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Relationship Between Childhood Trauma, Dissociation, Attachment and Alexithymia in Patients with Bipolar Affective Disorder

Mustafa KURT[1], **Demet GÜLPEK**[2]

[1]Department of Psychiatry, Faculty of Medicine, Karadeniz Technical University, Trabzon, Türkiye
[2]Freelance Psychiatrist, İzmir, Türkiye

ABSTRACT

Introduction: Environmental and genetic factors, relationships and experiences established in the early years of life are involved in the etiology of bipolar affective disorder (BAD). The aim was to determine the frequency of childhood traumas, attachment styles, alexithymia and dissociative symptoms in BAD patients, to compare them with the healthy population, and to examine the direct and indirect relationships of childhood traumas with BAD.

Methods: The study included 100 patients diagnosed with BAD according to DSM-IV TR diagnostic criteria and who had been euthymic for the last 2 months, and 100 healthy individuals matched for age and gender. The participants were administered the Sociodemographic Data Form, Childhood Trauma Questionnaire, Dissociative Experiences Scale, Toronto Alexithymia Scale, Experiences in Close Relationships Inventory-II, Hamilton Depression Scale and Young Mania Scale.

Results: In the BAD group, childhood traumas, insecure attachment types, dissociative symptoms and alexithymia were found to be significantly higher than in healthy individuals. A positive relationship was found between physical abuse, dissociation and alexithymia levels and the number of attacks. Being physically abused was associated with earlier onset of the disease. A positive relationship was found between emotional abuse, physical neglect and total trauma score and dissociation. Trauma types other than sexual abuse were found to be associated with difficulty in recognizing and expressing emotions. It has been found that there is a relationship between emotional abuse and avoidant attachment dimensions. Alexithymia levels were found to be high in patients with early-onset BAD. It has been found that having a family history of psychopathology increases the risk of developing BAD, while externally oriented thinking and marital status protect against the disease.

Conclusions: There is a relationship between childhood traumas, attachment types, dissociative and alexithymic characteristics in BAD. Our study reveals that emotional and physical abuse in childhood affects the development of BAD and the course of the disease, and the importance of holistic evaluation of the individual in terms of clinical course and treatment process.

Keywords: Alexithymia, attachment, bipolar affective disorder, childhood trauma, dissociation

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INTRODUCTION

Bipolar affective disorder (BAD) is a chronic disorder with depressive and manic episodes, varying in duration and severity, affecting social, occupational and daily life functionality (1). It is argued that environmental and genetic factors, as well as relationships and experiences formed in the first years of life, have an impact on the emergence of BAD (2). Relationships established in childhood are thought to have negative effects on developmental processes and thus contribute to the emergence of adult psychiatric disorders (3). Attachment theory comes first among the theories examining the connection between experiences in the early stages of life and psychopathology.

According to attachment theory, insecure attachment is considered a determinant of disorders, while secure attachment is considered an indicator of healthy relationships. Among insecure attachment styles, anxious/ambivalent attachment is associated with depression and anxiety disorders, and avoidant attachment is associated with behavioral and externalizing disorders (4). Attachment theory; It has been shown that the emotional closeness between the child and the parent has an impact on the child's psychological development and organization of behavior, and that parental maltreatment has a negative impact on the general health status through attachment insecurity (5). Insecure attachment styles are common in BAD and have been shown to be associated with mood attacks (6). In the light of this information, it can be considered that childhood traumas may have an impact on the etiology and clinical follow-up of BAD.

Exposure to trauma paves the way for the emergence of psychiatric disorders in individuals at all ages, and poses a greater risk in childhood when coping skills are lacking. It is stated that being maltreated in

Correspondence Address: Mustafa Kurt, Department of Psychiatry, Faculty of Medicine, Karadeniz Technical University, Trabzon, Türkiye • **E-mail:** drmustafakurt61@gmail.com
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Highlights

- **Insecure attachment styles, alexithymia and dissociation are common in BAD.**
- **Childhood traumas have a negative effect on BAD.**
- **Externally oriented thinking may be protective in BAD.**
- **Types of childhood trauma can be used as an indicator in BAD.**

childhood increases the incidence of psychiatric disorders in adulthood (7). It has been demonstrated that maltreatment experienced during childhood creates a predisposition to BAD, increasing the severity and sensitivity of the disease (8). It has been shown that maltreatment and behavior towards the child causes BAD by creating hypothalomo-pituitary system irregularity and physiological changes in the prefrontal-thalamic-limbic pathways (9). Sexual abuse experienced in childhood plays a role in the development of BAD by leading to the development of negative cognitive schemas (10). Childhood trauma is associated with less response to treatment and poor prognosis in psychiatric disorders (11). It has been found that childhood traumas, especially sexual and physical abuse types, increase the risk of suicide (12). Childhood maltreatment in individuals diagnosed with BAD has been associated with poorer response to treatment, more negative clinical features (presence of psychotic symptoms), earlier age of disease onset, more suicide, and comorbidity (13).

Childhood maltreatment has been reported in a large proportion of patients with dissociative symptoms (14). Dissociation directly or indirectly negatively affects the clinical follow-up and prognosis of mental diseases (15). It is stated that the presence of dissociative symptoms in BAD may lead to deterioration in factors that have a functional impact on recovery, such as decision-making, planning, problem-solving capacity, remembering, understanding emotions, comprehending the content of daily life events and executing processes (16). In a study investigating the relationship between BAD and dissociation, general dissociative symptoms were associated with earlier age of onset, amnesia and depersonalization/derealization symptoms were associated with disease duration, and patients with dissociative symptoms were shown to report higher rates of childhood abuse and neglect (17).

Alexithymia is defined as the failure of psychological development to result in a healthy outcome in connection with the traumatic experience experienced in childhood, and the fixation or regression of emotional development in the early period (18). Studies examining the prevalence of alexithymia in the general population have revealed different results. In two separate studies, alexithymic features were found at different rates, 7.6 and 39.8%, in patients applying to mental health outpatient clinics. The different frequencies of alexithymic features in individuals can be explained by the influence of upbringing in Eastern and Western societies and the learning in the sociocultural environment they are in (19). There are a limited number of studies in the literature investigating alexithymia in BAD.

In this study; It was aimed to determine the frequency of childhood trauma, attachment styles, alexithymia and dissociative symptoms in BAD patients who have been in a euthymic mood for two months and to compare them with the healthy population. It was planned to evaluate the relationship between these variables and the BAD clinic. An important aim of the study is to investigate the effect of childhood trauma on BAD, as well as the relationship between the concepts of dissociation and alexithymia, which are generally associated with childhood maltreatment, and BAD.

METHODS

Participants and Process

Between June 2018 and November 2018, 100 patients who applied sequentially to the Mental Health Polyclinic of Izmir Katip Çelebi University Atatürk Training and Research Hospital, who were diagnosed with BAD according to DSM-IV TR criteria and who were in the euthymic period for two months before the application, and 100 healthy individuals matched in terms of gender and age. was included in the research. Permission for the study was received from Izmir Katip Çelebi University Faculty of Medicine Non-invasive Scientific Research and Ethics Committee dated 23.05.2018 with number 209. All participants were included in the research by signing the voluntary consent form. The medical diagnosis was clarified by applying the structured clinical interview form for DSM-IV axis one disorders (SCID-I) to the participants of the study. Hamilton Depression Scale (HDS) and Young Mania Scale (YMS) were applied by the practitioner to show that patients diagnosed with BAD were in remission and euthymic. Euthymic patients with an HDS score of less than seven and a YMS score of less than eight were included in the study. Mental retardation, additional mental illness diagnosis, neurological and severe physical illness were accepted as exclusion criteria of the study.

Measurements

The sociodemographic and clinical data form developed by the researcher for this study was applied to the participants. The participants were evaluated with the Childhood Trauma Questionnaire (CTQ), Dissociative Experiences Scale (DES), Toronto Alexithymia Scale (TAS), and Experiences in Close Relationships Inventory-II (ECRI-II).

Childhood Trauma Questionnaire (CTQ)

It is a self-report scale developed to retrospectively screen maltreatment experiences in childhood and adolescence. CTQ is a five-point Likert scale consisting of 28 items. It has 5 subdimension: physical abuse, physical neglect, emotional abuse, emotional neglect and sexual abuse. Şar et al. suggested that a score above 5 points for sexual abuse and physical abuse, above 7 points for physical neglect and emotional abuse, above 12 points for emotional neglect, and above 35 points in total gives positive feedback. The Turkish version of the CTQ has been shown to have strong psychometric properties with Cronbach's α=0.93 value for overall measurement (20).

Dissociative Experiences Scale (DES)

DES consists of 28 items and each item is scored between 0-100. The scale score is calculated by taking the average of the scores from all questions. The level of dissociation is determined by the DES total score. It has three subdimensions: absorption, amnesia and depersonalization/derealization. Studies show that the cut-off score with the highest sensitivity and specificity in determining the pathological level of dissociation is a DES score of 30 or above. DES values of 30 and above are defined as pathological dissociation with a high probability of dissociative disorder. The Turkish version of the scale has strong psychometric properties (Cronbach's α = 0.91) (21).

Toronto Alexithymia Scale (TAS)

TAS is one of the most commonly used screening tools for alexithymia and is a 20-item self-report scale. It has three subdimension: difficulty in recognizing emotions (TAS-1), difficulty in expressing emotions (TAS-2), and externally oriented thinking (TAS-3). It is a five-point Likert-type scale. A cut-off score of 61 and above is accepted in defining the pathological level of alexithymia. TAS was translated into Turkish by Güleç et al. and has been shown to have good psychometric properties (Cronbach's α=0.78) (22).

Experiences in Close Relationships Inventory-II (ECRI-II)

ECRI-II is a 36-item self-report scale created by Brennan et al. It is defined by the dimension of attachment anxiety and avoidance. It is validity and reliability study in Turkey was conducted by Selçuk et al (23). The scale has a total of 36 items in a seven-point Likert-type scale, 18 of which are in the anxiety and 18 in the avoidance subdimensions. The score obtained from each subdimension ranges between 18 and 126 and it is said that the higher the score obtained from the scale, the higher the avoidant attachment or attachment anxiety. Those who score less than two dimensions are grouped as secure, those who score more than two dimensions are grouped as fearful, those who score more than anxious attachment dimension are grouped as preoccupied, and those who score more than avoidant attachment dimension are grouped as apathetic type. While the Cronbach's alpha coefficient of the avoidance subdimension is 0.90, the Cronbach's alpha coefficient of the anxiety subdimension is 0.86 (23).

Statistical Analysis

The data were evaluated with IBM Statistical Package for Social Sciences (SPSS) program version 23.0. The Kolmogorov–Smirnov test was used to test the normal distribution hypothesis in the between-group analysis of continuous variables. Mann Whittney U test was used to compare the means of numerical variables between the BAD and control groups, which did not comply with normal distribution. Chi-square test was used to analyze differences between the sociodemographic characteristics and categorical variables of the BAD and control groups. Spearman correlation test was used to evaluate the relationships between the CTQ, DES, TAS and ECRI scales and clinical features in the BAD group, as the variables did not conform to normal distribution. The Mann Whittney U test was used to compare the means of numerical variables in BAD patients with and without early onset. Descriptive features were expressed as percentage, frequency, mean, standard deviation and median. Significance values were determined by applying Bonferroni correction to reduce the margin of error in the correlation of scales with multiple comparisons made between the BAD and healthy control group. The significance level is shown in bold below the tables. Logistic regression analysis was applied to examine which of the independent variables (sociodemographic data, alexithymia 3 subdimension and trauma 5 subdimension) were partial risk factors for the dependent variable, taking BAD as the dependent variable. In the selection of independent variables, variables explaining the difference between the early-onset and non-early-onset BAD group and scale dimensions that were not related to each other according to the corrected p value in the correlation analysis were considered.

RESULTS

1. Sociodemographic and Clinical Characteristics

The average age in the BAD group was 43.06±9.98 years, and the average age in the control group was 42.38±10.03 years. Age and gender distribution were similar between the two groups.

Table 1. Comparison of sociodemographic data in the BAD and control groups and clinical features in the BAD group

			Bipolar n=100		Control n=100		p
Age		(Mean, SD)	43.06	9.98	42.38	10.03	0.631
Gender	Female Male	(n, %) (n, %)	51 49	%51 %49	52 48	%52 %48	0.887
Marital status	Single Married Divorced Widow	(n, %) (n, %) (n, %) (n, %)	18 62 18 2	%18 %62 %18 %2	29 67 4 0	%29 %67 %4 %0	0.003
Education status	Primary education Secondary education High school University	(n, %) (n, %) (n, %) (n, %)	17 13 36 34	%17 %13 %36 %34	5 7 50 38	%5 %7 %50 %38	0.013
Employment history	Unemployed Employed Retired Student	(n, %) (n, %) (n, %) (n, %)	43 39 16 2	%43 %39 %16 %2	21 70 9 0	%21 %70 %9 %0	**<0.001***
Family history of psychopathology	Yes No	(n, %) (n, %)	35 65	%35 %65	9 91	%9 %91	**<0.001***
Severe alexithymia	TAS>61	(n, %)	37	%37			
Pathological dissociation	DES>30	(n, %)	28	%28			
Trauma	ÇTQ>35 Sexual abuse >5 Physical abuse >5 Emotional abuse >7 Physical neglect >7 Emotional neglect>12	(n, %) (n, %) (n, %) (n, %) (n, %) (n, %)	67 30 40 51 58 47	%67 %30 %40 %51 %58 %47			
Bipolar type	Type 1 Type 2	(n, %) (n, %)	92 8	%92 %8			
Age of onset		(Mean, SD)	29.24	9.04			
Duration of illness		(Median,IQR)	13.50	10.75			
Number of attacks		(Median, IQR)	6	4			
Number of hospitalizations		(Median, IQR)	2	2			
First Attack	Depressive Manic	(n, %) (n, %)	42 58	%42 %58			
Hospitalization history		(n, %)	71	%71			
Psychotic attack		(n, %)	64	%64			
Suicide attempt		(n, %)	28	%28			

Mann Whitney U test, Chi square test. Significance value obtained using Bonferroni correction: p<0.002

It was found that 18% of the BAD group was divorced and 43% was unemployed. A family history of psychopathology was found in 35% of the BAD group and 9% of the control group participating in the study. Significant differences were found between the BAD group and the control group in features such as employment status and family history of psychopathology (p<0.001, p<0.001). No difference was found between the groups in terms of education levels (p=0.013). Marital status was found to have a value close to statistical significance (p=0.003).

The mean age of disease onset in the BAD group was 29.19±9.04 years, disease duration was 13.5 years, and the number of attacks was 6. 71% of the BAD group had a history of hospitalization. The average number of hospitalizations was found to be 2. 92% of the patients were distributed as BAD type 1, 8% as BAD type 2. It was determined that the first attack was a manic episode in 58% of the patients. It was observed that 64% of the attacks had psychotic symptoms. During the disease period, 28% of the BAD group attempted suicide at least once. Clinical features are presented in Table 1.

Childhood trauma, alexithymia, dissociation and insecure attachment style were found to be more common in the BAD group compared to the control group (p<0.001) (Table 2).

2. Correlations Between Variables and Clinical Markers

The relationship between the CTQ total and subdimension scores and other scale scores of the BAD group was evaluated. The type of physical abuse was found to be significantly positively correlated with the total TAS score (r=0.300, p=0.002). A positive significant relationship was found between the type of emotional abuse and DES, total alexithymia and avoidant attachment (r=0.391, p=0.000, r=0.303, p=0.002 and r=0.283, p=0.004, respectively). A positive significant relationship was found between physical neglect and DES score (r=0.298, p=0.003). A positive correlation was found between the CTQ-Total score and the DES score (r=0.316, p=0.001). Although not at the level of statistical significance, values close to significance were found between CTQ-Total score and TAS-2 and total alexithymia (r=0.276, p=0.005 and r=0.275, p=0.006) (Table-3).

Table 2. Comparison of CTQ, DES, TAS and ECRI scores in BAD and control groups

			Bipolar n=100		Control n=100		p
CTQ	Sexual abuse	(Mean, SD)	6.33	3.11	5.49	1.87	**0.001***
	Physical abuse	(Mean, SD)	6.80	3.21	5.51	1.60	**<0.001***
	Emotional abuse	(Mean, SD)	9.00	4.46	6.35	2.58	**<0.001***
	Physical neglect	(Mean, SD)	8.79	3.59	6.57	2.42	**<0.001***
	Emotional neglect	(Mean, SD)	11.98	4.84	8.71	3.68	**<0.001***
	Total	(Mean, SD)	42.82	14.5	32.69	9.81	**<0.001***
DES	Total	(Mean, SD)	23.87	17.82	9.95	10.28	**<0.001***
	Absorption	(Mean, SD)	31.36	19.93	15.32	14.42	**<0.001***
	Amnesia	(Mean, SD)	18.71	19.26	6.15	9.23	**<0.001***
	Depersonalization	(Mean, SD)	17.60	21.93	5.30	10.09	**<0.001***
TAS	Total	(Mean, SD)	55.88	11.40	44.94	9.48	**<0.001***
	TAS-1	(Mean, SD)	17.75	6.89	12.75	4.94	**<0.001***
	TAS-2	(Mean, SD)	14.07	4.38	10.80	3.45	**<0.001***
	TAS-3	(Mean, SD)	23.98	3.46	21.37	3.99	**<0.001***
ECRI	Avoidant attachment	(Mean, SD)	53.91	19.65	47.05	18.36	0.018
	Anxious attachment	(Mean, SD)	67.19	19.89	55.90	17.28	**<0.001***
Attachment style	Secure	(n, %)	26	%26	46	%46	**<0.001***
	Apathetic	(n, %)	29	%29	20	%20	
	Preoccupied	(n, %)	19	%19	27	%27	
	Fearful	(n, %)	26	%26	7	%7	

CTQ: Childhood trauma questionnaire; DES: Dissociative experiences scale; TAS: Toronto alexithymia scale; TAS-1: Difficulty in recognizing emotions; TAS-2: Difficulty in expressing emotions; TAS-3: Externally oriented thinking; ECRI: Experiences in Close Relationships Inventory; Mann Whitney U test. Significance value obtained using Bonferroni correction: p<0.002

Table 3. Correlations between CTQ and DES, TAS and ECRI in BAD patients

		DES	TAS-1	TAS-2	TAS-3	TAS-total	Anxious attachment	Avoidant attachment
Sexual abuse	r	0.091	0.156	0.190	0.202	0.239	0.034	0.116
	p	0.368	0.122	0.058	0.044	0.017	0.737	0.250
Physical abuse	r	0.250	0.241	0.227	0.140	**0.300**	0.024	0.170
	p	0.012	0.016	0.023	0.165	**0.002***	0.813	0.090
Emotional abuse	r	**0.391**	0.279	0.272	0.082	**0.303**	0.199	**0.283**
	p	**0.000***	0.005	0.006	0.415	**0.002***	0.047	**0.004***
Physical neglect	r	**0.298**	0.219	0.239	-0.061	0.204	0.159	0.185
	p	**0.003***	0.029	0.200	0.545	0.042	0.114	0.065
Emotional neglect	r	0.206	0.195	0.238	0.023	0.219	0.163	0.245
	p	0.039	0.051	0.017	0.817	0.024	0.106	0.014
CTQ-total	r	**0.316**	0.233	0.276	0.063	0.275	0.175	0.255
	p	**0.001***	0.019	0.005	0.536	0.006	0.081	0.010

CTQ: Childhood trauma questionnaire; DES: Dissociative experiences scale; TAS: Toronto alexithymia scale; TAS-1: Difficulty in recognizing emotions; TAS-2: Difficulty in expressing emotions; TAS-3: Externally oriented thinking; Spearman Rho correlation. Significance value obtained using Bonferroni correction: p<0.004

The relationship between the age of onset, number of attacks, and disease duration of the BAD group and DES, TAS-20, ECRI, and CTQ scores were evaluated. A positive correlation was found between the number of attacks experienced by the BAD group throughout their illness and the DES (r=0.300, p=0.002). No relationship was found between the variables and the age of onset and disease duration (Table 4).

3. Relationship Between Early Age of Onset and Variables in BAD

The term early-onset BAD is used in people diagnosed with the disease at or before the age of 18. Thirteen individuals in the BAD group had early onset. When the relationship of early onset age with variables was examined, in the early onset BAD group; physical abuse (p=0.025), DES-absorption (p=0.041), TAS-1 (p=0.022) and total alexithymia level (p=0.034) were found to be significantly higher than the non-early onset BAD group (Table 5).

4. Examining Risk Factors Predicting BAD

Logistic regression analysis was applied to investigate which of the independent variables (sociodemographic data, alexithymia 3 subdimension and childhood trauma 5 subdimension) were partial risk factors for the dependent variable, taking BAD as the dependent variable. In the logistic regression test, having a history of psychopathology in first-degree relatives was found to be a significant predictor of BAD

Table 4. Correlations between clinical features and CTQ, DES, TAS and ECRI in the BAD group

		Age of onset	Number of attacks	Duration of illness
Sexual abuse	r p	-0.181 0.072	0.065 0.521	0.052 0.607
Physical abuse	r p	-0.089 0.379	0.218 0.029	0.113 0.262
Emotional abuse	r p	0.064 0.530	0.113 0.262	0.035 0.727
Physical neglect	r p	0.172 0.087	0.120 0.236	0.119 0.240
Emotional neglect	r p	0.099 0.325	0.035 0.730	0.142 0.158
CTQ-total	r p	0.057 0.572	0.126 0.212	0.139 0.169
DES	r p	-0.133 0.188	**0.300** **0.002***	-0.048 0.633
TAS-total	r p	-0.213 0.033	0.216 0.031	0.010 0.924
Avoidant attachment	r p	0.089 0.376	0.026 0.798	-0.033 0.746
Anxious attachment	r p	0.004 0.966	0.059 0.563	0.082 0.420

CTQ: Childhood trauma questionnaire; DES: Dissociative experiences scale; TAS: Toronto alexithymia scale; Spearman Rho correlation. Significance value obtained using Bonferroni correction: p<0.004

Table 5. Relationships between age of disease onset and scales

		BAD with early onset n=13		BAD without early onset n=87		p
Sexual abuse	(Mean, SD)	6.84	2.60	6.25	3.19	0.580
Physical abuse	(Mean, SD)	7.92	3.04	6.63	3.22	**0.025***
Emotional abuse	(Mean, SD)	9.6	3.33	8.90	4.62	0.194
Physical neglect	(Mean, SD)	7.38	2.21	9.00	3.71	0.186
Emotional neglect	(Mean, SD)	12.23	5.03	11.94	4.84	0.853
CTQ-total	(Mean, SD)	43.23	10.96	42.75	15.01	0.612
DES	(Mean, SD)	33.21	21.21	22.47	18.16	0.069
Absorption	(Mean, SD)	41.45	18.78	29.86	19.76	**0.041***
Amnesia	(Mean, SD)	29.03	22.71	17.16	18.35	0.096
Depersonalization	(Mean, SD)	25.00	26.20	16.49	21.17	0.155
TAS-total	(Mean, SD)	22.15	7.22	17.09	6.64	**0.034***
TAS-1	(Mean, SD)	15.30	4.06	13.88	4.42	**0.022***
TAS-2	(Mean, SD)	24.61	3.06	23.88	3.52	0.227
TAS-3	(Mean, SD)	61.92	9.66	54.97	11.41	0.628
Avoidant attachment	(Mean, SD)	47.07	19.33	54.93	19.60	0.188
Anxious attachment	(Mean, SD)	63.84	19.84	67.68	19.97	0.637

CTQ: Childhood trauma questionnaire; DES: Dissociative experiences scale; TAS: Toronto alexithymia scale; TAS-1: Difficulty in recognizing emotions; TAS-2: Difficulty in expressing emotions; TAS-3: Externally oriented thinking; Man Whitney U test. Statistical significance: p<0.05

Table 6. Logistic regression analysis of sociodemographic, trauma and alexithymia subdimensions for BAD

	p	OR	%95 confidence interval
Age	0.814	1.005	0.963-1.049
Gender	0.922	0.961	0.430-2.146
Marital status	**0.028***	0.169	0.035-0.822
Education status	0.721	0.789	0.215-2.897
Family history of psychopathology	**0.001***	5.367	2.066-13.945
TAS-1	0.066	0.918	0.837-1.006
TAS-2	0.378	0.941	0.822-1.077
TAS-3	**0.004***	0.856	0.770-0.952
Sexual abuse	0.794	0.979	0.834-1.149
Physical abuse	0.551	1.074	0.850-1.356
Emotional abuse	0.155	0.876	0.730-1.051
Physical neglect	0.374	0.924	0.795-1.154
Emotional neglect	0.919	1.007	0.885-1.145

TAS-1: Difficulty in recognizing emotions; TAS-2: Difficulty in expressing emotions; TAS-3: Externally oriented thinking. Statistical significance: p<0.05

(p=0.001). Externally oriented thinking and marital status were found to be protective factors in BAD (p=0.004 and p=0.028, respectively) (Table 6).

DISCUSSION

The remarkable finding of our study is that childhood trauma, insecure attachment styles, alexithymia and dissociative features were more common in BAD than in the control group. In our study, it was found that the rate of divorce in the BAD group was 18% and was 3.5 times more common than in the healthy group. In a review evaluating the marital relationship in BAD, it was shown that the divorce rates of patients with BAD were high (24). In the regression analysis performed in our study, the effect of marital status on reducing the likelihood of developing BAD was shown. In our research, it was found that 43% of the BAD group was not working in any business field. In a study examining the determinants of employment, it was found that 48% of patients with BAD worked less than healthy controls (25). In BAD, secure attachment style has been shown to be a predictor of reducing general functional impairment (26). In our study, it can be said that the BAD group had a high divorce rate, little working life, a high level of insecure attachment styles in the way they formed relationships, frequent and mostly psychotic attacks, and hospitalizations, and that similar to the literature, functionality in the BAD group was negatively affected.

It is known that the frequency of mental illness increases in adulthood due to neglect and abuse in childhood (7, 10). In our study, it was found that childhood maltreatment was common in the BAD group. It was found that 67% of the BAD group had been maltreated in childhood; 58% had physical neglect, 51% had emotional abuse, 47% had emotional neglect, 40% had physical abuse, and 30% had sexual abuse. It has been shown that the incidence of childhood trauma in BAD varies between 45% and 70% (10). In the study conducted by Garno et al., looking at the distribution of childhood maltreatment according to subdimensions in BAD, 37% had emotional abuse, 24% had emotional neglect, 24% had physical abuse, 21% had sexual abuse, and 12% had childhood maltreatment (27). Tekin at al. examined the distribution of childhood maltreatment according to subdimensions in BAD, they found that 33% emotional abuse, 29.4% emotional neglect, 27.5% physical abuse, 19.6% sexual abuse, and 17.6% physical neglect (28). The higher prevalence of trauma subtypes in our study compared to the literature may be due to the fact that the individuals were selected from the mood disorders clinic of a tertiary healthcare hospital, 64% had a psychotic episode, 28% had attempted suicide, and 71% had complicated disease characteristics such as being hospitalized at least once. Another reason may be that the concept of abuse is defined differently in different geographies, depending on the local and cultural situation (29). The presence of childhood trauma in BAD has been found to be associated with earlier age of disease onset, increased number of attacks, rapid cycling, more frequent suicide attempts, and more alcohol/substance abuse (13, 27). Similar to the literature, in our study, more physical, sexual, emotional abuse and physical and emotional neglect were reported in the BAD group compared to the healthy group (28, 30). In a review of the effect of childhood trauma on the clinical course of BAD, it was shown that there was a strong relationship between subtypes of abuse and BAD disease severity (31). In our study, it was found that being physically abused was associated with earlier onset of the disease. It was found that the disease duration was longer in BAD patients who were exposed to trauma than in those who were not. A Relationship were found between abuse subtypes and dissociation, alexithymia, and avoidant attachment dimension. Our findings show that negative life experiences experienced in early life may cause complex clinical symptoms in BAD.

In our study, a significant relationship was found between emotional abuse and avoidant attachment dimension. In the literature, it has been shown that trauma is associated with avoidant and anxious attachment dimensions, and that emotional neglect and abuse subtypes are more clearly associated (32). The family history of psychopathology in the BAD group participating in our study was found to be 35%. The presence of psychological burden in the family may lead to differences in the development of the parent-child relationship (33). In our research, it was found that 26% of the BAD group had a secure, 29% apathetic, 19% preoccupied, and 26% fearful attachment style. Attachment style in childhood is seen as one of the determinants of psychopathology in life periods (34). Similar to the literature, in our study, it was found that insecure attachment style was more common in the BAD group compared to the healthy group (6, 35). When the relationship between anxious and avoidant attachment dimensions and BAD clinical features was examined, similar to the literature, no relationship was found between the number of attacks, age of onset, and disease duration and attachment dimensions (6). Caregivers with a fearful attachment style have been found to display frightening, threatening and dissociative behavioral characteristics (36). It is thought that the presence of threshold and subthreshold mental illness symptoms in the parents of the BAD patients in our study has an effect on the fearful attachment style being seen 3.5 times more in the BAD group than in the healthy group.

Although the association of dissociative disorder and BAD has been relatively little studied, there is evidence that there are connections between them (37). It has been shown that the onset of dissociative symptoms in adolescence may be a precursor to BAD in later years (38). Dissociative symptoms that occur in BAD are related to childhood trauma and are also related to the severity of the trauma (39). The relationship between childhood trauma and dissociation has been shown to cause the disease to start at an early age in BAD patients (30, 40). In our study, dissociative experiences scale scores were found to be significantly higher in the BAD group compared to the healthy group. It was found that 28% of the patients had pathological dissociation, which means that they were likely to develop a dissociative disorder. The frequency of dissociative symptoms independent of the mood episode in BAD patients varies between 10-20% (39). In the study, when the relationship between childhood trauma and dissociation in the BAD group was examined, a significant relationship was found between emotional abuse, physical neglect, total trauma score and dissociative symptoms. In the study, no relationship was observed between disease duration and age of onset and dissociation, and it was found that absorption symptoms (a state of detachment from one's environment while being preoccupied with mental images) were high in the early-onset BAD patient group. Hariri et al. found that disease duration was associated with derealization/depersonalization and amnesia subdimensions in BAD (40). In our research, a strong relationship was found between dissociation and the number of attacks experienced. Yılmaz et al. concluded that the frequency of attacks increases as dissociative features increase in BAD (41). Steardo et al. found that the severity of dissociative symptoms in BAD was related to the total number of attacks (42). Kefeli et al. found a relationship between dissociation and the frequency of depressive attacks (35). Our findings support the view that dissociation directly or indirectly negatively affects the clinical follow-up of mental illnesses (15). Further studies are needed to clarify whether dissociation causes early disease onset or whether early disease onset causes dissociation.

In our study, alexithymia scores of the BAD group were found to be higher than those of the healthy group. In studies conducted in our country, results were obtained that found alexithymia features to be high in BAD (35, 43). According to Krystal, if there is a psychological trauma during the child's development period, the ability to react emotionally will pause at that stage and these people have difficulty expressing emotions and use a somatization mechanism (44). It has been reported that childhood emotional neglect is associated with alexithymia and is a risk factor for the emergence of alexithymia in adulthood (45). In our study, emotional abuse and physical abuse were found to be significantly associated with the total alexithymia score. It was found that emotional abuse may be associated with difficulty in recognizing and expressing emotions at a level close to statistical significance. These results suggest that alexithymic symptoms are more common when various types of trauma are present in BAD. Sensory processing of emotional processes, including alexithymia, is important in BAD (46). Alexithymic individuals who have difficulty talking about their feelings tend to direct their attention outward, and what is meant by extroverted thinking is the stimulus-dependent, externally focused cognitive style (19). In our study, difficulty expressing emotions and total alexithymia scores were found to be high in early-onset BAD patients. In the study examining the effect of alexithymia on functionality in BAD, it was shown that total alexithymia and externally oriented thinking subdimension were negatively correlated with the age of onset (47). Externally oriented thinking has been shown to be predictive of daily functioning and social adaptation in BAD patients (47). In the regression analysis of our study, it was determined that as the probability of externally oriented thinking as a dimension of alexithymia increases, the probability of developing BAD decreases. The data obtained reveal the importance of alexithymia in BAD along with its subdimensions.

In the study sample, the prevalence of BAD was found to be the same in both genders. It can be said that the BAD group reflects the general society in terms of gender ratio. Strengths of the study include that the BAD and healthy groups were matched for gender and age, and that participants had no additional medical or mental illnesses. The limitations of our study include the evaluation of the patient group's psychological symptoms and characteristics using retrospective self-report tools, the possibility that the BAD group received treatment and the negative side effects of the medications could affect our data, the fact that the personality structures of the individuals were not evaluated, and the reliability of the forms filled out without the influence of the clinician was lower than the structured forms.

As a result, childhood traumas, insecure attachment styles, dissociative symptoms and alexithymic features are more common in BAD compared to the normal population. The regression analysis showed that a family history of psychopathology facilitated the emergence of BAD, and externally oriented thinking and marital status played a protective role against the disease. Our findings reveal that physical abuse in childhood may have an impact on the development of BAD and the course of the disease. It shows that experiencing emotional abuse and neglect in childhood affects sensory processes and attachment structure. Studies have shown that childhood trauma in individuals with mental illnesses shows different treatment responses, imaging findings, and suicide risk than individuals without trauma, suggesting that these individuals may have a clinically different variant (48). Our study suggests that trauma, attachment, dissociation and alexithymia, together with its subdimensions, may contribute to being considered as a phenotype for bipolar affective disorder.

Ethics Committee Approval: Permission for the study was received from Izmir Katip Çelebi University Faculty of Medicine Non-invasive Scientific Research and Ethics Committee dated 23.05.2018 with number 209.

Informed Consent: All participants were included in the research by signing the voluntary consent form.

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