



The effects of temperament and character traits on perceived social support and quality of life in patients with epilepsy



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ABSTRACT

Objectives: This study aimed to investigate the effect of temperament and character traits on perceived social support and quality of life in patients with epilepsy (PWE).

Methods: Fifty-two PWE and 54 healthy controls were included in this study. Demographics and clinical data were recorded. Temperament and Character traits were investigated using Temperament and Character Inventory (TCI), Perceived Social Support was evaluated by Multidimensional Scale of Perceived Social Support Scale (MSPSS), and quality of life was assessed using a 36-Item Short-Form Health Survey (SF-36). Participants also completed the Hospital Anxiety Depression Scale (HADS).

Results: TCI and MSPSS scores showed no significant difference between the groups ($p > 0.05$). Mental and physical subscales of SF-36 were significantly lower in PWE than the controls ($p = 0.012$, $p = 0.020$, respectively). Multiple linear regression analysis indicated that Reward Dependence and Cooperativeness were independent predictors for perceived social support, and Persistence score was an independent predictor for the physical subscale of SF-36 even after adjustment for confounding background variables ($p < 0.05$, for all).

Conclusion: Temperament and character traits may affect perceived social support and quality of life in PWE. Thus, an evaluation of temperament and character traits may play a significant role in preventing negative effects on perceived social support and quality of life in PWE.

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1. Introduction

Epilepsy is a prevalent chronic neurological disorder characterized by seizures and can cause structural and neurochemical changes in the brain. It is estimated to affect 50 million people worldwide and may give rise to serious morbidity and mortality [1]. A series of conditions including depression, anxiety, stroke, migraine, asthma, heart disease, arthritis, and peptic ulcers are more common in patients with epilepsy (PWE) compared with the general population [2].

Psychiatric comorbidities have been suggested to be the most frequent complications of epilepsy; they aggravate the burden of living with epilepsy and may affect the quality of life in PWE more than seizures itself [3]. Although psychiatric illness is more common in PWE than in the general population, psychiatric and psychological diseases mostly remain underdiagnosed and undertreated in these patients. Epilepsy may pave the way for the development of psychiatric disorders owing to chronic stress exposure. The uncertainty and unpredictability of seizures (seizure phobia) may lead to feelings of sadness, loneliness, despair, poorer self-esteem, self-reproach and social isolation,

stigmatization, or disability in PWE. It has also been suggested that personality changes may also occur in PWE [4]. The prevalence of personality disorders in PWE is 1–2% [5]. Reported types of personality disorder include antisocial, avoidant, obsessive–compulsive, schizoid, schizotypal, dependent, and dissociated personality [6]. Certain personality traits such as viscosity, anger, hyposensitivity, preoccupation with philosophical and religious interests, excessive emotionality, circumstantiality, and hypergraphia have also been described in PWE [6,7]. The type and frequency of seizure, age at onset and duration of epilepsy were reported to be related to personality disorders. The biological factor of underlying epilepsy, sociological, biochemical and neurophysiological factors may account for abnormal personality traits [8].

Temperament and Character Inventory (TCI) developed by Cloninger et al. is a well-established approach to evaluate the personality traits of the general population as well as patients with chronic disorders. According to Cloninger's psychobiological model, personality has different psychobiological dimensions of temperament and character. This model of personality identified four dimensions of temperament as Novelty Seeking, Harm Avoidance, Reward Dependence, and Persistence, and three dimensions of character as Self-directedness, Cooperativeness, and Self-transcendence [9]. There have been several studies evaluating the temperament and character traits of epilepsy patients through TCI [10–12].

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Social support is thought to be a pillar supported by the people around the individual and may offer protection from the negative effects of stressful events, ongoing life challenges, and chronic health conditions. Social contacts and family relationships represent a significant source of social support and may considerably affect the individual's ability to manage the disease in epilepsy [13]. Better social support may increase the quality of life and reduce the severity of psychiatric symptoms in the PWE [14].

Epilepsy is known to have a great effect on the quality of life. Recognition of the factors involved in the quality of life may provide opportunities to improve the diagnostic and intervention strategies in PWE [15]. Therefore, there has been a need for studies investigating the factors affecting the quality of life in epilepsy. We hypothesized that temperament and character traits of PWE might affect perceived social support and quality of life. However, to the best of our knowledge, the effects of temperament and character traits on perceived social support and quality of life have not yet been investigated in PWE. Therefore, the present study aims to investigate the effects of temperament and character traits on perceived social support and quality of life in PWE.

2. Methods

This case–control study was conducted at the Neurology and Psychiatry departments of a university hospital in the period of March–September 2015. Seventy consecutive patients with epilepsy who referred to the neurology outpatient clinic were enrolled in the study. Seventy healthy volunteers, who were non-medical workers from our hospital, and their family members were included as controls. Of the patient group, 12 individuals were excluded based on exclusion criteria, 2 for refusing to participate in the study and 4 for providing incomplete information for the scales. On the other hand, 6 individuals from the control group were excluded based on exclusion criteria, 5 individuals refused to participate in the study and 5 individuals provided incomplete information for the scales. Thus, a total of 52 patients with epilepsy comprised the epileptic group and the control group included 54 healthy subjects. The diagnosis of epilepsy was made by a neurologist according to the International League Against Epilepsy [16]. Participants between 18 and 55 years of age with at least primary school education and patients with a diagnosis of epilepsy for at least 1 year were included in this study. We excluded the patients with known chronic systemic diseases or neurological diseases other than epilepsy, cognitive disorders such as mental retardation and dementia, a history of epilepsy surgery, psychiatric disorders such as psychotic disorder, obsessive–compulsive disorder, alcohol and/or drug addiction.

The complete neurologic examination was performed for all participants by the same neurologist and the relevant data were recorded based on the epilepsy information form. Then, the same psychiatrist conducted psychiatric interviews with all participants using the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorder, Fourth Edition, Axis I Disorders (SCID-I) [17,18], and participants were instructed to complete the TCI, Hospital Anxiety Depression Scale (HADS), Multidimensional Scale of Perceived Social Support Scale (MSPSS), and 36-Item Short-Form Health Survey (SF-36) in a quiet room. Written informed consent was obtained from all participants in line with the ethical principles of the Declaration of Helsinki. The research protocol was approved by the local ethics committee.

2.1. Measurement tools

2.1.1. Epilepsy information form

The information form included factors such as gender, age, marital status, educational background, occupation, age at first epileptic seizure, presence of aura, frequency and type of the seizures, duration of epilepsy, presence of EEG abnormalities, and medications.

2.1.2. Temperament and Character Inventory (TCI)

The TCI is a self-evaluation scale consisting of 240 items with alternatives 'true' or 'false'. The scale is used to evaluate Cloninger's seven-category personality model. According to this model, temperament has four dimensions: Novelty Seeking, Harm Avoidance, Reward Dependence, and Persistence; and also character has three dimensions Self-directedness, Cooperativeness, and Self-transcendence [9]. The scale has been translated into Turkish with demonstrated validity and reliability by Köse et al. [19].

2.1.3. Hospital Anxiety Depression Scale (HADS)

The Hospital Anxiety Depression Scale (HADS) is a self-report questionnaire screening anxiety (7 items) and depressive (7 items) symptoms. The anxiety (HADS-A) and depression (HADS-D) subscales are rated from 0 to 3 (four-point Likert scales), giving maximum scores of 21 for anxiety and depression, respectively. The Turkish version of the HADS was validated by Aydemir et al. [20].

2.1.4. Multidimensional Scale of Perceived Social Support Scale (MSPSS)

Multidimensional Scale of Perceived Social Support Scale (MSPSS) is a 12-item scale that measures the perceived social support from family, friends, and special persons in three subscales. Each subscale of MSPSS includes 4 items and each item is rated between 0 and 6. Higher scores indicate higher perceived social support [21]. The validity and reliability study for the Turkish version of MSPSS was performed by Eker et al. [22].

2.1.5. Short Form Health Survey (SF-36)

The Short Form Health Survey (SF-36) is used to assess the general quality of life. This questionnaire evaluates eight dimensions of physical health and mental health for the past 4 weeks. They are linked to physical functioning, physical role, bodily pain, general health, vitality, social functioning, emotional role and mental health. Each domain has a score ranging from 0 to 100 with higher scores indicating better quality of life [23]. The SF-36 was tested and proven to be a reliable and valid measure of health status in Turkey [24].

2.2. Statistical analysis

The statistical analysis was performed using the SPSS software (version 15 SPSS; Chicago, IL, USA). The Kolmogorov–Smirnov test was used to assess the normality of distribution of all continuous variables. Descriptive statistics were performed to report the analysis of data presented as mean \pm standard deviation or median (minimum–maximum). A chi-square test was used to compare categorical variables which were given as the number of cases and percentages. Student's *t* test and the Mann–Whitney *U* test were used for parametric and non-parametric data, respectively. The Pearson's and Spearman's rank correlation tests were performed to determine the strength of linear association between the variables. Multiple linear regression analysis was performed in order to find out the independent predictor effect of the temperament and character traits on the perceived social support and quality of life. *P*-values < 0.05 were considered to represent statistical significance for all analyses. A Bonferroni correction was performed for multiple comparisons.

3. Results

3.1. The demographic and clinical findings of the epilepsy and control groups

Fifty-two PWE (27 males and 25 females) and 54 healthy controls (18 males and 36 females) were included in this study. There were no significant differences between PWE and controls in terms of age, gender, education, marital status, and occupation ($p > 0.05$ for all).

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