

Borderline Personality Features in Students: The Predicting Role of Traumatic Experiences and Aggressive Traits

Seyedeh Fatemeh Sajjadi,^{1,*} Habibe Riyahi,² and Sanaz Behbuei³

¹Department of Psychology, University of Otago, Dunedin, New Zealand

²Department of Psychology, Shahid Chamran University of Ahvaz, Ahvaz, IR Iran

³Tabriz University, Tabriz, IR Iran

*Corresponding author: Seyedeh Fatemeh Sajjadi, Department of Psychology, University of Otago, Dunedin, New Zealand. Tel: +98-9173046244, Fax: +98-7136301969, E-mail: Fatemeh.sajjadi@postgrad.otago.ac.nz

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Abstract

Background: Borderline personality (BP) is a serious mental condition in clinical practice which is marked by aggression and is shown to be affected by traumatic life events.

Objectives: This study aimed to determine the relationship between early trauma and aggressive traits as predictive factors of borderline personality features (BPF) in high school students.

Methods: Three hundred and eleven students with mean age of 16.66 were recruited via multi stage random sampling. All the participants were asked to complete borderline personality features scale for children, early trauma inventory, and buss-perry aggression questionnaire. Analyzing data was done using canonical correlation.

Results: The results indicated that BPF is predicted by early trauma and aggression traits.

Conclusions: In general, the findings showed that early trauma, physical aggression, verbal aggression, anger, and hostility can predict BPF and explain a considerable variance of survival index.

Keywords: Borderline Personality Disorder, Trauma, Aggression, Students

1. Background

Borderline personality disorder (BPD) is a severe mental condition that causes substantial problems for afflicted individuals and their families (1). BPD is mainly described by instability in identity and affect, non-suicidal self-harm behaviors, impulsivity, severe irritability, hostility, and aggressiveness (2). BPD symptoms tend to become apparent in adolescence (3). In spite of adolescents manifesting BPF, most health professionals hesitate to diagnose BPD in adolescence (4), but the growing body of research suggests that BPD diagnosis is reliable in this age group although BPD treatment usually begins in early adulthood (5).

One of the core features of BPD is impulsive aggression that fundamentally associates with the mortality and morbidity of BPD (6). BPD aggression can be measured as subscales of attitudinal and behavioral violence (7), described as tendency to engage in physical and verbal aggression, and the propensity to anger and keeping hostile beliefs about others across the situations (8). In comparison with healthy control groups, individuals with BPD report more anger and aggressiveness (9). Indeed, impulsivity, uncontrollable aggression, and self-aggression represent three of the nine criteria of BPD. Impulsive behavior and aggressiveness are also correlated with biological defects including serotonergic dysregulation and malfunction

tion of frontal-limbic circuits that are also exist in BPD (10). Aggressiveness in BPD can appear in different kinds of behaviors, such as property demolition, domestic violence, offensive behaviors, self-harm, suicidal behavior, substance abuse (6), high risk sexual behavior, and angry outburst (8).

Environmental factors and stressors are accounted for 55% of variance in BPD including social rearing environment, attachment-related disturbances, child maltreatments, and early traumatic experiences ranging from early permanent parental separation to emotional and sexual abuse or neglect (11). A developmental model proposed by Hughes et al. (12) draw attention to the importance of child's lack of social proximity to or responsiveness from caregivers in the development of BPD with subsequent individuals disability to regulate their emotions effectively. In this vein, Zanarini et al. (13) asserted that up to 91% of BPD patients report experiencing some sorts of childhood abuse, including sexual, emotional, and physical abuse. Of note, various sorts of abuse rarely happen in isolation; for instance, sexual abuse is unlikely to happen in the absence of emotional abuse, while emotional abuse often occurs independently (14).

On basis of the above mentioned research, the main objective of this study was to determine the predictive role of

early trauma and aggressive traits in developing BPD features in adolescents. It was hypothesized that experiencing childhood trauma and the presence of aggressive traits like physical aggression, verbal aggression, anger, and hostility in adolescents can effectively cause developing BPD features.

2. Methods

This is a correlational-descriptive study investigating the relationship of early traumatic experiences and aggression with BPF in high school students in Shiraz. The data were analyzed with canonical correlation analysis using SPSS20.

2.1. Participants

Students studying in 2nd to 4th grades of high schools in Shiraz city in educational year 2015 - 2016 were selected to participate in the questionnaire surveys. The sample included 311 students (54.7% female, 45.3% male) recruited via multistage random sampling. 35.4% of the subjects were in 2nd grade, 44.7% in 3rd grade, and 19.9% in 4th grade of high school.

2.2. Instruments

Borderline personality features scale for children (BPFS-C: Crick, Murray-Close, and Woods, 2005): this is a 24-item self-report questionnaire that assesses BPF among children and adolescents aged 9 - 17 (15). BPFS_C is scored on a 5-point Likert scale with responses ranging from 1 "not at all true" to 5 "always true" to evaluate affective instability, identity problems, negative relationships, and self-harm (16). The BPFS-C has shown good internal consistency across a 12-month study by Crick et al. (15) on a sample of 400 students aged 10 - 12 ($\alpha > 0.76$) as well as criterion validity (17) and construct validity (15). Previous research in Iran employing the 22-item instruments with a large sample ($n = 400$) of boys and girls in high schools showed high consistency ($\alpha > 0.83$) (18). In the current study, Cronbach's α was 0.84.

Buss-Perry aggression questionnaire (AQ; Buss & Perry, 1992): this is a 29-item self-rating scale that is gold-standard for the measurement of aggression by means of 4 factors: physical aggression, verbal aggression, anger, and hostility. The answers are scored on a 5-point Likert scale ranged from 1 to 5 (19). Regarding internal consistency, adequate indices were obtained for full scale and the subscales; Cronbach's α coefficients of 0.89 for whole scale, 0.85 for physical aggression, 0.72 for verbal aggression, 0.83 for anger, and 0.77 for hostility have been obtained. With respect to scale reliability, test-retest reliability for the subscales and

total score ranged from $\alpha = 0.72$ to $\alpha = 0.80$ (20). Cronbach's α in Iranian population was calculated to be 0.78 (21). In the current study, Cronbach's α of the total scale was obtained as 0.75.

Early trauma inventory (ETI; Mehrabizade et al. 2011): ETI has 23 items investigating traumas before age of 18. Participants are asked to answer each item with Yes/No, scoring 1 for Yes and 0 for No. The total score varies from 0 to 23. Adequate psychometric properties have been demonstrated for the scale in large samples; Ahmadi et al. (22) reported Cronbach's α of < 0.89 ($n = 120$) and Cronbach's α of 0.91 to 0.93 ($n = 180$). In the current study, the reliability coefficient using Cronbach's α was 0.78.

3. Results

Descriptive statistics, including mean, SD, and minimum/maximum scores on all the measures are reported for both full sample and female/male participants separately in Table 1.

As can be seen in Table 1 the mean (SD) scores obtained by the sample ($n = 311$) were 55.64 (11.94) on BPF, 73.36 (14.74) on aggressive traits, and 4.41 (3.77) on early trauma. Moreover, student t-test statistic was calculated to examine the difference between both sexes in terms of study variables. The results showed no significant differences between male and female students in all research variables except hostility ($P = 0.002$) and CGPA ($P = 0.006$).

To determine the relationship among BPF (affective instability, negative relationships, identity problems, and self-harm), early traumatic experiences, and aggressive traits (physical aggression, verbal aggression, anger, and hostility), a matrix for Pearson correlation coefficient was calculated (Table 2). Most of the variables in the study showed a positive correlation with each other by giving significant alpha coefficients ranging from 0.1 to 0.52, meaning that all the correlations were significant at $P < 0.01$.

Considering the main study variables, as seen in Table 2, significant positive relationships were found between affective instability and physical aggression ($r = 0.36$), verbal aggression ($r = 0.36$), anger ($r = 0.32$), hostility ($r = 0.44$); between negative relationships and physical aggression ($r = 0.31$), verbal aggression ($r = 0.20$), anger ($r = 0.36$), hostility ($r = 0.24$); between identity problems and physical aggression ($r = 0.35$), verbal aggression ($r = 0.18$), anger ($r = 0.34$), hostility ($r = 0.31$); between self-harm and physical aggression ($r = 0.39$), verbal aggression ($r = 0.32$), anger ($r = 0.40$), hostility ($r = 0.27$). The result also shows a negative significant relationship between trauma and affective instability ($r = -0.39$), negative relationships ($r = -0.3$), identity problems ($r = -0.27$), and self-harm ($r = -0.23$).

Table 1. Mean, Standard Deviation, and Ranges for Main Study Variables

Variable	Range	Full Sample (n = 311)	Female (n = 170)	Male (n = 141)	P Value
Age, y	15 -18	16.66 ± 0.809	16.75 ± 0.78	16.56 ± 0.83	0.13
CGPA	11 -18	15.41 ± 2.53	16.01 ± 2.33	14.70 ± 2.58	0.006
Borderline personality features	27 -92	55.64 ± 11.94	55.40 ± 12.99	56.02 ± 13.14	0.65
Affective instability	6 -25	14.64 ± 3.49	13.97 ± 3.77	15.51 ± 3.70	0.24
Negative relationships	6 -27	13.50 ± 4.11	13.75 ± 4.41	13.21 ± 4.59	0.86
Identity problems	5 -25	13.53 ± 3.84	13.91 ± 4.37	13.08 ± 3.95	0.10
Self-harm	6 -27	13.95 ± 4.17	13.75 ± 4.76	14.21 ± 4.32	0.50
Early trauma	6 -23	18.58 ± 3.55	18.27 ± 3.25	18.84 ± 3.78	0.51
Aggressive traits	41 -122	73.36 ± 14.74	71.82 ± 15.92	75.38 ± 16.16	0.17
Physical aggression	12 -37	23.54 ± 4.53	23.32 ± 5.19	23.82 ± 4.63	0.34
Verbal aggression	5 -24	12.00 ± 4.03	12.94 ± 4.15	11.21 ± 3.76	0.81
Anger	7 -27	15.22 ± 3.93	15.55 ± 3.34	14.83 ± 4.23	0.90
Hostility	8 -37	21.80 ± 5.73	22.96 ± 6.38	20.81 ± 4.94	0.002

Abbreviations: CGPA, cumulative grade point average; y, years.

Table 2. Correlation Matrix for Research Variables (n = 311)^a

Variables	1	2	3	4	5	6	7	8	9
1	-	0.42 ^b	0.46 ^b	0.52 ^b	0.36 ^b	0.36 ^b	0.32 ^b	0.44 ^b	-0.39 ^b
2		-	0.41 ^b	0.45 ^b	0.31 ^b	0.20 ^b	0.36 ^b	0.24 ^b	-0.23 ^b
3			-	0.39 ^b	0.35 ^b	0.18 ^b	0.34 ^b	0.31 ^b	-0.27 ^b
4				-	0.39 ^b	0.32 ^b	0.40 ^b	0.27 ^b	-0.23 ^b
5					-	0.38 ^b	0.33 ^b	0.48 ^b	-0.32 ^b
6						-	0.37 ^b	0.46 ^b	-0.20 ^b
7							-	0.37 ^b	-0.05
8								-	-0.26 ^b
9									-

^a1, Affective instability; 2, negative relationships; 3, identity problems; 4, self-harm; 5, physical aggression; 6, verbal aggression; 7, anger; 8, hostility; 9, early trauma.

^bP < 0.001

Before performing canonical analysis, we plotted the aggression box plot to find outlier data (Figure 1) and then, we performed canonical analysis after removing outlier data.

In this study, early traumatic experiences and aggressive traits are considered as predictors of BPF to investigate the joint multivariate relationship between these two variables. The results of multivariate test of significance for canonical correlation full model demonstrate that Wilks lambda ($P < 0.001$) is statistically significant, explaining a relationship between early traumatic experiences, aggressive traits, and BPF. λ is a sign of unexplained variance, consequently $1 - \lambda$ is the full model effect size in r^2 matrix. In this vein, the effect size of four canonical correlation functions equals $1 - 0.51 = 0.49$. The effect size is the joint variance between 2 classes of variables that the full model can ex-

plain; thus, the obtained model in this study explains 49% of variance between early traumatic experiences, aggressive traits, and BPF.

To determine the test significance level of functions, we should consider the amount of variance that explains each function. Canonical correlation squared ($R^2 C$) of the study functions is 0.423, 0.083, 0.022, and 0.004, respectively. Sherry and Henson (23) pointed out that functions explaining more than 10% of variance will be interpreted; therefore, only one of the functions explaining 42% of joint variance is accepted and the other functions are not interpreted.

The results indicated that there is a significant relationship between 2 classes of variables and the two first functions explain a significant variance. To understand the role of each variable in functions, standard and structural coef-

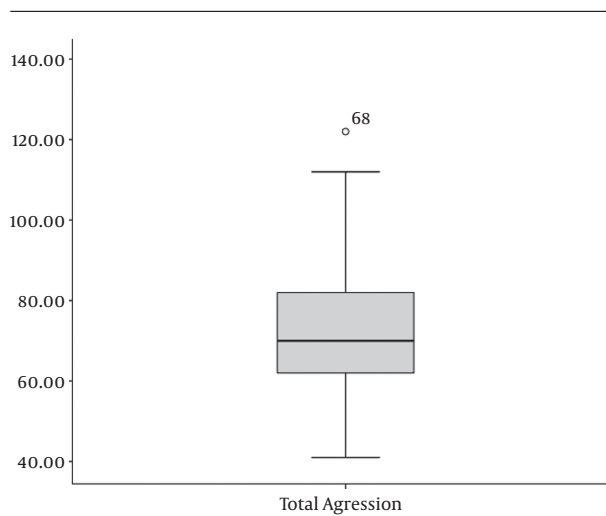


Figure 1. Box Plot for Aggression Variable

ficients of variables are considered (Table 3).

Table 3. Standard, Structural, and Squared Structural Coefficients of Research Variables

Variables	Standard Coefficient	Structural Coefficient	Squared Structural Coefficient
Affective instability	0.455	0.856	0.501
Negative relationships	0.222	0.728	0.529
Identity problems	0.307	0.680	0.462
Self-harm	0.305	0.768	0.589
R ² C		0.42	
Early trauma	0.435	0.611	0.373
Physical aggression	0.261	0.706	0.498
Verbal aggression	0.107	0.577	0.332
Anger	0.485	0.712	0.506
hostility	0.210	0.671	0.450

Alpert and Peterson (1972) assert that only variables with minimum structural coefficient of 0.3 are interpreted. Among independent variables, anger (structural coefficient (SC) = 0.71), physical aggression (SC = 0.70), hostility (SC = 0.67), early trauma (SC = 0.61), and verbal aggression (SC = 0.57) had more important roles, in sequence, in linear structure of predictor variables. Regarding dependent variables, affective instability (SC = 0.85), self-harm (SC = 0.76), negative relationships (SC = 0.72), and iden-

tity problems (SC = 0.68), in sequence, played a more effective role in linear structure of dependent variables. More broadly, BPF is predicted by early trauma and aggression traits. Also, canonical R squared coefficient (R² C) was 42% that determines the amount of joint variance between the two canonical classes of independent and dependent variables (Figure 2).

4. Discussion

Our study is the first to investigate the role of early trauma and aggressive traits in predicting BPF in a sample of high school students. Our nuanced findings support the possibility of such prediction. Consistent with the findings of Douglas and Dutton (24) and McCloskey et al. (10), our findings indicate that aggressive traits are associated with BPF. This finding is compatible with observations of McCloskey et al. (10) since they found that individuals with BPD, in comparison with healthy controls, showed more affective aggression. Aggressiveness is a trait disposition rather than an identical construct (25). McCloskey et al. (10) assert that individuals with BPD mostly engage in physical aggression, verbal aggression, anger, and hostility as aggression dimensions that were tested in our canonical function and the obtained results proved their predictive role in developing BPD. It has been well established that aggression is secondary to affective instability and emotion dysregulation (10); both of which are the core features of BPD (26). Furthermore, aggression is a reaction to dysregulated anger and the engagement of BPD patients into aggressive behaviors is correlated with emotional distress (3). Thus, aggressive behaviors occur when individuals with BPD are experiencing significant negative affect, emotion dysregulation, and interpersonal oversensitivity (e.g., feeling of ignorance and abandonment).

Our findings regarding the formative role of early traumatic events in developing BPF are also theoretically congruent with the results of recent investigations (27). The results obtained by Herman (28) demonstrate that while abuse experiences were reported by individuals with related disorders, these experiences were less frequent and less severe; but high trauma scores and the history of multiple childhood abuse were reported almost exclusively among patients with BP. The robust association between these two components suggest that trauma is one of the major factors but not the only sufficient component to account for BP psychopathology. What is meanwhile important is that trauma is the most pathogenic factor for those with vulnerable temperament or for children with unprotected caregiver. The point of interest is that the memories of childhood maltreatment and abuse had become integrated into the personality structure and ego syntonic. Yet,

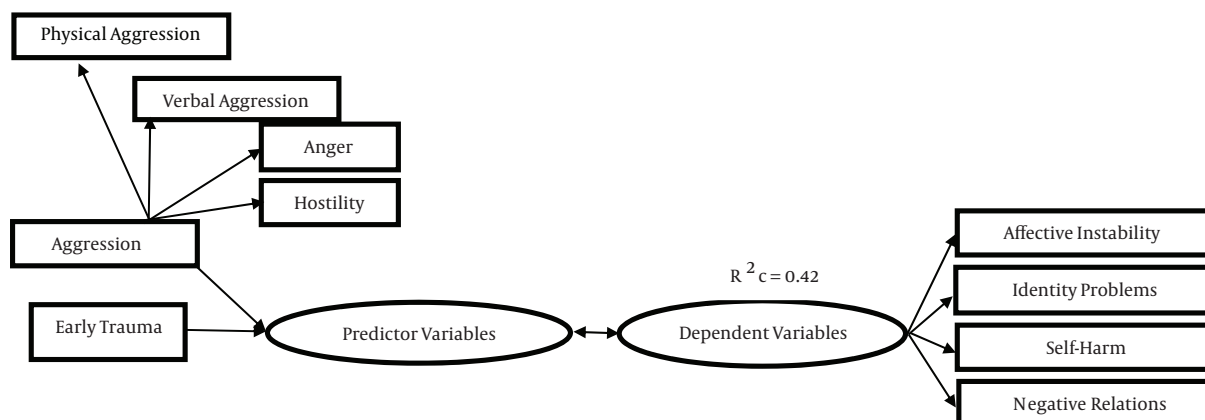


Figure 2. Conceptual Relationship Between Dependent and Predictor Variables

patients suffering BPD cannot perceive the immediate connection between their symptoms and early abusive experiences (28). On a related note, previous follow-up studies (29) demonstrate that fragments of trauma may be transformed through the time and revealed in different forms, such as somatoform, behavioral reenactment, or dissociated personality. In this regard, BPD is considered to be the representing form of adaptation to chronic abuse and traumatic events. The findings of the present study yield direct implications for the treatment of BP patients by recovery, integration, and validation of patient's traumatic memories and experiences.

4.1. Conclusions

Several limitations of this study should be taken into account. The first is the method of the sample recruitment which was based on non-clinical students using cross-sectional design that may not lead to generalizable results to other populations. Second, BPD is a complicated mental disorder involving multiple risk factors that were not analyzed in the present study. In conclusion, it is suggested that further studies with a closer outlook at these components on individuals with BPD diagnosis in other age groups be conducted as prospective longitudinal studies to establish the casual links between variables more effectively; it may help better verification of the findings of this study in future.

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Footnotes

Authors' Contribution: Seyedeh Fatemeh Sajjadi was responsible for analysis and interpretation of data, drafting of the manuscript, and statistical analysis. Sanaz Behbuei was responsible for the acquisition of data.

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