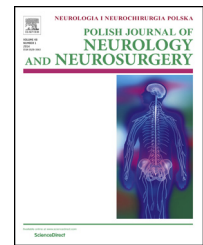


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## Original research article

# Significance of noncompliance when treating patients with epilepsy

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## ABSTRACT

**Introduction:** The absence of patient's cooperation when it comes to his/her treatment ("noncompliance") is typical to chronic diseases and it is significant problem in medical practice. The term "compliance" means patient's capability of strictly adhering to the recommendations concerning the prescribed treatment. The noncompliance with drug regime is frequent case in patients with epilepsy, it is related to increased risk of epileptic seizures' occurrence and other undesired consequences, including increased costs in the healthcare area.

**Objective:** The objective of our research is assessing the interconnection between compliance with the treatment and social-demographic and clinical factors in patients with epilepsy.

**Contingent and methods:** The research covers 131 consecutively included patients with epilepsy of various social-demographic and clinical characteristics. We have utilized analysis of the medical documentation, anamnesis, study of the somatic and neurological status, self-assessment scales and statistical methods.

**Results:** We established statistically significant positive correlations between the number of patients with poor compliance and the absence of professional/educational occupation, frequency of epileptic seizures, number of the antiepileptic drugs taken during the present and past treatment, the simultaneous presence of poor control of epileptic seizures and adverse drug events being the reason behind the modification of the previous treatment.

**Conclusion:** Patient's poor compliance, the great frequency of seizures, the higher number of antiepileptic drugs and the adverse drug reactions have negative impact on the course of the epileptic disease. The improved compliance results in optimizing the antiepileptic treatment, improving patients' condition and significantly cutting down costs incurred in the healthcare area.

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## 1. Introduction

The term “compliance” is patient's ability to strictly adhere to the recommendations concerning the prescribed treatment. The absence of compliance (“noncompliance”) is typical to chronic diseases and it is significant problem in medical practice. The noncompliance with the drug regime is frequent case when it comes to patients with epilepsy and it is related to increased risk of epileptic seizures (ES) and other harmful consequences, including increased costs in the healthcare sector [1–4]. Despite the guidelines and recommendations, many patients do not take the antiepileptic drugs (AED) according to doctor's precise prescription. The per cent of poor compliance with the treatment of patients with epilepsy is high and it is observed within the limits from 20% to 80% [5–8].

The notion “noncompliance” includes error in the AED dose (intake of higher or lower quantity), erroneous interval between the individual doses, noncompliance with the treatment duration, intake of AED that were not prescribed by the doctor, noncompliance with the living regime. The compliance degree could be formulated as per cent of the drugs taken from the prescribed dose for particular time period [9]. The absence of validated assessment scales creates difficulties when it comes to defining the impact of the specific factors on patient's unsatisfactory compliance [10].

The adverse events (AE) and the absence of satisfactory control of ES are the main reason for modifying the anti-epileptic treatment. On the other hand many seizures are being provoked directly by skipping AED. The noncompliance significantly deteriorates disease progression [11] and is directly related to poor therapeutic reaction, increased disease rate, emergency examinations and hospitalizations, as well as increased costs in the healthcare sector [2]. The non-assessment of poor compliance could result in unwanted modification of antiepileptic treatment by the doctor (modification of drugs and doses) and in many cases it is the reason behind the imprecise assessment of epilepsy as therapeutically resistant [12]. This is the reason behind running unnecessary expensive tests (for example, pre-surgical preparation), treatment with higher number and higher doses of AED, oftentimes with increase of toxic drug effects. That is why the adequate therapeutic approach requires detailed information about compliance from the patient and his/her relatives.

## 2. Objective

The objective of our research is to assess the interconnection between compliance with treatment and the social-demographic and clinical factors in patients with epilepsy.

## 3. Contingent and methods

The research covered 131 consecutively included patients with epilepsy of total 449 screened middle-aged, i.e.  $40.13 \pm 13.37$ -year-old, of whom 57 (43.5%) male and 74 (56.5%) female. The patients were treated and monitored in Multi-profile Hospital for Active Treatment in Neurology and Psychiatry “Saint

Naum” in Sofia. The research included patients that have had the disease for more than 1 year, without modifying the antiepileptic treatment in the last 3 months, without comorbid somatic, neurologic and psychiatric diseases that require additional treatment.

We utilized analysis of the medical documentation, anamnesis, study of the somatic and neurological status. We assessed the significance of the following factors: epilepsy type (in conformity with the International Classification of Epilepsies from 1989), number of taken AED during the present and past treatment, monthly frequency of ES, AE. We used interviewing questionnaire that included 4 points for assessing patient's compliance with the treatment in the last 3 months: 1) daily dose skipping; 2) modifying the AED dose; 3) noncompliance with the AED intake regime; 4) noncompliance with the recommended living regime (enough sleep, regular eating habits, no alcohol use). The answer provided to each question was assessed correspondingly with 1 (never); 2 (1–3 times monthly) and 3 (more often than 3 times monthly). With the possible questionnaire values from 4 to 12 points, patient's compliance was assessed as good with general value of 5 and more points, and as unsatisfactory with less than 5 points. The presence and frequency of AE were assessed with adapted and validated Bulgarian version of the Liverpool Adverse Event Profile (LAEP-BG), which contains 2 subscales: “neurologic and psychiatric side effects” and “non-neurological side effects” [13,14]. Disease's impact onto the health-related Quality of Life (QoL) of patients was researched with the Bulgarian version of the Quality of Life in Epilepsy Inventory – 89 (QOLIE-89 questionnaire), which consisted of seventeen subscales [15]. The higher scores indicated better QoL.

### 3.1. Statistical methods

Descriptive statistics was used for calculating the demographic and clinical data, and the scores of psychometric questionnaires QOLIE-89 and LAEP-BG subscales. The continuous variables were presented as a mean value  $\pm$  standard deviation (SD), while noncontinuous data were presented as percentages. Differences between scores of both patient groups (with poor and with good compliances) were calculated by nonparametric pair Student's t-tests. The chi-square tests and Fisher exact test were used for the categorical variables. The Spearman Rank Correlation was calculated to evaluate the relationships of some investigated parameters. The level of significance was chosen at  $p < 0.05$ . Statistical analysis was performed using the statistical package Statistica 8.0 for Windows (Stat Soft Inc., USA).

## 4. Results

The participants in our research were with different seizure frequency: seizurefree patients (48.9% without seizures in the last 6 months) and the ones with varying resistance degree: 38.2% with up to 3 seizures monthly and 13.0% with 4 and more seizures monthly. On the grounds of the analysis of patient's compliance with the treatment we established that in 81.7% of the cases the patients rendered good cooperation during the therapeutic process. In order to define the relationship between the ES, AEs persistence and the need of treatment

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