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ORIGINAL ARTICLE

A cross-sectional study to explore the awareness and knowledge of epilepsy among health colleges' students in relation to their demographic differences

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ABSTRACT

Background: Epilepsy encompasses a challenging health problem that affecting millions of people globally. This study-surveyed student from different health-related colleges in the Makkah region of western Saudi Arabia.

Methods: A survey-based study was carried out between March 2021 and September 2021. All health colleges were included in this study. The study compared the knowledge and awareness of epilepsy and recommended strategies to bridge this knowledge gap.

Results: The number of participants in the current study was 354. Their mean age was 22.6 ± 2.03 years. Among the studied subjects, 49.3% participants were males and 50.7% were females. The majority were fourth-year students, while intern students were the least represented. The College of Medicine represented the predominant proportion among the colleges. The majority of students were single. Moreover, the associations between the level of awareness and participants' age, marital status, and students' college were significantly positive (*p*-values: 0.048, 0.017, and 0.020 respectively).

Conclusion: Out of all variables included, only age, marital status, and certain colleges showed strong conformity with the degree of awareness and knowledge.

Keywords: Knowledge, awareness, epilepsy, health students, Saudi Arabia.

Introduction

Epilepsy is the most common neurological disorder, affecting more than 50 million people worldwide [1,2]. In the Kingdom of Saudi Arabia, epilepsy occurs in 6.54 out of every 1,000 individuals [1,3]. Such common and chronic neurological disorder is associated with a significant social and economic burden to the patients, their families and the healthcare system [3-5]. In the developing countries, the frequency of epilepsy is greater compared with the developed countries [6,7]. There is a lack of knowledge and awareness about epilepsy in the common population and even in healthcare professionals [6,8,9], and that reflects many problems in daily life including employment, education, and social status [6,10,11], due to lack of awareness and false beliefs about epilepsy that reflect the social survival of epilepsy patient [2,6,12]. Health related students are the future physicians of society and during their undergraduate period, they can be a source of health awareness and opinion formers to the general population. For this purpose, their knowledge must be assessed, thus they may play a pivotal role in society to educate the populace regarding various diseases. However, limited research

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investigating health related students' knowledge at Saudi Arabia's universities comparing to international studies [13-15]. Therefore, we came forward with an objective to determine an average estimate of health-related students acquainted with the knowledge of epilepsy at Umm Al-Qura University (UQU) at Makkah city, kingdom of Saudi Arabia.

Subjects and Methods

A cross-sectional study was conducted using a self-administered structured questionnaire at UQU, Saudi Arabia. A random sampling technique and multistage stratification method were applied to stratify students according to gender, college, and students' academic years. We concentrated on six specialty colleges at UQU, namely, the College of Medicine, College of Applied Medical Sciences, College of Dentistry, College of Pharmacy, College of Nursing, and College of Public Health and Health Informatics. The minimum possible sample size to achieve a precision of ±5% with a 95% confidence interval is 350 according to Epi Info™ 7.1.5 (Center for Disease Control and Prevention; Atlanta, GA).

The survey was classified into three parts. First, the educational and demographic information of students was collected. Then, the second section includes questions about epilepsy. The third section aimed to find out the general attitude of the participants. The survey question's ideas were driven from previously published researches [13,15-17]. Consequently, final scores were calculated according to the correct answer in which each correct answer was given a score of one, while incorrect answers were given a score of zero. Poor knowledge was considered if total scores were below 75%, while those over 75% signified good knowledge. All the questionnaire participants' requests were answered on the spot by the researcher. Participants were asked to give their consent and they voluntarily responded to the questionnaire. The collected data were extracted from an Excel sheet then transfer into SPSS version 23. Frequency was calculated for the categorical variables and mean ± standard deviation for the continuous variables. The Chi-square test was used to compare the categorical variables.

Results

A total of 354 students of health-related students were surveyed. Table 1 shows students' educational demographic dissemination; about 49.3% were males, while females represented 50.7%. The mean age of participants was 22.6 ± 2.03 years; the 22- and 24-year-old age groups were predominantly represented (18.4%). On the other hand, the 29- and 30-year-olds were the least represented (0.8% and 1.1%). All age groups are labelled in Table 1. Single participants (244, 69.1%) were markedly more represented than married participants Table 1. Students of the College of Medicine were the most signified among all the colleges (36.3%). Conversely, the least represented was the College of Public Health and Health Informatics (7.4%). Moreover, fourth-year students were predominant (96, 27.2%) compared with intern students (9.1%). Concerning students' level of awareness of epilepsy, the majority were aware (217, 61.5%), while 136 (38.5%) were not aware (Table 1). On the other hand, regarding students' level of knowledge, most students had poor knowledge (94.9%) (Table 1). Concerning students' past history of epilepsy, (33.1%) of students have been diagnosed before with epilepsy, while 66.9% of students have no past history (Table 1). On the other hand, students' family history, majority of students have no family history of epilepsy (67.4%), while 32.6% has. Six subgroups of questions aimed to assess the level of knowledge of epilepsy. Students attitude regarding using first aid for epileptic patients were described in Figure 1, which majority of students did not know (56.37%), while students attitude concerning epileptic medications as described in Figure 2; most of students thinks that epileptic medications can affect patients' daily activities additionally, most of students thinks that epileptic patients can play sports (Figure 3).

Epilepsy knowledge diverse among the subgroups associated with respondents' demographic data, as described in Table 3; there was a significant difference between participants' age, marital status, and students' college (*p*-values, 0.048, 0.017, and 0.020 respectively). However, there was no significant difference between students' gender and academic years.

Discussion

This survey of health-related students at UQU in a western Saudi city suggested that the knowledge and awareness of epilepsy are inadequate but can be improved. The presented study demonstrates that the majority of students did hear about epilepsy (61.5%). This is strongly agreeing with the Saudi study represented in which 94.79% of the participated students did hear about epilepsy [16]. Majority of the participants in the current study have no family history of epilepsy (66.9%), this agrees with the Saudi study in which majority have no family history concerning epilepsy (86.598%) [16]. A study suggested that individuals' regions are influencing the public awareness about epilepsy [16]. Majority of our study participants believes that epilepsy is contiguous in its nature, this is far different from several studies represented [1,16,18]. Most of the students in the current study corresponding about all types of seizures (31.7%); however, 6.5% and 13.3% were aware of "absence seizures" and "simple partial seizures". In contrast, in the Ethiopian study [15], 97.4% and 96.5% were aware

Table 1. *Demographic data.*

Variable	Category	Frequency (%)
Age [mean (SD)]	22.6 ± 2.03	
Age	19	17 (4.8)
	20	40 (11.3)
	21	36 (10.2)
	22	65 (18.4)
	23	79 (22.4)
	24	65 (18.4)
	25	32 (9.1)
	26	5 (1.4)
	27	7 (2)
	29	3 (0.8)
	30	4 (1.1)
Gender	Male	174 (49.3)
	Female	179 (50.7)
Academic year	Second year	53 (15)
	Third year	69 (19.5)
	Fourth year	96 (27.2)
	Fifth year	65 (18.4)
	Sixth year	38 (10.8)
	Intern	32 (9.1)
Collage	College of Medicine	128 (36.3)
	College of Applied Medical Sciences	67 (19)
	College of Dentistry	62 (17.6)
	College of Nursing	34 (9.6)
	College of Pharmacy	36 (10.2)
	College of Public Health and Health Informatics	26 (7.4)
Marital status	Single	244 (69.1)
	Married	109 (30.9)
Heard about epilepsy	yes	217 (61.5)
	no	136 (38.5)
Past history of epilepsy	yes	117 (33.1)
	no	236 (66.9)
Family history of epilepsy	yes	115 (32.6)
	no	238 (67.4)
Knowledge score of epilepsy	Good knowledge	18 (5.10)
	Poor knowledge	335 (94.90)

of "absence seizures" and "simple partial seizures". Moreover, in the Thailand study, most did not distinguish absence seizures (88.2%) or absence seizures (66.4%) [17].

Regarding epilepsy management, majority of the students in this study were knowledgeable about management of epilepsy (32%); however, in the Ethiopian study [15], 57.4% of the participants were knowledgeable about management of epilepsy. A study suggested that respondents who received epilepsy-related education were obviously more aware of the emergency management of captured patients [19]. This demonstrates the valuable benefits of educational activities that focus on first aid management of epileptic seizures [19]. This study was aimed to determine and estimate the level of knowledge and awareness of epilepsy and it is detriments

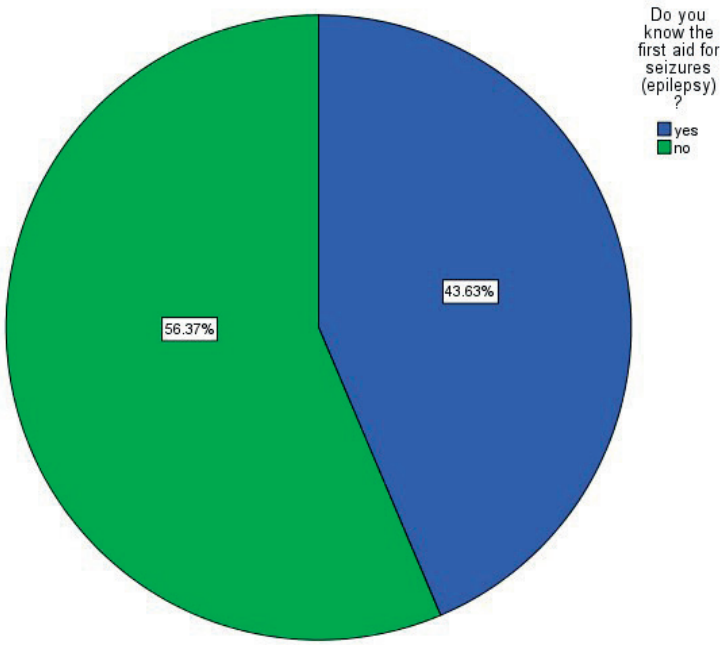

Figure 1. *Knowledge regarding first aid for seizures.*

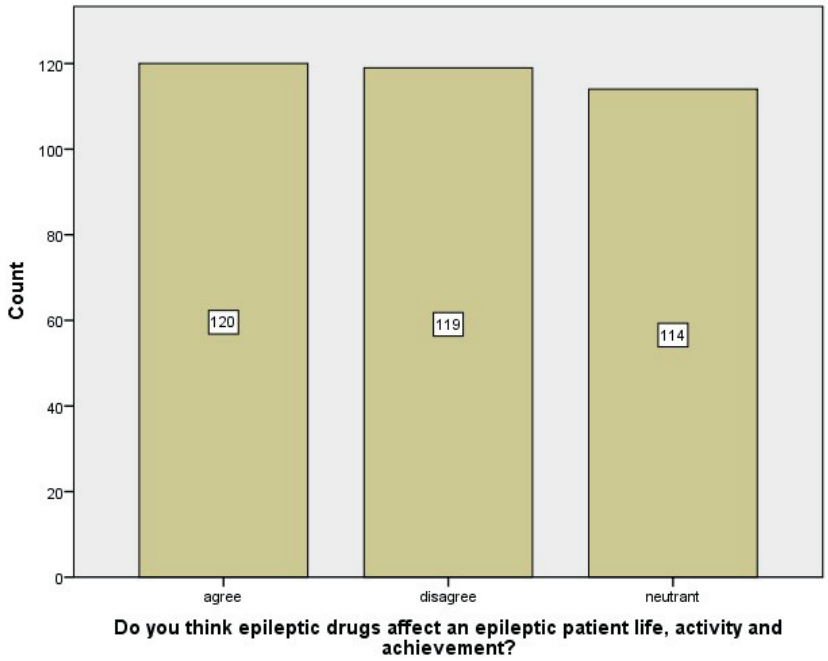

Figure 2. *Knowledge regarding effect of epileptic drugs.*

among health-related students at UQU in Makkah city, Saudi Arabia. Our study represented a poor level of knowledge among majority of students (94.90%), this is far different from several studies [15,17].

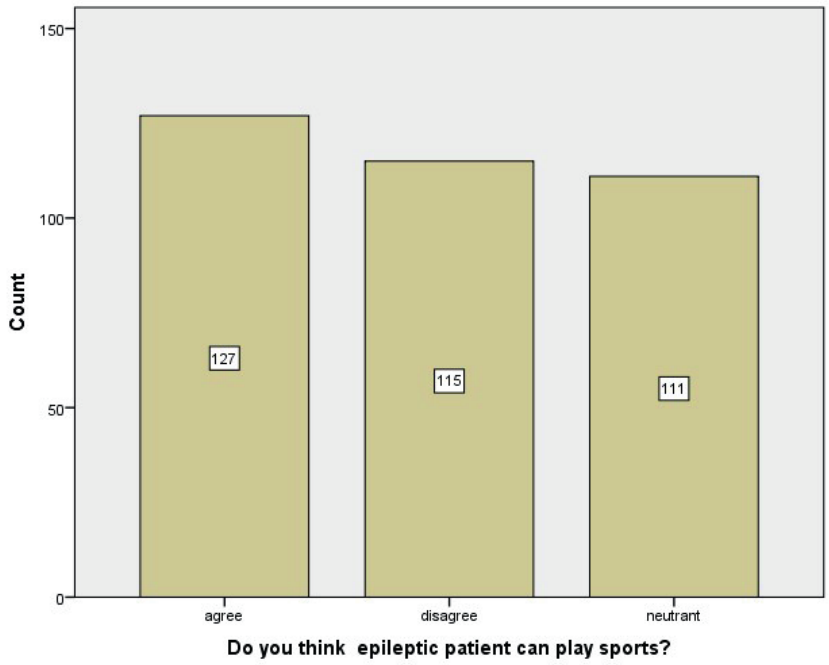

Figure 3. *Knowledge regarding epileptic patient on playing sports.*

Table 2 . *Percentage of the correct answers.*

Question	Correct answer *n* (%)
Is epilepsy contagious?	112 (31.7)
Which of the following causes epilepsy?	119 (33.7)
Which of the following considered type(s) of seizures?	112 (31.7)
Do you think epilepsy can be cured?	163 (46.2)
How long antiepileptic drugs should be taken?	113 (32)
What are the consequences of epilepsy?	103 (29.2)

Narrowing the gap between epileptic patients and health facilities is a major problem, which can only be overcome by substantially improving the knowledge of health personnel [20-22]. Assessing the level of knowledge of health personnel about a highly neglected and stigmatized disease is seen as a daunting challenge [20]. The low level of knowledge and misunderstandings found in of the interviewees indicated that educational programs were needed to demystify epilepsy [23]. Our study representing no significant differences between level of knowledge and academic years of students. Generally, older students perform better, which can easily be attributed to training and experience [24]. This agrees with the Saudi study [25] in which, students of the clinical year have an upright belief, because the level of education will affect people's opinions. Although this trend may indicate that clinical training and lectures have had a positive impact on epilepsy awareness, it does not reflect the extent and speed of its occurrence [24]. However, whether students retain their knowledge for a long time after leaving school is controversial, as evidenced by the low level of knowledge shown by most doctors [24].

These study results are not illustrative among all Saudi's universities thus; we recommend more investigating concerning health-related students epilepsy knowledge.

***Table 3**. Association between level of awareness and demographic data.*

Variable	Level of knowledge		*p*-value
	Poor *n* (%)	Good *n* (%)	
19	15 (88.2)	2 (11.8)	0.048*
20	35 (87.5)	5 (12.5)	
21	36 (100)	0 (0)	
22	60 (92.3)	5 (7.7)	
23	74 (93.7)	5(6.3)	
24	65 (100)	0 (0)	
25	32 (100)	0 (0)	
26	5 (100)	0 (0)	
27	7 (100.0)	0 (0.0)	
29	3 (100.0)	0 (0.0)	
30	3 (75)	1 (25)	
Gender			
Male	165 (94.8)	9 (5.2)	1.000
Female	170 (95)	9 (5)	
Collage			
College of medicine	115 (89.8)	13 (10.2)	0.020*
College of applied medical sciences	65 (97)	2 (3)	
College of dentistry	62 (100)	0 (0)	
College of nursing	33 (97.1)	1 (2.9)	
College of pharmacy	36 (100)	0 (0)	
College of public health and health informatics	24 (92.3)	2 (7.7)	
Marital status			
Single	227 (93)	17 (7)	0.017*
Married	108 (99.1)	1 (0.9)	
Academic year			
Second year	51 (96.2)	2 (3.8)	0.538
Third year	63 (91.3)	6 (8.7)	
Fourth year	94 (97.9)	2 (2.1)	
Fifth year	61 (93.8)	4 (6.2)	
Sixth year	36 (94.7)	2 (5.3)	
Intern	30 (93.8)	2 (6.3)	

Conclusion

This study conclude that majority of the participants were not knowledgeable about epilepsy so additional plans might be verbalized to raise the public's awareness and health burden to protect the reliable information passed to the public to discover and manage this serious dilemma.

List of Abbreviations

UQU Umm Al-Qura University

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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None.

Consent to participate

Written informed consent was obtained from all the participants.

Ethical approval

The study was carried out from March 2021 to September 2021 after obtaining ethical approval from UQU's research ethics committee (ethical number: HAPO-02-K-012-2021-08-720).

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