



Research Article

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# Assessment of Perception, Attitude and Practice towards Epilepsy Among a Rural Population in Sudan, 2023

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## Abstract

**Background:** Epilepsy is a neurological disorder characterized by recurrent seizures, which can affect individuals' daily lives significantly. Understanding the public's knowledge, attitudes, and practices (KAP) towards epilepsy is crucial for effective health education and management strategies. This study aimed to assess the perception, attitude and practice among a rural population in Sudan towards epilepsy.

**Method and Materials:** This study was a descriptive cross-sectional, community-based study conducted in March 2023 at a rural area in Gezira state in the central part of Sudan. A self-constructed questionnaire was designed by authors based on revision of previous similar studies. It consisted of four domains: The first domain was about sociodemographic data (age, gender, occupation, residence and educational level). The second, third and fourth domains consisted of questions regarding knowledge, attitude and practice. 150 participants were involved in this study and data was analysed by SPSS version 22.

**Results:** The total number of participant in this study was 150 individuals. The majority (83) were females (55.3%) and 36% of respondents were in the age group (15-30). The overall net result of KAP of the participants in this study towards epilepsy was as follows: for knowledge it was 67.9%, attitude 63.5% and practice 53.9%. There was no significant association between gender and knowledge of epilepsy, P-value 0.887.

**Conclusion:** The current study's findings underscore the need for targeted educational interventions to dispel myths and misconceptions about epilepsy. Increasing awareness through community-based programs can help reduce the stigma and improve the quality of life for epileptic individuals. Comparative analysis with other studies highlights the universal challenge of epilepsy-related stigma and the critical role of education in mitigating its impact.

**Keywords:** Epilepsy, Perception, Knowledge, Attitude, Practice, Gezira, Sudan



## Introduction

Epilepsy is a neurological disorder characterized by recurrent, unprovoked seizures. It affects about 50 million people worldwide, making it one of the most common neurological conditions globally [1]. Despite its prevalence, epilepsy is often misunderstood, leading to significant social stigma, discrimination, and inadequate care for individuals with the condition. The Knowledge, Attitude, and Practice (KAP) model has been instrumental in assessing and addressing these issues by evaluating public awareness, beliefs, and behaviours towards epilepsy. Knowledge about epilepsy encompasses awareness of the condition, its causes, symptoms, and treatment options. Studies have shown that misconceptions and lack of knowledge about epilepsy are prevalent in many parts of the world. For example, a study conducted in Nigeria revealed that only 37.5% of respondents could correctly identify epilepsy as a brain disorder [2]. Similarly, in a study in Pakistan, only 28% of participants were aware that epilepsy could be controlled with medication [3]. Adequate knowledge about epilepsy is crucial as it influences attitudes and practices. Misconceptions, such as the belief that epilepsy is contagious or caused by evil spirits, contribute to social stigma and discrimination against individuals with epilepsy [4]. Educational interventions have been shown to significantly improve knowledge and reduce stigma. For instance, a community-based educational program in India resulted in a substantial increase in awareness and understanding of epilepsy among participants [5].

Assessing attitudes towards epilepsy is crucial to reduce the stigma surrounding the disease [6]. Practice refers to the beliefs and feelings that people have about the condition and those who suffer from it. Negative attitudes are often rooted in fear and misunderstanding. In many cultures, epilepsy is associated with supernatural beliefs, leading to fear and social exclusion of those affected. A study in China found that 40% of respondents believed that people with epilepsy should not be employed in jobs that involve physical labour [7]. Positive attitudes are essential for fostering a supportive environment for people with epilepsy. Public health campaigns and educational programs have been effective in changing negative attitudes. For example, in a study in the United Kingdom, a national campaign to raise awareness about epilepsy significantly improved public referrals to the actions and behaviours of individuals towards epilepsy and those who suffer from it. This includes first aid for seizures, social interactions, and the willingness to engage with and support people with epilepsy. A lack of knowledge and negative attitudes often result in harmful practices, such as inappropriate first aid measures or social ostracism. Proper training and education can lead to better practices. For example, training programs for teachers in schools have been shown to improve their ability to provide appropriate first aid during a seizure and create a more inclusive environment for students with epilepsy [8]. Community health worker training programs have also been effective in improving epilepsy management practices in low-resource settings [9]. The Knowledge, Attitude, and Practice (KAP) model provides a comprehensive framework for understanding and addressing the challenges associated with epilepsy. Despite its prevalence, public knowledge, attitudes,

and practices towards epilepsy vary significantly across different regions and cultures, often influenced by education, socioeconomic status, and cultural beliefs. Good knowledge and attitude towards epilepsy will be reflected on good practice towards the disease. Therefore, this study aimed to assess the perception, knowledge, attitude and practice towards epilepsy among a population of a rural area in Gezira state in the central part of Sudan.

## Method and Materials

This study was a descriptive cross-sectional, community-based study conducted in March 2023 at Gezira state in the central part of Sudan. A self-constructed questionnaire was designed by authors based on revision of previous similar studies. It consisted of four domains. The first domain was about sociodemographic data (age, gender, occupation, residence and educational level). The second, third and fourth domains consisted of questions regarding knowledge, attitude and practice. Data was collected by Batch 40 medical students from, Faculty of Medicine, University of Gezira, during their rural residency course in Shakira Hagalsafie in Alhasessa locality, a city lies along the Blue Nile river north to Wad-Medani city (the capital of Gezira state). The students were trained. They interviewed each participant who was willing to participate in the study. The interviewer did not attempt to improve the respondents' knowledge. Data was analyzed by SPSS version 22. Descriptive Statistics was used with frequency tables for each KAP item. Cross-tabulation of Gender and Knowledge of Epilepsy was done. Chi-Square Tests was performed to see if there's a significant association between demographic variables and KAP items.

### Summary of Statistical Analysis

- i. Descriptive Statistics: Provided a clear overview of the distribution of responses for each KAP item.
- ii. -Cross-tabulations: Identified potential relationships between demographic variables and KAP items.
- iii. Chi-Square Tests: Assessed the significance of these relationships.

### Ethical Consideration

Ethical approval was obtained from the ethical committee of the faculty of Medicine, University of the Gezira as well as verbal informed consent from each participant.

## Results

The total number of participants in this study was 150 individuals. The majority (83) were females (55.3%) as shown in Table 1. 36% of respondents were in the age group (15-30) and 34.7% were in the age group (31-45). Most of the respondents were students and free workers, 34.7 % and 25.3 % respectively. 32.7 % of the participants were educated till secondary school. Most of the participants didn't experience sudden loss of consciousness, only 12.7 % did, from those only 11.3% had lost connection with their surrounding once before. 93.3 % of participants hadn't lose bladder and bowel control. Only 8.7 % of participants think they had faced some sort of magic before. Only 12.0 % of the participants had experienced transient seizure.

**Table 1:** Gender of participants.

	Frequency	Percent	Percent
<b>Males</b>	67	44.7	44.70%
<b>Females</b>	83	55.3	55.30%
<b>Total</b>	150	100	100.00%

**Descriptive Statistics**

We'll start with frequency tables for each KAP item.

**Knowledge about Epilepsy:**

115 (76.7%), had heard of epilepsy and 35 (23.3%) did not. 117 (78.0%) answered that is epilepsy a mental illness, 32 (21.3%) said it is not and 1 (0.7%) did not know (Table2). 94 (62.7%) answered that epilepsy is hereditary and 56 (37.3%) reported it is not. 80% of respondents reported that epilepsy is not contagious.

**Table 2:** Is epilepsy a mental illness?

Response	Number	%
<b>Yes</b>	117	78%
<b>No</b>	32	21%
<b>I do not know</b>	1	0,70%
<b>Total</b>	150	100%

**Attitude towards Epilepsy:**

44 (29.3%) think epilepsy is caused by a fault of the ancestors, 93 (62.0%), reported no, and don't know 13 (8.7%). Regarding the response of respondents to whether they think epilepsy prevents a happy life, 86 (57.3%) reported yes and 64 (42.7%) reported no. 114 (76.0%) reported that an epileptic person can have a married life, 35 (23.3%) reported that they will not and 1 (0.7%) don't know. The majority 110 (73.3%) reported epileptics can live a normal sexual life, 31 (20.7%) and 9 (6.0%) do not (Table 3).

**Table 3:** Do you think epilepsy prevents happy life?

Response	Number	%
<b>Yes</b>	86	57.30%
<b>No</b>	64	42.70%
<b>Total</b>	150	100%

**Practice towards Epilepsy:**

76 (50.7%) think epilepsy affects education while 74 (49.3%) do not. 85 (56.7%) thinks that epileptics can be employed, and 65 (43.3%) do not. The majority 92 (61.3%) reported that society discriminates against epileptics and 58 (38.7%) do not think so. 105 (70.0%) would allow their child to play with an epileptic child while 45 (30.0%) reported no. 62 (41.3%) think a traditional healer's treatment is beneficial for epilepsy, and 88 (58.7%) do not (Table 4). 75 (50.0%) reported if they saw someone having an epileptic seizure they will take him to the hospital, 75 (50.0%) while ,62 (41.3%) reported they will spray water on their face, 6 (4.0%) make them hold a bunch of keys, 5 (3.3%) will leave them alone and 2 (1.3%) don't know what to do.

The overall net result of participants (KAP) in this study to-

wards epilepsy was as follows: for knowledge it was 67.9%, attitude 63.5% and practice 53.9%.

**Table 4:** Do you think a traditional healer's treatment is beneficial for epilepsy?

Response	Number	%
<b>Yes</b>	62	41.30%
<b>No</b>	88	58.70%
<b>Total</b>	150	100%

**Step 2: Cross-Tabulations**

Cross-tabulation of Gender and Knowledge of Epilepsy shown in Table 5.

**Table 5:** Gender and knowledge of epilepsy.

Gender	Heard of Epilepsy (Yes)	Heard of Epilepsy (No)	Total
<b>Male</b>	51	16	67
<b>Female</b>	64	19	83
<b>Total</b>	115	35	150

**Step 3: Chi-Square Tests**

Chi-Square tests were performed to see if there's a significant association between demographic variables and KAP items.

Example: Chi-Square Test for Gender and Knowledge of Epilepsy

- Null Hypothesis (H0): There is no association between gender and knowledge of epilepsy.

- Alternative Hypothesis (H1): There is an association between gender and knowledge of epilepsy.

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

Where  $(O_i)$  are the observed frequencies and  $(E_i)$  are the expected frequencies.

**Chi-Square Results**

- Pearson Chi-Square = 0.020

- p-value = 0.887

Since the p-value is greater than 0.05, we fail to reject the null hypothesis. There is no significant association between gender and knowledge of epilepsy.

**Discussion****Knowledge about Epilepsy**

In the current study, 76.7% of respondents had heard of epilepsy, a figure that aligns closely with findings from other regions. For instance, a study conducted in Nigeria revealed that 80% of participants were aware of epilepsy, though misconceptions were widespread, with 65% incorrectly identifying it as a mental illness, and 30% believing it to be hereditary [10]. Similarly, research from Turkey indicated high awareness levels, with 90% of respondents having heard of epilepsy, but only 50% possessing accurate knowledge about the condition, with misconceptions about its hereditary nature affecting 20% of participants [11].

Contrastingly, studies in rural areas of developing countries often report lower awareness and higher rates of misconceptions. For example, in rural India, awareness was significantly lower, and many participants held erroneous beliefs, such as epilepsy being caused by supernatural forces or ancestral faults [12]. This disparity highlights the critical role of education in improving public knowledge about epilepsy.

### Attitudes towards Epilepsy

Attitudes towards epilepsy in the current study revealed mixed perceptions. While 76.0% believed that individuals with epilepsy could have a married life, 57.3% thought epilepsy prevents a happy life, and 29.3% associated it with ancestral faults. These attitudes reflect deep-seated cultural beliefs and stigmas. In Saudi Arabia, a study found that 70% of respondents believed epileptics could marry, but 60% thought epilepsy negatively impacts their quality of life [13]. This is similar to findings in India, where cultural beliefs significantly influenced negative attitudes towards epilepsy, with 40% of respondents attributing it to supernatural causes [12]. In contrast, attitudes in more developed regions tend to be more positive due to better education and awareness campaigns. For instance, a study in the United States found that while there is still some stigma associated with epilepsy, the majority of respondents (85%) did not view epilepsy as a barrier to marriage or a happy life [14].

### Practices towards Epilepsy

The practices towards epilepsy in the current study showed that 50.7% believed it affects education, 56.7% thought epileptics could be employed, and 61.3% recognized societal discrimination against epileptics. These findings are consistent with those from Ethiopia, where 55% of participants believed epilepsy impacted education and employment, and 65% acknowledged societal discrimination [15]. Similarly, in Kenya, a study indicated that 60% of respondents would not allow their children to play with epileptic peers, underscoring the prevalent stigma and discrimination [16].

However, in regions with extensive public health education, such as parts of Europe, practices towards epilepsy are more inclusive. A study in the UK reported that 70% of respondents were supportive of educational and employment opportunities for individuals with epilepsy, reflecting a more accepting and informed society [17].

### Regional Comparisons and Implications

The discrepancies in knowledge, attitudes, and practices towards epilepsy across different regions emphasize the importance of tailored educational interventions. In regions with high levels of misconceptions and stigma, community-based education programs are crucial. For example, in rural Tanzania, targeted educational campaigns significantly improved public knowledge and reduced stigma towards epilepsy [18]. Moreover, cross-cultural studies reveal that while epilepsy is universally stigmatized to some extent, the severity and nature of the stigma vary widely. For instance, a comparative study between Brazil and France showed that while

both countries had misconceptions about epilepsy, the stigmatization was more profound in Brazil due to cultural beliefs and lower levels of public education [19].

When comparing these findings with other studies, it becomes evident that knowledge about epilepsy varies significantly across regions, influenced by educational, cultural, and socio-economic factors. For example, higher awareness levels in urban areas of developed countries contrast sharply with the misconceptions prevalent in rural areas of developing nations. Attitudes and practices towards epilepsy are similarly affected, with cultural beliefs playing a significant role in shaping perceptions and behaviours.

### Conclusion

The current study's findings are consistent with global trends, indicating that while awareness of epilepsy is relatively high, misconceptions and stigmas persist, particularly in regions with lower levels of education. Targeted educational interventions are essential to dispel myths and improve the quality of life for individuals with epilepsy. Comparative analyses highlight the universal challenge of epilepsy-related stigma and underscore the critical role of education in mitigating its impact.

### Recommendations

- i. Enhanced Education Programs: Implement community-based education programs tailored to address specific knowledge gaps and cultural beliefs about epilepsy in Sudan.
- ii. Regular Follow-ups: Strengthen healthcare systems to ensure regular follow-up visits and continuous patient support.
- iii. Utilizing Media: Leverage social media, radio, and television to disseminate accurate information about epilepsy to reduce the social stigmata about the disease.

### Limitations

The study had several limitations. First, the cross-sectional design does not allow for the establishment of causality. Second, self-reported data may be subject to recall bias and social desirability bias. Third, the study was conducted in a specific rural area, which may limit the generalizability of the findings to other regions as the respondents are limited to few sectors of the community.

Despite these limitations, the study provides valuable insights into the KAP of population in a rural Sudan and highlights the need for targeted health education and intervention programs.

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### Disclosure of Conflict of Interest

All authors have no conflict of interest.



## Ethical Approval

Ethical approval was obtained from faculty of Medicine, University of Gezira ethical committee as well as informed verbal consent from all participants.

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