Emotional Profile and Employment of Patients with Epilepsy

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ABSTRACT

Background: Epilepsy as a disorder of the brain characterized by an enduring predisposition to generate epileptic seizures and by the biologic, cognitive, psychological, and social consequences of this condition. This association may reflect the anatomical and neurobiological source of both epileptic seizures and the behavioral manifestations. The aim of this research was to analyze emotional profile of patients with epilepsy, and to determine the relationship between dimensions of emotions and employment.

Methods: The research was conducted on the sample of 100 participants, 50 patients with epilepsy and 50 healthy subjects. Subgroups are equal in age (between 25 and 65 years of age) and level of education. In the estimation of emotional characteristics was used Plutchik’s Emotions Profile Index (EPI). Basic socio-demographic data were also collected.

Results: Patients with epilepsy are significantly less employed (p <.001). Deviations of the reference values emotions dimension were found in seven of eight dimensions in study group, and in five of eight dimensions in control group. Significantly differences found in the rejection dimension (p = .043). In other dimensions don’t be significant differences.

Limitations: This study has, however, also several limitations. One of all, we only evaluated the motivated participants, not randomly selected

Conclusion: The patients with epilepsy are significantly fewer employment, and significantly more inclined to the opposition / rejection (delay, hostility, contempt and critical) compared with healthy control group. Our knowledge can be useful for planning future interventions for people living with epilepsy.

Key Words: Epilepsy, Emotions, Emotional Profile

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Introduction

The International League Against Epilepsy (ILAE) and the International Bureau for Epilepsy (IBE) define epilepsy as a disorder of the brain characterized by an enduring predisposition to generate epileptic seizures and by the biologic, cognitive, psychological, and social consequences of this condition. This association may reflect the anatomical and neurobiological source of both epileptic seizures and the behavioral manifestations.

Emotion is the reaction of the body caused by a certain stimulus. It occurs in the form of protection, destruction, reproduction, deprivation, acceptance, rejection, exploration and orientation, or in their combination (Plutchik, 1970).

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Although undoubtedly important in the care of the patient with epilepsy, advances in neurologic diagnosis and treatment tended to obscure the behavioral manifestations of epilepsy until Gibbs drew attention to the high incidence of behavioral disorders in patients with temporal lobe epilepsy (Gibbs, 1997). The quality of life is often suboptimal for patients with epilepsy, and this may adversely affect mood (Kanner and Balabanov, 2002; Harden and Goldstein, 2002; Baker et al., 1993; Hermann, 1992; Perrine et al., 1995). It is estimated that 20 – 30% of patients with epilepsy have psychiatric disturbances (Vuilleumier and Jallon, 1998). The most common psychiatric conditions in epilepsy are depression, anxiety, and psychoses (Tellez-Zenteno et al., 2007; Ettinger et al., 2004; Kobau et al., 2006; Barry et al., 2007; Jobe et al., 2007; Jobe, 2003). Research conducted in recent years has shown that patients with temporal lobe epilepsy and animal models with impaired amygdala and/or hippocampus exhibit interacting emotional disorders and disorders of emotional learning (Hort et al., 1999; Vazquez and Devinsky, 2003; Kempainen et al., 2006; Cardoso et al., 2009). It is also known that people, especially those with childhood onset epilepsy, do not do as well as expected with respect to school completion, employment, marriage, and parenthood (Camfield et al., 1993; Gaitatzis et al., 2004; Shackleton et al., 2003; Strine et al., 2005; Tellez-Zenteno et al., 2007). There is growing evidence that epileptogenic lesions disrupt cortical networks that carry out emotional processing.

The aim of this research was to analyze emotional profile of patients with epilepsy, and to determine the relationship between dimensions of emotions and employment. This information could be important to the planning of future interventions for persons living with epilepsy. Because, comprehensive care of the epileptic patient requires “attention to the psychological and social consequences of epilepsy as well as to the control of seizures” (Sackellaes and Berent, 2000).

**Methods**

**Participants**

We examined 50 participants with epilepsy, between 25 and 65 years of age (mean age ± standard deviation [SD] 47 ± 12.47 years) of which 26 (52%) were male. The examination took place in the period between January 9, 2017 to March 10, 2018 at the Department of Neurology of the Primary Health Center Tuzla. Inclusion criteria were: medically confirmed diagnosis of epilepsy, age between 25 and 65 years, participants without oligophrenia, structural damage to the brain or addiction. The control group consisted of 50 healthy subjects. The groups were matched by age and level of education.

**Procedures**

This study was approved by the Research Ethics Board of Primary health Care Center Tuzla. Written consent was obtained for all participants. All measurements were conducted and scored by a trained research assistant in accordance with standardized procedures under the supervision of a licensed psychologist, with identical test administration ordering for all participants.

**Measures**

In the estimation of emotional characteristics was used Plutchik’s Emotions Profile Index (EPI) (Baškovac-Milinković et al., 1985; Plutchik and Kellerman, 1974). EPI is a standard personality questionnaire based on the forced choice. It consists of 12 different traits (adventurous, affectionate, brooding, cautious, gloomy, impulsive, obedient, quarrelsome, resentful, self-conscious, shy, and sociable) that are paired with each other in all possible combinations, so it contains 62 items questionnaire. Task of respondents is to choose one of the features of two paired that describes her/him best. The test measures the intensity, as well as the analogy and the bipolarity of eight basic emotions, where in the intensity of the emotion scale shows the rating from 0 to 100%. With each of the emotions, characteristic behavior and function is linked which together describe one personality trait. By analyzing the results of the questionnaire for each respondent the following dimensions with the corresponding emotion, personality trait and behavior are provided: incorporation (acceptance, trusting, incorporation); orientation (surprise, indecisive, impulsive, stopping); self-protection (fear, shy, timid, escape); deprivation/depression (sadness, gloomy, apathetic, lonely); opposition/rejection (disgust, hostile, scornful, critical); exploration (expectation, curious, orderly, controlling); aggression/destruction (anger, quarrelsome, grouchy, sarcastic); reproduction (joy, etc.)

**Results**

The examination involved 50 participants with epilepsy, between 25 and 65 years of age (mean age ± standard deviation [SD] 47 ± 12.47 years) of which 26 (52%) were male. The control group consisted of 50 healthy subjects. The groups were matched by age and level of education. The quality of life is often suboptimal for patients with epilepsy, and this may adversely affect mood (Kanner and Balabanov, 2002; Harden and Goldstein, 2002; Baker et al., 1993; Hermann, 1992; Perrine et al., 1995). It is estimated that 20 – 30% of patients with epilepsy have psychiatric disturbances (Vuilleumier and Jallon, 1998). The most common psychiatric conditions in epilepsy are depression, anxiety, and psychoses (Tellez-Zenteno et al., 2007; Ettinger et al., 2004; Kobau et al., 2006; Barry et al., 2007; Jobe et al., 2007; Jobe, 2003). Research conducted in recent years has shown that patients with temporal lobe epilepsy and animal models with impaired amygdala and/or hippocampus exhibit interacting emotional disorders and disorders of emotional learning (Hort et al., 1999; Vazquez and Devinsky, 2003; Kempainen et al., 2006; Cardoso et al., 2009). It is also known that people, especially those with childhood onset epilepsy, do not do as well as expected with respect to school completion, employment, marriage, and parenthood (Camfield et al., 1993; Gaitatzis et al., 2004; Shackleton et al., 2003; Strine et al., 2005; Tellez-Zenteno et al., 2007). There is growing evidence that epileptogenic lesions disrupt cortical networks that carry out emotional processing.

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sociable, generous, sympathetic). A control scale (bias) measures dissimulation tendency or tendency to appear in the best way possible. Also, for basic socio-demographic data was used socio-demographic questionnaire.

**Statistical analysis**

Descriptive statistics and Mann-Whitney U-test were used for data analysis (Petz, 1997). Statistical significance was defined as a value of $p < 0.05$. Microsoft Office Excel 2007 and Arcus Quickstat Biomedical software were used for data processing.

**Results**

The participants of study group (SG) are significantly fewer employment compared with healthy control group (CG), as shown in Fig. 1.

Comparisons, in March 2018, the number of persons in paid employment in Bosnia & Herzegovina amounted to 794.505 i.e. 62.7%.

Patients with epilepsy are less sociable, less communicative, suggestive persons, who are looking for stability and security, do not like new experiences and adventures because they are less adaptable and tend to avoid social contacts. In interpersonal relations they are anxious and worried, prone to acceptance and trust in other people. They are pessimistic individuals, fearful of difficulties they will not be able to overcome, with constant feelings of deprivation and limitation, emptiness, dissatisfaction with life prospects and fear of loss, leading to passivity, unplanned and disorganized way of life from day to day. Occasionally they can be bitter and quarrelsome, and when tensions are usually shaken on anyone, as shown in Fig. 2.

**Discussion**

The significantly higher odds of unemployment among persons with seizures compared with those without seizures suggest that the past or current presence of seizures may hinder employment. This finding is consistent with the study that found high levels of unemployment or inability to work among adults with self-reported epilepsy (Kobau *et al.*, 2002).

Our results shown that patients with epilepsy are emotionally unstable, special in the orientation and exploration dimensions. There are several studies that suggest that chronic trauma can lead to the change of psychological personality traits such as increased aggression, depression, distrust, alienation, tendency to withdrawal and isolation, impaired self-protection, and poor social integration.
The limitations of the study include the size of the sample, as well as choice of EPI as only questionnaire for measuring of emotional profile and personality traits. Further, we only evaluated the motivated participants, and not randomly selected.

**Conclusion**

The patients with epilepsy are significantly fewer employment, and significantly more inclined to the opposition / rejection (delay, hostility, contempt and critical) compared with healthy CG. However, we are in the rest dimensions dont found statistically significant differences between the epilepsy group and the healthy control group, differently from Pinquart and Shen's meta-analysis (Pinquart and Shen, 2011), where high levels of internalizing problems were found in all types of chronic illnesses analyzed, including and epilepsy (Piccinelli et al., 2010; Gatta et al., 2017).

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**References**


