Journal of Experimental and Clinical Medicine
https://dergipark.org.tr/omujecm

Research Article

J Exp Clin Med
2024; 41(1): 73-79
doi: 10.52142/omujecm.41.1.12

The effect of childhood trauma on sleep quality and functionality in patients with bipolar disorder-I

Filiz İZCİ*, Didem BEŞİKÇİ, Metin ASLAN, Elif YILMAZ Osman KAMİLOĞLU

Department of Psychiatry, University of Health Science, Erenköy Mental and Nervous Diseases Training and Research Hospital İstanbul, Türkiye

Received: 03.10.2023 • **Accepted/Published Online:** 21.03.2024 • **Final Version:** 29.03.2024

Abstract

Childhood trauma in bipolar patients affect multiple clinical variables. Sleep is a parameter affecting the prognosis and functionality in bipolar patients. In this study; we aim to evaluate the effect of childhood trauma on sleep and functionality. The study included a healthy control group (n=50) and a total of 100 participants diagnosed with BD-I according to DSM-5 diagnostic criteria who were admitted to our hospital between January 12, 2021, and June 30, 2021. Sociodemographic data form, Pittsburg Sleep Quality Index (PSQI), Childhood Psychiatric Trauma Scale (CTQ), and Bipolar Disorder Functioning Scale (BDFS) scales were applied to the patient and control groups. Compared to the control group, in the patient group, there was a statistically significant increase in the CTQ total score, emotional abuse, emotional neglect, and sexual abuse subscale scores; The sub-scores for work, emotional functionality, mental functionality, stigmatization, introversion, social participation, daily activities and hobbies, and BDFS total scores were found to be statistically lower ($p< 0.05$). Because of the correlation between the scale scores, there was a negative correlation between the PSQI total score and the BDFS total score. Childhood traumas and sleep problems are more common in patients with bipolar disorder than in healthy controls. Additionally, childhood traumas may cause deterioration in bipolar functionality scores such as emotional functionality and introversion in bipolar patients.

Keywords: bipolar disorder, childhood trauma, sleep, functionality

1. Introduction

Even though over half of people with bipolar disease (1) had experienced trauma in their childhood, sleep difficulties might present as nightmares, poor sleep quality, frequent nighttime awakenings, and decreased sleep duration. Most bipolar patients who are depressed experience insomnia, but a sizable portion also report hypersomnia symptoms, which include extreme daytime sleepiness, trouble getting up, and prolonged nocturnal sleep (2).

There are many factors that affect sleep in Bipolar Disorder. Bipolar disorder may cause decreased sleep quality, disruption, etc. in both euthymic and depressive periods, as well as decreased need for sleep, and manic periods. Sleep problems are observed. Other factors affecting sleep include medications taken for treatment and other disease symptoms. Beyond this, premorbid childhood traumas may have an impact on both disease symptoms and sleep quality. Survivors of both short-term and long-term trauma often experience sleep disturbances such as difficulty falling asleep, frequent awakenings, shorter sleep periods, restless sleep, fatigue during the day, especially nightmares and anxious dreams (3).-It has been suggested that, particularly in bipolar patients who have a history of emotional abuse, the quality of their sleep may be related to the level of anxiety they experience. This was the conclusion of a study that examined the relationship between childhood trauma and poor sleep quality in 493 euthymic bipolar patients. (4).

Childhood trauma is one environmental element that can impact brain development and lead to anomalies and illnesses related to the brain (5,6). Early disease onset in bipolar patients who have experienced severe childhood abuse has been linked to trauma (7,8). In a research conducted; A strong association between lifetime substance use comorbidity and rapid cycling has been observed, especially in cases of severe emotional abuse. It has also been shown that there is a significant relationship between severe sexual abuse in childhood and attempted suicide throughout a person's life. Abuse in various forms has been associated with an increasing likelihood of suicide attempts and rapid cycling (1). In another manner, traumas can impede functionality and have a variety of effects on the condition. Trauma experienced as a child may hinder the development of interpersonal abilities, particularly the need for closeness, which may hinder social functioning as an adult. These people have trouble forming intimate bonds with others and interacting with others (9,10). For patients who report suffering childhood trauma, it might indicate a cumulative risk for diminished social functioning beyond exhibiting clinical symptoms (11). Childhood interpersonal trauma is a significant predictor of adult satisfaction with social functioning; however, adult interpersonal trauma does not follow the same pattern. Nonetheless, 45% of individuals who stated having encountered interpersonal trauma as children also mentioned having done so as adults (9). It has been found that this group

*Correspondence: filizizci@yahoo.com

of traumatized chronic patients has lower social functionality both in the active disease stage and in remission, according to a study done on 1039 patients with schizophrenia and bipolar spectrum (11). Furthermore, a decline in the quality of sleep lowers life satisfaction, increases the risk of relapses, and can seriously impair emotional functioning.10 Bipolar individuals with sleep difficulties have been reported to have worse quality of life, impairment, and overall function (2) in another study.

We think that sleep problems seriously affect functionality in bipolar patients, and that sleep quality will be further affected, especially in patients with a history of childhood trauma. In this respect; Planning treatment according to sleep and childhood traumas is important in increasing functionality. We think that the results of our study will make a meaningful contribution to the literature. Our aim in this study is to determine to what extent childhood traumas affect sleep quality and functionality in the patient and control groups.

2. Materials and Methods

2.1. Participants

Our research is a cross-sectional study. In our study, we included 50 patients and 50 healthy subjects, aged 18-65 years, primary school graduates, diagnosed with Bipolar Disorder Type 1 according to DSM-5 diagnostic criteria, accepted to participate in the study, followed up in XXX Hospital between January 2021 and June 2021. The patient group was selected from people who had been in remission for at least 2 months. Remission criteria were determined by scale scores and clinical results. (Young Mania Rating Scale ≤12 and Hamilton Depression Rating Scale -17 ≤7). Participants were evaluated by two psychiatrists. All of the patient groups were patients who received medication regularly and were in remission. However, those with mental retardation or neurocognitive disorder, a history of brain injury or trauma, a history of alcohol substance abuse, and a previous diagnosis of sleep disorder were excluded from the study. Control group; the subjects were selected from healthy volunteers who did not have any additional medical or psychiatric diseases, did not describe sleep problems, and did not take medication. Sociodemographic data form, Pittsburg Sleep Quality Index, Childhood Trauma Questionnaire, and Bipolar Disorder Functioning Scale were applied to the patients and control group.

2.2. Data Collection Tools

Sociodemographic data form: This is the form used to assess the patient's sociodemographic characteristics, such as age, gender, level of education, marital status, job status, and history of alcohol and drug use. The researchers created the form.

Childhood Trauma Questionnaire(CTQ): There are 28 questions on the Bernstein et al. test. With this scale, a total score on childhood emotional abuse, physical abuse, physical neglect, emotional neglect, and sexual abuse is developed. This total score is made up of five subscores. Sar et al. indicated reliability and validity (13,14).

Pittsburgh Sleep Quality Index (PSQI): Buysse et al. developed PSQI, and Ağargün et al. translated it into Turkish (15, 16). The PSQI is a 19-item self-report measure used to assess the quality and disruption of sleep during the previous month. There are 24 questions total—19 are self-report questions and 5 are for the spouse or roommate to respond to. The scale's eighteen scored questions are divided into seven parts. Sleep disorders, drug use while sleeping, habitual sleep efficiency, subjective sleep quality, sleep latency, duration, and daytime dysfunction. Each part is assessed from 0 to 3 points. The overall scale score is the sum of the scores for the seven components. The overall score is between 0 and 21. "Poor sleep quality" is indicated by a total score higher than 5.

Bipolar Disorder Functioning Scale (BDFS): The Turkish Psychiatric Association's Mood Disorders Scientific Study Unit created the Functioning Scale in Bipolar Disorder. The 58 items on the scale are divided into 11 subscales, which are: sexual, mental, emotional, feeling of stigma, introversion, relationships at home, friendships, involvement in social activities, daily activities and hobbies, taking initiative and realizing one's potential, and work (17).

2.3. Statistical Analysis

Version 26.0 of the Statistical Package for Social Sciences (IBM SPSS Corp., Armonk, NY, USA) was used for all analyses. The terms mean, standard deviation, frequency, and percentage were used to describe descriptive statistics. The Shapiro-Wilk test was used to determine whether the data corresponded to the normal distribution, and the results showed that they did. To compare categorical variables across various groups, the chi-square test or Fisher's exact test were employed. For variables with a normal distribution, the independent sample t-test and Pearson correlation analysis were utilized. Pearson Correlation Analysis was used to assess the relationship between numerical variables. 5% was chosen as the overall type-1 error threshold for statistical significance. In every test, a value of $P<0.05$ was accepted as statistically significant.

3. Results

3.1. Comparison of the demographic characteristics of the participants

A total of 100 participants, 50 patients and 50 healthy, were included in our study. There was no significant difference between the patient and control groups in terms of; Age (p=0 .909), gender (p= 1.000), duration of education (p=0.128), marital status (p=0.154), alcohol use (p=0 .297), substance use (p=0 .051) and smoking (p=0 .151). (p>.05). The rate of not working was higher in the patient group than in the control group. (p=0.001) (p<0.05) (Table 1)

Table 1. Comparison of the demographic characteristics of the participants

	Patient (n:50)	Control (n:50)	t/x ²*	p
Age	38.1±11.79	36.3±9.4	-0.064	.909
Gender			0	1.000
Woman	*50% (n:25)*	*50% (n:25)*		
Male	*50% (n:25)*	*50% (n:25)*		
Education time	12.02±3.29	17.64±3.02	1.534	.128
Marital status			1.425	.154
Married	*48% (n:24)*	*20% (n:10)*		
Single	*34% (n:17)*	*78% (n:39)*		
Divorced/Separate	*18% (n:9)*	*2% (n:1)*		
Working Status			-4.633	.001*
Not working	*64% (n:32)*	*6% (n:3)*		
Has a Regular Job	*26% (n:13)*	*80% (n:40)*		
Retired/Student	*10% (n:5)*	*14% (n:7)*		
Smoking Status			-2.064	.151
Smoking	*52% (n:26)*	*36% (n:18)*		
None	*48% (n:24)*	*64% (n:32)*		
Total Duration of Disease	12.10±9.65	-	-	-

*:p<.05

3.2. Comparison of the clinical scale scores of the participants

When the CTQ total scale and subscale scores of the patient and control groups were evaluated; CTQ total score, emotional abuse, emotional neglect, and sexual abuse sub-scores were found to be statistically significantly higher in the patient group. (p<0.05) (Table 2)

When the PSQI total scale and subgroups of the patient and control groups were evaluated; While sleep duration was less in the patient group, sleep disturbance and sleep medication intake were statistically higher in the patient group. (p<0.05) (Table 2)

When the BDFS total and subscale scores of the patient and control groups were evaluated; the BDFS total score, emotional functionality, mental functionality, feeling of stigma, introversion, participation in social activities, daily activities and hobbies, and work sub-scores were statistically lower in the patient group. (p<0.05) (Table 2)

3.3. Distribution of BDFS and CTQ scores according to PSQI

The distribution of BDFS and CTQ scores of those with and without a PSQI sleep score below 5 is shown in Fig. 1.

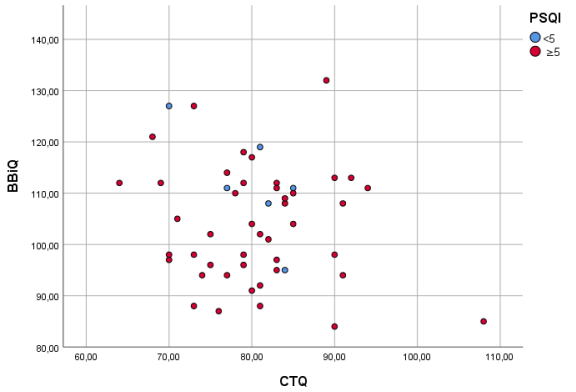

Fig. 1. Scatter dot plot of CTQ and BBIQ scales according to PSQI cutoff score

Table 2. Comparison of the clinical scale scores of the participants

	Patient	Control	t	p
CTQ	80.56±7.93	75.00±6.25	3.890	.001*
Emotional Abuse	11.9±3	10.9±1.46	2.116	.037*
Physical Abuse	13.86±3.15	13.82±2.06	0.750	.940
Physical Neglect	18.68±2.00	17.86±3.68	1.383	.171
Emotional Neglect	23.40±1.87	21.00±3.84	4.292	.001*
Sexual Abuse	12.72±3.21	11.42±1.37	2.631	.011*
PSQI	7.66±2.66	7.08±2.66	1.080	.283
Subjective Sleep Quality	0.96±0.75	1.12±0.59	-1.178	.242
Sleep Latency (delay)	0.12±0.43	0.34±0.74	-1.802	.075
Sleep Time	0.6±0.96	0.95±0.86	-1.944	.05*
Habitual Sleep Activity	2.02±1.39	1.82±1.4	0.714	.477
Sleeping disorder	1.74±0.66	1.42±0.6	2.511	.014*
Sleeping Pill Use	1.1±1.28	0.24±0.68	4.182	.000*
Daytime Dysfunction	1.12±1.06	1.16±0.93	-.200	.842
BDFS	104.78±11.06	114.96±8.39	5.184	.001*
Emotional Functioning	5.1±0.86	6.04±1.64	3.585	.001*
Mental Functioning	7.8±0.98	8.26±1.17	2.118	.037*
Sexual Functioning	7.9±2.25	8.08±2.21	0.403	.668
Feeling of Stigma	8.78±2.34	10.240±1.30	3.853	.001*
Introversion	6.72±1.45	7.76±1.59	3.400	.001*
Domestic Relations	14.98±2.47	15.20±2.44	0.477	.656
Relationships with Friends	11.18±2.28	11.76±1.49	1.504	.156
Participation in Community Events	13.82±3.95	15.52±3.51	2.273	.025*
Daily Activities and Hobbies	15.54±3.47	17.10±3.67	2.183	.031*
Taking Initiative and Using Potential	6.16±1.89	7.36±1.52	3.486	.001*
Work	6.80±1.64	7.64±1.89	2.371	.020*

*:p<.05. CTQ: Childhood Trauma Questionnaire. PSQI: Pittsburgh Sleep Quality Index. BDFS: Bipolar Disorder Functioning Scale

3.4. Correlation coefficients of the patient group's PSQI, CTQ and BDFS scores

When the correlation distribution of the total and subscale scores of the PSQI, CTQ, and BDFS scales of the patient group was examined.

Table 3. Correlation coefficients of the patient group's PSQI, CTQ and BDFS scores

	YMRS	B1	B3	B4	B5	B6	B7	B8	B9	B10
BDFS	.144	**-.412****	-.112	**.380****	**.781****	**.669****	**.481****	**.596****	**.808****	**.708****
CTQ	.063	**-.387****	-.063	-.019	**.354***	.251	.130	-.097	.109	.069
C1	.033	**-.344***	-.039	-.140	.105	.166	.003	-.154	-.037	-.101
C2	-.137	-.155	-.149	-.087	.202	.139	.179	-.205	.139	.119
C3	.032	-.203	-.124	.125	**.352***	**.459****	.205	.046	.050	-.030
C4	.148	.022	.020	**.320** *	**. 409****	.264	.037	.047	.224	**.288***
C5	.001	**-.384****	-.045	-.246	.152	-.032	.091	-.110	.035	.112
PSQI	.026	.255	.216	-.144	**-.289***	**-.409****	-.268	**-.309***	-.261	-.273
P1	.208	.144	-.002	-.074	-.209	-.067	-.158	-.235	**-.322***	-.126
P2	.158	.239	.193	-.057	**-.283***	-.249	-.115	.015	-.086	-.185
P3	-.215	.016	-.066	.110	.116	.097	.010	-.180	.217	-.095
P4	**-.321***	**.350***	.064	.051	-.004	.027	.004	-.104	-.095	-.186
P5	.088	-.209	-.106	-.036	-.125	-.103	.041	-.138	-.174	-.078
P6	.178	.048	.129	-.190	-.166	**-.426****	-.215	-.091	-.124	.030
P7	.160	.109	.301*	-.145	**-.285***	**-.335***	-.256	-.170	-.235	-.209
	BDFS	CTQ	C1	C2	C3	C5				
BDFS	1.000									
CTQ	.121	1.000								
C1	-.084	**.615****	1.000							
C2	.020	**.576****	.254	1.000						
C3	.244	**.643****	**.288***	.186	1.000					
C4	**.374****	**.430****	-.169	.109	**.512****					
C5	-.029	**.618****	**.414****	**.362****	.038	1.000				
PSQI	**- .393****	.049	.063	-.002	-.198	.263				
P1	**-.284***	-.026	.126	.053	-.032	.015				
P2	-.148	**-.342***	-.259	-.264	-.168	**-.314***				
P3	.062	.113	-.008	.195	.015	.016				
P4	-.077	.012	-.189	.184	-.001	-.044				
P5	-.159	.156	**.332***	-.082	.007	.258				
P6	-.193	-.019	-.030	-.025	-.162	.263				
P7	**-.371****	.080	.264	-.179	-.190	.277				

Bold values are statistically significant *:p<.05.**:p<.01 (Childhood Trauma Questionnaire: CTQ. Emotional Abuse: C1. Physical Abuse: C2. Physical Neglect: C3. Emotional Neglect: C4. Sexual Abuse: C5; Pittsburgh Sleep Quality Index: PSQI. Subjective Sleep Quality: P1.Sleep Latency (delay): P2. Sleep Time: P3. Habitual Sleep Activity: P4. Sleeping disorder: P5. Sleeping Pill Use: P6. Daytime Dysfunction: P7; Bipolar Disorder Functioning Scale: BDFS. Emotional Functioning: B1. Mental Functioning: B2. Sexual Functioning: B3. Feeling of Stigma: B4. Introversion: B5. Domestic Relations: B6. Relationships with Friends: B7. Participation in Community Events: B8. Daily Activities and Hobbies: B9. Taking Initiative and Using Potential: B10. Work: B11; Young Mani Rating Scale: YMRS)

While there was a negative correlation between CTQ total score and B1, P2, there was a positive correlation with C1, C2, C3, C4, C5. While there was a negative correlation between C1 score and B1, a positive correlation was found between C3, C5 and P5. While there was a positive correlation between the C3 subscore B5, B6, C4, the C4 subscore was positively correlated with the B4, B5, B10, BDFS total score. While the C5 sub-score had a positive correlation with C2, a negative correlation was found with the B1, P2 score. ($p<0.05$, $p<0.01$) (Table 3)

A positive correlation was found between P1, P3, P5, P6, and P7 total scale scores of PSQI, and a negative correlation with B5, B6, B8, BDFS total scores. A negative correlation was found between P1 subscale scores and BDFS total and B9 scores. While the P2 subscore was negatively correlated with B5, the P4 score was positively correlated with the B1 subscore. A negative correlation of P6 subscore with B6; A negative correlation of P7 subscore with B2, B3, B5, B6, BDFS total and P4 was found, and a positive correlation was found with P5. ($p<0.05$, $p<0.01$) (Table 3)

BDFS total scale scores were negatively correlated with B1, and positively correlated with B4, B5, B6, B7, B8, B9, B10.While B1 sub-score has a negative correlation with B5, B6, B9, B11; B4 subscore had a positive correlation with B2, B6. The positive correlation of B5 sub-score between B6, B7, B8, B9, B10; negative relationship between B6 and B3; positive relationship between B7 and B6, B8; positive direction between B9 and B8; A positive correlation was found between B10 and B6, B8, B9. ($p<0.05$, $p<0.01$) (Table 3)

4. Discussion

In our study; Patients with bipolar disease had lower levels of functionality and higher childhood trauma scores than the control group. Among the childhood trauma subgroups, emotional abuse, emotional neglect and sexual abuse were more commonly observed. The rate of sleep disorders and the use of sleeping pills were found to be higher. The sleep duration of the patient group was shorter. In bipolar patients who have experienced childhood trauma; There was a decrease in emotional functioning and introversion scores, and an increase in sleep problems such as sleep disorders and sleep

delay. It was observed that bipolar patients' sleep problems seriously affected their functionality levels.

Compared to the general population, euthymic bipolar individuals had an 82.9% lower rate of poor sleep quality. The subcomponents of efficiency and sleep delay show notable deficits (18). In a another study, 56.5% of bipolar patients reported having poor-quality sleep. Patients who slept poorly took longer to fall asleep and experienced more frequent sleep disruptions. Furthermore, research revealed that antidepressant use, smoking, history of suicide attempts, seasonality, lifetime anxiety comorbidity, somatoform and impulse control abnormalities, and requirement for electroconvulsive therapy were considerably higher in bipolar patients with poor sleep quality (19). In our study, similar to the literature; more sleep disruptions, shorter sleep durations and more use of sleeping pills were seen in the control group.

Bipolar patients who experienced trauma as children had an earlier onset of illness, more frequent mood swings, more psychotic symptoms, a higher risk of co-occurring anxiety disorders or substance use disorders, a higher rate of depressive and manic episodes, and rapid cycling. In bipolar disorder patients, childhood trauma is a predictor of poor functioning and unfavorable clinical characteristics. In summary, it impacts the intensity and course of the illness, hence affecting the patients' functionality in multiple domains (20). Sleep issues are another symptom that bipolar people have and that impairs their ability to operate. Negative childhood events are linked to poor adult sleep quality (21). There is evidence linking sleeplessness, traumatic experiences as a child, the intensity of clinical symptoms, and functional impairment. Participants who had suffered childhood trauma were substantially more likely than non-participants to experience symptoms of insomnia. The symptoms of sleeplessness are strongly linked to emotional neglect, physical abuse, and emotional abuse. Additionally, insomnia symptoms were found to have lower functioning and to partially moderate the association between the degree of positive and depressive/anxiety symptoms and childhood trauma (22). In accordance with the literature and our study hypotheses; ın our study, individuals who experienced childhood trauma were more likely to experience sleep problems, which was associated with decreased functionality. Although sleep disturbance was more common in those who experienced emotional abuse, it was found that sexual abuse and sleep latency were inversely related.

Both short and long sleep durations are linked to lower functionality and quality of life when compared to normal sleep length, even though short sleep duration in bipolar disorder is associated with more severe symptoms (23). Bipolar individuals with poor sleep quality were found to have worse levels of emotional and intellectual functioning, as well as lower levels of self-sufficiency, taking initiative, and overall functionality (19). Furthermore, studies comparing bipolar patients with sleep disturbances to the healthy control group have demonstrated abnormalities in cognitive skills, such as attention and processing speed (24). In our study; Despite providing more sleep interruptions and shorter sleep conditions, a negative relationship is observed between sleep total scores and bipolar functionality. We also found that the mental functioning score and bipolar functioning total score of the daytime sleep disorder assessment increased. Consistent with our study hypotheses; We can say that the decrease in sleep quality of bipolar disorder patients also affects their functionality and mental functioning.

Bipolar people who have suffered childhood trauma have been shown to have social cognitive abnormalities (25). It was believed that trauma worsens the clinical course of bipolar disorder by increasing its cumulative trauma burden in addition to influencing the condition's onset (26). In our study, we found that the mental functionality score and the bipolar functionality total score declined with an increase in the daytime sleep disorder score. According to a study, emotional trauma, in particular, was shown to be present in bipolar patients more often than in controls. This suggests that emotional trauma is linked to poorer clinical results (27). In a another study, those who had been subjected to more emotional abuse showed a tendency to operate worse in social situations, which was linked to less resilience. On the other hand, greater distress was linked to poorer levels of social functionality and resilience (28). Similarly, it was discovered that Bipolar Disorder-I individuals experiencing mixed/rapid cycle episodes had negative effects on their mental and physical health (29). Bipolar patients' scores for emotional abuse, sexual abuse, and emotional neglect were linked to worse cognitive function (30). The results of our study show that emotional abuse, emotional neglect, and sexual abuse were more prevalent in the patient group; emotional functionality decreased with increasing emotional abuse and sexual abuse scores, while introversion increased with increasing physical neglect, emotional neglect, and total trauma scores. This also demonstrates how bipolar individuals' functionality declines and they become more reclusive and solitary after experiencing trauma.

The limitations of the study are that it was a cross-sectional study, that no structured or semi-structured interviews were conducted, that trauma stories may have difficulty in remembering, that not all patients were using the same medications, and that comorbidities that accompany bipolar disorder and could affect sleep level were not specified. The strengths of the study are that it is a case-control study, that all patients are in remission, that attack periods are excluded, and that the number of patients and controls is sufficient.

In conclusion; Bipolar disease patients had lower functioning ratings and more childhood trauma than the control group. Furthermore, ratings for sleep disorders and sleeping pill use are higher, and sleep duration is shorter, despite the fact that emotional abuse, emotional neglect, and sexual abuse are

more prevalent. Bipolar patients who have experienced childhood trauma may see a decline in their emotional functioning and introversion scores as well as a rise in sleep issues like sleep disorder and sleep latency. Furthermore, bipolar people sleep issues have a detrimental impact on their degree of functionality. It should be stressed more because childhood traumas impact bipolar patients' ability to sleep and function in some areas. Comorbidities accompanying BD were not examined in the study, but it may be recommended to examine the relationship between childhood traumas and sleep and functionality in future studies.

Conflict of interest

The authors declared no conflict of interest.

Funding

No funding was used for the study.

Acknowledgments

The authors would like to thank all partıcıpants who partıcıpated ın the study.

Authors' contributions

Concept: F.İ., D.B., Design: F.İ., D.B., Data Collection or Processing: E.Y., M.A., O.K., Analysis or Interpretation: F.İ., M.A., Literature Search: F.İ., D.B., E.Y., Writing: F.İ., O.K., D.B.

Ethical Statement

Approval was obtained from Erenköy Mental Health and Diseases Training and Research Hospital Ethics Committee, the study started. The ethics committee decision date is 30/11/2020 and the number of ethical committee decisions is 47.

References

1. Garno JL, Goldberg JF, Ramirez PM, Ritzler BA: Impact of childhood abuse on the clinical course of bipolar disorder. Br J Psychiatry 2005; 186: 121–5.
2. Giglio LM, Andreazza AC, Andersen M, Ceresér KM, Walz JC, Sterz L et al.: Sleep in bipolar patients. Sleep Breath 2009; 13: 169-173.
3. Lavie, P: Sleep disturbances in the wake of traumatic events. New England Journal of Medicine 2001; 345(25), 1825–1832.
4. E Aubert, I Jaussent, E Olié, D Ducasse, J M Azorin, F Bellivier, et al.: Effect of early trauma on the sleep quality of euthymic bipolar patients. J Affect Disord 2016;206:261-267.
5. McEwen BS: Effects of Stress on the Developing Brain. Cerebrum 2011; 2011: 14.
6. Andersen SL, Teicher MH: Stress, sensitive periods and maturational events in adolescent depression. Trends Neurosci 2008;31(4):183-91.
7. Brown GR, Anderson B: Psychiatric morbidity in adult inpatients with childhood histories of sexual and physical abuse. American Journal of Psychiatry 1991; 148, 55–61.
8. Heim C, Nemeroff CB: The role of childhood trauma in the neurobiology of mood and anxiety disorders: preclinical and clinical studies. Biological Psychiatry 2001; 49, 1023–1039.
9. Stain HJ, Brønnick K, Hegelstad WTW, Joa I, Johannessen JO, Langeveld J et al.: Impact of interpersonal trauma on the social functioning of adults with first-episode psychosis. Schizophr Bull 2014;40(6):1491-8.
10. Cotter J, Kaess M, Yung AR: Childhood trauma and functional disability in psychosis, bipolar disorder and borderline personality disorder: a review of the literatüre. Ir J Psychol Med 2015;32(1):21-30.
11. Hjelseng IG, Vaskinn A, Ueland T, Lunding SH, Reponen AJ, Steen NE et al.: Childhood trauma is associated with poorer social functioning in severe mental disorders both during an active illness phase and in remission. Schizophr Res 2022;243:241-246.
12. Harvey AG: Sleep and circadian rhythms in bipolar disorder: seeking synchrony, harmony, and regulation. Am J Psychiatry 2008;165(7):820-9.
13. Bernstein DP, Stein JA, Newcomb MD, Walker E, Pogge D, Ahluvalia T, et al.: Development and validation of a brief screening version of the Childhood Trauma Questionnaire. Child Abuse Negl 2003; 27:169–90.
14. Sar V, Ozturk E, Ikikardes E: Validity and reliability of the Turkish version of Childhood Trauma Questionnaire. Turk Klin Tip Bilim Derg 2012; 32:4.
15. Buysse DJ, Reynolds CF, Monk TH: The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. Psychiatry Res 1989; 28:193-213.
16. Agargün MY, Kara H, Anlar O: Pittsburgh Uyku Kalitesi İndeksi'nin Geçerliği ve Güvenirliği. Turk Psikiyatri Derg 1996; 7: 107-11.
17. Aydemir Ö, Eren İ, Savaş H, Oguzhanoglu NK, Koçal N, Özgüven HD, et al.: Bipolar Bozuklukta İşlevsellik Ölçeğinin geliştirilmesi, güvenilirlik ve geçerliliği. Türk Psikiyatri Dergisi 2007; 18(4):344-352.
18. Rocha PM, Neves SF, Corrêa H: Significant sleep disturbances in euthymic bipolar patients. Compr Psychiatry 2013;54(7):1003-8.
19. Keskin N, Tamam L, Ozpoyraz N: Assessment of sleep quality in bipolar euthymic patients. Compr Psychiatry 2018; 80: 116-125.
20. Agnew-Blais J, Danese A: Childhood maltreatment and unfavourable clinical outcomes in bipolar disorder: a systematic review and meta-analysis. Lancet Psychiatry 2016; 3(4):342-9.
21. Koskenvuo K, Hublin C, Partinen M, Paunio T, Koskenvuo M: Childhood adversities and quality of sleep in adulthood: A population-based study of 26,000 Finns. Sleep Med 2010;11(1):17-22.
22. Laskemoen JK, Aas M, Vaskinn A, Berg AO, Lunding SH, Barrett EA et al. Sleep disturbance mediates the link between childhood trauma and clinical outcome in severe mental disorders. Psychol Med. 2021;51(14):2337-2346.
23. Gruber J, Harvey AG, Wang PW, Brooks JO, Thase ME, Sachs GS, et al.: Sleep functioning in relation to mood, function, and quality of life at entry to the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD). J Affect Disord 2009;114(1-3):41-9.
24. Bradley AJ, Anderson KN, Gallagher P, McAllister-Williams RH: The association between sleep and cognitive abnormalities in bipolar disorder. Psychol Med 2020; 50: 125-32.
25. Quidé Y, Cohen-Woods S, O'Reilly N, Carr VJ, Elzinga BM, Green MJ: Schizotypal personality traits and social cognition are associated with childhood trauma exposure. Br J Clin Psychol 2018; 57(4): 397–419.
26. Lebovitz JG, Millett CE, Shanahan M, Levy-Carrick NM, Burdick KE: The impact of lifetime interpersonal and intentional

trauma on cognition and vulnerabilityto psychosis in bipolar disorder. BJPsych Open 2021; 7(5): 164.

27. Dualibe AL, Osório FL: Bipolar Disorder and Early Emotional Trauma: A Critical Literature Review on Indicators of Prevalence Rates and Clinical Outcomes. Harv Rev Psychiatry 2017;25(5):198-208.

28. Antelo E, Saldaña O, Rodríguez-Carballeira A: The impact of group psychological abuse on distress: the mediating role of social functioning and resilience. Eur J Psychotraumatol 2021;12(1):1954776.

29. Erten E, Uney AF, Saatçioğlu Ö, Özdemir A, Fıstıkçı N, Çakmak D: Effects of childhood trauma and clinical features on determining quality of life in patients with bipolar I disorder. J Affect Disord 2014;162:107-13.

30. Savitz JB, van der Merwe L, Stein DJ, Solms M, Ramesar RS: Neuropsychological task performance in bipolar spectrum illness: genetics, alcohol abuse, medication and childhood trauma. Bipolar Disord 2008;10(4):479-94.