ORIGINAL ARTICLE

DOI: 10.4274/nkmj.galenos.2024.33866
Nam Kem Med J 2024;12(3):225-234

Dysfunctional Personality Disorder Beliefs, Treatment Adherence and Lifetime Suicide Attempts of Bipolar Disorder Patients Type-1

Tip-1 Bipolar Bozukluk Hastalarında İşlevsel Olmayan Kişilik Bozukluğu İnançları, Tedavi Uyumu ve Yaşam Boyu İntihar Girişimleri

Esat Fahri AYDIN[1], Hacer Akgül CEYHUN[1], Mine ŞAHİNGÖZ[2], Fatma TUYGAR OKUTUCU[1], Celaleddin KARTAL[3]

[1]*Atatürk University Faculty of Medicine, Department of Psychiatry, Erzurum, Turkey*
[2]*Necmettin Erbakan University Faculty of Medicine, Department of Psychiatry, Konya, Turkey*
[3]*Private Practice of Psychiatry, Sivas, Turkey*

ABSTRACT

Aim: This study aims to determine the effects of personality-specific dysfunctional beliefs on psychiatric treatment adherence of patients with bipolar disorder (BD) type-1 in relation to their suicide attempt history. Additionally, the clinical features of the patients related to that may influence medication adherence.

Materials and Methods: Patients were screened (n=79) using the Morisky Medication Adherence Scale, and the Personality Belief Questionnaire-Short Form to assess psychiatric treatment adherence and personality-specific dysfunctional beliefs, respectively.

Results: The results of the study show that the psychiatric medication treatment adherent group consisted of 26 (32.9%) patients, while the psychiatric medication treatment non-adherent group consisted of 53 (67.1%) patients. Participants with a history of suicide attempt had high dysfunctional beliefs specific to avoidant, dependent, histrionic, paranoid, and borderline personalities both in the psychiatric medication treatment adherent and psychiatric medication non-adherent group ($p<0.05$). The number of patients who stopped their medication due to its side effects was significant higher in the psychiatric medication treatment non-adherent group than the psychiatric medication treatment adherent group ($p<0.05$). The age of onset of BD was significantly higher in the psychiatric medication treatment adherent group than in the psychiatric medication treatment non-adherent group ($p<0.05$).

Conclusion: This study showed that during the pharmacological management of BD type-1 patients with history of suicide attempt, dysfunctional beliefs specific to avoidant, dependent, histrionic, paranoid, and borderline personalities may be considered. This study highlights the importance of dysfunctional personality beliefs in type-1 BD patients.

Keywords: Bipolar disorder, suicide attempted, medication adherence, personality disorders, age of onset

ÖZ

Amaç: Bu çalışma, kişiliğe özel işlevsel olmayan inançların, bipolar bozukluk (BB) tip-1 hastalarında intihar girişimi öyküsü ile ilişkili olarak psikiyatrik tedavi uyumuna etkisini belirlemeyi amaçlamaktadır. Ayrıca hastaların ilaç uyumlarına ilişkin klinik özellikleri de değerlendirilmiştir.

Gereç ve Yöntem: Hastalar, psikiyatrik tedavi uyumunu ve kişiliğe özel işlevsel olmayan inançları değerlendirmek için sırasıyla Morisky İlaç Uyum Ölçeği ve Kişilik İnanç Anketi-Kısa Formu kullanılarak tarandı (n=79).

Bulgular: Araştırmanın sonuçları, psikiyatrik ilaç tedavisine uyum sağlayan grubun 26 (%32,9) hastadan oluştuğunu, tedaviye uyumsuz grubun ise 53 (%67,1) hastadan oluştuğunu göstermektedir. İntihar girişimi öyküsü olan katılımcıların hem psikiyatrik ilaç tedavisine uyumlu hem de psikiyatrik ilaç tedavisine uyumlu olmayan grupta yüksek düzeyde kaçınmacı, bağımlı, histrionik, paranoid ve borderline kişiliğe özel işlevsel olmayan inançları vardı ($p<0,05$). İlaç tedavisini yan etki nedeniyle bırakan hasta sayısı, psikiyatrik ilaç tedavisine uyumsuz grupta, ilaç tedavisine uyumlu gruba göre

Address for Correspondence: Esat Fahri AYDIN MD, Atatürk University Faculty of Medicine, Department of Psychiatry, Erzurum, Turkey
Phone: +90 442 344 73 62 **E-mail:** esatfahriaydin@gmail.com **ORCID ID:** orcid.org/0000-0003-0166-2076
Received: 20.03.2024 **Accepted**: 23.07.2024

This study was presented as an open paper in EABCT 2021 Congress Belfast, Northern Ireland 8th-11th September. The name of the presentation is "Dysfunctional personality disorder beliefs, suicide attempt and medication adherence in patients with bipolar disorder type-1".

anlamlı olarak daha yüksekti (p<0,05). BB'nin başlangıç yaşı, psikiyatrik ilaç tedavisine uyumlu grupta, psikiyatrik ilaç tedavisine uyumsuz gruba göre anlamlı olarak daha yüksekti (p<0,05). Birinci derece akrabalarda psikiyatrik bozukluk öyküsü, psikiyatrik ilaç tedavisine uyumsuz grupta, psikiyatrik ilaç tedavisine uyumlu gruba göre istatistiksel olarak daha yüksekti (p<0,05).

Sonuç: Bu çalışma, intihar girişimi öyküsü olan BB tip-1 hastalarının farmakolojik tedavisinde kaçınmacı, bağımlı, histriyonik, paranoid ve borderline kişiliklere özel işlevsel olmayan inançların dikkate alınabileceğini göstermiştir. Bu çalışma tip-1 BB hastalarındaki işlevsel olmayan kişilik inançlarının önemini vurgulamaktadır.

Anahtar Kelimeler: Bipolar bozukluk, intihar girişimi, ilaç uyumu, kişilik bozuklukları, başlangıç yaşı

INTRODUCTION

Although bipolar disorder (BD) is an economically costly health service, effective treatment thereof remains to be one of the greatest problems of daily psychiatric practice. Success of medication is affected by factors such as patient's tolerance, suitableness of the regimen, and above all, adherence to the medication[1]. The World Health Organization (2014) defines medication non-adherence as "a case in which a person's behavior in taking medication does not correspond with agreed recommendations from health personnel". In a recent meta-analysis, medication non-adherence for schizophrenia, major depressive disorders, and BD were detected at 56%, 50%, and 44%, respectively[2]. Medication non-adherence was significantly related to more hospitalization, and suicide attempts in patients with BD in a prospective observational study[3]. Moreover, as shown in the same study, costs incurred by non-adherent patients were higher than those of adherent patients[3]. Medication non-adherence previously was found to be related to some factors such as experiencing side effects, insight problems, reluctance to use psychiatric medication, substance use history, and number of hospitalizations in patients with BD[4,5].

Suicide is a crucial public health problem. Every year, almost 800,000 people die by suicide worldwide[6]. Death by suicide has an enormous effect on individuals' mental health[7]. Suicide affects not only the family of the person who died via suicide but also a considerable group of people who have connections with the person who died via suicide. It was shown that each suicide affected 135 people who knew the person died via suicide[8]. Additionally, association between suicide and psychopathology is widely accepted[9].

BDs are usually comorbid with other psychiatric disorders, making BD management difficult[10]. Personality disorders are highly comorbid in patients with BD[11]. In a systematic review of euthymic BD patients, 41.2% had at least one comorbid personality disorder, and cluster B personality disorders were the most common cluster of personality disorders. Moreover, borderline personality disorder (10.1%) was detected as the most common subtype of personality disorder[12]. Personality disorders adversely influence suicide attempts, treatment outcomes, and psychosocial functioning in BD patients[13-17]. The association of personality disorders and suicide has been implicated previously. High mortality rates in personality disorders may be associated with suicide[18,19]. A recent meta-analysis has shown that the lifetime prevalence of suicide attempt is 33.9% in BD[20].

Personality disorders' effect is one of the substantial factors considering medication non-adherence. This effect may be one of the causes of the adverse clinical course in patients with BD[21]. Medication adherence problems in BD were previously associated with personality disorder comorbidity[22]. Additionally, borderline personality disorder was found to be a predictor of antipsychotic treatment non-adherence in BD in a follow-up study[23]. Besides this, the limited clinical research on this topic calls for further investigations to be done[24].

As stated by cognitive theory, a personality disorder is distinguished in the dysfunctional beliefs that characterize and sustain it[25]. Dysfunctional personality disorder beliefs supply explanations for dysfunctional attitudes to past and current experiences[26]. Exploring and modifying dysfunctional personality disorder beliefs are among the main goals of cognitive-behavioral psychotherapy of personality disorders. In the current study, dysfunctional personality disorder beliefs are considered a proxy for personality disorders, as the beliefs themselves are often what cause the difficulties of personality[27].

The present study primarily aimed to evaluate the effect of personality disorder beliefs on medication adherence of patients with BD type-1 (BD-1) in relation to their suicide attempt history. Additionally, to assess the clinical characteristics of the participants in relation to their medication adherence was aimed. To the authors' knowledge, the present study is the first study exploring the effects of personality disorder beliefs on medication adherence of patients with BD-1 in relation to their suicide attempt history.

MATERIALS AND METHODS

The present cross-sectional study was performed with patients followed in Ataturk University Research and Training Hospital Clinic of Psychiatry Outpatient between June 2017 and February 2019. The sample included 79 patients with BD-1,

who met the following criteria: age of 18-65 years, a diagnosis of BD-1 established with SCID-I[28,29], and being euthymic in BD as defined by the Turkish version of the Hamilton rating scale for depression (HRSD) ≤7[30] and Young Mania rating scale ≤ 5[31] for at least eight weeks. Exclusion criteria were the presence of mental retardation, comorbid axis I, and a medical illness affecting patients' general health condition.

The necessary approval was obtained from the Atatürk University Faculty of Medicine Clinical Research Ethical Committee (decision no: 21, date: 09.06.2017). The study procedures were conducted in line with the Helsinki Declaration. Informed consent was procured from all participants before their participation in the study. A form was developed to obtain necessary socio-demographic and clinical data regarding the study's aims.

Morisky Medication Adherence Scale

Participants' adherence to medication was evaluated using the MMAS, which was created by Morisky et al.[32-34]. The validity and reliability of the Turkish version of the scale have been evaluated[35]. The scale includes four items about patients' adherence to medication. Medication adherence is considered high if the patient answers "no" to all items. Medication adherence is moderate if the patient answers "yes" to one or two items. Medication adherence is poor if the patient answers "yes" to three or four items. In the present study, poor and moderate medication adherence patients have been grouped as medication non-adherent, and patients with high medication adherence as medication adherent[36].

Personality Belief Questionnaire-Short Form

The PBQ-SF, developed by Butler et al.[37], is a self-rated tool created to evaluate dysfunctional beliefs associated with personality disorder. The PBQ-SF evaluates beliefs associated with ten personality disorders: paranoid, schizoid, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, obsessive-compulsive, and passive-aggressive. In PBQ-SF, the respondents are asked to rate 65 statements on a 5-point scale ranging from 0= I do not believe it at all to 4= I believe it totally. Total scores of all the personality disorder beliefs included in the scale extend between 0 and 28. A high score indicates high levels of dysfunction. The PBQ-SF has a reliability and validity study in Turkey[38].

Statistical Analysis

Statistical Package for Social Sciences: The Statistical Package for Social Sciences (SPSS) Statistics 20.0 Software was used for statistical analysis. The comparison of the medication adherent and medication non-adherent groups in terms of socio-demographic characteristics and clinical features was done through the Pearson chi-squared test and independent-sample t-test. The Pearson chi-squared test used nominal variables, while the independent sample t-test used continuous variables. Using the Kolmogorov-Smirnov test, the skewness and kurtosis values were examined to evaluate the normal distribution of data. Moreover, the patients' socio-demographic characteristics and clinical features were presented as mean ± standard deviation and percentages (%). In the present study, p values below 0.05 were determined to be statistically significant.

Two-way Multivariate Analysis of Variance Test: The MANOVA was used to determine whether the dysfunctional personality beliefs of patients with BD-1 differ according to medication adherence and history of suicide attempts. The test was conducted with the medication adherence and suicide attempt as independent variables, and the passive-aggressive, dependent, obsessive-compulsive, anti-social, narcissistic, histrionic, schizoid, paranoid, borderline, and avoidant personality beliefs scores as dependent variables. MANOVA is a parametric test and requires that some assumptions be met before analysis of the data. In this direction, all assumptions were checked before the test and were met.

RESULTS

The mean age of patients was 34.49±12.37 years. Among the patients, 34 (43.0%) were female and 45 (57.0%) were male. Their mean number of years of education was 11.56 ± 3.77. Among the patients, 41(51.9%) had psychotic features and 13 (16.5%) had at least one suicide attempt in their medical history. The mean age of BD onset was 24.62±7.78 years.

Medication adherent and medication non-adherent groups were created based on the MMAS. The medication adherent group consisted of 26 (32.9%) patients, while the medication non-adherent group consisted of 53 (67.1%) patients. Table 1 displays a comparison of these two groups with respect to socio-demographic and clinical features and course of illness. In terms of years of education, the medication non-adherent group had significantly higher years of education than the medication adherent group (t=-2.26, p=0.02). In the medication adherent group, the age of BD onset was significantly higher than the medication non-adherent group (t= 2.13, p=0.04). No significant differences were detected regarding the other parameters in Table 1.

While 46.2% (n=12) of patients reported that they experienced drug side effects in the medication adherent group, 67.9 % (n=36) of patients in the non-adherent group reported the same. Statistically, no significant difference was detected between the two groups (X^2: 3.46, p=0.06). In terms of stopping medication due to side effects, the number of patients (n=10, 12.7%) was significantly higher in the medication non-

adherent group than the adherent group (n=0, 0.0%) (X^2: 5.61, p=0.02).

History of BD in the first-degree relatives was not statistically different between the two groups (n=1, 3.8% in the medication adherent group; n=9, 17.3% in the medication non-adherent group) (X^2: 2.81, p=0.15). However, history of psychiatric disorder in the first-degree relatives was statistically higher in the medication non-adherent group (n=25, 48.1%) than the adherent group (n=6, 23.1 %) (X^2: 4.52, p=0.03).

In all of the patients, the mean avoidant personality belief scores (14.20±5.93) were the highest, and the mean histrionic personality belief scores (6.96±5.61) were the lowest among all personality disorder belief scores (Figure 1). In both groups, the mean avoidant personality belief scores were higher in the adherent group (14.57±5.31) than in the non-adherent group (14.01±6.25), and the mean histrionic personality belief scores were lower in the adherent group (6.84±5.78) than in the non-adherent group (7.01±5.58) (Figure 2). In the group with history of suicide attempt, the mean avoidant personality belief scores (16.76±6.12) were the highest, and the narcissistic personality beliefs scores (9.07±7.15) were the lowest. In the group without history of suicide attempt, the mean histrionic personality disorder beliefs were the lowest (6.27±5.21), and the mean avoidant personality belief scores (13.69±5.81) were the highest (Figure 3). The means and standard deviation values of dysfunctional personality belief scores of the medication-adherent and medication non-adherent patients according to history of suicide attempt are presented in Table 2.

For the assessment of patients' dysfunctional personality disorder beliefs according to medication adherence and history of suicide attempt, MANOVA was performed. The MANOVA showed a significant multivariate main effect for medication adherence [$F_{(10.66)}$= 3.500, p=0.001, Wilks' Λ = 0.653]. However, there is no significant difference between the personality disorder beliefs in terms of medication adherence at the univariate level in MANOVA (Table 3). Additionally, there was a significant multivariate main effect for history of suicide attempt [$F_{(10.66)}$= 4,290, p= 0.000, Wilks' Λ = 0,606).

Table 1. Socio-demographic and clinical features of the patients

Variable	Medication adherent (n=26)	Medication non-adherent (n=53)	Test	p value
Age, mean ± SD	37.61±14.32	32.96±11.13	t=4.05	0.15[b]
Gender, n (%)				
Female	10 (61.5)	29 (54.7)	X^2: 2.1	0.56[a]
Male	16 (38.5)	24 (45.3)		
Marital status, n (%)				
Single	11 (42.3)	25 (47.2)	X^2: 0.17	0.91[a]
Married	14 (53.8)	26 (49.1)		
Divorced	1 (3.8)	2 (3.8)		
Years of education, mean ± SD	10.23±3.72	12.22±3.65	t=-2.26	**0.02[b]**
Age at first onset, mean ± SD	27.69±10.11	23.11±5.89	t=2.13	**0.04[b]**
Age at first hospitalization, mean ± SD	28.33±9.56	24.16±5.48	t=1.96	0.058[b]
Total episode number, mean ± SD	2.96±1.88	7.22±19.39	t=-1.11	0.26[b]
Psychotic feature history, n (%)				
None	10 (38.5)	28 (52.8)	X^2: 1.44	0.23[a]
Yes	16 (61.5)	25 (47.2)		
Number of hospitalization, mean ± SD	2.11±1.42	1.71±1.68	t=1.04	0.29[b]
Hamilton rating scale for depression-17 scores, mean ± SD	2.15±1.51	2.18±2.07	t=-0.07	0.94[b]
Young Mania rating scale scores, mean ± SD	0.30±0.78	0.47±1.08	t=-0.68	0.49[b]
Suicide attempt, n (%)				
None	22 (84.6)	44 (83)	X^2: 0.03	1.00[a]
Yes	4 (15.4)	9 (17)		
Number of suicide attempt, mean ± SD	0.19±0.49	0.39±1.06	t=-0.92	0.35[b]
History of psychiatric disorder in first degree relatives, n (%)	25 (48.1)	6 (23.1)	X^2: 4.52	0.03

Significant outcomes are reported in bold. [a]Pearson chi squared test, [b]Independent samples t-test. SD: Standard deviation.

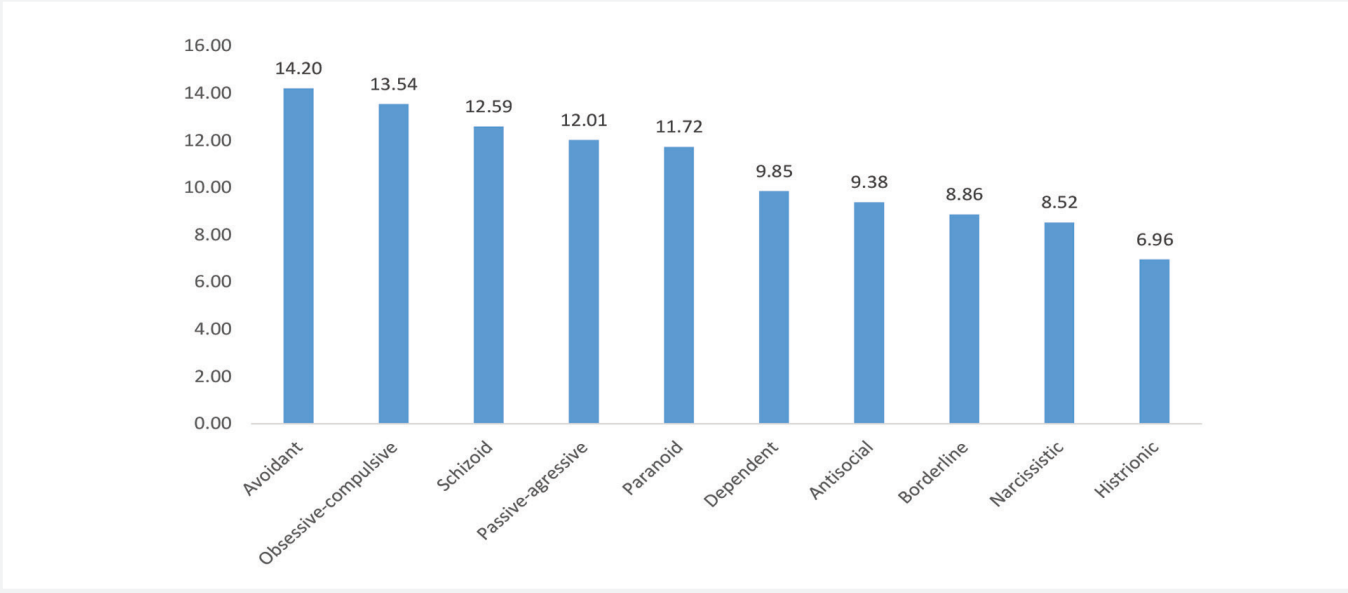

Figure 1. Mean scores of the all patients in subscales of the personality belief questionnaire-short form

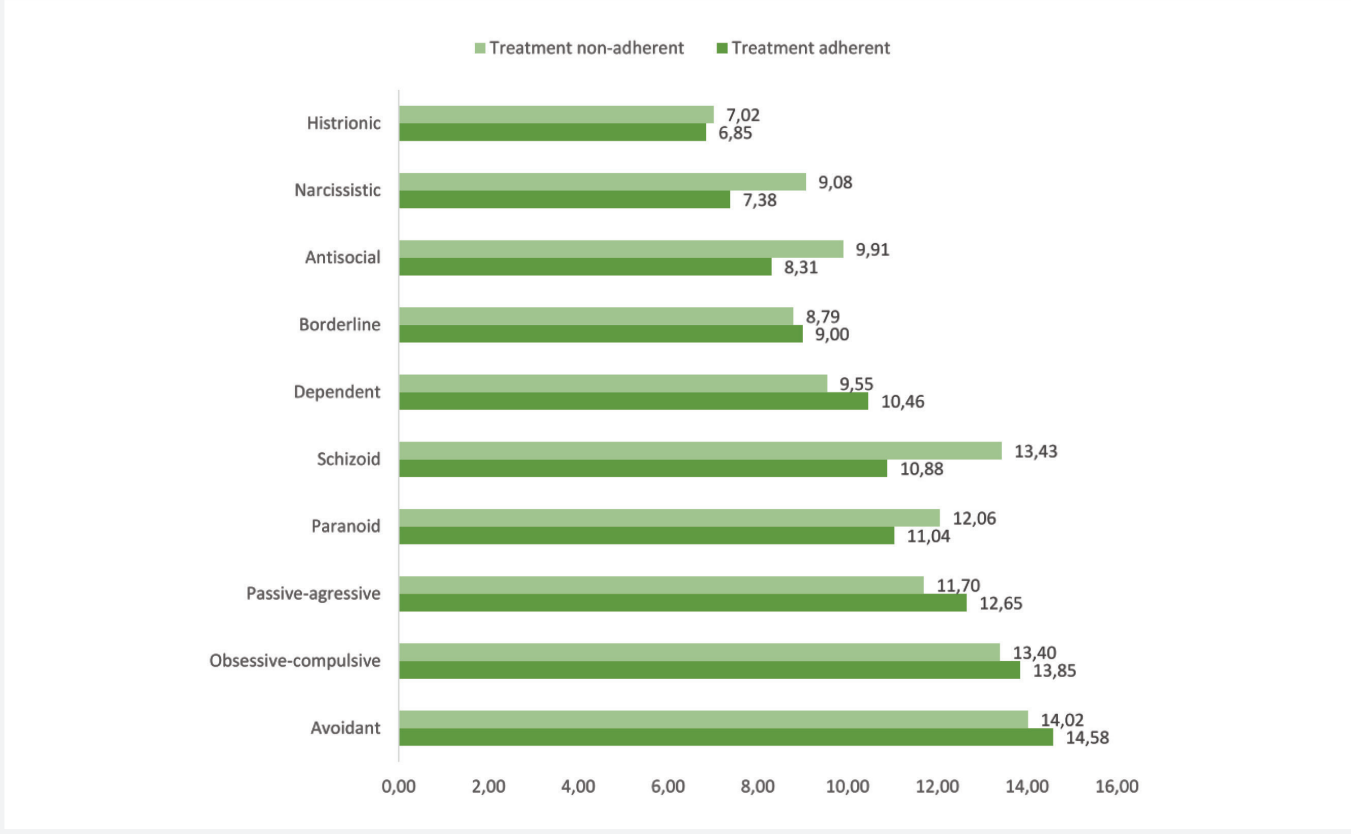

Figure 2. Mean scores of the patients according to medication adherence in sub scales of the personality belief questionnaire-short form

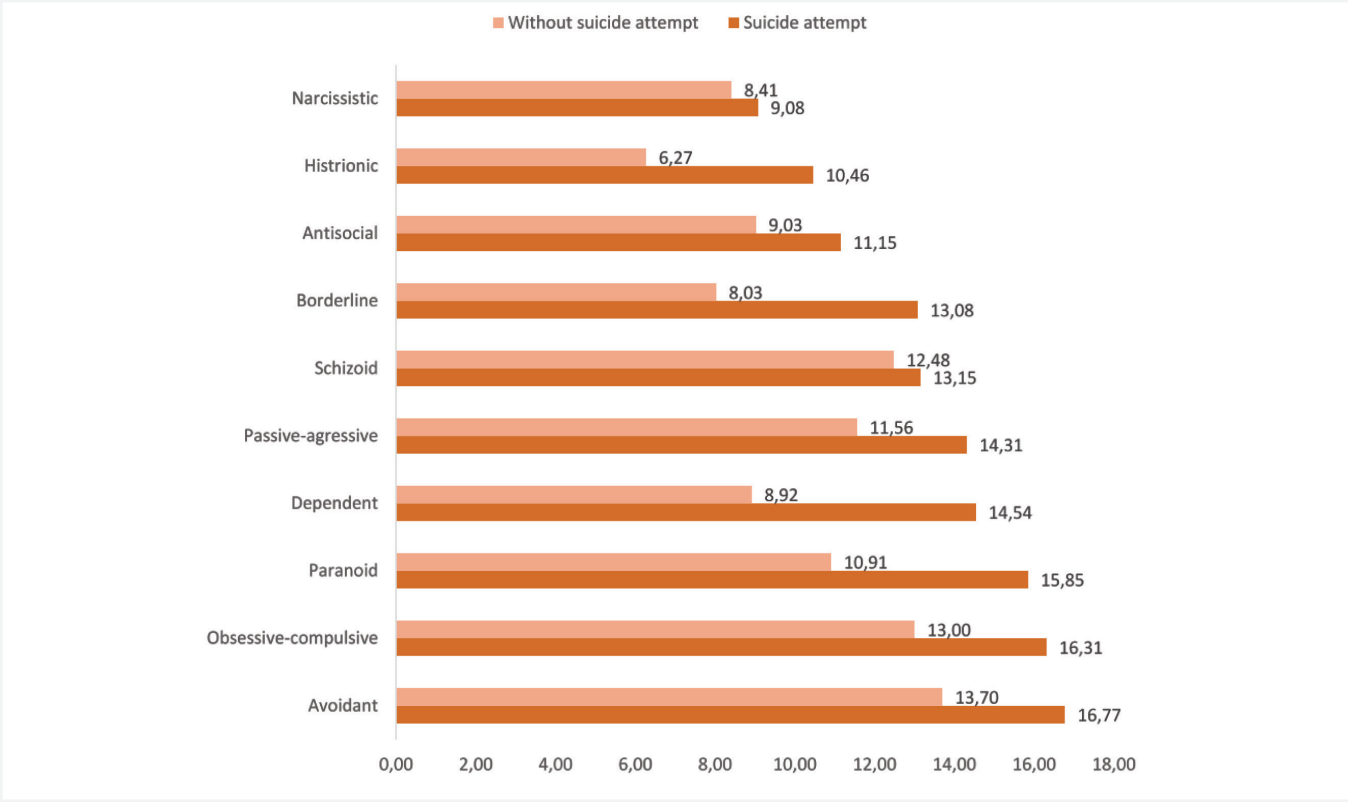

Figure 3. Mean scores of the patients according to suicide attempt in sub scales of the personality belief questionnaire-short form

Table 2. Descriptive statistics of the personality belief questionnaire-short form scores of participants

Personality belief questionnaire-short form subscale	History of suicide attempt	Medication adherent	Medication non-adherent
Avoidant	Positive	20.00±1.82	15.33±6.89
	Negative	13.59±5.15	13.75±6.17
Dependent	Positive	18.00±4.69	13.00±7.44
	Negative	9.09±5.97	8.84±5.76
Passive aggressive	Positive	17.25±3.77	13.00±6.76
	Negative	11.81±5.73	11.43±5.14
Obsessive compulsive	Positive	18.50±7.54	15.33±9.61
	Negative	13.00±7.58	13.00±6.99
Antisocial	Positive	10.25±8.18	11.55±8.15
	Negative	7.95±5.70	9.56±6.69
Narcissistic	Positive	6.00±1.82	10.44±8.29
	Negative	7.63±4.38	8.79±5.93
Histrionic	Positive	13.25±4.71	9.22±6.97
	Negative	5.68±5.24	6.56±5.23
Schizoid	Positive	10.50±8.10	14.33±7.10
	Negative	10.95±5.13	13.25±6.21
Paranoid	Positive	16.00±3.55	15.77±7.91
	Negative	10.13±6.72	11.29±6.56
Borderline	Positive	13.75±2.21	12.77±6.61
	Negative	8.13±5.47	7.97±5.77

Data presented as mean ± standard deviation.

Table 3. Evaluation of PBQ-SF subscale scores according to medication adherence and history of suicide attempt with two-way multivariate analysis of variance test

Effect	PBQ-SF subscale	F	p value
Main effect: medication adherence	Avoidant	1.373	0.245
	Dependent	1.792	0.185
	Passive aggressive	1.679	0.199
	Obsessive compulsive	0.415	0.521
	Antisocial	0.445	0.507
	Narcissistic	2.215	0.141
	Histrionic	0.779	0.380
	Schizoid	2.332	0.131
	Paranoid	0.046	0.831
	Borderline	0.092	0.762
Main effect: suicide attempt history	Avoidant	4.316	**0.041**
	Dependent	11.101	**0.001**
	Passive aggressive	3.827	0.054
	Obsessive compulsive	2.540	0.115
	Antisocial	0.959	0.331
	Narcissistic	0.000	0.997
	Histrionic	8.253	**0.005**
	Schizoid	0.025	0.876
	Paranoid	5.593	**0.021**
	Borderline	7.804	**0.007**
Main effect: medication adherence history of suicide attempt	Avoidant	1.574	0.214
	Dependent	1.467	0.230
	Passive aggressive	1.166	0.284
	Obsessive compulsive	0.415	0.521
	Antisocial	0.005	0.944
	Narcissistic	0.761	0.386
	Histrionic	1.907	0.171
	Schizoid	0.147	0.703
	Paranoid	0.100	0.753
	Borderline	0.048	0.828

Significant outcomes are reported in bold. PBQ-SF: Personality belief questionnaire-short form

As presented in Table 3, avoidant, dependent, histrionic, paranoid, and borderline personality disorder beliefs were differentiated in terms of history of suicide attempt at the univariate level in MANOVA. In light of these outcomes, patients with history of suicide attempt had significantly higher avoidant, dependent, histrionic, paranoid, and borderline personality disorder beliefs both in the medication adherent and medication non-adherent group ($p<0.05$).

DISCUSSION

In this cross-sectional study, it was found that the medication non-adherence rate was 67.1, and suicide attempt history was 16.5% in patients with BD-1. Avoidant personality belief scores were the highest, and histrionic personality belief scores were the lowest among the participants in the present study. BD-1 patients with a history of suicide attempts showed higher avoidant, dependent, histrionic, paranoid, and borderline personality disorder beliefs both in the medication adherent and non-adherent groups.

In the present sample, the medication non-adherence rate was 67.1%. Literature shows that medication non-adherence rate in BD is roughly reported at 50%[39]. In a clinical trial involving eight countries, 57 % of patients with BD had problems with adherence to treatment[40]. The differences between the present sample's high non-adherence rate (67.1%) and the previous studies' results may be due to the varied sample characteristics and assessment tools used. Besides this, in a clinical trial carried

out in Turkey using the same evaluation tool for medication adherence as this clinical trial, a similar medication non-adherence rate (67.5%) was found in patients with BD-1[36].

In terms of personality pathology, scores of avoidant personality disorder beliefs were found to the highest among the whole sample in the current study. Previously, cluster B and C traits were detected to be more frequent than cluster A disorders in BD[41,42]. In remitted patients with BD, cluster B and C disorders were similarly more frequent than cluster A, and borderline personality disorder was the most frequent comorbid personality disorder[12]. In another meta-analysis that included studies on both outpatient and inpatients, obsessive-compulsive personality disorder ranked first when comparing the frequency of personality disorders[42].

In this sample, 16.5% of the participants have a history of suicide attempt. A history of suicide attempt was found at 40.8 % in another study with remitted BD-1 patients[43]. In a comprehensive report of 101 cases, it was found that 31.1% of BD patients attempted suicide at least once[44]. Additionally, in the same study, it was stated that small sample size and brief exposure times might overestimate suicidal risk in BD. Additionally, it is assumed that the lifetime prevalence of suicide attempts is associated with geographic region, and geographic differences may have influences on the outcomes[20].

In the current sample, personality disorder beliefs from clusters B and C (avoidant, dependent, histrionic, borderline), as well as paranoid personality disorder beliefs from cluster A, were significantly related to the history of suicide attempt. In a ten-year follow-up trial, borderline and narcissistic personality disorders were detected to be associated with suicide attempts[45]. Cluster B personality disorder comorbidity was related to suicide attempts in remitted BD-1 participants[43]. The relationship between cluster B personality disorders and suicide attempt is widely acknowledged; however, there are some differences in results among studies. Only cluster C personality disorders were significantly related to suicide attempts in a study that investigated both unipolar and BDs[46]. In another study, paranoid, dependent, narcissistic, borderline, and histrionic personality disorder beliefs were reported to be associated with suicide attempts[26]. This study used the same personality belief assessment tool as the present study. Considering the mentioned results, when assessing suicidal risk, the focus should not only be given to cluster B personality disorder traits, but also to cluster C and paranoid personality disorder traits.

High level of education is mostly considered to lead to better medication adherence outcomes in BD[47,48]. Contrarily, in a study with BD-1 patients receiving lithium treatment, no difference was found between medication adherent and non-adherent groups regarding years of education[49]. In the present study, the non-adherent group had higher levels of education than the adherent group. The inconsistency with the previous findings may be due to this study's sample characteristics. Different population characteristics and inadequate psychoeducation may have contributed to the present study's results regarding the association between education level and medication adherence. Nonetheless, the influence of education on medication adherence should be considered in future studies.

Regarding the course of BD, results show that the age of onset was significantly lower in the medication non-adherent group in the current study. Early-onset of BD was shown to be related to medication adherence only in some studies[50-52]. The course of the disorder, early-onset, and medication adherence may influence each other reciprocally. For deeper explanations, further studies are necessary.

Medication-related side effects are considered to be one of the important contributors to medication adherence[2]. On the contrary, previous reports state that clinicians pay less attention on the causality of the side effects on medication adherence than patients with BD[40]. Additionally, it was reported that side effects primarily concerning clinicians (e.g., hypothyroidism, diabetes insipidus, hypercalcemia)and patients with BD (e.g. weight gain, tremors, cognitive impairment, and sedation) are different[53]. In accordance with the previous findings, this study found that the adherent group's history of discontinuing medication due to side effects was significantly lower than the non-adherent group. Studies on medication-related side effects are crucial to understand this better and satisfy patients' needs. Hence, the impacts of side effects on patients with BD necessitate the generation of different perspectives in clinical applications.

A family history of BD was related to compliance with psychoeducation programs[54]. No significant influence of the family history of BD on medication adherence was found in different studies with patients with BD[49,52]. In this study, a significant relationship was detected between medication adherence and family history of psychiatric disorder, but not with a family history of BD. Interestingly, in a systematic review, a family history of BD was identified as a factor affecting medication adherence in pediatric BD patients[55]. Considering the above-mentioned outcomes regarding family history, a family history of BD or psychiatric disorder may have detrimental influences on the adherence of patients with BD.

Study Limitations

The limitations of this clinical trial need to be emphasized. First, the recruitment of the participants from a tertiary hospital where many complex patients were enrolled may limit the generalizability of the results. Second, the MMAS used in the present trial to evaluate medication adherence is a self-report assessment tool. Third, the relatively small sample

size limits the results. Fourth, the pharmacological agents that the patients used were not assessed. Fifth, including only euthymic patients may limit the generalizability of the present study's results. A further study considering the present study's topics would be performed with BD-1 patients during their episodes. Sixth, only BD-1 patients were enrolled in the present study. The exclusion of other types of BD patients, such as patients with cyclothymia or BD type-2, may have generated limitations. Finally, comorbid psychiatric diagnoses such as substance use disorder, attention deficit hyperactivity disorder, and obsessive-compulsive disorder were excluded, which may have contributed to the generalizability problems of the present study.

CONCLUSION

As far as we know, this clinical trial is the first to assess the influence of dysfunctional personality disorder beliefs on medication adherence of patients with BD-1 in relation to their previous suicide attempts. This study showed that patients with a history of suicide attempt exhibited higher avoidant, dependent, histrionic, paranoid, and borderline personality disorder beliefs both in the medication adherent and non-adherent groups. This study suggests that assessing avoidant, dependent, histrionic, paranoid, and borderline personality traits is crucial in patients with BD-1 and a history of suicide attempt. Additionally, medication-related side effects, early age of onset of BD-1, and family history of psychiatric disorder may influence the medication adherence of patients with BD-1. Longitudinal studies are necessary in order to comprehend the contributions of dysfunctional personality disorder beliefs on medication adherence in relation to a history of suicide attempt.

Ethics

Ethics Committee Approval: Atatürk University Faculty of Medicine Clinical Research Ethical Committee (decision no: 21, date: 09.06.2017).

Informed Consent: Informed consent was procured from all participants before their participation in the study.

Authorship Contributions

Concept: E.F.A., H.A.C., M.Ş., F.T.O., C.K., Design: E.F.A., H.A.C., M.Ş., F.T.O., C.K., Data Collection or Processing: E.F.A., F.T.O., C.K., Analysis or Interpretation: E.F.A., Literature Search: E.F.A., Writing: E.F.A., H.A.C., M.Ş., F.T.O., C.K.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

REFERENCES

1. García S, Martínez-Cengotitabengoa M, López-Zurbano S, Zorrilla I, López P, Vieta E, et al. Adherence to Antipsychotic Medication in Bipolar Disorder and Schizophrenic Patients: A Systematic Review. J Clin Psychopharmacol. 2016;36:355-71.
2. Semahegn A, Torpey K, Manu A, Assefa N, Tesfaye G, Ankomah A. Psychotropic medication non-adherence and its associated factors among patients with major psychiatric disorders: a systematic review and meta-analysis. Syst Rev. 2020;9:17.
3. Hong J, Reed C, Novick D, Haro JM, Aguado J. Clinical and economic consequences of medication non-adherence in the treatment of patients with a manic/mixed episode of bipolar disorder: results from the European Mania in Bipolar Longitudinal Evaluation of Medication (EMBLEM) study. Psychiatry Res. 2011;190:110-4.
4. Girone N, Cocchi M, Achilli F, Grechi E, Vicentini C, Benatti B, et al. Treatment adherence rates across different psychiatric disorders and settings: findings from a large patient cohort. Int Clin Psychopharmacol. 2024.
5. Mert DG, Turgut NH, Kelleci M, Semiz M. Perspectives on reasons of medication nonadherence in psychiatric patients. Patient Prefer Adherence. 2015;9:87-93.
6. Organization WH. Preventing suicide: A global imperative. World Health Organization; 2014.
7. Sher L, Oquendo MA. Suicide: An Overview for Clinicians. Med Clin North Am. 2023;107:119-30.
8. Cerel J, Brown MM, Maple M, Singleton M, van de Venne J, Moore M, et al. How Many People Are Exposed to Suicide? Not Six. Suicide Life Threat Behav. 2019;49:529-34.
9. Turecki G, Brent DA, Gunnell D, O'Connor RC, Oquendo MA, Pirkis J, et al. Suicide and suicide risk. Nat Rev Dis Primers. 2019;5:74.
10. Vieta E, Berk M, Schulze TG, Carvalho AF, Suppes T, Calabrese JR, et al. Bipolar disorders. Nat Rev Dis Primers. 2018;4:18008.
11. Fan AH, Hassell J. Bipolar disorder and comorbid personality psychopathology: a review of the literature. J Clin Psychiatry. 2008;6:1794-803.
12. Bezerra-Filho S, Galvão-de Almeida A, Studart P, Rocha MV, Lopes FL, Miranda-Scippa Â. Personality disorders in euthymic bipolar patients: a systematic review. Braz J Psychiatry. 2015;37:162-7.
13. Uçok A, Karaveli D, Kundakçi T, Yazici O. Comorbidity of personality disorders with bipolar mood disorders. Compr Psychiatry. 1998;39:72-4.
14. Dunayevich E, Sax KW, Keck PE Jr, McElroy SL, Sorter MT, McConville BJ, et al. Twelve-month outcome in bipolar patients with and without personality disorders. J Clin Psychiatry. 2000;61:134-9.
15. Colom F, Vieta E, Martínez-Arán A, Reinares M, Benabarre A, Gastó C. Clinical factors associated with treatment noncompliance in euthymic bipolar patients. J Clin Psychiatry. 2000;61:549-55.
16. Loftus ST, Jaeger J. Psychosocial outcome in bipolar I patients with a personality disorder. J Nerv Ment Dis. 2006;194:967-70.
17. Tan RE, Erim BR, Üstün N, Üney R. Effects of comorbid personality disorders in bipolar type I disorder patients to disease course. Anadolu Psikiyatri Dergisi-Anatolian Journal of Psychiatry. 2019;20:237-44.
18. Tyrer P, Reed GM, Crawford MJ. Classification, assessment, prevalence, and effect of personality disorder. Lancet. 2015;385:717-26.
19. Hiroeh U, Appleby L, Mortensen PB, Dunn G. Death by homicide, suicide, and other unnatural causes in people with mental illness: a population-based study. Lancet. 2001;358:2110-2.
20. Dong M, Lu L, Zhang L, Zhang Q, Ungvari GS, Ng CH, et al. Prevalence of suicide attempts in bipolar disorder: a systematic review and meta-analysis of observational studies. Epidemiol Psychiatr Sci. 2019;29:e63.
21. Levin JB, Krivenko A, Howland M, Schlachet R, Sajatovic M. Medication Adherence in Patients with Bipolar Disorder: A Comprehensive Review. CNS Drugs. 2016;30:819-35.

22. Colom F, Vieta E, Martínez-Arán A, Reinares M, Benabarre A, Gastó C. Clinical factors associated with treatment noncompliance in euthymic bipolar patients. J Clin Psychiatry. 2000;61:549-55.

23. Arvilommi P, Suominen K, Mantere O, Leppämäki S, Valtonen H, Isometsä E. Predictors of adherence to psychopharmacological and psychosocial treatment in bipolar I or II disorders - an 18-month prospective study. J Affect Disord. 2014;155:110-7.

24. Murru A, Pacchiarotti I, Amann BL, Nivoli AM, Vieta E, Colom F. Treatment adherence in bipolar I and schizoaffective disorder, bipolar type. J Affect Disord. 2013;151:1003-8.

25. Kart A, Yucens B. Personality Beliefs in Obsessive-Compulsive Disorder: How Are They Related to Symptom Severity? Psychiatry Investig. 2020;17:822-8.

26. Ghahramanlou-Holloway M, Lee-Tauler SY, LaCroix JM, Kauten R, et al. Dysfunctional personality disorder beliefs and lifetime suicide attempts among psychiatrically hospitalized military personnel. Compr Psychiatry. 2018;82:108-14.

27. Beck AT, Davis DD, Freeman A. Cognitive therapy of personality disorders. Guilford Publications; 2015.

28. Çorapçıoğlu A, Aydemir Ö, Yıldız M, Danacı A, Köroğlu E. Adaptation to Turkish and reliability of Structured Clinical Interview for DSM-IV, Axis I disorders. İlaç ve Tedavi Dergisi. 1999;12:33-6.

29. First MB, Spitzer RL, Gibbon M, Williams JB. Structured clinical interview for DSM-IV clinical version (SCID-I/CV). Washington, DC: American Psychiatric Press; 1997.

30. Akdemir A, Örsel S, Dağ İ, Türkçapar H, İşcan N, Özbay H. Hamilton Depresyon Derecelendirme Ölçeği (HDDÖ)'nin geçerliği, güvenirliği ve klinikte kullanımı. Psikiyatri Psikoloji Psikofarmakoloji Dergisi. 1996;4:251-9.

31. Karadağ F, Oral T, Yalçin FA, Erten E. Young mani derecelendirme olçeğinin türkiye'de geçerlik ve güvenilirliği [Reliability and validity of Turkish translation of Young Mania Rating Scale]. Turk Psikiyatri Derg. 2002;13:107-14.

32. Morisky DE, Green LW, Levine DM. Concurrent and predictive validity of a self-reported measure of medication adherence. Med Care. 1986;24:67-74.

33. Morisky DE, Malotte CK, Choi P, Davidson P, Rigler S, Sugland B, Langer M. A patient education program to improve adherence rates with antituberculosis drug regimens. Health Educ Q. 1990;17:253-67.

34. Morisky DE, Ang A, Krousel-Wood M, Ward HJ. Predictive validity of a medication adherence measure in an outpatient setting. J Clin Hypertens (Greenwich). 2008;10:348-54.

35. Bahar G, Savaş HA, Ünal A, Savaş E, Kaya H, Bahar A. Reliability and validity of the Morisky Medication Adherence Scale for bipolar mood disorder. Anatolian Journal of Psychiatry. 2014;15:141-9.

36. Buturak SV, Emel EB, Koçak OM. The effect of temperament on the treatment adherence of bipolar disorder type I. Nord J Psychiatry. 2016;70:176-82.

37. Butler AC, Beck AT, Cohen LH. The personality belief questionnaire-short form: Development and preliminary findings. Cognitive therapy and research. 2007;31:357-370.

38. Taymur İ, Türkçapar MH, Örsel S, Sargın E, Akkoyunlu S. Kişilik İnanç Ölçeği-Kısa Formunun (KİÖ-KTF) Türkçe Çevirisinin Üniversite Öğrencilerinde Geçerlilik, Güvenilirliği. Klin Psikiyatr. 2011;14:199-209.

39. Jawad I, Watson S, Haddad PM, Talbot PS, McAllister-Williams RH. Medication nonadherence in bipolar disorder: a narrative review. Ther Adv Psychopharmacol. 2018;8:349-63.

40. Vieta E, Azorin JM, Bauer M, Frangou S, Perugi G, Martinez G, et al. Psychiatrists' perceptions of potential reasons for non- and partial adherence to medication: results of a survey in bipolar disorder from eight European countries. J Affect Disord. 2012;143:125-30.

41. George EL, Miklowitz DJ, Richards JA, Simoneau TL, Taylor DO. The comorbidity of bipolar disorder and axis II personality disorders: prevalence and clinical correlates. Bipolar Disord. 2003;5:115-22.

42. Friborg O, Martinsen EW, Martinussen M, Kaiser S, Overgård KT, Rosenvinge JH. Comorbidity of personality disorders in mood disorders: a meta-analytic review of 122 studies from 1988 to 2010. J Affect Disord. 2014;152-154:1-11.

43. Bezerra S Filho, Galvão-de-Almeida A, Studart P, Martins DF Jr, Caribé AC, Schwingel PA, et al. Suicide attempts in bipolar I patients: impact of comorbid personality disorders. Braz J Psychiatry. 2017;39:133-9.

44. Tondo L, Pompili M, Forte A, Baldessarini RJ. Suicide attempts in bipolar disorders: comprehensive review of 101 reports. Acta Psychiatr Scand. 2016;133:174-86.

45. Ansell EB, Wright AG, Markowitz JC, Sanislow CA, Hopwood CJ, Zanarini MC, et al. Personality disorder risk factors for suicide attempts over 10 years of follow-up. Personal Disord. 2015;6:161-7.

46. Jylhä P, Rosenström T, Mantere O, Suominen K, Melartin T, Vuorilehto M, et al. Personality disorders and suicide attempts in unipolar and bipolar mood disorders. J Affect Disord. 2016;190:632-9.

47. Ozerdem A, Tunca Z, Kaya N. The relatively good prognosis of bipolar disorders in a Turkish bipolar clinic. J Affect Disord. 2001;64:27-34.

48. Leclerc E, Mansur RB, Brietzke E. Determinants of adherence to treatment in bipolar disorder: a comprehensive review. J Affect Disord. 2013;149:247-52.

49. Gonzalez-Pinto A, Mosquera F, Alonso M, López P, Ramírez F, Vieta E, et al. Suicidal risk in bipolar I disorder patients and adherence to long-term lithium treatment. Bipolar Disord. 2006;8:618-24.

50. Barraco A, Rossi A, Nicolò G; EPHAR Study Group. Description of study population and analysis of factors influencing adherence in the observational Italian study "Evaluation of Pharmacotherapy Adherence in Bipolar Disorder" (EPHAR). CNS Neurosci Ther. 2012;18:110-8.

51. Vega P, Barbeito S, Ruiz de Azúa S, Martínez-Cengotitabengoa M, González-Ortega I, Saenz M, et al. Bipolar disorder differences between genders: special considerations for women. Womens Health (Lond). 2011;7:663-74.

52. Col SE, Caykoylu A, Karakas Ugurlu G, Ugurlu M. Factors affecting treatment compliance in patients with bipolar I disorder during prophylaxis: a study from Turkey. Gen Hosp Psychiatry. 2014;36:208-13.

53. Mago R, Borra D, Mahajan R. Role of adverse effects in medication nonadherence in bipolar disorder. Harv Rev Psychiatry. 2014;22:363-6.

54. Cakir S, Bensusan R, Akca ZK, Yazici O. Does a psychoeducational approach reach targeted patients with bipolar disorder? J Affect Disord. 2009;119:190-3.

55. Sanchez M, Lytle S, Neudecker M, McVoy M. Medication Adherence in Pediatric Patients with Bipolar Disorder: A Systematic Review. J Child Adolesc Psychopharmacol. 2021;31:86-94.