

Coping with stress, psychological resilience and psychiatric symptoms in migraine patients

Coping with stress, psychological resilience in migraine

Burcu Sirlir Emir¹, Sevlr Yıldız², Aslı Kazgan Kılıçaslan³, Serpil Doğan⁴, Osman Kurt⁵, Kerim Uğur⁶

¹ Department of Psychiatry, Clinic of Psychiatry, Elazığ Fethi Sekin City Hospital, Elazığ

² Department of Psychiatry, Clinic of Psychiatry, Binali Yıldırım University, Erzincan

³ Department of Psychiatry, Clinic of Psychiatry, Bozok University, Yozgat

⁴ Department of Neurology, Clinic of Neurology, Elazığ Fethi Sekin City Hospital, Elazığ

⁵ Department of Public Health, Adiyaman Provincial Health Directorate, Adiyaman

⁶ Department of Psychiatry, Clinic of Psychiatry, Malatya Turgut Özal University, Malatya, Türkiye

Abstract

Aim: Migraine is a prevalent chronic disease with unknown etiopathogenesis that affects the quality of life. In the present study, we aimed to investigate anxiety, depression, coping with stress and psychological resilience of migraine patients.

Material and Methods: The study was conducted with 40 patients and 40 healthy individuals. The study data were collected with a sociodemographic and clinical data form, Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), Psychological Resilience Scale for Adults (RSA), and Inventory of Coping Strategies (ICS).

Results: It was determined that the RSA-structural resilience, RSA-social competence, BDI, BAI, ICS-optimism and ICS-social support scores of the patients were significantly higher when compared to the control group, RSA-self-perception, RSA-future perception, RSA-familial conformity, RSA-social resources, RSA-total and ICS-safe approach scores were significantly lower in the patient group when compared to the controls. There were positive correlations between the number of migraine attacks and RSA-future perception, RSA-familial conformity, RSA-social resources and RSA-total scores of the patients; There was a significant negative correlation between the number of migraine attacks and ICS-optimism scores.

Discussion: The incidence of anxiety and depression was significantly higher and psychological resilience was significantly lower in the patients when compared to the control group. It could be suggested that patients could prefer ineffective coping strategies and their psychological resilience could be low. The determination of the psychiatric complications associated with migraine could alter treatment interventions, and thus, the prognosis.

Keywords

Migraine; Depression, Anxiety, Resilience, Coping with Stress

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Corresponding Author: Burcu Sirlir Emir, Department of Psychiatry, Clinic of Psychiatry, Elazığ Fethi Sekin City Hospital, 23100, Elazığ, Türkiye.

E-mail: bsirlir@hotmail.com P: +90 424 606 60 00 F: +90 424 238 76 58

Corresponding Author ORCID ID: <https://orcid.org/0000-0002-3389-5790>

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Introduction

Migraine is a significant public health issue that could lead to functional and labor losses [1]. Although its etiology is not completely known, genetic and environmental factors are known to affect its incidence [2]. The increase has been associated with the frequency of anxiety disorders and depression. Anxiety and depression could be induced by severe and frequent migraine attacks, they could also trigger migraine; therefore, there is a bidirectional correlation between these factors [3].

Stress is the most significant trigger of migraine, and most individuals experience their first attack under stress, and most severe attacks were observed during stressful periods [4]. It has also been demonstrated that stress can lead to chronic migraine [3]. The assumption that migraine occurs not only due to stress, but also due to the lack of adaptation to stress, was proposed earlier, and recent studies have supported this assumption [5]. The perception of danger or threat could lead to a struggle to eliminate the danger, called coping with stress [6]. Studies have associated recurrent migraine attacks with maladaptive coping strategies [7].

Individuals sometimes surrender to stress, while sometimes they could struggle to overcome it. The coping strength of individuals who adapt quickly and easily to adversity is called psychological resilience [8]. Psychological resilience could play a key role in the prognosis of the disease, as well as its progression [9].

We considered that depression, anxiety, psychological resilience, and coping mechanisms are significant parameters in migraine, which affect the prognosis of the disease, quality of life and treatment. Thus, the present study aimed to investigate anxiety and depression, psychological resilience, coping levels and correlations between these factors in migraine patients.

Material and Methods

The study was approved by the Firat University ethics committee (No: 2022/03-28). The study was conducted at Elazığ Fethi Sekin City Hospital Hospital, Neurology Clinic between March 2022 and September 2022. The study was conducted with 40 tension headache patients who presented to the Neurology outpatient clinic at Elazığ Fethi Sekin City Hospital and were diagnosed by a neurologist based on the International Headache Society (HIS, 2004) diagnostic criteria, and 40 healthy individuals who met the study criteria. The participants were interviewed by a psychiatrist for about 30 minutes with a structured interview form based on DSM-5, and those with psychiatric comorbidities to psychotic disorders were also included in the study. The study data were collected with a Sociodemographic data form, Beck Depression Inventory, Beck Anxiety Inventory, Psychological Resilience Scale for Adults, and Inventory of Coping Strategies. Patients, who were 18-65 years old, diagnosed with migraine, without a known metabolic disease, physical pathology, or any other neurological disease, were included in the study.

Data Collection Instruments

Sociodemographic Data Form: It was developed by the authors based on the data requirements of the current study. It included demographic data such as age, marital status, education level, place of residence, employment, income level, and clinical evaluation questions such as anamnesis details, smoking or

alcohol use.

Beck Depression Inventory (BDI): The validity and reliability of the study in Turkish were determined by Hisli [10] and the cut-off point was determined as 17.

Beck Anxiety Inventory (BAI): The validity and reliability of the study in Turkish were determined by Ulusoy et al. [11]

Psychological Resilience Scale for Adults (RSA): The scale was developed by Friberg et al. [12] and includes 'self-perception' and 'future perception', 'structural resilience, social competence', 'familial adaptation,' and 'social resources' dimensions. In the present study, the Chronbach alpha was determined as 0.86.

Inventory of Coping Strategies (ICS): It was developed by Folkman and Lazarus [13] in 1980. The scale includes 30 items and 5 sub-dimensions. The reliability of the scale was determined as high since the Cronbach Alpha coefficient was 0.70.

Data analysis

The study data were analyzed on SPSS version 22 software (Statistical Package for Social Sciences; SPSS Inc., Chicago, IL). In the study, descriptive categorical data are presented as counts and percentages, and continuous data are presented as means and standard deviations (Mean \pm SD). Intra-group categorical data were compared with Chi-square analysis (Pearson Chi-square). The normal distribution of the continuous variables was determined with the Kolmogorov-Smirnov test. Paired group data were compared with the Mann-Whitney U-test. Spearman's correlation test was employed to determine the correlation between continuous variables. The statistical significance was accepted as $p < 0.05$.

Ethical Approval

Ethics Committee approval for the study was obtained.

Results

The study was conducted with 80 participants (40 patients and 40 controls). Eighty percent of the patient group were female and 20% were male, 77.5% of the control group were female and 22.5% were male. There was no significant difference between the gender of the groups ($p = 0.785$). The mean age of the patients was 33.3 ± 10.0 years and the mean age of the control group was 32.4 ± 9.8 years, and there was no significant difference between the mean age of the groups ($p = 0.654$). The employment rate (12.5%) was significantly lower in the patient group when compared to the control group (42.5%) ($p = 0.003$). Migraine incidence in the family members of the patients (77.5%) was significantly higher when compared to the control group (17.5%) ($p < 0.001$) (Table 1).

The RSA-structural resilience ($p < 0.001$), A-social competence ($p < 0.001$), BDI ($p < 0.001$), BAI ($p < 0.001$), ICS-optimism ($p = 0.001$) and ICS-social support ($p < 0.001$) scores of the patients were significantly higher when compared to the control group. RSA-self-perception ($p = 0.013$), RSA-future perception ($p < 0.001$), RSA-familial adaptation ($p = 0.005$), RSA-social resources ($p < 0.001$), RSA-total ($p < 0.001$) in the patient group) and ICS-safe approach ($p = 0.002$) scores of the patients were significantly lower compared to the control group (Table 2).

There were positive significant correlations between the number of migraine attacks and RSA-future perception, RSA-familial adaptation, RSA-social resources, and RSA-total scores

Table 1. Intra-group comparisons.

		Patient		Control		p*
		n	%	n	%	
Gender	Female	32	80	31	77,5	0,785
	Male	8	20	9	22,5	
Age, Mean±SD		33,3±10,0		32,4±9,8		0,654**
Marital status	Unmarried	12	30	15	37,5	0,478
	Married	28	70	25	62,5	
Education	Primary or lower	12	30	10	25	0,617
	Secondary or higher	28	70	30	75	
Residence	Rural	4	10	8	20	0,21
	Urban	36	90	32	80	
Income	Low	11	27,5	13	32,5	0,355
	Medium	28	70	23	57,5	
	High	1	2,5	4	10	
Employment	Yes	5	12,5	17	42,5	0,003
	No	35	87,5	23	57,5	
Organic disease comorbidity	Yes	8	20	7	17,5	0,775
	No	32	80	33	82,5	
Psychiatric disease comorbidity	Yes	6	15	3	7,5	0,481
	No	34	85	37	92,5	
Psychiatric treatment history	Yes	6	15	6	15	1
	No	34	85	34	85	
Smoking	Yes	6	15	12	30	0,108
	No	34	85	28	70	
Alcohol/substance use	Yes	0	0	2	5	0,494
	No	40	100	38	95	
Diagnosis (years), Mean±SD		4,7±4,7		-	-	-
Annual attacks, Mean±SD		59,1±34,8		-	-	-
Migraine type	With aura	14	35			
	Without aura	26	65			
Last attack	0-6 months ago	38	95	-	-	-
	6-12 months ago	2	5			
	>12 months ago	0	0			
Migraine history in family	Yes	31	77,5	7	17,5	<0,001
	No	9	22,5	33	82,5	

* Chi-square analysis, **Mann-Whitney U test.

Table 2. Group scale scores.

	Patient	Control	p*
	Mean±SD	Mean±SD	
RSA-self-perception	14,9±3,5	19,6±7,6	0,013
RSA-future perception	9,1±2,6	14,1±3,5	<0,001
RSA-structural resilience	10,8±2,1	7,5±2,6	<0,001
RSA-social competence	17,3±4,2	11,5±3,6	<0,001
RSA-familial adaptation	13,7±4,7	17,8±6,7	0,005
RSA-social resources	14,6±4,3	21,5±7,1	<0,001
RSA-total	78,3±14,1	91,8±17,0	<0,001
BDI	11,9±8,5	4,4±4,2	<0,001
BAI	12,8±9,8	4,6±4,2	<0,001
ICS-safe approach	12,5±6,1	15,8±4,4	0,002
ICS-despair	11,5±6,0	12,7±4,4	0,178
ICS- submissive approach	11,2±4,0	10,9±3,3	0,575
ICS-optimism	10,8±3,6	8,3±2,2	0,001
ICS-seeking social support	9,3±3,0	6,1±1,6	<0,001

*Mann-Whitney U test. RSA: Resilience scale for Adults, BDI: Beck Depression Inventory, BAI: Beck Anxiety Inventory, ICS: Inventory of Coping Strategies.

Table 3. Correlations between the number of migraine attacks, diagnosis time, and scale scores.

	# of Attacks		Diagnosis time	
	r	p	r	p
Migraine diagnosis time	-0,121	0,456		
RSA-self-perception	0,238	0,139	0,049	0,763
RSA-future perception	0,44	0,004	-0,044	0,786
RSA-structural resilience	0,208	0,198	-0,111	0,497
RSA-social competence	0,056	0,733	0,113	0,489
RSA-familial adaptation	0,451	0,003	0,038	0,817
RSA-social resources	0,425	0,006	0,007	0,967
RSA-total	0,4	0,011	0,067	0,683
BDI	-0,118	0,469	0,114	0,482
BAI	-0,183	0,259	0,278	0,082
ICS-safe approach	-0,145	0,371	0,081	0,618
ICS-despair	-0,132	0,416	0,335	0,035
ICS- submissive approach	-0,128	0,432	-0,015	0,929
ICS-optimism	-0,339	0,032	0,208	0,197
ICS-seeking social support	-0,291	0,068	0,111	0,495

RSA: Resilience scale for Adults, BDI: Beck Depression Inventory, BAI: Beck Anxiety Inventory, ICS: Inventory of Coping Strategies

of the migraine patients, while there was a negative significant correlation between the number of migraine attacks and the RSA-optimism score. A positive and significant correlation was determined between the time of diagnosis and RSA-despair score (Table 3).

Discussion

Although it was assumed that genetic and neurobiological factors were responsible for the correlation between migraine and depression, certain studies have focused on stress, a risk factor for both [14]. Depression and anxiety disorders are comorbid psychiatric diseases that are frequently observed in migraine patients, leading to a decrease in quality of life, resistance to treatment, and further drug use [3]. High anxiety and depression levels were identified in the present study, demonstrating the significance of the early diagnosis of psychiatric comorbidities in the prevention of the chronic disease [15]. Thus, further comprehensive pharmacological or non-pharmacological treatments of migraine and psychiatric comorbidities should be considered.

In our study, the incidence of migraine was significantly higher in the family members of the patients, suggesting familial transmission. In the literature, early onset disease and higher disability levels were reported in patients with a family history of migraine [16]. Also, the low employment rate reported in our study supported the loss of labor due to the disease.

Coping strategies balance stress and migraine. Günel et al. [7] reported that migraine patients sought less social support and were more optimistic about coping. The optimism observed among the migraine patients in the present study was consistent with that study; however, our patients sought more social support. We found that the self-confidence of the patients was low, suggesting that the acceptance of and coping with migraine pain was inadequate [17]. There is a negative correlation between self-confidence and perceived stress, and based on the present study findings, it could be suggested that perceived stress was high in migraine patients. We determined a positive and significant correlation between the time of diagnosis and ICS-despair scores. In a study conducted with multiple sclerosis patients, a chronic neurological disease, a positive correlation was reported between depression and anxiety in multiple sclerosis patients who adopted the despair approach [18].

Although several studies have been conducted on migraine, its etiopathology still remains unclear, and has been quite difficult to determine its triggers [19]. Recent studies have focused on psychological factors as well as physiological factors in migraine incidence and resistance. Perceived stress, a significant psychological factor, was associated with the incidence of migraine attacks [20]. Stress is a key risk factor not only for the attack incidence, but also the decrease in response to treatment and chronicity of episodic migraine [3,21]. It should be noted that daily life events rather than major events have been associated with decreased functionality [20]. This finding indicates the significance of perception not the event in migraine.

In the study, it was determined that RSA self-perception,

RSA future perception, RSA familial adaptation, RSA social resources, and RSA total scores were lower in migraine patients when compared to the control group. Self-perception is the self-knowledge of individuals and associated with self-discipline and neurotic personality traits. It is expected that individuals with high self-discipline and low neuroticism would have high resilience due to their self-perception [22]. It demonstrates strong social relations, and it was suggested that seeking social support predicts psychological resilience in migraine [21]. Future perception refers to the views of the individual about the future, and familial adaptation refers to the support provided by family members, and the present study findings indicated negative views about the future and more maladaptive familial conditions among migraine patients [23].

Improving resilience could be a solution when interventions against stress are not possible. Where acceptance and commitment therapy (ACT) has been applied as a behavioral approach in migraine patients, it was reported that ACT improved psychological resilience, and the patients could cope with stress more easily [24]. In a study conducted by Martin et al. [25], behavioral interventions such as exposure, desensitization and learning to cope were employed, and learning to cope was found to be the most effective method.

Limitations

The limitations of the study included its cross-sectional nature and the employment of self-report scales. The strengths of the study were the inclusion of only migraine patients and exclusion of other diseases characterized by headaches, and the employment of multidimensional scales. It could be suggested that interventions that aim at coping with stress and psychological resilience, as emphasized in our study, could be beneficial.

Conclusion

In conclusion, patients suffered from high anxiety and depression levels, and exhibited low resilience. It could be suggested that patients employed ineffective coping strategies when coping with pain and their psychological resilience levels were low. Due to the prevalence of concomitant psychiatric disorders in migraine, early post-diagnostic psychiatric evaluation is important. We hope that since it could change the prognosis and treatment of comorbidities, future studies should be conducted with larger sample sizes to investigate the correlation between these factors, and the findings of the present study would shed light on future studies.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

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