

Suicide attempts and clinical features of bipolar patients

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ABSTRACT

الأهداف: تحديد المسببات السريرية لمحاولات الانتحار في المرضى الذين يعانون من اضطراب ثنائي القطب.

الطريقة: أجريت هذه الدراسة بأثر رجعي وشملت المرضى المصابين باضطراب ثنائي القطب الذين منحوا موافقتهم المسبقة للمشاركة فيها وجري علاجهم في قسم الطب النفسي، مستشفى إسطنبول خاصكي للتدريب والأبحاث، إسطنبول، تركيا. خلال الفترة الممتدة ما بين عامي 2013 و2014م. وجرى تقييم مائتان وثمانية عشر مريضاً باستخدام طرق المقابلة السريرية المنظمة (SCID-I) (DSM-IV Axis-I) للكشف عن كل ما يمكن تشخيصه من الأمراض النفسية. و أجرى فحص التنبؤ السريري لمحاولات الانتحار في محاولي وغير محاولي الانتحار.

النتائج: كان معدل محاولات الانتحار مدى الحياة للعينة كلها 19.2% وكان لدى محاولي الانتحار من مرضى ثنائي القطب اعتلال مشترك أكثر مع اضطرابات الطعام. وعلاوة على ذلك، كان جنس الأنثوي وتاريخ الأسرة من اضطرابات المزاج من مسببات محاولات الانتحار. لم يكن هناك اختلاف بين المجموعات من حيث النوع الفرعي لثنائي القطب والعمر عند بداية ظهور ثنائي القطب وعدد النوبات، وأول نوبة ونوعها الغالب، تاريخ الانتحار في الأقارب من الدرجة الأولى وشدة نوبات، والاستشفاء وكونهم مصابين بالذهان.

الخاتمة: كشفت هذه الدراسة أن الجنس الأنثوي و التاريخ العائلي من اضطراب المزاج واضطرابات الأكل هي الأكثر شيوعاً في المرضى ثنائي القطب مع محاولة انتحار واحدة على الأقل مقارنة بالذين لم يُقدموا على محاولة الانتحار.

Objectives: To identify clinical predictors of suicide attempts in patients with bipolar disorder.

Methods: This study included bipolar patients who were treated in the Psychiatry Department, Haseki Training and Research Hospital, Istanbul, Turkey, between 2013 and 2014; an informed consent was obtained from the participants. Two hundred and eighteen bipolar patients were assessed by using the structured clinical interview for Diagnostic and Statistical Manual of Mental Disorders, 4th edition

(DSM-IV) Axis-I (SCID-I) in order to detect all possible psychiatric

comorbid diagnoses. Clinical predictors of suicide attempts were examined in attempters and non-attempters. The study design was retrospective.

Results: The lifetime suicide attempt rate for the entire sample was 19.2%. Suicide attempters with bipolar disorder had more lifetime comorbidity of eating disorder. Female gender and family history of mood disorder were significant predictors for suicide attempts. There was no difference between groups in terms of bipolar disorder subtype, onset age of bipolar disorder, total number of episodes, first and predominant episode type, suicide history in first degree relatives, severity of episodes, and hospitalization and being psychotic.

Conclusion: Our study revealed that female gender, family history of mood disorder, and eating disorder are more frequent in bipolar patients with at least one suicide attempt.

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Bipolar disorder (BD) is a repetitive and severe disease paving the way for serious risks, particularly the high frequency of suicide attempts. Suicide risk, being 0.2-0.4% per year in bipolar patients, is approximately 20-30 times higher than the general

population.^{1,2} It is estimated that approximately 10-15% of patients die due to suicide.³ Approximately half of all bipolar patients attempt to commit suicide at least once in their lifetime.⁴⁻⁶ This percentage is 30 times higher than the population with no psychiatric disorder.¹ The existence of previous suicide attempts is one of the most important factors for death resulting from suicides.⁷ Thus, it is essential to determine the risk factors associated with suicide attempts. Suicide attempt history is found to be associated with family suicide history, longer hospitalization due to psychiatric reasons, early age of onset,^{8,9} extent of depression, worsening affective episodes, mixed states, rapid cycling, and Axis-I comorbidity, including specifically anxiety disorder,¹⁰ and substance use disorder (SUD)¹¹ comorbidities, personality disorders¹² comorbidity, and physical and sexual abuse.¹³ This study aims to determine the suicide attempt rates in bipolar patients, and to identify clinical predictors of increased risk of suicide attempts in subjects with BD, by comparing the characteristics of suicide attempters and non-suicide attempters in Turkey.

Methods. This study included bipolar patients who were treated in the Department of Psychiatry, Haseki Training and Research Hospital, Istanbul, Turkey between 2013 and 2014; informed consents was obtained from the participants. All patients were treated in the outpatient service, which constitutes our study's academic setting. All patients were subject to structured clinical interview for DSM IV/clinical version (SCID-I/CV), and 218 patients with bipolar disorder (208 patients BD-I, 10 patients BD-II) were included in the study. Additional axis-I psychiatric disorders accompanying bipolar disorder were diagnosed. Upon acceptance by the Psychiatry Department, a semi-structured interview schedule indicating sociodemographic and clinical features of the patient was completed by taking into consideration the patient itself, their relatives, and prior medical records. These schedules were kept updated throughout the follow-up period. For the study, schedules were reevaluated and reviewed through clinic interviews. All patients were assessed in the interepisodic interval of BD; they were euthymic

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when they were included in this study. Based on the data, the patients were separated into 2 groups: a suicide attempter group with at least one suicide attempt, and a non-suicide attempter group. Groups were compared in terms of demographic, clinical, and comorbidity features. The study design is retrospective. The ethics committee approval of this study was obtained from the Istanbul Haseki Training and Research Hospital. Inclusion criteria were patients diagnosed with bipolar disorder, who applied to the clinic and volunteered to participate in the study. Exclusion criteria were mental retardation, mental disorder based on general medical condition, education, and language problems high enough to prevent psychiatric interview and assessment.

Statistical calculations were performed using the Number Cruncher Statistical System version 2007 (Statistical Software, Utah, USA) for Windows. In addition to the standard descriptive statistical calculations (mean±standard deviation) for the process in which these 2 groups were compared, unpaired t test was used when the variables indicated a normal distribution, and Mann Whitney-U test was used when the variables did not indicate a normal distribution. Chi square test was performed during the evaluation of qualitative data. Statistical significance level was established at $p < 0.05$.

Results. In Table 1, the main clinical characteristics of suicide attempters and non-suicide attempters are summarized. In the present sample, 19.5% (n=42) of the subjects had at least one suicide attempt. The mean age at the time of the interview was 42.65 (±12.2 SD). Suicide attempt was significantly more frequent in females (16%) than males (3.2%) ($p=0.014$). When the patients were compared in terms of marital status, suicide attempt was significantly more frequent in divorced or widowed patients than patients who have never been married ($p=0.017$). Lifetime comorbidity of one or more additional diagnosis occurred in 64.3% of the sample. There was no significant difference between bipolar patients with any additional diagnosis and bipolar patients with no additional diagnosis in terms of suicide attempt. When comorbidities accompanying bipolar disorder were separately evaluated, eating disorder comorbidity was found to be high in the suicide attempter group ($p=0.003$). Patients with eating disorders were mainly females. When the family history of bipolar disorder was separately evaluated among affective disorders, there was no significant difference with suicide attempt. There was no difference between

Table 1 - Differential clinical features between patients with and without suicidal attempt.

Variables	Suicidal attempt (n=42) n (%)	No suicidal attempt (n=176) n (%)	P-value
<i>Gender</i>			0.014
Males	7 (16.7)	67 (38.1)	
Females	35 (83.3)	109 (61.9)	
<i>Marital status</i>			
Married (1)	18 (42.9)	84 (47.7)	0.762
Single (2)	13 (31.0)	74 (42.1)	0.038
Widow/divorced (3)	11 (26.2)	18 (10.2)	0.017
<i>Subtype</i>			0.638
BD-I	39 (92.9)	169 (96.0)	
BD-II	3 (7.1)	7 (4.0)	
<i>First episode</i>			0.053
Manic	11 (34.4)	63 (56.8)	
Depressive	21 (65.7)	48 (43.2)	
<i>Axis-I comorbidity (lifetime)</i>			0.096
Total	27 (64.3)	89 (50.6)	0.508
SUD	3 (7.1)	6 (3.4)	0.765
PD	3 (7.1)	8 (4.6)	0.374
SAD	10 (23.9)	29 (16.5)	0.887
Simple Phobia	2 (4.8)	10 (5.7)	0.178
OCD	13 (31.0)	35 (20.0)	0.373
PTSD	4 (9.6)	29 (16.5)	0.263
GAD	6 (15.0)	13 (7.4)	0.491
<i>BTA anxiety</i>	0 (0)	6 (3.4)	0.761
Anxiety disorder	22 (52.4)	85 (48.3)	0.595
Somatization disorder	1 (2.4)	4 (2.3)	0.003
Eating disorder	4 (9.6)	1 (0.6)	
<i>Predominant polarity</i>			0.145
Manic	25 (59.6)	106 (60.2)	
Depressive	11 (26.2)	29 (16.5)	
Mix	1 (2.4)	17 (9.7)	
<i>Psychotic symptoms</i>			0.346
Yes	35 (83.3)	132 (75.0)	
<i>Episode severity</i>			0.142
Severe	29 (70.0)	97 (55.1)	
<i>Hypertymia</i>			0.882
Yes	4 (9.5)	18 (10.2)	
<i>Distimia</i>			0.841
Yes	1 (2.4)	8 (4.6)	
<i>Bipolar chronicity</i>			0.836
Yes	1 (2.4)	1 (0.6)	
<i>Hospitalization</i>			0.081
Yes	32 (76.2)	106 (60.2)	
<i>Seasonal pattern</i>			0.681
Yes	13 (31.0)	63 (35.8)	
<i>Family history of mood D</i>			0.008
Yes	24 (57.1)	59 (33.6)	
<i>Family history of bipolar D</i>			0.251
Yes	14 (33.3)	41 (23.3)	
<i>Family history of suicide</i>			0.242
Yes	0 (0)	10 (5.7)	
<i>Lithium monotherapy (lifetime)</i>			0.229
Yes	33 (78.6)	119 (67.7)	

Table 1 - Differential clinical features between patients with and without suicidal attempt (continued).

<i>Anticonvulsant monotherapy (lifetime)</i>			0.501
Yes	17 (40.5)	84 (47.8)	
<i>Antipsychotic monotherapy (lifetime)</i>			0.215
Yes	11 (27.0)	29 (16.5)	
<i>Antidepressant use</i>			0.135
Yes	27 (64.3)	88 (50.0)	
Age (mean±SD)	43.5 ± 12.0	41.8 ± 12.5	0.425
Age of onset (mean±SD)	4.6 ± 7.8	22.9 ± 7.9	0.209
Disease duration (mean±SD)	17.6 ± 8.5	18.3 ± 10.4	0.686
Average cycle interval (month) (mean±SD)	11.4 ± 4.9	12.7 ± 8.9	0.362
Total number of episodes (mean±SD)	10.5 ± 6.5	8.1 ± 7.8	0.066
Number of manic episodes (mean±SD)	6.4 ± 4.5	5.1 ± 4.2	0.077
Number of hypomanic episodes (mean±SD)	1.5 ± 1.3	1.4 ± 2.7	0.816
Number of mix episodes	1.1 ± 1.8	0.9 ± 1.6	0.478
Number of depressive episodes (mean±SD)	3.8 ± 2.6	2.9 ± 3.1	0.083
Number of hospitalization (mean±SD)	3.9 ± 2.5	3.2 ± 2.4	0.094

BD- bipolar disorder, AD - anxiety disorder SUD - substance use disorders, OCD - obsessive compulsive disorder, PD - personality disorder, SAD - social anxiety disorders, GAD - general anxiety disorder

groups in terms of bipolar disorder subtype, onset age of bipolar disorder, total number of episodes, first and predominant episode type, suicide history in first degree relatives, severity of episodes, hospitalization, and being psychotic (Table 1).

Discussion. The rate of bipolar disorder patients who attempted to commit suicide at least once in their lifetime (19.2%) was lower than the rates reported in previous studies. It is a known fact that suicide behavior varies in different cultures.¹⁴ Two separate studies conducted in similar designs, revealed the prevalences of lifetime suicide attempt in Turkey (3.5%) and in the USA (4.6%), concurring with the general belief on the lower rates of suicide attempt in Turkey compared to Western countries,^{1,15} In 2 studies conducted with similar methods, lifetime suicide attempt rate was 3.5% in Turkey¹⁵ and 4.6% in USA.¹ This result is reported to be affected from some cultural factors such as strong familial bonds, as well as religious factors. In our study, it is noted that suicide attempt rate in female bipolar

patients were higher than in male patients ($p=0.014$). It is accepted that suicide attempt is more frequent in females than males.¹⁶ The rate of suicide attempt in female bipolar patients is reported to be twice the same rate in males.¹ Our findings are consistent with the previous studies in this aspect. Even if checked in terms of mood disorders, it is determined that suicide history in biological patterns increases the suicide risk in adopted children.¹⁷ These findings lead us to think that specific genetic and biological factors may also be effective in suicidal behavior. Consistent with such finding, family suicide history is reported to be more in suicide attempter bipolar patients than non-suicide attempters.^{12,16,18} Our study is consistent with the studies reporting that as significant difference exists between these 2 groups in terms of suicide history in first degree relative.⁸ While there was no difference between the 2 groups in terms of family BD history, any family mood disorder history was significantly higher in the suicide attempter group ($p=0.008$). This result appears to be inconsistent with the existing literature.¹⁹ However, among the patients who were included in our study from both groups, only 10 patients had family suicide history, and an insufficient number of cases included in our study may have caused this situation. Although our findings are inadequate for making a strong conclusion, it may be speculated that the suicide attempt in bipolar patients is associated with comorbid disorder beyond the specific genetic and biological factors. It is reported that SUD^{11,20,21} and anxiety disorders,^{6,22} particularly panic disorder²⁰ and social anxiety disorder,²³ accompanying BP are associated with suicide attempt. In our study, it is determined that eating disorder comorbidity may be associated with suicide attempt ($p=0.003$).

There was no significant difference in terms of frequency of suicide attempt between bipolar patients with any axis-I psychiatric comorbidity and bipolar patients with no comorbidity. However, suicide attempt is frequent in patients with eating disorder.²⁴ In eating disorder patients, BD comorbidity is found to be associated with suicide attempt.²⁵ In some disorders (substance use disorder) other than BP, eating disorder comorbidity is reported to be associated with suicide attempt.²⁶ A review of the data reveals that in bipolar patients, eating disorder comorbidity may be expected to be associated with suicide attempt.

In addition, eating disorder is reported to be more frequent in bipolar females than bipolar males.²⁷ Also in our study, all of the eating disorder cases were females. Suicide attempt rate in females is found to be significantly higher than males. Consequently, the association between eating disorder comorbidity and

suicide attempt in bipolar patients may be related to gender variable. Despite suicide attempts being found to be significantly more frequent in eating disorder patients with comorbid bipolar, eating disorder should not be interpreted as directly related comorbid. For instance, though seen at a higher rate of incidence in women with a history of suicide, this comorbidity may be an indirect description for all of our female patients with eating disorders. Furthermore, in eating disorder patients, impulsivity was found to be associated with an increase in suicide attempts.²⁷ Similarly, impulsivity is a prominent element of bipolar disorder and is an established risk factor in suicide attempts^{28,29} in bipolar patients. However, in our study, direct impulsive features were evaluated. Studies focused on this point will be elucidative. Some of our findings are inconsistent with the existing literature. In our study, alcohol SUD rate was 0.04%. In a comprehensive study, this rate was determined as 36.6% among BD patients.³⁰ Although 11 different countries were included in this study, none of them had a significant Muslim population, and thus, the dramatic difference between this study and our findings may be accounted for the fact that Turkey has an overwhelmingly Muslim population who may have fewer proclivities for alcohol and substance use due to religious beliefs. Two parameters significantly higher than expected stand out in our study: obsessive compulsive disorder (OCD), which might be observed as a comorbidity in bipolar patients, and psychotic symptoms. The OCD comorbidity rate in patients with BD was reported as 16.1% in a Turkish study,³¹ whereas this rate was 22% in our study. In a study carried out in Turkey, it was found that 43% of patients show psychotic symptoms associated with BD.³² However in our study, this rate stands at 76%, and psychotic symptoms in patients with no previous suicide attempt are particularly apparent. The reason for the high rates in our findings may be due to the fact that our clinic specializes, in monitoring bipolar patients who are unable to be treated in other clinics.

Study limitations. The retrospective evaluation of our patients was checked and controlled by information gathered not only from patients, but also from their relatives. The medical records were also used, and as most of the patients have been followed up by our Department for a long time, the data is frequently updated. All these factors reduced the probable effects of the limitations of the retrospective design of our study. Our study is the non evaluation of axis-II disorders, which are known to be associated with suicidal behavior in bipolar patients.^{12,13} The non evaluation of the data for comorbidity, if any, at the time of suicide attempt.

Another limitation is that when looking at the clinical variables such as 'stressful, events, relationship problems, financial losses, and so forth, the attempted suicide is not checked in the presence of significant life events of the story.

In conclusion, suicide is a serious complication of BD. It is known that one of the most important risk factors in completed suicides is the previous suicide attempt history. Therefore, in order to prevent suicides, it is important to determine the demographic and clinical features, which create a risk for suicide attempt. In our study, female gender, family mood disorder history, and eating disorder comorbidity are found to be more frequent in bipolar patients who have attempted to commit suicide at least once in their lifetime than in non-attempters. Studies discussing various probable factors such as impulsivity and genetic will be useful in clarification of the association between these features and suicide attempt.

References

- Pompili M, Gonda X, Serafini G, Innamorati M, Sher L, Amore M, et al. Epidemiology of suicide in bipolar disorders: a systematic review of the literature. *Bipolar Disorders* 2013; 15: 457-490.
- Søndergård L, Lopez AG, Andersen PK, Kessing LV. Mood stabilizing pharmacological treatment in bipolar disorders and risk of suicide. *Bipolar Disorders* 2008; 10: 87-94.
- Schaffer A, Isometsä ET, Tondo L, Moreno D, Turecki G, Reis C. International Society for Bipolar Disorders Task Force on Suicide: meta-analyses and meta-regression of correlates of suicide attempts and suicide deaths in bipolar disorder. *Bipolar Disorders* 2015; 17: 1-16.
- Olié E, Seyller M, Beziat S, Loftus J, Bellivier F, Bougerol T. Clinical and neuropsychological characteristics of euthymic bipolar patients having a history of severe suicide attempt. *Acta Psychiatr Scand* 2015; 131: 129-138.
- Gonda X, Pompili M, Serafini G. Suicidal behavior in bipolar disorder: epidemiology, characteristics and major risk factors. *J Affect Disord* 2012; 143: 16-26.
- Schaffer A, Cairney J, Veldhuizen S, Kurdyak P, Cheung A, Levitt A. A population-based analysis of distinguishers of bipolar disorder from major depressive disorder. *J Affect Disord* 2010; 125: 103-110.
- Umamaheswari V, Avasthi A, Grover S. Risk factors for suicidal ideations in patients with bipolar disorder. *Bipolar Disorders* 2014; 16: 642-651.
- Ratnarajah D, Maple M, Minichiello V. Understanding family member suicide narratives by investigating family history. *Omega (Westport)* 2014; 69: 41-57.
- Berutti M, Nery FG, Sato R, Scippa A, Kapczinski F, Lafer B. Association between family history of mood disorders and clinical characteristics of bipolar disorder: results from the Brazilian bipolar research network. *J Affect Disord* 2014; 161: 104-108.
- Garcia-Amador M, Colom F, Valenti M, Horga G, Vieta E. Suicide risk in rapid cycling bipolar patients. *J Affect Disord* 2009; 117: 74-78.
- Carrà G, Bartoli F, Crocamo C, Brady K, Clerici M. Attempted suicide in people with co-occurring bipolar and substance use disorders: Systematic review and meta-analysis. *J Affect Disord* 2014; 167: 125-135.
- Friborg O, Martinussen M, Kaiser S, Toreovergård K, Rosengvinge J. 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.
- Post R, Altshuler L, Kupka R, McElroy S, Frye M, Rowe M, et al. Like physical and sexual abuse, in childhood is associated with an earlier onset and more difficult course of bipolar disorder. *Bipolar Disorders* 2015; 17: 323-330.
- Brian A, Christine S, Gregory S, Frances L, Christine L, Beth W. Racial/Ethnic Differences in Health Care Visits Made Before Suicide Attempt Across the United States. *Medical Care* 2015; 53: 430-435.
- Polatöz Ö, Kuğu N, Doğan O. The prevalence of suicidal behaviour and its correlation with certain sociodemographic variables in Sivas province. *Journal of Psychiatry and Neurological Sciences* 2011; 24: 13-23.
- Vonborczyskowski A, Lindblad F, Vinnerljung B, Reintjes R, Hjern. A Familial factors and suicide: an adoption study in a Swedish National Cohort. *Psychol Med* 2011; 41: 749-758.
- Woolgar M, Baldock E. Attachment disorders versus more common problems in looked after and adopted children: comparing community and expert assessments. *Child and Adolescent Mental Health* 2015; 20: 34-40.
- Serretti A, Chiesa A, Calati R, Linotte S, Sentissi O, Papageorgiou K, et al. Influence of family history of major depression, bipolar disorder, and suicide on clinical features in patients with major depression and bipolar disorder. *Eur Arch Psychiatry Clin Neurosci* 2013; 263: 93-103.
- Umamaheswari V1, Avasthi A, Grover S. Risk factors for suicidal ideations in patients with bipolar disorder. *Bipolar Disord* 2014; 16: 642-651.
- Nesvåg R, Knudsen GP, Bakken IJ, Høye A, Ystrom E, Surén P. Substance use disorders in schizophrenia, bipolar disorder and depressive illness: a registry-based study. *Soc Psychiatry Psychiatr Epidemiol* 2015; 50: 1267-1276.
- Hidalgo-Mazzei D, Walsh E, Lia R, Mark Z. Comorbid Bipolar Disorder and Borderline Personality Disorder and Substance Use Disorder. *J Nerv Ment Dis* 2015; 203: 54-57.
- Goes FS. The importance of anxiety states in bipolar disorder. *Curr Psychiatry Rep* 2015; 17: 3.
- Goes FS, McCusker MG, Bienvenu OJ, Mackinnon DF, Mondimore FM, Schweizer B, et al. Co-morbid anxiety disorders in bipolar disorder and major depression: familial aggregation and clinical characteristics of co-morbid panic disorder, social phobia, specific phobia and obsessive-compulsive disorder. *Psychol Med* 2012; 42: 1449-1459.
- Suokas JT, Suvisaari JM, Grainger M, Raevuori A, Gissler M, Haukka J. Suicide attempts and mortality in eating disorders: a follow-up study of eating disorder patients. *Gen Hosp Psychiatry* 2014; 36: 355-357.
- McElroy SL, Frye MA, Helleman G, Altshuler L, Leverich GS, Suppes T. Prevalence and correlates of eating disorders in 875 patients with bipolar disorder. *J Affect Disord* 2011; 128: 191-198.

26. Jen A, Saunders EF, Ornstein RM, Kamali M, McInnis MG. Impulsivity, anxiety, and alcohol use in bipolar disorder comorbid with eating disorders. *Int J Bipolar Disord* 2013; 1: 13.
27. Zerwas S, Larsen JT, Petersen L, Thornton LM, Mortensen PB, Bulik CM. The incidence of eating disorders in a Danish register study: Associations with suicide risk and mortality. *J Psychiatr Res* 2015; 65: 16-22.
28. Swann A, Lijffijt M, Lane S, Steinberg J, Moeller F. Increased trait-like impulsivity and course of illness in bipolar disorder. *Bipolar Disorders* 2009; 11: 280-288.
29. Perroud N, Baud P, Mouthon D, Courtet P, Malafosse A. Impulsivity, aggression and suicidal behavior in unipolar and bipolar disorders. *J Affect Disord* 2011; 134: 112-118.
30. Merikangas K, Jin R, He JP, Kesler R, Lee S, Sampson N, et al. Prevalence and correlates of bipolar spectrum disorder in the world mental health survey initiative. *Arch Gen Psychiatry* 2011; 68: 241-251.
31. Koyuncu A, Tükel R, Özyıldırım İ, Meteris H, Yazıcı O. Impact of obsessive-compulsive disorder comorbidity on the sociodemographic and clinical features of patients with bipolar disorder. *Compr Psychiatry* 2010; 51: 293-297.
32. Akkaya C, Altın M, Kora K, Karamustafaloğlu N, Yaşan A, Tomruk N, et al. Sociodemographic and clinical features of patients with bipolar I disorder in Turkey-HOME study. *Bulletin of Clinical Psychopharmacology* 2012; 22: 31-42.

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