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## Bipolar disorder and perceived social support: relation with clinical course, and the role of suicidal behaviour

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### ABSTRACT

**Objective:** The objective in this study was to analyse the effects of the perceived social support from the family, friends and other important people in the lives of patients with bipolar disorder (BD) in remission on clinical course and suicidal behaviour in a multidimensional model.

**Method:** The study conducted 100 patients diagnosed with BD-1(remission) according to DSM-5. All participants were administered Multidimensional Scale of Perceived Social Support(MSPSS), Young Mani Rating Scale(YMRS), Patient Health Questionnaire(PHQ-SADS), Mood Disorder Diagnosis and Monitoring Form(SKIP-TURK), and Global Assessment of Functioning(GAF).

**Results:** There was a significant negative correlation between the duration of untreated period (DUP), episodes length, illness duration, subthreshold depressive symptoms and their MSPSS scores ( $p < .05$ ). There was a significant difference in the MSPSS total scores (not subscales) between the two groups divided according to suicidal behaviour ( $p = .03$ ). There was a significant positive correlation between the GAF scores and the all MSPSS subscales scores. GAF and MSPSS friends\_subscale scores were found to be predictors for suicide behaviour (respectively;Wald = 4.81,  $p = .028$ , OR = .93, 95% CI = 0.88-0.99;Wald = 4.71,  $p = .03$ , OR = 1.08, 95% CI = 1.01–1.16).

**Conclusion:** This study indicates that there are significant relationships between suicide attempts, DUP, episode length, subthreshold depressive symptoms, functioning and multidimensionally perceived social support. The fact that suicide attempt is related to total score and not to subscale scores of perceived social support shows the importance of the coexistence of all dimensions in the perceived social support area and emphasizes the necessity of examining these dimensions as a whole. Meanwhile, it is observed that the perceived friend\_support along with functioning is associated with suicidal behaviour in BD.

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### KEYWORDS

Bipolar disorder; perceived social support; clinical course; suicidal behaviour; functioning; subthreshold depressive symptoms

## Introduction

Social support is directly related to the severity of psychological and physical symptoms and acts as a buffer between the stressful events of life and symptoms [1]. Authors examining the effect of social support on the disorders conceptualized social support as a positive factor aiding the protection of health and healing of disorders [2]. It has been argued that social support accelerates the healing of diseases [3], additionally helping healthcare and recovery by encouraging a healthy behaviour [4]. Many authors have stated that the size of a social support system and the satisfaction with the support received from that system are two different dimensions of social support and that satisfaction from a social support system could be an important and independent factor for coping with stress. Furthermore, compared with objectively measured social support, perceived social support is considered as a better psychological indicator [5–7].

Studies published in the field of bipolar disorders reveal that, as seen in other psychiatric diagnoses, the

perceived social support levels of people with bipolar disorder are lower than that of the normal population [8,9]. Moreover, different results have been found in studies regarding the effect of the perceived social support levels on the prognosis of bipolar disorder. Some studies show that lower levels of support or less perceived social support are related to poor symptomatic outcomes [10] and that support levels are related to more frequent occurrence of affective episodes [11]. In addition, social support has a negative correlation with the number of previous depressive periods [12,13], and it can affect the relapse of both manic and depressive episodes [11]. However, conversely, some studies suggest that social support does not have a relationship with the frequency of episodes [14].

In most of the studies in this field, the current mental state of the patient has not been reported, and it is likely that the perceived social support can be affected by the state of the current mood. So, in case this possibility is not considered, the effects of social support observed in bipolar symptomatology can be lower [15]. Thus,

the present study was planned to include patients in the euthymic state, considering the possibility that a person's mood can change the social support perception. Additionally, most of the studies conducted in this field have not examined social support as the perceived social support, a subjective measure that is rather used to express satisfaction from the support received. Thus, this study focussed on the perceived social support from family, friends and other important people in the lives of patients in remission state of bipolar disorder. The study objective was to determine the effect of perceived social support on clinical characteristics of the disorder using a multidimensional model.

## Method

### *Sampling and study procedure*

The study was conducted as a part of a project with an ethics committee approval “dated 13.10.2014 – no 2” to evaluate the factors affecting functioning in bipolar disorder. Hundred consecutive patients who were followed up in the bipolar disorder branch clinic, who were diagnosed with bipolar disorder I in remission state for Structured Clinical Interview for DSM-IV (SCID-I) and who volunteered to participate in the study by signing the consent form were included during the period of October 2015 to April 2016. A total of 106 patients were recruited for this study. However, 4 were excluded because they were not in remission and 2 were excluded due to their unwillingness to participate in the interview. Therefore, 100 BD patients in remission that signed the consent form were included in the study. The exclusion criteria consisted of being younger than 18 or older than 65 years of age, being illiterate, not being in the remission phase, having an intellectual disability or cognitive defect that was recognizable in the interview, having a disease due to a severe general medical condition recognizable in the interview, or having been diagnosed with schizophrenia or any other psychotic disorder. The Multidimensional Scale of Perceived Social Support (MSPSS) was administered to evaluate the perceived social support. It was confirmed that the patients were in remission state by using the Young Mania Rating Scale (YMRS) and the Patient Health Questionnaire, Somatic Anxiety, Depression (PHQ-SADS) administered at the time of enrolment in the study; in addition, the subthreshold mood symptoms were evaluated using these scales. The SKIP-TURK was administered to evaluate the sociodemographic data and clinical variables such as the illness duration, number of and duration of episodes, number of hospitalizations, history of suicidal behaviour and compliance with the treatment. The Global Assessment of Functioning (GAF) scores of the patients were used for the evaluation of functioning.

## Materials

### *YMRS*

This scale is a 11-item interviewer-rated scale prepared for the measurement of the severity of and change in the manic episode. Its validity and reliability study in Turkey has been conducted [16].

### *PHQ-SADS*

It was developed by Kroenke et al. [17]. It is a patient-reported scale filled in by the patient. It can be used both in research and in daily clinical practice. It comprises the PHQ-9 subscale evaluating the nine fields of major depressive disorder, the GAD-7 subscale evaluating the seven basic anxiety symptoms, the PHQ-15 subscale evaluating the somatic symptoms. Its validity and reliability study in Turkey has been conducted [18].

### *SCID-I*

SCID-I is a clinical interview scale developed and structured by First et al. to diagnose major DSM-IV Axis I disorder [19]. The Turkish adaptation and reliability study of SCID-I was conducted [20].

### *Mood disorder diagnosis and monitoring form (SKIP-TURK)*

It is a registry form comprising 111 items including sociodemographic data and used for the monitoring of patients with mood disorder. It was developed by Özerdem et al. [21]. It is not a diagnostic tool but a data gathering tool. Its purpose is to standardize data gathering process and form a database that can be easily pooled and evaluated in multi-centre studies when needed. It inquires the age at disease onset, disease duration, age at onset of treatment, history of physical and sexual abuse, history of physical illness, academic and social functionality, premenstrual syndrome, history of smoking, alcohol and substance use; type of the first episode, stressor before the episode, severity of episodes, onset after birth, depression subtype, episodes with psychotic findings, suicide attempt, hospitalization, duration of episodes, what the attack is healed by; and number of episodes, stressor before the episode, severity of the episode, duration of the episode, intervals with psychotic findings, suicide attempt, hospitalization, predominant disease pattern, seasonality, sudden onset and outset, chronicity and fast cyclicity before and after the protective treatment in total and for each period.

### *MSPSS*

The MSPSS was developed in 1988 by Zimet et al. [1] to determine the social support factors perceived by the people. It consists of a total of 12 items. It is a Likert-type scale rated on a 7-point (1–7 points) scale ranging from “definitely no” to “definitely yes.” The source of

the perceived social support can be measured in three subdimensions as family, friends and other important people (such as partner, fiancé, relative, neighbour and doctor). The lowest score that can be received from the subscales is 4 and the highest is 28. The lowest total scale score is 12 and the highest is 84. Higher scores show that the perceived social support is high. The validity and reliability study of the reviewed Turkish Form has been conducted [22].

### Statistical analysis

Mean, standard deviation, median lowest, median highest, frequency and ratio values were used in descriptive statistics of the data. The distribution of the variables was measured using Kolmogorov Smirnov test. Patients were divided into two groups: patients with and those without a history of suicide attempt in order to evaluate the relationship between the suicidal behaviour and the perceived social support. Student-t test was used for the comparison between these two groups. The Pearson's correlation coefficient was used in the correlation analysis. Logistic regression analysis that suicide behaviour were treated as independent variable was performed to determine the predictive value of perceived social support subscales. Hosmer-Lemeshow goodness of fit statistics were used to assess model fit. The strong points of the associations between the independent variables and the suicide behaviour were expressed as odds ratios (OR), with their 95% confidence intervals (CI). A two-tailed hypothesis was used for statistical analysis. *P*-values < .05 were considered to indicate statistical significance in all analyses. IBM SPSS Statistics for Windows, Version 22.0 software (IBM Corp., Armonk, NY, USA) was used for the statistical analysis.

### Results

In total, 100 patients with bipolar disorder I (male, 40; female, 60) were included. Sociodemographic data and clinical variables of the patients included in the study are shown in Table 1.

The correlation analysis was performed to examine the relationship between the perceived social support and the clinical course. There was no significant relationship between the total number of episodes, number of depressive episodes, number of manic episodes, number of hypomanic episodes of the patients throughout their lives and the MSPSS total and subscale scores ( $p > .05$ ). Similarly, there was no significant relationship in the correlation analyses between the total number of hospitalizations and the MSPSS total and subscale scores ( $p > .05$ ). There was a significant negative correlation between the duration of untreated period (DUP) and total the MSPSS score ( $r = -0.26$ ,  $p = .01$ ) and the MSPSS friend subscale score ( $r = -0.32$ ,

**Table 1.** Sociodemographic features of patients with bipolar disorder 1 ( $n = 100$ ).

	%	
Gender		
Male	40	
Female	60	
Marital status		
Single	35	
Married	45	
Divorced	17	
Living separately	2	
Widow	1	
Socioeconomic level		
Middle / upper	41	
Middle / lower	53	
Lower	6	
Working status		
Active working	43	
Retired	10	
Unemployed	14	
Unable to work	18	
	Mean $\pm$ SD	Median (Min-Max)
Age	40.9 $\pm$ 11.2	42 (20–65)
Education duration (years)	11.6 $\pm$ 3.9	11 (2–21)

Note: SD: standard deviation.

$p = .001$ ). In addition, there was a significant negative correlation between the duration of the episodes and total the MSPSS score ( $r = -0.30$ ,  $p = .002$ ) and family subscale score ( $r = -0.26$ ,  $p = .011$ ).

When the patients were divided into two groups (patients with and those without the history of suicide attempts), there was no statistically significant difference between the two groups in terms of the MSPSS family, friend and other important people subscale scores ( $p > .05$ ). However, there was a significant difference between the two groups in terms of the total MSPSS scores obtained by the sum of all of the subscale scores ( $p = .03$ ). The rate of suicide attempt was higher in the group with a lower total the MSPSS score (Table 2).

There was a negative correlation between the sub-threshold depressive symptoms and the MSPSS family subscale ( $r = -0.28$ ,  $p = .005$ ), whereas there was no relationship between subthreshold manic symptoms and the MSPSS total and subscale scores ( $p > .05$ ). There was a significant positive correlation between the GAF scores and the total MSPSS score ( $r = 0.37$ ,  $p < .001$ ), family ( $r = 0.35$ ,  $p < .001$ ), friend ( $r = 0.42$ ,  $p < .001$ ) and other important people subscale scores ( $r = 0.25$ ,  $p = .01$ ). There was a significant negative

**Table 2.** Clinical features of patients with bipolar disorder 1 ( $n = 100$ ).

	Mean $\pm$ SD	Median (Min-Max)
Age of onset	25.9 $\pm$ 9.3	24 (14–54)
Illness duration (years)	14.9 $\pm$ 9.7	14 (1–40)
The time until starting treatment (years)	1.4 $\pm$ 3.8	0 (0–20)
Total number of episodes	8.0 $\pm$ 9.0	5 (1–65)
Number of manic episodes	4.4 $\pm$ 4.8	3 (0–22)
Number of depressive episodes	2.4 $\pm$ 4.5	1 (0–27)
Number of hospitalizations	2.3 $\pm$ 2.9	1 (0–17)
Time under episode (days)	62.3 $\pm$ 48.7	45 (7–250)
GAF score	62.1 $\pm$ 9.4	61 (43–82)

Note: SD: standard deviation; GAF: global assessment of functioning.

correlation between the illness duration and the total MSPSS score ( $r = -0.26$ ,  $p = .01$ ), family ( $r = -0.21$ ,  $p = .03$ ) and friends ( $r = -0.34$ ,  $p = .001$ ) subscales scores (Table 3).

In order to evaluate the predictive effect of perceived social support subscales and GAF scores, which is an important outcome on suicide attempt, a regression model including 4 possible predictors (3 perceived social support subscales and GAF scores) was established. For the logistic regression, the Hosmer–Lemeshow goodness-of-fit test showed that the logistic model was appropriate ( $2 = 6.49$ ;  $df = 8$ ;  $p = .59$ ). When the predictive capabilities of perceived social support subscales were evaluated by logistic regression analysis that suicide behaviour history was established as an dependent variable, GAF and perceived friend support subscale scores were found to be predictive on suicidal behaviour (respectively; Wald = 4.81,  $p = .03$ , OR = 0.93, %95 CI = 0.88–0.99; Wald = 4.71,  $p = .03$ , OR = 1.08, %95 CI = 1.01–1.16). As OR value for both GAF score and perceived social support friend subscale score were close to 1, it was observed that the relationship with the dependent variable was weak (Tables 4 and 5).

## Discussion

For patients with bipolar disorder, who experience many difficulties in social relationships and require continuous social support both in the attack and the remission periods, social ties are particularly important [15]. Although the results of the studies examining the relationship between the frequency of episodes, an important indicator of the clinical course, and social support different from those in the literature, it has mostly been shown that the social support is related to the disorder relapse [10,11]. The present study found no significant relationship between the multi-dimensionally perceived social support of patients in remission state and the number of episodes experienced during the disorder, along with the number of hospitalization, which is inconsistent with previous studies' results. In their one-year prospective study on 27 patients with

bipolar disorder in remission, Staner et al. [14] found that social support is not a risk factor for relapse, which is similar to our results. We believe that this difference in our results is related to the inclusion of patients who were regularly followed up in the branch clinic of a mental health hospital and were in remission and the analysis of the perceived social support, a subjective evaluation factor, unlike the literature.

Furthermore, the analysis of the time from the onset of disorder symptoms to the initiation of regular treatment (duration of untreated period-DUP) revealed a negative correlation with the perceived social support of the patient. The necessity of preventive treatment in bipolar disorder is indisputable to prevent relapses, reduce the risk of suicide and prevent psychosocial consequences of the episodes [23]; furthermore, delayed institution of preventive treatment is related to poor disease course in bipolar disorder [24]. Conversely, the importance of the time lag between the first onset of disorder symptoms and the initiation of treatment in psychotic disorders has been studied extensively; these studies reported that weak social support is related to delayed treatment in the first-episode psychotic patients [25,26]. In a study examining the effect of time before receiving the diagnosis of bipolar disorder on the clinical outcomes, McCraw et al. [27] reported a relationship between the perceived social support and the time until diagnosis in bipolar disorder. In the present study, we observed a negative correlation between the perceived social support and the duration of episode, indicating a decrease in the duration of episode with increasing social support. Consistent with our results, S. L. Johnson et al. [28]

**Table 3.** Relationship between suicide behaviour and perceived social support in patients with bipolar disorder-I ( $n = 100$ ).

	Group with suicide attempt history Mean $\pm$ SD	Group without suicide attempt history Mean $\pm$ SD	$p$
MSPSS total	56.4 $\pm$ 18.2	63.9 $\pm$ 12.3	.03*
MSPSS family	22.5 $\pm$ 6.5	23.7 $\pm$ 5.5	.39
MSPSS friends	18.5 $\pm$ 8.3	21.4 $\pm$ 8.1	.15
MSPSS others	16.8 $\pm$ 11.4	17.9 $\pm$ 8.2	.62

Notes: Student  $t$ -test;  $p^* < .05$ . MSPSS: multidimensional scale of perceived social support; SD: standard deviation.

**Table 4.** The relationship between perceived social support and clinical features in patients with bipolar disorder-I ( $n = 100$ ) ( $r$ ).

	MSPSS total	MSPSS family	MSPSS friends	MSPSS others
Total number of episodes	−0.10	−0.18	−0.12	−0.02
The number of depressive episodes	0.02	−0.02	0.01	0.03
Number of manic episodes	−0.13	−0.18	−0.18	−0.02
Number of hospitalizations	−0.11	−0.13	−0.19	−0.03
The time until starting treatment (years)	−0.26*	−0.11	−0.32***	−0.15
Time under episode (days)	−0.30*	−0.26*	−0.28	−0.32
Subthreshold depressive symptoms	−0.19	−0.28*	−0.07	−0.09
Subthreshold manic symptoms	0.08	−0.13	0.05	0.11
Illness duration (years)	−0.26*	−0.21*	−0.34***	−0.08
GAF score	0.37***	0.35***	0.42***	0.25*

Notes: Pearson correlation analysis;  $p^* < .05$ ,  $p^{***} < .001$ . MSPSS: multidimensional scale of perceived social support; GAF: global assessment of functioning.



**Table 5.** Logistic regression analysis of MDSPSS subscales and GAF scores predicting suicide behaviour.

		Wald	OR	% 95 confidence interval	p
Step 1 <sup>a</sup>	GAF	5.81	0.92	0.87–0.99	.02
	MDSPSS family	1.40	1.06	0.97–1.15	.24
	MDSPSS friends	4.20	1.08	1.01–1.16	.04
	MDSPSS others	0.01	1.002	0.95–1.05	.95
Step 2 <sup>a</sup>	GAF	5.88	0.92	0.87–0.99	.02
	MDSPSS family	1.47	1.06	0.97–1.15	.23
	MDSPSS friends	4.37	1.08	1.01–1.16	.04
	MDSPSS				
Step 3 <sup>a</sup>	GAF	4.81	0.93	0.88–0.99	.03
	MDSPSS friends	4.71	1.08	1.01–1.16	.03

Notes: MDSPSS: multidimensional scale of perceived social support; GAF: global assessment of functioning.

<sup>a</sup>Variable(s) entered on step 1: MDSPSS family, MDSPSS friends, MDSPSS others, GAF.

reported a longer time for remission in individuals with low social support, in a study on 59 patients with bipolar disorder who were monitored for 6 months. Another study reported that high social status is related to faster recovery from the episodes and that this result may be related to the use of social and financial support [29]. We believe that the relationship between the perceived social support and the duration of episodes is an important finding, considering the importance of fast and appropriate institution of episode treatment as one of the first goals in the treatment of bipolar disorder.

The role of social and interpersonal factors on the development of suicidal tendency has been shown in both clinical and non-clinical populations [30–32]. In a suicide model developed by J. Johnson et al. [33], it was argued that social factors such as weak social support and the perception of social interaction resulted in the development of suicidal tendency. In the Interpersonal Theory of Suicidal Behaviour proposed by [34], it was argued that the low level of belonging felt in the social networks created a risk of more suicidal thoughts. Only few studies have examined the effects of the perceived social support on suicide attempts in the patients with bipolar disorder. In a recent study, qualitatively examining 20 patients with bipolar disorder, the effect of social support on suicidal thoughts and behaviours has been reported [35]. Furthermore, we found no relationship between suicidal behaviour and the dimensions of perceived social support, sub-dimensions of family, friends and other important people in their lives. However, it was observed that the total score had a relationship with the suicidal behaviour, and the patient group with a history of suicide attempts had lower total perceived social support. This result shows us the necessity of examining all areas in the multidimensional analysis of perceived social support and that these areas particularly influence the suicidal behaviour in combination. Furthermore, according to our results, even though social support perceived from friends and functioning were

observed to have a weak effect on suicidal behaviour, the importance of socialization and support from friends was seen when the friendships other than those with family members are considered as the source of individualization. The effect of friend support perception with functioning on suicide attempt, supports the importance of social roles in the management of the disease [36]. This weak relationship was thought to be related to the current assessment of perceived social support and GAF scores while evaluating suicidal behaviour as lifelong. Considering that our patients are a group with good adherence to treatment and followed regularly in the branch outpatient clinic, it is considered that current and lifelong evaluations are important.

We also observed that the perceived social support had a relationship with subthreshold depressive symptoms, which are known to have a distinctive effect on the course of the disease and general wellbeing and that there is a decrease in subthreshold depressive symptoms with an increase in perceived social support. Johnson et al. [11] observed a relationship between inadequate social support and incomplete recovery in a 1-year follow-up study of 94 patients with bipolar disorder in remission, consistent with our results. Moreover, it was detected in our study that many areas of perceived social support had significant relationships with functioning during the remission period. With the successful use of more effective treatment options during the disorder episodes, particularly in the recent years, and considering that criteria such as functioning and quality of life have an important place in the treatment, it is believed that perceived social support is an important factor in the clinical course. The present study observed an inverse relationship between the duration of illness and perceived social support. Family members and caregivers experience significant burden, owing to the chronic clinical course and loss of functioning [37,38]. In Turkey, a study examining the burden in the caregivers of patients with bipolar disorder reported that the caregiver burden increased with an increasing duration of illness [39]. When these results are evaluated, it is believed that prolonged illness increases the caregiver burden; thus, the social support that the patients perceive from their environment may also decrease. The clinical course being negatively affected by the decrease in the perceived social support, coupled with a decrease in the perceived social support due to prolonged illness, seems to be representing a vicious cycle. Therefore, we suggest that informing the caregivers about the effects of the perceived social support on the clinical course and providing them a psychosocial education regarding the episodes and coping with the disorder symptoms is important in reducing the caregiver burden and increasing the social support for the patient.

The first limitation of this study is its retrospective design, although the information provided by the

patients regarding the clinical course from the onset of first symptoms was checked against the hospital records and that obtained from the relatives of the patients. Thus, no definitive conclusion can be drawn from the observed relationships, and there is a need for longitudinal studies on the subject. Second, the patients included in the study were those who regularly visited a special branch clinic and who had good compliance with the treatment; therefore, these results cannot be generalized to all the patients with bipolar disorder, which has a heterogeneous nature. This study suggests that there are significant relationships between multi-dimensionally perceived social support and suicide attempts, duration of untreated period, episode length, subthreshold depressive symptoms and functioning on condition, when the universal limitations are considered. We believe that the investigation of the relationship of these variables with each other and/or the presence of other intervening variables in a prospective study would be important for interventions in the clinical course, functioning and suicidal behaviours, which are important factors in bipolar disorder.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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