

Adaptive family functioning and borderline personality disorder: Mediating role of impulsivity

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Abstract

Objective: To explore the relationship among adaptive family functioning, impulsivity and borderline personality disorder, and to test the mediating role of impulsivity between the other two elements.

Methods: The cross-sectional correlational study was conducted at the National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan, from August 17, 2015, to June 10, 2017, and comprised patients seeking psychiatric consultation. The Diagnostic and Statistical Manual of Mental Disorders-4th Edition criteria was used to assess personality disorders. Correlation and mediation analysis was carried out on those diagnosed with borderline personality disorder. Data was analysed using SPSS 21.

Results: Of the 408 patients assessed, 183(45%) had borderline personality disorder. Of them, 118(64.4%) were males and 65(35.5%) were females. Both impulsivity and borderline personality disorder were negatively related to adaptive family functioning ($p < 0.01$). Significant positive relationship was found between impulsivity and borderline personality disorder ($p < 0.01$).

Conclusion: The mediating role of impulsivity between adaptive family functioning and borderline personality disorder was established.

Keywords: Borderline personality disorder, Suicide, Impulsivity, Mediation. (JPMA 70: 86; 2020).

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Introduction

Borderline personality disorder (BPD) is a prevalent psychiatric illness that involves core problems like pervasive instability in initiating and maintaining interpersonal relationships, problematic image of one's self and problems in regulating emotions and impulsivity.^{1,2} The aetiology explaining causes of BPD revolves around problematic parent-child interaction and family relationships.³ BPD increases the vulnerability of individuals to develop other comorbid problems like substance abuse, depression, generalised anxiety and personality disorders (PDs).⁴⁻⁶

Family environment has been extensively studied as a causal factor behind BPD. Children from lost and separated families are considered to be at high risk of developing BPD.⁷ Linehan's bio-psychosocial model emphasises on interaction between biological and social factors that interplay in the onset and maintenance of

psychopathology.⁸ Genetic vulnerability, when paired with harsh family environment, leads to outcomes like BPD. In such instances individuals learn maladaptive patterns of dealing with environmental stressors, and in turn, learn to exhibit emotions either in extreme form or tends to overly control and inhibit expression. It leads to difficulty in emotional regulation, and as a consequence individual keeps on oscillating between extreme expression and extreme inhibition of emotions. This triggers anxiety, depression, aggressive and rule-breaking behaviours without thinking of probable outcomes which is referred to as impulsivity (IMP).⁹⁻¹⁴

IMP involves elements of deficient planning and control.¹⁵ It involves behaviours that are exhibited as a consequence of internal or external stimuli without much prior thought, or judgment without taking into consideration the eventual outcomes of a situation. These behaviours are referred to as impulsive behaviours. Previous studies have established the mediating role of impulsivity in the context of BPD, poor health-related outcomes like obesity and suicide.¹⁶

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Though various studies establish the prevalence of BPD to be 6% of the global population, prevalence data from Pakistan is lacking.¹⁷ The current study was planned to bridge the gap by not only establishing the prevalence of BPD among a clinical sample, but by also understanding the dynamics of BPD with reference to adaptive family functioning (AFF) and IMP.

Subjects and Methods

The cross-sectional correlational study was conducted at the National Institute of Psychology, Quaid-i-Azam University, Islamabad, Pakistan, from August 17, 2015, to June 10, 2017, and comprised patients seeking psychiatric consultation. After getting approval from the institutional ethics review committee, GPower version 3.1 was used to estimate a priori sample size for the most complex mediational model of the present study involving one predictor, one outcome and one mediator.¹⁸ Using F test for change in R² the estimated sample size for medium effect size was 107 with error probability 0.05 and sample power 0.95. The sample was raised using non-probability convenience sampling technique. Initially, participants aged 18-59 years seeking treatment for psychiatric illness were contacted from different public-sector hospitals of Islamabad, Rawalpindi and Lahore. Formal permission was sought from relevant hospital authorities in each case. Those who gave written informed consent were enrolled.

The current study used IMP and AFF subscales of the Adult Self Report (ASR). Both subscales are three-point Likert type scales in Urdu language and have been validated for Pakistani sample.¹⁹ Personality disorders were assessed by using Diagnostic and Statistical Manual of Mental Disorders-4th Edition (DSM IV) criteria of PD. Urdu version of Assessment of DSM IV (ADP IV) was used for assessment of PDs which is a 7-point scale and has also been validated for Pakistani sample.²⁰ ADP IV assesses individuals on personality dimension and related distress or impairment.

Responses were marked after asking each question. Based upon the initial screening of ADP IV, those who showed BPD symptoms were shortlisted for further assessment.

SPSS 21 was used for computation of alpha reliability and correlational analysis. Alpha reliability for IMP and BPD were 0.80 and 0.70 respectively. For assessing AFF, mean score was computed as applicable for each participant. Process Macro was also used to establish mediation. Moreover, frequencies and percentages were computed

for age, gender, education and marital status. $P < 0.05$ was considered significant.

Results

Of the 600 individuals approached, 408(68%) volunteered and were assessed. Of them, 183(45%) had BPD and represented the final sample in which 118(64.4%) were males and 65(35.5%) were females. Of the total, 101(55%) individuals had history of suicide attempts (Table 1). Bivariate correlation indicated significant negative relationship involving AFF, IMP and BPD ($p < 0.05$). Significant positive relationship was found between IMP and BPD ($p < 0.05$) (Table 2).

In terms of the mediating role of IMP between AFF and BPD, there was 4% variance without the mediator because of AFF (Table 3). In Model 1 IMP mediator was regressed on AFF and it indicated that AFF predicted IMP and accounted for 3 % variance. In Model 2, both IMP and AFF significantly predicted BPD, confirming a partial mediation for the current model (Figure).

The point of estimate K² was 0.05 (95% confidence interval [CI]: 0.01 -- 0.10), indicating small mediating effect of AFF on BPD through IMP. R² med was 0.02 (95% CI: 0.002 -- 0.05). It can be inferred that 2% additional variance in BPD can be attributed to the indirect effect of AFF via IMP, the mediator. Overall effect size was small.

$$\begin{aligned} a &= -0.60^* & b &= 0.14^{***} \\ c' &= -0.24^* & c &= -0.33^{**} \\ ab & & & (B = -0.08, SE = 0.03, CI = -.18, UL = -0.02) \end{aligned}$$

Table-1: Demographic details of sample diagnosed with Borderline Personality Disorder (n=183).

Demographics	Clinical f (%)
Gender	
Male	118 (64.4%)
Female	65 (35.5%)
Age (years)	
18-35	98 (53.5%)
36-59	85 (46.44%)
Education	
Illiterate	33 (18%)
Primary	48 (26.22%)
Matriculation	67 (36.61%)
Graduation and above	35 (19.1%)
Marital Status	
Single	40 (21.8%)
Married	123 (67.2%)
Separated / Divorced / Widowed	20 (10.9%)
Past Suicide Attempts	
No attempt	82 (44.80 %)
Suicide Attempt	101 (55.1%)

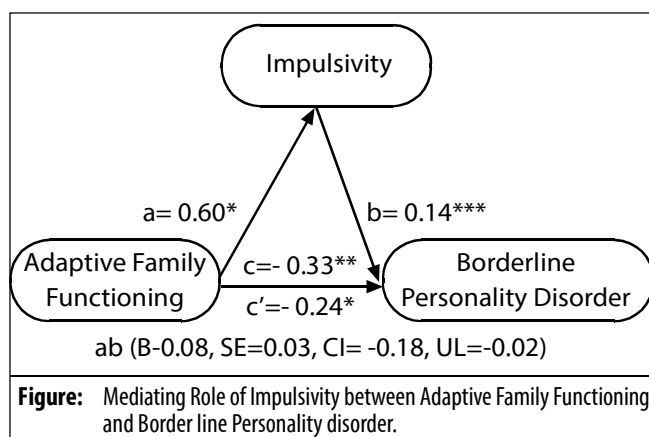
Table-2: Correlation between Adaptive family functioning, Impulsivity and Borderline Personality disorder (n=183).

Variables	2	3
1. Adaptive family functioning	-0.18*	-0.20**
2. Impulsivity	-	0.34**
3. Borderline personality disorder	-	-

Note: **p < .01, *p < .05.

Table-3: Mediation role of Impulsivity (IMP) between Adaptive Family Functioning (AFF) and Borderline Personality Disorder (BPD) (n=183).

Model	B	SE	CI (lower)	CI (Upper)
Model without Mediator				
Constant	6.61***	0.15	6.31	6.91
AFF-BPD(c)	-0.33**	0.12	-0.556	-0.09
R2 (Y,X)	0.04			
Models with addition of Mediator				
Model 1: IMP as dependent variable				
Constant	10.12***	0.30	9.53	10.73
ADP ----IMP (a)	-0.60*	0.23	-1.06	-0.14
R2	0.03			
Model 2: BPD as Dependent variable				
Constant	5.14***	0.39	4.37	5.91
IMP---BPD (b)	0.144***	0.03	0.07	0.21
AFF---BPD (c')	-0.24*	0.11	-0.46	-0.01
Indirect effect	-0.08	0.03	-0.18	-0.02
R2 (Y, M, X)	0.12			



Discussion

One of the prime objectives of the present study was to examine the inter-relationship involving AFF, IMP and BPD. Correlation analysis confirmed that AFF was negatively related with IMP and BPD, whereas both IMP and BPD were positively related to each other. Both these findings are consistent with literature.^{7,10,11}

Family is considered to play a central role in development, especially in Asian societies. AFF leads to the development of healthy personality. In contrast, exposure to unhealthy familial environment leads to the learning of maladaptive

patterns. Family is a prime institution that provides an individual with an opportunity to learn the ways in which one can deal with daily-life stressors by basic psychological processes of imitation and modelling. If this initial learning is faulty, it leads to generalisation of these faulty patterns across other situations later in life as well.²¹ It also puts an individual at a risk of developing other mental health problems and BPD in particular.

Findings of the current study also confirm that the risk of attempting suicide among patients with BPD is considerably high^{14,16,17} as 55% individuals with BPD reported history of having attempted suicide. Literature indicates that difficulty in regulating emotions is key feature of BPD. This dysregulation is evident in all spheres of life. It leads to adoption of clingy and ambivalent patterns of attachment in interpersonal relationships as well. Poor AFF aggravates the situation. In such instances minor disagreements and conflicts are catastrophised and interpreted as rejection of personality as a whole which in turn leads to exhibition of impulsive behaviours. This impulsivity increases the likelihood of indulgence in self-harming behaviours like suicide which is often strongly lined with BPD.^{15,16,17,22} In order to deal with the state of distress emerging from suppression and extreme expression of emotions behaviours like self-mutilation and suicide are common.¹⁷ These indicators are considered to be crucial features of BPD. Individuals with BPD along with a comorbid mental illness are at an increased risk of suicide and self-harming behaviours in comparison with individuals having only other mental illnesses.^{12,13} Literature also indicates a very strong relationship between IMP and BPD. This comorbidity is lethal as it makes an individual more vulnerable to committing suicide.²¹⁻²⁴

Studies have established that poor AFF is an important predictor of BPD. Additionally, IMP has shown to mediate relationships in the context of BPD and health-related outcomes i.e., issues like suicide and obesity. With this, the mediating role of IMP was explored in relation between AFF and BPD. Findings highlight that the addition of mediator i.e., IMP explains an additional 8% variance.²³ Family provides supports and serves as a referral point with respect to which an individual formulates and validates the impression of self. If adaptive, it leads to positive self-concept and, if not, it leads to feelings of worthlessness and self-doubt. This can shatter an individual's belief in self to deal with environment, people and stressful situations.¹⁸ This can be inferred that poor

AFF along with IMP can lead to problematic personality behaviours like BPD. This is often manifested in forms of self-harm, mutilation and suicide which are often strongly linked with BPD.^{9,25,26}

In terms of limitations, the present study aimed at exploring the patterns of BPD in relation to AFF and IMP, but its cross-sectional design was not ideal. Further longitudinal studies need to be conducted as they can provide information about changing patterns of this disorder and interaction between variables at different developmental stages. Moreover, the study assessed BPD, IMP and AFF through self-reporting approach. Future researches shall employ informant measures as they can provide a more comprehensive assessment, and can assist in comparing multi-informant data. Future studies shall also statistically control the effect of demographic variables as well.

Conclusion

Both family functioning and impulsivity were found to play a key role in BPD. Poor relationships with family and inconsistent ways of response behaviour were potential risk factors for developing BPD. Suicide risk assessment must be made while dealing with BPD patients.

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Conflict of Interest: None.

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References

1. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition. Washington, DC: American Psychiatric Association; 1994.
2. Wiggins JS, Pincus AL. Conceptions of personality disorders and dimensions of personality. *Psychological Assessment: J Consulting Clin Psychol* 1989; 1: 305-16
3. Chanen AM, Jovev M, Jackson HJ. Adaptive functioning and psychiatric symptoms in adolescents with borderline personality disorder. *J Clin Psychiatry* 2007; 68: 297-306.
4. McGlashan TH, Grilo CM, Skodol AE, Gunderson JG, Shea MT, Morey LC, et al. The Collaborative Longitudinal Personality Disorders Study: baseline Axis I/II and II/II diagnostic co-occurrence. *Acta Psychiatr Scand* 2000; 102: 256-64.
5. Skodol AE, Gunderson JG, Pfohl B, Widiger TA, Livesley WJ, Siever LJ. The borderline diagnosis I: psychopathology, comorbidity, and personality structure. *Biol Psychiatry* 2002; 51: 936-50.
6. Paris J, Zweig-Frank H. A 27-year follow-up of patients with borderline personality disorder. *Compr psychiatry* 2001; 42: 482-7.
7. Ryan SR, Friedman CK, Liang Y, Lake SL, Mathias CW, Charles NE, et al. Family Functioning as a Mediator of Relations between Family History of Substance Use Disorder and Impulsivity. *Addict Disord* 2016; 15: 17-24.
8. Crowell SE, Beauchaine TP, Linehan MM. A biosocial developmental model of borderline personality: Elaborating and extending linehan's theory. *Psychol Bull* 2009; 135: 495-510.
9. Sebastian A, Jacob G, Lieb K, Tüscher O. Impulsivity in borderline personality disorder: a matter of disturbed impulse control or a facet of emotional dysregulation?. *Curr Psychiatry Rep* 2013; 15: 339.
10. Münch AL, Hunger C, Schweitzer J. An investigation of the mediating role of personality and family functioning in the association between attachment styles and eating disorder status. *BMC Psychol* 2016; 4: 36.
11. Crowell SE, Beauchaine TP, Linehan MM. A biosocial developmental model of borderline personality: Elaborating and extending linehan's theory. *Psychol Bull* 2009; 135: 495-510. [same as ref 8]
12. Cheng AT, Chen TH, Chen CC, Jenkins R. Psychosocial and psychiatric risk factors for suicide. *Br J Psychiatry* 2000; 177: 360-5.
13. Oldham JM. Borderline personality disorder and suicidality. *Am J Psychiatry* 2006; 163: 20-6.
14. Carpenter RW, Trull TJ. Components of emotion dysregulation in borderline personality disorder: A review. *Curr Psychiatry Rep* 2013; 15: 335.
15. Guerrieri R, Nederkoorn C, Jansen A. The effect of an impulsive personality on overeating and obesity: Current state of affairs. *Psihologijsketeme* 2008; 17: 265-86.
16. Chapman AL, Specht MW, Cellucci T. Borderline personality disorder and deliberate self-harm: does experiential avoidance play a role? *Suicide and Life-Threatening Behav* 2005; 35: 388-99.
17. Rana MH, Rana R, Riaz S. Borderline personality disorder-it's here to stay. *J Pak Psychiatric Soc* 2018; 15: 6-7
18. Cunningham JB, Gardner E. Power, effect and sample size using GPower: practical issues for researchers and members of research ethics committees. *Evidence Based Midwifery* 2007; 5: 132-6
19. Ivanova MY, Achenbach TM, Rescorla LA, Turner LV, Árnadóttir HA, Au A, et al. Syndromes of collateral-reported psychopathology for ages 18-59 in 18 societies. *Int J Clin Health Psychol* 2015; 15: 18-28.
20. Hassan Z, Kamal A. Dimensional vs Categorical approach: An assessment of Personality pathology among adolescents. [Dissertation]. Pakistan: National Institute of Psychology; 2012.
21. Zanarini MC, Frankenburg FR, Dubo ED, Sickel AE, Trikha A, Levin A, et al. Axis I comorbidity of borderline personality disorder. *Am J Psychiatry* 1998; 155: 1733-9.
22. Oumaya M, Friedman S, Pham A, Abou AT, Guelfi JD, Rouillon F. Borderline personality disorder, self-mutilation and suicide: literature review. *L'Encephale* 2008; 34: 452-8.
23. Zanarini MC, Frankenburg FR, Fitzmaurice G. Defense mechanisms reported by patients with borderline personality disorder and axis II comparison subjects over 16 years of prospective follow-up: description and prediction of recovery. *Am J Psychiatry* 2013; 170: 111-20.
24. Soloff PH, Lynch KG, Kelly TM, Malone KM, Mann JJ. Characteristics of suicide attempts of patients with major depressive episode and borderline personality disorder: a comparative study. *Am J Psychiatry* 2000; 157: 601-8.
25. Berg JM, Litzman RD, Bliwise NG, Lilienfeld SO. Parsing the heterogeneity of impulsivity: A meta-analytic review of the behavioral implications of the UPPS for psychopathology. *Psychol Assess* 2015; 27: 1129-46.
26. Krause-Utz A, Sobanski E, Alm B, Valerius G, Kleindienst N, Bohus M, et al. Impulsivity in relation to stress in patients with borderline personality disorder with and without co-occurring attention-deficit/hyperactivity disorder: an exploratory study. *J Nerv Ment Dis* 2013; 201: 116-23.