

Perceived social support systems' and depression's effects on attitudes regarding coping strategies for the disease in patients with epilepsy

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ABSTRACT

الأهداف: للتحقق من تصور نظم الدعم الاجتماعي، وآثار الاكتئاب على المواقف بشأن استراتيجيات التصدي لهذا المرض في المرضى الذين يعانون من الصرع.

الطريقة: أجريت هذه الدراسة المستعرضة على 182 من مرضى الصرع اللذين تقدموا بطلبات لعيادات الأعصاب في كلية الطب في جامعة إرجيس، قيصري، تركيا خلال الفترة ما بين نوفمبر 2011م ونوفمبر 2012م. كأدوات لجمع البيانات، استخدمنا مقياس متعدد الأبعاد لتصوير أنظمة الدعم الاجتماعي ومقياس بيك للاكتئاب ومقياس تقييم لمواجهة المواقف.

النتائج: وجدنا في معظم الأحيان أن مرضى الصرع استخدموا استراتيجيات المواجهة المتمركز حول الانفعال. من بين استراتيجيات المواجهة المتمركز حول الانفعال، جاء في المرتبة الأولى التكيف الديني، وجاء في المرتبة الثانية إعادة تفسير إيجابي والنمو، في حين جاء في المرتبة الثالثة استخدام الدعم الاجتماعي كدورا أساسيا، والتي كانت واحدة من الاستراتيجيات المواجهة حول المشكلة. كانت أكثر وسائل المواجهة الغير فعالة استخداما هو "التركيز على تنفيس عن العواطف". وكانت أكثر المتغيرات تأثيرا على استراتيجيات المواجهة من مرضى الصرع هي العمر والجنس والمستوى التعليمي والبنية العائلية، ونوع النوبات، وتداخل هذا المرض في مجال التواصل. وجدنا ارتباطا سلبيا من بين نتائج الاكتئاب استراتيجيات المواجهة المتمركز حول الانفعال، استراتيجيات المواجهة غير فعالة، والاستراتيجيات المواجهة حول المشكلة، في حين كان هناك ارتباط إيجابي وجدت بين استراتيجيات المواجهة حول المشكلة واستراتيجيات المواجهة المتمركز حول الانفعال.

الخلاصة: كانت المتغيرات الأكثر تأثيرا على استراتيجيات المواجهة من مرضى الصرع هي العمر والجنس والمستوى التعليمي والبنية العائلية، ونوع النوبات، وتداخل المرض في التواصل.

Objective: To investigate the perceived social support systems', and depression's effects on attitudes regarding coping strategies for the disease in patients with epilepsy.

Methods: This cross-sectional study was conducted on 182 epileptic patients who applied to the Neurology

Polyclinics of the Faculty of Medicine at Erciyes University, Kayseri, Turkey between November 2011 and November 2012. As data collection tools, we used the Multidimensional Scale of Perceived Social Support Systems, Beck Depression Inventory, and the Assessment Scale for Coping Attitudes.

Results: We found that epileptic patients most frequently employed emotion-oriented coping strategies. Among the emotion-oriented coping strategies, religious coping ranked first, positive reinterpretation and growth came second, while using instrumental social support, which was one of the problem-oriented coping strategies, ranked third. The most frequently used non-functional coping methods were "focus on and venting of emotions". The most influential variables on coping strategies of epileptic patients were age, gender, educational level, family structure, type of seizures, and the interference of the disease in communication. We found a negatively significant correlation among the scores of depression and emotion-oriented coping strategies, dysfunctional coping strategies, and problem-based coping strategies, while there was a positive correlation found between dysfunctional coping strategies and emotion-oriented coping strategies.

Conclusions: The most influential variables on the coping strategies of epileptic patients were age, gender, educational level, family structure, type of seizures, and the interference of the disease in communication.

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Epilepsy is a disease that involves repetitive seizures resulting from abnormal electrical signals in the brain,¹ and which has neurobiological, cognitive, psychological, and social dimensions.² Three basic support types are mentioned for the chronically ill: emotional, instrumental, and information.³ Social support is defined as the help given to an individual by the people around him/her. In the cases of seizures and emotional tension, individuals need support from their friends and family members who are natural assistants. This support network composed of these informal helpers has a positive effect on the health behavior and adaptation process of the individual.⁴ Since epilepsy is a commonly observed neurological disorder, often accompanied by psychosocial challenges,⁵ cognitive and characteristic behaviors, environmental factors, and psychosocial matters also contribute to psychiatric disorders in epilepsy.⁶ Depression is the most prevalent psychiatric disorder among epileptics.⁷ In epileptic patients, there is a 40-60% prevalence of depressive symptoms leading to diagnosis, treatment, and social problems.^{8,9} Depression and anxiety are seen as an interictal complications in the epileptic population. The etymology of these disorders is multifactorial and includes neurobiological and psychosocial risk factors. The psychosocial risk factors include social stigma, unfavorable life events, fear, insufficient self-confidence, disability, low rate of marriage, higher rate of unemployment, and presence of a depressive disease history in the individual and family.¹⁰ In general, coping can be defined as the attitude adopted by people facing stressful conditions and it signifies an identified complex and multidimensional process that is determined by personal characteristics, cognitive skills, and environmental conditions.¹¹ Coping attitudes have an important role in adaptation to obligatory conditions. It is stated that coping strategies are influential on the psychosocial adaptation and well-being of epileptic patients.¹² Epilepsy is a medical condition that requires individuals to cope with the social and psychosocial results of the disease.¹³ The primary treatment goals for epilepsy are not only to focus on the physical complications and to control seizures, but also include the effects of problematic psychological reflections (insufficient self-confidence, fear, and anxiety) on social complications (restriction on driving, unemployment, and social isolation) and life quality.¹ The purpose of

this study is to investigate the perceived social support systems', and depression's effects on attitudes regarding coping strategies for the disease in patients with epilepsy.

Methods. This cross-sectional study was conducted on 182 epileptic patients who applied to the Neurology Polyclinics of the Faculty of Medicine at Erciyes University, Kayseri, Turkey between November 2011 and November 2012. Inclusion criteria for the study were established for the participants as follows: to be literate, have no sign of intellectual disability or dementia, have no other disease than epilepsy, be between 18-75 years old, have been followed up for epilepsy for at least one year, and to be receiving antiepileptic treatment. The Ethics Committee of Erciyes University, Faculty of Medicine, approved this study, and informed consent was obtained from the participants. Data collection tools were employed through face-to-face interview with the participants after examinations in a specially allocated area in the neurology polyclinics.

Data collection tools. As data collection tools, we used the Multidimensional Scale of Perceived Social Support Systems, the Beck Depression Inventory (BDI) and the Assessment Scale for Coping Attitudes (COPE).

Personal information form. This form consisted of 16 questions concerning participants' socio-demographical characteristics such as their age, gender, marital status, educational level, occupation, family type, income, and residence. It also covered introductory data regarding their disease such as the duration of the disease, seizure type, the frequency of seizures during the last one year (monthly), duration of disease, the antiepileptic medications taken, how much the disease affected their family and academic life, and how the people around them perceived the disease.

Multidimensional scale of perceived social support. The scale was developed by Zimet et al¹⁴ in 1988, and the study on its reliability and validity in Turkey was conducted by Eker et al.¹⁵ It is a 7-point Likert type scale varying from "absolutely no" to "absolutely yes". It has 3 subscales that are composed of 4 items to assess the sufficiency of support from 3 sources: family, friends, and other important or special individuals. The minimum score to be made on the subscales is 4, while the maximum is 28. The total scale score is obtained by summing up the scores from the subscales; the minimum score is 4 and the maximum score is 84. A high score from the scale indicates that the perceived social support is high.^{4,16} The Cronbach-alpha internal consistency coefficient is 0.88, and the reliability coefficient for subscales is 0.90 for "perceived social support from friends", 0.83 for "perceived social

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support from family” and 0.92 for “perceived social support from someone special”.

Beck Depression Inventory (BDI). The inventory developed by Beck et al¹⁷ is employed to determine the physical, emotional, and cognitive symptoms of depression. Hisli¹⁸ conducted a study on the validity and reliability of the scale in Turkish. The highest score of this 21-point Likert type scale is 63. High total scores indicate a high level and severity of depression. The Cronbach-alpha internal consistency of BDI is calculated to be 0.950.

Coping scale. This is a multidimensional coping scale that was developed to assess the responses to stress in different ways.¹⁹ It is a self-rating scale that consists of 60 questions and 15 subscales. Agargun et al²⁰ conducted the study on its reliability and validity in Turkish. Each subscale is composed of 4 questions and the possible scores from each subscale range from 4 to 16. Each of these subscales informs us on single coping attitudes. High scores from the scales allow us to interpret which coping attitudes are employed most by the individual. In our study, the Cronbach-alpha internal consistency coefficient was found to be 0.79.

Statistical analysis. The study data was assessed using the IBM SPSS Statistics for Windows, Version 20.0. (IBM Corp., Armonk, NY, USA). In the study, parametric and non-parametric analyses were conducted after checking the appropriateness of the variables for normal distribution in order to compare the continuous variables. To compare the average scores of 2 groups, we employed the Student’s t-test and/or Mann-Whitney U test, while we employed the Kruskal-Wallis test (KW) or one-way variance analysis to compare the averages of more than one group. Dunn’s test, one of the multiple comparison tests (post-hoc), was employed to determine from which group the difference originated. The Pearson correlation coefficient was calculated to evaluate the relation between the variables. Multiple linear regression analysis (selection model: stepwise) was conducted to find the independent variables that have an effect using the subtitles of the coping with stress strategies scale. Categorical variables were analyzed on the dummy variable structure. A value $p < 0.05$ was accepted as statistically significant.

Results. The median age of the 182 participants in the research population was 32 (18-75), and 57.7% were women, 47.3% were single, 44% were primary school graduates, 82.45% had a nuclear family, 39% were housewives, 93.4% lived in a city, and 64.8% smoked.

Table 1 - The COPE subscale scores of Turkish epileptic patients.

COPE subscales	Mean±SD
<i>Problem-oriented coping</i>	
Using instrumental social support	11.98±2.48
Active coping	11.81±2.41
Restraint	10.42±2.35
Suppression of competing activities	10.97±2.16
Planning	11.20±2.41
<i>Emotion-oriented coping</i>	
Positive reinterpretation and growth	12.05±2.43
Religious coping	15.24±1.44
Humor	7.24±3.29
Use of emotional social support	11.63±2.36
Acceptance	10.92±2.31
<i>Dysfunctional coping</i>	
Mental disengagement	10.96±2.24
Focus on and venting of emotions	11.37±2.39
Denial	8.77±2.91
Substance use	5.05±2.04
Behavioural disengagement	9.28±2.62
COPE - Assessment Scale for Coping Attitudes	

Table 1 shows the COPE subscale mean scores of the epileptic patients. It was found that the participants employed emotion-oriented coping strategies most frequently. Among the emotion-oriented coping strategies, religious coping ranked the first, positive reinterpretation and growth came second, and use of an instrumental social support method, which is one of the problem-oriented coping strategies, came third.

The mean scores of the male participants were significantly high for positive reinterpretation and growth and use of instrumental social support ($p < 0.05$). When the COPE subtitles were compared according to the educational levels of participants, there was a statistically significant difference between the groups for behavioral disengagement and restraint. This difference originated from participants with preschool education and university education for behavioral disengagement, and from participants with university and other educational levels for restraint. Participants with a traditional family structure had significantly lower mean scores for mental disengagement, denial, and religious coping than participants with a nuclear family structure. When the COPE subtitles were compared according to occupations, there was a statistically significant difference between the groups for humor, restraint, substance use, and suppression of competing activities. This difference originated from the housewife and other occupations group for humor,

Table 2 - Distribution of COPE subscale scores of Turkish epileptic patients according to different variables.

Variables	n (%)	COPE subscales (mean±SD)						
		1	2	3	4	5	6	7
Gender								
Male	77 (42.3)	12.4±2.3	11.1±2.0	11.6±2.3	12.3±2.4	11.9±2.5	8.5±3.1	15.3±1.4
Female	105 (57.7)	11.6±2.5	10.8±2.5	11.0±2.4	11.5±2.4	11.7±2.2	9.1±2.7	15.1±1.5
P-value		0.030	0.346	0.076	0.026	0.612	0.230	0.429
Educational level								
Illiterate or literate	24 (13.2)	12.2±2.8	10.7±1.8	11.5±3.1	12.6±2.5	11.3±2.9	8.2±3.3	15.1±1.4
Primary school	80 (44.0)	11.9±2.5	10.6±2.3	11.2±2.4	11.6±2.5	12.0±2.3	8.6±3.0	15.2±1.6
Highschool & above	78 (42.8)	12.1±2.2	11.4±2.3	11.5±2.2	12.1±2.4	11.8±2.3	9.4±3.0	15.3±1.3
P-value		0.840	0.110	0.669	0.191	0.536	0.511	0.839
Family structure								
Traditional	24 (13.2)	11.5±2.8	9.8±2.4	10.9±2.6	11.9±2.2	11.8±2.9	7.0±2.3	14.4±2.0
Nuclear	150 (82.4)	12.1±2.4	11.2±2.2	11.4±2.4	12.0±2.5	11.8±2.3	9.1±2.9	15.4±1.3
Separated	8 (4.4)	12.8±2.3	10.1±1.3	11.3±2.5	12.3±2.4	12.8±2.7	7.5±2.4	15.0±2.0
P-value		0.376	0.013	0.654	0.934	0.530	0.001	0.005
Profession								
Worker	23 (12.6)	11.0±2.1	11.2±3.0	10.4±2.6	10.7±2.8	11.1±2.4	9.2±2.4	14.6±2.1
Freelance	20 (11.0)	12.1±2.0	10.8±2.3	11.6±2.5	12.4±2.2	12.2±2.3	7.8±3.2	15.6±0.9
Housewife	71 (39.0)	12.2±2.4	11.1±2.0	11.5±2.4	12.2±2.2	12.1±2.4	9.0±3.1	15.4±1.3
Other	68 (37.4)	12.2±2.6	10.7±2.2	11.5±2.2	12.0±2.2	11.7±2.4	8.7±2.7	15.2±1.4
P-value		0.201	0.733	0.258	0.068	0.323	0.364	0.071
Smoking								
Yes	118 (64.8)	12.2±2.6	10.8±2.2	11.4±2.5	12.1±2.5	11.9±2.5	8.2±3.0	15.2±1.5
No	64 (35.2)	11.9±2.1	11.2±2.4	11.3±2.3	11.8	11.6±2.2	9.8±2.5	15.4±1.3
P-value		0.275	0.289	0.720	±2.4 0.384	0.454	<0.001	0.419
Seizure type								
Partial	33 (20.9)	13.8±2.0	10.5±2.0	12.6±1.7	12.3±2.6	13.4±2.4	6.4±2.5	15.7±0.9
Generalized	119 (75.3)	11.6±2.4	11.2±2.4	11.1±2.4	12.0±2.4	11.4±2.3	9.7±2.6	15.3±1.3
Other	6 (3.8)	12.3±2.2	11.7±2.0	11.0±2.8	12.3±2.6	11.5±3.2	7.7±3.0	14.7±1.5
P-value		<0.001	0.261	0.004	0.812	<0.001	<0.001	0.092
Seizure frequency (in the last month)								
No seizures	76 (41.8)	11.8±2.3	11.4±2.2	11.7±2.2	12.2±2.2	11.6±2.4	9.4±2.7	15.4±1.2
1 seizure	73 (40.1)	12.6±2.3	10.8±2.3	11.4±2.3	12.2±2.6	12.2±2.4	8.3±3.2	15.4±1.2
2 and more	33 (18.1)	11.4±2.8	10.2±2.1	10.5±2.9	11.0±2.6	11.4±2.4	8.2±2.6	14.4±2.1
P-value		0.041	0.042	0.064	0.050	0.158	0.030	0.002
The interference of the disease on the illness								
Yes	48 (26.4)	11.5±2.4	10.5±2.3	10.5±2.7	12.1±2.5	11.7±2.4	8.9±2.9	15.0±1.6
No	134 (73.6)	12.2±2.4	11.1±2.2	11.7±2.2	11.9±2.5	11.8±2.4	8.7±2.9	15.3±1.4
P-value		0.089	0.086	0.005	0.798	0.689	0.612	0.263

COPE - Assessment Scale for Coping Attitudes, ¹Positive reinterpretation and growth, ²Mental disengagement, ³Focus on and venting of emotions, ⁴Using instrumental social support, ⁵Active coping, ⁶Denial, ⁷Religious coping, ⁸Humor, ⁹Behavioural disengagement, ¹⁰Restraint, ¹¹Use of emotional social support, ¹²Substance use, ¹³Acceptance, ¹⁴Suppression of competing activities, ¹⁵Planning

and from worker, freelance and other occupations for restraint. Participants who smoked had significantly lower scores than non-smoker participants for humor and behavioral disengagement ($p<0.05$) (Table 2).

The seizures of 75.3% of the participants were generalized, and 41.8% had had no seizures during the last month. Seventy-two percent of the participants stated that the response of those around them to their disease was negative, and 73.6% stated that their disease had no effect upon their communication ability. When the COPE subtitles were compared according to seizure type, there was a statistically

significant difference between the groups for positive reinterpretation and growth, focus on and venting of emotions, active coping, denial, humor, use of emotional social support, acceptance, and planning. This difference originated from the participants who had generalized or partial seizures. When the subtitles of the coping with stress strategies scale were compared according to the frequency of seizures in the last month, the difference was statistically significant for the groups for positive reinterpretation and growth, mental disengagement, denial, religious coping, and use of emotional social support. This difference originated

Table 2 - Distribution of COPE subscale scores of Turkish epileptic patients according to different variables, cont'd.

Variables	COPE subscales (mean±SD)							
	8	9	10	11	12	13	14	15
Gender								
Male	7.2±3.4	9.0±2.6	10.3±2.4	11.8±2.4	4.9±2.0	11.0±2.4	11.1±2.1	11.3±2.5
Female	7.3±3.1	9.6±2.5	10.5±2.2	11.4±2.3	5.3±2.0	10.8±2.2	10.8±2.3	11.0±2.3
P-value	0.718	0.123	0.490	0.353	0.169	0.715	0.373	0.432
Educational level								
Illiterate or literate	7.2±3.1	10.2±2.2	10.9±2.0	11.7±2.7	4.7±1.5	10.8±2.5	10.7±2.1	11.6±2.7
Primary school	7.7±3.7	9.5±2.6	10.8±2.4	11.6±2.5	5.1±2.3	11.0±2.5	11.1±2.3	11.3±2.5
Highschool & above	6.8±2.9	8.8±2.6	9.8±2.3	11.7±2.1	5.1±1.9	10.9±2.0	10.9±2.0	11.0±2.2
P-value	0.215	0.040	0.020	0.916	0.670	0.967	0.702	0.594
Family structure								
Traditional	5.8±2.4	9.0±2.4	10.4±2.7	11.3±2.8	5.8±2.7	10.6±2.6	10.4±1.9	11.5±2.4
Nuclear	7.5±3.4	9.3±2.7	10.4±2.3	11.7±2.3	4.9±1.9	11.0±2.3	11.0±2.2	11.1±2.4
Separated	6.8±3.3	9.9±1.8	10.6±1.6	11.6±2.0	5.1±2.1	10.6±1.6	11.9±2.2	12.1±2.7
P-value	0.054	0.709	0.962	0.750	0.161	0.723	0.250	0.414
Profession								
Worker	7.1±2.8	10.0±2.3	9.8±2.2	10.8±2.4	6.3±2.2	9.9±2.1	9.8±2.7	10.4±2.4
Freelance	6.9±3.0	10.1±2.1	11.4±1.9	12.0±2.1	5.0±2.0	11.2±2.3	12.2±1.9	11.4±2.4
Housewife	8.1±3.8	9.3±2.7	10.7±2.1	11.9±2.2	5.1±2.4	11.1±2.4	11.2±2.0	11.6±2.3
Other	6.4±2.7	8.8±2.7	10.0±2.6	11.5±2.5	4.6±1.3	11.0±2.3	10.7±2.1	10.9±2.5
P-value	0.023	0.121	0.032	0.222	0.011	0.134	0.001	0.127
Smoking								
Yes	6.8±3.3	8.9±2.7	10.4±2.4	11.7±2.4	4.8±1.8	10.7±2.4	11.0±2.1	11.2±2.4
No	8.0±3.2	10.0±3.4	10.4±2.2	11.4±2.4	5.4±2.3	11.2±2.2	11.0±2.3	11.2±2.4
P-value	0.029	0.009	0.806	0.378	0.071	0.306	0.708	0.348
Seizure type								
Partial	5.1±1.7	9.4±2.5	11.4±2.1	12.6±1.9	4.4±1.8	12.1±2.0	11.6±2.2	12.7±2.4
Generalized	7.8±3.4	9.3±2.5	10.3±2.3	11.5±2.3	5.0±1.7	10.6±2.3	11.0±2.0	10.9±2.2
Other	8.0±3.2	8.7±2.2	10.5±2.7	11.7±2.2	4.8±1.7	11.5±2.2	11.2±2.5	12.2±1.6
P-value	<0.001	0.795	0.062	0.040	0.263	0.005	0.349	<0.001
Seizure frequency (in the last month)								
No seizures	7.7±3.3	9.3±2.4	10.4±2.3	11.7±2.2	4.7±2.0	11.0±2.3	11.0±2.1	11.2±2.2
1 seizure	6.9±3.2	9.3±2.8	10.5±2.4	12.0±2.4	5.2±2.1	11.1±2.3	11.2±2.0	11.4±2.6
2 and more	6.8±3.4	9.2±2.7	10.3±2.5	10.8±2.6	5.5±2.1	10.3±2.4	10.4±2.5	10.8±2.4
P-value	0.236	0.994	0.923	0.044	0.163	0.263	0.217	0.516
The interference of the disease on the illness								
Yes	7.7±3.5	9.3±2.6	10.6±2.4	11.7±2.6	5.3±2.1	10.4±2.8	10.7±2.4	10.8±2.5
No	7.1±3.2	9.3±2.6	10.4±2.3	11.6±2.3	5.0±2.0	11.1±2.0	11.1±2.1	11.3±2.4
P-value	0.282	0.834	0.620	0.906	0.351	0.093	0.366	0.243

COPE - Assessment Scale for Coping Attitudes, ¹Positive reinterpretation and growth, ²Mental disengagement, ³Focus on and venting of emotions, ⁴Using instrumental social support, ⁵Active coping, ⁶Denial, ⁷Religious coping, ⁸Humor, ⁹Behavioural disengagement, ¹⁰Restraint, ¹¹Use of emotional social support, ¹²Substance use, ¹³Acceptance, ¹⁴Suppression of competing activities, ¹⁵Planning

from the participants who had one and more than one seizure a month for positive reinterpretation and growth and use of emotional social support, while for mental disengagement, denial, and religious coping it originated from participants who had more than one seizure a month and those who had no seizures. The mean scores of focus on and venting of emotions were significantly lower for participants who stated that the disease had an effect on their communication ability ($p<0.05$) (Table 2).

Our study found a positively significant correlation among the scores of denial, humor, and the duration of

the disease there was a positively significant correlation between the scores of planning (Table 3). A negatively significant correlation was found among the scores of suppression of competing activities, substance use, use of emotional social support, restraint, religious coping, use of instrumental social support, and the number of friends. While there was a negatively significant correlation between the scores of behavioral disengagement there was a positively significant correlation between the scores of use of instrumental social support and income. There was a positively significant correlation among the scores of humor,

Table 3 - The correlation between the COPE subscale scores of Turkish epileptic patients according to different variables.

Variables	COPE subscales						
	1	2	3	4	5	6	7
Age	r=-0.104 p=0.163	r=-0.077 p=0.299	r=-0.062 p=0.409	r=-0.048 p=0.523	r=-0.052 p=0.489	r=0.103 p=0.165	r=0.047 p=0.528
Income	r=0.169 p=0.179	r=-0.027 p=0.829	r=0.141 p=0.264	r=0.286 p=0.021	r=0.207 p=0.098	r=-0.094 p=0.456	r=-0.033 p=0.796
Number of friends	r=-0.091 p=0.322	r=-0.155 p=0.091	r=-0.094 p=0.307	r=-0.223 p=0.015	r=-0.093 p=0.312	r=-0.049 p=0.594	r=-0.289 p=0.001
Epilepsy history / year	r=-0.103 p=0.180	r=-0.049 p=0.528	r=-0.062 p=0.422	r=-0.029 p=0.711	r=-0.076 p=0.326	r=0.207 p=0.007	r=0.010 p=0.899
BDI	r=-0.543 p<0.001	r=-0.222 p=0.003	r=-0.436 p<0.001	r=-0.300 p<0.001	r=-0.415 p<0.001	r=0.209 p=0.005	r=-0.381 p<0.001
PSS total	r=0.446 p<0.001	r=-0.095 p=0.202	r=0.297 p=0.001	r=0.173 p=0.019	r=0.303 p<0.001	r=-0.348 p<0.001	r=0.085 p=0.256
PSS-family	r=0.103 p=0.168	r=0.036 p=0.634	r=0.122 p=0.102	r=0.032 p=0.666	r=0.070 p=0.351	r=-0.074 p=0.322	r=-0.019 p=0.800
PSS-friends	r=0.454 p<0.001	r=-0.094 p=0.208	r=0.315 p<0.001	r=0.157 p=0.034	r=0.267 p<0.001	r=-0.323 p<0.001	r=0.095 p=0.203
PSS-someone special	r=0.403 p<0.001	r=-0.132 p=0.075	r=0.218 p=0.003	r=0.183 p=0.013	r=0.310 p<0.001	r=-0.345 p<0.001	r=0.089 p=0.234

COPE - Assessment Scale for Coping Attitudes, BDI - Beck Depression Inventory, PSS - Perceived Social Support, ¹Positive reinterpretation and growth, ²Mental disengagement, ³Focus on and venting of emotions, ⁴Using instrumental social support, ⁵Active coping, ⁶Denial, ⁷Religious coping, ⁸Humor, ⁹Behavioural disengagement, ¹⁰Restraint, ¹¹Use of emotional social support, ¹²Substance use, ¹³Acceptance, ¹⁴Suppression of competing activities, ¹⁵Planning

Table 3 - The correlation between the COPE subscale scores of Turkish epileptic patients according to different variables, cont'd.

Variables	COPE subscales							
	8	9	10	11	12	13	14	15
Age	r=0.221 p=0.003	r=0.147 p=0.048	r=0.008 p=0.917	r=-0.060 p=0.422	r=-0.172 p=0.021	r=0.037 p=0.616	r=-0.027 p=0.721	r=0.070 p=0.350
Income	r=-0.133 p=0.290	r=-0.334 p=0.007	r=-0.102 p=0.419	r=0.139 p=0.269	r=-0.180 p=0.151	r=0.149 p=0.237	r=0.130 p=0.301	r=0.075 p=0.554
Number of friends	r=-0.022 p=0.813	r=-0.116 p=0.209	r=-0.250 p=0.006	r=-0.266 p=0.003	r=0.212 p=0.020	r=-0.119 p=0.197	r=-0.196 p=0.032	r=-0.260 p=0.004
Epilepsy history / year	r=0.316 p<0.001	r=0.104 p=0.178	r=0.027 p=0.723	r=-0.031 p=0.689	r=-0.096 p=0.212	r=-0.095 p=0.218	r=-0.016 p=0.832	r=0.007 p=0.932
BDI	r=0.202 p=0.006	r=0.046 p=0.534	r=-0.138 p=0.063	r=-0.317 p<0.001	r=0.274 p<0.001	r=-0.387 p<0.001	r=-0.346 p<0.001	r=-0.367 p<0.001
PSS total	r=-0.242 p=0.001	r=-0.111 p=0.136	r=0.147 p=0.048	r=0.284 p<0.001	r=0.056 p=0.450	r=0.292 p<0.001	r=0.262 p<0.001	r=0.183 p=0.013
PSS-family	r=-0.057 p=0.447	r=-0.098 p=0.188	r=-0.021 p=0.781	r=0.039 p=0.599	r=0.011 p=0.883	r=0.078 p=0.295	r=0.019 p=0.803	r=-0.131 p=0.077
PSS-friends	r=-0.229 p=0.002	r=-0.090 p=0.225	r=0.122 p=0.101	r=0.273 p<0.001	r=0.036 p=0.628	r=0.250 p=0.001	r=0.269 p<0.001	r=0.206 p=0.005
PSS-someone special	r=-0.235 p=0.001	r=-0.076 p=0.305	r=0.199 p=0.007	r=0.285 p<0.001	r=0.076 p=0.307	r=0.297 p<0.001	r=0.261 p<0.001	r=0.255 p=0.001

COPE - Assessment Scale for Coping Attitudes, BDI - Beck Depression Inventory, PSS - Perceived Social Support, ¹Positive reinterpretation and growth, ²Mental disengagement, ³Focus on and venting of emotions, ⁴Using instrumental social support, ⁵Active coping, ⁶Denial, ⁷Religious coping, ⁸Humor, ⁹Behavioural disengagement, ¹⁰Restraint, ¹¹Use of emotional social support, ¹²Substance use, ¹³Acceptance, ¹⁴Suppression of competing activities, ¹⁵Planning

behavioral disengagement, and age ($p < 0.05$) (Table 3).

There was a negatively significant correlation among the scores of planning, suppression of competing activities, acceptance, use of emotional social support, religious coping, active coping, use of instrumental social support, focus on and venting of emotions, mental disengagement, positive reinterpretation and growth, and depression ($p < 0.05$) (Table 3).

We found a negatively significant correlation among the scores of perceived social support from someone special, and in total and positive reinterpretation and growth, focus on and venting of emotions, use of instrumental social support, active coping, restraint, use of emotional social support, acceptance, suppression of competing activities, and planning. There was a negatively significant correlation with the scores of denial and humor ($p < 0.05$) (Table 3).

As a result of the multiple linear regression analysis, we found that the independent variables affecting the positive reinterpretation and growth subscale of the coping with stress scale were the type of seizures and interference of the disease in communication. The variable affecting mental disengagement was family

structure. The variables affecting the focus on and venting of emotions were the type of seizures and interference of the disease in communication. The variable affecting the use of instrumental social support was gender. The variable affecting active coping was the type of seizures. The variables affecting denial were family structure, smoking, and the type of seizures. The variables affecting religious coping were family structure and the type of seizures. The variable affecting humor was the type of seizures. The variables affecting behavioral disengagement were educational level and smoking. The variable affecting the use of emotional social support, acceptance, and planning subscales was the type of seizures (Table 4).

Discussion. In this study, we found that the participants most frequently employed emotion-oriented coping strategies. Of the emotional coping methods, religious coping ranked first, while positive reinterpretation and growth ranked second. In a study on epileptic patients in Iran, it was found that emotion-oriented coping strategies were employed more than problem-oriented coping strategies.²¹ In their studies,

Table 4 - Multiple linear regression analysis of the factors affecting COPE subscales of the Turkish epileptic patients.

Variables	COPE subscales											
	1 β	2 β	3 β	4 β	5 β	6 β	7 β	8 β	9 β	11 β	13 β	15 β
<i>Gender</i>												
Female												
Male				-0.83*								
<i>Educational level</i>												
Illiterate or literate												
Primary School									-1.05			
Highschool and above									-1.68*			
<i>Family Structure</i>												
Traditional												
Nuclear		1.35*				1.28*	0.92					
Separated		0.29				-0.26	0.33*					
<i>Smoking</i>												
No												
Yes						0.97*			1.17*			
<i>Type of seizures</i>												
Generalized partial	2.22*		1.36*		1.97*	-2.83*	0.11	2.73*		1.14*	1.47*	1.78*
Other	0.54		0.01		-0.02	-1.94*	-0.85*	-0.49*		-0.43	0.18	-0.06
<i>Interference in communication</i>												
Yes			0.97*									
No												
R ²	0.12*	0.05*	0.09*	0.03*	0.10*	0.28*	0.12*	0.10*	0.08*	0.05*	0.06*	0.08*

* $p < 0.05$, COPE - Assessment Scale for Coping Attitudes, ¹Positive reinterpretation and growth, ²Mental disengagement, ³Focus on and venting of emotions, ⁴Using instrumental social support, ⁵Active coping, ⁶Denial, ⁷Religious coping, ⁸Humor, ⁹Behavioural disengagement, ¹⁰Restraint, ¹¹Use of emotional social support, ¹²Substance use, ¹³Acceptance, ¹⁴Suppression of competing activities, ¹⁵Planning

Bautista et al²² stated that the most frequently employed basic coping strategies were acceptance, religious tendency, and searching for emotional support, while the less frequently used ones were substance use, denial, and humor. As in numerous studies,^{21,23,24} our study also suggests that religious belief and intuition are used as a major coping strategy to deal with this chronic disease (epilepsy). Based on these conclusions, the argument related to coping religiously is effective in coping because the spiritual dimension evokes a feeling to accept, to trust in God, and not to rebel by considering the disease as a difficulty originating from Allah. However, to come to a final judgment, theist, and atheist groups should be compared.

In our study, we found a positively significant correlation among the scores of behavioral disengagement, humor subscales, and age. Bourgault-Fagnou and Hadjistavropoulos²⁵ reported that the elderly were less sensitive and less anxious regarding their health than young people. This can be explained by the fact that as people age they know their disease better, and they, thus, have fewer negative perceptions about the disease; also their coping capacity and rationalizing ability improve with age.

The mean scores of the male participants from positive reinterpretation and growth and use of instrumental social support subscales were significantly higher. It is reported that coping strategies vary according to a variety of factors like age, gender, culture, and disease, and they have distinct characteristics for each individual.²⁰ It is understood from our study that males are more successful in using instrumental social support, which is one of the problem-oriented coping strategies. We believe that this may be connected with attributed power perception, seeking a remedy, and self-expression, to the culture as well. The participants with higher levels of education had significantly lower scores for behavioral disengagement and restraint. Cano et al²⁶ stated that individuals with higher educational levels are more successful and experienced in using the coping strategies against the complex perceptions of feelings of pain. It is not surprising that as the educational level of individuals gets higher, they not only have a better capacity to apprehend the meaning and importance of the disease and its consequences, but also they do not have other tendencies (for example, disengagement and restraint) since they employ solution-oriented coping methods more successfully and consciously. The mean scores of the participants with a traditional family structure were significantly higher than participants with a nuclear family structure for mental disengagement, denial, and religious coping. It has been

stated that spirituality has an influence on the coping abilities of participants with their disease.²⁷ Religious tendency, and the approaches observed in traditional family structures may lead them to be more effective since they are transferred in a hierarchical order (from generation to generation).

We found a positively significant correlation between income and the use of the instrumental social support subscale of COPE and a negatively significant correlation with behavioral disengagement. While material income is an advantage in that it provides positive helpful support, since there are more opportunities to look for a remedy, it is understandable that it is also accompanied with a decrease in undermining behavior.

As a result of multiple linear regression analysis, seizure type was the independent coefficient that affected positive reinterpretation and growth, focus on and venting of emotions, denial, religious coping, humor, use of emotional social support, acceptance, and planning subscales. We believe that those with generalized seizures are less successful in using coping strategies than those with partial seizures in many parameters, not only due to the severity of the disease but also to perception of the disease as well as to stigmatization, and since they lead to more severe biological outcomes. When the subtitles of the COPE scale were compared according to the frequency of seizures during the last month, there was a statistically significant difference between the groups for positive reinterpretation and growth, mental disengagement, denial, religious coping, and use of emotional social support groups. The outcomes produced by epilepsy are reported to make coping with the disease more difficult than seizures do.²⁸ Having more seizures adversely affects the coping strategies due to their social-behavioral results, besides the fact that it creates distrust of the treatment provided, a more "sick-person mode," and it develops a lack of self-confidence. We found a negatively significant correlation among the number of friends and the scores of using instrumental social support, religious coping, restraint, use of emotional social support, substance use, and suppression of competing activities subscales, while there was a negatively significant correlation with the scores of planning. Participants employ not only positive strategies such as support from family and friends, using distracters, inclining to religion and spirituality, and using meditation techniques, but also negative strategies such as denial, self-accusation, or taking alcohol or drugs.²⁹ People diagnosed with epilepsy experience many psychosocial problems, including the fear of having seizures.³⁰ A life dependent on medications and other people adversely affects self-

confidence. Social support and acceptance of the disease by the family play an important role in surmounting such difficulties and social contacts and, within this context, family relations, and social contacts increase a patient's ability to cope with the disease.³¹

We found a positively significant correlation among the duration of disease and the scores of denial and religious coping subscales of the COPE scale. Hosseini et al²¹ maintained that religion helps the patient to accept the disease. Having a strong faith in religion and an increase in the duration of the disease can explain their having a more submissive attitude in line with their faith and greater acceptance of the reality of the disease.

The mean scores of participants who stated that their disease had an influence on their communication ability were significantly lower for the focus on and venting of emotions. The stigma and seizures that accompany epilepsy themselves adversely affect social communication.⁶ The presence of seizures and their unpredictable times in epileptics may result in social and communicative limitations, loss of functions, and loss of self-confidence. We found a negatively significant correlation among the depression scores, and the scores of positive reinterpretation and growth, mental disengagement, focus on and venting of emotions, use of instrumental social support, active coping, religious coping, use of emotional social support, acceptance, suppression of competing activities, and planning subscales, but we found a positively significant correlation with denial, humor, and substance use. The prevalence of psychiatric comorbid disorder is higher in epileptics. These comorbidity rates are seen in correlation with endogenous and exogenous (iatrogenic conditions) factors and the severity and chronicity of epilepsy.³² Depression is obviously common in epilepsy; however, epilepsy is more common in depression. Depression itself is a risk factor for epilepsy.³³ Lack of family support is a risk factor for depression in people with medical diseases.³⁴ Feelings of demoralization, helplessness and hopelessness, confusion, and subjective insufficiency are important for depression, and are determiners of which psychotherapy method should be preferred.⁶ In a study which investigated the coping strategies developed by patients with epilepsy and depression,²² it was observed that more than one third of the participants with major depression preferred coping through denial. Lower life quality, higher inability, paroxysm of laughter, severe seizures, inability to work and inability to drive was also associated with depression. In general terms, being depressed decreases a person's capacity to cope in many aspects of life, and may lead to a tendency to use drugs because of depression.

We found a positively significant correlation among the scores of perceived social support from a friend or someone special, and in total and positive reinterpretation and growth, focus on and venting of emotions, use of instrumental social support, active coping, restraint, use of emotional social support, acceptance, suppression of competing activities, and planning subscales, but we found a negatively significant correlation with denial and humor scores. People with epilepsy are frequently in fear of having a seizure and this affects their social relations, self-confidence, and academic success, and thus leads to making fewer friends, having a shorter married life, and more often developing anti-social behaviour.¹³ Foladi et al³ stressed the greatest need of participants was for emotional support from their family and friends while Taleghani et al³⁵ stressed the significance of the presence of a supportive environment in which the problems, experiences, and anxieties of participants are discussed openly. Those with epilepsy are in need of psychological and social support to cope with epilepsy.¹³ It is obvious from the positive correlation found among the perceived social support and problem-oriented and emotion-oriented coping strategies that social support offers the opportunity to use more conclusive methods and that participants employ more dysfunctional coping methods such as denial when such conditions are not available.

A limitation of this study was the use of the BDI as the only assessment tool to assess the presence and severity of depressive symptoms.

In conclusion, this study found that people with epilepsy employed emotion-oriented coping strategies most frequently. The most important variables affecting coping strategies with the disease among epileptics were age, gender, educational level, family structure, seizure type, and interference of the disease in the patient's communication ability. It is crucial for epileptics to keep losses related to their disease to a minimum by not only controlling the frequency and severity of seizures through optimal effective medication, but also by developing social support systems, taking the necessary precautions to protect their mental health and treating existing mental problems, if there are any.

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