

A Study on Childhood Epilepsy among Traders in Benin City Nigeria

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Abstract

Background: Epilepsy is a serious childhood disease associated with stigmatization in the community. Despite the deleterious effect of the disease on childhood brain growth and development, the disease is treatable. **Objective:** The aim of this study is to document the knowledge of childhood epilepsy by community members using traders (market women and men in a popular market in Benin City, Nigeria) as a case study. **Methodology:** This was a descriptive cross-sectional study carried out in April 2018. Data collection was by researcher-administered questionnaire. The respondents were traders (women and men) in Edaiken market Benin City Nigeria who were recruited consecutively during the period of the study. The analysis was performed using the Statistical Package for the Social Sciences version 21, and the level of statistical significance of variables was set at 95% confidence level and $P < 0.05$. **Results:** Of the 500 respondents, 47 (9.4%) males and 453 (90.6%) females; mean age (standard deviation) was 35.3 ± 9.4 years. Total knowledge score of childhood epilepsy in this study was 27.6%. Only 116 (23.2%) study participants gave correctly a description of epileptic fits in a child. Although majority 71.0% said that epilepsy has the medical cure, none was able to mention any known drugs for the treatment of epilepsy and 72.6% said that they would use traditional remedies. **Conclusion:** The overall observed knowledge score of childhood epilepsy was low. Although most respondents stated that epilepsy has medical cure, majority preferred the traditional options for treatment. These findings, therefore, highlighted the need to enlighten the public about childhood epilepsy and its medical treatment options.

Keywords: Childhood, disease, epilepsy, management, traders, treatment options

INTRODUCTION

Epilepsy exists when someone has a seizure and their brain demonstrates a pathologic and enduring tendency to have recurrent seizures.^{1,2} The disease carries a great social stigma, which leads to harmful discriminatory practices based on various misconceptions associated with the disease.^{3,4} These wrong perceptions give room to a range of assumptions as to the cause, complications, and management of the disease leading to reluctance in information sharing, false accusations of sufferers based on superstition, and application of harmful treatment modalities all of which worsen the situation of the epileptics.^{4,5}

In developed parts of the world, public awareness is very high as a result of regular nationwide polls which guide education campaigns aimed at reducing stigma and providing accurate knowledge about epilepsy.⁶⁻⁸ Epilepsy education has been shown to improve knowledge about the disease and help combat social stigma, thereby improving access to care and changing societal attitudes toward epileptics.^{3,9-12}

In Africa, epileptics who have neurological, physical, and psychiatric morbidities do not get adequate care leading to increase in mortality and morbidity.¹³⁻¹⁵ In many African communities, the lack of qualified medical personnel also means that people living with epilepsy who have neurological, physical, and psychiatric comorbidities never get adequate care leading to increased morbidity and mortality. Perception of epilepsy as the manifestation of supernatural forces, coupled with false information concerning spread through body fluids contribute to a very high level of stigma which can only be dealt with by spread of adequate and correct information concerning the condition.^{11,12}

Improving public knowledge about epilepsy has been shown to influence positively on the attitudes of the public toward sufferers in Africa.¹¹⁻¹⁵ Various studies in Nigeria have

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assessed the awareness of epilepsy among various groups and communities,¹¹⁻¹⁵ but none to the knowledge of the authors has looked at traders in the Mid-West region of Nigeria. This study aims to document the knowledge of childhood epilepsy by community members using traders (market women and men in a popular market in Benin City, Nigeria) as a case study.

METHODOLOGY

This was a descriptive cross-sectional study carried out in April 2018 in Edaiken Market Uselu in Benin City, Nigeria. Benin City is the capital of Edo State and has five local government areas (LGAs), namely Egor, Oredo, Ikpoba-Okha, Ovia-Northeast, and Ovia-Southwest.

The city is cosmopolitan, and the inhabitants are mainly civil servants, artisans, and traders. Egor was selected among the other five LGAs by convenient sampling. There are five main markets in Egor, namely Edaiken, Oliha, Evuotubu, Siluko, and Ogida. Edaiken market (popularly referred Uselu market) is one of the biggest and oldest markets in Egor as well as in Benin City. People from different tribes such as Bini, Esan, Hausa, Ibo, Yoruba, and from the neighboring states such as Delta, and Kogi have shops/stores, stalls, and stands in the market.

The market is strategically located along the busy Benin-Lagos Expressway in Egor LGA. Before the commencement of the study in April 2018, the market was renovated by the State Government with improved infrastructure such as lock-up shops with electric power supply and well-organized stalls and stands. Currently, there are over 1500 lock-up shops and 1000 stands/stalls in the market. These are arranged in rows and columns. Each row is meant to deal with different items; for example, there were rows for perishable goods, sundries, household accessories, etc. Renovation work was ongoing in the market at the time of the study.

This study population was over 2000 comprising men, and women who were performing their daily trade in the market. Sampling technique was a systematic sampling method where every fifth stand, stall, or shop was selected consecutively and the occupant of the selected stall/shop was recruited in the study. Every fifth stall, store, or shop was selected to reduce contact between the interviewer and other eligible study participants occupying the neighboring stalls, stores, or shops, thereby reducing bias in their answers to the questionnaire.

A minimum sample size was determined as described by Cochran using 95% confidence level (CL) and the best estimate of the prevalence of the population's knowledge score of childhood epilepsy as 50.0%.¹⁶

$$n = Z^2 pq/d^2$$

where: n = The desired sample size.

P = Best estimate of prevalence of the population's knowledge score of childhood epilepsy = 50.0% (i.e. $P = 0.5$)

$$q = 1.0 - P = 1 - 0.5 = 0.5$$

Z = Standard normal deviation usually set at 1.96 which corresponds to the 95.0% CL

d = Degree of accuracy desired shall be set at 5.0% or 0.05.

Therefore;

$$n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2} = 384$$

The minimum sample size calculated from the formula above is 384.

Data collection was done by researcher-administered questionnaire method. The questionnaire was prepared following an extensive literature search and was pre-tested in a smaller market in Benin City, which was not included in the study. The research assistant was trained on data collection using the prepared questionnaire. He also received health education on epilepsy. Information on the questionnaire was translated in the local languages such as "Pidgin English," English and Bini languages depending on the preference of the respondent. This was to ensure that appropriate data were obtained from the study participants. The questionnaire was used to obtain information on the demographic characteristics of the study participants and information that included meaning and description of epilepsy, whether there is medical cure for the disease and possible treatment options of the disease. Participants were also asked to give eye witness description of an individual with epilepsy and it was recorded as "well described" or "not well described" on the data collection sheet. Information on causes, symptoms, and home remedies for epilepsy were also obtained from the respondents and were recorded on the questionnaire.

Verbal informed consent was obtained from each study participants after reading and explaining the content of informed consent form to the study participants before the commencement of data collection from each trader. The ethical approval for this study was obtained from the Research and Ethics Committee of College of Medical Sciences, University of Benin.

Data analysis

Data obtained was entered into Microsoft Excel for Windows 13 and was analyzed with the Statistical Package for the Social Sciences version 16.0 (Inc., Chicago, Illinois, USA). Further analysis was performed using GraphPad InStat where applicable.

The social class of the study participants was calculated using the method proposed by Olusanya *et al.*¹⁷ using the sum of the occupation of the head of the household (husband) and the educational level of the spouse (woman of the household). The social class was categorized into upper, middle, and lower classes, respectively.

Tables and figures were drawn appropriately, and test of significance of association was calculated using the Chi-square

test and Fisher's exact test where applicable. Sections with narratives were analyzed to check whether the information supplied was correct or not and were recorded as such on the data analysis sheet. These were compared across demographic factors.

Percentage knowledge score of each identified variable for assessment of knowledge of childhood epilepsy was determined by the number of proportion that answered the questions accurately. These include accurately mentioning the meaning of epilepsy in the local language, correct description of epileptic fits, comments on whether epilepsy is contagious or not, any known medical cure of epilepsy, and appropriate remedy for a child with epileptic fits. The total percentage knowledge score of the study participants was then determined by taking the average percentage knowledge score of each variable inquired of the study participants about childhood epilepsy. Knowledge percentage score was graded as poor if the score was <40.0%, fair = 40.0%–49.0%, good = 50.0%–59.0%; very good = 60.0%–69.0%; and excellent = ≥70.0%. The test of statistical significance of each variable was set at $P < 0.05$.

RESULTS

There were 500 respondents with analyzable data; 453 (90.6%) females and 47 (9.4%) males; the mean age (standard deviation) was 35.3 ± 9.4 years. The age range was 18–60 years. Majority of the respondents were from middle social class 307 (61.4%), 171 (34.2%) were from lower social class and 22 (4.4%) from upper social class. Three-quarter of the respondents had secondary education, 20.0% had primary, 5.0% had no formal education, and 2% had tertiary education. Other sociodemographic characteristic of the respondents is shown in Table 1.

Of the 500 respondents, 314 (62.8%) correctly mentioned "what epilepsy is" in their local language, while 186 (37.2%) did not know what epilepsy is in their local language. One hundred and sixteen (23.2%) gave a correct description of an epileptic fit and this was dependent significantly on eye witness of the disease either in the respondents' child ($\chi^2 = 46.12, P = 0.00$) or his/her neighbors' child ($\chi^2 = 11.30, P < 0.001$). Table 2 shows the association between the appropriate description of epileptic fits and sociodemographic factors such as gender, age, social class, and educational level of respondents. However, none of these factors had a statistically significant association on the appropriate description of childhood epileptic fits by the respondents.

The proportion of the respondents who said epilepsy is contagious (i.e., can be transferred from one person to another) was 256 (51.2%), whereas 244 (48.8%) said that epilepsy is not contagious. Figure 1 shows modes of contagiousness of childhood epilepsy as volunteered by the respondents. The most common mode of contagiousness mentioned by the respondents was "through saliva contact" by 184 (71.9%).

Table 1: Sociodemographic characteristics of the respondents (n=500)

Sociodemographic characteristics	n (%)
Gender	
Female	453 (90.6)
Male	47 (9.4)
Age group (years)	
18-27	96 (19.2)
28-37	208 (41.8)
38-47	118 (23.6)
47-58	71 (14.2)
57 and above	3 (0.6)
No response	3 (0.6)
Social class	
Upper	22 (4.4)
Middle	307 (61.4)
Lower	171 (34.2)
Level of education of the respondents	
Tertiary	14 (2.8)
Secondary	361 (72.2)
Primary	97 (19.4)
No formal	28 (5.6)
Tribe of the respondents	
Binis	222 (44.4)
Isan	89 (17.8)
Ibo	62 (12.4)
Yoruba	51 (10.2)
Urhobo	42 (8.4)
Hausa	13 (2.6)
Isoko	12 (2.4)
Calabar/Ogoja	5 (1.0)
Agbor/Kwale	4 (0.8)

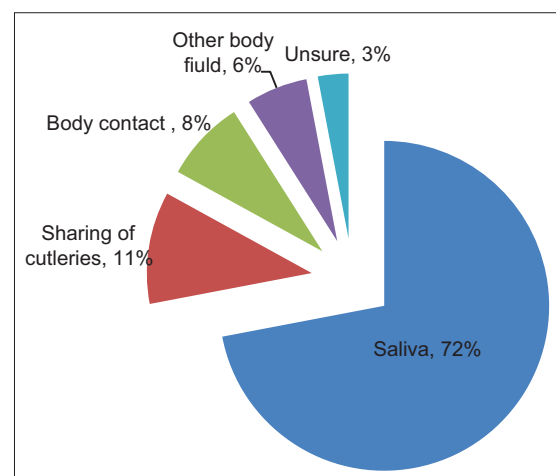


Figure 1: Modes of contagiousness of childhood epilepsy as volunteered by the respondents

Table 3 shows causes, symptoms, and treatment options of epilepsy as volunteered by the respondents. The most common cause of epilepsy was smoking during pregnancy (75.6%).

Majority of the respondents mentioned the symptoms of epilepsy such as jerking of the body by 399 (79.8%);

Table 2: Association between appropriateness description of epileptic fits and some factors such as gender, age, social class, educational level, and eye witness of epileptic fits by respondents (n=491)

Factors	Appropriateness of description of epilepsy		χ^2	P
	Yes (%)	No (%)		
Gender				
Male (n=46)	7 (15.2)	39 (84.8)	2.00	0.16
Female (n=445)	109 (24.5)	336 (75.5)		
Age group (years)				
18-27 (n=93)	12 (13.0)	81 (87.0)	9.09	0.06
28-37 (n=205)	54 (26.3)	151 (73.7)		
38-47 (n=117)	33 (28.2)	84 (71.8)		
48-57 (n=70)	16 (22.9)	54 (77.1)		
58 and above (n=3)	0 (0)	3 (100.0)		
Missing age value (n=3)				
Social class				
Upper (n=20)	3 (15.0)	17 (85.0)	3.16	0.21
Middle (n=303)	66 (21.8)	237 (78.2)		
Lower (n=168)	47 (30.0)	121 (70.0)		
Level of education				
Tertiary (n=12)	1 (9.0)	11 (91.0)	6.46	0.09
Secondary (n=355)	83 (23.4)	272 (76.6)		
Primary (n=96)	29 (30.2)	67 (69.8)		
No formal (n=28)	3 (10.7)	25 (89.3)		

upward rolling of eyes, 409 (81.8%); foaming from the mouth, 407 (81.4%); drooling of saliva, 402 (80.4%); coma, 408 (81.0%); irrational behavior, 405 (81.0%); and clenching of teeth, 397 (79.4%) (*multiple responses were allowed).

Three hundred and fifty-five (71.0%) said the epilepsy has medical cure and 145 (29.0%) did not agree to this; reason given is that epilepsy is a “spiritual disease.” None of the respondents who stated that epilepsy has medical cure mentioned any known orthodox medicine used for the treatment of epilepsy.

Table 4 shows the association between sociodemographic characteristics of the respondents and whether epilepsy has medical cure. Table shows that there was no significant difference between males and females knowledge on whether epilepsy has medical cure. However, the younger respondents significantly said that epilepsy has medical cure and the proportion of those who agreed to this significantly decreased with increase in age of the respondents ($\chi^2 = 26.00, P < 0.001$). Table also shows that the highest proportion of respondents who agreed that epilepsy has medical cure were from the middle social class ($n = 241$ [78.5%]; $\chi^2 = 22.74, P < 0.001$) and had secondary level of education ($n = 279$ [77.3%]; $\chi^2 = 38.10, P < 0.00$).

On appropriate remedy for a child with epileptic fit (i.e., what to do when a child is convulsing in the neighborhood), only 15 (3.0%) said that they will seek “orthodox medical attention,” 363 (72.6%) respondents said that they will use traditional

Table 3: Response of the study participants as regards causes, symptoms and home remedies for epilepsy (n=500)

About epilepsy	n (%)
Causes of epilepsy	
Hereditary disease	240 (48.0)
Complicated meningitis	299 (59.8)
Congenital anomaly	338 (67.7)
Drugs	310 (62.0)
Head injury	211 (43.3)
Jaundice (yellow eye)	145 (29.0)
Smoking during pregnancy	378 (75.6)
Symptoms of epilepsy	
Jerking of the body	399 (79.8)
Upward rolling of eyes	409 (81.8)
Foaming from the mouth	407 (81.4)
Drooling of saliva	402 (80.4)
Coma	408 (81.0)
Irrational behavior	405 (81.0)
Clenching of teeth	397 (79.4)
Fisting	6 (1.2)
Treatment of epilepsy	
Scarifications	202 (40.4)
Put child in fire	135 (27.2)
Native chalk	62 (12.4)
Use of native oil (Ori-Oyo)	33 (6.6)
Herbs	32 (6.4)
Palm kernel oil	27 (5.4)
Inducing diarrhea	12 (2.4)

*There were multiple responses

remedies, and 122 (24.4%) respondents said that they do not know what to do when a child is convulsing. Traditional remedies outlined by the respondents are shown in Table 3. The most common was scarifications by 40.4%; followed by putting the child in fire by 27.2%.

The total knowledge score of the study participants about childhood epilepsy is shown in Table 5. The overall knowledge score was 27.6% (poor). Although 62.8% accurately mentioned the meaning of epilepsy in the local language, other parameters assessed such as the correct description of epileptic fit, medical care and appropriate remedy for a child with the epileptic fit was poor.

DISCUSSION

The knowledge grade of childhood epilepsy among traders in Egor was poor. This was in keeping with some works done by Jack-Ide *et al.*⁶ in a rural community of Bayelsa State Nigeria and some other works in West African Region.⁴ Reasons attributed for this poor knowledge were lack of readily accessible and accurate information about the disease and if these were not addressed, the community members will continue to uphold the negative perception of the disease and its sufferers.

Some authors had documented that most community members perceive epilepsy as “a spiritual disease.” For example, Esegbe

Table 4: Association between the sociodemographic characteristics of the study participants and whether epilepsy has medical cure

Sociodemographic factors	Epilepsy has medical cure		χ^2	P
	Yes (%)	No (%)		
Gender				
Female (n=453)	325 (71.7)	128 (28.3)	1.30	0.26
Male (n=47)	30 (63.8)	17 (36.2)		
Age group (years)				
18-27 (n=96)	77 (80.2)	19 (19.8)	26.00	0.00
28-37 (n=209)	160 (76.6)	49 (23.4)		
38-47 (n=118)	80 (67.8)	38 (32.2)		
48-57 (n=71)	35 (49.3)	36 (50.7)		
58 and above (n=3)	1 (33.3)	2 (67.7)		
Missing age value (n=3)	2 (66.7)	1 (33.3)		
Social class				
Upper (n=22)	15 (68.2)	7 (31.8)	22.74	0.00
Middle (n=307)	241 (78.5)	66 (21.5)		
Lower (n=171)	99 (57.9)	72 (42.1)		
Level of education				
Tertiary (n=14)	13 (92.9)	1 (7.1)	38.10	0.00
Secondary (n=361)	279 (77.3)	82 (22.7)		
Primary (n=97)	52 (53.6)	45 (46.4)		
No formal (n=28)	11 (39.3)	17 (60.7)		

Table 5: Percentage knowledge score and grade of the study participants on childhood epilepsy

Information inquired about childhood epilepsy	n (%)	Knowledge grade
Accurately mentioned meaning of epilepsy in the local language	62.8	Very good
Correct description of epileptic fit	23.2	Poor
Agreed that epilepsy is not contagious	48.8	Fair
Any known medical care of epilepsy	0.0	Poor
Appropriate remedy for a child with epileptic fit (seeking medical care)	3.0	Poor
Overall knowledge percentage score	27.6	Poor

et al. observed that most community members attributed epilepsy to “evil spirit,”^{7-11,14} and that sufferers are being punished by the gods/ancestors during an epileptic fit.^{11,12} In the present study, the cause of childhood epilepsy identified by most respondents was smoking during pregnancy. This was contrary to most studies in Nigeria where spiritual forces or heredity were the most documented causes of the disease. While “evil spirit” was not mentioned as the cause of childhood epilepsy in this study, less than half stated that childhood epilepsy is hereditary (or “a family disease”). This may not be far from the fact that children are said to be innocent and may not be possessed by evil spirit as compared to adults who are bound to be punished by the gods or engage in witchcraft.

Half of the respondents stated that childhood epilepsy is contagious which is in keeping with findings from other studies in Nigeria.^{6-12,18,19} The most common mode of

transmissibility of the diseases opined by respondents in these studies is the saliva. This is held strongly among many community members including the well-educated as observed in several studies in Nigeria.^{18,19} For example, Mustapha *et al.*¹⁸ in their study of knowledge and perceptions of epilepsy among secondary school teachers in Osogbo South-West Nigeria observed that the foam (saliva) from the mouth of a convulsing person with epileptic disorder is said to be the infecting agent. Similar finding was observed among medical students in a study in South-south Region, Nigeria.¹⁹ These authors concluded that this may be the reason why persons with epilepsy do not get help from passers-by or members of the community during the epileptic episodes. This finding was corroborated by the fact that one-quarter of the respondents in this study stated that they will not do anything for a child who is having epileptic seizures. The other implication on the contagiousness of childhood epilepsy is the finding underlies the cultural misconceptions peculiar to this part of the country. Conventionally, most community members differentiate convulsions from epilepsy based on the presence of foam (saliva) in the mouth. Parents usually do not accept a child is epileptic if foaming is not present. While these parents express relief when told that their child convulsed but did not foam from the mouth, on the contrary, there are lots of stigma, shame, and family breakups based on salivation alone in a child that convulses. This same misconception was demonstrated in the area of treatment of childhood epilepsy in this study. Despite the fact that over 70% claimed that childhood epilepsy can be cured medically, the same percentage would rather apply traditional remedy to a convulsing child and this is irrespective of the level of education and social class. Higher level of education was associated with greater knowledge of a medical cure but did not translate to the desired need to present in a health care facility. Outlined home remedies such as scarifications, use of herbal medication and putting the child in fire are practices deleterious to the child's health and worsen morbidity and mortality. These practices have been documented by other authors.¹²⁻¹⁴

The facts that childhood epilepsy carries lots of stigma and has essentially an attendant influence on the way sufferers are treated by community members is worth commenting. Although the respondents in the present study did not attribute childhood epilepsy to the evil spirit nor from the gods, there is a belief that there may be some cultural and traditional implication to the disease. This reflected in their answers to treatment options for a child with epileptic fits in which over three-quarter of the study participants stated “traditional remedies” as treatment option for a child with epileptic fits. The belief that epilepsy disorder is best treated with traditional medicine has been documented by several authors in developing countries.^{4,8-12} Use of traditional remedies such as scarification marks to wade off evil spirits, putting the child into fire and use of herbal medications as observed in this study have been found to be inimical to the course of the disease and

its outcome. Some of these traditional medicines have been found to contain hypoglycemic substances which worsen the convulsions as well as cause coma or prolong postictal sleep in these children.

Limitation of the study

There could be a recall bias from the respondents; however, some of these were taken care of by probing further into some of the questions asked in the questionnaire during data collection.

CONCLUSION

Childhood epilepsy is a common public health problem shrouded with many misconceptions. Although the respondents knew about epilepsy, none of them could mention any known medical treatment of childhood epilepsy. Irrespective of educational background and social class, many people in the community would prefer to treat the condition at home with traditional remedies which had been documented to be harmful to the health of the child. There is, therefore, the need for health campaigns across all strata of society to inform and address the sociocultural misconceptions about epilepsy which would hopefully improve the health-seeking behavior of parents/guardians of children with epilepsy.

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Conflicts of interest

There are no conflicts of interest.

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