AWARENESS OF SEIZURE FIRST AID AND PSYCHOLOGICAL SUPPORT AMONG THE POPULATION IN NAJRAN REGION, SAUDI ARABIA

Saleh Al Qahtani*[1], Mohammed Al Mutlaq[2], Yahya Ishaq[2], Hidar Al Qudhaya, Saeed Al Salea[2], Wejdan Al Abyah[2], Taif Alqahtani[2], Maha Alsqoor[2], Montaha Aljaleel[2], Rema Al Sairi[2], Rahaf Almakrami[2], Manar Alsiari[2]

[1]Assistant professor, College of Medicine, Internal Medicine Department at Najran University, KSA, and Emergency Medicine Senior Registrar SBEM 2023, MBBS (2018-2019) faculty of Medicine, King Khaled University, Abha city; [2]Student in College of Medicine, Najran University, KSA

Abstract

Background & aim: There are a number of opposing viewpoints regarding epilepsy, and public knowledge of the condition differs greatly between nations. The current study sought to ascertain what the general knowledge in Najran region, Saudi Arabia, knew about several facets of epilepsy

Methodology: An observational, cross-sectional study was carried out over a six-month period in Najran region. A structured survey was utilized to collect information from adult participants recruited through social media. This survey was piloted to guarantee its clarity and relevance. The sample size was estimated to allow for a 95% confidence level and a 5% margin of error. SPSS software was used to conduct statistical analyses on awareness levels, first aid knowledge, and demographic relationships. Answers of 380 participants were enrolled in the study analysis.

Results: Majority of participants was female (63.4%), with mean age was 28.36 years. Up to 6% had medical occupation. Mean total score of knowledge about epilepsy first aids was 24.33 ± 7.38. Out of those patients; 213 (56%) and 167 (44%) had satisfactory and unsatisfactory knowledge, respectively. Both groups of participants either with satisfactory or unsatisfactory level of knowledge had comparable characteristics with exception of significantly higher of males among those with satisfactory knowledge (70.8% vs. 53.8%; p= 0.04).

Conclusion: There is a lack of knowledge and awareness of studied population toward epilepsy first aids. Thus, educational courses and awareness campaigns are essential in order to improve the knowledge of the general population about this issue. Also, similar studies should be done all over the Saudi Arabia to actually assess the population's knowledge.

Keywords: epilepsy, first aid, Awareness, Attitudes, Knowledge, Saudi Arabia

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*Corresponding Author: Saleh Al Qahtani, Assistant professor, College of Medicine, Internal Medicine Department at Najran University, KSA, and Emergency Medicine Senior Registrar SBEM 2023, MBBS (2018-2019) faculty of Medicine, King Khaled University, Abha city

Correo-e: sarah_elsehy2014@pt.kfs.edu.eg

Introduction

Recurrent seizures are the hallmark of epilepsy, a common yet stigmatized neurological illness. A persistent neurological condition that affects people of all ages is epilepsy. Epilepsy affects over 50 million individuals worldwide, making it one of the most common neurological disorders [1].

The fact that about 80% of those impacted reside in low- and middle-income countries is alarming. However, up to 70% of people with epilepsy may be able to live seizure-free lives with proper diagnosis and treatment. However, the risk of dying young is significantly higher for those who have epilepsy-up to three times higher than the general population [2].

Since there is little information available, the general public's perspective of epilepsy has not changed much, even though it has been recognized as a disease since antiquity [3]. Several frequent myths regarding seizure first aid have been documented by numerous worldwide studies. These include holding the victim down, sprinkling water on the face, pushing drugs down the throat, and placing things in the mouth to prevent tongue swallowing [4-6].

People with epilepsy may be stigmatized and subjected to discrimination as a result of misconceptions about the condition. Many misconceptions exist about epileptic disorders. For example, a study was conducted to examine the attitudes of Saudi Arabians toward epilepsy. According to the survey, 23% of participants thought that "evil" was the main cause of epilepsy, whilst 10% thought that "jinn" or "fairies" were to blame [7].

These findings demonstrated a significant knowledge gap about seizure first aid in the general community. However, by investigating the general public's awareness of seizure first aid in Najran region, Saudi Arabia, we aimed to bridge that knowledge gap.

Methods

Study setting& design

This was an online observational cross-sectional study was conducted in the period from February 2025 to May 2025 in Najran region, Saudi Arabia. The study employed a structured questionnaire was developed based on a review of relevant literature on such point of research [8].

Selection criteria

The inclusion criteria included individuals aged 18 years or older, of any gender, residents of Najran region in Saudi Arabia and provided consent to participate. Exclusion criteria included individuals under the age of 18, those residing outside Najran region, individuals who do not consent to participate, and those who submit incomplete questionnaires.

Data collection and ethical consideration

Every participant gave informed consent, willingly choosing to take part and showing their agreement with the study's goals. Recruitment took place via multiple social media platforms, such as X (formerly Twitter), WhatsApp, and Facebook, to guarantee a varied and inclusive sample.

This method was crafted to reflect various demographic groups throughout Najran region, thus boosting engagement and improving the trustworthiness and significance of the research. Ethical principles were upheld during the recruitment process, guaranteeing that the autonomy and confidentiality of participants were thoroughly honoured.

Sample size calculation

The sample size was derived by using the Cochran formula. The required number of participants was 377 but rounded to 380 for even calculations after that, using this formula. $n = (z)^2\ p\ (1 - p) / d^2$. n= sample size. Z= 1.96 standard deviation for 95% CI. p= 50% d= 5%.

Structure of the questionnaire

We used an online self-administered Arabic questionnaire (Appnedix-1). Data for this research were gathered using a structured, self-completed online survey. The survey included the following parts;

1. Socio-demographic data included 7 questions as age, sex, marital status, nationality, educational level, function, family income.
2. Knowledge assessment on epilepsy included 9 questions that assessed general knowledge about epilepsy.
3. Knowledge about appropriate action during seizure included 15 questions about dealing with epileptic fits
4. Knowledge about appropriate action after end of seizure included 4 questions about dealing after end of epileptic fits
5. Timing to call emergency medicine included 12 question assessing knowledge of subjects about timing to call emergency medicine for epileptic fit

Each question in each part from part 2 to part 5 was scored by 1 for correct

answer and 0 for incorrect answer. The maximum score was 40. The awareness level is satisfactory if the total score was ≥60% (≥ 24 points) [9].

Reliability and piolet study

The adapted tools were tested for their reliability by using Cronbach's alpha coefficient test in SPSS program version 24 by a statistician. It was carried out on 100 participants and the results showed internal consistency reliability (Cronbach's α) was 0.850. The validated questionnaire was subsequently pre-tested on 38 participants (10%), who later were included in the main study

Statistical analysis

Data were elaborated with numbers (percentages) for all qualitative variables, while mean, standard deviation were used to present all the quantitative variables. In addition to the comparison carried out, the Mann–Whitney U test and Student t test was applied. Normality of data was assessed with the Kolmogorov–Smirnov and Shapiro–Wilks tests. A P-value <0.05 was considered statistically significant. All data analyses were carried out using SPSS ver. 21, Armonk, New York, IBM Corporation.

Results

Demographic data of the participants (Table 1, Figure 1)

Mean age of participants was 28.36 years. Majority (63.4%) of patients were females. There were only 6 (1.6%) participants were non-educated. Meanwhile, 125 (32.9%), 221 (58.2%) and 28 (7.4%) participants had high school education, bachelor's/diploma and masters, respectively. Twenty-four (6.3%) participants had medical occupations and 74 (19.5%) participants were medical student (Table 2).

General knowledge of participants about epilepsy

Mean score of general knowledge of participants about epilepsy was 4.87. A total of 145 (38.2%) participants had satisfactory general knowledge and the other 235 (61.8%) participants had unsatisfactory knowledge.

General knowledge of participants about epilepsy (table 2):

Mean score of general knowledge of participants about epilepsy was 4.87. A total of 145 (38.2%) participants had satisfactory general knowledge and the other 235 (61.8%) participants had unsatisfactory knowledge.

Knowledge of participants about appropriate action during a seizure (table 3)

Mean score of knowledge of participants about appropriate action during seizure was 7.76. A total of 146 (38.4%) participants had satisfactory knowledge and the other 234 (61.6%) participants had unsatisfactory knowledge (Table 3).

Table 1. Demographic data of the participants.

	N= 406
Age group (years)	28.36 ± 10.03
18-24	150 (39.5%)
25-34	144 (37.9%)
35-44	46 (12.1%)
45-54	35 (9.2%)
≥ 55	5 (1.3%)
Gender	
Male	139 (36.6%)
Female	241 (63.4%)
Educational level	
Non-educated	6 (1.6%)
Highschool	125 (32.9%)
Bachelor's / Diploma	221 (58.2%)
Master's	28 (7.4%)
Occupation	
Medical	24 (6.3%)
Non-medical	356 (93.7%)
Medical student	74 (19.5%)
Monthly income (SAR)	
< 1000	156 (41.1%)
1000-5000	97 (25.5%)
5001-10000	67 (17.6%)
10001-15000	39 (10.3%)
> 15000	21 (5.5%)

Data expressed as frequency (percentage), mean (SD)

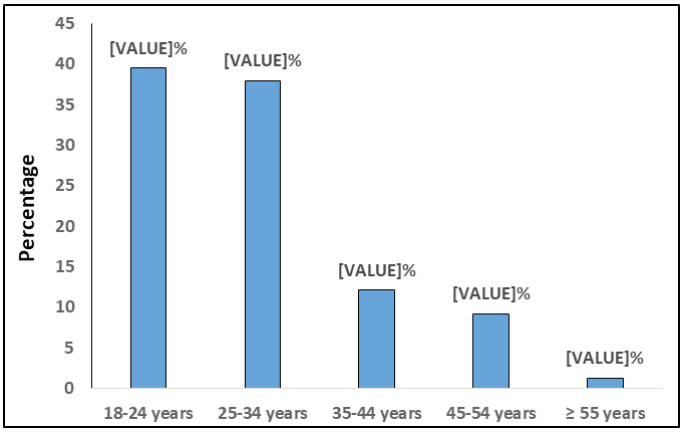

Figure 1. Age of groups among the studied participants.

Table 2. General knowledge of participants about epilepsy.

	Correct answers
Have you ever heard of "epilepsy" or "epileptic seizures"?	355 (93.4%)
Do you believe epilepsy is a brain disorder?	304 (80%)
Do you think seizures occur only in specific circumstances?	212 (55.8%)
Do you think seizures can result in sudden death?	229 (60.3%)
Do you personally have epilepsy, have a family member with epilepsy, or know someone with epilepsy?	127 (33.4%)
Have you ever witnessed someone having a seizure?	231 (60.8%)
Do you know the correct response if you see someone having a seizure?	181 (47.6%)
Have you ever attended a workshop or training on first aid for seizures?	64 (16.8%)
Have you ever watched a video demonstrating first aid for epilepsy?	147 (38.7%)
Total score	4.87 ± 1.98
Satisfactory (> 60%, > 5 points)	145 (38.2%)
Unsatisfactory (< 60%, < 5 points)	235 (61.8%)

Table 3. Knowledge of participants about appropriate action during a seizure.

	Correct answers
Leave the scene immediately.	50 (13.2%)
Do nothing but observe.	61 (16.1%)
Do nothing but read the Quran.	73 (19.2%)
Call emergency services (997) immediately, regardless of the circumstances.	312 (82.1%)
Restrain the individual and stop their movements.	187 (49.2%)
Sprinkle water on their faces to wake them up.	265 (69.7%)
Stay beside them and time the seizure.	286 (75.3%)
Monitor their breathing and chest movements.	318 (83.7%)
Perform CPR even if they are breathing.	291 (76.6%)
Clear the area of hard or sharp objects.	333 (87.6%)
Place a soft pillow under their head and neck.	275 (72.4%)
Loosen tight clothing, such as unbuttoning the collar, and remove tight accessories.	299 (78.7%)
Remove contact lenses, if applicable	169 (44.5%)
Place a piece of fabric in their mouth to prevent tongue swallowing.	258 (67.9%)
Administer epilepsy medication orally to stop the seizure.	261 (68.7%)
Total score	7.76 ± 3.29
Satisfactory (> 60%, > 9 points)	146 (38.4%)
Unsatisfactory (< 60%, < 9 points)	234 (61.6%)

Data expressed as frequency (percentage), mean (SD)

Table 4. Knowledge of participants about action after end of seizure.

	Correct answers
Gently turn them onto one side (recovery position).	295 (77.6%)
Leave once the seizure has stopped.	52 (13.7%)
Stay with the person until they are fully awake.	350 (92.1%)
Inform them about what happened during the seizure	195 (51.3%)
Total score	2.34 ± 0.93
Satisfactory (> 60%, > 2 points)	173 (45.5%)
Unsatisfactory (< 60%, < 2 points)	207 (54.5%)

Data expressed as frequency (percentage), mean (SD)

Table 5. Knowledge of participants about timing to call emergency services.

	Correct answers
The person has never had a seizure before.	255 (67.1%)
The seizure lasts longer than 5 minutes.	296 (77.9%)
The person experiences another seizure immediately after the first	294 (77.4%)
The person is injured during the seizure (e.g., from falling or bleeding).	328 (86.3%)
The person does not regain full consciousness after the seizure.	297 (78.2%)
The seizures occur more frequently than usual for that individual.	286 (75.3%)
The person has difficulty breathing post-seizure.	304 (80%)
The person is a stranger and alone	297 (78.2%)
The individual has chronic conditions like diabetes or heart disease.	284 (74.7%)
The person is pregnant.	304 (80%)
The seizure happens in water (e.g., a pool or bathtub).	296 (77.9%)
The person requests medical assistance themselves.	311 (81.8%)
Total score	9.35 ± 3.61
Satisfactory (> 60%, > 7 points)	296 (77.9%)
Unsatisfactory (< 60%, < 7 points)	84 (22.1%)

Data expressed as frequency (percentage), mean (SD)

Table 6. Total score of awareness among participants as regard seizure first aid.

	N= 380
Total score	24.33 ± 7.38
Satisfactory (> 60%, > 24 points)	213 (56%)
Unsatisfactory (< 60%, < 24 points)	167 (44%)

Knowledge of participants about action after end of seizure (table 4)

Mean score of knowledge of participants about action after end of seizure was 2.34. A total of 173 (45.5%) participants had satisfactory knowledge about action after end of seizure and the other 207 (54.5%) participants had unsatisfactory knowledge (Table 4).

Knowledge of participants about timing to call emergency services (Table 5)

Mean score of knowledge of participants about timing to call emergency services was 9.35. A total of 296 (77.9%) participants had satisfactory knowledge about timing to call emergency services and the other 84 (22.1%) participants had unsatisfactory knowledge (Table 5).

Total score of awareness among participants as regard seizure first aid (Table 6, figure 2)

Mean total knowledge score was 24.33. A total of 213 (56%) participants had satisfactory knowledge and 167 (44%) participants had unsatisfactory knowledge score.

Factors affecting awareness of participants as regard seizure first aid (Table 7, figure 3)

Both groups of participants either with satisfactory or unsatisfactory level of knowledge had comparable characteristics with exception of significantly higher of males among those with satisfactory knowledge (70.8% vs. 53.8%; p= 0.04).

Table 7. Factors affecting awareness of participants as regard seizure first aid.

	Level of awareness		*P* value
	Satisfactory (n= 213)	Unsatisfactory (n= 167)	
Age group (years)			0.13
18-24	82 (38.5%)	68 (40.7%)	
25-34	76 (35.7%)	68 (40.7%)	
35-44	31 (14.6%)	15 (9%)	
45-54	23 (10.8%)	12 (7.2%)	
≥ 55	1 (0.50%)	4 (2.4%)	
Gender			**0.04**
Male	151 (70.8%)	90 (53.8%)	
Female	62 (29.2%)	77 (46.2%)	
Educational level			0.68
Non-educated	2 (0.9%)	4 (2.4%)	
Highschool	70 (32.9%)	55 (32.9%)	
Bachelor's / Diploma	124 (58.2%)	97 (58.1%)	
Master's	17 (8%)	11 (6.6%)	
Occupation			0.89
Medical	15 (7%)	9 (5.4%)	
Non-medical	198 (93%)	158 (94.6%)	
Medical student	38 (17.8%)	36 (21.6%)	0.90
Monthly income (SAR)			0.09
< 1000	87 (40.8%)	69 (41.3%)	
1000-5000	59 (27.7%)	38 (22.8%)	
5001-10000	37 (17.4%)	30 (18%)	
10001-15000	15 (7%)	24 (14.4%)	
> 15000	15 (7%)	6 (3.6%)	

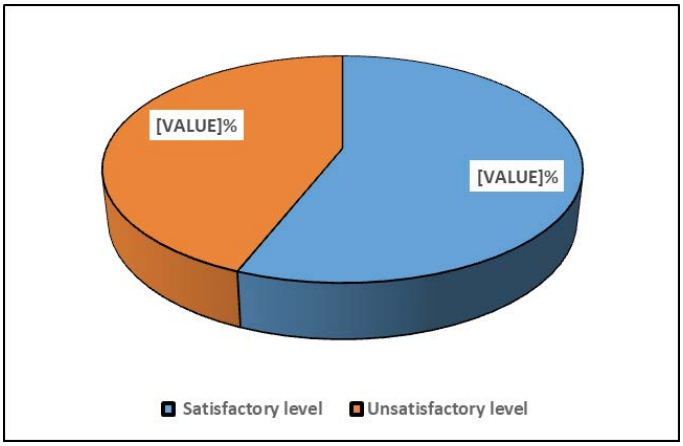

Figure 2. Level of total knowledge score in studied participants.

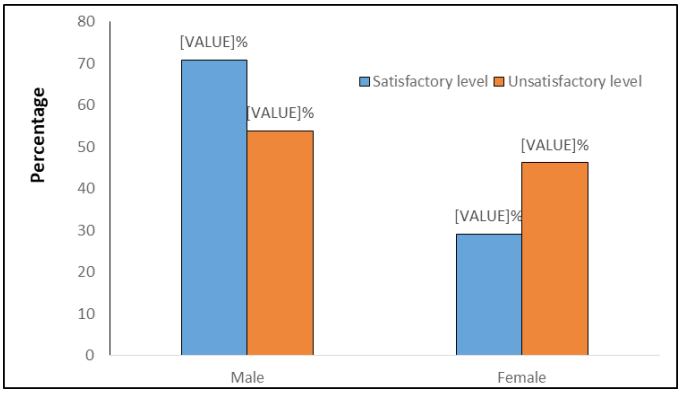

Figure 3. Sex distribution among studied participants based on level of total score of knowledge.

Discussion

Over 0.5% of the world's illness burden is caused by epilepsy, a persistent neurological disorder. Approximately 7.6 out of 1000 people will experience epilepsy at some point in their lives. Psychosis and co-occurring mental disorders, such as anxiety and depression, are common in people with epilepsy. Approximately 70% of epilepsy can be treated with reasonably priced anti-seizure drugs. The treatment is not given to a significant fraction of this population [10].

Even with improved access to healthcare facilities and heightened medical understanding of epileptic patients, parental knowledge, attitudes, and practices about epilepsy continue to have a significant role in how patients with epilepsy are managed. Due to unfavourable social beliefs, controlling epilepsy in Saudi Arabia is extremely difficult. Recently, previous study in Saudi Arabia found that only 47.9% had satisfactory awareness regarding first aids [9].

These findings demonstrated a significant knowledge gap about seizure first aid in the general community. However, by investigating the general public's awareness of seizure first aid in Najran region, Saudi Arabia, we aimed to bridge that knowledge gap. We used an online self-administered Arabic questionnaire formed of 40 questions that assess general knowledge of 380 participants as regard epilepsy first aid.

Mean age of participants was 28.36 years. Majority (63.4%) of patients were females. There were only 6 (1.6%) participants were non-educated. Meanwhile, 125 (32.9%), 221 (58.2%) and 28 (7.4%) participants had high school education, bachelor's/diploma and masters, respectively. Twenty-four (6.3%) participants had medical occupations and 74 (19.5%) participants were medical student.

In the study of Idris et al (2024), mean age of 604 participants in their study was 34.56 years. a total of 560 (92.7%) participants were males. Only 2.4% of participants could read and write while 24.3%, 5.8% and 67.5% participants had high school, intermediate and university level of education, respectively [9].

Important finding in the current study was that 355 (93.4%) participants had heard before about epilepsy which is consistent with the education levels of our study population and previously published studies (range, 77.4–95%) [11]. Also, a lot of studies all over the world reported similar percentage [12, 13].

Up to 80% of our participants considered that epilepsy in brain disorders. When comparing our results with other studies from Saudi Arabia, there was a remarkable improvement in the people's understanding of the causes of epilepsy with significantly less focus on false concepts such as punishment from God or evil eye [14-16]. In a study conducted by Obeid et al (2012) among university-educated school teachers and undergraduate students, 45.3% of the respondents believed that epilepsy is caused by possession of Jinn (demons). This is also consistent with previous studies coming from Saudi Arabia [14].

As regard the immediate action toward patient with epileptic seizures; up to 82% of participants recommended calling emergencies services regardless the circumferences. Other participants' considerations were recorded as read the Quran (19.2%), Sprinkle water on their faces (69.7%) and do nothing but observe (16.1%). These results have been previously reported in several Arab countries such as Kuwait [17].

In previous study, regarding epilepsy treatment, only 53.4% believed the medications can help in the treatment of epilepsy. Around one-third of the participants believed in faith and spiritual treatment with the recitation of Quran, the Islamic holy book. In 7.9% of the respondents, herbal medicine was selected as a form of treatment for epilepsy [9].

In other study, up to 10% of the respondents believed that epilepsy was untreatable, which is a reflection of cultural beliefs in Saudi Arabia [18]. This is in alignment with previous studies conducted in Riyadh [19], Asir [20], United Arab Emirates [21], and Ethiopia [22]. Around 17% of the participants did not know whether there was a treatment for epilepsy in another recent study [9].

Unfortunately, up 69% of our participants didn't knew that ant seizure medication should not be given orally during a seizure. This is because the person may be unable to swallow, and medication could even cause choking. Previous studies' results were variables which found that 41.4 % of people in Saudi Arabia [16], 45.9 % of people in Iran [5], and 81.5 % of people in Grenada [4] were aware of this measure

The main finding in the current study was that mean total knowledge score was 24.33. A total of 213 (56%) participants had satisfactory knowledge and 167 (44%) participants had unsatisfactory knowledge score. Both groups of participants either with satisfactory or unsatisfactory level of knowledge had comparable characteristics with exception of significantly higher of males among those with satisfactory knowledge (70.8% vs. 53.8%; p= 0.04).

Similarly, Idris et al (2024) declared that about the half of the studied sample had unsatisfactory awareness level toward epilepsy [9], these results are consistent with other study that was conducted by AlDossari et al (2018) to assess the public knowledge, awareness of and attitudes toward epilepsy were disagree with this study, However, the negative attitudes and misconceptions still exist [16].

Another study that was conducted by Kiwanuka et al (2018) showed that the majority of participants had poor knowledge toward epilepsy [23]. Another study by Molla et al (2021) also revealed that about the half of the respondents had poor knowledge toward epilepsy first aid [24], which matched a study conducted in Moscow.

Hakami et al (2023) stated that 80.5 % had low awareness of seizure first aid. The most common correct responses were clearing the area of dangerous objects (91.3 %), putting a pillow under the neck (69.3 %), and timing the seizure (68.5 %). However, only 32.2 % knew to tell the person what happened after the seizure. The most common misconception was that an ambulance should be called immediately, regardless of the details (88.3 %) [25]

The latter study concluded that people who previously watched an educational video on seizure first aid or who knew someone with epilepsy were more likely to have a high awareness of seizure first aid [25].

The study used a comprehensive list of first-aid measures from reliable sources and currently published literature. However, the participants were a young, educated generation, and some may argue whether they represent the general population. This greater number of young populations was also remarkable in previous public surveys on epilepsy and seizure first aid in Saudi Arabia. For example, the study by Al-Dosary et al (2022) on public awareness of seizure first aid in Saudi Arabia found that 75 % of participants were aged ≤35 years. Moreover, the high number of university students in the study could have introduced bias into the results [16].

Nevertheless, the findings should be interpreted with caution due to several limitations. First, the self-reported nature of the data could have led to over-reporting of certain outcomes, such as the high percentages of participants who had previously witnessed a seizure and those who had previously attended a course or workshop on seizure first aid. Second, the online nature of the study may have excluded subgroups of the population, such as those without internet access [26].

Third, the scoring system for awareness levels was not validated, which could have introduced bias into the results. Finally, the study was conducted in a single region, which limits the generalizability of the findings to other populations in Saudi Arabia.

Conclusion

According to this survey, the general public in Najran region, Saudi Arabia, is not well-informed about seizure first aid. The widespread misunderstandings that an ambulance should always be summoned and that ant seizure medicine can be taken orally to halt a seizure serve as evidence of this. These false beliefs have the potential to exacerbate seizure outcomes and cause treatment delays.

The public should be educated on seizure first aid using a range of resources, including field training, social media videos, and other instructional materials. This study will shed important light on Saudi Arabian public awareness of seizure first aid. The results may assist pinpoint areas in which education is required and enhance the standard of treatment for epileptics in the Najran region and beyond.

Recommendations

It's recommended to conduct more training sessions, awareness campaigns, and the distribution of evidence-based information about epilepsy first aid; its nature, managements, complications and correction of misconceptions. Also, more studies are warranted with a greater number of participants

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Conflict of interest

The authors declare that no conflict of interest.

Availability of data and materials

All data generated or analyzed during this study are included in this published article.

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