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Impulsivity, Emotional Dysregulation, Parenting Styles, and Self-Mutilation in Clients with Borderline Personality Disorder

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ABSTRACT

Aim of the Study: The purpose of the current study is to examine the influence of impulsivity on self-mutilation with the mediating role of emotional dysregulation and the moderating role of parenting styles of both the father and mother of the clients having borderline personality disorder.

Method: It was a survey research. Data were collected from (n=200) individuals diagnosed with borderline personality disorder from the hospitals located in Islamabad and Rawalpindi with the help of purposive sampling.

Results: The results of the study revealed that impulsivity and emotion dysregulation significantly positively predicted self-mutilation among patients with BPD. Emotion dysregulation significantly mediated impulsivity and self-mutilation. Parental control (both father and mother) has significantly positively moderated impulsivity and self-mutilation. Parental responsiveness (both father and mother) has significantly negatively moderated impulsivity and self-mutilation. Findings revealed that last-born children were significantly higher in impulsivity as compared to 1st born and middle-born among clients with borderline personality disorder.

Conclusion: Emotion dysregulation is significantly mediated between impulsivity and self-mutilation. Parental control (both father and mother) has significantly positively moderated impulsivity and self-mutilation. Parental responsiveness (both father and mother) has significantly negatively moderated impulsivity and self-mutilation.

Keywords: Borderline Personality Disorder, Impulsivity, Self-mutilation, Emotion Dysregulation, Parenting Styles.

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Introduction and Theoretical Background

Borderline personality disorder (BPD) is a psychological illness that influences more or less 1–2% of the general population. Suicidal ideation, self-harm, and suicide are all common in people suffering from

BPD (Kverme et al., 2019). BPD is diagnostically characterized by profound vulnerability to remarked interpersonal outrages, self-doubting, excessive and unpredictable emotions, impulsivity, and sometimes self-destructive actions (Gunderson et al., 2018; Petfield et al., 2015). Suicidal behavior and self-harm occur in up to 84 percent of patients with BPD, and up to 10 percent of individuals diagnosed with BPD die by committing suicide. Furthermore, suicidal ideation and self-harm are four to six times more common than successful suicides, and they occur sooner in life among people with BPD than in depressive adults (Rufino et al., 2017). Furthermore, self-harm can be linked with the instinctual suicidal proclamation that assists the interpersonal domain. Apart from interpersonal insecurity, changes in one's sense of self will arise at any time. Symptoms can also include impulsivity, outrage, emotional dysregulation, isolation, and pretended maniacal episodes (Dhaliwal et al., 2020, Videler et al., 2019, Gunderson et al., 2018). People with BPD exhibit lifelong accounts of adopting multiple practices of mutilating themselves and endeavoring suicide. Cutting themselves, hitting doors, and head bashing were the most conventional ways of self-mutilation recorded by borderline patients (Goodman et al., 2017).

Self-mutilation is more common than suicide, with incidence rates of about 4 percent among the general population (Poudel et al., 2022). Self-mutilation seems to occur more often than suicide attempts (Park et al., 2020; Hedeland et al., 2016). Moreover, the tactics utilized (cutting/blurring with self-injury/overdose with suicide and severity) differ often in terms of self-mutilation and suicide attempts (self-mutilation is not usually as medically severe as a suicide attempt) (Scala et al., 2018). Finally, the role of self-mutilation and suicide attempts varies. While a suicide attempt's traditional function is to end your life, the function of self-mutilation varies greatly and is intended as a method of regulating effects, ending distortions, building interpersonal boundaries and effects, and punishing yourself or avoiding a real attempt at suicide (Klonsky, 2007). Several studies have tried to uncover variables that might predict these behaviors to better understand and predict self-mutilation in borderline personality disorder (Scala et al., 2018).

According to the theory of Emotional Dysregulation, manifestations of BPD in the behavioral, psychological, social (impulsivity, self-mutilation) and interpersonal (insecure, aggression) domains are maladaptive means of dealing with unaccepted and often unrecognized emotions (Gunderson et al., 2018). Recent research, however, provides a more complex understanding of emotional dysfunction in BPD (Dixon-Gordon et al., 2017). The biosocial theory (Linehan, 2018), a common model of BPD, emphasizes that BPD progress is a consequence of the inconstant interplay of the child's biologically-based emotional insecurity (e.g., impetuous and emotional instability) and external influences (e.g., invalidating conditions and unfavorable childhood experiences) (Chapman, 2019) that are seen as invalidating, diminishing, or minimizing or altering the child's adverse transformation (Musser et al., 2018, Dixon-Gordon et al., 2017). The inability to perceive feelings can result in imprudent behavior, mood swings, and an overwhelming desire to regulate along with other BPD symptoms. Patients with BPD appear to have a lot of intruding impulses, which can lead to long-term or strict use of inhibition. In exchange, this mechanism will inhibit personality reformation and balance (Etemadi et al., 2020).

According to research, those who develop BPD during puberty may have had traumatic interactions as children, such as bullying or a lack of emotional reaction from their parents (Brüne et al., 2016). One part of the parent-child relationship that could be linked to BPD symptoms is parents' disapproval of their children's emotional feelings (Peris & Miklowitz, 2015).). As a result, the parent-child interaction and styles of parenting can be significant factors in the initiation and formation of BPD in children and adolescents. Parenting styles are considered distinctive types of parental assessment and feedback that parents present to their children (Jansen et al., 2012). These parenting styles are categorized into three groups based on two separate aspects of responsiveness and demandingness: authoritative, authoritarian (dictator), and tolerant (permissive) (Etemadi et al., 2020).

The individual’s ability to control and regulate emotions is critical for psychological and social well-being in their life. Emotion dysregulation, on the other hand, is a major risk factor for borderline personality disorder. As indicated by previous studies, a soft and affectionate parenting style encourages the

maintenance of appropriate emotion control in children and adolescents and has an effect on self-harming behaviors in adults (Gorostiaga et al., 2019; Buckmaster et al., 2018). However, very few research studies have been conducted on the interaction between parental styles and emotion control in BPD (Tani et al., 2018). Based on the literature, we can conclude that, despite the high prevalence of borderline personality traits among adolescents, particularly in Pakistan, research studies have not paid ample consideration to borderline characteristics in adolescents. This research has explored the associations between factors intended to describe impulsiveness and self-mutilation based on previous studies. This research would contribute to a better understanding of the effects of parenting styles and emotion dysregulation on impulsivity and self-mutilation in individuals with borderline personality disorder.

Method

The purpose of conducting this study was to verify the hypotheses of the selected sample and investigated the impact of impulsivity on self-mutilation with the mediating role of emotional dysregulation and moderating role of parenting styles among clients with borderline personality disorder and also investigate the difference in the basis of demographic variables i.e., gender and birth order. Instruments were chosen for measuring study variables i.e., impulsivity (Short Impulsive Behavior Scale (S-UPPS-P) **(**Cynders et al., 2014), self-mutilation (Inventory of Statements about Self-Injury (ISAS) (Klonsky & Glenn, 2009), emotional dysregulation (Difficulties in Emotion Regulation Scale - Short Form (DERS – SF**) (**Kaufman, et al., 2015), and parenting styles (Scale of Parenting Styles developed by Ghafoor & Kurukkan, 2014). Permission was acquired from the authors of all the research tools used in this study before their use. Ethical approval was taken from the research committee of the Riphah Institute of Clinical and Professional Psychology, Lahore.

For data collection participants were approached at different hospitals located in Islamabad and Rawalpindi. Data were collected from 200 clients from March 2021 to July 2021. Individuals with at least 12 years of education were included in the study. Clients, who were enrolled in hospitals for interventions or therapy and who were taking online counseling sessions for at least three months or more, were ensured as inclusion criteria. Participants belonged to the middle class and also participated willingly. So, these clients were over-represented in this study. Clients with other comorbid disorders and physical disabilities were also ensured as excluded. Clients below 12 years of age and above 25 years of age were also ensured as excluded. Clients qualifying below 12 years of education were also considered excluded.

Data was collected from the individuals (n = 200) already diagnosed with borderline personality disorder from hospitals located in Rawalpindi and Islamabad through a purposive sampling technique. 67% of the participants are male and rests 33% are females. The age window for the participant parents is between 18 years to 25 years. 57 % of the participant are between the ages of 18-21 and got the highest frequency of 57%. Remaining of the participants are between the ages of 22 to 25 with a frequency of 42. This implies that the age range of 18 to 22 is more prominent than others. Out of 200 clients who participated in the study only 140 were unemployed, which makes them 80 % of this study. Only 20% of participants are employed. Descriptive analysis revealed that 57 % of participants have only one sibling, 37% have two siblings and only 6% have three siblings. Results revealed that 50 percent of participants are middle-born children, 43 percent are last-born children, and just 6 percent are first-born children. Participants' self-harm incidences and methods are also examined. According to the findings, 51 percent of individuals have harmed themselves 10-20 times, 32 percent have harmed themselves 21-30 times, and just 18 percent have harmed themselves more than 31 times. 42 percent of participants injure themselves by cutting themselves, 35 percent by burning themselves, 11 percent by biting themselves, and just 6 percent by pinching, punching, or bashing themselves.

Results

Table 1: *Pearson Correlation among Study Variables*

Variables	1	2	3	4	5
1. Impulsivity	--	.21**	.29**	-.29**	.66**
2. Emotional dysregulation		--	.22**	-.39**	.45**
3. Parental Control			--	-.33**	.31**
4. Parental Responsiveness				--	-.25**
5. Self-mutilation					--

***p*< .01

Table 1 shows the Pearson correlation among study variables. Results show that impulsivity has significant positive correlation with emotion dysregulation (r = .21, p < .01), parental control (r = .29, p < .01) and self-mutilation (r = .66, p < .01) whereas significant negative correlation with parental responsiveness (r = -.29, p < .01). Emotion dysregulation has significant positive correlation with parental control (r = .22, p < .01) and self-mutilation (r = .45, p < .01) whereas significant negative correlation with parental responsiveness (r = -.29, p < .01). Parental control has significant negative correlation with parental control (r = -.33, p < .01) whereas significant positive correlation with self-mutilation (r = .31, p < .01). Parental responsiveness has significant negative correlation with self-mutilation (r = -.31, p < .01).

Table 2: *Structural Equation Modeling on Hypothetical Model of the Study*

	X^2					
Models	**Value**	***df***	***p***	**RMSEA**	**AIC**	**BIC**
Default model	--	--	--	--	37.91	38.46
Saturated model	--	--	--	.000	40.00	40.61
Independence model	1.91	2	.38	.032	31.19	31.34

Table 2 shows the structural equation modeling of the hypothetical model. It was found that the independent model was the best-fitted model of the current study, X^2 (2) = 1.91, p > .05. An RMSEA value of .032 is also less than .05 which indicates that the model is well fitted. Details of direct and indirect effects are given in Figure 1. Therefore hypotheses 4 and 5 were supported by the results.

Figure 1: *Final Model of the Study with Direct and Indirect Effects*

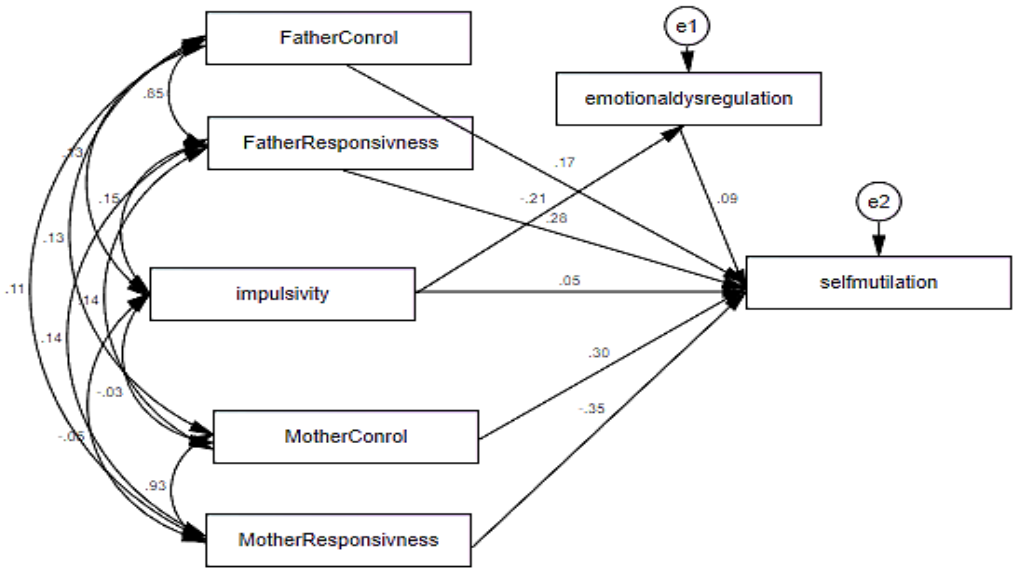
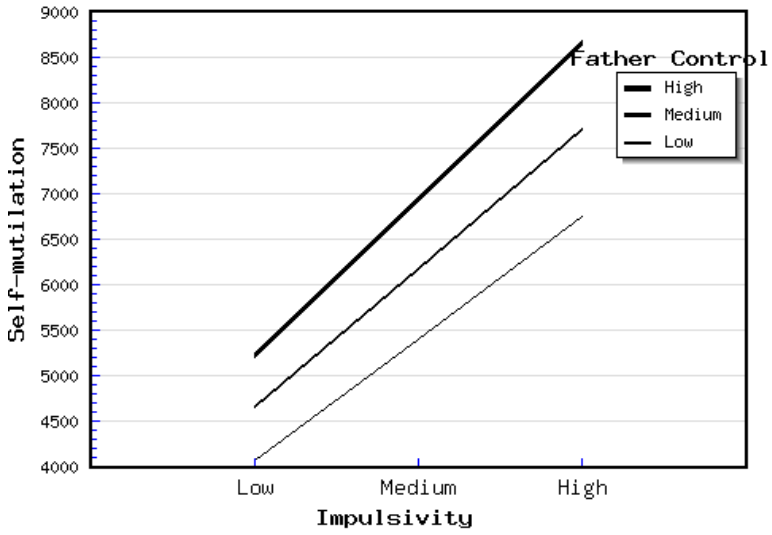


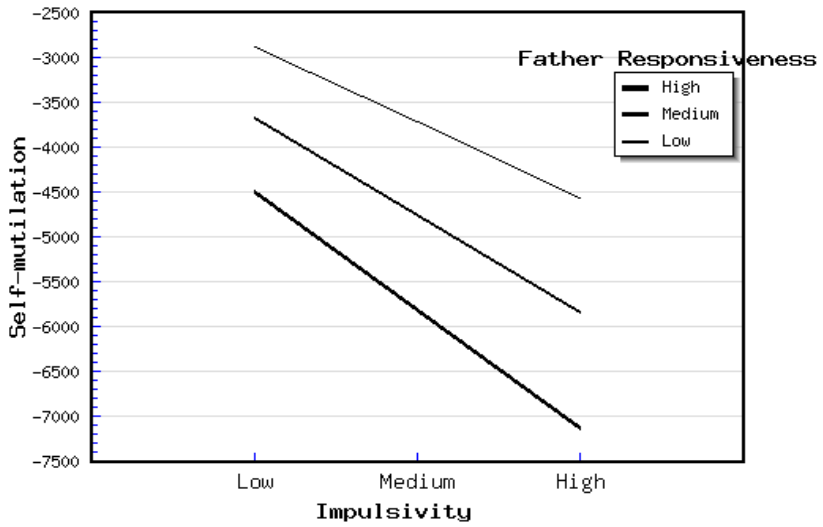
Figure 3 shows a final model of the study. It was found that the direct effect of impulsive on self-mutilation was significant (β = .05, $p < .05$). The direct effect of impulsivity on emotion dysregulation was significant (β = .28, $p < .01$). Similarly the direct effect of emotional dysregulation on self-mutilation was also significant (β = .09, $p < .05$). Results revealed that emotion dysregulation significantly mediated between impulsivity and self-mutilation. Mother control significantly positively moderated the relationship between impulsivity and self-mutilation (β = .30, $p < .05$). Father control significantly positively moderated the relationship between impulsivity and self-mutilation (β = .17, $p < .05$). Mother responsiveness significantly negatively moderated the relationship between impulsivity and self-mutilation (β = -.35, $p < .05$). Father responsiveness significantly negatively moderated the relationship between impulsivity and self-mutilation (β = -.30, $p < .05$).

Figure 2: *Mod Graph for Moderating Role of Father Control*



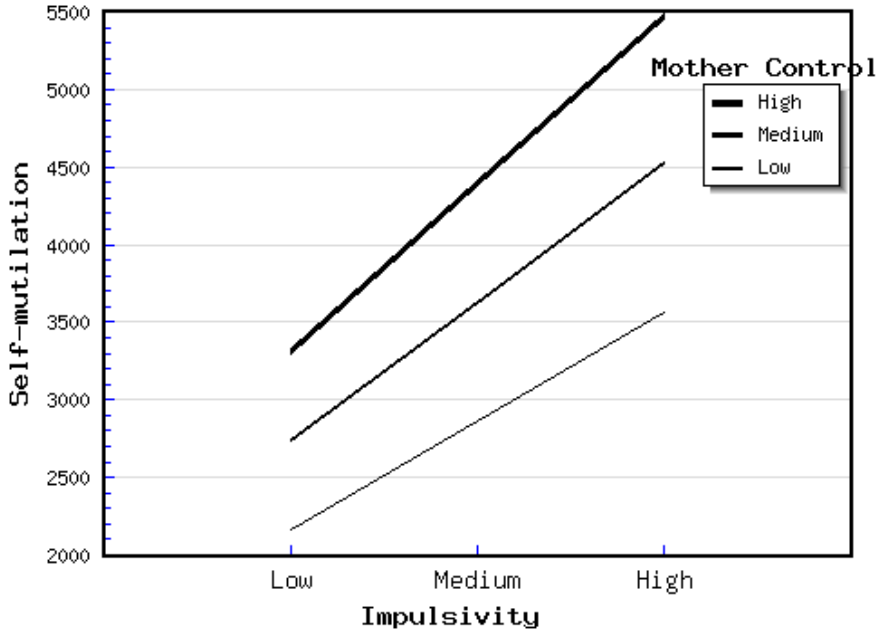
The above figure revealed that at a higher level of father control, the level of impulsivity increases which in turn increases the level of self-mutilation.

Figure 3: *Mod Graph for Moderating Role of Father Responsiveness*



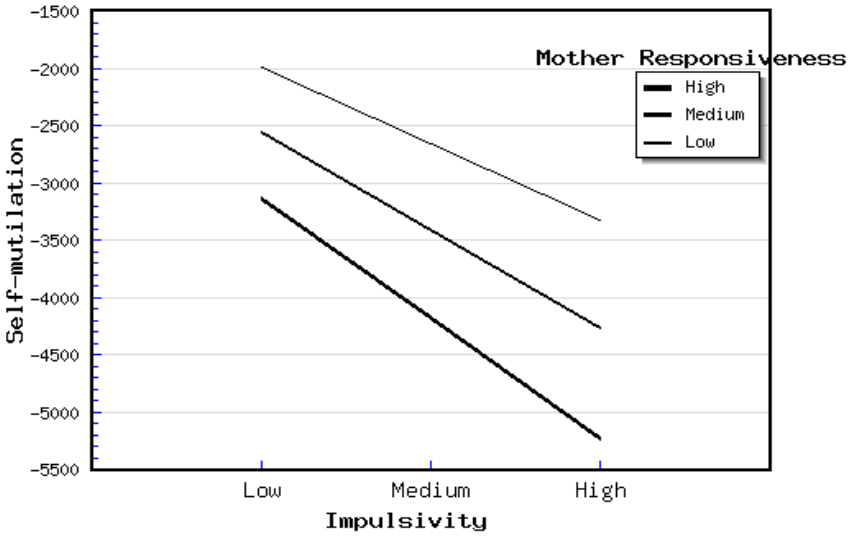
The above figure revealed that at a higher level of father responsiveness, the level of impulsivity decreases which in turn decreases the level of self-mutilation.

Figure 4: *Mod Graph for Moderating Role of Mother Control*



The above figure revealed that at a higher level of mother control, the level of impulsivity increases which in turn increases the level of self-mutilation.

Figure 5: *Mod Graph for Moderating Role of Mother Responsiveness*



The above figure revealed that at a higher level of mother responsiveness, the level of impulsivity decreases which in turn decreases the level of self-mutilation.

Table 3: *Gender Differences in Self-mutilation*

	Men		Women				
Variable	***M***	***SD***	***M***	***SD***	***t* (198)**	***P***	**Cohen's *d***
Self-mutilation	50.90	6.58	50.65	6.84	.23	.80	.17

The above table shows gender differences in self-mutilation. Results revealed that there were non-significant gender differences in self-mutilation among participants.

Table 4: *Mean, Standard Deviation, and F for Comparison of Impulsivity and Self-Mutilation*

	1st Born		Middle Born		Last Born				
Variables	***M***	***SD***	***M***	***SD***	***M***	***SD***	***F***	***p***	**η2**
Impulsivity	78.57	4.25	79.45	13.54	97.39	8.54	89.72	.00	1.23
Self-mutilation	50.37	7.60	51.04	6.07	50.85	6.64	.10	.89	.07

One-way ANOVA was done to compare the impact of birth order on impulsivity and self-mutilation. Above table shows that there were significant mean differences in birth orders in impulsivity with t (198) = 2.29, p <.05. Last born significantly reported higher impulsivity (M = 97.39, SD = 8.54) as compared to 1st Born (M = 78.57, SD = 4.25), and Middle born (M = 79.45, SD = 13.54). Therefore hypothesis 7 was supported by the results. The value of η2 was 1.23 (> .80) which means a high effect size. Results were non-significant on self-mutilation. Therefore, hypothesis-7 was supported whereas hypothesis-8 was not supported by the results. Only for significant F-values post hoc analysis, Bonferroni was done to check the difference present between significant variables.

Table 5: *Post Hoc test for Investigating Multiple Comparisons in Impulsivity*

(I) Birth Order	**(J) Birth Order**	***MD (I-J)***	***SE***	***P***
1st Born	Middle Born	-.88	2.10	.90
	Last Born	-18.82*	1.84	.00
Middle Born	1st Born	.88	2.10	.90
	Last Born	-17.94*	1.61	.00
Last Born	1st Born	18.82*	1.84	.00
	Middle Born	17.94*	1.61	.00

*p< .05

The above table shows that the last-born was significantly higher in impulsivity (MD = 18.82, p < .05) as compared to 1st born and middle born.

Discussion

The negative association between emotional dysregulation and self-mutilation among individuals with borderline personality disorder was supported by the results. Researchers investigated whether those who have self-mutilation, have a general lack of emotion regulation or if emotion regulation is associated with self-mutilation function specifically (Fox et al., 2015). The individual with self-mutilation revealed reductions in negative affect after receiving painful stimulation, indicating that pain may act to modulate unpleasant feelings even when self-injury is not present. Overall, research on patients with BPD, emotion

dysregulation function indicates that the negative activity is sustained physically and psychologically as an effective, it is maladaptive emotion regulation strategy (Gillies et al., 2018).

Parenting control proved to be positively related to self-mutilation and emotional dysregulation among individuals with a borderline personality disorder. According to another study, the quality of an individual's familial relationships and parenting practices have a substantial impact on the occurrence and frequency of self-mutilation-related conduct. Because psychopathology is sensitive and chaotic, both of these characteristics tend to induce maladaptive emotional reactions, which can directly lead to self-mutilation (Adrian et al., 2011). In families with self-harming individuals, the most frequent parenting style is the rejection of the child and an unclear attitude toward control and direction, which can lead to a disordered and nontransparent family dynamic. Furthermore, regardless of self-mutilation, the majority of respondents evaluated their parents' control and supervision as inadequate or inconsistent; on the other hand, only a small number of individuals reported the apparently optimal moderate control.

Parenting responsiveness proved to be negatively related to self-mutilation and emotional dysregulation among individuals with a borderline personality disorder. Previous research has revealed that insufficient emotional support from parents, according to Baetens and colleagues (2013), not only impacts the occurrence of self-harm directly but also indirectly increases the risk of self-mutilation by increasing the frequency of sad emotions in individuals. Parents who are harsh on themselves are more likely to instill excessive self-criticism in their children, which can lead to self-harm (Baetens et al., 2013).

Emotion dysregulation is also significantly mediated between impulsivity and self-mutilation. Self-mutilation is linked to impulsivity, which has been identified as a risk factor. Individuals who engaged in non-suicidal self-injury showed greater levels of self-reported impulsivity than those who did not, according to research and meta-analysis of clinical and non-clinical mixed age groups (Hamza et al., 2015). There is not always a relationship between impulsivity and self-mutilation. However, impulsivity has a role in the development of self-harming behaviors. According to theoretical and empirical studies, the primary functions of the sense of psychopathology, are probably by conflicting with self-regulation goals during periods of emotional distress (Dryman & Heimberg, 2018). This stress may lead attention to be redirected away from the longer-term goal of self-regulation, such as becoming healthier, and toward decreasing emotional distress by seeking immediate pleasure and relief, such as smoking a cigarette or acting rashly (Rømer Thomsen et al., 2018).

In the current study parental control (father control & mother control) significantly moderated the relationship between impulsivity and self-mutilation. It was found that with a higher level of parental control interacting with impulsivity the level of self-mutilation increases. Control, overprotection, and rejection from parents can take the shape of a tighter attitude and more control, and they have a detrimental impact on an individual's confidence and independence, which can lead to mental health difficulties (Bi et al., 2018). A higher level of parental supervision, for example, has been linked to an individual’s sadness and anxiety (Sun et al., 2018). As a result, it is reasonable to conclude that psychological intervention techniques aimed at lowering impulsivity may have a stronger impact on the prevention and control of individuals who have had a harsh mother-child relationship. Another potential explanation is that extreme and harsh parenting, such as overprotection and rejection, may hinder teens from acquiring appropriate impulse control (Kim et al., 2013).

Parental responsiveness (father responsiveness & mother responsiveness) significantly moderated the relationship between impulsivity and self-mutilation. It was found that with a higher level of parental responsiveness interacting with impulsivity the level of self-mutilation decreases. According to Adrian et al. (2011), the quality of an individual’s familial relationships and parenting practices have a substantial impact on the occurrence and frequency of self-injurious conduct because both of these characteristics tend to induce maladaptive emotional reactions, which can directly lead to self-harm. According to Baetens et al. (2013), insufficient emotional support from parents not only influences the occurrence of self-harm directly but also indirectly enhances the risk of self-harm by increasing the frequency of sad

moods in teens. Excessive self-criticism, for example, is more likely to be instilled in children by critical parents, which can lead to self-destructive behavior.

A previous study by Silberschmidt et al. (2015), revealed gender differences in self-mutilation among participants and found consistent with overall demographic differences in this group. In general, women exhibited greater symptomatology, such as depression, anxiety, and physical complaints. Men are more likely to have antisocial personality disorder, whereas narcissistic personality disorder is on the rise (Silberschmidt et al., 2015). In the current study, the reason behind non-significant gender differences may be due to data collected from urban cities of Pakistan and there was not much diversity in participants concerning culture and living standards. That is why both men and women exhibit the same level of self-mutilation. Findings in birth order revealed that the last born was significantly higher in impulsivity as compared to 1st born and middle born. Previous research indicated that increasing birth order is the manifestation of beer personality however our findings are consistent with the previous as our results revealed that the last born has a higher impulsivity level than the first and second born which may be due to our sample being based on individuals with BPD (Lejarraga et al., 2019).

Conclusion

In conclusion, the present study provides valuable insights into the complex interplay of various factors contributing to self-mutilation among patients diagnosed with borderline personality disorder (BPD). Our findings underscore the significant positive predictive role of impulsivity and emotion dysregulation in the manifestation of self-mutilation behaviors within this clinical population. Moreover, our results illuminate a mediating relationship between impulsivity and self-mutilation, wherein emotion dysregulation acts as a significant mediator. This suggests that the impact of impulsivity on self-mutilation is, in part, explained by the presence of emotion dysregulation among individuals with BPD.

The study also sheds light on the moderating influence of parental control and responsiveness, revealing that both paternal and maternal factors play distinct roles in influencing the relationship between impulsivity and self-mutilation. Specifically, higher levels of parental control were associated with an exacerbation of the positive link between impulsivity and self-mutilation, while greater parental responsiveness exhibited a protective effect, mitigating the association between impulsivity and self-mutilation. Contrary to expectations, our investigation did not reveal significant gender differences in self-mutilation within the BPD population, highlighting the pervasive nature of this maladaptive behavior across genders among individuals with BPD. Furthermore, an intriguing finding emerged concerning birth order, with the third-born individuals exhibiting significantly higher impulsivity compared to their first and second-born counterparts within the BPD cohort. This nuanced exploration of birth order adds a novel dimension to our understanding of impulsivity among individuals diagnosed with BPD.

Limitations and Suggestions

Several limitations in the current study warrant consideration for future research endeavors. Firstly, the geographical scope of data collection was confined to Rawalpindi and Islamabad, thereby limiting the generalizability of the study's findings. To enhance the external validity and robustness of future research, it is recommended that samples be collected from a more diverse array of locations across Pakistan. This geographical expansion would facilitate a more comprehensive understanding of self-mutilation within the broader cultural context and allow for the examination of potential regional variations.

Secondly, a notable limitation arises from the exclusive focus on patients with borderline personality disorder (BPD) in the present study, precluding any comparative analysis with other personality disorder groups. To address this limitation and foster a more nuanced understanding of self-mutilation across personality disorders, future research should incorporate diverse groups of personality disorders. This approach would enable researchers to explore and compare the patterns of self-mutilation within different diagnostic categories, shedding light on disorder-specific characteristics and contributing to a more comprehensive understanding of the phenomenon.

Future Implications

While acknowledging the limitations of this study, the research significantly contributes to our understanding of self-mutilation in the context of borderline personality disorder (BPD). The implications of the findings extend to areas such as comprehension, management, and the identification of emotional and social resources crucial for both the emergence and alleviation of self-mutilative behaviors in individuals with BPD. A notable strength of the study lies in its potential to inform clinical practices and intervention strategies. By revealing the predictive roles of impulsivity and emotion dysregulation in self-mutilation among individuals with BPD, the research provides valuable insights into the psychopathological mechanisms underlying this complex phenomenon. These insights are crucial for developing targeted therapeutic interventions that address specific risk factors, aiming to mitigate the occurrence of self-mutilation.

The identification of emotion dysregulation as a mediator between impulsivity and self-mutilation emphasizes the interconnected nature of these factors. This understanding guides the development of interventions targeting emotion regulation skills, presenting a comprehensive approach to reducing self-mutilative behaviors in individuals with BPD. Furthermore, the study's exploration of parental influences, including both control and responsiveness, enriches its potential applications. The findings emphasize the need for tailored parental coaching programs that recognize the distinct impact of paternal and maternal influences on the relationship between impulsivity and self-mutilation. Such programs could empower parents with strategies to modulate their parenting styles, contributing to the overall well-being of individuals at risk for self-mutilation. The identification of birth order as a factor influencing impulsivity adds a novel dimension to intervention considerations. This suggests that interventions targeting impulsivity should consider potential variations associated with birth order, allowing for more personalized and effective treatment approaches.

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Conflict of Interest

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