Original Article

The Role of Neuroticism Facets in Predicting Symptoms of Borderline Personality Disorder

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Abstract

Borderline personality disorder is a debilitating condition characterized by difficulties in emotion regulation, impulsivity, and interpersonal problems. The present study aimed to address the role of neuroticism facets in prediction Symptoms of borderline personality disorder. The research method was a cross-sectional and correlational study. The statistical population of the study consisted of students from the Islamic Azad University of Tabriz (31,447 people) in 2020–2021. The sample size according to Morgan's table was 400 students. The participants were selected using Convenience Sampling method, and they completed online versions of the Neuroticism Questionnaire and the Borderline Personality Scale. Data analysis was performed by structural equation modeling method. The software used for analysis were SPSS and SmartPLS. The results showed that anxiety (ß=0.86, P<0.05), anger (ß=0.43, P<0.05), and depression (ß=0.16, P<0.05) had significant relationships with hopelessness. Anxiety (ß=0.164, P<0.05), anger (ß=0.22, P<0.05), depression (ß=0.162, P<0.05), self-conscious (ß=0.24, P<0.05), and Impulsivity (ß=0.76, P<0.05) had significant relationships with impulsivity. Anxiety (ß=0.21, P<0.05), depression (ß=0.84, P<0.05), self-conscious (ß=0.17, P<0.05), and Impulsivity (ß=0.13, P<0.05) had significant relationships with dissociation. Therefore, findings revealed that neuroticism can be an important construct in predicting BPD symptoms in clinical intervention. Focusing on neuroticism symptoms and reduction of negative reactions, could be useful targets to reduce signs of BPD.

Introduction

Borderline personality disorder (BPD) is a problematic and debilitating disorder characterized by difficulties in several functional areas. In DSM-5, symptoms of BPD include emotional problems, interpersonal problems, behavioral problems such as suicide, a distorted sense of self characterized by unstable self-image, as well as cognitive symptoms (APA, 2013; Soleimani, B., & Dastbaz, 2023). Many patients with BPD also exhibit frequent self-harming or suicidal behaviors, although suicide attempts are not unique to this disorder (APA, 2013). BPD is a common personality disorder with a reported prevalence of 1. 7% (Gunderson et al., 2018). In clinical setting, BPD is more common and mortality rate associated with this disorder is 3-8 times more than normal population (Kjær et al., 2020). BPD is considered a severe heterogeneous mental disorder with three main categories of symptoms: 1) difficulties in emotional regulation, 2) impulsivity and 3) interpersonal problems (Skodol et al., 2005).

Some studies have cited the Five-Factor Model (FFM) as the best framework for studying BPD (Clark, 2007; Maples et al., 2014) where personality is studied in terms of neuroticism (N), extraversion (B), openness to experience (O), conscientiousness (C) and agreeableness (A)(Mullins-Sweatt et al., 2012). In general, BPD in FFM can be considered by high levels of N, and low levels of A, C, and E (Samuel & Widiger, 2008). Levels of personality traits, particularly N, are associated with the severity of BPD (Ralevski et al., 2005). Neuroticism was the first personality trait to be recognized in relation to personality disorders (Widiger, 2005). Neuroticism is associated with the unstable emotional patterns of BPD (Suzuki et al., 2015). The relationship between neuroticism and emotional parameters, which reflect

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unstable emotions, explains why individuals with BPD uniquely exhibit unstable emotions and negative reactivity. Dejonckheere et al. (2019) studied this topic and suggested that negative reactivity plays a significant role in predicting symptoms of BPD.

Based on the diagnostic criteria of BPD, Widiger (2005) suggested that six facets of neuroticism (anxiety, angry/hostility, depression, self-consciousness, impulsiveness, and vulnerability) along with low trust, low agreeableness, and low conscientiousness, are associated with BPD. (Widiger, 2005). Samuel and Widiger (2008) found that anxiety, anger, depression, self-consciousness, impulsivity and vulnerability have a significant positive relationship with BPD, whereas traits such as extraversion and consciousness have a negative relationship with BPD (Samuel & Widiger, 2008). Depression, as a facet of neuroticism, is commonly comorbid with BPD, with a prevalence of 83% (Zanarini et al., 1998). Anger, hostility, and anxiety are facets of neuroticism associated with BPD symptoms (Dinger et al., 2021). In many prominent pathological models of BPD, it is assumed that negative reactivity in BPD reflects negative self-perceptions and emotional dysregulation, which suggest that individuals with BPD struggle to cope with interpersonal conflicts (Clarkin et al., 2007).

Neuroticism is a basic component of personality models (Costa & McCrae, 1992; Moghadam et al., 2022) and is considered as a risk factor in many psychiatric disorders (Hougsnæs et al., 2017).

Given the importance of neuroticism in many mental and physical disorders, it is not surprising that neuroticism is apparent in prominent models of personality, personality disorders, and psychological disorders. Although there is extensive literature on the predictive role of neuroticism in personality disorders, particularly BPD, there is limited literature on the facets of neuroticism in relation to personality disorders in general and BPD in particular. Therefore, the present study aims to address predictive role of the facets of neuroticism in BPD.

Method

Participants

The research method was a cross-sectional and correlational study. The Statistical population consisted of all students of Tabriz Islamic Azad university (n= 31,447) in 2020-2021. The sample size was calculated as 380 students according to Morgan table; however, 400 students were selected to account for potential dropouts. The participants were selected using the convenience sampling method and completed online questionnaires.

Instrument

Neuroticism questionnaire:

This questionnaire was designed by McCrae and Costa for the normal population and has been used for over two decades in research and clinical setting. Original version was designed in 1992 by McCrae and Costa(Costa & McCrae, 1992). They reported alpha coefficients ranging from 0.74 to 0.89, with a mean of 0.81. In the present research, neuroticism was measured using the 48 items from the NEO-long form questionnaire. Responses were provided on a 5-point Likert scale by the participants themselves. McCrae & Costa (1992) asked 208 university students to complete NEO questionnaire in three months interval and reliability coefficient were 0.83, 0.75, 0.80,0.79,0.79 for N, E, O, A, C respectively(Costa & McCrae, 1992). A study by Garvousi farshi (2001) reported test-retest reliability over a two-week interval as ranging from 0.86 to 0.90, with internal consistency coefficients between 0.68 and 0.86. Most studies demonstrated validity of this scale by correlation between S and R forms. Validity of this questionnaire was reported as 0.67 when used with Eysenck personality questionnaire.

Borderline Personality Scale (STB):

In the present research, the STB scale was used, which was developed by Jackson and Claridge to measure borderline personality patterns in non-clinical studies (Jackson & Claridge, 1991). This scale had 18 items in the form of yes/no, but Mohammadzade increased the number of items to 20 during the standardization process to align with DSM-IV-R criteria (Mohamadzade, 2005). Scores range is between 0-20. Higher scores show high level of narcissism. Jackson & Claridge reported 0.61 for re-test reliability coefficient. In Iran, Mohammadzade reported test-retest reliability coefficient as 0.84 in 4 weeks interval and Cronbach alpha coefficient is reported 0.77 (Mohamadzade, 2005). In this study, the facets of neuroticism were selected as independent (exogenous) variables, and borderline personality traits were selected as dependent (endogenous) variables.

Procedure

Due to the need to reduce social contact in order to prevent the spread of COVID-19, the convenience sampling method and online implementation were used. The questionnaire link was shared with users via WhatsApp and Telegram social networks. Participants were instructed not to write their names on the questionnaires and were assured that all responses would remain confidential and used solely for statistical analysis They were also informed that they could withdraw from the study at any time if they chose not to continue. Data analysis was conducted using the structural equation modeling method. Statistical analysis was performed using SPSS 23 and SmartPLS. At The researchers began by introducing themselves to the participants online and thanking them in advance for their willingness to take part. They also gave clear instructions on how to complete the questionnaire and kindly encouraged participants to answer honestly. Research ethics were fully observed in this research; Participants were reassured that their information would

be kept completely private. They filled out the questionnaires anonymously, in a calm and comfortable setting, to ensure they felt secure.

Results

The statistical sample consisted of 269 females and 131 males aged 21–40 years (m=28.68, SD=6.28). Additionally, 56 participants (14%) had an associate's degree, 224 (56%) held a bachelor's degree, 107 (26.75%) had a master's degree, and 13 (3.25%) had a doctoral degree.
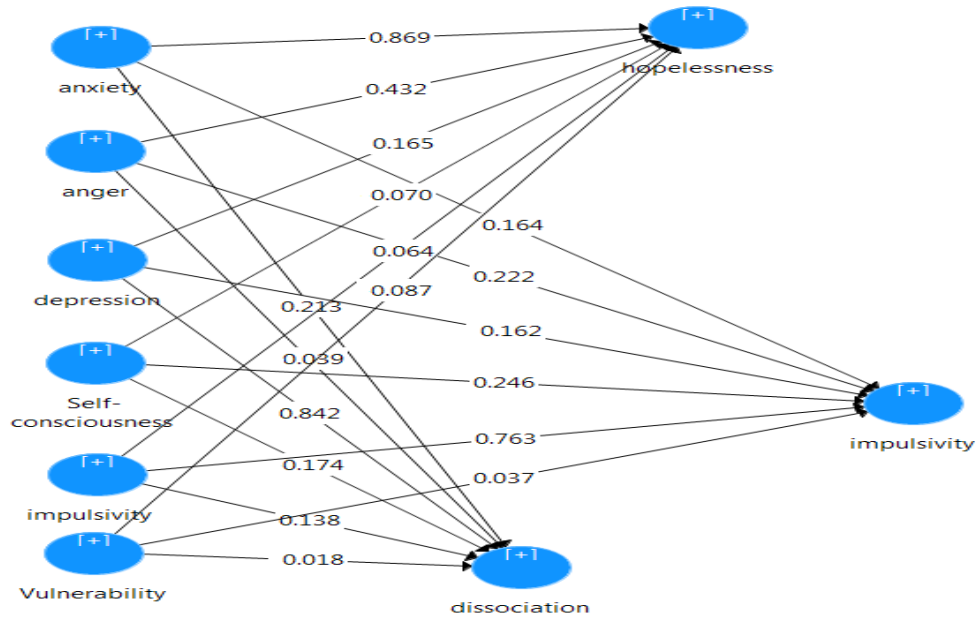

Figure1. Output of the test of causal relationships between research variables in the standard setting
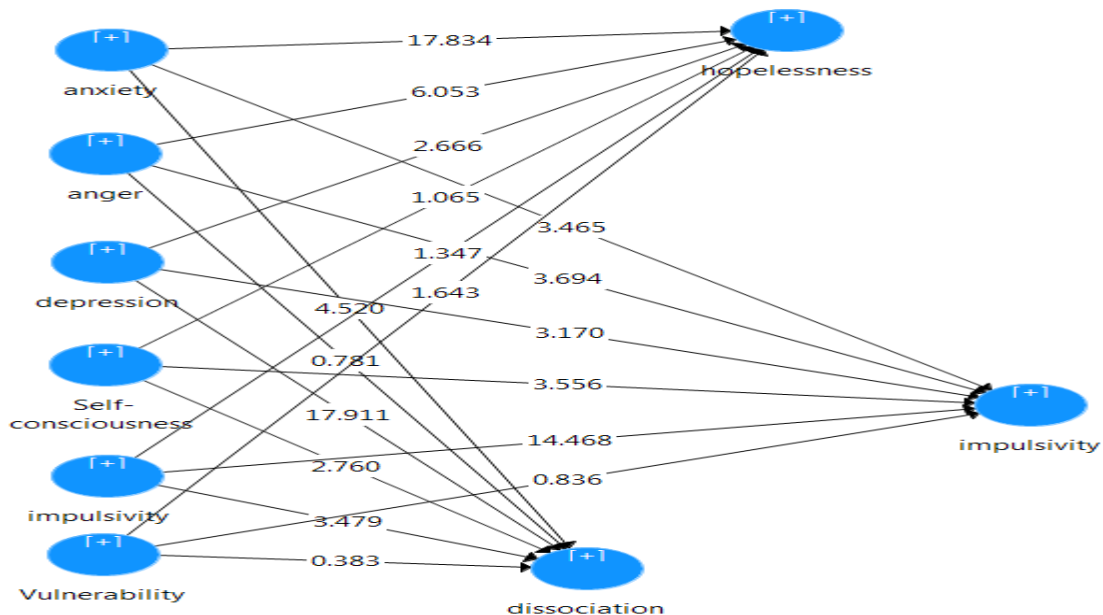

Figure 2. Output of the test of causal relationships between research variables in the t-value setting

Table 1 shows results of structural equations modeling among facets of neuroticism and BPD symptoms. According to findings, anxiety (ß=0.86, t-17.83), anger (ß=0.43,t=6.05), and depression (ß=0.16, t=2.66) had significant relationships with hopelessness. Anxiety (ß=0.164, t-3.46), anger (ß=0.22,t=3.69), depression (ß=0.162, t=3.17), self-conscious (ß=0.24, t=3.55), and Impulsivity (ß=0.76,t=14.46) had significant relationships with impulsivity. Anxiety (ß=0.21, t=4.52), depression (ß=0.84, t=17.91), self-conscious (ß=0.17, t=2.76), and Impulsivity (ß=0.13, t=3.47) had significant relationships with dissociation.

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Table 1. results of structural model of research variables

Path	ß	T-Value	Result
anxiety→ hopelessness	0.86	17.83	significant
anger→ hopelessness	0.43	6.05	significant
Depression→ hopelessness	0.16	2.66	significant
Self-consciousness→ hopelessness	0.07	1.06	non-significant
impulsivity → hopelessness	0.06	1.34	non-significant
Vulnerability→ hopelessness	0.08	1.64	non-significant
Anxiety→ impulsivity	0.164	3.46	significant
anger→ impulsivity	0.22	3.69	significant
Depression → impulsivity	0.162	3.17	significant
Self-consciousness→ impulsivity	0.24	3.55	significant
impulsivity →impulsivity	0.76	14.46	significant
Vulnerability→ impulsivity	0.03	0.836	non-significant
Anxiety→ dissociation	0.21	4.52	significant
anger→ dissociation	0.03	0.781	non-significant
Depression→ dissociation	0.84	17.91	significant
Self-consciousness→ dissociation	0.17	2.76	significant
Impulsivity→ dissociation	0.13	3.47	significant
Vulnerability→ dissociation	0.018	0.383	non-significant

Table 2. reliability and validity of model

Variable	Cronbach's alpha	CR (composite reliability)	AVE(average variance extracted)
anxiety	0.851	0.885	0.495
anger	0.834	0.873	0.464
depression	0.865	0.896	0.527
self-consciousness	0.826	0.868	0.453
impulsivity	0.873	0.901	0.536
vulnerability	0.753	0.891	0.409
hopelessness	0.894	0.893	0.621
Impulsivity	0.872	0.899	0.530
dissociation	0.838	0.886	0.613

According to table 2, composite reliability and Cronbach's alpha coefficient were higher than 0.7 for all variables, indicating good model fitness.The findings confirmed this fitness. On the other hand, the average variance extracted (AVE) was 0.4. Based on these findings, all values were higher than 0.4, indicating that convergent reliability was within the acceptable range.

Discussion

The present research was conducted to examine the role of neuroticism facets in predicting borderline personality symptoms. The findings showed significant relationships between facets of neuroticism and borderline personality symptoms. Findings in the literatures are consistent with the present finding in term of the relationships between facets of neuroticism and borderline personality symptoms (Clark, 2007; Dinger et al., 2021; Distel et al., 2009; Samuel & Widiger, 2008; Wright et al., 2015).

The most prominent dimensional traits model is five factors model (Costa & McCrae, 1992), which enhances our understanding of personality disorders, including borderline personality disorder, as a maladaptive manifestation of normal personality functioning (Samuel et al., 2013). Wright et al. (2015) reported that a reduction in BPD symptoms is associated with reductions in neuroticism and increases in agreeableness and conscientiousness. Neuroticism (in contrast to emotional stability) is considered as a common predisposition toward negative emotions. However, neuroticism reflects negative experiences rather than simply severe negative emotions. Neurotic people tend to react negatively to events and stressors more intensely than usual and experience frequent emotional mood changes throughout the day (Maples et al., 2014). Theoretical perspectives on neuroticism recognize the strongest negative reaction to threats or punishment as the central characteristic of neuroticism (Costa & McCrae, 1992; Suls & Martin, 2005).

BPD and neuroticism are characterized by similar experiences and emotional behaviors. Symptoms of BPD include emotional instability and a high level of negative emotions, such as chronic nihilistic feelings, periodic dysphoria, irritability, and anxiety (APA, 2013). Similarly, neuroticism is characterized by a high level of negative emotions. It is a personality trait with a tendency to experience intense negative emotions, such as distress, depression, anxiety, and nervousness (Costa & McCrae, 1992). Both neuroticism and BPD are associated with high levels of impulsivity (APA, 2013). The consistent relationships between high levels of neuroticism and BPD found in the present research and previous studies may reflect shared patterns of negative emotions and behaviors. Those affected by BPD may

shift between one mood to another mood, experiencing dysphoric states and euthymia within the same day (Lieb & Linehan, 2004). According to the Multiple Self-States Model (Ryle, 1997), changes in mental functioning, interpersonal communication, and mood—key characteristics of BPD—can emerge as a set of repeated, inflexible and partly separated behaviors which are self-states. The Multiple Self-States Model highlights the structural separation level of self-states as a predictor of BPD severity (Ryle, 2007).

So, to further explore the relationships between neuroticism and BPD, refer to the following literature. The first factor is biological (heritable) vulnerability. In this regard, researchers have shown that neuroticism has a heritable basis, with heredity accounting for 30–50% of neuroticism (Barlow, 2000; Clark et al., 1994). In this regard, Distal et al. showed that neuroticism may predict BPD symptoms significantly and 50% of phenotypic relationships can be accounted by common genetic factors (Distel et al., 2009). Kendler et al. found that BPD factor is heritable; they found that emotional instability explains 67% of BPD. This finding supports the view that BPD is an emotional dysregulation disorder in the first glance (Kendler, Myers, & Reichborn-Kjennerud, 2011).

The second factor is Generalized Psychological Vulnerability. Generalized psychological vulnerability refers a sense of uncontrollability in life events and a lack of ability to manage these events (Barlow, 2000). It is thought that this sense of uncontrollability results from both early experiences and interactions with parents. Parents who are over-controlling on children (authoritarian parenting) or too permissive (easy-going parenting) parents have less control over children. As usual, parents transfer sense of security and predictability of life events to children. When such transference does not occur, children may develop a fear of uncontrollability in life. A Study by Lyons-Ruth suggested that infants who have unnresponsive mothers may struggle with controlling their environment, making them more susceptible to emotional disorders, including BPD (Lyons-Ruth & Jacobvitz, 2008).

In addition to generalized psychological vulnerability, a high level of neuroticism and an unpredictable environment, communication between affected individuals and their parents is often invalid. These children are subjected to criticism, blame, and punishment when they express their feelings, and they may grow into adults with BPD symptoms, experiential avoidance, unstable emotions, and difficulty regulating their emotions (Sauer-Zavala & Barlow, 2000). According to Linehan theory, a developmental-evolution pathway in BPD begins with early vulnerability; initially, this early vulnerability emerges as impulsivity , which is later followed by increased emotional sensitivity (Crowell et al., 2009). In fact, according to Linehan, BPD is a complicated interaction between biological (heritable) vulnerability and unsafe social environment (Linehan, 1993). The present study has some limitations: 1-The present study was conducted on university students, making generalization to other populations difficult. 2- This research is correlational in nature, so causal relationships cannot be established.

Conclusion

Findings of the present research revealed that neuroticism can be an important construct in predicting BPD symptoms. In clinical intervention, focusing on neuroticism symptoms and reduction of negative reactions could be useful targets to reduce signs of BPD.

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Disclosure Statement

There is no conflict of interest reported by the authors.

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