

# Factors Contributing to the Persistence of Epilepsy: A Consideration of Hotspot Area at Mahenge, in Morogoro Region, Tanzania

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## Abstract

**Background:** Mahenge district is the leading area on the prevalence of epilepsy in which the rate keeps on increasing where rate is estimated to reach at 6.4 in three consecutive years (from 2014-2016), furthermore the government via ministry of health is requested by District Officer to find other solutions on the prevention and treatment of the epilepsy hence there is a need on assessing the causes of persistence of epilepsy in Mahenge.

**Methods:** A cross-sectional study was conducted to a sample of 200 Participants. Data were collected by the use of Questionnaires that carried much of open questions. Data were collected and analyzed descriptively and cross tabulation as well as chi-square were used for association.

**Results:** A total of 187 study respondents participated in the study. The results obtained showed that lack of knowledge on epilepsy, poverty and traditional perceptions on epilepsy play significant role in persistence of epilepsy at Mahenge, due to the absence of sufficient provision of health education in relation to poverty living line among the community and local belief that epilepsy is a tradition evil spirit disease contributes greatly to the persistence of epilepsy. The association between religious perceptions with challenges facing the community with epileptic disorder on searching for epileptic treatments; the obtained T-value (0.594). Also it was observed that affected people with epilepsy face various on seeking for treatments due few numbers of healthy facilities, and those facilities present are very distant from many of community members as well as expertise which force them to involve in seeking the traditional medicines which do not produce desirable outcomes.

**Conclusion:** The perceptions of the community on epilepsy and lack of knowledge on selection of suitable treatment interventions have contributed greatly to the persistence of epilepsy. As the results, the affected community members are facing social discrimination such as dropout from schools, giving no opportunity in social participation especially in decision making and also unemployment problem.

**Keywords:** Epilepsy • Neurological disorder • Persistence • Mahenge

**Abbreviations:** DC: District Commissioner; IBEA: International Bureau of Epilepsy; ILAE: International League Against Epilepsy; IDRC: International Development Research Centre; mhGAP: Mental Health Gap Action Programmes; NGOs: Non-governmental organizational; RUCU: Ruaha Catholic University; WHO: World Health Organization; PWE: People with epilepsy

## Background

Epilepsy is a group of neurological disorder which is characterized with epileptic seizures in which the clusters of nerve cells or neurons in the brain sometimes signal abnormally causing strange sensation, emotions and behaviors or sometimes convulsion, muscle spasms and loss of consciousness.

WHO and its partners recognize that epilepsy is a major public health concern. As an initiative established in 1997, World Health Organization (WHO). The International League Against Epilepsy (ILAE) and International Bureau for Epilepsy (IBE) are carrying out a global campaign "Out of the Shadows" to provide better information and raise awareness about epilepsy and strengthen public and private efforts to improve care and reduce the disorder's impact.

It is estimated that there are fifty millions of people suffering from Epilepsy in which eighty (80%) percent is covered by developing countries including Tanzania (WHO 2013) where Morogoro specifically Mahenge district and

Ruvuma regions are leading. Wapogoro people of the Mahenge Mountains in the interior of Tanzania, suffered from epilepsy, called "kifafa" in Swahili [1-23]. There 1310 sick people in 2011-2012 and the number kept on increasing for forty four (44) more people in 2012-2013 (1354 affected individuals) as reported by District Commissioner (D.C) in 2013 and the number was estimated to increase for 6.4 percent in two to three years to come that is 2014-2015 [21]. The government of Tanzania has dedicated "EPILEPSY DAY" which is conducted each year.

There is the upsurge of the affected individuals thus in 2016 were 923 but in 2017 raised up to 1362 meanwhile up to February 2018, were 1381 [21]. Thus this study has assessed factors underlying. Therefore it has addressed the gap by assess awareness on epilepsy among the community, second it has explore on treatment seeking behavior among affected individual and lastly it has examine the social cultural factors contributing to epilepsy among members in the society.

## Methods

### Study Area

The study was conducted in Mahenge district one of the six districts of the Morogoro Region of Tanzania whereas other districts are Urban Morogoro, rural Morogoro, Kilombero, Mvomero and Kilosa. The area is characterized by leading in the population with epilepsy [21]. It covers 24,460 square kilometres (9,444 sq. mi) of which 4,927 square kilometres (1,902 sq. mi) is in forest reserves Ulanga District is bordered to the north and west by the Kilombero District, to the east by the Lindi Region and to the south by

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the **Ruvuma Region**. The area is covered with population number of 265,203 according to National Bureau of Statistic Tanzania specifically National census of 2012. Furthermore the area is located at 886 meters above the sea level (Figure 1).

## Study Design and Setting

Cross-sectional study of 200 participant was used to assess factors which makes epilepsy persist in the hotspot area of Mahenge Tanzania was conducted in February to March 2018. Thus measurement of exposure of interest and outcome of interest is carried out at the same time. The design was opted since is very flexible, timely and economic [23] as the research was scheduled under a period. It involves using different groups of people who differ in variable of interest but share other characteristics, such as socioeconomic status, education background and ethnicity. This means there is no experimental procedure, so no variables can be manipulated by the researcher.

## Participants

The study enrolled 200 participants and it covered the population inhabitants aged between 18 years up to 65 years since they are considered possibly to have knowledge about epilepsy that were selected in four wards in Mahenge district out of 21 total number of wards. The study was conducted in Mahenge district, Morogoro region focusing on adult individuals with ages between 18- 65 who are residing in Mahenge.

Mahenge district was selected purposefully; the main goal of purposive sampling was to focus on particular characteristics of a population of interest, which enabled the Principal Investigator to obtain answers on research questions. Sampling to the control group employed this method as well to get information of interest at the place.

Mahenge district is occupied with twenty one (21) wards through which five (5) were considered and study populations were taken or selected. The lists of wards with their respective streets were obtained from District Council of Mahenge in Ulanga district. The distribution sample was awarding to wards was calculated by the use of the OpenEpi calculator version 3 to check for the power of the study using the prevalence in children exposed to pesticides which were for control group assurance of study reliability, where the power was found to be 80%.

The technique employed was multistage sampling stage in which sample frame of 21 wards of Mahenge district was made whereby 5 wards were selected randomly. In each ward there was the division of 2 streets each covering more than 15 population residents making the total sample size or total population study approximately of 200 through the actual sample size used was 187 in consideration to related challenges faced during sampling.

Moreover Probability proportional to size was conducted to select three villages of interest from each of the selected wards. Thus, a list of all landing

sites in the village was obtained, with their respective population of members, arranged in descending order and the cumulative population determined. The total population with the number of wards/villages was determined, to determine the sampling interval. Then the first ward was determined by getting a random number and the cluster that had this selected random number was the first cluster selected. The next cluster was selected by adding the sampling interval to a random number. The same procedure was repeated until all the 5 wards/ village were identified plus their sampling distribution to each cluster

Non probability sampling techniques such as quota and convenience techniques were implemented to obtain sample characteristic which are desired ages accordingly whereas the convenience technique were used when selecting respondents above 18 years. The spinning method was employed to select the direction to start the selection of households and hence participants.

## Inclusion and Exclusion Criteria

### Inclusion Criteria

- Adult aged between 18 years up to 65 years
- An adult who has been in Mahenge for more than a year.

### Exclusion Criteria

- Adults with impaired vision and speech.
- Adults with chronic illness.

### Variables

The independent variables were Social-demographic characteristics age, gender, occupational, Educational level ,other factors were Awareness factors, Religious perception factors, epileptic treatments seeking behavior factors, Societal beliefs factors where by the dependence variable was persistence of epilepsy.

### Data Collection Instruments

Therefore data collection process, the instrument which Questionnaire formatted both open and crossed questionnaire was used in collection of data. This instrument was short and simple to ensure all participants are able to understand it and for effectively collection of data (the questionnaires were constructed and translated in Kiswahili).

### Data Analysis

All statistical analyses were conducted using Statistical Packages for Social Sciences (SPSS) version 22.0 for quantitative data. Manual data analysis by using scientific calculator was also carried for quantitative data.

## Results

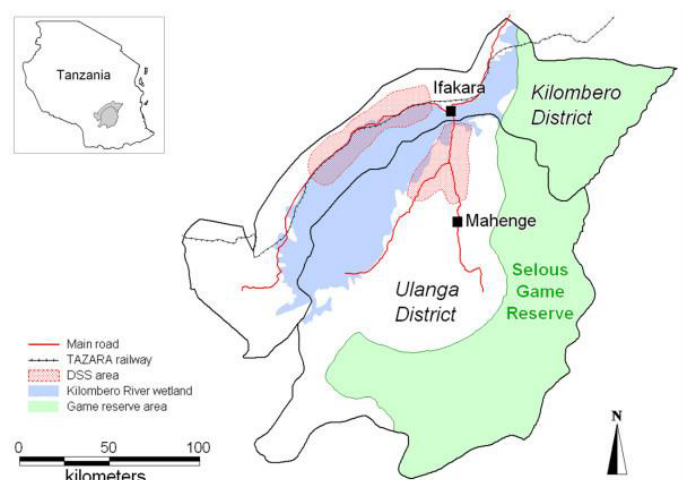
### Social-demographic characteristics of the respondents

A total of 187 study respondents participated in the study in which there were four demographic variables were investigated including age, education level, occupation status and gender. The variation of age among the respondents has directly shown that there was high number of respondent's aged 18-25 which were 44 respondents equal to 23.3 percent of the total number of the all respondents. The level of education thus 21.6 of respondents completed o-level secondary school who were 41 in number, while the lowest number was that of respondents reached higher level of education like colleges as well as universities which was 33 (19) (Table 1).

### Assessment of awareness on Epilepsy among the community members

#### Heard about Epilepsy

The study findings outlined the significant number of study respondents 182



**Figure 1.** The map of Mahenge District council.

**Table 1.** Socio-demographic characteristics of the studied respondents.

Age	Frequency	Percent
18-25	44	23.3
26-35	36	19
36-45	37	19.5
46-55	38	20
56-65	32	16.9
<b>Occupation</b>		
None employed	60	31.7
Employed	66	35
self employed	61	31
<b>Gender</b>		
Male	97	51.3
Female	90	48
<b>Education</b>		
Non educated	37	20
Primary school	38	20.3
Ordinary level	41	21.6
Advanced level	38	20
Higher level	33	19
<b>Total</b>	<b>187</b>	<b>100</b>

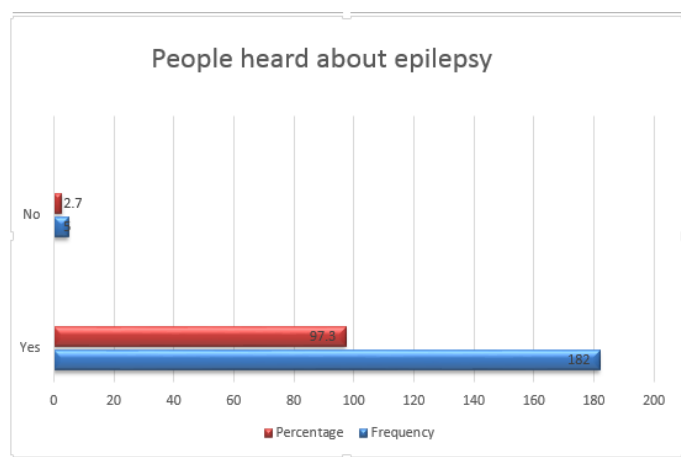
(97.3%) who once or often heard about the Epileptic disorder, this implies that the majority of residing population at Mahenge in Ulanga district has heard about the epileptic disease hence they are actually popular know the disease meanwhile there happened low number of study respondents who ever heard about the disease who covered 5(2.7%) study respondents. The individuals who never heard about of epilepsy were the ones who were foreigners such as businessmen as well as tourists who are not familiar to the area or were coming from areas with no epileptic cases, as shown in the (Figure 2).

**Understanding on the epilepsy among the study population**

The minority of the study respondents depicted that there were 31% of the study population that said epilepsy is a disease in which a person encountered with loosing of memory, while the majority of the study respondents in Mahenge, Ulanga district understood the Epileptic disorder as disorder in which an individual urinates while fainting that covered 35% of the total study respondents as shown in the figure, and also there were 34% of respondents shown that epileptic disorder understood that it is falling down and fainting disease (Figure 3).

**Communicability and treatment of epilepsy**

The study populations were asked to explain whether the disease is transmitted from one individual to the others or not (measure of communicability) also were asked to if the disease can be treated or not, the



**Figure 2.** People heard about epilepsy.

results were as followed. The understanding among the study populations were almost similar with little difference in answers since there were 96 study respondents suggested that the epilepsy is communicable that can be transmitted from one individual to the other, However disease can be treated by mostly herb drugs (disease is treatable), the total number of these were 94 respondents (Table 2).

**Provision of health education about epilepsy**

The study revealed that there are absolutely no provisions of health education on epilepsy that intended to prevent further spread of epilepsy among the community at Mahenge in Ulanga district, the findings have shown that 79 percent of the study respondents replied that there were no provisions of health education among the community meanwhile 21 percent of study population mentioned that there was provision of health education among the community at Mahenge in Ulanga district.

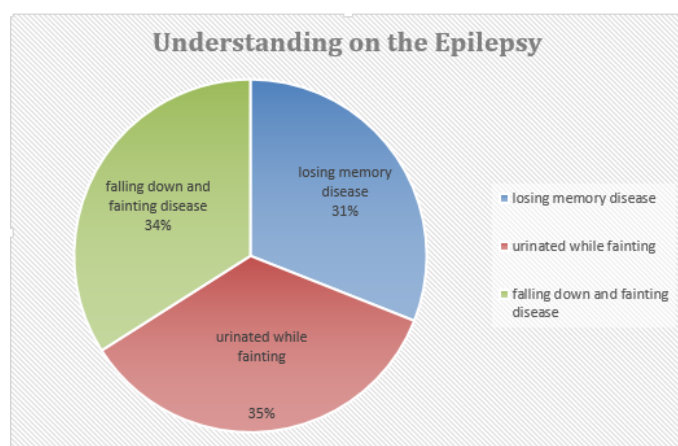
**Association between demographic variables towards understanding of epilepsy**

The Chi-Square statistic appears as an option when requesting a cross tabulation in SPSS. The output is labeled Chi-Square Tests; the Chi-Square statistic used in the Test of Independence is labeled Pearson Chi-Square. To make a conclusion about the hypothesis with 95% confidence, the value labeled Asymp. Sig. (which is the *p*-value of the Chi-Square statistic) should be less than .05 (which is the alpha level associated with a 95% confidence level). Thus according to findings basing on understanding variable and demographic characteristics or variables which were inserted for cross tabulation shown no association between these two variables, in which the obtained P-Value is greater than 0.05 (1.72) (Table 3).

**Treatments seeking behaviors among the affected community**

**Places where symptomatic individuals are commonly taken for treatment**

Study findings outline that majority firstly when are symptomized are taken to the prayers (70) equals to 37% of total study respondents, while total number of respondents 54 corresponding to 28.9 depicted that they often go to the witch doctors on seeking treatments of the epilepsy (Figure 4).



**Figure 3.** Understanding on the Epilepsy.

**Table 2.** Communicability and treatment of Epilepsy.

Communicability	Frequency	Percentage
Communicable	96	51.3
non communicable	91	49.7
<b>Treatment</b>		
Treated	94	50.2
Non treated	93	49.8
<b>Total</b>	<b>187</b>	<b>100</b>

**Table 3.** Relationship or association of understandings of epilepsy and demographic characteristics by using chi square tests.

		Understanding on epilepsy			Total	T-value
		falling down and fainting disease	losing memory disease	urinated while fainting		
Age	18-25	15	12	17	44	1.72
	26-35	13	6	17	36	
	36-45	12	13	12	37	
	46-55	13	14	11	38	
	56-65	10	14	8	32	
Education	non educated	10	13	14	37	
	primary school	15	12	11	38	
	o-level	12	15	14	41	
	advanced level	17	6	15	38	
	higher level	9	13	11	33	
Occupation	none employed	18	20	22	60	
	Employed	29	19	18	66	
	self employed	16	20	25	61	
Gender	Male	35	25	37	97	
	Female	28	34	28	90	
Total		63	59	65	187	

### Challenges faced by community with epilepsy when looking for epileptic disorders

The findings from the study revealed that the significant number of study community (52) declared that the prominent challenge they face on finding on treatment of epilepsy is few numbers of health professionals since it was observed only one health facility which Mahenge District Hospital in which there is one doctor and one nurse responsible on provision of epileptic disorders among the affected by epilepsy. While 38 number of community members declared that due to lack of health education has hindered the appropriate the provision of treatment on epilepsy among the study community (Figure 5).

### Religious perceptions on appropriate epileptic treatments

As it presents in Figure 5 below, the findings show that large percent (76) agreed the appropriate treatment for epilepsy is provided drugs or medicines from the hospitals, dispensaries or any other health facilities however there is 14 percent declared some of religious perceptions take prayers as appropriate treatment for the epilepsy.

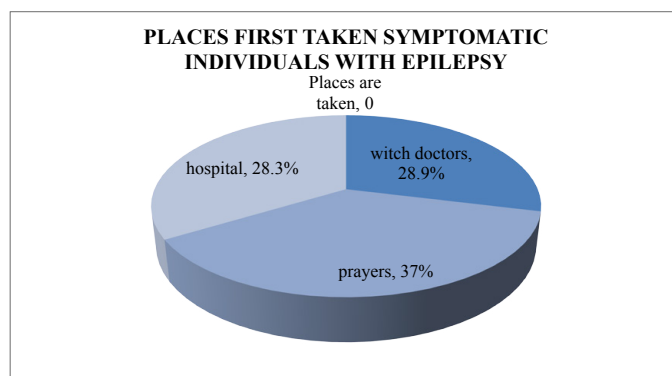
### Association between challenges faced by community on seeking for treatment and religious perceptions

The Table 4 below displays the association between religious perceptions with challenges facing the community with epileptic disorder on searching for epileptic treatments; the obtained T-value (0.594). To make a conclusion about the hypothesis with 95% confidence, the value labeled Asymp. Sig. (which is the p-value of the Chi-Square statistic) should be less than .05 (which is the alpha level associated with a 95% confidence level), this indicates that there is no association or relationship on religious perceptions on challenges faced community on seeking for epileptic disease (Table 4).

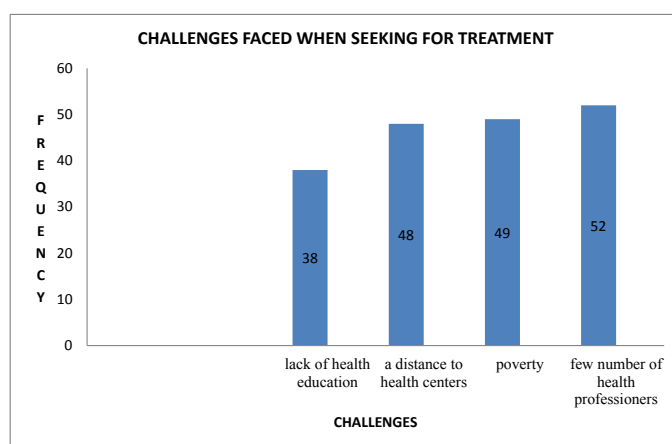
### Social cultural factors contributing to epilepsy among the members in the society

### Customs and traditional perceptions towards epileptic treatments

The study reveals that critical numbers of the study respondents declared that the appropriate treatment comes from traditional drugs "herbs" in 69 percent of total study community suggest in such way however 39 percent of the study population declared that medicines from health facilities provide desirable outcome to the affected individuals.



**Figure 4.** Places where symptomized community with epilepsy are taken.



**Figure 5.** Challenges faced community when looking for epileptic treatments.

### Societal beliefs on the cause of the epilepsy

The findings show the large number of study population depicted that the nature or cause of the epileptic disorder is due the witchcraft believe that is the affected individuals have been bewitched either because of land conflict or developmental jealous, that covers 93 number of total study population equal to 49.7 percent however few number of population studied 40 (21.4%) declare that the disease is caused by hard hitting of the head by heavy objects like stones and caring heavy objects mostly for long time

**Table 5.** Relationship between effects of epilepsy with custom and traditional perceptions towards seeking of epileptic treatment.

Effects of epilepsy	custom and tradition perceptions		P-Value
	epilepsy can be treated by hospital drugs	traditional drugs are more desirable	
Poverty	24	25	0.123
Isolated from communal participation	25	27	
Dropouts from school	20	22	
Not employment	20	24	

**Effects of epilepsy to the community**

The findings show that large percentage of the study population affected by being isolated from communal participation in various activities such as meetings and other social activities which covers 28% of the total population however 24 percent of the study population affected by not being employed hence lives in very poverty line.

**Relationship between effects of epilepsy and customs and traditional perceptions towards epileptic treatments**

The Table 5 below indicates the chi-square test in which the value obtained (0.123) of the relationship depict that there is no relationship or association between effects of epilepsy with customs and traditional perceptions towards seeking of epileptic treatment, since the value of correlation obtained (0.123) is greater than the mean error used to find the desired study respondents number which is 0.05, since for the variables to associate or relate should give T-Value less than 0.05 (Table 5).

**Relationship between effects of epilepsy with custom and traditional perceptions towards seeking of epileptic treatment**

Since the majority believes that epilepsy is caused by witch craft beliefs or other evil spirits hence they consider traditional drugs as sufficient interventions for elimination or reducing the consequences of epilepsy, 69% of the total respondents declared that traditional drugs are most preferred rather than modern drugs (31%). This also plays a great significant role on contributing to persistence of epilepsy.

**Discussion**

This section explains in details what have extracted from the study area conducted at Mahenge, Ulanga in Morogoro in association with other studies conducted in various parts in World basing on the same objectives such as awareness of the epilepsy, treatments seeking behaviors and social-cultural factors leading to the epilepsy whereas each of these factors are discussed below.

**Awareness of Epilepsy**

The study findings reveal that there exist some of the actual awareness and the etiological nature of epilepsy such that 35 percentages declared that epilepsy is a urinated while fainting disorder, 34 percentages of study community understands epilepsy as falling down and fainting disease while 31 percentages of the findings from study community understands it as losing memory disease. This is due to lack of health education provided to the community.

Also there are various misunderstandings on awareness of Epilepsy around the world according to the studies performed, In Cameroon it is believed that people with epilepsy are inhabited by the devil. This does not mean that they are seen as evil, but that evil invades them and causes them to convulse from time to time (US Department of Health; The World Health Organization, 2009).

In Uganda, as in many other countries, epilepsy is thought to be contagious and so people with epilepsy are not allowed to join the communal food pot for fear of others contracting epilepsy through that person's saliva (US Department of Health; The World Health Organization, 2009). In the Netherlands in 1996, a person was whipped and put into isolation because her seizures were thought to result from magic (US Department of Health; The World Health Organization, 2009).

In China, epilepsy diminishes the prospect of marriage, especially for women. A survey of public awareness in 1992 revealed that 72% of parents objected to their children marrying someone with epilepsy (US Department of Health; The World Health Organization, 2009).

In some rural areas of India, attempts are made to exorcise evil spirits from people with epilepsy by tying them to trees, beating them, cutting a portion of hair from their head, squeezing lemon and other juices onto their head and starving them (US Department of Health; The World Health Organization, 2009).

In Indonesia, epilepsy is often considered as a punishment from unknown dark forces.

In Liberia, as in other African countries, the cause of epilepsy is perceived as related to witchcraft or evil spirits (US Department of Health; The World Health Organization, 2009).

In Nepal, epilepsy is associated with weakness, possession by an evil spirit or the reflection of a red color. Bystanders who witness a seizure will often spray water on the forehead of the person experiencing the seizure of make him or her smell a leather shoe (US Department of Health; The World Health Organization, 2009).

Hence the study findings at Mahenge, Ulanga in Morogoro is quite similar to that which was conducted by US Department; The World Health Organization, 2009 on assessment of epilepsy in various parts of the World in which there emerge misunderstandings on the etiological nature of the epilepsy.

**Treatment seeking behaviors on epilepsy**

Fear, misunderstanding and the resulting social stigma and discrimination surrounding epilepsy often force people with this disorder "into the shadows". The social effects may vary from country to country and culture to culture, but it is clear that all over the world the social consequences of epilepsy are often more difficult to overcome than the seizures themselves.

Significant problems are often experienced by people with epilepsy in the areas of personal relationships and, sometimes, legislation. These problems may in turn undermine the treatment of epilepsy as well as treatments seeking behaviors among the community.

Misunderstandings about epilepsy, combined with the economic and financial barriers to availability of treatment in developing countries, play an important role in preventing treatment becoming available to millions of people in developing countries. For example, culturally informed health-seeking strategies often lead the majority of people with epilepsy in developing countries to turn to traditional healers for treatment (US Department of Health; The World Health Organization, 2009).

Due to that, the study reveals that lack of education (38 number of study community), distance to the health centers (48 number of study community), and poverty (49 number of study community) as well as fewer number of health experts on epilepsy (52 number of study community) are the significant challenges or obstacles intervene with popular seeking of proper treatments of the epilepsy. Also there exist a problem of selection of targeted places whereas the symptomatic individuals are to be taken, the study findings reveal that total number of 70 of study community use to take victims to the prayers since they believe epilepsy is associated with evil spirits, whereas 54 study community declared that they usually take the affected ones to the witch doctors and only 63 study community responded that they often take to the hospitals or other health centers on seeking for the treatments.

WHO and World Cup studies in various countries especially in developing

countries like Uganda, Namibia reveal that economic factors (poverty) hinder the proper community seeking behaviors towards epileptic disorders in such a way that. In 1990, WHO identified that, on average, the cost of the anti-epileptic drug phenobarbitone (which alone could be used to control seizures in a substantial proportion of those with epilepsy and which is on the WHO list of essential drugs) could be as low as US\$ 5 per person per annum.

The World Bank report "Investing in Health" (1993) states that in 1990 epilepsy accounted for nearly 1% of the world's disease burden. Epilepsy commonly affects young people in the most productive years of their lives, often leading to avoidable unemployment.

The success in controlling seizures by medication varies depending on the type of epilepsy. For example, if no underlying cause can be found for your seizures (idiopathic epilepsy), you have a very good chance that medication can fully control your seizures. Seizures caused by some underlying brain problems may be more difficult to control (Doctor Colin Tidy, 2018)

The overall outlook is better than many people realize. The following figures are based on studies of people with epilepsy, which looked back over a five-year period. These figures are based on grouping people with all types of epilepsy together which gives an overall picture:

- About 5 in 10 people with epilepsy will have no seizures at all over a five-year period. Many of these people will be taking medication to control seizures. Some will have stopped treatment having had two or more years without a seizure whilst taking medication.
- About 3 in 10 people with epilepsy will have some seizures in this five-year period but far fewer than if they had not taken medication.
- So, in total, with medication about 8 in 10 people with epilepsy are well controlled with either no, or few, seizures.

Thus adherence on medication can greatly be affected by individual seeking treatments behaviors since single dose of modern drugs can not sufficient produce the desired relief from the epileptic seizure (Doctor Colin Tidy, 2018)

### **Determination of social cultural factors contributing to epilepsy**

Poor knowledge and strong cultural and religious beliefs characterize the experience of PWE (People with Epilepsy) in this population. Epilepsy was commonly ascribed to witchcraft and curses. Nearly all PWE demonstrated pluralistic care-seeking behavior, including the use of prayers and traditional healers alongside modern care. PWE reported discrimination as a result of their condition. The majority of PWE had suffered burns during seizures. Epilepsy-related stigma contributes to overall disease burden and PWE face exclusion across major life domains. There is a need to educate communities and inculcate perceptions and attitudes that promote early detection of epilepsy and early care-seeking behavior (Epilepsy and Behaviors Department in Kilimanjaro, Tanzania. February 2011)

The study findings at Mahenge, Ulanga in Morogoro region reveal that social cultural and religious beliefs among the study community such that epilepsy is treated by using traditional drugs covered a majority percentage of total studied populations (69%) since they believe epilepsy is caused by evil spirit as well as other witchcraft associated beliefs and lack of knowledge on the epidemiology of the epilepsy whereas is only 31 percentages declare that modern traditional drugs produce a desirable outcomes.

The large Clinical Standards Advisory Group (CSAG) survey showed the extent to which different areas of concern were related to age and the severity of the epilepsy. In adults, common issues of concern are the driving ban, work, social life, psychological factors, impairment of memory, and loss of confidence. In children, common issues were school and education, psychological factors, social life, sports, the need to take tablets, sleep, supervision, play, and difficulties with learning.

There are varieties of studies on social cultural factors contributing to the epilepsy Worldwide but the available ones show power knowledge as well as believe on traditional taboos contribute significantly to the occurrence of epilepsy .

## **Recommendations**

The study on the factors contributing to the persistence of epilepsy at Mahenge, Ulanga in relation to other studies recommend the following

Provision of mass education campaigns on epilepsy, since there observed some of the misunderstands on epilepsy (35% of study community said it is characterized with urinating while faint disease, 34% of study community declared that it is falling down and fainting disease and 31% of the study community said it is losing memory infection) this involves educating the majority on the possible etiological nature of epilepsy since the cause of epilepsy is inadequate known yet, propel behaviors linking to the treatments among the affected community as well as the consequences of epileptic disorders within the community. By knowing the disease will ensure proper management of it so as to provide relief and avoid further spread of the disease.

There should be suitable number of health care facilities nearby the community and health expertise responsible for treatments of epilepsy (since at study area Mahenge it was observed one doctor and one nurse while it is only Mahenge hospital provides treatments of epilepsy, a distant individual has to walk 59 kilometers per day seeking for the modern treatments) this will encourage the community to attend for regular medical examinations, also for the affected ones to have regular and continuous taking of doses for treatments of epilepsy.

Setting of special priorities towards the affected individuals especially in employment opportunities in which they are capable with, also they should not be dropped out from the schools, since the study depicted some of the effects of epilepsy are unemployment in which covers 28 percentages out total number of study community, poverty (26%) and dropout from schools (22%). These all effects make the individuals not affording treatment of the disease; hence there should be first priorities in various economic activities such as employment opportunities, possession of land so that the affected individuals can manipulate the opportunities so that they earn money to afford the modern treatments

Early diagnosis and treatments, such as the studies done in Liberia by Doctor Colin Tidy, 2018 revealed that if a child is early diagnosed and given the treatments, the complications of epileptic seizures will not occur during his or her adult ages., this will also minimize or eliminate the persistence of epilepsy.

Discouragement on some of religious perceptions on epileptic treatments, despite of the facts that majority of the religious leaders perceive that modern traditional drugs produce desirable results to the affected individuals (76% of total study community declared that they are advised by their religious leaders to seek for modern drugs from health centers), however 24 percentages are advised to seek for prayers as treatment interventions, the fact is that prayers cannot be used as treatment interventions, hence this perception should be discouraged.

## **Conclusions**

The understanding about Epilepsy is still controversy idea since there exist misunderstands around the World such that in Uganda, they believe that epilepsy is contagious disorder, In China terms as genetic disorder in which genes transfer carries the infectious from parents to the children whereas in Indonesia they consider it as punishment from unknown dark forces, and from the study area Mahenge study community declare that epilepsy is either urinated while fainting disease(35%), falling down and faint (34%) while others declared that epilepsy is losing memory disease(31%), since the community do not have better awareness this leads to mismanagement of epilepsy hence contribute to its persistence at Mahenge.

Fewer number of health facilities as well health care expertise such as doctors and nurses responsible for management of epilepsy has contributed to the persistence of the epilepsy, since at the study it was observed

there is only one doctor and one nurse responsible for the management of epilepsy basing on its prevention interventions as well as treatment, simply considerable number of study community (52 total number of study community) declared that this is the major leading reason for the persistence of epilepsy.

Also there are several of social cultural factors such as traditional and cultural perceptions believe on traditional drugs (69 percentages of total study community) as suitable treatments, also some members in the society perceive the disease as witchcraft disease (93 total number of respondents that covered 49.7%), thus the perceptions of the community on epilepsy and lack of knowledge on selection of suitable treatment interventions have contributed greatly to the persistence of epilepsy.

## Declaration

### Ethics approval and consent to participate

The study was conducted after obtaining permission from the Mahenge District Council under the supervision of District Health Officer (DHO). A letter to request the permission to conduct research within District was written to the authority

Study participants were informed of the aim of the study and its importance and written informed consent was provided to the participants before recruiting them in the study which was a formal written consent and confidentiality. The information from this study was used for academic purposes only, thus each participant was treated anonymously.

### Consent for publication

Not applicable as it was done under academic qualification of postgraduate education, publication is per ethical approval

### Availability of data and material

The data sets used and analyzed during the current study are available and still under analysis for subsequent publications but will be available upon request from the correspond author.

## Funding

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## Authors' Contributions

PMC and MM designed the study, conducted data collection, did data analysis and interpretation of findings, wrote and approved the manuscript. RM provided technical inputs to improve designing the study, supported data analysis, read, improved and approved the final manuscript write up.

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