after a semistructured interview; four participants had high scores (>20) on K-10, and two participants had moderate depression (BDI-II score >25). Only when psychological distress or depression was not detected on these tools, they were given further assessments, i.e. m-PANAS, CERQ, ETISR-SF, and DERS.

All analyses were carried out using IBM Statistical Package for Social Sciences for Windows, Version 20.0. Shapiro Wilk's test was used to check for normality of data. Most of the data did not follow a normal distribution. Therefore, nonparametric analyses were carried out. Fisher's exact test (for categorical data) and Mann–Whitney's U test (for continuous data) were used to compare between-group (i.e., BPD and control group) differences in sociodemographic data, early trauma experiences, and emotion regulation. Binary logistic regression was carried out to look for variables predictive of emotion regulation.

RESULTS

Demographic characteristics of BPD and control groups can be found in Table 1.

Table 1: Comparison of sociodemographic data between BPD and control groups using Fisher's exact test

Sample characteristics	BPD Median=23.50 (IQR=7)		Control group Median=26.00 (IQR=6)		Fisher's exact, *P*
	n	*%*	*n*	*%*	
Age					
Education					
High school	10	29.4	2	5.9	P=0.597†
Graduate	17	50.0	10	29.4	
Postgraduate/above	7	20.6	22	64.7	
Socioeconomic Status					
Low	3	8.8	1	2.9	P=1.00†
Middle	30	88.2	32	94.1	
High	1	2.9	1	2.9	
Marital Status					
Single	21	61.8	18	52.9	P=0.038**
Married	9	26.5	15	44.1	
Separated/Divorced	4	11.8	1	2.9	
Family history of psychiatric illness					
Present	24	70.6	9	26.5	P=0.395†
Absent	10	29.4	25	73.5	

*Significant at 0.01 level, **significant at 0.05 level, †not significant, IQR – interquartile range, BPD – Borderline Personality Disorder, *n* – Total number of cases, % – Percentage of cases

The study group was predominantly in the age group of 18–23 years (50%). The overall representation of gender was 24 females and ten males in each of the groups. The minimum age was 18 years, and the maximum was 31 years. The mean duration of illness (±SD) was 4.82 (±2.44) years, with minimum and maximum duration ranging from 1 to 10 years for both BPD and the related co-morbid conditions. The control group had a higher proportion of postgraduates in comparison to the BPD group, which had more graduates. Participants from both the groups belonged mostly to the middle socioeconomic status. Majority in the BPD group were single. The BPD group had a higher proportion of family history of psychiatric illness as compared to the control group.

More than two-thirds of them in the BPD group were on medication and had a comorbid psychiatric diagnosis, and about one-third of them had an independent diagnosis of BPD (26.5%). The diagnosis was arrived at after a detailed workup by trainees and supervised by a senior resident/junior consultant. The final diagnosis was arrived at after consultation with a psychiatrist. The Axis-1 diagnoses were documented from the case files, and depression was found to be the most frequent co-morbidity (23.5%) followed by OCD, other personality disorders, ADHD, and adjustment disorder.

BPD group had significantly higher levels of negative affect, lower levels of positive affect, severe emotion dysregulation, and excessive use of maladaptive emotion regulation strategies such as rumination, catastrophization, and other-blame along with poor use of adaptive strategies for emotion regulation [Table 2].

Except for the sexual abuse subscale, both the groups differed significantly on general abuse, emotional abuse, physical punishment, and global subscales of ETISR-SF. The BPD group had higher median scores [Table 3].

Difficulties in emotion regulation and negative affect are positively correlated with general trauma, physical abuse, and emotional abuse. Difficulties in emotion regulation have a strong positive correlation with emotional abuse, whereas the rest of the variables have a moderate correlation among each other. This implies that when the emotional, physical, or general abuse increases, there would be a corresponding increase in the difficulties in emotion regulation.

To test for multicollinearity, intercorrelations between the predictor variables were examined. None of the predictor variables had a variance inflation factor greater than 0.65, indicating no serious multicollinearity among the variables. Significant positive correlations with DERS were found on subscales of ETISR-SF—general trauma, emotional abuse, and physical punishment along with negative affect subscale of m-PANAS [Table 4].

Binary logistic regression was applied [Table 5]. The outcome variable, DERS scores, was coded as individuals having either low or high emotion dysregulation (1 = high, 0 = low) on the basis of the median of the entire sample. The DERS scores for the combined group ranged from 40 to 164, with a median of 94 and IQR of 57. A five-predictor logistic model (negative affect, general trauma, physical punishment, emotional abuse, and sexual abuse) was fitted to the data to test the research hypothesis "the likelihood that an individual develops emotion dysregulation is related to his/her scores on negative affect, general trauma, physical punishment, emotional abuse, and sexual abuse". General trauma, physical punishment, and sexual abuse subscales scores of ETISR-SF got excluded, and the remaining two variables produced Nagelkerke R^2 = 0.684 and accounted for 68.4% of the variance in DERS scores [Table 6].

A highly significant overall effect was found on the mPANAS negative affect scale (Wald = 10.334, df = 1, *P* =0.001) and the Emotional Abuse subscale of ETISR-SF (Wald = 8.57, df = 1, *P* = 0.003). The β coefficient was significant and positive for

Table 2: Emotion dysregulation scores in BPD and control groups

Emotion dysregulation	BPD (*n*=34)		Control group (*n*=34)		Mann-Whitney U test
	Mdn	**IQR**	**Mdn**	**IQR**	**Sig. level (2-tailed)**
Difficulties in Emotion Regulation Scale (DERS)	128.50	30.00	73	24	*U*=28.00, *P*=0.001*
Subscales of Cognitive Emotion Regulation Questionnaire (CERQ)					
Rumination	7.00	4.00	5.00	2.00	*U*=318.00, *P*=0.001*
Self-Blame	5.00	5.00	4.00	2.00	*U*=521.50, *P*=0.487†
Catastrophization	8.00	4.00	4.00	2.00	*U*=150.00, *P*=0.001*
Other-Blame	6.00	5.00	4.00	2.00	*U*=339.00, *P*=0.002*
Maladaptive Strategies Total	26.50	10.00	16.50	7.00	*U*=174.50, *P*<0.001*
Adaptive Strategies Total	27.00	10.00	30.00	13.00	*U*=402.50, *P*=0.031**
m-PANAS-positive affect scale	24.00	14.00	39.00	8.00	*U*=155.00, *P*<0.001*
m-PANAS- negative affect scale	34.00	15.00	16.00	10.00	*U*=142.50, *P*<0.001*

*Significant at 0.01 level, **significant at 0.05 level, †not significant, BPD – Borderline personality disorder (study group), Mdn – Median, IQR – Interquartile range, m-PANAS – Modified positive and negative affect schedule

Table 3: Early trauma experiences in BPD and control groups

Early traumatic experiences	BPD (*n*=34)		Control Group (*n*=34)		Mann-Whitney U test
	Mdn	**IQR**	**Mdn**	**IQR**	**u/sig. (2-tailed)**
ETISR-SF					
General Trauma	3.00	3.00	1.00	2.00	*U*=254.50, *P*<0.001*
Physical Punishment	3.00	2.00	0.00	1.00	*U*=138.00, *P*<0.001*
Emotional Abuse	4.00	2.00	0.00	2.00	*U*=100.50, *P*<0.001*
Sexual Abuse	0.00	2.00	0.00	0.00	*U*=453.00, *P*=0.062†
Total	11.00	6.00	3.00	4.00	*U*=86.50, *P*<0.001*

*Significant at 0.01 level, **significant at 0.05 level, †not significant, BPD – Borderline Personality Disorder (study group), Mdn – Median, IQR – Interquartile range, U – Mann-Whitney's U test value, ETISR-SF – Early trauma inventory self report-short form

Table 4: Spearman's rank correlation coefficient (Rho) between subscales of ETISR-SF, m-PANAS, and DERS

	DERS	PANASn	ETISRGT	ETISRPP	ETISREA	ETISRSE
DERS	1	0.68**	0.42**	0.59**	0.69**	0.18
PANAS negative affect scale		1	0.33**	0.41**	0.44**	0.15
ETISR-GT			1	0.47**	0.49**	0.24*
ETISR-PP				1	0.64**	0.33
ETISR-EA					1	0.36*
ETISR-SE						1

DERS – Difficulties in emotion regulation, PANASn – Negative affect, ETISR-GT – General trauma, ETISR-PP – Physical abuse, ETISR-EA – Emotional abuse, ETISR-SE – Sexual abuse, ETISR-SF – Early trauma inventory self report-short form. **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed)

both, indicating that an increase in negative affect (OR = 1.161, *P* = 0.001, 95% CI 1.06, 1.271) and emotional abuse (OR = 2.339, *P* = .003, 95% CI 1.324, 4.132) is associated with increased odds of emotion dysregulation. There was no significant overall effect on general trauma (Wald = 0.023, df = 1, *P* = 0.880), physical punishment (Wald = 0.004, df = 1, *P* = 0.952), or sexual subscales of ETISR-SF (Wald = 0.041, df = 1, *P* = 0.840).

The model with the variables correctly classifies the outcome for 83.8% of the cases, compared to 51.5% in the null model. The model summary shows the -2LL (45.258), which is compared to the -2LL for the null model in the omnibus test of model coefficients and is highly significant (χ^2 = 48.951, df = 5, *P* < 0.001); therefore, our new model is significantly better. The Nagelkerke's R^2 suggests that the model explains roughly 68.4% of the variance in DERS scores. Hosmer and Lemeshow test of the goodness of fit suggests the model is a good fit to the data as *P* = 0.753 (>0.05).

DISCUSSION

More than two-thirds of the BPD patients had a family history of psychiatric illness, whereas only a small number of the control group had such history. Prevalence of psychiatric illness in the family is almost double the numbers as found in the Western literature.[41] The findings throw light on the fact that there is a high prevalence of psychiatric illness in the families of individuals with BPD. Some Asian studies[3,42] have reported the negative impact of family psychopathology on BPD.

More than two-thirds of the BPD group was on medication for co-morbid conditions. Majority of the participants had an independent diagnosis of BPD with no co-morbidity. The highest co-morbidity was depression, followed by OCD, other personality disorders, and other disorders. The average duration of illness reported by the BPD group was about 4 years, and seeking treatment for PDs is generally delayed as most seek treatment when Axis-I symptoms manifest. According to the National Collaborating Center for Mental Health,[43] the exacerbation of BPD symptoms overlaps with co-morbid conditions and its course fluctuates with depressive, schizophrenic, impulsive, dissociative, and identity disorders. Hence, a related co-morbid condition makes it difficult to determine

Table 5: Binary logistic regression analysis using DERS as outcome variable

Predictor	β	SE β	Wald's χ^2	df	*P*	Odds ratio (OR)	95% C.I. for OR	
							Lower	Upper
Constant	−5.267	1.334	15.594	1	0.001	NA	NA	NA
Negative affect	0.149	0.046	10.334	1	0.001**	1.161	1.060	1.271
General trauma	0.045	0.295	0.023	1	0.880	1.046	0.587	1.862
Physical Punishment	0.019	0.308	0.004	1	0.952	1.019	0.557	1.864
Emotional Abuse	0.850	0.290	8.572	1	0.003**	2.339	1.324	4.132
Sexual Abuse	0.073	0.360	0.041	1	0.840	1.075	0.531	2.177

DERS – Difficulties in emotion regulation, df – Degrees of freedom, OR – Odds Ratio, C.I. – Confidence Interval. ** Correlation is significant at the 0.01 level (2-tailed)

Table 6: Classification table of the null model and model along with variables

	Null model				Model with variables			
Emotion Dysregulation	Observed	Predicted DERS		Percentage correct	Observed	Predicted DERS		Percentage correct
		Low	High			Low	High	
	Low (0)	0	33	0.0	Low (0)	28	5	84.8
	High (1)	0	35	100.0	High (1)	6	29	82.9
Overall Percentage				51.5	Overall Percentage			83.8

Model summary		Goodness-of-fit test	χ^2	df	*P*
-2 Log likelihood	45.258[a]		5.046	8	0.753
Cox & Snell R^2	0.513	Omnibus test of coefficients	48.951	5	<0.001**
Nagelkerke R^2	0.684**				

DERS – Difficulties in emotion regulation, df – Degrees of freedom. **Correlation is significant at the 0.01 level (2-tailed)

if the presenting symptoms are those of BPD. Nath *et al.*[9] similarly found that only 5% of the young adults presenting with deliberate self-harm had more than one personality disorder diagnosis, in light of the high prevalence of personality disorders in a part of the Asian subcontinent. However, comorbidity of PTSD in the current sample was not as common as reported in the western literature.[44] This could be because there might have been traumatic events where treatment was not sought; however, this needs further exploration. Research has also found that PTSD does not cease to be diagnosed and is frequently associated with higher levels of sexual abuse,[45] which is not statistically significant in the current sample.

Emotion dysregulation was found to distinguish those with BPD from the control group. Scores on DERS were almost double of that found in the control group. As hypothesized in several models of BPD, support for the findings come from BPD[46] and depressive psychopathology,[47] where both BPD patients and major depressive disorder patients reported clinically relevant difficulties in emotion regulation. The literature suggests that those who have BPD have intense negative responses to everyday life events have trait-negative affect[48] and experience more negative affect.[49,50] Some individuals employ cognitive strategies to overcome the negative affect, thereby regulating their emotions cognitively. These strategies could be both adaptive and maladaptive. Specifically, the current sample used rumination, catastrophization, other-blame, and self-blame as strategies to overcome distress. Rumination and thought suppression have been found to be used more frequently by other BPD samples as well. These findings throw light on the specific strategies that maintain and exacerbate emotion dysregulation.[51,52]

The high occurrence of childhood emotional abuse in BPD patients is consistent with prior results.[17,53] Similar results have been found in Asian studies with a nonclinical sample[54] and high-risk populations.[55] It can be speculated that emotional abuse and neglect may affect core processes of emotion regulation development and, therefore, have detrimental effects on emotion regulation over and above other forms of childhood adversities. The current study has found similar results regarding the difference between the BPD group and the control group, with the emotional abuse, physical abuse, and general trauma subscale of ETISR-SF being statistically significant [Table 3].

However, the difference between the BPD group and control group on the sexual events subscale of ETISR-SF was not significant unlike other studies.[16,24] Emotional abuse has emerged as a major predictor of emotion dysregulation in this sample. This finding is supported by previous studies. However, in this sample, sexual abuse experiences do not significantly differ from the control group, unlike the findings from the West[16] or

East[56] where emotion dysregulation has been explained by the negative effects of child sexual abuse.[57] This could be due to our use of a tool that addresses different kinds of abuse and difficulty in revealing a history of sexual abuse without adequate rapport and trust in the researcher. Nevertheless, many studies have underscored the fact that any form of abuse, especially sexual and emotional abuse overall, are found in those who have BPD, along with the fact that abuse and neglect are predictors of severity of BPD symptoms.[16,58]

Correlation and regression analyses [Tables 4-6] showed that DERS scores had a strong positive correlation with emotional abuse subscale of ETISR-SF, whereas the rest of the variables had a moderate correlation among each other [Table 5]. Studies examining the associations between various forms of maltreatment and BPD in adults have found that emotional abuse is the only form of maltreatment that has an association with BPD above and beyond other forms of abuse and neglect.[59] Sexual abuse was not significantly correlated with DERS in the current sample, unlike in literature where sexual abuse is one of the predictors for BPD.[17,58]

In the binary logistic regression analysis, negative affect and emotional abuse had significant positive regression weights, indicating that participants with higher scores on these are expected to have greater difficulties in emotion regulation. Some investigators[16] have presented good evidence that a high percentage of individuals with BPD report a history of neglect, physical abuse, and sexual abuse. Sexual abuse is often underreported in BPD, and especially in the Indian context, talking about sex or sexual abuse is a taboo. This could be one reason why there is underrepresentation of sexual abuse.[60]

According to the model, the log of the odds of an individual having emotion dysregulation was significantly and positively related to negative affect and emotional abuse. In other words, the higher the negative affect and emotional abuse, the more likely it is that an individual develops risk for emotion dysregulation. Those who have higher levels of negative affect were 1.16 times more likely than those who have lower levels of negative affect to emotionally dysregulate. For every one-unit increase in negative affect, the risk of emotion dysregulation increases by 16%. Those who have higher levels of emotional abuse were 2.33 times more likely than those who have lower levels of emotional abuse to emotionally dysregulate. For every one-unit increase in emotional abuse, the risk of emotion dysregulation increases by 133%. Compared to the null model, the model with variables explained more of the variance in the outcome and was highly significant. The model explains roughly 68.4% of the variance in DERS scores. Hosmer and Lemeshow test of the goodness of fit suggests that the model is a good fit to the data [Table 6].

This study highlights the necessity of treatment strategies for long-term maladaptation related to childhood trauma. It also elucidates the precise emotion regulation deficits that are central to BPD and would help sharpen the focus in therapy. It also indicates the risk of developing emotion dysregulation when one has a high negative affect or is exposed to emotional abuse.

This study has a few limitations; hence, our results need to be regarded as preliminary. First, we cannot rule out the possibility of response bias and the limits of self-reporting emotion regulation. Second, the cross-sectional design did not permit to test causal effects. Third, the use of convenience sampling may have led to selection bias, limiting the generalizability of this study. Finally, logistic regression models, which use categorical data, can appear to have more predictive power than they actually have, as a result of sampling bias. Hence, a larger sample and use of linear models with continuous data would predict results more accurately.

Future research should assess early/adult trauma experiences more comprehensively, including thorough clinical interviews, to examine additional trauma characteristics, such as the onset of childhood maltreatment, that might have a particular impact on emotion regulation. Further research on developing appropriate assessment instruments, understanding etiological variables, and examining potential cultural differences in symptom expression of BPD are desirable.[61]

Conflicts of interest
There are no conflicts of interest.

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