Original Article

Comparison of impulsivity, emotional instability, decision making and risky behaviors in patients with bipolar disorder and borderline personality disorder

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Abstract

This study aimed to compare impulsivity, emotional instability, decision-making, and high-risk behaviors in individuals with bipolar disorder (BD) and borderline personality disorder (BPD). The present study was a comparative causal study. The statistical population of the present study includes patients with BD and BPD in psychiatric centers and psychiatric hospitals in Tabriz in 2020. The sample consisted of 2 groups of 50 people, each of which was selected based on a semi-structured clinical interview. Research instruments included the Bart impulsivity questionnaire, Eisenhower personality questionnaire, Iowa gambling test, and Mohammadi high-risk behaviors questionnaire. Multivariate analysis of variance (MANOVA) was used to analyze the hypotheses. The results showed that compared to BPD, participants with BD have significantly higher mean scores in impulsivities and high-risk decision-making ($p < .05$). On the contrary, the results also indicated that the mean scores of emotional instability and high-risk behaviors were higher in BPD ($p < .05$). Findings of the present study point to the fact that individuals with BD and BPD have unique problems in terms of impulsivity, high-risk decision-making, emotional instability, and high-risk behaviors. Thus, these findings must be taken into account by the healthcare specialists in order to provide effective and individualized treatments.

Introduction

The relationship between borderline personality disorder (BPD) and bipolar disorder (BP) is highly discussed. For example, it is discussed whether they have independent or dependent characteristics. For example, the fluctuating mood symptoms observed in patients with BPD have led some to consider it a type of ultra-rapid cycling of BD and state that it falls into the spectrum of BD (MacKinnon & Pies, 2006). However, as Paris and Black (2015) suggested, some characteristics of BPD (e.g., interpersonal problems) appear to be not descriptive and are not related to fluctuating mood and thus appear to be BD. The clinical diagnostic problem is whether a patient has other diseases or disorders (Bayes, Parker, & Paris, 2019; Massó Rodriguez et al., 2021). Both can lead to fluctuating mood, deliberate self-harm (DSH), suicide, alcohol consumption, and drug abuse (Ghaemi, Dalley, Catania, & Barroilhet, 2014).

Common characteristics in both disorders (e.g., impulsivity) are considered "meta-diagnostic processes,"

and their presence may compromise diagnostic accuracy (Paulus, Ohmann, Möhler, Plener, & Popow, 2021; Yen et al., 2015). Symptoms of impulsivity often manifest as sexual inappropriate behaviors in BD and BPD. However, impulsivity may also include physical, financial, overeating, or aggression (Fornaro et al., 2016). Impulsivity is considered the primary psychological mediator in both disorders (Barker et al., 2015; Khalsa, Baldessarini, Tohen, & Salvatore, 2018; Richard-Lepouriel et al., 2019) (Latalova, 2009; Barker et al., 2015). Impulsivity in the DSM-5 (American Psychiatric Association, 2013) has been considered a diagnostic criterion for BPD and indicates a characteristic clinical symptom in patients. Patients with BPD have been assessed as very stable and highly vulnerable over time (DeShong & Kurtz, 2013; Espiridion & Kerbel, 2020).

In contrast, BD is believed to be more impulsive than BPD (Aguglia, Mineo, Rodolico, Signorelli, & Aguglia, 2018). Impulsivity observed in patients with BPD is often manifested to cope with negative emotions such as distraction (Flannery et al., 2020). In contrast, impulsivity

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is found in bipolar patients as a trait, and with fluctuating mood impulsivity, which is more often associated with hypomanic episodes (Eskander, Emamy, Saad-Omer, Khan, & Jahan, 2020; Wilson et al., 2007).

Significant similarities in the symptomatology of bipolar patients and patients with BPD rely primarily on the concept of emotional instability, which is defined as a specific reactive characteristic of mood associated with dysphoria, irritability, or severe episodic anxiety in response to environmental events (Palmer et al., 2021; Renaud, Corbalan, & Beaulieu, 2012). Emotional instability is clearly associated with a BPD. However, some experts consider it one of the main characteristics of BPD and BD, which are somewhat different in nature and process of instability (Blanco et al., 2017). However, regarding differential diagnosis, Renaud et al. (2012) distinguish between emotional instability (severe and mood to stressful events) and mood disability (stable emotional state fluctuations over a period). In this regard, capacity, intensity, frequency, and duration of emotional changes have been described as central in distinguishing patients with BD and BPD (Zanarini, Temes, Frankenburg, Reich, & Fitzmaurice, 2018).

Emotional instability in BPD often manifests as irritability, aggression, and hostility (Palmer et al., 2021; Renaud et al., 2012), and there is evidence that patients with BPD have higher levels of anger and impulsivity than patients with BD (Eskander et al., 2020; Wilson et al., 2007). Decision-making processes (in addition to rapid action processes) may also be critical in understanding why people with BPD have impulsive behaviors. Research indicates that patients with BPD were less likely to expect more significant rewards for delayed use than control group subjects, indicating that unwillingness to delay rewards or enjoyment is associated with a BPD (Dougherty, Bjork, Huckabee, Moeller, & Swann, 1999; Zhuang, Wang, Lei, Zhang, & Fan, 2020). Other studies have used Iowa gambling tasks to evaluate BPD's reward-based decision-making. For example, Haaland and Landro (2007) found that 20 hospitalized patients with BPD preferred fewer options with high-risk profit options when doing Iowa gambling tasks than those with 15 subjects in the non-clinical control group (Haaland & Landrø, 2007; Wojcik et al., 2019).

Also, patients with BD have common cognitive impairments such as decision-making and executive function. These cognitive disorders indicate a significant clinical problem in up to 60% of patients with BD (Chen et al., 2021; Martino et al., 2008), and can be seen in depression, mania, and depression-mania episodes. The result of these cognitive impairments in real life causes dysfunction in independent living, social relationships, and job success. BPD is characterized by a high degree of novelty related to excitement seeking, willingness to experience new situations, and risky behaviors. People with BPD engage in risky behaviors such as high-risk driving, drug abuse, and gambling. These behaviors generally have potentially adverse consequences (Marques-Feixa et al., 2021; Steinberg, 2008). Increased risky behaviors are one of the most well-known symptoms of BD and have been included in the diagnostic criteria for mania (Bauer et al., 2017; Hıdıroğlu et al., 2013).

Risky behaviors have a high potential for harm or danger and a simultaneous opportunity for reward (Edge, 2020). This disease is associated with specific psychosocial dysfunctions, including high rates of impulsive behaviors such as suicide (Song et al., 2017), drug abuse (Hunt, Malhi, Cleary, Lai, & Sitharthan, 2016; Subramanian, Sarkar, & Kattimani, 2017), sexual dysfunction (Adelson et al., 2013; Kopeykina et al., 2016) and criminal behavior (Moore et al., 2019; Soyka & Zingg, 2010). Moreover, children of parents with BD are at greater risk for maladaptive behaviors (Jones & Bentall, 2008; Klimes-Dougan, Jeong, Kennedy, & Allen, 2017; van Santvoort et al., 2015). To achieve more explicit definitions of BPD and BD based on the similarities and differences between the two disorders in the basic structure, we need to learn more about the central characteristics such as impulsivity, emotional instability, decision-making, and risky behaviors (Edge, 2020). In the clinical setting, depending on the individual's disorder, these descriptions help health professionals differentiate between the two disorders more accurately and select and provide appropriate treatment strategies (Fletcher, Parker, Bayes, Paterson, & McClure, 2014; Fowler, Madan, Allen, Oldham, & Frueh, 2019). Thus, in this study, a comparative approach was used to compare these two disorders to more accurately describe patients with borderline disorder and BD and find a suitable structure to distinguish between them.

Method

Participants

The design of the present study was comparative-causal. The statistical population of the present study included patients with borderline and bipolar personality disorders in psychiatric centers and specialized psychiatric hospitals in Tabriz in 2020. The sample consisted of 2 groups (50 people in each group), each selected based on a semi-structured clinical interview. A convenience sampling method was used in the present study. Hence, according to their psychiatric records, they were selected among those diagnosed with BPD and BD. The researcher performed the MCMI-III test and a semi-structured clinical interview to diagnose BPD and BD. In addition to providing the final diagnosis, another criterion was considered for selecting both groups, which included the age range of 18 to 45 years, and the mean age was 26±6.75 years. The tools used to collect the data included:

Instrument

Bart impulsivity questionnaire:

The eleventh version of the Bart Impulsivity Scale measures three factors, including cognitive/attention impulsivity, motor impulsivity, and lack of planning.

This scale has 30 items or questions, and each is scored on a 4-point scale (never / rarely, sometimes, often, and most of the time / always). Also, 11 items out of these 30 items are scored in reverse. The lowest score on the scale is 30, the highest score is 120, and the score of the non-psychiatric control group usually ranges from 50 to 60 (Thomas, Knowles, Tai, & Bentall, 2007). In a study conducted by Patton, Stanford, and Bart (White, Lejuez, & de Wit, 2008) (1997), they calculated the validity and reliability of the tool at 0.87 and 0.79, respectively. For the first time in Iran, Ekhtiari et al. (Ekhtiari, Safaei, et al., 2008) translated and standardized the original version of this questionnaire, and its validity and reliability coefficients were calculated at 0.75 and 0.83, respectively.

Eysenck Adult Personality Questionnaire:
The Eysenck Personality Questionnaire is a 90-item scale that measures psychoticism, neuroticism, extroversion, and lying. For each item of the questionnaire, there are two options (yes) and (no), which in some cases, the option yes takes score 3 points and the option no takes score zero. The psychoticism subscale (including 23 questions) in the Eysenck personality questionnaire measured emotional instability. In the Iranian sample, Cronbach's alpha coefficient was obtained at 0.72, 0.89, 0.92, and 0.72, respectively, for psychoticism, neuroticism (0.89), extraversion (0.92), and lie (0.72), which indicates high and acceptable reliability. Kaviani et al. (2005) conducted the research to validate and standardize the revised form of the Eysenck questionnaire in different age groups of the Iranian population showed that this questionnaire has good validity and reliability. The correlation coefficients obtained in the test-retest of Eysenck Adult Personality Questionnaire were as follows: Extraversion – introversion= 0.88, psychoticism= 0.76, Neuroticism = 0.88 and lie = 0.95. Internal correlation of each scale by Cronbach's alpha coefficient was reported 0.79, 0.76, 0.86, and 0.71, respectively, for extraversion - introversion, psychoticism, neuroticism, and lie (Kaviani et al., 2005).

Iowa Gambling Test:
This test was designed in 1994 at the University of Iowa (Bechara, Damasio, Damasio, & Anderson, 1994)(Bachara, Damasio, & Anderson, 1994). The Iowa gambling test construct's reliability has been determined by conducting studies on individuals with brain injury in the frontal lobe and functional brain imaging studies in clinical and non-clinical specimens. Studies have also shown a strong correlation between the Iowa Gambling Test and the Executive Functions Test (Zinchenko & Enikolopova, 2017). The Iowa Gambling Test is now used to assess many human decision disorders. In the ABCD version of this test, four sets of 60 cards are placed in front of the subject. The subject has a total number of 100 choices that he or she should take one card in each of the four sets. After each selection, he or she is informed of the wins or losses. The subject should

try to make the most profit of his or her choices. Cards are divided into profitable (D, C) and unprofitable (B, A) classes. Although the profit margin of profitable cards is low, due to less loss than profit, they are generally profitable. Unprofitable cards bring more profit than profitable cards, but in general, they cause more loss due to their more significant loss than profit. Profits (in the class of profitable cards) and losses (in the class of unprofitable cards) increase over time. Although the A and B cards are equal to this profit, the number of cards that lose in class A is higher, and the rate of each loss is less. In contrast, in class B cards, the number of losing cards is less, but the loss rate of each card is higher. The same rule applies to C and D cards. At the end of the test, the subject's net score is calculated as (D + C) - (B + A) (Ekhtiari, Rezvanfard, & Mokri, 2008). The present study calculates and provides the subject's net score to the researcher. The Persian version of this test can be used in the 2.3 Pro Fox programming environment and the Windows operating environment. This version consists of a combination of real cards in which computer software calculates wins and losses (Ekhtiari, Janati, Moghimi & Behzadi, 2003).

Tendency to risky behaviors questionnaire:
Zadehmohammadi and Ahmadabadi developed this questionnaire in (2008). This questionnaire included 38 items or questions, and each item is scored on a 5-point Likert scale (strongly disagree to strongly agree), and has seven components (tendency to a drug, tendency to alcohol, tendency to smoking, tendency to violence, tendency to have sex and sexual behavior, tendency to have sex with the opposite sex, and the tendency to drive dangerously. This scale is scored on a Likert scale from 1 to 5 (strongly agree to strongly disagree). The reliability of this scale was evaluated by the internal consistency method with the help of Cronbach's alpha, and its construct validity was examined using explanatory factor analysis and principal component analysis method. KMO test was obtained at 0.949, which is at a very desirable and satisfactory level. The Bartlett sphericity test was statistically significant (p = 0.01, df = 0.703, x2 = 16789.044). Also, the reliability of the risk scale and its subscales was at an appropriate level, so that Cronbach's alpha was 0.938 for the general scale and between 0.809 and 0.931 for its subscales (Zadehmohammadi & Ahmadabadi, 2008).

Millon Clinical Multiaxial Inventory-Third Edition (MCMI-III):
This test is a standardized questionnaire that measures a wide range of information related to the personality, emotional adjustment, and vision of the subject to the questionnaire and is suitable for people over 18 years of age who have reading and writing skills. The original version of this questionnaire was first developed by Millon in 1977 and revised twice so far. The current version consists of 175 items with yes and no answers. It includes 28 separate scales based on categories, variability indices, clinical personality patterns, severe personality trauma, clinical syndrome, and severe

clinical syndrome. Studies on its reliability and validity show that this questionnaire is a well-organized psychometric tool. The alpha coefficient for the general questionnaire has been obtained at 0.80. The depression and obsessive-compulsive disorder scales have been reported higher than 0.90 and lower than 0.66, respectively (Craig, 2001). A high test-retest reliability with a median of 0.91 has been estimated for this questionnaire. Khajeh Moghahi (1993) translated this test for the first time in Iran and developed its questions according to Iranian culture. In a study conducted by (Mohammad Reza et al. (2021), the results of examining the diagnostic validity of this test indicate that the diagnostic validity of all scales of this test is estimated at a very good level (Mohammad Reza et al., 2021). The reliability of the present questionnaire was estimated between 0.61-0.79 among the patients, 0.79-0.97 in the control group, and 0.82-0.96 using Cronbach's alpha coefficient (Delavar, Gharaei, and Chegini, 2012).

Semi-structured Clinical Interview for Diagnosis in Axis II (SCID-II):

SCID-II is a semi-structured clinical interview to evaluate 10 Axis II personality disorders in the DSM-VI-TR. It is also used for depressive and passive-aggressive personality disorders. Using this interview, Axis II can be diagnosed both absolutely (presence or absence of disorder) and dimensionally (according to the number of personality disorders that the code receives). Fogelson et al. (1991) evaluated personality disorder in 45 first-degree non-sick relatives of schizophrenia, schizoaffective disorder, or BD patients. They reported the intra-class correlation coefficient in the range of 0.60 for schizotypal personality disorder to 0.82 for BPD. Results of other researchers emphasize the good validity and reliability of SCID-II in different situations (for example, Beyrami et al., 2012).

Semi-structured Clinical Interview for Diagnosis in Axis I (SCID-I):

SCID is a clinical interview for diagnosing Axis I disorders based on DSM-IV. In the present study, this version was used to reject other clinical diagnoses of

Axis I and the final diagnosis of BD II and BPD. The clinical version has a specific manual and scoring program. The reliability coefficient for SCID was calculated at 60% (Kübler, 2013). Diagnostic agreement of this tool in Persian is desirable for most diagnoses with more than 60% reliability. Kappa coefficients for all current diagnoses and lifetime diagnoses are estimated at 52% and 55%, respectively (Amini et al., 2007).

First, the researcher referred to Razi Psychiatric Hospital in Tabriz. According to medical records, the patients with BPD and BD were introduced to the researcher. Then, a definitive diagnosis was performed by conducting the Millon test, SCID-I, and SCID-II. By selecting the final sample, patients were explained about the research and how to complete the questionnaires. Patients were asked to complete each questionnaire on impulsivity, emotional instability, high-risk behaviors, and the Iowa Gambling Test. The research method was as follows: At first, referring to Razi Psychiatric Hospital in Tabriz, patients with BPD and BD were introduced to the researcher according to medical records. Then, by performing the Millon test and SCID-I, SCID-II was definitively diagnosed, and by selecting the final sample, patients were explained about the research and how to work and complete the questionnaires. Patients were asked to complete each questionnaire on impulsivity, emotional instability, high-risk behaviors, and the Iowa Gambling Test. Mean and standard deviation were used to analyze the data at the descriptive level, and multivariate analysis of variance (MANOVA) was used to analyze the data at the inferential level.

Results

The results showed that 48% of people with BPD were male, and 52% were female. The mean and standard deviation of the age of the subjects in this group was between 32.18±7.31. In people with BD, 78% were males, and 22% were female. Their mean age was 21.42±4.25. The mean and standard deviation of the research variables in BD and BPD are shown in Table 1.

Table 1. Mean and standard deviation of research variables in bipolar disorder and borderline personality disorder

Group Variables	bipolar disorder		borderline personality disorder	
	Mean	SD	Mean	SD
Lack of planning	23/94	1/55	19/34	3/73
Motor impulsivity	32/46	2/54	25/76	5/53
Cognitive impulsivity	31/22	2/60	26/54	4/83
Impulsivity (total)	87/62	2/56	71/64	12/68
Emotional instability	7/34	2/56	10/22	2/28
Decision making	2013/82	720/61	2921/23	454/49
High-risk driving	14/80	4/53	18/48	2/88
Violence	13/02	3/63	16/54	3/38
smoking	12/32	2/83	15/68	3/35
drug use	19/18	5/12	25/68	8/03

alcohol consumption	14/04	3/99	19/10	6/15
Friendship with the opposite sex	9/74	2/58	12/64	2/37
sex and sexual behavior	9/96	3/26	12/46	2/53
High-risk behaviors (total)	93/06	19/49	120/58	24/23

Table 1 shows the mean and standard deviation of research variables in BD and BPD. According to the results, the mean scores of impulsivity and high-risk decision-making in BD were higher, and the mean scores of emotional instability and high-risk behaviors were higher in BPD.

To use MANOVA, the following assumptions must be met: (a) observations are randomly and independently sampled from the population; (b) each dependent variable has an interval measurement; (c) dependent variables are multivariate normally distributed within each group of the independent variables (which are categorical); (c) the population covariance matrices of each group are equal (this is an extension of homogeneity of variances required for univariate ANOVA). So, the data was checked for these assumptions. The results showed that all assumptions were met, and we could use MANOVA to analyze the data.

First, we evaluated the Wilks lambda for research variables in BD compared to BPD. The results showed a significant difference between the groups regarding impulsivity, emotional instability, decision-making, and high-risk behaviors F (12, 87) = 37.788, p < .001, Wilks' λ = .161). The results of the multivariate analysis of variance are reported in Table 2.

Table 2. Results of multivariate analysis of variance of research variables in bipolar disorder and borderline personality disorder

Source	Dependent variable	Squared sum	df	squared mean	Statistic F	sig
Group	Lack of planning	529/000	1	529/000	64/63	0/01
	Motor impulsivity	1122/25	1	1122/25	63/88	0/01
	Cognitive impulsivity	547/56	1	547/56	36/33	0/01
	Impulsivity (total)	6384/01	1	6384/01	76/21	0/01
	Instability	207/36	1	207/36	35/17	0/01
	High-risk driving	338/56	1	338/56	23/45	0/01
	Violence	309/76	1	309/76	25/14	0/01
	smoking	282/24	1	282/24	24/79	0/01
	drug use	1056/25	1	1056/25	23/26	0/01
	alcohol consumption	640/09	1	640/09	23/77	0/01
	Friendship with the opposite sex	210/25	1	210/25	34/16	0/01
	Relationship and sexual behavior	156/25	1	156/25	18/30	0/01
	High-risk behaviors (total)	18933/76	1	18933/76	39/16	0/01
	Decision making	2058482270	1	2058482270	56/72	0/01

Based on the results of Table 2, there is a significant difference between the two groups of people with BPD and BD in terms of impulsivity and its components, high-risk behaviors, emotional instability, and decision-making (p <0.01), so that people with BD had higher impulsivity and high-risk decision-making and people with BPD have higher emotional instability and high-risk behaviors.

Discussion

The present study compared impulsivity, emotional instability, decision-making, and high-risk behaviors in patients with BD and BPD. The research results and explanations related to each result are presented here. The results revealed that impulsivity in BD patients was higher than that in BPD patients. In this regard, the results of studies conducted by (Painter et al., 2019; Victor, Johnson, & Gotlib, 2011), and DeShong and Kurtz (2013) also showed a high level of impulsivity in BD patients compared to BPD patients. Impulsivity is considered as a core element of BD and is a prominent part of its diagnostic criteria (Bart, Abramson, & Alloy, 2019; Ozten & Erol, 2019) Studies suggest that impulsivity in bipolar patients may be independent of mood. Patients with BD report higher scores in general impulsivity and its dimensions (Lima, Peckham, & Johnson, 2018; Richard-Lepouriel et al., 2019). Also, BD has been strongly associated with sensitivity to reward (Johnson, Carver, Mulé, & Joormann, 2013; Pearlstein, Johnson, Modavi, Peckham, & Carver, 2019) and intense emotional experiences (Gruber, 2011; Jaggers & Gruber, 2020), and emotion regulation problems (Mason, Brown, & Croarkin, 2016). High scores on the entertainment search scale in Behavioral Activation System (BAS) have been reported among individuals at risk for BD (Johnson et al., 2013) and those diagnosed with bipolar spectrum disorder (Miller, Johnson, & Eisner, 2009; Zhang et al., 2021). People at risk for mania also report a feeling of high impulsivity

during intense emotion (Johnson, Carver, & Tharp, 2017). According to these results, Muhtadie et al. (2014) stated that people with BD have high impulsivity with high rewards and intense emotions. These forms of impulsivity severely impair psychosocial function in this group.

The results also showed a significant difference between people with BPD and BD in emotional instability. The level of emotional instability in BPD patients was higher than that in BD patients. The results were consistent with the findings of previous studies (Husain et al., 2021; Paris & Black, 2015). Emotional instability is associated with a BPD. However, some experts consider it one of the main characteristics of BPD and BD, which are somewhat different in nature and process of instability (Scheiderer, Wang, Tomko, Wood, & Trull, 2016). However, regarding the differential diagnosis, Renaud et al. (2012) refer to a distinction between emotional instability (severe and brief mood response to stressful events) and mood inability (stable emotional state fluctuations over a period). In this regard, capacity, intensity, frequency, and duration of emotional changes have been described as a central point in distinguishing between BD and BPD (Brüne, 2016). It has been recommended that increased emotional sensitivity may predispose to emotional instability in BPD (Linehan, 1993). Based on two-factor theories of emotional instability, nature-based models report high negative emotions and low voluntary control in BPD (Sleuwaegen et al., 2018).

Also, two-dimensional attachment models reported more intense emotional reactions and cognitive control, and executive function problems in BPD (Lei et al., 2018; Minzenberg, Poole, & Vinogradov, 2008). Also, considering the emotional model of Gross and Thompson (2007), several factors may cause a more robust emotional response in BPD. In particular, more negative assessments and changes in attention orientation may help explain the production of stronger emotional responses. The present study also revealed that decision-making in BD patients was higher than that in BPD patients. The present study results are consistent with those of studies conducted by Malloy-Diniz et al. (2017) and Martino et al. (2008). Patients with BD share cognitive impairments, including attention, processing speed, verbal memory, learning, decision-making, and executive function. These cognitive impairments represent a significant clinical problem in up to 60% of patients with BD (Bart et al., 2021; Martino et al., 2008) and can be observed in depressive, manic, and depressive-manic episodes (Solé et al., 2017).

This pervasive impairment in cognitive function in BD suggests that it may be a trait marker associated with a genetic vulnerability. Yechiam et al. (2008) used a modeling method to describe the decision-making processes in BD. The decision-making process was assessed in 28 bipolar patients (14 patients with acute problems and 14 treated people) and 25 in the control group using the Iowa Gambling Test to assess cognitive impulsivity and decision-making. The results showed that patients with acute BD tended to make more significant irregular choices. Similarly, Minassian et al. (2010) found that patients with BD tend to choose random options and high error rates in a predictive task such as the Iowa Gambling Test. Decision-making style in acute patients may indicate an impairment in concentration, a key characteristic in both manic and depressive episodes (e.g., Thakurdesai & Sawant, 2018)

The present study results revealed that high-risk behaviors in BPD patients were higher than that in BD patients. The results of the present study are consistent with those of studies conducted by (Eskander et al., 2020), Patel et al. (2019), Riemann et al. (2014), Asherson et al. (2014). The frequency of self-harming behaviors is higher than other psychiatric diagnoses in patients with BPD. BPD is characterized by a high degree of novelty related to excitement seeking, willingness to experience new situations, and risky behaviors. People with BPD engage in risky behaviors such as high-risk driving, substance abuse, and gambling. These behaviors generally have potentially adverse consequences (Song et al., 2017). Destructive behaviors in BPD can also be interpersonal, such as conflict with others (Moukhtarian et al., 2021), aggressive behaviors such as throwing objects or hitting a person (Paulus et al., 2021). People with BPD often report engaging in these behaviors to reduce or prevent negative emotions (Rosario-Williams, Kaur, & Miranda, 2021; Selby & Joiner, 2009). Understanding the role of emotions in this type of behavior is especially important since people with BPD have emotional instability. The capacity and level of emotion frequently fluctuate throughout the day (Baptista, Cohen, Jacquet, & Chambon, 2021)(Carpenter & Trull, 2013). Regarding BPD, Selby and Joyner (2009) believe that it is a disorder in which most psychological traumas may be linked to emotional contagion, which may be associated with behavioral disorders (such as substance use disorders, appetite disorders) in other cases.

However, since BPD is characterized by a wide range of destructive behaviors and emotional instability, it may strongly link emotional contagions. Some evidence of emotional contagion has been found in destructive and risky behaviors such as alcohol consumption, overeating, and suicide attempts (Asherson et al., 2014; Rosario-Williams et al., 2021).

Conclusion

Any research is likely to suffer some limitations. In the present study, the statistical population included the patients referred to a specialized psychiatric hospital in Tabriz. Hence, we should treat with caution in generalizing the study results to other populations and groups. As the present study was conducted during the Coronavirus outbreak, some clients did not have the necessary cooperation, and the use of a non-random

convenience sampling method was one of the limitations of the research. Researchers should attempt to conduct a similar study with a larger sample size to cover the limitations of the present study. Also, future studies need to focus on examining the psychological and social factors affecting the core issues in BD and BPD. Considering that these patients face many problems in controlling their impulses, a research suggestion would be to investigate the role of self-control and self-regulation in developing and maintaining BD and BPD. Furthermore, the current financial hardship is an essential social factor that researchers must consider. Such social factors predispose individuals to develop psychiatric disorders like BD and BPD.

All in all, our findings could be a vital start point to draw more attention to two of the most debilitating psychiatric disorders (i.e., BD and BPD). Therefore, psychopathology researchers may consider performing more broad studies to further investigate the differences and similarities between BD and BPD. Such psychopathology studies could be insightful for healthcare professionals in implementing more effective treatment plans. Also, by identifying the traumas in patients with BPD and BD, they can take appropriate measures to improve and reduce their emotional and cognitive impairment.

Disclosure Statement

The authors declare that there was no commercial or financial relationship that could be construed as a potential conflict of interest in their research.

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