

Knowledge and Practice Regarding Epilepsy among Nurses in Asutifi North District, Ghana

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Abstract

A recent study has indicated that 70 million people are estimated to suffer from epilepsy. Despite the increase in education and health care, some health professionals continue to linger in darkness about the cause and treatment options of the disease. The main objective was to study the nurses within the Asutifi North District to understand their subjective experiences of epilepsy in a socio-cultural context and how their knowledge shaped their practice towards people with epilepsy. The exploratory descriptive cross-sectional study design was used. The study participants were selected using a multistage sampling technique to arrive at a sample size of 102 using a standard statistical formula. Data analysis was done using STATA version 12. Findings indicated that 45.1% of nurses have had theory lessons only, 29.4% clinical demonstrations only, and 25.5% of participants said they have had both theory and clinical demonstrations. The bivariate logistic analysis proved a significant difference in knowledge of epilepsy and demographic factors as observed among religion ($p=0.017$), speciality area ($p=0.045$), and close family relationship with epilepsy ($p=0.001$). When the socio-demographic characteristics were cross-tabulated with practice on epilepsy, the area of speciality (RMN) ($p=0.001$) appeared statistically significant. Nurses in the Asutifi North District of the Ahafo Region of Ghana tended to have low knowledge and poor practice on epilepsy. Therefore, enhancing nursing education and training on epilepsy is imperative to improving health care delivery for people living with epilepsy.

Keywords: Knowledge; Practice; Epilepsy; Nurses; Asutifi North District

Introduction

Epilepsy is one of the world's oldest known brain disorders among several medical conditions (Epilepsy Foundation, 2017). A recent study has indicated that 70 million people are estimated to suffer from this disease (Verma & Vankar, 2016). Because epileptic seizures typically include convulsions, the term convulsion is sometimes used as a synonym for seizure. However, not all epileptic seizures lead to convulsions, and not all convulsions are caused by epileptic seizures. Epilepsy is triggered by abnormal electrical activity in the brain resulting in an involuntary change in body movement, function, sensation, awareness and behaviour. The condition is characterized by repeated seizures or "fits" as they are commonly called. These take many forms ranging from the shortest lapse of attention to severe and frequent convulsions.

The prevalence of active epilepsy in developing countries ranges from 5-10 per 1000 people, and the disorder to a significant degree is associated with a host of parasitic and bacteria infectious diseases that are largely absent in industrial countries. Parasitic infestations, such as *Onchocerca volvulus*, *Taenia solium* and *Toxoplasma gondii* are believed to increase the risk of epilepsy (Ae-Ngibise et al., 2015). Unlike other neurological conditions, epilepsy can be completely controlled in the majority of cases by medication or surgical procedures (Linehan, Walsh, Kerr Brady, & Kelleher, 2009).

Despite global advances in diagnosis and treatment in recent years, about eight million people with epilepsy in Africa are not treated with modern anti-epileptic drugs (World Health Organization, 2004). It is also estimated that 80 percent of the burden of epilepsy is in the developing world, where in some areas 80 to 90 percent of people with epilepsy receive no treatment at all (Atlas of Epilepsy Care in the World, 2005). Sadly, Dr. Sammy Ohene, who is the President of the Epilepsy Society of Ghana, is cited as saying "More than half of epileptic patients in Ghana could be treated at less than 30 Ghana Cedis a year" (Owusu-Aboagye, 2015).

Information gathered cited Dr. James Boakye Fordjour, the Head of Obstetrics and Gynaecology at Brong Ahafo Regional Hospital, as saying that the Brong Ahafo Regional Hospital has been recording an increasing number of epilepsy cases since 2013 and that the public should pay much attention to and support people with epilepsy to live meaningful lives (Ghana Broadcasting Corporation, 2015). Speaking at World Epilepsy Day, Dr. Patrick Adjei urged Ghanaians to support and encourage epileptics to live normal lives. According to him, "Epilepsy once diagnosed can go away, do not despise people with epilepsy because epilepsy is not contagious as many have assumed. Epilepsy has nothing to do with witchcraft and spirits but comes about as a result of physical condition of the brain. Many individuals with epilepsy are perceived by the community as weak, inhuman, dangerous or inferior because of their symptoms, and as result of the stigma, these people are excluded. But epilepsy is treatable and up to 70 percent of the seizure can be cured and the risk of reoccurrence is about 25 percent" (Ghana Health Service [GHS], 2015). Even though highly effective, low-cost treatments are available, as many as 9 of 10 people with epilepsy in Africa go untreated. The reasons for the unavailability of treatment include inadequate health delivery systems, lack of trained personnel, lack of essential drugs, and traditional beliefs and practices that often do not consider epilepsy as a treatable condition. This treatment gap greatly increases the burden of epilepsy and disability (de Boer, Mula, & Sander, 2008).

A study conducted on beliefs on epilepsy in Northern Ghana highlighted that the most interesting perceived cause of seizures in males is harbouring anal worms, and spirituality is a strong notion as a perceived cause. Besides, there is the belief that spells of epilepsy are cast on women as a form of punishment when they engage in adultery (Adjei et al., 2013). According to Ekeh and Ekrikpo (2015) when medical students in Uyo, Southern Nigeria, were asked about their knowledge, attitude and perception towards epilepsy, the result was as follows: on the aetiology of epilepsy, 14.88% of the basic students and 5.41% of the clinical students were positive that epilepsy was caused by evil spirits. Again, 9.09% of the basic students compared to 5.41% of the clinical students believe that epilepsy was caused by witches; 10 of the basic students as against only three (2.70%) of the clinical students identified palm oil as a cause. The result further added that a large number of clinical students 85.59% know that birth injuries can cause epilepsy as against 47.11% of the basic students. Only 36.36% of the preclinical students were aware that infections can cause epilepsy as against (88.29%) of the clinical students (Ekeh & Ekrikpo, 2015).

It is worth noting that when someone has a seizure, it does not necessarily mean that person has epilepsy, though. Certain things can sometimes trigger seizures in people with epilepsy. They include flashing or bright lights, a lack of sleep, overstimulation (like staring at a computer screen or playing video games for too long), certain medications, and hyperventilation (breathing too fast or too deeply). In addition, seizures can be triggered in anyone under certain conditions, such as life-threatening dehydration or high temperature. But when a person experiences repeated seizures for no obvious reason, that person is said to have epilepsy (Goodman, 2004). It is therefore important to make behavioural and psychosocial adjustments with epileptic patients to control seizure and improve and attain higher quality of life by sticking to medication regimen, having adequate sleep, good nutrition and reducing stress (Hosseini, Sharif, Ahmadi, & Zare, 2016).

In connection with the manifestations of epilepsy, the most common symptoms proffered by most respondents include convulsion, falling down, rolling of eyes, foaming of mouth, urination, and biting of tongue (Kabir, Iliyasu, Abubakar, Kabir, & Farinyaro, 2005). Interestingly, surveys in developing countries with different cultures reveal common beliefs, for example, that epilepsy is a contagious illness or a kind of mental retardation (Fernandes, Cabral, Araujo, Noronha, & Li, 2005). This assertion was supported in a study among people with epilepsy that indicated 2.2% of the respondents admitted that epilepsy is transmitted through contacts with epileptic patients (Kassie, Kebede, & Duguma, 2014). Among the medical students studied, 24.79% basic and 9.91% clinical students respectively believed that epilepsy is transmitted by saliva; 38.02% basic and 5.41% clinical students affirmed blood as a means of spread of the disease; urine was made up of 8.26% basic and 5.41% clinical students; faeces/flatus 4.96% basic and 3.60% clinical students respectively during a convulsive episode or at all times. The study stressed further that epilepsy is also believed to be transferable from one person to another by various routes. As a result it leads to "courtesy stigma" where relatives, friends, and companions of persons with epilepsy are stigmatized as well (Ekeh & Ekrikpo, 2015).

There is no doubt that community care of people with epilepsy needs much improvement and nurses are professionals who play a very important role in providing coordinated care and education to these patients. Since nursing care for patients with epilepsy is very important, nurses must take special care to decrease the risk and complications associated with this disease. The most important nursing intervention is to keep up an adequate airway, breathing and circulation during seizures and to prevent any injury of the patients with epilepsy. Also, an oral airway suction apparatus should be available at bedside at all times (Shehata, El-Lateef, Ghanem, & El-Masry, 2015) to reduce danger while optimizing results in the management of the patient (Buelow, Privitera, Levisohn, & Barkley, 2009).

In line with whether epilepsy is treatable or not, approximately one-third of clinical nurses (36.5%) believed that epilepsy was incurable (Dayapoğlu & Tan, 2016). This notion is strongly supported by a study claiming that epilepsy cannot be cured with medication, arguing that about 3 in 10 people experienced seizures, despite medication (Tidy, 2015). It was therefore concluded that when seizures persist beyond a certain age, families and health care personnel placed child in the "sickness sphere," meaning that the child is incurable and treatment attempts are futile (Sharkawy, Newton, & Hartley, 2006). However, a survey indicated that 79% of nurses are of the view that epilepsy can be controlled or cured in this case 25% of the nurses, and this assertion is supported by Ekeh and Ekrikpo (2015) who claimed 68.60% of the basic medical students and 87.39% of the clinical students said that disease can be treated in the hospital.

An observation made between October and November 2016 at the Asutifi North District Health Directorate in the Ahafo Region of Ghana indicated that among the top 10 diseases in the district, epilepsy was not captured, and that the district has minimal information on epilepsy. This was evident by data gathered from the Ghana Health Service (GHS) District Health Information Management System (DHIMS) which indicated that the Brong Ahafo Region had recorded 17,666 for cases of epilepsy in 2012, with 104 cases of epilepsy for Asutifi South District, but none for the Asutifi North. In 2013, there was a rise in reported cases of the condition up to 1,888, but a slight decline in Asutifi South with reported cases being 100. In 2014 and 2015, the number of reported cases increased to 3,166 and 3,495 respectively, whilst the Asutifi South recorded 128 and 125 within the same period, but none for the Asutifi North District Health Directorate. However, there was a sharp fall in the reported cases of epilepsy in the Region with a figure of 1,377 with

the Asutifi North Health Directorate recording 10 cases from January to June, 2016, and in the same duration Asutifi South recorded 33 cases (GHS, 2016).

Despite the increase in education and health care, some health professionals continue to linger in darkness about the cause and treatment options of epilepsy. As efforts to improve the care of people living with epilepsy are a major concern, little has been done to identify the extent of subjective knowledge and practice among nurses.

Methodology

This was an exploratory descriptive cross-sectional study with a quantitative approach. The study population consisted of nurses (both males and females) who have been licensed by the Nursing and Midwifery Council of Ghana and working in government facilities within the Asutifi North District. The exclusion criteria were private health facilities, non-trained health professionals and other health professionals without nursing background, and student nurses on clinical attachment during the period of the study in the district.

Sample procedure

A multistage sampling technique was used to select the study participants from the communities. This was because the district is vast and by population, Asutifi North District has 20 communities. To access the participants, these communities were grouped into four sub-districts. Ten communities were randomly selected at the district level as the first stage. A standard statistical formula from Rumsey (2016) was used to arrive at a sample size of 102. The starting point was randomly selected and a systematic random sampling method was used to select the study participants from the ten communities.

Using Standard formula

$$n = \left(\frac{Z^2 \times P(1-P)}{e^2} \right) \div \left(1 + \left(\frac{Z^2 \times P(1-P)}{e^2 N} \right) \right),$$

where

n = Sample size.

Z = Z-score (95% Confidence level; Z Value \Rightarrow 1.96).

e = Margin of error (i.e., allowing for 0.05).

N = Population size (i.e., 127 nurses).

P = Standard deviation (0.5 or 50%).

Substituting figures into the equation

$$n = \left(\frac{Z^2 \times P(1-P)}{e^2} \right) \div \left(1 + \left(\frac{Z^2 \times P(1-P)}{e^2 N} \right) \right)$$

$$n = \left(\frac{1.96^2 \times 0.5(1-0.5)}{0.05^2} \right) \div \left(1 + \left(\frac{1.96^2 \times 0.5(1-0.5)}{0.05^2 \times 127} \right) \right)$$

$$n = \left(\frac{3.8416 \times 0.25}{0.0025} \right) \div \left(1 + \left(\frac{3.8416 \times 0.25}{0.0025 \times 127} \right) \right)$$

$$n = 384.16 \div 4.02488189$$

$$n = 95.44627905 \sim 95.5 \approx 96$$

However, for attrition rate where there was an anticipation of non-response by participants leading to missing data and then reducing the number of respondents for the study, it was prudent to increase the sample size. This was calculated as:

$$nA = \frac{n}{C}, \text{ where}$$

nA = Sample size (based on attrition or non-response).

n = Sample size (i.e. 96).

C = Confidence level (i.e., 0.95 or 95%).

Substituting figures into the equation

$$nA = \frac{n}{C} = \frac{96.0}{0.95} = 101.0526316 \sim 101.05 \approx 102$$

Therefore, the final sample size used for the study was 102.

Research tool

The research tool used for data collection for this study was a paper-based self-designed semi-structured questionnaire with 31 items that were reviewed and modified to suit the current research.

Data Analysis and presentation of results

Descriptive statistics, which involves frequencies and percentages, were used in representing data for the socio-demographic characteristics of all respondents. An operational definition was used to categorize the knowledge level and practices of the study participants on multiple response items. Participants who scored 16 or more out of the 31 items correct on the knowledge of factors contributing to the development of epilepsy were operationally labelled as having “high” knowledge and those who scored less or equal to 15 seen as having “low” knowledge. Subsequently, participants who had nine or more appropriate responses correct on the level of practices on epilepsy were operationally labelled as having “good” practices, and those who scored from one to eight were operationally categorised as having “poor” practices. Besides, responses on other items and other relevant questions were cross-tabulated in terms of the bivariate analysis to see how statistically significant the independent variables influence the dependent variables. The statistical software that was used for analyzing the data was STATA, version 12.

Ethical consideration

To obtain data for this study, an introductory letter was collected from the Graduate School, School of Allied Health Sciences, and Department of Public Health of the University for Development Studies, Tamale, which was presented to the Health Directorate of Ghana Health Service in the Asutifi North District. It was to explain the purpose of the study and to seek permission to involve the nurses. Besides, the purpose of the study was explained to the participants by the researchers to gain their maximum cooperation and also to conform to research ethics.

Results

Socio-demographic characteristics

Majority of the respondents 78.4% (80/102) were between the ages 21 and 30 years. More than half (73.5%) of the respondents were females. Concerning religion, 87.3% of the respondents were Christians. About 39.2% of the respondents were Community Health Nurses (CHN), making the majority of the participants of this study. Most respondents (91.2%) had no close family member with epilepsy. The background information of the respondents is shown in Table 1 below.

Variable	N	(100%)
Age		
21-30	80	78.43
31-40	14	13.73
41-50	5	4.90
51-60	3	2.94
Sex		
Male	27	26.5
Female	75	73.5
Religion		
Christianity	89	87.3
Muslim	8	7.8
African Traditional	4	3.9
Others	1	1.0
Specialized Area		
Registered General Nurse (RGN)	15	14.7
Registered Mental Nurse (RMN)	11	10.8
Registered Midwife (RM)	7	6.9
CHN	40	39.2
Others (Post NAC/NAP)	29	28.4
Close Family with Epilepsy		
Yes	9	8.8
No	93	91.2

Source: Field data (2017).

Table 1: Socio-demographic Data of Respondents (N=102).

Knowledge of factors contributing to the development of epilepsy

Findings indicated that 67.7% said “Yes” they are aware of the causes of epilepsy. This implies that more than half of the nurses know the factors that contribute to the development of epilepsy. The results of the perceived causes of epilepsy show that 48.0% of the nurses associated birth trauma to be the cause of epilepsy which is a correct response. In terms of hereditary, 22.5% of the respondents gave their accent to it which is a wrong response, whilst 13.7% of the respondents attributed the onset of the disease to brain injury which they were right. Though the same number of nurses indicated witchcraft as the perceived cause of epilepsy, they were wrong with that notion. The result of the data indicated that 57.8% of the respondents agreed that convulsion contributes to the development of epilepsy, 21.6% of the respondents agreed that high body temperature contributes to the development of epilepsy whilst 14.7% of the respondents concurred malaria is a contributing factor to the development of epilepsy. It is worth saying that all those responses given by the nurses were correct. In connection with maternal factors, the result showed that 68.6% of the respondents agreed that maternal alcohol consumption is a risk factor in epilepsy, 64.7% of the respondents agreed that malnutrition is a risk factor in epilepsy, 49.0% of the respondents were in accord that drug use is a risk factor in epilepsy, whilst only a few 23.6% of the nurses knew maternal age above 30 years to be a risk factor for developing epilepsy. The above responses given by the nurses on the maternal risk factors for the development of epilepsy were all right.

In assessing activities that sometimes trigger seizures in people with epilepsy, 8.8% of the nurses said “Yes” staring at a TV/Computer screen for too long could trigger seizures. Besides, 36.3% cited Stress; breathing too fast/deeply (3.9%); Flashing or bright light (12.7%) and Lack of sleep (45.1%) of the nurses. The responses given by the nurses on this variable were all correct.

Data collected on the manifestation of epilepsy from the nurses depicted that Shriill cry (Shouting) (31.4%); loss of consciousness (49.0%) and falling down (48.0%). Jerking of the body (60.8%); rolling of the eyes (30.4%), and foaming of the mouth (45.1%). When it came to the biting of the tongue as a manifestation of epilepsy, 30.4% (31/102) of the nurses affirmed it as a clinical feature; urination (23.5%) and abnormal behaviour (15.7%). A critical assessment of the findings on manifestations of epilepsy from the respondents depicted that the responses afore-given were all right. It was deduced from the data that majority of the nurses do not know the clinical features of the disease. However, the manifestations serve as indicators in monitoring people with epilepsy so that urgent or immediate attention could be given to them. Table 2 depicts the detail results on knowledge of respondents on factors contributing to the development of epilepsy.

Factors contributing to the Development of Epilepsy	Response rate (N=102)	
	Correct (%)	Wrong (%)
Perceived causal factors		
Curse	95 (93.1%)	7 (6.9%)
Hereditary	79 (77.5%)	23 (22.5%)
Brain injury	14 (13.7%)	88 (86.3%)
Witchcraft	88 (86.3%)	14 (13.7%)
Birth trauma	49 (48.0%)	53 (52.0%)
Spiritually possessed	90 (88.2%)	12 (11.8%)
Brain infection	10 (9.8%)	92 (90.2%)
Poison/Bad blood	96 (94.1%)	6 (5.9%)
Personal factors		
Convulsion	59 (57.8%)	43 (42.2%)
High temperature	22 (21.6%)	80 (78.4%)
Malaria	15 (14.7%)	87 (85.3%)
Parasitic infections	9 (8.8%)	93 (91.2%)
Others factors	4 (3.9%)	98 (96.1%)
Maternal factors in epilepsy		
Maternal alcohol	70 (68.6%)	32 (31.4%)
Malnutrition	66 (64.7%)	36 (35.3%)
Drug use	50 (49.0%)	52 (52.0%)
Maternal age >30 years	24 (23.6%)	78 (76.4%)
Triggering factors		
Lack of sleep	46 (45.1%)	56 (54.9%)
Stress	37 (36.3%)	65 (63.7%)
Flashing/Bright light	13 (12.7%)	89 (87.3%)
Staring at screen for long	9 (8.8%)	93 (91.2%)
Breathing too fast	4 (3.9%)	98 (96.1%)
Manifestation of Epilepsy		
Jerking of the body	62 (60.8%)	40 (39.2%)

Loss of consciousness	50 (49.0%)	52 (51.0%)
Falling down	49 (48.0%)	53 (52.0%)
Foaming of the mouth	46 (45.1%)	56 (54.9%)
Shrill cry (Shouting)	32 (31.4%)	70 (68.6%)
Rolling of the eye	31 (30.4%)	71 (69.6%)
Biting of tongue	31 (30.4%)	71 (69.6%)
Urination	24 (23.5%)	78 (76.5%)
Abnormal behaviour	16 (15.7%)	86 (84.3%)

Source: Field data (2017).

Table 2: Knowledge of respondents on factors contributing to the development of epilepsy.

Categorization of level of knowledge on epilepsy

Participants who scored 16 or more out of the 31 items correct on the knowledge of factors contributing to the development of epilepsy were operationally labelled as having “high” knowledge and those who scored less or equal to 15 seen as having “low” knowledge. From the table below, 61 out of the 102 participants were considered as having low level of knowledge on epilepsy. This is shown in table 3 below.

Level of knowledge	Frequency (N=102)	Percentage (100%)
High	41	40.2
Low	61	59.8

Source: Field data (2017).

Table 3: Level of knowledge of participants.

Practice on Epilepsy

When the skills of the nurses were assessed on managing epilepsy during the attack, 87.3% said “No” they would not keep/run away in the face of epileptic crisis; would not touch the patient (81.4%), and perform first aid measures (68.6%). In terms of counselling the patient, avoid heights (24.5%); avoid alcohol (32.4%); take drugs as prescribed (26.5%); regular exercise (10.8%); and get plenty of sleep (14.7%).

In the case of preferred choice for treatment, Orthodox medicine (66.7%, n=102); not encourage prayer camp healing (80.4%); no traditional/herbal treatment (50.8%); no fetish healing (85.3%) and no animal sacrifice (93.1%). Despite the fact that epilepsy is treatable, their choice of treatment for epilepsy was against the religiospiritual domain. Therefore, managing cases of seizure attacks in their communities should not be a problem. Table 4 highlights the details of the practice on epilepsy.

Practices	Response rate (N=102)	
	Correct (%)	Wrong (%)
What to do when seizure occurs		
Keep/Run away	89 (87.3%)	13 (12.7%)
Touching patient	83 (81.4%)	19 (18.6%)
Perform first aid measures	70 (68.6%)	32 (31.4%)
Counselling to patient		
Avoid heights	26 (24.5%)	76 (74.5%)

Avoid alcohol	33 (32.4%)	69 (67.7%)
Take drugs as prescribed	27 (26.5%)	75 (73.5%)
Regular exercise	11 (10.8%)	91 (89.2%)
Get plenty of sleep	15 (14.7%)	87 (85.3%)
Preferred choice for treatment		
Prayer camp healing	82 (80.4%)	20 (19.6%)
Traditional/herbal	61 (50.8%)	41 (40.2%)
Fetish healing	87 (85.3%)	15 (14.7%)
Animal sacrifice	95 (93.1%)	7 (6.9%)
Orthodox medicine	68 (66.7%)	34 (33.3%)
Drugs used in the treatment		
Phenobarbitone	35 (34.3%)	-
Diazepam	20 (19.6%)	-
Carbamazepine	15 (14.7%)	-
Phenytoin	25 (24.5%)	-
Other drugs	7 (6.9%)	-

Source: Field data (2017).

Table 4: Practice on Epilepsy.

Categorization of practices on epilepsy

On the practices on epilepsy, participants who had nine or more appropriate responses correct were operationally labelled as having “good” practices, and those who scored from one to eight were operationally categorised as having “poor” practices. This is shown in table 5 below.

<i>Practice</i>	<i>Frequency (N=102)</i>	<i>Percentage (100%)</i>
Good	48	47.1
Poor	54	52.9

Source: Field data (2017).

Table 5: Level of practices on epilepsy.

Analysis from the table above indicates that more than half 52.9% (54/102) of the nurses had poor practices on epilepsy.

Bivariate Analyses

When the socio-demographic characteristics were cross-tabulated with knowledge of epilepsy, a significant difference was observed among religion ($p=0.017$), speciality area ($p=0.045$), and close family relationship with epilepsy ($p=0.001$). More so, when the socio-demographic characteristics were cross-tabulated with practice on epilepsy, area of speciality (RMN) ($p=0.001$) appeared statistically significant. This is also indicated in table 6.

Variable	Knowledge on epilepsy		p-value
	High (N=41) (100%)	Low (N=61) (100%)	
Age			
21 – 30 years	30 (73.3%)	50 (82.0%)	0.234
31 – 40 years	7 (17.1%)	10 (16.4%)	
41 – 50 years	2 (4.8%)	1 (1.6%)	
51 – 60 years	2 (4.8%)	0 (0.0%)	
Sex			
Male	6 (14.6%)	7 (11.5%)	0.133
Female	35 (85.4%)	54 (88.5%)	
Religion			
Christianity	30 (73.2%)	53 (86.9%)	0.017*
Muslim	7 (17.1%)	5 (8.2%)	
Traditionalist	4 (9.7%)	0 (0.0%)	
Others	0 (0.0%)	3 (4.9%)	
Speciality area			
RGN	4 (9.8%)	5 (8.2%)	0.045*
RMN	2 (4.9%)	0 (0.0%)	
RM	3 (7.3%)	0 (0.0%)	
CHN	16 (39.0%)	36 (59.0%)	
Others	16 (39.0%)	20 (32.8%)	
Close family relationship with epilepsy			
Yes	8 (12.2%)	1 (8.2%)	0.001*
No	34 (87.8%)	56 (91.8%)	

(*)=p is statistically significant based on chi square analysis.

Table 6: Socio-demographic factors and knowledge on epilepsy.

Variable	Practices on epilepsy		p-value
	Good (N=48) (100%)	Poor (N=54) (100%)	
Age			
21 – 30 years	34 (70.8%)	47 (87.0%)	0.192
31 – 40 years	8 (16.6%)	6 (11.1%)	
41 – 50 years	3 (6.3%)	1 (1.9%)	
51 – 60 years	3 (6.3%)	0 (0.0%)	
Sex			
Male	13 (14.6%)	6 (13.04%)	0.189
Female	43 (85.4%)	40 (87.0%)	
Religion			
Christianity	44 (73.2%)	38 (82.6%)	0.065
Muslim	8 (17.1%)	5 (10.9%)	
Traditionalist	4 (9.7%)	0 (0.0%)	
Others	0 (0.0%)	3 (6.5%)	

Speciality area			
RGN	9 (16.2%)	5 (10.9%)	0.001*
RMN	6 (10.7%)	0 (0.0%)	
RM	5 (8.9%)	0 (0.0%)	
CHN	18 (32.1%)	31 (67.4%)	
Others	18 (32.1%)	10 (21.7%)	
Close family relationship with epilepsy			
Yes	12 (21.4%)	6 (13.0%)	0.269
No	44 (78.6%)	40 (87.0%)	

(*)=p is statistically significant based on chi square analysis.

Table 7: Socio-demographic factors and practices.

Discussion

This study assessed the knowledge and practice regarding epilepsy among nurses in Asutifi North District in the Ahafo Region of Ghana.

The knowledge of the study participants on epilepsy regarding the causes in the development of epilepsy was analyzed. The results on knowing the cause of epilepsy indicated that a majority 69 (67.7%) of the nurses responded 'Yes' knowing the causes of epilepsy whilst 33 (32.4%) said 'No'. This implies that majority of the nurses have basic knowledge about the causes of epilepsy.

On the perceived causes of epilepsy, 49 (48.0%) of the nurses associated birth trauma to be the cause of epilepsy, 25 (24.5%) knew of brain injury, 23 (22.6%) claimed hereditary as a cause of epilepsy whilst 10 (9.8%) of the nurses said brain infection is also a cause of epilepsy. However, 14 (13.7%) of the respondents attributed witchcraft to be the cause of epilepsy, spiritual possession accounting for 12 (11.8%) of the respondents, few 7 (6.7%) of the respondents said it is caused by curses and 6 (5.9%) also said epilepsy could be caused by poisoning or bad blood. This result is in harmony with other studies conducted in Ghana (Adjei et al., 2013) and Uyo, Southern Nigeria (Ekeh & Ekrikpo, 2015). It can be deduced that the causes of epilepsy within the Asutifi North District were categorized into physiological and cultural superstitious causes of the disorder. Specifically, the physiological causes took the form of brain injury, birth trauma and brain infection whilst the cultural superstitious causes also manifested through curse, heredity, spiritual possession and poisoning or bad blood. When knowledge on epilepsy was associated with socio-demographic characteristics, a significant difference was observed among Muslim religion ($p=0.017$), speciality area (RMN) ($p=0.045$) and close family relationship with epilepsy ($p=0.001$).

When factors that could trigger seizure in people with epilepsy were assessed, 46 (45.1%) of nurses identified lack of sleep as a contributory factor that could trigger seizure in epileptic patients, 37 (36.3%) cited stress whilst 4 (3.9%) attributed fast breathing to trigger seizure in epileptic patients with few 9 (8.8%) affirming staring at computer screen for too long. This result indicated that majority of the nurses did not know what could trigger seizure in people living with epilepsy as most of their responses were in the negative. However, seizures could be triggered in anyone under certain conditions such as life-threatening dehydration or high temperature among other factors (Goodman, 2004).

Regarding manifestation of epilepsy, 62 (60.8%) nurses said jerking of the body is a manifestation of epilepsy, followed by loss of consciousness 50 (49.0%); 46(45.1%) of nurses knew foaming of the mouth as a manifestation of epilepsy; 49 (48.0%) knew falling down to be a manifestation of epilepsy, while shouting was described by 32 (31.4%) nurses as manifestation of epilepsy. 31 (30.4%) of respondents identified rolling of the eye and tongue biting as manifestation of epilepsy, 24 (23.5%) respondents said urination is manifestation of epilepsy with only a few 16 (15.7%) respondents associating abnormal behaviour to epilepsy. The few who responded in the affirmative the result was in consonance with other studies that cited responses such as convulsion, falling down, rolling of eyes, foaming of mouth, urination, and biting of tongue as manifestations of epileptic attack (Kabir et al., 2005). This indicated that majority

of the nurses lack knowledge on the manifestations of epilepsy.

Fifteen (14.7%) respondents perceived sharing of food could possibly transmit epilepsy, and 11 (10.8%) nurses said physical contact with a patient can facilitate transmission of the disease whilst 9 (8.8%) respondents said it could be transmitted through marital union. More so, five (4.9%) indicated breath from an epileptic patient is infectious, 3 (2.9%) said animal dropping and contact with excretions respectively from epileptic patients could spread the disease. This result confirmed other studies where respondents were of the view that epilepsy is contagious and could be spread through contact (physical), saliva, blood, urine, and faeces/flatus (Ekeh & Ekrikpo, 2015; Kassie et al., 2014).

Due to the training nurses have gone through, 70 (68.6%) of the nurses responded that they will perform recommended first-aid measures on epileptic person when seizure occurs, 19 (18.6%) of the nurses responded that they will not touch the patient whilst 13 (12.8%) of the nurses responded that they will keep/run away for fear of the attack. For the nurses who claimed they will perform recommended first-aid measures, 54 (77.1%) of them said they will reassure the patient that he or she will be well and refer him or her for appropriate medical treatment, whilst 16 (22.9%) after the recommended first-aid is given they will clean the person up and ask him to continue his or her journey. This result is not far from a description that portrays that the most important nursing intervention is to keep up an adequate airway, breathing and circulation during seizures and to prevent any injury of the patients with epilepsy. Besides, an oral airway suction apparatus should be available at bedside at all times (Shehata et al., 2015) to reduce danger whiles optimizing results in the management of the patient (Buelow et al., 2009).

Implication

Enhancing nursing education and training on epilepsy is imperative to improving health care delivery for people living with the disease. Health education and health promotion programs should be geared towards destigmatizing epilepsy among health professionals and the general public. It is therefore important to improve training and health care delivery for epilepsy especially at the community level.

Conclusion

Nurses at the Asutifi North District tended to have low knowledge and poor practices on epilepsy. This is because some nurses culturally believe that the spread of the disease is by spiritual possession and a curse. These serve as drawbacks to managing epilepsy.

Competing Interest

The authors declare no conflict of interest in the conduct and reporting of this study.

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Personnel of the Study

1. RICHARD OPOKU ASARE: Principal investigator and the corresponding author, who conceived the study, reviewed literature, designed the questionnaire, contributed significantly to the acquisition of data, drafted the manuscript, read and approved the final draft for submission.

2. AKWASI BOAKYE-YIADOM: Supervised the study, critically revised the questionnaire and the content of the study for important intellectual content, and approved the final draft for submission.
3. PAUL ARMAH ARYEE: Supervised the entire study, critically revised the content of the study for important intellectual content, and approved the final draft for submission.

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