Cukurova Medical Journal
ÇUKUROVA ÜNİVERSİTESİ TIP FAKÜLTESİ

Cukurova Med J 2020;45(4):1587-1597
DOI: 10.17826/cumj.742665

ARAŞTIRMA / RESEARCH

The relationship between childhood trauma and emotional regulation difficulty in panic disorder patients

Panik bozukluğu olan hastalarda çocukluk çağı travması ile duygusal işlev bozukluğu arasındaki ilişki

Rukiye Ay[1] Oğuzhan Kılınçel[2]

[1]Bursa Training and Research Hospital, Department of Psychiatry, Bursa, Turkey
[2]Sakarya Yenikent State Hospital, Department of Psychiatry, Sakarya, Turkey

Cukurova Medical Journal 2020;45(4):1587-1597

Abstract

Purpose: This study aims to determine the presence of childhood trauma and emotional dysfunction as well as evaluate the relationship between childhood trauma and emotional dysfunction in patients with panic disorder.
Materials and Methods: The study included 80 patients who met the study criteria according to the DSM-5 criteria and 80 randomly selected healthy individuals with similar sociodemographic characteristics. Panic Agoraphobia Scale, Childhood Trauma Scale (CTQ-28), and Difficulties in Emotion Regulation Scale (DERS) were applied to the participants.
Results: A total of 160 cases were included in the study, including 80 patients aged 18-53 and 80 control subjects aged 19-61. In the patient group, the total score of the Difficulties in Emotion Regulation Scale (DERS)) and the Awareness, Openness, Disagreement, Strategies, Impulse and Goals subscales were statistically significantly higher than the control group. The prevalence of those with a CTQ score of ≥35 was 47.5% in the patient group and 26.3% in the control group, which was statistically significantly higher in the patient group. Increase in "Disagreement", "Awareness", and "Goals" subscores significantly increased the likelihood of being in the patient group.
Conclusion: Pharmacological agents and therapies targeting the affected regions may reduce the adverse effects of childhood trauma and associated emotional regulation difficulties in patients with panic disorder, increasing the success of treatment and quality of life.

Keywords:.Childhood trauma, neglect, emotional regulation, panic disorder

Öz

Amaç: Çalışmamızın birincil amacı panik bozukluğu hastalarında çocukluk çağı travmalarının varlığını saptamak, ikincil amacımız panik bozukluğu hastalarında duygusal işlev bozukluğunun varlığını tespit etmek ve üçüncü amacımız panik bozukluğu hastalarında çocukluk travması ile duygu işlev bozukluğu arasındaki ilişkiyi değerlendirmektir.
Gereç ve Yöntem: Çalışmaya, DSM-5 kriterlerine göre çalışma kriterlerini karşılayan 80 hasta ve rastgele seçilmiş benzer sosyo-demografik özelliklere sahip 80 sağlıklı birey dahil edildi. Katılımcılara Panik Agorafobi Ölçeği, Çocukluk Çağı Travma Ölçeği (CTQ-28) ve Duygu Düzenleme Zorluk Ölçeği (DERS) uygulandı.
Bulgular: Çalışmaya 18-53 yaş arası 80 hasta grubu ve 19-61 yaş arası 80 kontrol grubu dahil toplam 160 olgu dahil edildi. Hasta grubunda Duygusal Düzenleme Zorluk Ölçeği (DERS) ve Farkındalık, Açıklık, Anlaşmazlık, Stratejiler, Dürtü ve Amaç alt ölçeklerinin toplam puanı kontrol grubuna göre istatistiksel olarak anlamlı derecede yüksek bulundu. CTQ skoru ≥35 olanların oranı hasta grubunda %47.5 ve kontrol grubunda %26.3 idi, bu da hasta grubunda istatistiksel olarak anlamlı derecede yüksekti. Anlaşmazlık, Farkındalık, Amaç skorlarında yükselme hasta grubunda olmayı öngörmekte olduğu tespit edilmiştir.
Sonuç: Etkilenen alanları hedefleyen farmakolojik ajanlar ve tedaviler ile çocukluk ve buna bağlı duygusal düzenleme güçlüklerinin panik bozukluğu hastaları üzerindeki olumsuz etkileri azaltılabilir. Tedavi başarısı ve yaşam kalitesi arttırılabilir.

Anahtar kelimeler: : Çocukluk çağı travması, duygusal ihmal, duygusal düzenleme güçlüğü, panik bozukluğu

Yazışma Adresi/Address for Correspondence: Dr. Oğuzhan Kılınçel, Sakarya Yenikent State Hospital, Department of Psychiatry, Sakarya, Turkey E-mail: okilincel@gmail.com
Geliş tarihi/Received: 26.05.2020 Kabul tarihi/Accepted: 05.08.2020 Çevrimiçi yayın/Published online: 30.12.2020

INTRODUCTION

Child neglect and abuse is generally defined as the negligence of a child as a result of any physical, mental, sexual or social damage resulting in compromised health and safety by the people who are responsible for the care, health and protection of the child, especially the parents, or the actions of other adults[1]. Physical abuse refers to when a person is subjected to brute force before the age of 18 by a person who is at least five years older or a family member who is two years older than him/her[2]. Emotional abuse is characterized by mockery, humiliation, receiving humiliating comments, or experiencing severe verbal threats which may negatively affect the child's mental health[3] .Sexual abuse is the exploitation of a child who has not yet completed his/her psychosocial development through the use of threatening, force, or deception to fulfil the abuser's sexual gratifications and needs by someone at least six years older[4]. Physical neglect is the failure to provide the child's basic needs, including adequate nutrients, clothes, and a safe and controlled environment. Child abandonment is also a form of physical neglect[5]. Emotional neglect is defined as the failure to meet the child's psychological needs and emotional needs, not teaching social rules, and not giving supportive attention to the child's social development[6].

It is known that the incidence of psychiatric illness in adulthood increases with neglect or abuse in childhood[2]. A positive relationship was found between many psychiatric disorders such as anxiety disorder, posttraumatic stress disorder, dissociative disorders, personality disorders, somatization disorders, alcohol and substance abuse, depression, psychotic disorders, and history of childhood trauma[7,8].

Panic disorder (PD) is a mental discomfort characterized by constant anxiety and repetitive panic attacks about unexpected events and other panic attacks in the absence of attacks, being in a state of constant sorrow with the belief that panic attacks may have bad results, and taking precautions against and avoiding these situations[9]. Some studies have shown that panic disorder may also be associated with childhood traumas. A 21-year follow-up study involving 1265 young adults indicated that physical abuse and sexual abuse experienced in childhood significantly increased the development of panic attacks and panic disorders[9]. In another study that included 40 panic disorder patients and 40 healthy volunteers, physical and emotional abuse and emotional neglect scores were significantly higher in the panic disorder group, while the disease was more severe in equally matched groups, and there was a correlation between the neglect and abuse scores. There was no difference between the two groups in terms of physical neglect and sexual abuse[10].

Emotion regulation difficulty is defined as lack of awareness regarding emotions, lack of understanding and acceptance of emotions, difficulties in controlling impulses and turning towards goal-oriented behavior while experiencing negative emotions, and having difficulty in accessing adaptive emotion regulation strategies[11]. Emotional dysfunction has been reported to play a role in the development, maintenance, and treatment of many psychopathologies, such as depression, bipolar disorder, personality disorders, substance abuse, eating disorders, and somatoform disorders[12]. Difficulty in emotion regulation can lead to maladaptive coping strategies and fear-related chronic avoidance in anxious individuals[13].

Understanding the mechanism between traumatic experience and psychopathology in order to prevent such negative consequences after childhood traumas is considered essential. Several studies have investigated whether or emotional regulation and the mediating role of childhood traumas were related to psychopathologies. Adolescent studies have also shown the adverse effects of childhood trauma on emotional health through emotional regulation.[14] In a study conducted in our country with the participation of 69 university students, it was stated that emotional abuse and sexual abuse had a significant effect on Difficulties in Emotion Regulation Scale (DERS) scores[15] Patients with childhood trauma use a more incongruous cognitive emotion regulation strategy, leading to depressive and anxiety symptoms[16,17].

We believe that the recognition and intervention of the possible causes that play a role or mediate in the development, maintenance, and treatment resistance of panic disorder, a frequently encountered clinical disease, will be beneficial in increasing the quality of life of patients. This study aims to determine the presence of childhood trauma and emotional dysfunction as well as evaluate the relationship between childhood trauma and emotional dysfunction in patients with panic disorder.

MATERIALS AND METHODS

Study Design: This study included 80 patients who applied to the Psychiatry Outpatient Clinic of Sakarya Yenikent State Hospital between February 2020 and May 2020, who met the study criteria according to the DSM-5 criteria as well as 80 randomly selected healthy individuals with similar sociodemographic characteristics. Patients with panic disorder who were literate, volunteered to participate in the study, and between ages 18-65 were included in the study. Patients with mental retardation or with neurological/systemic diseases that would affect cognitive functions were excluded from the study. Figure 1 illustrates the stages of sample selection

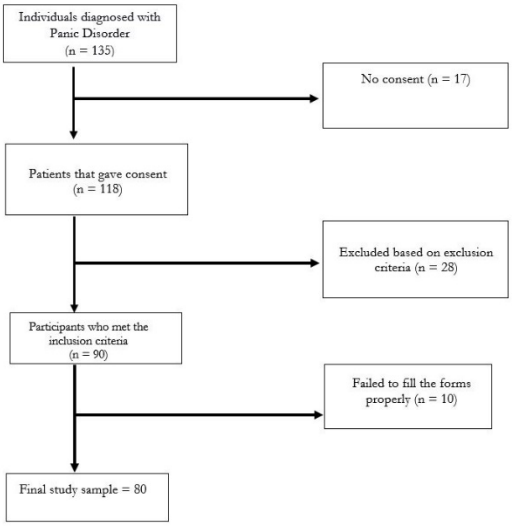

Figure 1. Sample selection

The research project was approved by the Sakarya University Faculty of Medicine Non-Interventional Clinical Research Ethics Committee (no 09, dated 17.01.2020). The data of the study were collected by face to face interview by the psychiatrist in the hospital. Rules Specified in the Helsinki Declaration were observed in the data collection phase.

Measures

Sociodemographic form

Sociodemographic variables, such as age, gender, education, marital status, employment status, occupation, number of children, as well as panic disorder course and previous physical and mental illnesses, were obtained from the sociodemographic form prepared by the researchers.

Panic and Agoraphobia Scale

This scale was developed by Bandelow[18]. İt is used for the subdivision of severity ratings in patients diagnosed with panic disorder, taking into account panic attacks, phobic avoidance, the anxiety of expectation, restriction in social relations, and physical illness. It consists of 14 items spanning five subscales including: panic attacks (3+1 items), avoidance (3 items), anticipatory anxiety (2), disability (2), and health concerns (2). Total score consists of the total of all subscores. Cronbach's alpha coefficient was reported as varying 0.88 and 0.89 for original version. When it receives the highest specificity among breakpoint 11/12 points in the study conducted in Turkey (92.94%) and sensitivity (92.00%) it is provided. Turkish adaptation of the scale was conducted by Tural et al [19] Cronbach's alpha coefficient was reported as varying between 0.86 and 0.88 for Turkish version[19].

Childhood Trauma Scale (CTQ-28)

CTQ-28 is a five-point Likert-type self-report scale developed by Bernstein et al. in 2003 [20]. It consists of five subscales: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. In the validity and reliability study of the 28-item scale, cutoff points were proposed as follows: over 5 points for sexual and physical abuse, over 7 points for physical neglect and emotional abuse, over 12 points for emotional neglect, and over 35 points for total score and Cronbach's alpha coefficient was reported 0.93 for Turkish version [21].

Difficulties in Emotion Regulation Scale (DERS)

The Difficulties in Emotion Regulation Scale developed by Gratz and Roemer consists of 36 items collected under the sub-dimensions of lack of awareness regarding emotional responses (Awareness), lack of understanding of emotional responses (Openness), acceptance of emotional responses (Disagreement), limited access to emotionally perceived emotion regulation strategies (Strategies), difficulties in controlling impulses while experiencing negative emotions (Impulse), and difficulties in performing goal-oriented behaviors when experiencing negative emotions (Goals) [11]. The self-report scale utilizes five-point Likert-type measurement. Although the cutoff scores were not

determined for the scale, high scores indicate the presence of more severe emotional regulation difficulties. Validity and reliability studies of the original form of the scale were conducted by Gratz and Roemer[11]. Cronbach alpha coefficient of whole scale was found to be 0.93, while the same coefficient was found to be between 0.88-0.89 for the subscales[11]. The psychometric properties of the Turkish form of the scale were studied by Ruganci et al[22]. Cronbach alpha coefficient of whole scale was found to be 0.94, while the same coefficient was found to be between 0.75-0.90 for the subscales[22].

Statistical analysis

Statistical evaluations of the data were made with SPSS (Statistical Package for the Social Sciences) 15.0 version statistical package program. Data of continuous variable were expressed as mean, standard deviation, median, minimum, and maximum, while data of categorical variables were expressed as a percentage by frequency. In the analysis of groups, Student's t-test were used for continuous variables, Chi-square test for categorical variables, and Pearson correlation test for correlations. Logistic regression analysis was applied with the retrospective elimination method to the Difficulties in Emotion Regulation Scale scores of the patient and control groups. The results were evaluated with a 95% confidence interval and significance level as $p < 0.05$.

RESULTS

A total of 160 cases were included in the study, including 80 patient groups aged 18-53 and 80 control subjects aged 19-61. No statistically significant difference was found between the patient group and the control group in terms of age, gender, or marital status ($p>0.05$). In the patient group, there was a significantly higher rate of those with low education level, unemployed, and with a family history. Age of disease onset ranged from 10 to 46 years in the patient group, and the mean was 27.60 ± 7.95 years. Drug use was present in 35% of patients (Table 1). Difficulties in Emotion Regulation Scale (DERS) total score and the Awareness, Openness, Disagreement, Strategies, Impulse and Goals subscale scores were significantly higher in the patient group than in the control group (**$p<0.05$**) (Table 2).

Table 1. Sociodemographic characteristics of the groups

	Patient group		Control group		p
	Mean/n	SD/%	Mean/n	SD/%	
Age	31.82	8.39	29.64	7.75	0.069[1]
Gender					
Female	46	57.5	52	65.0	0.330[2]
Male	34	42.5	28	35.0	
Education level					
Primary education	17	21.3	2	2.5	<0.001[2]
High school	29	36.3	27	33.8	
Associate	12	15.0	30	37.5	
License	22	27.5	21	26.3	
Marital status					
Single	29	36.3	40	50.0	0.079[2]
Married	51	63.8	40	50.0	
Working status					
Unemployed	19	23.8	3	3.8	<0.001[2]
Student	14	17.5	7	8.8	
Employed	47	58.8	70	87.5	
Family history of psychiatric disorder	16	20.0	5	6.3	0.010[2]
Psychiatric disorder onset age	27.60	7.95	-	-	-
Drug use	28	35.	-	-	-

[1]T-Test used for statistical analysis. [2]Chi-Square test used for statistical analysis.

Table 2. Emotional Regulation Difficulty Scale scores

	Patient Group				Control Group				P
	Mean	Sd	Median	Min-Max	Mean	Sd	Median	Min-Max	
Total	100.30	23.51	97.50	62-167	76.67	23.02	70.50	41-147	<0.001
Awareness	16.11	4.69	16.00	6-28	14.17	4.40	13.00	7-28	0.003
Openness	12.36	3.81	12.00	6-23	9.80	3.99	9.50	5-23	<0.001
Disagreement	15.74	6.59	13.50	7-30	11.01	4.24	10.00	6-26	<0.001
Strategies	23.65	7.73	22.00	9-40	16.32	6.94	15.50	8-37	<0.001
Impulse	15.71	5.68	15.00	7-30	12.70	6.15	12.00	5-36	<0.001
Goals	17.07	4.21	17.00	7-25	12.92	4.56	13.00	5-24	<0.001

T-Test used for statistical analysis.

Table 3. Childhood Trauma Scale scores in patient group and control group

	Patient group				Control group				p
	Mean	SD	Median	Min-Max	Mean	Sd	Median	Min-Max	
Total	37.40	10.74	34.00	25-73	31.61	7.66	29.00	25-64	<0.001
Emotional abuse	7.99	3.45	7.00	5-20	6.44	2.27	5.00	5-15	0.002
Physical abuse	6.02	2.28	5.00	5-18	5.41	0.92	5.00	5-9	0.056
Emotional neglect	10.84	4.00	10.00	5-21	8.96	4.07	8.00	5-21	0.001
Physical neglect	7.17	2.56	6.50	5-15	5.71	1.57	5.00	5-13	<0.001
Sexual abuse	5.52	1.68	5.00	5-15	5.11	0.64	5.00	5-10	0.025

T-Test used for statistical analysis.

In the patient group, the Child Trauma Scale (CTQ-28) and Emotional abuse, Emotional neglect, physical neglect, and sexual abuse subscale scores were significantly higher compared to the control group. Although the physical abuse subscore was higher, this difference was not statistically significant (**p<0.05**) (Table 3). The rate of those with a CTQ score of ≥35 was 47.5% in the patient group and 26.3% in the control group, which was significantly higher in the patient group (**p=0.05**). Panic Agoraphobia Scale (PAS) mean total score was 21.97 ± 8.46 (median = 22) in the patient group, Panic attack characteristics mean score was 5.49 ± 2.88 (median = 6), mean anticipatory anxiety score was 5.16 ± 2.92 (median = 5), mean avoidance anxiety score was 4.35 ± 2.24 (median = 5), mean disability score was 3.87 ± 2.60 (median = 4), and the mean health concern score was 3.24 ± 1.92 (median = 3).

According to the results of the patient group, there was a weak statistically significant correlation between PAS total score and DERS total score, Openness, Disagreement, Strategies, Impulse, Goals, CTQ-28 total, Emotional abuse, Physical abuse, Emotional neglect, Physical neglect, Sexual abuse scores; a weak statistically significant correlation between panic attack characteristics sub-score and disease onset age, DERS total, Strategies, Objectives, and Sexual abuse scores; a weak statistically significant correlation between agoraphobia avoidance sub-score and DERS total, Openness, Disagreement, Strategies, CTQ-28 total, Emotional abuse, Physical abuse points; weak statistically significant correlation between anticipatory anxiety subscore and Disagreement, Emotional neglect, and Sexual abuse scores; a weak statistically significant correlation between disability subscore and DERS total, Openness, Disagreement, Strategies, Impulse, Goals, CTQ-28 total, Emotional abuse, Physical abuse, Emotional neglect, Physical neglect, and Sexual abuse scores; and a weak statistically significant correlation between health concern sub-score and DERS total, Openness, Strategies, Impulse, Goals, and Emotional neglect subscores (Table 4).

Table 4. Relationship between Panic Agoraphobia Scale scores and age, disease onset age, DERS and CTQ scores in the patient group

	ERDS Total		Panic attack features		Agoraphobia avoidance		Anticipatory anxiety		Disability		Health concerns	
	r	p	r	p	r	p	r	p	r	p	r	p
Age	-0.002	0.986	0.019	0.865	-0.093	0.413	0.032	0.781	0.097	0.391	0.066	0.563
Disease onset age	0.113	0.320	0.230	0.040	-0.026	0.822	0.063	0.580	0.093	0.411	0.105	0.353
ERDS Total	0.429	<0.001	0.294	0.008	0.277	0.013	0.179	0.113	0.419	<0.001	0.316	0.004
Awareness	0.019	0.870	-0.041	0.720	0.063	0.577	-0.079	0.489	-0.006	0.957	0.098	0.386
Openness	0.338	0.002	0.196	0.081	0.292	0.009	0.123	0.277	0.332	0.003	0.241	0.031
Not accepting	0.351	0.001	0.187	0.097	0.256	0.022	0.294	0.008	0.338	0.002	0.193	0.086
Strategies	0.445	<0.001	0.334	0.002	0.254	0.023	0.186	0.098	0.429	<0.001	0.318	0.004
Impulse	0.268	0.016	0.144	0.203	0.155	0.169	0.104	0.361	0.269	0.016	0.246	0.028
Goals	0.329	0.003	0.300	0.007	0.218	0.052	0.015	0.897	0.336	0.002	0.252	0.024
CTQ-28 Total	0.357	0.001	0.162	0.152	0.287	0.010	0.208	0.064	0.375	0.001	0.211	0.061
Emotional abuse	0.325	0.003	0.086	0.448	0.304	0.006	0.078	0.494	0.440	<0.001	0.173	0.125
Physical abuse	0.263	0.019	0.102	0.367	0.281	0.012	0.120	0.290	0.221	0.049	0.129	0.254
Emotional neglect	0.310	0.005	0.202	0.072	0.215	0.055	0.234	0.037	0.276	0.013	0.228	0.042
Physical neglect	0.242	0.031	0.066	0.564	0.213	0.058	0.188	0.095	0.228	0.042	0.138	0.221
Sexual abuse	0.317	0.004	0.240	0.032	0.163	0.148	0.224	0.046	0.297	0.007	0.142	0.209

DERS: Difficulties in Emotion Regulation Scale , CTQ: Childhood Trauma Scale.

Table 5. Difficulties in Emotion Regulation Scale scores according to CTQ scores in the patient group

	CTQ < 35				CTQ ≥ 35				P
	Mean	Sd	Median	Min-Max	Mean	Sd	Median	Min-Max	
Total	86.93	15.41	87.50	62-130	115.08	22.12	112.50	64-167	<0.001
Awareness	15.24	3.71	15.00	8-21	17.08	5.46	18.50	6-28	0.086
Openness	10.48	3.10	10.00	6-19	14.45	3.43	14.50	8-23	<0.001
Disagreement	12.81	4.74	12.00	7-30	18.97	6.88	18.50	7-30	<0.001
Strategies	19.83	5.93	19.00	9-32	27.87	7.33	28.50	10-40	<0.001
Impulse	13.02	4.18	12.00	7-25	18.68	5.68	18.50	7-30	<0.001
Goals	15.57	3.78	16.50	7-25	18.74	4.08	19.00	8-25	<0.001

Note: T-Test used for statistical analysis, CTQ: Childhood Trauma Scale.

No statistically significant difference was found between the patients with CTQ score < 35 and those with CTQ ≥ 35 in terms of age, gender, educational status, marital status, employment status, family history of the disease, age of onset, and drug use status (p>0.05). In the patient group, the total score of DERS and Openness, Disagreement, Strategies, Impulse, and Goals scores were statistically significantly higher in patients with CTQ≥ 35 than those with CTQ score <35; Awareness sub-score was also higher, but this difference was not statistically significant (p>0.05) (Table 5). Patients with CTQ ≥ 35 had higher CTQ score, mean PAS total score and mean panic attack, avoidance anxiety, anticipatory

anxiety, and disability subscores compared to patients with CTQ<35, however, these differences were not statistically significant (p>0.05) (Table 6).

Logistic regression analysis was applied with the retrospective elimination method between the CTQ score >35 patient (n=38) and control groups (n=21). The logistic regression model was statistically significant in Step 3 (χ^2=13.921, Nagelkerke R^2=0.289, p=0.008). In this model, for each 0.848-fold (p=0.01) increase in "Disagreement" scores, 0. 865 fold increase in "Awareness" scores, and 0.902 fold increase in "Goals" scores increased likelihood of being in the control group (Table 7).

Table 6. Panic Agoraphobia Scale scores according to CTQ scores in the patient group

	CTQ < 35				CTQ ≥ 35				p
	Mean	Sd	Median	Min-Max	Mean	Sd	Median	Min-Max	
Total	20.38	7.63	21.50	5-36	23.74	9.07	25.00	6-47	0.132
Panic attack features	5.31	2.47	6.00	0-10	5.68	3.30	6.00	0-17	0.703
Agoraphobia avoidance	4.60	2.72	5.00	0-9	5.79	3.04	6.00	0-12	0.063
Anticipation anxiety	4.29	1.92	4.00	0-7	4.42	2.57	5.00	0-9	0.651
Disability	3.29	2.45	3.50	0-8	4.53	2.63	5.00	0-11	0.057
Health concerns	2.83	1.72	3.00	0-7	3.68	2.04	4.00	0-8	0.028

T-Test used for statistical analysis.

Table 7. Logistic regression analysis with the retrospective elimination method between the CTQ score >35 patients and control group

		χ^2	R^2	p	OR
Step 1	Model	14.860	0.306	0.021	
	Awareness			0.346	0.940
	Openness			0.211	0.854
	Disagreement			0.037	0.839
	Strategies			0.964	1.004
	Impulse			0.079	1.152
	Goals			0.328	0.886
	Constant			0.031	124.786
Step 2	Model	14.858	0.306	0.011	
	Awareness			0.191	0.940
	Disagreement			0.015	0.856
	Strategies			0.077	0.841
	Impulse			0.262	1.153
	Goals			0.030	0.889
	Constant			0.340	123.583
Step 3	Model	13.921	0.289	0.008	
	Awareness			0.018	0.865
	Disagreement			0.107	0.860
	Goals			0.027	0.902
	Constant			0.215	30.387

Variables entered on Step 1, Awareness, Openness, Disagreement, Strategies, Impulse, Goals.

DISCUSSION

In our study, we investigated childhood traumas and emotional dysfunction in patients with panic disorder, one of the most common anxiety disorders. According to the results of our study, panic disorder patients were found to have significantly more childhood trauma (CT) and Emotion Regulation Difficulty (ERD) compared to healthy controls. In the patient group, we found significantly more ERD in the presence of CT.

Stein et al. reported that the rate of childhood physical abuse (CPA) and childhood sexual abuse (CSA) was between 13% and 54% in patients with panic disorder[23]. In a study conducted in 2001, people with a history of trauma were evaluated in terms of panic symptoms, and a lifetime panic attack rate of 53-90% was detected in trauma victims[24]. In a study conducted with 81 panic disorder patients in our country, the rate of abuse was found to be 48.1%[25]. Another study evaluating childhood traumas in panic disorder obtained different results from the majority of the literature. Longitudinal data of 539 participants with current panic disorder were evaluated at the beginning of the study and after two years of follow-up[26]. In that study, 54.5% of the participants initially reported childhood trauma, but this did not predict the persistence of panic disorder. Emotional neglect and abuse were associated with the occurrence of anxiety disorders such as social phobia rather than panic disorder and higher general anxiety symptoms (anxiety attacks or attacks and avoidance)[26]. However, it has been argued that the trauma described in the relevant publication does not provide an explanation for the effect of childhood. In our study, the rate of those with a CTQ score of ≥35 was 47.5% in the patient group and 26.3% in the control group, and a significantly higher rate of childhood trauma was found in the patient group. Variables such as symptoms at the time of panic disorder, disease severity level, the treatment they received, treatment responses, and presence of residual symptoms may cause differences between studies. There is also a need for long-term clinical follow-up studies as well as cross-sectional studies. In the group with panic disorder, neurobiology and neuroimaging studies are needed to broaden our horizons on how different types of trauma affect neurodevelopment and its effects on the course of the disease.

In a birth cohort study that examined the data of 1265 young people under the age of 21 in New Zealand, exposure to childhood sexual and physical abuse was associated with a later increased risk of panic attacks/disorders even after adjustment for prospective confounding factors[9]. In a study involving 183 patients who applied to the psychiatry outpatient clinic, anxiety disorders and depressive disorders, including panic disorder, were found more prevalent among those who experienced emotional abuse[27]. In our study, the Child Trauma Scale (CTQ-28) total score, Emotional abuse, Emotional neglect, Physical neglect, and Sexual abuse subscores were significantly higher in the patient group compared to the control group; although the physical abuse subscore was also higher, this difference was not statistically significant. In light of the information given above, it was observed that there was a significant relationship between emotional and sexual abuse in the panic disorder group. There is no proven information that different types of trauma cause different pathologies. In our study, comorbid conditions such as mood disorder, personality disorder, and substance abuse, in which childhood trauma may be a risk factor in their development, were not evaluated. Due to these possible pathologies accompanying the panic disorder group included in our study, all trauma subtypes may have been found significant. There is a need for other high-sample studies that exclude comorbid conditions.

In a study by Bonevski and Novotni (2008) which included 40 panic disorder patients and 40 healthy volunteers, the level of physical and emotional abuse was found to be significantly higher in the patient group with an emphasis on emotional neglect. They concluded that there is a significant correlation between disease severity and emotional neglect and physical and emotional abuse in patients with panic disorder[10]. In our study, the rate of Panic Agoraphobia was found to be significantly higher in the presence of CT, and similar results were encountered in the literature. We found a weak statistically significant correlation between CTQ-28 total, emotional abuse, and physical abuse scores. Unlike other studies, we could not find a significant correlation between panic agoraphobia rate and sexual abuse scores. This may be attributed to the fact that the number of patients of both genders were nearly equal in our study. Another reason may be the differentiating variables among patients such as clinical violence, new diagnosis, chronic disease, and treatment response. In light of all these findings, people with childhood trauma can be followed up for

the development of panic disorder, allowing early diagnosis and treatment. From another point of view, patients diagnosed with panic disorder who have suffered childhood trauma can be carefully followed up for conditions such as comorbid conditions, clinical severity, and treatment resistance.

Emotion dysfunction has been less studied in patients with panic disorder than in other anxiety disorders. In a study of 60 panic disorder patients, it was found that relying on suppression in emotion regulation strategies increased expectation anxiety and avoidance[28]. In our study, in accordance with the literature, the Difficulties in Emotion Regulation Scale (DERS) total score and Awareness, Openness, Disagreement, Strategies, Impulse, and Goals subscores were significantly higher in the patient group compared to the control group. DERS total score, and Openness, Disagreement, Strategies, Impulse, and Goals subscores were significantly higher in patients with CTQ ≥35 than those with CTQ score < 35; while the Awareness subscore was also higher, this difference was not statistically significant. Although emotion regulation difficulties are recognized in many studies, including in our study, there are few studies related to emotion regulation processes in panic disorder, and determination of these processes can contribute positively to the understanding and treatment of this disorder.

It has been indicated that early childhood is a more vulnerable period for the adverse effects of traumatic experiences, considering the greater plasticity in the development of neuronal and other physiological systems[29]. One study stated that experiences of abuse cause intense emotions in the child and that children have inadequate ability to cope with these emotions and difficulty in organizing emotions[30]. Bilim et al. studied 802 adults between the ages of 18-65, and found that the group with a high level of abuse experienced more difficulty in all dimensions of emotion regulation than the group with a low level of abuse[31]. Soenke et al. (2010) affirmed the relationship between emotional disorder, childhood emotional abuse, and generalized anxiety disorder (GAD). Sexual and physical abuse were significantly associated with increased symptoms of anxiety in adulthood[32].

In a study on 585 patients with depressive disorder, it was reported that the severity of depression and anxiety increased emotional dysregulation in the presence of all forms of childhood trauma[16].

In a study on 701 adults, structural equation modelling analysis revealed that emotional regulation difficulties were mediated by the development of childhood traumas and psychopathology. However, this study was based on the self-report of participants. Multiple instruments should be used to measure symptoms of both childhood abuse and psychopathology, and interventions targeting specific emotion regulation strategies to children with abuse can reduce the development of psychopathology[33].

In our study, we found significantly more CT and emotional dysfunction in panic disorder patients compared to healthy controls. Comprehensive studies are needed to clarify the mechanism of emotion regulation, which mechanisms affect the development of the panic disorder, and its course in the presence of different types of trauma. The results of these studies may lead to planning of interventions that can strengthen emotion regulation strategies in the presence of trauma, prevention of psychopathology development, or facilitation of treatment. Preventive measures and targeted therapeutic interventions, both psychotherapeutic and pharmacological, can increase our ability to address emotional disorder, a problem affecting the lives of many people with a history of interpersonal trauma.

There are some limitations in our study: the open-label characteristics of the study are a factor that can increase researcher bias [7,8]. One of the limitations of our study is that childhood trauma data were obtained from self-assessment scales. In addition, CTQ has been shown to have high reliability and validity by Bernstein. Emotional regulation difficulties were determined with scales based on self-report of patients. We believe that clustering will be more apparent with the limited number of samples and more samples. Thus, some features that are not statistically significant may be significant. However, while screening studies in the literature usually include a healthy control group, our study included more patients in the panic disorder group than in many studies. Another limitation is that the drug use of our PD patients was not restricted. It has been proposed that some scale scores, especially Panic-Agoraphobia level, may decrease while using drugs. The fact that depression and anxiety scales were not applied led to the inability to evaluate the effect of depression and anxiety on emotional dysfunction. However, this patient group was excluded by clinical evaluation. Lack of neuroimaging was another

limitation. Despite these limitations, we believe that our study will provide important contributions by presenting an overview of the relevant literature relating to this patient group and shedding light on future studies.

In conclusion, according to the results of our study, we found significantly more childhood trauma in the panic disorder patient group compared to the healthy control group. Furthermore, we found a correlation between the presence of childhood trauma and disease severity. In the related literature, it has been suggested that subtyping is beneficial in terms of determining the differences and risk groups such as the severity of the disease, presence of comorbidity, and treatment response in panic disorder. We have obtained results that support the sub-type of panic disorder associated with trauma alleged by recent studies. There is a need for advanced studies in this field, both clinical and neuronal. Research indicates that emotion regulation difficulties could be one of the mediating mechanisms in the development of panic disorder associated with childhood traumas. In our study, we found that there was a significantly more severe emotional regulation difficulty in the panic disorder patient group with childhood trauma, in accordance with the literature. Clinical severity scores were significantly higher in the group with emotional regulation difficulties. Further studies with a higher number of traumatic patients, including comorbid conditions, type and continuity of traumatic life, age of trauma, and age at onset of panic disorder, remission level, cognitive or autonomic symptom differences, residual symptoms, and treatment resistance are also needed. Strengthening adaptive emotion regulation methods, targeting difficulties in emotion regulation, and interventions that increase prefrontal neuroplasticity can reduce emotional emotion regulation difficulties associated with childhood trauma. Pharmacological agents and therapies targeting the affected regions may reduce the adverse effects of childhood trauma and associated emotional regulation difficulties in patients with panic disorder, increasing the success of treatment and quality of life.

Yazar Katkıları: Çalışma konsepti/Tasarımı: RA, OK; Veri toplama: RA, OK; Veri analizi ve yorumlama: RA, OK; Yazı taslağı: RA, OK; İçeriğin eleştirel incelenmesi: RA, OK; Son onay ve sorumluluk: RA, OK; Teknik ve malzeme desteği: RA, OK; Süpervizyon: RA, OK; Fon sağlama (mevcut ise): yok.
Etik Onay: Bu çalışma için Sakarya Üniversitesi Rektörlüğü, Tıp Fakültesi Girişimsel Olmayan Klinik Araştırmalar Etik Kurulundan 17.01.2020 tarih ve 09 sayılı kararı etik onay alınmıştır.
Hakem Değerlendirmesi: Dış bağımsız.
Çıkar Çatışması: Yazarlar çıkar çatışması beyan etmemişlerdir.
Finansal Destek: Yazarlar finansal destek beyan etmemişlerdir.

Author Contributions: Concept/Design : RA, OK; Data acquisition: RA, OK; Data analysis and interpretation: RA, OK; Drafting manuscript: RA, OK; Critical revision of manuscript: RA, OK; Final approval and accountability: RA, OK; Technical or material support: RA, OK; Supervision: RA, OK; Securing funding (if available): n/a.
Ethical Approval: Ethical approval was obtained for this study from Sakarya University Rectorate, Faculty of Medicine, Non-Interventional Clinical Research Ethics Committee, dated 17.01.2020 and numbered 09.
Peer-review: Externally peer-reviewed.
Conflict of Interest: Authors declared no conflict of interest.
Financial Disclosure: Authors declared no financial support

REFERENCES

1. Turla A. Çocuk ihmali ve istismarı olgularında tıbbi yaklaşım. Ondokuz Mayıs Üniversitesi Tıp Dergisi. 2002;19:291-300
2. Brown GR, Anderson B. Psychiatric morbidity in adult inpatients with childhood histories of sexual and physical abuse. Am J Psychiatry. 1991;148:55-61.
3. Walker CE, Bonner BL, Kaufman KL. The Physically and Sexually Abused Child: Evaluation And Treatment: Pergamon Press. 1988.
4. Oral R, Can D, Kaplan S, et al. Child abuse in Turkey: an experience in overcoming denial and a description of 50 cases. Child Abuse Negl. 2001;25:279-90.
5. Ulloa Flores RE, Navarro Machuca IG. Estudio descriptivo de la prevalencia y tipos de maltrato en adolescentes con psicopatología. Salud Mental. 2011;34:219-25.
6. Yurdakök K, İnce O. Duygusal istismar ve ihmal. Katkı Pediatri Dergisi. 2010;32:423-33.
7. Jangam K, Muralidharan K, Tansa KA, Aravind Raj E, Bhowmick P. Incidence of childhood abuse among women with psychiatric disorders compared with healthy women: Data from a tertiary care centre in India. Child Abuse Negl. 2015;50:67-75.
8. Kılınçel O, Kılınçel Ş, Gündüz C, Cangür Ş, Akkaya C. Klozapinin hızlı döngülü bipolar afektif bozuklukta duygudurum düzenleyicisi olarak rolü. Turk Psikiyatri Derg. 2019;30:268-71.
9. Goodwin RD, Fergusson DM, Horwood LJ. Childhood abuse and familial violence and the risk of panic attacks and panic disorder in young adulthood. Psychol Med. 2005;35:881-90.
10. Bonevski D, Novotni A. Child abuse in panic disorder. Med Pregl. 2008;61:169-72.
11. Gratz KL, Roemer L. Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. J Psychopathol Behav Assess. 2004;26:41-54.
12. Berking M, Wupperman P. Emotion regulation and mental health: recent findings, current challenges, and future directions. Curr Opin Psychiatry. 2012;25:128-34.
13. Cisler JM, Olatunji BO, Feldner MT, Forsyth JP. Emotion regulation and the anxiety disorders: an

integrative review. J Psychopathol Behav Assess. 2010;32:68-82.
14. Choi JY, Oh KJ. Cumulative childhood trauma and psychological maladjustment of sexually abused children in Korea: mediating effects of emotion regulation. Child Abuse Negl. 2014;38:296-303.
15. Demirkapı EŞ. Çocukluk çağı travmalarının duygu düzenleme ve kimlik gelişimine etkisi ve bunların psikopatolojiler ile ilişkisi (Uzmanlık tezi): Aydın, Adnan Menderes Üniversitesi, 2014.
16. Huh HJ, Kim KH, Lee HK, Chae JH. The relationship between childhood trauma and the severity of adulthood depression and anxiety symptoms in a clinical sample: The mediating role of cognitive emotion regulation strategies. J Affect Disord. 2017;213:44-50.
17. Kılınçel Ş, Vural AP, Kılınçel O. Theory of mind deficit in adolescents with major depressive disorder. Journal of Psychiatry/Anadolu Psikiyatri Dergisi. 2020;21.
18. Bandelow B. Assessing the efficacy of treatments for panic disorder and agoraphobia: II. The Panic and Agoraphobia Scale. Int Clin Psychopharmacol. 1995;10:73-81.
19. Tural Ü, Fidaner H, Alkın T, Bandelow B. Panik agorafobi ölçeği (PAÖ) Türkçe uyarlaması. Türk Psikiyatri Derg. 2000; 11.
20. Bernstein DP, Stein JA, Newcomb MD, et al. Development and validation of a brief screening version of the Childhood Trauma Questionnaire. Child Abuse Negl. 2003;27:169-90.
21. Sar V, Öztürk E, Ikikardes E. Cocukluk Cagi Ruhsal Travma Ölceginin Türkce uyarlamasinin gecerlilik ve güvenilirligi. Türkiye Klinikleri Tip Bilimleri Dergisi. 2012; 32:1054.
22. Rugancı RN, Gençöz T. Psychometric properties of a Turkish version of the Difficulties in Emotion Regulation Scale. J Clin Psychol. 2010;66:442-55.
23. Stein MB, Walker JR, Anderson G, A L Hazen, C A Ross, G Eldridge et al . Childhood physical and sexual abuse in patients with anxiety disorders and in a community sample. Am J Psychiatry. 1996;153:275-7.
24. Bryant RA, Panasetis P. Panic symptoms during trauma and acute stress disorder. Behav Res Ther. 2001;39:961-6.
25. Bakım B, Karamustafalıoğlu O, Akpınar A, Tankaya O, Özçelik B, Ceylan G.Y, et al. Panik bozukluk hastalarında çocukluk çağı travmatik yaşantılarının cinsel işlev üzerine etkileri. Dusunen Adam: 2011;24:182-8.
26. De Venter M, Van Den Eede F, Pattyn T, Wouters DJ, Veltman BW JH, Penninx B. , et al. Impact of childhood trauma on course of panic disorder: contribution of clinical and personality characteristics. Acta Psychiatr Scand. 2017;135:554-63.
27. Örsel S, Karadag H, Kahilogullari AK, Aktas EA. Psikiyatri hastalarinda çocukluk çagi travmalarinin sikligi ve psikopatoloji ile iliskisi/The frequency of childhood trauma and relationship with psychopathology in psychiatric patients. Anadolu Psikiyatri Dergisi. 2011;12:130-6.
28. Levitt JT, Brown TA, Orsillo SM, Barlow DH. The effects of acceptance versus suppression of emotion on subjective and psychophysiological response to carbon dioxide challenge in patients with panic disorder. Behav Ther. 2004;35:747-66.
29. Luby JL, Barch D, Whalen D, Tillman R, Belden A. Association between early life adversity and risk for poor emotional and physical health in adolescence: a putative mechanistic neurodevelopmental pathway. JAMA Pediatr. 2017;171:1168-75.
30. Burns EE, Jackson JL, Harding HG. Child maltreatment, emotion regulation, and posttraumatic stress: The impact of emotional abuse. J Aggress Maltreat Trauma. 2010;19:801-19.
31. Bilim GY Çocukluk çağı örselenme yaşantıları: Duygu düzenleme, kişilerarası tarz ve genel psikolojik sağlık açısından bir inceleme (Yüksek Lisans Tezi). Ankara, Ankara Üniversitesi, 2012.
32. Soenke M, Hahn KS, Tull MT, Gratz KL. Exploring the relationship between childhood abuse and analogue generalized anxiety disorder: The mediating role of emotion dysregulation. Cognit Ther Res. 2010;34:401-12.
33. Jennissen S, Holl J, Mai H, Wolff S, Barnow S. Emotion dysregulation mediates the relationship between child maltreatment and psychopathology: A structural equation model. Child Abuse Negl. 2016;62:51-62.