It is illegal to post this copyrighted PDF on any website. Analysis of Childhood Traumas and Defense Styles in Patients With Tension Headache

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ABSTRACT

Objective: Studies indicate that patients tend to develop chronic tension headache as a response to stress. The present study investigated the relationship between headache and the events that caused childhood traumas and defense styles, which could be considered as a significant source of stress in individuals with tension headache.

Methods: Fifty patients between the ages of 18 and 65 years diagnosed with tension headache were included in the present study. The control group included 50 healthy participants. All study participants completed a sociodemographic data form prepared by the researchers and the Childhood Trauma Questionnaire and Defense Style Questionnaire.

Results: Traumatic experiences (emotional abuse, physical abuse, emotional neglect, physical neglect, and sexual abuse) were significantly higher in the patient group compared to the control group. The total score of immature and neurotic defense styles was higher in the patient group than in the control group (P < .001, P < .001). The mature defense styles total score was significantly higher in the control group than in the patient group (P = .006). A positive correlation was found between the childhood trauma scores and immature and neurotic defense style scores.

Conclusion: The findings indicate that traumatic experiences during childhood were more frequent in patients with tension headache compared to healthy individuals. Furthermore, these individuals had difficulty coping with stress, and inappropriate defense styles were employed as a response to stress.

Prim Care Companion CNS Disord 2020;22(5):20m02592

To cite: Korkmaz S, Kazgan A, Yıldız S, et al. Analysis of childhood traumas and defense styles in patients with tension headache. *Prim Care Companion CNS Disord*. 2020;22(5):20m02592.

To share: https://doi.org/10.4088/PCC.20m02592 © Copyright 2020 Physicians Postgraduate Press, Inc.

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*Corresponding author: Sevda Korkmaz, MD, Department of Psychiatry, Firat University Faculty of Medicine, Elazig, Turkey (skorkmaz23@hotmail.com). The driving force behind psychosomatic disorders cannot be fully explained. However, it is acknowledged that traumas and significant life events experienced by individuals are the main cause of the onset of such disorders.¹

Tension headache is a psychosomatic disorder that represents a significant percentage of primary headaches. Myofascial mechanisms have been shown to play an important role in the pathophysiology of the disorder.² Patients with tension headache were found to have a decrease in the function of antinociceptive systems that control the perception of pain and facilitation in the neurons that cause pain perception in the brain stem due to various stimuli, especially psychosocial stress factors.³ It is acknowledged that the systems of stress intervention are disrupted in children who encounter traumatic experiences at early ages.⁴ Due to such traumatic events, the individual starts to use his/her defense styles unconsciously to relieve emotions such as anxiety, guilt, sadness, and embarrassment.

On the basis of clinical observations, we have found that previous traumatic experiences are more common in patients with tension headache compared to healthy individuals. Furthermore, we have also noted that patients with tension headache exhibit differences in several defense styles, which are employed due to life events. Therefore, the objective of the present study was to investigate whether traumatic experiences contribute to the onset of tension headache and to identify the defense styles that are more frequently used by these patients.

METHODS

In this cross-sectional study, standardized scales were used to analyze the psychological defense styles and traumatic experiences of patients with tension headache compared to healthy controls. Local ethics committee approval was obtained, and the study was conducted in accordance with the Helsinki Declaration.⁵

Fifty patients aged 18 to 65 years diagnosed with tension headache in the Neurology Outpatient Clinic of Firat University Faculty of Medicine, Elazig, Turkey, were included in the study. Individuals with a neurologic disorder were excluded from the study based on neurologic examination, as their conditions could lead to cognitive dysfunction. Patients unable to complete questionnaires and scales due to physical and mental disorders and those who were illiterate were also excluded. The control group comprised 50 healthy hospital staff members aged 18 to 65 years who met the same inclusion/exclusion criteria and had similar sociodemographic characteristics as the patient group.

The participants in the patient and control groups completed the sociodemographic data form prepared by the researchers, the Childhood Trauma Questionnaire,^{6,7} and the Defense Style Questionnaire.⁸ Furthermore, participants in the patient group were asked to indicate the severity of their headache through the Visual Analog Scale for Pain.⁹

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Clinical Points

- The cause of psychosomatic disorders cannot fully be explained.
- Traumatic experiences during childhood were more frequent in patients with tension headache compared to healthy individuals.
- A positive correlation was determined between childhood trauma scores and immature and neurotic defense styles scores.

Statistical Analysis

SPSS version 22 (IBM, Armonk, New York) was used for statistical analyses. Normal distributions were tested with the Kolmogorov-Smirnov test with Lilliefors correction. Student *t* test was used for comparisons between groups when the data exhibited normal distribution, and Mann-Whitney U test was used when the data was not normally distributed. Pearson correlation analysis was used to determine the positive or negative relationships between results, and P < .05 was considered statistically significant.

Childhood Trauma Questionnaire. The Childhood Trauma Questionnaire, developed by Bernstein et al,⁶ originally included 70 items but later was reduced to 28.⁷ The 5-point Likert-type self-report scale, which evaluates violence during childhood, focuses on 5 factors: physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect. The categorical evaluation of the scale based on the total score of 5 factors was conducted by Walker et al.¹⁰ The participants' responses indicating "sometimes, often true, very often true" were coded categorically and included in the abuse/neglect group in the present study.¹¹

Defense Style Questionnaire. The 40-item Defense Style Questionnaire is a self-report instrument designed to measure the reflections of the unconsciously used defense styles on consciousness and consists of 40 items and 20 defenses. The scale, developed by Andrews et al,8 evaluates each item on a 9-point Likert-type scale, wherein 1 corresponds to strongly disagree and 9 to strongly agree. The 20 defense mechanisms of the scale were classified under 3 main dimensions: immature, neurotic, and mature defenses. It is possible to use a total score or arithmetic mean for measuring each of the subdefenses and the 3 defense styles. Immature defenses include reflection (questions 6 and 29), passive aggression (questions 23 and 36), acting out (questions 11 and 20), isolation (questions 34 and 37), devaluation (questions 10 and 13), autistic fantasy (questions 14 and 17), denial (questions 8 and 18), displacement (questions 31 and 33), dissociation (questions 9 and 15), splitting (questions 19 and 22), rationalization (questions 4 and 16), and somatization (questions 12 and 27). Neurotic defenses include doing-undoing (questions 32 and 40), pseudoaltruism (questions 1 and 39), idealization (questions 21 and 24), and reaction formation (questions 7 and 28). Mature defenses include sublimation (questions 3 and 38),

Table 1. Demographics of Patients and Controls

	Pati	Patients		Controls	
Variable	n	%	n	%	
Sex, female	39	78	35	70	
Marital status, married	37	74	27	54	
Place of residence, city center	42	84	50	100	
Education					
Elementary school	33	66	9	18	
High school	3	6	14	28	
College	14	28	27	54	
Economic situation, low	12	24	8	16	
Smoker, yes	11	22	7	14	
Alcohol use, yes			2	4	
Photophobia	24	48			
Osmophobia	13	26			
Phonophobia	25	50			
Psychiatric treatment history	12	24			

humor (questions 5 and 26), suppression (questions 2 and 25), and anticipation (questions 30 and 35). A validity and reliability study of the scale was conducted in the Turkish language by Yilmaz et al.¹²

RESULTS

The mean age of participants in the patient and control groups was 35.6 ± 8.8 and 33.3 ± 8.53 , respectively. The sociodemographic data of both groups are presented in Table 1. Traumatic experiences (emotional abuse, physical abuse, emotional neglect, physical neglect, and sexual abuse) were found to be significantly higher in the patient group compared to the control group (P=.019, P=.024, P=.000, P = .001, P = .045, respectively; Table 2). The total scores of immature and neurotic defense styles were found to be statistically higher in the patient group than in the control group (P < .001 and P < .001, respectively). The total score of mature defense styles was significantly higher in the control group than in the patient group (P = .004, Table 2). There was a statistically significant difference between the patient and control groups based on the subdefense scores for acting out, isolation, autistic fantasy, displacement, splitting, and somatization within immature defense styles (Table 3). A statistically significant difference was determined between the patient and control groups based on the subdefense scores for doing-undoing, pseudoaltruism, and reaction formation within the neurotic defenses (Table 4). The subdefense scores for sublimation and suppression, which are mature defense styles, were statistically significantly different for the patient and control groups (Table 5). A positive correlation was determined between the childhood trauma scores and immature and neurotic defense style scores (Table 6).

DISCUSSION

The present study identified traumatic experiences (emotional abuse, physical abuse, emotional neglect, physical neglect, and sexual abuse) as significantly higher in the patient group with tension headache compared to the control group. Total scores of immature and neurotic defense styles

Table 2. Comparison of Defense Style Questionnaire (DSQ) Scores Between Patients and Controls^a

	Patients	Controls				
Variable	(n=50)	(n=50)	Р	t		
Age, y	35.6±8.8	33.3±8.53	.184	-1.338		
Emotional abuse	6.6±3.0	5.54 ± 0.7	.019*	-2.414		
Physical abuse	5.82 ± 1.13	5.34 ± 0.93	.024*	-2.301		
Emotional neglect	6.64 ± 2.04	5.4 ± 0.6	.000**	-4.105		
Physical neglect	7.92 ± 4.43	5.62 ± 0.9	.001**	-3.594		
Sexual abuse	5.42 ± 1.44	5.0 ± 0.0	.045*	-2.057		
DSQ total score	31.98±6.93	26.9 ± 1.83	.000**	-5.005		
DSQ immature total	112.32±32.72	93.04±11.38	.00**	-3.935		
DSQ neurotic total	43.64±10.64	36.14 ± 5.86	.00**	-4.362		
DSQ mature total	43.26 ± 11.36	48.94 ± 7.25	.004*	2.980		
^a Data are presented as mean \pm SD.						

^{*}P<.05.

**P<.001.

Table 3. Comparison of Immature Defense Style Scores Between Patients and Controls^a

	Patients	Controls		
Variable	(n=50)	(n=50)	Р	t
Reflection	8.78±4.08	8.68±2.48	.883	-0.148
Passive aggression	7.72 ± 3.66	7.96 ± 1.94	.684	0.409
Acting out	9.6 ± 4.66	7.68 ± 2.29	.011*	-2.611
Isolation	9.86 ± 4.41	7.94 ± 2.69	.010**	-2.627
Devaluation	8.98 ± 4.63	7.54 ± 2.26	.052	-1.973
Autistic fantasy	9.92 ± 4.72	7.58 ± 3.03	.004*	-2.948
Denial	8.54 ± 4.39	7.94 ± 1.76	.374	-0.896
Displacement	9.98 ± 3.80	7.48 ± 2.39	.000**	-3.934
Dissociation	8.28 ± 5.12	7.3 ± 2.8	.239	-1.186
Splitting	10.24 ± 3.62	7.76±3.19	.000**	-3.632
Rationalization	9.42 ± 3.45	8.64±3.01	.232	-1.203
Somatization	12.64 ± 4.61	6.78 ± 2.40	.000**	-7.965
Immature total	112.3 ± 32.72	93.04 ± 11.38	.000**	-3.935
^a Data are presented a	is mean ± SD.			

*P<.05.

**P<.001.

were higher in the patient group, while the total score of mature defense styles was higher in the control group. There was also a positive relationship between childhood trauma scores and immature and neurotic defense style scores.

Psychological traumas experienced during childhood are physical abuse, sexual abuse, emotional abuse, emotional neglect, and physical neglect. Furthermore, negative events in life, such as accidents and natural disasters, are also considered psychological traumas.¹³ The biological stress response system becomes active through a primary mechanism created in the brain when the trauma occurs due to these stress factors. The hypothalamic-pituitaryadrenal axis, responsible for regulating the body's stress response, becomes disrupted.¹⁴ Furthermore, the stressors experienced in the early stages of life could change the main neural networks and functions in a developing brain.^{15–17} It is acknowledged that severe stress and negative childhood experiences are associated with psychiatric disorders and several psychosomatic disorders such as obesity, chronic fatigue syndrome, and fibromyalgia.¹⁸⁻²⁰

Studies^{21,22} have indicated that there is a strong relationship between childhood traumas and somatization or somatoform disorders during adulthood and that the relationship between such traumas and pain is prevalent

<u>ghted PDF on any websit</u> Table 4. Comparison of Neurotic Defense Style Scores Between Patients and Controls^a

Variable	Patients (n = 50)	Controls (n=50)	Р	t		
Doing-undoing	40.46±4.31	8.44±3.21	.009*	-2.655		
Pseudoaltruism	12.4 ± 3.68	10.1 ± 2.54	.000*	-3.632		
Idealization	9.96±3.75	9.22 ± 2.5	.250	-1.159		
Reaction formation	11.0±3.79	8.38±2.19	.000*	-4.226		
Neurotic total	43.64 ± 10.64	36.1 ± 5.86	.000*	-4.362		
^a Data are presented as mean \pm SD.						

Table 5. Comparison of Mature Defense Style Scores	
Between Patients and Controls ^a	

Variable	Patients (n=50)	Controls (n=50)	Р	t		
Sublimation	11.22±4.33	13.18±2.15	.006**	2.861		
Humor	11.52±4.11	12.76±2.55	.074	1.809		
Suppression	10.14±4.23	11.9±2.44	.013*	2.544		
Anticipation	10.38 ± 3.83	11.1±2.64	.278	1.092		
Mature total	43.26±11.36	48.94 ± 7.25	.006**	2.980		
^a Data are presented as mean ± SD.						

*P<.05.

**P<.001.

in women. The causes of the relationship between traumas and somatic symptoms are unclear, yet somatization plays a major role in the onset and progress of pain in the body. Somatization is considered the expression of stress or a direct way of representing traumatic stress in several cultures and subcultures.²³ Particularly, nervous individuals who experience difficulty expressing their emotions and have an anxious personality might apply this mechanism more frequently.^{24,25} Individuals who are prone to stress experience difficulty in expressing their emotions verbally. In patients with tension headache, the increased anger due to psychological or somatic factors cannot be externally reflected, therefore introverted anger increases and, consequently, headache levels increase through somatization.²⁶ Such issues are more common in individuals who usually avoid talking about their problems or were raised in families in which anxiety was suppressed. Under such conditions, the individual's stress is expressed through the body, and the problem is perceived to be physical.

The present study established that the total scores for immature and neurotic defense styles were higher in the patient group and the total score for mature defense styles was higher in the control group. Defense styles have been classified by several psychologists and range from mature defenses to immature defenses.²⁷ Immature defense styles are the most primitive mechanisms that may be observed during early life, and neurotic defense styles are frequently used by individuals with obsessive-compulsive disorder, by those with a hysterical nature, or by individuals who are under stress. Mature defense mechanisms are classified as those that enable individuals to establish a harmonious and positive balance between their inherent dynamics and environmental reality. Therefore, it is acknowledged that the

Korkmaz et al **It is illegal to post this copyrighted PDF on any website.** Table 6. Correlation Analysis Between Childhood Trauma Subtypes and Defense Styles

	Emotional	Physical	Emotional	Physical	Sexual	Immature	Neurotic	Mature
Variable	Abuse	Abuse	Neglect	Neglect	Abuse	Total	Total	Total
Emotional abuse								
r	1	0.105	-0.003	0.023	0.145	0.152	0.024	0.053
Р		.298	.975	.818	.150	.132	.810	.599
Physical abuse								
r	0.105	1	0.180	-0.077	-0.084	0.283**	0.329**	0.039
Р	.298		.074	.444	.407	.004	.001	.697
Emotional neglect								
r	-0.003	0.180	1	0.736**	0.201*	0.225*	0.274**	0.210*
Р	.975	.074		.000	.045	.024	.006	.036
Physical neglect								
r	0.023	-0.077	0.736**	1	0.367**	0.148	0.196	-0.089
Р	.818	.444	.000		.000	.141	.051	.378
Sexual abuse								
r	0.145	-0.084	0.201*	0.367**	1	-0.080	0.052	0.000
Р	.150	.407	.045	.000		.427	.605	.999
Immature total								
r	0.152	0.283**	0.225*	0.148	-0.080	1	0.417**	0.018
Р	.132	.004	.024	.141	.427		.000	.860
Neurotic total								
r	0.024	0.329**	0.274**	0.196	0.052	0.417**	1	0.139
Р	.810	.001	.006	.051	.605	.000		.168
Mature total								
r	0.053	0.039	-0.210*	-0.089	0.000	0.018	0.139	1
Р	.599	.697	.036	.378	.999	.860	.168	
*P<.05.								
**P<.001.								

use of mature defenses refers to a personality with healthy functioning, and the use of immature defenses refers to psychopathology.^{28,29}

Personality changes occur as a result of the disruption in object relations due to traumatic events during the process of individuation, and a pattern that utilizes neurotic defenses frequently occurs.³⁰ A previous study³¹ found a positive and significant relationship between childhood traumas and immature and neurotic defense styles and a negative and significant relationship between childhood traumas and mature defense styles. The present study also found a positive relationship between childhood trauma scores and immature and neurotic defense style scores.

Emotions such as despair are highly common in patients with tension headache who experience chronic pain. Such patients develop a self-pattern with limited ability to cope with problems as a result of the traumatic events in their past coupled with a feeling of despair.³² Use of appropriate defense mechanisms and more constructive problem-solving coping

mechanisms once the problems are encountered could help reduce anxiety in such patients. Tension headache is a chronic disorder that challenges medical practitioners and results in economic losses due to the required examinations and frequent hospital admissions, similar to several other psychosomatic disorders. Therefore, it is essential to provide patients with tension headache appropriate treatment strategies as well as psychological support and assistance that reinforces the treatment.

This study had several limitations. The sample size of the patient group was relatively small, and several participants in the patient group experienced more than 1 type of trauma, therefore, it was not possible to measure the relationships between the trauma types and symptoms. Furthermore, the scales used in the study were self-report scales. Individuals who experience difficulty or embarrassment in expressing themselves in terms of sharing their traumas could have avoided several negative experiences that were highly intense and distressing.

Submitted: January 13, 2020; accepted April 26, 2020.

Published online: August 27, 2020. Potential conflicts of interest: None. Funding/support: None.

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