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Teachers' knowledge about first aid epilepsy and seizures in Al-Qunfudah, Saudi Arabia

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ABSTRACT

Background: Epilepsy is the commonest neurological disorders and one of the oldest diseases affecting humans. Epilepsy affects 6.54 out of 1,000 people, most of them are adolescents in Saudi Arabia. Children with epilepsy live under the estimate that at any time they may not be able to function normally or participate in their normal daily activities and they also have a risk of experiencing seizure attacks at school. Thus, Teachers' knowledge about epilepsy and first aid in seizures can have a major impact on a child's health and the goal of this research is to assess the awareness, knowledge and attitudes of teachers toward the disease in Al- Qunfudah region, Saudi Arabia. *Method:* A self-administered questionnaire was distributed electronically among school teachers in Alqunfudah region, to assess primary demographic data about their knowledge regarding epilepsy, seizure first aid and post-seizure care. *Result:* Our sample included 1171 school teachers, the contributed male teachers were 32.54% and female teachers were 67.46%. The most of contributor had moderate knowledge of epilepsy and be deficient in first aid training. 88.98% recognized epilepsy as neurological disease. Our study showed marked relationship between knowledge score and qualification (P-value= 0.05). *Conclusion:* The teachers in Al-qunfudah region have moderate knowledge of epilepsy and be deficient in first aid training. We recommend more health education about epilepsy and awareness campaigns, adequate training for first aid of epileptic seizures.

Keywords: Epilepsy, school teacher, AlQunfuda, Students, seizure.

1. INTRODUCTION

A seizure is defined as an abnormal discharge of impulses from the brain neurons leading to transient interruption of motor, sensory or mental functions. It is maybe partial (Convulsions limited to one extremity with realization) or generalized (affect all over the body with loss of responsiveness and awareness) (Kabel et al., 2020). Epilepsy is a chronic disorder characterized by recurrent seizures, the most difficult part of which is the

inability to predict when and where the next attack will happen (Habbash et al., 2022).

According to The World Health Organization, (WHO), epilepsy is known as one of the oldest human diseases and the commonest neurological disorder affecting individuals (Al-Harbi et al., 2018). 60% of epilepsy cases are unknown. However, it can be a consequence of injury, tumor, encephalitis, stroke and birth defects that occur from pathological processes called epileptogenesis. However, the pathophysiology of this excessive synchronization remains unclear. Epilepsy is a result of the interaction between heredity, environmental factors and post-infection complications (Alsharif et al., 2017). The prevalence is estimated at any given time to be about 50 million (Almutairi et al., 2016). In Saudi Arabia, epilepsy occurs in 6.54 out of 1000 people most of them adolescents (Habbash et al., 2022; Al Rajeh et al., 2001).

Children suffering from epilepsy loss of the ability to live a normal life and participates the usual life activities. Usually suffering from negative psychological concepts varying from them people unpopularity to self-efficacy impairment interfering with them usual normal life (Abdel Ghaffar et al., 2021). And also has a risk of experiencing epileptic fits while at school the school teachers play a vital role in the primary response protecting the children from harming themselves during the attack and deciding the case of the children needs to be transferred to hospital or not after the attack (Alkhotani et al., 2019). The knowledge of the schoolchildren teachers provides a great impact on the health of the children (Hsieh and Chiou, 2001). Several previous studies done on the first aid during the seizures and reported there are very poor practice (Al-Harbi et al., 2018; Alkhotani et al., 2019; Alqahtani, 2015; Alamri et al., 2018). There is a lack of literature about the knowledge of Epilepsy in Alqunfudah, so the aim of our study is to assess the teacher's knowledge about first aid against seizures of epilepsy among AlQunfuda populations.

2. METHOD

Our study is a cross-sectional study with an online questionnaire was conducted among AlQunfedah school teachers started from August 2022 to December 2022. We used the Raosoft website to calculate the required sample size for school teachers in Alqunfudah which is estimated to be 364 with a 95% confidence level and confidence interval of 5%.

The self-administrated questionnaires were translated from English to Arabic to be familiar to the all participant. The inclusion criterion was all teachers in all educational levels in the Alqunfudah region and the exclusion criteria were teachers outside Alqunfudah regions and non-teachers, Blind, non-communicative, intellectually disabled and severely demented patients.

The questionnaire of our study consisted of two main points: First on discussed demographic distribution (age, city, nationality, gender, qualification), second one examined epilepsy knowledge and attack first aid. It is formed of six questions the response of the teachers classified into three categories (good, moderate and poor) reflecting their knowledge. Our collected data inserted in Excel sheet and analyzed statically by SPSS-21 package software (SPSS Inc., Chicago, IL, USA). Descriptive analyses expressed in the form of frequency and percent.

Ethical approval

An ethical approval (HAPO-02-K-012-2022-11-1225) was obtained from Umm Alqura University ethical committee.

3. RESULT

The demographic distribution of school teacher in Al Qunfudhah, Saudi Arabia. With male teachers of 32.54% and female teachers of 67.46%. Aged from 20s to the 60s and the mean of the ages being at 40s (99.40%) are Saudi. Most of the teachers had a bachelor's degree (72.42%), whereas 20.32% had a diploma and 6.83% had master, respectively. only 0.43% had a PhD degree. 60.03% of teachers with more than 10 years' experience in the field of teaching (Table 1, 2) (Figure 1).

Table 1 Demographic distribution of the teachers.

			n	%
1	Sex	Female	790	67.46%
		Male	381	32.54%
2	Age	29 and less	175	14.94%
		30 – 39	298	25.45%
		40 – 49	592	50.56%
		50 – 59	101	8.63%
		60 and above	5	0.43%
3	Nationality	Non-Saudi	7	0.60%

		Saudi	1164	99.40%
4	Qualification	Bachelor	848	72.42%
		Diploma	238	20.32%
		Master	80	6.83%
		PhD	5	0.43%
5	Education	Primary	489	41.76%
		Secondary	277	23.65%
		High school	405	34.59%
6	Experience	5 years and less	261	22.29%
		6 to 10 years	207	17.68%
		> 10 years	703	60.03%

Significant greater increase in Participants who are 29 or less compared with any other age categories.

Table 2 Association between Epilepsy and first aid knowledge and Sociodemographic data (n=1171)

		Knowledge score			
		Poor Knowledge (124)	Fair Knowledge (573)	Good Knowledge (474)	
Sex	Female	78 (62.90%)	391 (68.24%)	321 (67.72%)	p > 0.05 The chi-square statistic is 1.3455. P= 0.510302.
	Male	46 (37.10%)	182 (31.76%)	153 (32.28%)	
Age	29 and less	28 (22.58%)	82 (14.31%)	65 (13.71%)	p < 0.05 The chi-square statistic is 20.5762. P= 0.00836.
	30 – 39	24 (19.35%)	150 (26.18%)	124 (26.16%)	
	40 – 49	54 (43.55%)	285 (49.74%)	253 (53.38%)	
	50 – 59	16 (12.90%)	53 (9.25%)	32 (6.75%)	
	60 and above	2 (1.61%)	3 (0.52%)	0 (0.00%)	
Nationality	Non-Saudi	1 (0.81%)	4 (0.70%)	2 (0.42%)	p > 0.05 The chi-square statistic is 0.4345. P= 0.804719.
	Saudi	123 (99.19%)	569 (99.30%)	472 (99.58%)	
Qualification	Bachelor	79 (63.71%)	422 (73.65%)	347 (73.21%)	p > 0.05 The chi-square statistic is 6.83059. The p-value is 0.336799. The result is not significant at $\alpha = 0.05$.
	Diploma	34 (27.42%)	111 (19.37%)	93 (19.62%)	
	Master	11 (8.87%)	38 (6.63%)	31 (6.54%)	
	PhD	0 (0.00%)	2 (0.35%)	3 (0.63%)	
Education	Primary	49 (39.52%)	240 (41.88%)	200 (42.19%)	p > 0.05 The chi-square
	Secondary	30 (24.19%)	126 (21.99%)	121 (25.53%)	
	High school	45 (36.29%)	207 (36.13%)	153 (32.28%)	

					statistic is 2.789295. P= 0.593682.
Experience	5 years and less	30 (24.19%)	115 (20.07%)	116 (24.47%)	p > 0.05
	6 to 10 years	25 (20.16%)	97 (16.93%)	85 (17.93%)	
	> 10 years	69 (55.65%)	361 (63.00%)	273 (57.59%)	The chi-square statistic is 4.8221 P= 0.306041.
Training on first aid for seizure	No	112 (90.32%)	505 (88.13%)	374 (78.90%)	p < 0.05
	Yes	12 (9.68%)	68 (11.87%)	100 (21.10%)	The chi-square statistic is 20.444. P= 0.000036.

knowledge of epilepsy and first aid

88.98% of respondents correctly answered the item "Etiology of epilepsy". Most teachers (81.30%) believed that an available treatment is there. Likewise, 81.30% of responders believed that antiepileptic medication could cause dependency. Only 15.37% of teachers did training on first aid for seizures. Most respondents (64.22%) correctly answered the item "How do you respond during a seizure attach) and 60.03% responded in a correct manner to the question "What care will you provide after the seizure ends?". 32.62% believed that the transportation of students to hospital must be when the time of the seizure exceeds than 5 minutes also when the seizures recurrence and the student does not wake up (Table 3) (Figure 1).

Table 3 Participants' knowledge of Epilepsy and first aid based on the questions (n=1171)

			n	%
1	Etiology of epilepsy	Jinn	17	1.45%
		Neurological disease	1042	88.98%
		Psychological disease	112	9.56%
2	Treatment available	No	219	18.70%
		Yes	952	81.30%
3	Medication dependency	No	219	18.70%
		Yes	952	81.30%
4	Training on first aid for seizure	No	991	84.63%
		Yes	180	15.37%
5	During a seizure attack, how do you respond?	Read the Quran	46	3.93%
		Ensure the student safety, and ask for help	752	64.22%
		Open his/her mouth and put gauze in it	373	31.85%
6	Post-seizure care	Read the Quran	33	2.82%
		Put the student on one of his sides and asking the help from the surrounding	703	60.03%
		The teacher tries to walk up the student	180	15.37%
		Wah student face with a plenty of water and introduce to him water to drink	255	21.78%
7	Hospital transportation?	a. Immediately if a seizure occurred	220	18.79%
		b. if the time of the seizure excedss 5 minutes	125	10.67%
		c. If a seizure continued for more than 10 minutes	87	7.43%
		d. If the seizures time lasts 20 minutes or	41	3.50%

		more		
		e. If the recurrence of seizure increases and still the student did not wake up	97	8.28%
		f. Both A & B	219	18.70%
		g. Both B & E	382	32.62%

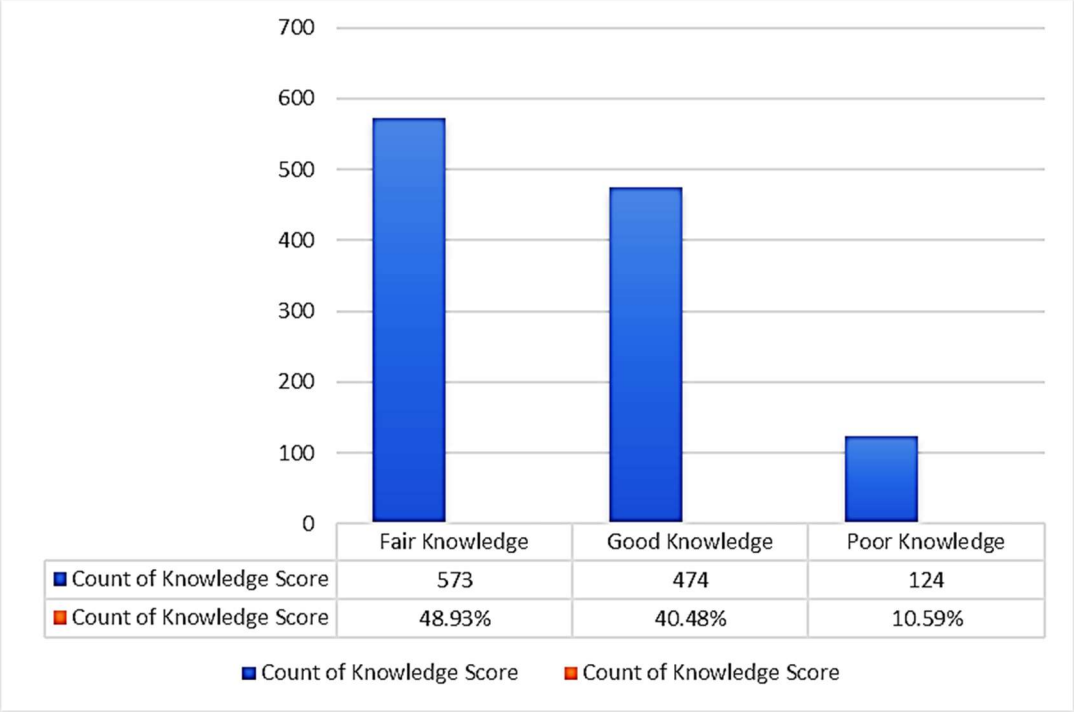

Figure 1 Participants Knowledge about Epilepsy and first aid (n=1171)

4. DISCUSSION

The current study aimed to assess the awareness and knowledge about the first aid for epilepsy and seizure among teachers in Al-qunfudah governate, Saudi Arabia. Worldwide, there are greater than 50 million people living with epilepsy, making it a common condition. It is approximately 6.54 per 1000 adults and children in Saudi Arabia (Al Rajeh et al., 2001). The health, performance and social skill development of a child can be significantly impacted by the teachers' understanding of epilepsy and seizure first aid (Hsieh and Chiou, 2001). Therefore, awareness of the processes of managing this illness and ways to reduce the impact of it on students is essential that teachers must be aware of.

In this study, the majority of respondents were aware of etiology of epilepsy, which 88.98% of them perceived epilepsy as neurological disease. This consistent with another study was conducted in Makkah (Alkhotani et al., 2019). In addition, only 1.45% of our participants believed that Jinn is epilepsy cause. This was supported by another findings of study in Jeddah, which stated that only 1.7% of our participants believed that Jinn is the main cause of epilepsy (Kanjo et al., 2021). This discrepancy can be attributable to recent advancements in teachers' epilepsy knowledge. Additionally, the majority of teachers (81.30%) thought that epilepsy had a therapeutic option. According to another study in India showed 83% of the teachers in our survey thought medication was the basis of treatment for epilepsy and that it may be cured (Goel et al., 2014). A previous study in Makkah found somewhat lower results, revealing that 73% of teachers were aware that epilepsy sufferers can receive therapy (Alkhotani et al., 2019). On the other hand, a different survey from Thailand found that 46.6% of respondents thought epilepsy was a chronic, incurable illness (Kankirawatana, 1999).

In regard to the response of our participants during seizure attacks, we found that nearly a third of them put gauze in the mouth of the patient. This was better than the results of a study that stated that most respondents would do this wrong behavior (Alkhotani et al., 2019). However further study in Jeddah showed similar result (Kanjo et al., 2021). Unfortunately, only 15.37% of teachers received training on first aid for seizure. Higher results were observed in another study in India, A seizing patient was given first aid by 27.8% of respondents (Thacker et al., 2008). Regarding the post-seizure care answers received by our participants, approximately 60.03% of them correctly answered a question about caring for an epileptic patient after a seizure attack. This result

is similar to a study in Jeddah (Kanjo et al., 2021). Furthermore, about one third of participants correctly knew the indication for transfer the patient to hospital, this was lower than another study was conducted in Makkah (Alkhotani et al., 2019).

According to our study there is no significant correlation was found between knowledge about first aid for epilepsy and gender. This was confirmed by another research in Jeddah (Kanjo et al., 2021). This result may imply that there were no appreciable differences between groups because of similar educational and occupational backgrounds. Additionally, we discovered a statistically significant increase in responders who had received training in first aid for seizures as well as participants who were 29 years of age or younger compared to other age groups. Earlier research, in contrast to ours, revealed a substantial correlation between knowledge score and qualification (Kanjo et al., 2021). When compared to teachers with greater experience (> 10 years), the younger generation had better knowledge and properly identified how to ensure safety, according to another study from Makkah that found a substantial relationship between knowledge and years of experience (Alkhotani et al., 2019). The possibility of comparing long experienced teachers with young teachers, we will often find that young teachers know more.

Our study had faced some limitation. Majority of the participants were Saudis with bachelor's degrees and a few of them had postgraduate. They additionally had greater than 10 years of experience. It focused on female gender which may affect the generalizability of our results to male gender. Our study could not establish a causal relationship due to observational nature. Recall bias was also a possibility.

5. CONCLUSION

Teacher awareness and knowledge of epilepsy and first aid in Al-Qunfudah governate, Saudi Arabia were moderate in knowledge of epilepsy and lacking in training in first aid. Through a public education campaign on appropriate first aid seizure care, attitudes and fears related to seizures can be greatly reduced. It is necessary to keep in mind that seizures can cause injuries, which require both first assistance and prevention. The answers to queries on first aid seizure management provide a comprehensive explanation of the causes of this disagreement. This study is intended to persuade decision-makers to include regular training programs in the first aid of epilepsy in the curricula of public schools.

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Author's contributions

All the authors contributed evenly with regards to data collecting, analysis, drafting and proofreading the final draft.

Ethical Approval

The study was approved by the Medical Ethics Committee of the Medical Research of Umm Al-Qura University, Makkah (Ethical approval code: HAPO-02-K-012-2022-11-1225).

Informed consent

Not applicable.

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Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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