

# Patterns of depressive symptoms in epilepsy

## Perfis de sintomas depressivos na epilepsia

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### ABSTRACT

**Objective:** The purpose of this study was to determine the nature and extent of depressive symptoms among patients with epilepsy. **Methods:** Ninety patients were investigated over a three-month period: 42 were suffering from generalized epilepsy, 29 from focal epilepsy and 19 from undetermined epilepsy. All completed the Zung self-rating scale for assessment of the depressive symptoms. **Results:** Sixty-seven patients felt stigmatized because of epilepsy (67%): 73.6% in the undetermined epilepsy group, 55.1% in the focal epilepsy group and 88% in the generalized epilepsy group. Moreover, among the 90 epileptic patients studied, symptoms of irritability, indecisiveness, personal devaluation and emptiness showed a constant increasing trend for their presence from the undetermined epilepsy group through the generalized epilepsy group to the focal epilepsy group. **Conclusions:** These findings indicate that although the focal epilepsy patients felt less stigmatized, they did not differ greatly in terms of depressive symptoms, in relation to the undetermined epilepsy and generalized epilepsy patients.

**Key words:** epilepsy, depression, Zung self-rating scale.

### RESUMO

**Objetivo:** O objetivo deste estudo foi determinar a natureza e extensão dos sintomas depressivos entre pacientes com epilepsia. **Métodos:** Noventa pacientes foram avaliados durante o período de três meses: 42 apresentando epilepsia generalizada, 29 com epilepsia focal e 19 com epilepsia indeterminada. Todos completaram a auto-escala de Zung para avaliação de sintomas depressivos. **Resultados:** Sessenta e sete pacientes se sentiam estigmatizados por causa da epilepsia (67%), sendo 73,6% do grupo epilepsia indeterminada, 55,1% do grupo epilepsia focal e 88% do grupo epilepsia generalizada. Além disto, entre os 90 pacientes epilépticos estudados, os sintomas de irritabilidade, dificuldade para tomar decisões, baixa estima pessoal e sensação de vazio mostraram-se presentes de forma crescente entre os grupos de epilepsia indeterminada, epilepsia generalizada e epilepsia focal. **Conclusões:** Estes achados indicam que embora os pacientes com epilepsia focal se sintam menos estigmatizados, eles não diferiram de maneira considerável daqueles com epilepsia indeterminada e epilepsia generalizada em termos de sintomas depressivos.

**Palavras-Chave:** epilepsia, depressão, autoescala de Zung.

Occurring in approximately one-third of patients, depression is the most common interictal psychiatric disorder in patients with epilepsy. Moreover, depression is associated with poor scores in health-related quality of life measures in the general population as well as among epileptic patients<sup>1,2</sup>. Given the high prevalence and associated morbidity and mortality, as well as the fact that the use of antidepressants could very often reduce the seizure threshold, recognition and appropriate treatment of depressive symptomatology in patients with epilepsy should be of primary concern in clinical practice<sup>2,3</sup>.

The aim of this study was to screen epileptic patients for depressive symptoms, to determine the nature and extent of these symptoms and to examine the possible relationships with the clinical features of epilepsy.

### METHODS

All patients selected for the study, attending the specialist epilepsy clinics of the Department of Neurology of the University of Athens on self-initiated visits. Patients were evaluated thoroughly by two specialists and then asked to describe their seizures in full text with details, in order to distinguish seizure types. Thorough physical and neurological examinations were also performed. Additionally, all patients were doing laboratory studies including serum tests and EEG (electroencephalography). Finally the diagnosis of the type of epilepsy was given based in all the abovementioned features, as well as further follow-up of patients.

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Then epileptic patients were asked to fill a self-administered non-standardized questionnaire, including 101 items in order to screen for depressive symptoms, to determine the nature and extent of these symptoms, and to examine the possible relationships with the clinical features of epilepsy. The first part of this questionnaire includes items concerning demographic variables as well as personal and family history of seizures; later on the patients are asked to describe in details their seizures in foul text. The second part aimed at detecting patients' adjustment to seizures, their psychological profile and discomfort in social activities because of the epilepsy. Follow-up information on patients stems from answers to questions of the third part of the questionnaire. In the fourth part of the questionnaire, information about the social status and/or skills of the patients is obtained, including level of education, current employment status and/or employment problems, driving skills, army service (compulsory for men in Greece) and marital status or steady relationship. Questionnaires with more than 10% unanswered questions or conflicted answers in control questions were rejected. The Zung depression self-rating scale (ZDRS) and the Zung self-rating anxiety scale were also utilized<sup>4-6</sup>.

To enter the study, patients should be able to read and write, and be receiving appropriate antiepileptic medication for at least one year. From a pull of 131 patients, 97 were considered eligible to be studied (able to read and write, and with intelligence quotient (IQ)>80). Thus, 90 of them successfully completed the questionnaire; the remaining 7 had either left more than 10% of the questions blank or gave conflicting answers in the control questions, which made the test unreliable. Forty-one were male and forty-nine female. Of these 90 patients, 42 were suffering from generalized epilepsy (GE), 29 from focal epilepsy (FE), and 19 from undetermined epilepsy (UE), i.e., difficult to be characterized as either GE or FE based only on the information of the questionnaire and their interview. They need further more specialized examinations (Video EEG, brain CT scan or brain MRI). The GE group comprises 13 males and 29 females exhibiting mean age 32.33±15.19 years, educational level 11.82±3.70 years and mean length of illness 15.24±10.76 years. The FE group comprises 11 males and 18 females having mean age 31.75±11.47 years, educational level 11.03±2.63 years and mean length of illness 15.25±11.72 years. Finally, the UE group consists of 11 males and 8 females having mean age 36.84±14.40 years, educational level 11.38±4.25 years and mean length of illness 19.05±13.46 years. There was no significant statistical difference between the three groups, regarding the demographic parameters such as age, sex, educational level and duration of illness. It should be noted that the ZDRS allows assessment of the frequency distribution of each depressive symptom for the purpose of matching this distribution with the type of epilepsy<sup>4</sup>. The ZDRS consists of 20 items covering affective, psychological, and somatic symptoms. The patient specifies

the frequency with which each symptom is experienced (a little=1, some=2, a good part of the time=3, or most of the time=4). The primary question under consideration in the present study is whether a subject reports the presence or the absence of a particular symptom, which is reflected by the answer given to the corresponding question. Therefore each answer was recoded in a dichotomous variable depending on the absence (score=1) or the presence (score=2-4) of the symptom.

Pairwise comparisons of the three groups consisted of checking whether the proportion of the presence of the specific symptom was significantly higher in one group rather than the other. This entailed a binomial test and, consequently, since the specific contingency tables were 2x2, cohort effects could also be computed. In other words, this effect could be interpreted as the relative risk of developing a symptom because a subject belongs to one group rather than the other. The binomial tests as well as the relative risks were computed naturally with the absolute frequencies. However, for the benefit of clarity of the interpretations, on the corresponding tables these frequencies are presented in percentages.

## RESULTS

Sixty-seven patients felt stigmatized because of epilepsy (67%), including 14/19 patients with undetermined epilepsy (UE), 16/29 patients with focal epilepsy (FE) and 37/42 patients with generalized epileptic (GE) seizures.

The table presents the percentage of the positive answers to each question of the Zung questionnaire for the three groups, and pair wise comparisons of the three groups with the binomial test. In those cases, where the binomial test yielded a statistically significant difference, the associated relative risk is recorded in parentheses.

## DISCUSSION

Comparisons between the GE group and the FE group favored the GE group in seven out of nine items of the ZDRS, where statistically significant differences were observed. The group of ZDRS items 15-18 are worth mentioning, for a constant increasing trend for the presence of the depressive symptoms involved could be observed from the UE group through the GE group to the FE group among the epileptic patients studied.

The arising question is whether generalized epilepsy seizures, because of their impressive appearance, lead to more pronounced stigmatization of the patients and this plays a major role for the occurrence of depressive symptoms<sup>7</sup>. Of course, it should be expected that stigmatization be

**Table.** Percentage of the positive answers to each question of the Zung questionnaire for the three groups and pair-wise comparisons of the three groups with the binomial test.

Question	UE	GE	FE	UE vs. GE	UE vs. FE	GE vs. FE
Depressed affect	66.7%	81.1%	82.1%	<0.05	<0.05	NS
Crying spells	66.7%	81.1%	89.3%	<0.05	<0.01	NS
Diurnal variation	83.3%	77.1%	78.6%	NS	NS	NS
Sleep disturbance	44.4%	39.5%	57.1%	NS	NS	<0.05
Decreased appetite	41.2%	30.6%	46.4%	NS	NS	<0.05
Decreased libido	58.8%	45.9%	57.7%	NS	NS	NS
Weight loss	22.2%	18.4%	28.6%	NS	NS	NS
Constipation	50.0%	47.4%	46.4%	NS	NS	NS
Tachycardia	55.6%	42.9%	55.6%	NS	NS	NS
Fatigue	50.0%	73.0%	48.1%	<0.05	NS	<0.01
Psychomotor retardation	58.8%	47.4%	71.4%	NS	NS	<0.01
Psychomotor agitation	72.2%	65.8%	82.1%	NS	NS	<0.05
Confusion	61.1%	47.4%	60.7%	NS	NS	NS
Hopelessness	50.0%	57.9%	57.1%	NS	NS	NS
Irritability	44.4%	63.2%	78.6%	<0.01	<0.01	<0.05
Indecisiveness	38.9%	50.0%	67.9%	NS	<0.05	<0.05
Personal devaluation	41.2%	44.7%	60.7%	NS	<0.05	<0.05
Emptiness	44.4%	57.9%	66.7%	<0.05	<0.01	NS
Suicidal rumination	22.2%	27.0%	33.3%	NS	NS	NS
Dissatisfaction	38.9%	61.1%	39.3%	<0.01	NS	<0.05

UE: undetermined epilepsy; GE: generalized epilepsy; FE: focal epilepsy.

dependent on the refractoriness of the disease and the frequency of the spells. Accordingly, it could be suggested that depression is dependent on the frequency of the spells. This is true perhaps for the 'reactive' depressive symptoms<sup>1,7,8</sup>. Multiple investigation groups have shown that depressive symptoms can be identified among patients with epilepsy during ictal, preictal, and postictal phases of their illness, allowing thus to wonder whether 'major depressive and bipolar disorders may be neurological disorders as noted by Kanner<sup>9,10</sup>. Another question can be raised about whether poor health related quality of life causes depressed mood or vice versa. Indeed, social isolation, stigmatization, and personal and family difficulties in everyday life could cause depression<sup>11,12</sup>.

Our study, like many others, was limited by not being based on a representative sample, and for including a high

number of patients with undetermined seizures. As a shortcoming of this study could be also considered the use of a self-administered non-standardized questionnaire for classifying epileptic seizures; however, an anonymous self-reporting questionnaire can give patients the opportunity to express some of their symptoms more easily than during a face-to-face interview with an unfamiliar person.

In conclusion, the findings of the present study indicate that not only patients with the generalized type of epilepsy but also those with focal epilepsy are more likely to present with depressive symptoms compare to those with undetermined epileptic seizures. Thus, in caring for epilepsy patients, physicians should be vigilant for detecting depressive symptoms that may be involved in the longitudinal course and prevention of epilepsy's progression or occurrence.

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