

# Knowledge, perceptions, and attitudes of students of health-related science colleges towards epilepsy in Taif, Saudi Arabia

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## ABSTRACT

**Background:** Epilepsy is one of the most common disorders that may be associated with negative attitudes among general populations. This may be due to poor public awareness and knowledge toward epilepsy. **Aim:** To assess knowledge, perceptions and attitudes of students of health-related science colleges toward epilepsy in Taif. **Methods:** This study was conducted in three health-related science colleges in Taif University. A questionnaire was distributed to students of these colleges. **Results:** More than 80% of the participants have heard or read about epilepsy. About half of them had witnessed a seizure attack. More than three quarters of the participants thought that epilepsy is a neurological disease. In total 97% of the participants stated that convulsions are the main manifestations of epilepsy. In total 77.7% of the participants selected the medical treatment and follow-up as the most effective treatment of epilepsy. More than three quarters of the participants agreed with that epileptic woman can get married and have children. About 90% agreed to work with epileptic persons and become a close friend of them. About half of the participants believed that the equal job opportunity for epileptic and normal persons should be practiced. **Conclusion:** The knowledge, perceptions, and attitudes of students of health-related science colleges toward epilepsy in Taif were acceptable regarding to this study. However, the negative attitudes and misconceptions still exist. Further studies are needed to determine methods of overcoming these negative attitudes and misconceptions.

**Keywords:** Attitudes, epilepsy, knowledge, students, Taif

## Introduction

Epilepsy is a condition in which a person has recurrent seizures.<sup>[1]</sup> A seizure is defined as abnormal disordered discharge of impulses from the brain neurons resulting in temporary

disturbance of motor, sensory or mental functions.<sup>[2]</sup> Seizures may be partial (Convulsions limited to one limb without loss of consciousness) or generalized (Convulsions all over the body with loss of consciousness).<sup>[3]</sup> Seizures and epilepsy are not the same, a seizure is an event and epilepsy is the disease involving recurrent unprovoked seizures.<sup>[4]</sup>

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Seizure episodes result from excessive electrical discharges in a group of brain neurons.<sup>[5]</sup> Different parts of the brain can be the site of such discharges. Seizures usually vary in frequency, from less than one attack per year to several attacks per day.<sup>[6]</sup> One

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seizure does not signify epilepsy. Epilepsy is defined as having two or more unprovoked seizures.<sup>[7]</sup>

Epilepsy is one of the world's oldest recognized conditions, with written records dating back to 4000 BC.<sup>[8]</sup> Fear, misunderstanding, discrimination, and social stigma have surrounded epilepsy for centuries. This stigma continues in many countries today and may have a negative impact on the quality of life for patients with epilepsy and their families.<sup>[9]</sup>

Epilepsy accounts for a significant proportion of the world's disease burden, affecting about 50 million people worldwide.<sup>[10]</sup> Epilepsy is very common in the Kingdom of Saudi Arabia, with a prevalence rate of 6.54 per 1000.<sup>[11,12]</sup> In Saudi Arabia, the awareness and attitudes of the Saudi public towards epilepsy are lower than predicted, especially from college students. A plan should be present to target Saudi Arabia community from the different levels of education and different regions for greater education to reach lower this stigma of epilepsy.<sup>[13,14]</sup> The epilepsy awareness campaigns must be impacted to come through the public barriers faced by epileptic patients. Supernatural belief and faith healing are effective targets for any future awareness to get more precious plans.<sup>[15]</sup> Improvement of the public knowledge and attitudes toward epilepsy may efficiently help the family physicians to convey better health care to the epileptic patients and their families and can effectively improve the primary care services conducted to patients with epilepsy.<sup>[16]</sup> The aim of this study was to assess knowledge, perceptions and attitudes of students of health-related science colleges toward epilepsy in Taif, Saudi Arabia.

## Methods

A cross-sectional study was conducted in three health-related science colleges in Taif University. The questionnaires were distributed to the students of three health-related science colleges at Taif University. This study was carried out over three months (October to December 2019). A written consent was taken from the participants before being involved in the study. This study was approved by the Research Ethics Committee of Taif University, Saudi Arabia and was in accordance with the declaration of Helsinki. This study was approved by the Research Ethics Committee of Taif University, Saudi Arabia on 15/09/2019.

### Inclusion criteria

Male and female students of the college of medicine, college of pharmacy, and college of applied medical sciences, Taif University were included in this study.

### Exclusion criteria

Students of any other university rather than Taif University, students of any other college rather than colleges of medicine, pharmacy, and applied medical sciences, Taif University and students who suffer from epilepsy were excluded from this study.

The participants were approached directly to arrange a 15 min interview with the researchers at a convenient time. The questionnaire was completed by the participants under the supervision of the researchers to improve clarity and limit response bias.

## The questionnaire

The questionnaire was adapted from a literature review of previous studies conducted in several countries.<sup>[13-15]</sup> It is a 20-item structured questionnaire which underwent a forward and backward translation from English to Arabic and the reverse by professional translators. To ensure face validity, the questionnaire was sent to three academics with a wide range of professional experience. Their views and comments were considered and then incorporated, where appropriate, into the final versions of the questionnaire. To assess test-retest reliability, the questionnaire was administered on two occasions to 12 randomly selected students of health-related science colleges. The second testing took place 2 weeks later. Test-retest reliability was calculated using Spearman's correlation coefficient ( $r$ ). The rho-value was 0.81, which implies acceptable test-retest reliability.

The final form of the questionnaire was divided into four parts. The first part consists of five elements about the sociodemographic data of the participants including sex, age, college, educational level, and the presence of a healthcare professional among family members. The second part consists of 4 multiple choice questions and one closed-ended question with three answers (yes, no, and I don't know) evaluating the knowledge of causes, manifestations, first aid measures of epileptic seizures, management of epilepsy, and the role of surgical intervention in treating epilepsy. The third part consists of five yes/no questions assessing the perceptions of epilepsy. The fourth part assesses the respondents' attitudes toward epilepsy and persons living with epileptic patients and consists of 10 questions with the following answers: agree, disagree, and neutral.

## Statistical analysis

The statistical analysis of the results was carried out using the Statistical Package for Social Sciences (SPSS) version 22.0 Inc., Chicago IL, USA. Descriptive analysis was used to calculate the proportion of each group of the participants who responded to each statement in the questionnaire. A Chi-square test was used to identify any significant difference among the participants' responses regarding certain statements in the questionnaire. A *P* value of less than 0.05 was considered statistically significant.

## Results

### Demographic data of the students

Table 1 shows the demographic data of students who gave their opinions in response to the questions included in the questionnaire. The respondents were 51 (12.7%) male and 352 (87.3%) female. In total 120 (29.8%) of the respondents were from 17 to 19 years old, 192 (47.6%) were from 20 to 22 years

old, and 91 (22.6%) were from 23 to 25 years old. Among them were 45 (11.2%) from the college of medicine, 113 (28%) from the college of pharmacy and 245 (60.8%) from the college of applied medical sciences. In total 90 (22.3%) of the students were from the first year, 59 (14.6%) were from the second year, 80 (19.9%) were from the third year, 42 (10.5%) were from the fourth year, 38 (9.4%) were from the fifth year, 65 (16.1%) were from the sixth year and 29 (7.2%) were from the seventh year. 197 (48.9%) of the respondents had a healthcare professional among their family members.

### Students' knowledge about epilepsy

Figure 1 shows the data obtained by student respondents who gave their opinions about the cause of epilepsy. The majority of the participants (84.1%) attributed epilepsy to neurological disease while 40.7% of them stated that epilepsy results from brain disease. Around 31.3% of the students think that epilepsy is due to emotional stress. In total 19.4% of the students believed that epilepsy is due to psychiatric disease. A total of 38.2% of the participants stated that epilepsy is a hereditary disease. In total 1.5% of the students think that epilepsy is due to blood disease. A total of 15.6% of the students attributed epilepsy to the use of drugs or toxins while 5% of the students considered infections to be the main cause of epilepsy.

When the students were asked about the manifestations of epilepsy, the majority of the respondents (97%) stated that epilepsy is usually manifested by convulsions while 60% reported that brief loss of consciousness is the characteristic feature of epilepsy. In total 45.4% of the students thought that epilepsy is manifested by foaming from the mouth. A total of 27.3% of the respondents stated that changes in behavior are the main manifestation of epilepsy while 18.1% reported that epilepsy is manifested by screaming [Figure 2].

Regarding the best way for dealing with someone having acute seizures, about half of the respondents (48.1%) reported that the

best way is to take the patient away from danger, 40.4% thought that a spoon or a cloth should be put in the patient's mouth while 40.4% stated that the best way is to put the patient on one side and hold. Moreover, 5.5% of the participants advised to put the patient's head down, 4.7% suggested forcing some medicine down the patient's throat, 1% of the students thought that putting the patient's head in a toilet hole is the most suitable way for dealing with acute seizures while 22.1% of the participants did not know [Figure 3].

Interestingly, when the students were asked about the best line of treatment of epilepsy, the majority of them (77.7%) reported that medical treatment and follow-up is the best way for management of epilepsy. However, 3.2% of the participants thought that herbal remedies are effective for treatment of epilepsy, 3% suggested cauterization as the main line of treatment, and 11.7% thought that epilepsy is untreatable disease

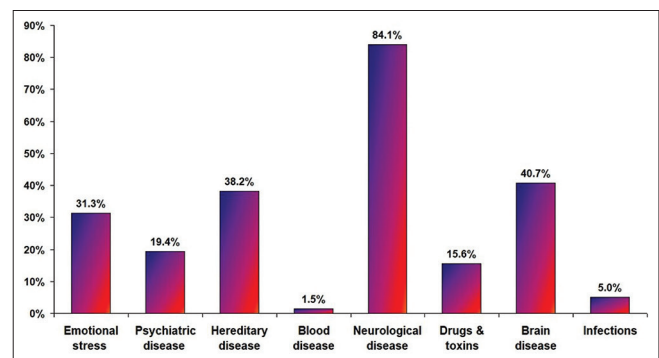


Figure 1: Knowledge of the participants regarding the cause of epilepsy

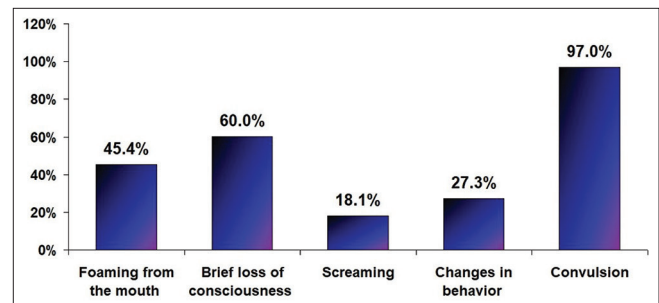


Figure 2: Knowledge of the participants regarding the manifestations of epilepsy

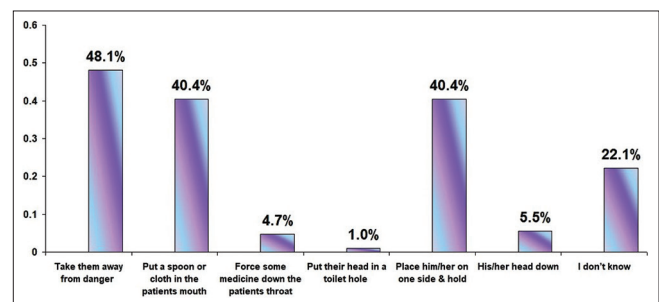


Figure 3: Knowledge of the participants regarding the best way for dealing with someone having acute seizures

Table 1: Demographic data of the participants

	Demographic information	Number (%)
Gender	Male	51 (12.7%)
	Female	352 (87.3%)
Age	17-19 years	120 (29.8%)
	20-22 years	192 (47.6%)
	23-25 years	91 (22.6%)
College	Medicine	45 (11.2%)
	Pharmacy	113 (28%)
	Applied medical sciences	245 (60.8%)
Educational level (In years)	1 <sup>st</sup>	90 (22.3%)
	2 <sup>nd</sup>	59 (14.6%)
	3 <sup>rd</sup>	80 (19.9%)
	4 <sup>th</sup>	42 (10.5%)
	5 <sup>th</sup>	38 (9.4%)
	6 <sup>th</sup>	65 (16.1%)
	7 <sup>th</sup>	29 (7.2%)
Presence of a health care professional in the family	Yes	197 (48.9%)
	No	206 (51.1%)

while 15.4% of the respondents did not know the best line of treatment [Figure 4].

Regarding the knowledge about the ability of surgery to treat medically uncontrollable cases of epilepsy, 39.7% of the participants reported that surgery is ineffective in these conditions while 14.1% thought that surgery may have a role in these cases while about half of the students (46.2%) did not know [Figure 5].

### Students' perceptions toward epilepsy

Figure 6 represents the responses of the students to questions that determined their perceptions toward epilepsy. Most of the students (81.1%) reported that they previously heard or read about epilepsy and 70.2% of them stated that they had an acquaintance with epilepsy. About half of them (50.1%) had witnessed a patient during seizure attack. However, the majority of the respondents (85.1%) did not attend a course on controlling seizures and 82.6% of them had not a family member with epilepsy.

### Students' attitudes toward epilepsy

Figure 7 shows the responses of the students to questions that determined their attitudes toward epilepsy. The majority of the respondents (85.9%) did not think that epilepsy is a form of madness or insanity. Around 55.3% of the participants

agreed to the statement that "Epileptic patient should have the same employment opportunity as normal persons". Most students stated that epileptic women can get married (76.4%) and have their own children (87.3%). Interestingly, the majority of the respondents (90.6%) accepted to work with epileptic persons.

## Discussion

In the present study, there was a high level of knowledge about epilepsy where the majority of the participants (84.1%) attributed epilepsy to neurological disease, 97% stated that epilepsy is usually manifested by convulsions, 48.1% reported that the best way to deal with epileptic patient with acute seizure is to take him away from danger, 77.7% thought that medical treatment and follow-up is the most suitable line of treatment of epilepsy, and 39.7% reported that surgery is ineffective for treatment of medically uncontrollable cases of epilepsy. These values are very close to what were reported from the studies that were carried out in Riyadh<sup>[16]</sup> and Al-Kharj<sup>[13]</sup> and more preferable than what were reported by similar studies conducted in Majmaa,<sup>[17]</sup> Aseer<sup>[18]</sup> and Qassim.<sup>[19]</sup> This may be attributed to the improved life style in Taif city with increased public knowledge and awareness about epilepsy.<sup>[20]</sup>

Although the good level of knowledge about the etiology and treatment of epilepsy, misconceptions were still reported in the present study. The good level of knowledge of epilepsy was implied by the students who stated that neurological or brain diseases are the main causes of epilepsy and reported that the medical treatment and follow-up are the best treatment for epilepsy. On the other hand, the false beliefs and misconceptions were represented by those individuals who considered evil eye

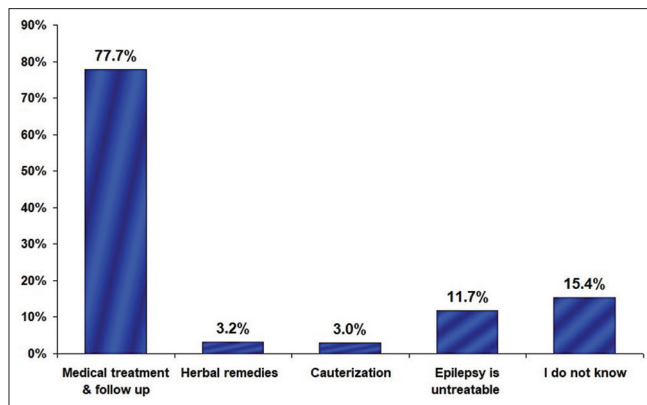


Figure 4: Knowledge of the participants regarding the best treatment of epilepsy

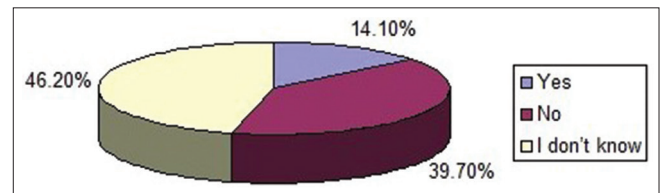


Figure 5: Knowledge of the participants regarding the ability of surgery to treat medically uncontrollable cases of epilepsy

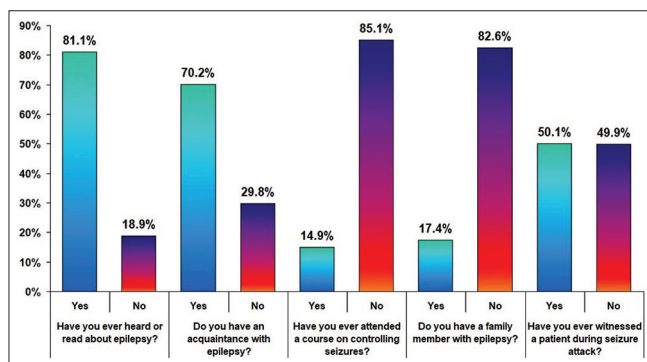


Figure 6: Perceptions of the participants toward epilepsy

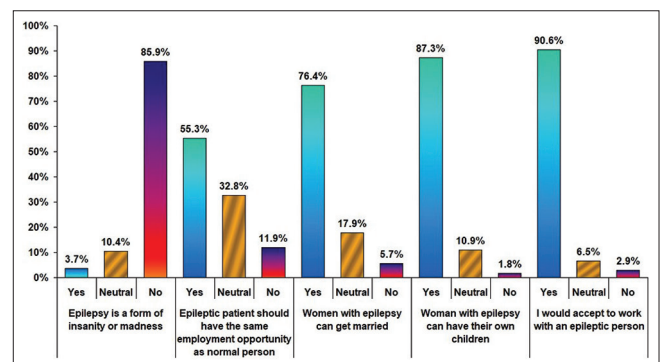


Figure 7: Attitudes of the participants toward epilepsy



as the cause of epilepsy, thought that putting a cloth or a spoon in the mouth of epileptic patient is the best way for dealing with a patient during an acute attack and reported that the spiritual rituals or religious healing is the most effective treatment of epilepsy. Altowayan *et al.*<sup>[19]</sup> attributed these false beliefs to the lack of awareness programs that are directed toward the general population and the university students in Saudi Arabia to improve their knowledge and overcome the misconceptions about epilepsy.

Compared to a previous study that was carried out by Alaqeel and Sabbagh,<sup>[16]</sup> our study reported a larger quantity of the participants who were up to date regarding the role of surgery in treating epilepsy which indicated improvement in the knowledge about the role of surgery in the management of medically untreatable cases of epilepsy. However, about half of the students (46.2%) still did not know whether surgery has a role in management of epilepsy or not which indicates the vital need for training programs and workshops about the lines of management of epilepsy.<sup>[21]</sup>

In the present study, the participants showed generally good perception toward epilepsy. Most of the respondents (81.1%) reported that they previously heard or read about epilepsy and 70.2% of them stated that they had an acquaintance with epilepsy and about half of them (50.1%) had witnessed a patient during seizure attack. This was in the same line with the results of previous studies that were carried out in Riyadh<sup>[16]</sup> and Al-Kharj<sup>[13]</sup> but was more preferable than studies that were performed in Assir<sup>[18]</sup> and Qassim.<sup>[19]</sup> However, the majority of the respondents (85.1%) reported that they didn't attend a course on controlling seizures which was in the same line with the results of Alsohibani *et al.*<sup>[22]</sup> who concluded that more campaigns are needed in order to increase societal awareness and improve perceptions toward epilepsy, obtaining help from governmental agencies, health institutions, mass media, and other health-related organizations.

In the present study, there was generally a positive attitude toward epilepsy and epileptic patients. The majority of the students (85.9%) did not think that epilepsy is a form of madness or insanity and more than half of them agreed that the epileptic patient should have the same employment opportunity as normal persons. Moreover, the majority of the respondents (90.6%) accepted to work with epileptic persons. This was in agreement with the results of the study that was carried out by Al-Dossari *et al.*<sup>[13]</sup> and was preferable than the results of the studies that were performed by Almutairi *et al.*<sup>[17]</sup> and Muthaffar and Jan<sup>[23]</sup> which reflects improvement in the attitudes of the Saudi individuals toward employment of epileptic patients.

In the present study, most participants stated that epileptic women can get married (76.4%) and have their own children (87.3%). Interestingly, these data nearly approximate the results of the studies carried out by Al-Dossari *et al.*<sup>[13]</sup> and Alshahrani *et al.*<sup>[24]</sup>

and reflect positive attitudes toward females with epilepsy. Also, these results were favourable than the findings of the previous studies carried out by Almutairi *et al.*<sup>[17]</sup> and Muthaffar and Jan<sup>[23]</sup> verifying a comparatively favorable reproductive status of the epileptic patients. However, most of the participants in the present study were females who may give responses in favor of their gender.

In the present study, there was significant increase in the knowledge, perceptions and attitudes toward epilepsy among female students compared to male students. This was in agreement with Algahtani *et al.*<sup>[21]</sup> who attributed these results to increased education level and the extensive use of the electronic media by females than males.

## Conclusion

In conclusion, knowledge, perceptions and attitudes of the students of health-related science colleges toward epilepsy in Taif were acceptable regarding to this study. However, the negative attitudes and misconceptions still exist. Further studies are needed to determine methods of overcoming these negative attitudes and misconceptions.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

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