Population-level Investigation of the Public Awareness Level Toward Witnessed Seizures in Saudi Arabia

Mazen Basheikh

Department of Internal Medicine, Faculty of Medicine, University of Jeddah, Jeddah, Kingdom of Saudi Arabia

Correspondence:
Mazen Basheikh
P.O Box 80112
Jeddah, Postal code: 21589
Saudi Arabia
Email: mabasheik@uj.edu.sa

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Abstract

Overview: Epilepsy is a common brain disorder with prevalence in Saudi Arabia of about 6.54 per 1,000 population.

The outcome of a seizure can be affected by the measures taken by witnesses in the prehospital setting; incorrect measures toward a seizure can cause serious harm to the seizing patient or the person trying to help them.

Methods: Cross sectional analysis of anonymous adults in Saudi Arabia who participated in an electronic format questionnaire distributed between May 2020 – August 2020 by social media to measure the awareness toward witnessed seizure in prehospital setting. Data collection included demographics and knowledge about epilepsy, appropriate approach toward a seizing patient and the expectation about the duration of most seizure attacks. Any workers in the health sector or any relatives or close friends of patients known to have epilepsy were excluded from the analysis.

Results: 416 participants met the inclusion criteria for this study with 52% being between 30 – 49 years of age and 52% males. 97% have heard about epilepsy before. 48.1% have seen at least one seizure before. 58% reported that they are willing to help seizing patients. The correct reaction toward a seizing patient was only chosen by 18 participants (4.3%). 79.6% will call the ambulance and 35.6% will try to put a hard object in the patient's mouth. Only 26% will put the patient on their right side. 32% thought that duration of most seizures was between 2-5 minutes.

Conclusion: The study results suggest that general public awareness about reaction to seizures in Saudi Arabia is inadequate and in need of increasing awareness.

Key words: public awareness, seizures, Saudi Arabia

Introduction

Epilepsy is defined as a brain disorder characterized by an enduring predisposition to generate epileptic seizures resulting in cognitive, psychological, and social consequences. An epileptic seizure is a transient occurrence of signs and/or symptoms due to abnormal excessive or synchronous neuronal activity in the brain [1].

Worldwide at least 50 million people live with epilepsy with almost 90% of the cases in developing countries. 5–10 per 1,000 people in developing countries are reported to have active epilepsy [2].

In Saudi Arabia, the estimate prevalence is about 6.54 per 1,000 population, which raises the importance of public awareness of this neurological disorder [3].

Correct measures taken by a witness in the acute setting can have a good impact on the outcome [4].

In contrast, incorrect measures toward a seizure such as: spray water over the patient's face, holding their tongue or fixing of the position, in addition to having no clear benefit to the patient, these actions can cause serious harm to the seizing patient or the person trying to help them [5].

This research is intended to assess the common knowledge and misconceptions of the general population in Saudi Arabia about proper reaction toward an ongoing seizure outside of a hospital setting.

Methods

A cross sectional analysis of anonymous adults in Saudi Arabia participated in an electronic format questionnaire distributed electronically by the author through social media to measure the awareness toward witnessed seizures in the prehospital setting between May 2020 – August 2020.

The data collection included participants' demographics, knowledge about epilepsy, professional background, general conception about the correct measures to follow and finally expectation regarding average time of a seizure attack (Table 1). No personal data that can identify the participants was required in this survey.

The correct answer for the helpful actions to be taken when witnessing a convulsion was defined as choosing the 2 answers of "putting the patient on their side" and "calling the ambulance" witout picking any of the other wrong answers (spray water over the patient's face, put a hard object in the patient's mouth, try to hold the patient's tongue to prevent tongue swallowing or holding the patient tight and try preventing them from seizing).

Exclusion criteria were having relatives or close friends diagnosed with epilepsy, or medical field employment.
Statistical analysis using "IBM SPSS statistics ver. 20.0" was applied to evaluate and test the hypothesis. Simple/ cross tabulation frequency tables and percentages. Chi square test was used to test and describe the relation between two categorized variables. The level $P<0.05$ was used as the cut-off value for significance.

Ethical approval was obtained from the Research Ethics Committee of the University of Jeddah. All methods were performed in accordance with: the University's Research Criteria, the national law of ethics of research on living things by Bureau of Experts at the Saudi Council of ministries and national committee of bioethics at King Abdulaziz City of Science and Technology.

Results

416 participants met the inclusion criteria for this study. The majority of them were between 30 – 39 & 40 - 49 years of old (28.2% and 24.5% respectively), with no significant difference in gender as males represented 52.9% and females 47.1%. Table 2 shows the details of the demographic characteristics.

Most of the participants have heard about epilepsy with 400 responding with yes (96.2%). (Figure 1).

When asked whether they have ever witnessed a seizure attack, 48.1% reported that they have witnessed at least 1 seizure before.

242 participants (58.2%) reported that they are willing to help if they see a seizing patient, 34.1% stated that they don't know and the minority with 7.7 % stated that they will not help in the acute setting (Table 3).

In regards to what actions should be taken when witnessing a patient having a seizure, the correct answer was defined as choosing the 2 answers of putting the patient on their side and calling the ambulance without picking any of the other wrong answers .

Only 18 participants (4.3%) chose the correct answer. An additional 63 participants (15.1%) chose the correct answer with at least one wrong action. When looking at the correct answers separately, 79.6% reported that they would call the ambulance, however only 26.4% chose to put the seizing patients on their side.

There was no statistically significant difference in getting the correct answer among different age groups or different genders.

Among the wrong choices, putting a hard object (e.g. piece of fabric) in the patient's mouth was the most frequently chosen by 148 participants (35.6%) followed by trying to hold the patient tight to prevent them from seizing (16.6%).

14.7% reported that they would try to hold the patient's tongue to prevent tongue swallowing. 7.9% will spray water on the patient's face.

2.2% of participants will try other measures which include religious and spiritual practices like reading segments of the Holy Quran.

Finally, only 0.5% reported that they will not try to do any of the previous measures, and they would leave the location.

Table 4 and Figure 2 show more details about actions taken by the participants in the survey.

The final aspect of the questionnaire was knowledge about estimated duration of most seizure attacks.

As shown in Table 5, 32.7% of the participants thought that the duration is between 2 – 5 minutes, while an almost similar percentage (32.5%) responded that they do not know. Only 22.4% expected that the duration is less than 2 minutes.

Table 1: Questions about knowledge toward convulsions included in the questionnaire given to participants

Question	Response
Have you ever heard about epilepsy disease?	• Yes • No • I don't know
Have you ever witnessed a seizure attack?	• Yes • No
If you witness a seizure attack, would you be more likely to try to help the seizing patient?	• Yes • No • I don't know
Which of the following actions do you think is helpful when trying to help a seizing patient outside a hospital environment? (you can choose more than one answer)	• Spray water over the patient's face • Put a hard object in the patient's mouth (like a piece of fabric) • Try to hold the patient's tongue to prevent it from swallowing • Put the patient on his/her right side • Hold the patient tight and try to prevent them from seizing • Call the ambulance • Do not do anything and leave the location • other
How long do you think most epileptic convulsions last?	• Less than 2 minutes • Between 2 to 5 minutes • Between 5 to 10 minutes • More than 10 minutes

Table 2: participants' demographics

Age	Frequency	Percent
less than 18 years	9	2.2
19-29 years	80	19.2
30-39 years	117	28.2
40-49 years	102	24.5
50-60 years	72	17.2
greater than 60 years	36	8.7
Total	416	100.0
Gender		
Males	220	52.9%
Females	196	47.1%

Figure 1: percentage of participants who have heard about epilepsy

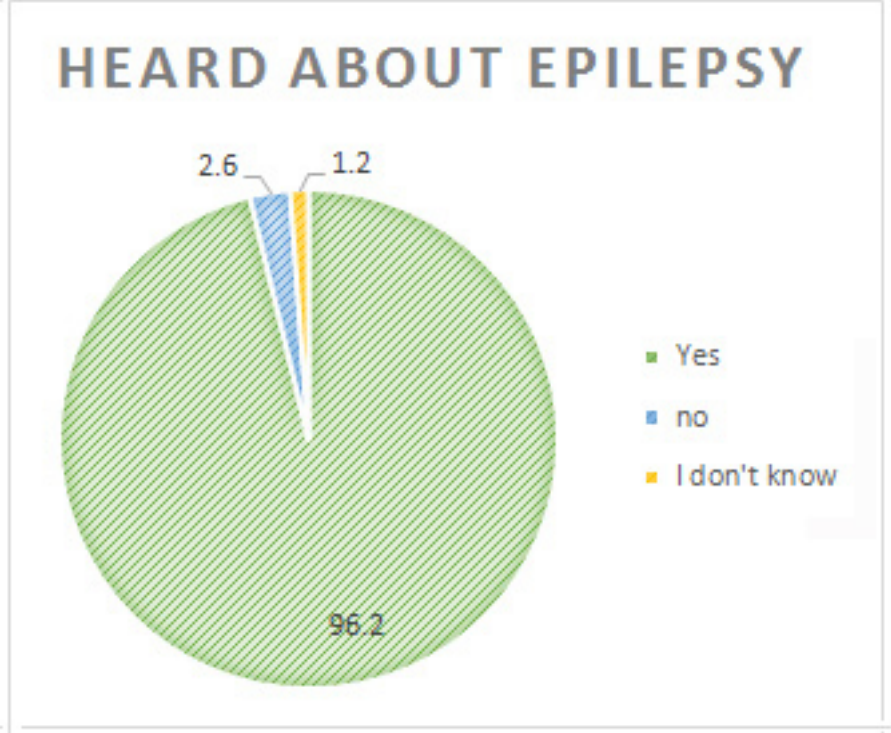


Table 3: The participants' responses regarding helping in the acute setting when there is a seizing patient

Would you try to help?	Frequency	Percent
No	32	7.7
Yes	242	58.2
I don't know	142	34.1
Total	416	100.0

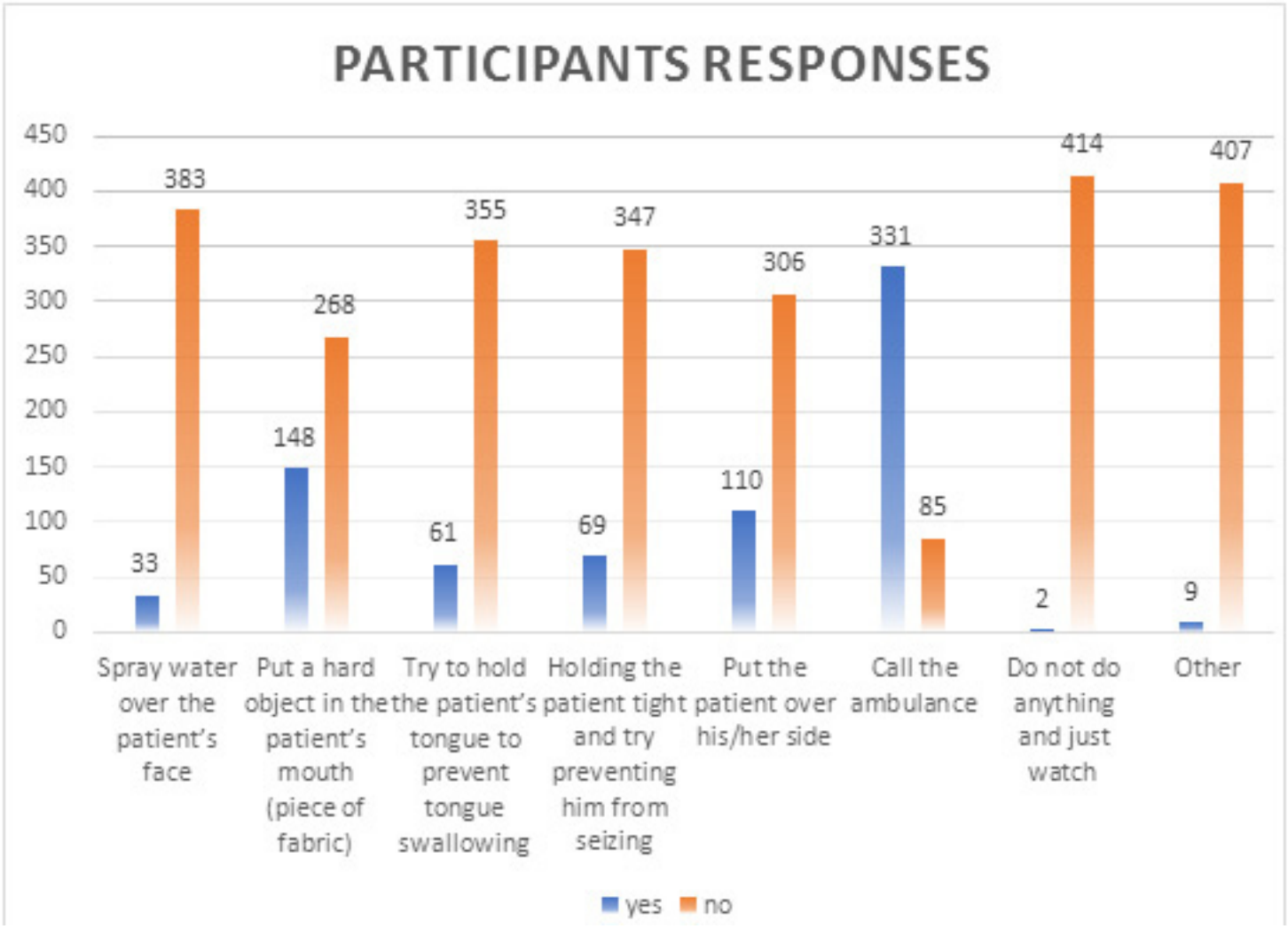
Table 4 shows the different response (corrects and incorrect) chosen by participants.

Action(s)	Response		total
	Yes	No	
	Number (percent)		Number (percent)
Spray water over the patient's face	33 (7.9%)	383 (92.1%)	416 (100%)
Put a hard object in the patient's mouth (piece of fabric)	148 (35.6%)	268 (64.4%)	416 (100%)
Try to hold the patient's tongue to prevent tongue swallowing	61 (14.7%)	355 (85.3%)	416 (100%)
Holding the patient tight and try preventing them from seizing	69 (16.6%)	347 (83.4%)	416 (100%)
Put the patient on his/her side	110 (26.4%)	306 (73.6%)	416 (100%)
Call the ambulance	331 (79.6%)	85 (20.4%)	416 (100%)
Do not do anything and just watch	2 (0.5%)	414 (99.5%)	416 (100%)
Other	9 (2.2%)	407 (97.8%)	416 (100%)

Table 5: response upon asking your expectation about duration of the seizure?

Duration of the attack	Frequency	Percent
Less than 2 minutes	93	22.4
Between 2 to 5 minutes	136	32.7
Between 5 to 10 minutes	43	10.3
More than 10 minutes	9	2.2
I do not know	135	32.5
Total	416	100.0

Figure 2 shows actual number of different responses by the participant



Discussion

Since the knowledge about epilepsy and its emergencies is important, identifying the general misconceptions in the general population is an important step to increase public awareness which eventually will be reflected on the outcome by reducing possible harm to patients and their community.

In regards to familiarity with epilepsy, the majority of the participants (96%) have heard about it which is not significantly different compared to previous studies done in Saudi Arabia (94.79%)[6], Sudan (90%)[7] and Jordan[8].

About 48.1% of the participants in this survey have witnessed at least one seizure attack. This compares closely to a previous study done in Al-Kharj, Saudi Arabia which found a similar percentage (49.5%)[6], and markedly higher than a study done in UAE with only 34% of the participants having witnessed a seizure [9].

Most of the participants, regardless of their age, would try to help (58%) with the majority of remaining responding by the (I don't know) option, reflecting the helping nature of the Saudi society. Based on these findings increasing awareness would be important to ensure correct actions get taken instead of potentially harmful ones.

A significant percentage of the participants chose one or more actions that are considered wrong and potentially harmful. The most commonly chosen was "putting a hard object (e.g. piece of fabric) in the mouth" (35.6%) which can lead to obstruction of the airway by choking or teeth fracture, which counters the most important aspect to ensure in first place which is airway patency [10].

Others will try to hold the tongue to prevent swallowing (14.7%) which is one of the major myths in the subject of epilepsy and its emergencies, as tongue swallowing during a convulsion is considered to be impossible because the convulsive state is a hypertonic state not hypotonic [11].

16.6% stated that they will try to hold the patient tight and prevent them from seizing. This may cause injuries to the spine, ribs and joints leading to fractures or dislocations and such actions should be avoided [7].

Only 26.7% of the participants said that they will put the patient on their side. This is a particularly important step as the recovery position ensures patency of the airways preventing events of hypoxia and reduces the risk of aspiration [10][12].

In addition to the previously mentioned options, the witness should try to remove any harmful objects from the patient's surrounding along with documentation of the seizure's duration [10][12].

Discussion

Only 22.4% of the participants thought that most seizures last less than 2 minutes which is the correct answer for most seizures [13].

A striking minority (4.9%) chose the correct approach without choosing any of the wrong / non beneficial actions which indicates the urgent need to improve awareness on how to react toward a seizing patient. Awareness can be enhanced to the mass population through traditional media like television, public campaigns, and integrated into the educational process, (e.g. schools and universities) or by using modern social media applications which allow easy access to the public and which can have a great impact on the society [14].

One limitation of this study is using an electronic questionnaire distributed through social media. The reason behind this was that this study was conducted during the COVID-19 pandemic where social distancing was a necessity.

Conclusion

The results of this study are strongly suggestive that the knowledge of the population in Saudi Arabia on how to react when seeing an actively seizing patient is inadequate and further efforts to increase the awareness are needed.

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