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Original Article

A Cross-Sectional Study on Outcomes of Hospitalization in Patients with Borderline Personality Disorder After Six Months

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Abstract

Background: Borderline Personality Disorder (BPD) is a serious psychiatric disorder that is characterized by unstable affect, mood, behavior, object relations, and self-image. In this study, a 6-month follow-up was performed to evaluate the outcomes of hospitalization in terms of symptoms severity, suicidal attempts, self-harm behaviors, substance use, and anger expression.

Methods: This cross-sectional study was performed on 60 patients hospitalized with BPD in Iran Psychiatric Hospital in the first 6 months of 2018. Demographic information of patients was collected at the time of admission. Patients were assessed by initial psychiatric evaluations with the Structured Clinical Interview for DSM-IV [Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-1), Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-2)], the Borderline Evaluation of Severity over Time (BEST), the Spielberger's state-trait anger expression inventory and Depression Anxiety Stress Scale (DASS). Medical comorbidities, self-harm and suicide ideations and attempts, high-risk behaviors, and substance use disorders were also assessed and recorded. Three months after discharge, the patients were reassessed by BEST questionnaire and after 6 months, they were reassessed using DASS, BEST, SCID-2, and Spielberger's state-trait anger expression inventory.

Results: The repeated measures analysis of changes in quantitative variables including the scores of the severity of symptoms in BEST, DASS, and Spielberger tools showed that the scores of DASS decreased significantly during the study (p=0.020), while no significant change was observed in the scores of Spielberger and BEST inventory.

Conclusion: In patients with BPD, hospitalization was correlated with reduced depression, anxiety, and stress 6 months after discharge. Regular follow-ups along with regular patient visits can form an effective therapeutic relationship with the patients and help to improve monitoring of their drug usage, self-harming acts, and suicidal thoughts.

Keywords: Borderline personality disorder, Hospitalization, Mental health

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Introduction

Borderline Personality Disorder (BPD) is a severe psychiatric disorder with a variety of mild to severe symptoms. This disorder is characterized by unstable affect, mood, behavior, object relations, and self-image (1).

Patients with BPD have difficulty balancing their emotions and controlling impulses, maladaptive and high-risk behaviors, impaired decision-making, and poor problem-solving skills (2).

In 1938, the "Borderline Personality" term was introduced by Adolph Stern to describe individuals who did not meet either the criteria for psychotic disorders or psychoneurotic disorders. These patients are on the border between neurosis and psychosis (3).

Patients with BPD always appear to be in a state of crisis. Due to mood swings and the impulsive and dramatic nature of the disorder, they experience chaotic interpersonal relationships, might attempt suicide, and have self-injurious behaviors. This disorder is one of the most challenging psychiatric disorders in societies and if not identified and properly treated, can impose high costs on the lives of individuals and the community (4).

The course of this disorder is relatively stable; patients change little over time. Research demonstrates that some signs and symptoms of BPD, such as impulsive behaviors, self-harming, and transient psychotic symptoms, fade with age. At the same time, severe feelings of emptiness, loneliness, depression, and anger do not usually change over time (5).

The recurrence of symptoms can be prevented by building an effective therapist-patient relationship, treating symptoms, and increasing patients' adherence to continuous treatment (5).

BPD is also associated with other psychiatric disorders such as mood disorders, anxiety disorders, eating disorders, and disorders of substance use. Diagnosing and treating BPD is a major medical challenge due to the complex nature of this disorder, changes in symptoms over time, and accompanying psychiatric disorders (6).

Maladaptive behaviors and emotional dysregulation in patients with BPD often lead to disturbed and chaotic interpersonal relationships, which may cause a lack of strong emotional support to follow up on their pharmacotherapy and psychotherapy. Hospitalization can significantly help patients in such critical situations (7).

According to the guidelines of the American Psychiatric Association (APA) to achieve the desired result in the treatment of patients with BPD, it is necessary to pay even more attention to psychotherapy in addition to appropriate and tailored pharmacotherapy based on the patient's clinical profile (8).

The follow-ups after discharge in patients with BPD show that hospitalization is related to improvement in patients' interpersonal relationships, suicide attempts, and depressive symptoms over time (9,10). For instance, a 3-month follow-up study of patients with BPD, for whom Dialectical Behavior Therapy (DBT) was performed, indicated that symptoms of depression and hopelessness, anger expression, dissociation, and general psychopathology scores were significantly improved (11).

If not treated correctly and timely, BPD can impose many destructive consequences for patients, their families, and society. Taking these facts into consideration, and concerning the lack of precise and comprehensive statistics about the treatment of patients with BPD in Iran, we decided to perform the present study and investigate the outcomes of hospitalization of patients with BPD after 3 and 6 months of discharge.

Materials and Methods

Design and sample

The present study was arranged and carried out in Department of Psychiatry, School of Medicine, Iran University of Medical Sciences. This cross-sectional study included 60 patients with BPD admitted to Iran Psychiatric Hospital from February to July 2018.

The diagnosis was based on the structured clinical interview for DSM-IV (SCID-1) and SCID-2. Demographic data including age, gender, educational level, self-mutilation and suicidal thoughts or attempts, drug abuse (including any use of drugs without doctor's prescription or more than a prescription dose), and high-risk behaviors were collected (Table 1). The Borderline Evaluation of Severity over Time (BEST) questionnaire was used to determine the severity of the disorder, and Spielberger's state-trait anger expression inventory and Depression Anxiety Stress Scale (DASS) were used to evaluate the

Table 1. Demographic characters, comorbidities and background data

Age (years) Mean (SD)		**29.6(7.36%)**
Gender	Female	27 (45%)
	Male	33 (55%)
Level of education	Elementary and middle school	22 (37%)
	Diploma	26 (43%)
	BSc	11 (18%)
	MSc / PhD	1 (2%)
Occupation	Employed	18 (30%)
	Unemployed	40 (67%)
	Housewife	2 (3%)
Marital status	Single	43 (72%)
	Married	12 (20%)
	Divorced/widowed	5 (8%)
Birth rank	First-born	16 (27%)
	Second-born	14 (23%)
	Higher	25 (42%)
Coexisting personality disorders	Narcissistic	24 (40%)
	Antisocial	24 (40%)
	Histrionic	7 (12%)
	Dependent	1 (2%)
	Passive	12 (20%)
	Schizotypal	1 (2%)
	Depressive	2 (3%)
	Paranoid	4 (7%)
Coexisting psychiatric disorders	Bipolar type 1 disorder	7 (12%)
	Bipolar type 2 disorder	2 (3%)
	Obsessive-Compulsive Disorder (OCD)	8 (13%)
	Major Depressive Disorder (MDD)	17 (28%)
	Post-Traumatic Stress Disorder (PTSD)	5 (8%)
	Phobia	3 (8%)
	Substance use disorder	20 (35%)
	Attention Deficit Hyperactivity Disorder (ADHD)	7 (12%)
Presence of self-harm ideation at first evaluation		22 (37%)
History of self-harm		21 (35%)
Presence of suicidal ideation at first evaluation		28 (47%)
History of suicidal attempt		28 (47%)
Substance type being used at first evaluation	Tetrahydrocannabinol (THC)	21 (35%)
	Opioid	21 (35%)
	Amphetamine	10 (16%)
	Tramadol	1 (2%)
	Benzodiazepines	2 (3%)
	Lysergic acid Diethylamide (LSD)	1 (2%)
	Opioid+amphetamine	10 (16%)
	THC+opioid	10 (16%)
	THC+Benzodiazepine	1 (2%)

Cont Table 1.

History of high-risk behaviors	High-risk driving	21 (35%)
	High-risk sexual behaviors	7 (12%)
	High-risk driving+sexual behaviors	3 (%5)
	Other high-risk behaviors	35 (58%)
Alcohol use in the first evaluation		34 (57%)

intensity of anger, depression, and anxiety.

Patients within acute mania episode or psychotic state or having major neurocognitive disorders who failed to understand or misunderstood the question`s concept, patients with obvious hearing or vision impairment, inability to understand or speak Persian, and illiterate patients were excluded from the study.

After discharge, patients were referred to the outpatient clinic of Iran Psychiatric Hospital for follow-ups at months 3 and 6 post-discharge. After 3 months, patients were assessed by the BEST questionnaire.

At the end of the study, after 6 months from discharge, patients were evaluated clinically regarding their adherence to pharmacological and non-pharmacological treatments, substance use, verbal and physical aggression, re-hospitalization, self-harm or suicide attempts, and psychotic symptoms. Spielberger anger questionnaire, DASS and SCID-I were used at the beginning and end of the study. BEST questionnaire was used at the beginning of the study and at months 3 and 6. For patients who did not come to the clinic, follow-ups were performed by phone. Patients received both pharmacotherapy and psychotherapy including family education and teaching family members how to encounter the illness. Pharmacotherapy consisted of mood stabilizers such as sodium valproate and carbamazepine and anti-psychotics such as risperidone and anti-depressants.

Data collection tools

1. SCID-I

SCID-I is a semi-structured clinical interview for axis I Disorders. Sharif *et al* and Amini *et al* translated this tool into Persian. Its specificity was over 85% in most diagnoses, and its Kappa was reported to be around 0.4 for all diagnoses, except for total anxiety disorder.

2. SCID-II

The SCID-II is a semi-structured clinical interview that evaluates 12 personality disorders. In categorical assessments, if the clinical criteria are sufficient, the diagnosis can be considered. In dimensional evaluations, the number of clinical criteria met is considered. In the research conducted by Maffei *et al* the inter-rater reliability was estimated between 0.48 and 0.98 in categorical diagnoses and between 0.90 and 0.98 in dimensional diagnoses. Bakhtiari reported this interview's suitable face and content validity and test-retest reliability of 80% with one-week interval (12,13).

3. Spielberger's state-trait anger expression inventory:

This scale was developed by Spielberger and consists of 10 items, each of which ranges from 1 to 4 scores. The person marks the best option based on his mental state (anger), and a higher score on this scale reflects more anger severity. The sum of scores on this scale reflects the degree of anger in the patient. In a pilot study conducted in Iran, this scale was implemented on a group of students, and its results were calculated by Pearson correlation coefficient, and its reliability was reported to be 73%. There was a statistically significant correlation between the scores of each category and the total score of the questionnaire (r=0.737, at the level of 0.01) (14).

4. Depression Anxiety Stress Scale (DASS) (1995)

This scale consists of 42 terms, and each subscale has 14 questions. Four options exist for each item, ranging from 1 (not true at all) to 4 (very true). The patients select an option indicating their mental state within the past week. The anxiety subscale of DASS has a correlation of 0.81 with Beck Anxiety Inventory (BAI), and the depression subscale of DASS has a correlation of 0.74 with Beck Depression Inventory (BDI) (15).

The Cronbach's alpha coefficient was acceptable for anxiety (0.79), stress (0.91), and depression (0.93). An acceptable test-retest reliability (0.740-0.881, $p<0.01$) was also reported for DASS-21 and its 3 dimensions (16).

5. Borderline Evaluation of Severity over Time (BEST):

Table 2. Variable prevalence

	Prevalence at initial phase	Prevalence at final phase	p-value
0	22 (37%)	8 (13%)	0.013
Self-harm attempted	21 (35%)	20 (27%)	0.100
Suicidal ideation	28 (48%)	16 (27%)	0.100
Suicide (s) attempted	28 (48%)	10 (17%)	0.001
DASS score	60.95	46.15	0.020
BEST score	39.4	36.4	0.319
SCID II severity	9.08	7.68	0.000
Spielberger's state-trait anger expression inventory score	27.2	26.9	0.830

This questionnaire was designed in 1990 by Pfohl and Blum. The scale includes 15 items and 3 subscales. All the items are rated on a Likert-like scale. The first 8 items comprise subscale A (thoughts and feelings) and involve assessments of mood reactivity, identity disturbance, unstable relationships, paranoia, feeling of emptiness, and suicidal thinking. The next 4 items comprise subscale B (behaviors -negative), which rates negative acts such as injuring oneself. Items on these subscales are rated from 1 (none/slight) to 5 (extreme). The final 3 items include subscale C (behaviors-positive), which rates behaviors such as following therapy plans. These items are rated from 5 (almost always) to 1 (almost never) (17,18).

Ethics approval

In this study, patients' information remained confidential. The study received ethical approval from ethics group of Iran University of Medical Sciences (IR.IUMS.REC.1398.463).

Statistical analysis

The results of the study were evaluated using Wilcoxon Test for the DASS questionnaire and SCID-II and mean severity of patients' personality disorder; McNemar test for self-harm ideations and attempts, suicidal ideations, and attempts, Repeated Measures Analysis (ANOVA) for results of the BEST questionnaire, and Paired-Samples T-Test for Spielberger's state-trait anger expression inventory. Statistical data analysis was performed with SPSS software version 24.

Results

Table 1 shows all demographic information, as well as comorbidity with other major psychiatric and personality disorders, substance use, self-harm, and suicide ideation and attempts at the beginning of the study. At the end of the study, we evaluated 41 patients; 19 did not answer follow-up calls.

The most prevalent comorbidity was Major Depressive Disorder (MDD), with 28% prevalence among the patients. The most common accompanying personality disorder was narcissistic personality disorder, with a prevalence of 40% among the study patients.

At the time of hospitalization, 37% of the patients had self-harm ideations, 35% had tried self-harm, 47% had suicidal ideations, and 47% had attempted suicide. The most common ways of suicide were drug overdose and jumping from a height. In the 6-month follow-up of the patients, 13% had self-harm ideations; 33% attempted self-harm, 27% had suicidal ideations, 17% attempted suicide, and 5% attempted self-harm and suicide. These findings showed that self-harm ideation significantly decreased, but self-harm attempts did not decrease significantly. Though suicide ideations did not significantly decrease, attempts for suicide decreased significantly (Table 2).

We found that the rate of substance use was 58% with cannabis being the highest abused substance (21 patients or 35% used it). The rate of substance use decreased to 52% at the end of the study. The mean DASS score at the time of hospitalization was 60.95, which at the end of the study showed a significant

Table 3. DASS findings

	N	percentiles 25th	Percentiles 50th (median)	Percentiles 75th	Mean	Std. deviation
DASS first	41	26.5	69	91.5	60.9512	35.06776
DASS end	41	16	37	85	46.1463	34.51417

Table 4. SCID II findings

	N	percentiles 25th	Percentiles 50th (median)	Percentiles 75th	Mean	Std. deviation
SCID first	60	8	9	10	9.08	1.862
SCID end	41	5.50	8	9	7.68	2.207

decrease to 46.15 (p=0.02).

The mean score of Spielberger's state-trait anger expression inventory at initial hospitalization time was 27.22. After 6 months of follow-up, this score decreased to 26.93, but this decrease is not statistically significant (p=0.836).

The mean severity score of BPD according to the BEST questionnaire at the time of hospitalization was 39.46, which decreased to 36.08 after 3 months of follow-up and 36.41 at the end of the study. Thus, the average severity of the disorder had decreased slightly but not significantly over time (p=0.319).

The mean score of DASS at initial hospitalization time was 60.95. After 6 months of follow-up, this score decreased to 46.15, which demonstrated a significant decrease (p=0.02) (Table 3).

According to SCID-II, the mean severity of patients' personality disorders at the initial hospitalization time was 9.08, which at the end of the study decreased significantly to 7.68 (p=0.00) (Table 4).

Discussion

Borderline personality disorder is one of the major challenges of the healthcare system. Due to its chronic nature and course of symptoms, many studies have shown that BPD patients repeatedly present in the emergency ward and psychiatric clinics.

Some studies have shown a 40% improvement of symptoms during the first 2 years (5) and the mean severity of the SCID scores decreased significantly during the one-year follow-up. In this study, the mean intensity of the SCID scores decreased significantly during 6 months after hospitalization. However, no significant change was observed in the BEST score (14).

In Bazrafshan's study of patients with borderline personality disorder, the most common comorbid disorders were major depressive disorder (MDD), Bipolar type 1 disorder, and substance use disorder (15). In Zanarini's study, mood and anxiety disorders were among the highest comorbidities. They showed that less comorbidity is essential in improving the symptoms of borderline personality disorder over time (5).

In our study, the most common comorbidity was a major depressive disorder with 28% prevalence, and then substance use disorder, bipolar type 1 disorder, and Obsessive-Compulsive Disorder (OCD).

Consistent with our findings, Paris and Frank's study represented a significant improvement in affective symptoms, impulsivity, interpersonal interactions, and transient psychotic symptoms over 15 years of follow-up (12).

In Zanarini's study, impulsive symptoms, including suicide and self-harm, decreased from 81% to 25% over 6 years (5). In Bazrafshan's study, suicide and self-harm attempts decreased from 60 to 47% and 70 to 50%, respectively (14). In this study, suicide and self-harm attempts decreased from 47 to 17% and 35 to 33%, respectively during 6 months. Also, the DASS and Spielberger scores were significantly reduced during 12 months, which were not examined in other studies. A significant decrease in DASS score was observed during 6 months, but we observed no significant change in Spielberger's score.

Consistent with our findings, Zanarini's study reported that cigarette and cannabis use were common among patients with BPD.

In these one-year follow-up studies of patients with BPD, it was stated that only 10% of patients

underwent psychotherapy during 12 months of follow-up, and 29% received pharmacotherapy. In contrast, in our study, 40% of the patients received pharmacotherapy alone, 10% of the patients received only psychotherapy and 5% of the patients received pharmacotherapy and psychotherapy together. This finding is in contrast with the study of Mirhaj Mohammadabadi *et al* claiming that psychotherapy is more acceptable than pharmacotherapy among patients with BPD. However, this contrast might be associated with our short period of follow-up (19).

Several factors can be involved in improving the symptoms of patients with BPD after discharge from the hospital.

The question is whether psychopathology of the disease improves over time or whether the symptoms depend on environmental factors such as behavior changes, development of social support networks, psychopharmacology, and psychotherapy. It seems that improvement of the symptoms over time is multifactorial, and identifying the various dimensions involved in improving the symptoms of these patients can be crucial for reducing the burden imposed on the patients and their caregivers and the health care system.

Paying serious attention to BPD in societies such as Iran with its special cultural context will play a significant role in improving the patients' and their caregivers' quality of life. Given the involvement of various factors in developing symptoms of BPD, more research is required to identify various factors and help social policymakers adopt gross practical solutions.

Limitations

There were some limitations in this study, first of which was the small number of patients, and the second the short period of follow-up and finally difficulty accessing them. Furthermore, issues such as the socioeconomic level of the patients and their families, the patients' level of education, income, history of childhood trauma, and temperament and personality traits of individuals in the study should be considered as possible confounding factors.

We believe further studies, especially with a larger number of patients and more extended follow-up periods might help reach a more accurate assessment of the disorders course and confounding factors restrict.

Conclusion

The short-term hospitalization of patients with BPD at the onset of the disorders crisis is beneficial to them in many ways, such as reducing their depression, anxiety, and stress.

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Conflict of Interest

None.

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