



# Knowledge of, perceptions of, attitudes and practices regarding epilepsy among medical students in Turkey



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## ABSTRACT

**Purpose:** Medical practitioners' attitudes have a significant impact on the quality of care for patients with epilepsy. This study was conducted to assess the current level of knowledge about epilepsy and treatment together with attitudes and perception toward patients with epilepsy among medical students in Turkey.

**Method:** The study was conducted using a structured questionnaire to assess knowledge, awareness, and practices about epilepsy among medical students at Selçuk University, Konya, Turkey.

**Results:** Eight hundred and ninety subjects were interviewed, and 73.5% reported their awareness about epilepsy. Of these, 38.1% knew someone who had epilepsy, and 38.5% had witnessed an epileptic seizure. Although most of the students had heard about epilepsy, 38.4% of the students believed that epilepsy was primarily a genetic disease. About one-fifth of the students attributed the causes of epilepsy to vitamin deficiency (8.8%) and psychiatric (19.1%), infectious (19.5%), mental (4.4%), and hematological disorders (3.4%). According to 4.8% of the students, epilepsy could be a punishment from God, and 2.1% of students thought that it could be caused by an evil spirit. Eighty-eight percent considered epilepsy as a dangerous disease, and most of them thought that epilepsy is a life-long condition. Fifty point six percent indicated that putting an object into the patient's mouth to prevent tongue-biting during a seizure is appropriate while 91.9% stated that drug therapy was the only treatment available for epilepsy. The most common negative attitudes toward people with epilepsy were students' objection to marrying someone with epilepsy and patients with epilepsy having children.

**Conclusion:** Misconceptions about the causes, treatment, and nature of epilepsy are common among medical students at a Turkish medical school. Negative attitudes toward patients with epilepsy still exist. Medical school training programs should be designed to increase awareness of students about epilepsy.

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## 1. Introduction

Epilepsy is one of the most common neurological disorders, affecting 1% of the population worldwide. It is a major public health problem in developing countries like Turkey and has been associated with stigma and negative preconceptions among both educated and uneducated people [1]. The causes of these negative attitudes are the lack of basic knowledge of epilepsy, misunderstanding, and some cultural beliefs. Nevertheless, community-based studies have shown that well-educated individuals have greater knowledge and lesser negative attitudes regarding epilepsy [2–5]. Medical students represent a well-educated part of the society and are the future workforce in the field of neurology of every country. Thus, it is important that they obtain the right knowledge about epilepsy and maintain an appropriate attitude toward a patient with epilepsy. Assessing the knowledge, attitudes, and practices regarding epilepsy of medical students will allow for better designed and targeted educational programs. However, very few published papers have examined these issues among university students in Turkey, and none focused on medical students. The purpose

of this study was therefore to assess Turkish medical students' knowledge about epilepsy and treatment together with their attitudes and perception of patients with epilepsy.

## 2. Methods

This study was a cross-sectional survey carried out at Selçuk University, Konya, Turkey, a tertiary institution located in the central part of Turkey. With an estimated student population of about 100,000, Selçuk University is regarded as the largest university in Turkey in terms of numbers. The study was designed as a cross-sectional questionnaire-based study to assess the medical students' knowledge, attitudes, and practices on epilepsy. All students who were willing to take part in the study were included. Students who declined to participate in the study were excluded. Questionnaires were distributed to the participants while they were in their classrooms. Eight hundred and ninety medical students from years one to six completed and returned the questionnaires giving a response rate of 90%. The educational program at Selçuk University School of Medicine is structured into a six-year curriculum consisting of three years of basic medical sciences, two years of clinical sciences, and a year of internship. While the first half of the

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program trains students in a nonclinical setting, the final three years are exclusively clinically oriented with a department-based educational program. Fourth- and fifth-year students reside invariably in the university hospital setting while sixth-year students work in the clinic as interns for a whole year by spending 1–2 months rotating in various departments. Therefore, sixth-year students are seen as members of the healthcare team who are made responsible for the basic medical care provided. Statistical analysis was carried out using SPSS for Windows Version 17.0 (SPSS Inc., Chicago, IL, USA). Results are expressed as frequencies, percentages, means, and standard deviations. The  $\chi^2$  test was used to verify differences between variables. The study was approved by the Ethical Committee of Selcuk University.

### 3. Results

A total of 890 out of 986 (response rate 90%) students completed the questionnaire; 53.3% of whom were female. Fifty-nine point one percent were in their third academic year and below while the rest were in their fourth academic year and above. The demographic characteristics of the students are listed in Table 1.

#### 3.1. Familiarity with epilepsy

Table 2 represents the responses to questions regarding familiarity with epilepsy.

Of the 890 students, 73.5% answered that they had heard or read about epilepsy, 38.1% responded that they were personally acquainted with someone with epilepsy, and 38.5% reported that they had witnessed a seizure. These figures represent a moderate degree of familiarity with the disease and its clinical expression. The frequencies of hearing or reading about epilepsy or observing a seizure were significantly higher among students in their clinical years compared with those in their basic medical science years ( $p < 0.001$ ). Of three different knowledge source categories concerning epilepsy, the primary source was medical textbooks or health workers, followed by family members or neighbors and mass media.

#### 3.2. Knowledge of epilepsy

The most commonly reported causes of epilepsy were neurologic (70.9%) and genetic (38.4%). About one-fifth of the students attributed the causes of epilepsy to vitamin deficiency (8.8%) and psychiatric (19.1%), infectious (19.5%), mental (4.4%) and hematological disorders (3.4%). According to 4.8% of the students, epilepsy could be a punishment from God, and 2.1% of the students believed that it could be caused by an evil spirit. However, 7.5% did not know of any cause of epilepsy. Significantly, a higher number of females than males reported neurologic causes as causes of epilepsy. On the other hand, more males reported punishment from God as the cause of epilepsy. When knowledge of clinical students was compared with that of their preclinical counterparts,

clinical students significantly more often reported vitamin deficiency and infectious, genetic and neurologic diseases as causes of epilepsy. These numbers showed that the level of medical student education did not appear to influence an appropriate response and also reflects a high degree of misunderstanding of the true nature of epilepsy.

Regarding the symptoms of epilepsy known to the students, sudden loss of consciousness (78.2%) and tonic-clonic movements (70.1%) were the most commonly recognized manifestations of epilepsy, while uncontrolled urination (41.8%) was the least known. In general, clinical students had more information about epilepsy symptoms.

The knowledge of the long-term prognosis of epilepsy among students was also investigated. Although more than half of the students agreed that it was treatable with proper management, the vast majority (88.1%) agreed that it is a dangerous illness and thought that epilepsy is a lifelong condition (81.9%). This belief was higher among female and clinical students compared with that among preclinical students and males ( $p < 0.001$ ). More females and clinical students thought that epilepsy is a lifelong disease ( $p < 0.001$ ).

For treatment, the most commonly reported treatment options for epilepsy were modern medicine (91.6%), brain surgery (25.2%), the Holy Quran (21.2%), and acupuncture (11.4%). "Other methods" of treatment, such as special diets and herbal medicine, were reported by 7.1% and 5.8% of students, respectively. Significantly more preclinical students than clinical students reported acupuncture and herbal medicine as treatment options for epilepsy. The belief in the Holy Quran as a treatment method for epilepsy was commonly reported among the students who believed that epilepsy was a punishment from God and could be caused by an evil spirit. When asked what they would do if they witnessed an individual having an epileptic seizure, three-quarters of the students (75.5%) said that they would keep the airway open, 74.7% of the students said that they would call an ambulance, and about half of the students (50.6%) said that they would insert an object in the patient's mouth. In almost equal proportions, students believed that "firmly holding the patient's hand and arm" and "praying for the patient" could help arrest the seizure. A small portion of the students believed that "onion-smell" or "cologne-smell", splashing water on a patient's face and returning the patient to a seated position could help arrest the seizure. More preclinical students and male students answered that smelling an onion or cologne could help arrest the seizure. Moreover, more preclinical students said that they would call an ambulance or do nothing when they witnessed a seizure. On the other hand, more clinical students said that they would keep the airway open when they witness a seizure.

#### 3.3. Attitude toward epilepsy and a person with epilepsy

A total of 71.8% of the students said that they would refuse to marry a person with epilepsy. Interestingly, 10.8% of respondents declined to express an opinion about marrying a person with epilepsy. There was no statistically significant relationship between gender and negative attitude toward marriage. Nearly all of the students (92.7%) felt that a person with epilepsy could have children. Most students (78.4%) believed that a person with epilepsy can be successful as any other person. In general, by comparing students based on their education years, preclinical students had significantly more negative attitudes than clinical students.

### 4. Discussion

To our knowledge, this is the first study to examine the knowledge, attitudes, and practices regarding epilepsy among medical students in Turkey. The present findings revealed that the percentage of students who had heard about epilepsy was 73.1%, a finding which is similar to previous results from reports among the general public in Turkey [6,7]. Also, these results are less favorable than those reported from studies among university students in developing countries [8–11].

**Table 1**  
Demographic characteristics of the sample.

Parameter	Frequency	Percentage
<i>Class</i>		
Preclinical (1–3 years)	526	59.1
Clinical (4–6 years)	364	40.9
1st year	160	18
2nd year	206	23.2
3rd year	160	18
4th year	151	17
5th year	109	12.3
6th year	104	11.7
<i>Gender</i>		
Female	480	53.9
Male	410	46.1

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