Research

Childhood Seizures: Assessment of the Knowledge, Attitude and Home Interventions among Patients attending a Paediatric Outpatient Clinic in Nigeria

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Abstract

Background: Most seizures in children occur outside the hospital and effective first aid would protect individuals from harm. Study assessed the knowledge, attitude and home-based interventions for childhood seizures.

Methodology: This was a descriptive cross-sectional survey conducted from 1st June to 31st December, 2021 among caregivers of patients in a Paediatric outpatient clinic. Interviewer-administered questionnaires were used to assess knowledge, attitude, and home intervention of childhood seizures. Data were analyzed using SPSS 24 and results presented as frequency tables, percentages and charts. P-values < 0.05 were considered significant.

Results: Out of 218 respondents, the commonest source of information on childhood seizures was from friends and relatives 126(73.2%). Fever was the commonest known cause. Only 15(6.9%) recognized seizure as a neurological disorder. Jerking of the body and clenching of the teeth were the commonest recognizable symptoms. The majority said seizures were contagious (176(80.7%) and children with seizures should not go to school 187(85.8%). The overall knowledge score was poor. Negative attitudes included avoidance 19(8.7%), isolation from playing with peers (15(6.9%) and from the public 17(7.8%). Common interventions during seizures were putting palm kernel oil in the mouth while only 25(29.4%) took the child to the hospital or laid him down away from harmful objects 25(29.4%). The practice of home intervention for seizures was good in only 11(5.0%) of respondents.

Conclusion: Knowledge, attitude and first aid home interventions for seizures were poor among caregivers in this study hence standard first aid management of seizures should be taught in schools and the community.

Keywords: Attitude, Childhood seizures**,** First aid, Knowledge, Home interventions

Introduction

A seizure is a transient occurrence of signs and/or symptoms resulting from abnormal excessive or synchronous neuronal activity in the brain.[1] Seizures can manifest as changes in behavior, movement, feelings, or levels of consciousness. Seizures in children can be

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febrile or afebrile.[1] Febrile seizures occur with fever in children aged between three months and five years. The afebrile seizure is also known as an epileptic seizure and refers to an event characterized by excessive hyper-synchronous discharges of cortical neurons whose manifestation may be motor, autonomic, psychic, or sensory. The most fearful symptoms are the motor manifestations such as falling, jerking, sudden arrest of movement, and or activity. Globally, about 50 million persons have epilepsy, two-thirds are children, and the majority (80%) live in the developing countries.[1,2]

Seizures can occur anywhere and at any time of the day or night. The manifestations of seizures are usually very frightening and cause anxiety among caregivers.[3] Parents and caregivers may therefore try to stop the seizure or offer some form of first aid to the child before presentation to health facilities. Considering the amount of time children spend at home, seizures most likely start at home outside the hospital, and as a result parents and caregivers may be the first respondents. These interventions are aimed at keeping the child safe, limiting complications/injuries, and transporting the child as soon as possible to a health facility for definitive management.[4-6] Proper intervention includes what to do and not to do when a child is having seizures.[4-6] What to do during seizures include easing the person to the floor; turning the person gently onto one side to help the person breathe and avoid choking on secretions if present; loosening neckties or anything around the neck that may make it hard to breathe; clearing the area around the person of anything hard or sharp to prevent injury; putting something soft and flat, like a folded jacket, under his or her head to limit head trauma/injury; removing eyeglasses; staying calm; timing the seizure and calling an emergency helpline or taking the child to the hospital if the seizure lasts longer than five minutes.[4-6] What not to do during a seizure include holding the person down, trying to stop him moving; putting anything in the person's mouth; giving mouth-to-mouth breaths or giving food or water.[4-6]

A lot of interventions for seizures at the community level are inappropriate in not just delaying the time for appropriate hospital management but also causing harm to the children. Harmful practices that are carried out during seizures in an attempt to abort them outside the hospital include burning the feet, pouring water on a convulsing child, application of palm kernel oil and crude oil to the body, and eyes, restraining the child and putting substances into the orifices (mouth, ear, nose, anus) as well as scarification.[3,7,8] These inappropriate interventions could cause aspiration, burns, scalds, sepsis, loss of facial structures such as teeth, chemical conjunctivitis, and blindness.[2,3,7,8]

There is a poor acceptance of persons with epilepsy in the society.[1,9,10] This is evidenced by ignoring them, refusing to send them to school, hiding them away from others, avoiding them, stigmatization, abandonment, neglect and discrimination.[1,9,10]

Inappropriate home interventions for seizure varies with local cultural practices. Other researches on first aid or pre-hospital intervention in seizure management have been documented in some localities[12] but none among caregivers of patients in the Rivers State University Teaching Hospital(RSUTH) hence the present study is designed to document pre-hospital/home intervention of childhood seizures and to complement the paucity of data on home interventions of childhood seizures. It is also hoped that the findings of the study will help in educating caregivers in the study environment on harmful practices to avoid when a child has seizures at home.

Method

A total of 218 respondents were analyzed with a mean age of 35.3 years, there were more females than males with a Female: Male ratio of 1.9:1. The highest level of education for most of them was secondary level 129 (59.2%), and most had ≤ 2 children, 122(56%). Among the respondents, 33(15.1%), had a child or relative with a seizure disorder, 33(15.1%), were already attending the pediatric neurology clinic of our hospital while 136(62.4%) had seen a child with seizures, Table 1

Table 1: Characteristics of the study population (n = 218)

Variable	Freq (%)
Age in years: Mean (Range)	35.3(19 - 41)
Gender	
Female	142(65.4)
Male	76(34.6)
Marital Status	
Married	194(89)
Single	24(11)
Level of education	
Tertiary	69(31.7)
Secondary	129(59.2)
Primary	6(2.8)

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Variable	Freq (%)
Nil formal education	1(0.5)
Undisclosed	13(6.0)
Number of children per person: Mean (Range)	2(0 to 7)
≤ 2	122(56.0)
3 to 4	73(33.5)
≥ 5	21(9.6)
Undisclosed	2(0.9)
Has a child or relative with a seizure disorder	
Yes	42(19.3)
No	176(80.7)
A parent whose child attends a pediatric neurology clinic	
Yes	33(15.1)
No	185(84.9)
Have you ever seen a child with seizures	
Yes	136(62.4)
No	82(37.6)

The majority of the respondents had heard of seizure disorder 172(78.9%), among those who had heard of seizure disorder, the most common source of information was from friends and relatives 126(73.2%), followed by social media 39(22.7%) and information from health workers 31(18.0%). Seizures were known to be caused by medical problems in 91(41.7%), and the most common medical problem known to cause seizure was fever in 66(30.3%). Attack from evil spirits was however said to be a cause of seizures in 49(22.5%), only 15(6.9%) recognized seizure as a neurological disorder, although 196(89.9%), knew that it could occur with another illness while 175(80.3%) acknowledged that it was treatable and that there were different types of seizures 33(15.1%). The most common known triggers for seizures in those at risk was fever 175(80.3%), followed by stress 25(11.5%). Jerking of the body 199(91.8%), Clenching of teeth 174(79.8%), and upward rolling of the eyes 58(26.6%) were the commonly known symptoms of seizures. The majority thought that seizures could be contagious 176(80.7) and that a child with a seizure disorder should not go to school 187(85.8). The overall knowledge score was poor with a mean of 42±12.7%, table 2.

Table 2: Information and Knowledge of seizure disorder

Variable	All patients [n (%)]
Has heard of Seizure disorder (n=218)	
Yes	172 (78.9)
No	46 (21.1)
Source of information (n=172)	
Relatives and friends	126 (73.2)
Social Media	39 (22.7)
Medical channels (hospital, health workers)	31 (18.0)
Mainstream media (TV, Radio)	26 (15.1)
Religious gatherings	16 (9.3)
The school (formal classes, reading)	9 (5.2)
Number of sources of information per person; Median (25th, 75th percent)	1 (1, 2)
One	108 (62.8)
Two	51 (29.7)
Three	8 (4.7)
Four	2 (1.2)
Five	1 (0.6)
Cannot remember the source	2 (1.2)
c) What are the causes of seizure disorder	
Medical problems:	91 (41.7)
Fever	66 (30.3)
Jaundice	16 (7.3)
Brain infection	7 (3.2)

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Variable	All patients [n (%)]
Poor cry at birth	4 (1.8)
Low blood sugar	4 (1.8)
Attack from evil spirits	49 (22.5)
Normal in children	8 (3.7)
It's a family trait	1 (0.5)
Do not know	70 (32.1)
Others	4 (1.8)
Number of causes written per respondent	
0	80 (36.7)
1	133 (61.0)
2	5 (2.3)
d) Seizure disorder is a mental illness	
Yes	15 (6.9)
No	203 (93.1)
e) Can a child with seizure have another illness	
Yes	196 (89.9)
No	22 (10.1)
f) Is seizure disorder treatable	
Yes	175 (80.3)
No	43 (19.7)
g) Patients with a seizure disorder need regular medical appointments/check-ups	
Yes	199 (91.3)
No	19 (8.7)
h) There are different types of seizures	
Yes	33 (15.1)
No	185 (84.5)
i) Triggers for seizures in those at risk	
Fever	175 (80.3)
Stress	25 (11.5)
Sleep deprivation	17 (7.8)
Discontinuation of Anti-seizure medications	23 (10.6)
Fatigue	6 (2.8)
Hunger	5 (2.3)
Excess noise	2 (0.9)
Number of triggers known per person: Median (25^{th}, 75^{th} percent)	1 (1, 1)
None at all	16 (7.3)
1	167 (76.6)
2	25 (11.5)
3	7 (3.2)
4	2 (0.9)
5	1 (0.5)
j) Seizures can present with these symptoms.	
Jerking	199 (91.8)
Clenching of teeth	174 (79.8)
Upward rolling of the eyes	58 (26.6)
Abnormal behavior	51 (23.4)
Loss of consciousness	50 (22.9)
Stiffness of the body	41 (18.8)

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Variable	All patients [n (%)]
Sudden fall	37 (17.0)
Staring gaze	25 (11.5)
Number of symptoms known per respondent: Median (25th, 75th percentile)	2 (2.3)
None	10 (4.6)
1-2	117 (53.7)
3-4	52 (23.9)
5-6	20 (9.2)
>6	19 (8.7)
k) Someone with a seizure disorder can give it to another person (i.e contagious)	
Yes	176 (80.7)
No	42 (19.3)
l) A child with a seizure disorder should not go to school	
Yes	187 (85.8)
No	31 (14.2)
Total knowledge score mean ± SD	**42 ± 12.7%**
Good: > 75%	2 (0.9)
Average: <75 – 60%	18 (8.3)
Poor: <60%	198 (90.8)

Negative attitudes identified among the respondents include the following: that children with a seizure disorder should be avoided,19(8.7%), should not play with other children,15(6.9%), should be hidden from the public, 17(7.8%) and that it occurred in poor families, 24(11.0%). Overall, the mean proportion of the population with negative attitudes was 8.6 ± 1.7%, Table 3.

Table 3: Attitude toward children with a seizure disorder

Variable	All patients [n (%)]
Children with a seizure disorder should be avoided	
Yes	19(8.7)
No	199(91.3)
Children with a seizure disorder should not play with other children	
Yes	15(6.9)
No	203(93.1)
Children with a seizure disorder should be hidden from the public	
Yes	17(7.8)
No	201(92.2)
Seizure disorder only occurs in poor families	
Yes	24(11.0)
No	194(89.0)

For intervention practice assessment, 85(39%) responded that traditional medicine should be given to children who have seizures while the same proportion had also witnessed seizures managed at home. The median number of home intervention practices reported by respondents was four and it ranged from one to 15 different intervention practices. Among those that have witnessed seizure management at home, the common practices were, putting palm kernel oil in the mouth 56(65.9%), application of onions to the body/eye 42(49.4%), rubbing palm kernel oil on the body 35(41.2%), giving a body massage during the seizure 32(37.6%), putting a spoon in the mouth 30(35.3%) and rubbing anointing oil on the body/eye 29(34.1). Only 25(29.4%) responded that the child was taken to the hospital and the same proportion laid the child on the floor while removing harmful objects around the child.

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Among all the respondents, 142(65.1%) said that they would take a child having seizures immediately to the hospital while 20(9.2%) would need the seizures to go on for hours before they take the child to the hospital. The majority responded that doctors should treat seizures 206(94.5%) although, 82(37.6%) said they would use a native/herbal concoction if their child had a seizure. The overall intervention practice score was assessed to be poor with a mean average of 51.3 ±1.4%. Table 4

Table 4: Intervention/ treatment of seizure disorder in the community, practice assessment

Variable	All patients [218(%)]
b) Traditional medicine should be given to children who have seizures	
Yes	85(39)
No*	40(42.7)
Do not know	10(4.6)
a) Have you ever seen or managed seizures at home (n=218)	
Yes	85(39)
No	133(61)
a1) If yes, what did you use (n=85)	
Palm kernel oil in the mouth	56(65.9)
Apply Onions to the body/eye	42(49.4)
Palm kernel oil in the body	35(41.2)
Massage the body	32(37.6)
Put a spoon in the mouth	30(35.3)
Rub anointing oil to the body/eye	29(34.1)
Take the Child to the hospital*	25(29.4)
Lie the person on the floor and remove harmful objects *	25(29.4)
Prayers for the seizure to end	16(18.8)
Hold the Child on your body to stop the seizure	16(18.8)
Crude oil in the eye	13(15.3)
Pour water on him	13(15.3)
Give him/her urine to drink	8(9.4)
Scent leaves to the body and body orifices	7(8.2)
Put the feet/hands in the fire	5(5.9)
Squeeze the eyes	1(1.2)
Runaway from the child	1(1.2)
Do nothing	1(1.2)
Number of interventions per person: Median(range)	4(1 – 15)
b) How long should a child convulse before you take the person to the hospital?	
Immediately*	142(65.1)
Seconds*	3(1.4)
Minutes	36(16.5)
Hours	20(9.2)
Do not know	17(7.8)
c) who do you think should treat seizure disorders	
Doctors	206(94.5)
Herbalists	5(2.3)
Prayers	185(84.9)
d) Would you use a native/herbal concoction if your child has a seizure	
Yes	82(37.6)
No*	110(50.5)
Do not know yet	26(11.9)

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Variable	All patients [218(%)]
Total Practice score mean ± SD	**51.3 ±1.4%**
Good: > 75%	11(5.0)
Average: <75 – 60%	55(25.2)
Poor: <60%	152(69.7)

Discussion

This study identified the non-health sector, made up of community of friends and relatives and the social media, as the major source of information on childhood seizure disorders. Significant misinformation was identified about the aetiology and factors that put one at risk of seizure disorders. The study also identified the negative attitudes that could fuel stigmatization towards children with seizure disorder in the community. In addition this study highlights the harmful home intervention practices for seizure disorders and a relatively low rate of acceptable standard first aid interventions for seizures among the respondents.

The majority of the respondents in this study had heard about seizures similar to findings reported by Frank-Briggs et al in Port Harcourt,[10] Anigilaje[12] in Illorin Nigeria, Wumi et al[13] in Ghana, Njanmshi et al in Cameroun,[14] and Ahhazzani et al in Saudi Arabia.[15] This familiarity with childhood seizures may be because seizures are a common neurological disorder in childhood globally.[1,2,11] The major source of knowledge about seizures was from relatives and friends in this study similar to reports from other studies both in the rural and urban centers.[8-10] Family and friends are closer to the parents/caregivers and are readily available as a source of information than health care providers. Caregivers are those who children depend on to provide their needs.

In this study, healthcare providers were the source of information for only 18.1% of respondents compared to 32% in Ghana.[13] Although both studies were done in hospitals situated in urban cities, the Ghana study was among caregivers whose children already had seizures and were on admission, therefore, increasing their chances of getting information about seizures from the health care providers unlike ours which was from a heterogeneous group of persons whose children may or may not have seizures. The percentage of those who got information from healthcare providers was however higher in urban areas like ours than the rural areas.[12]

Healthcare providers may need to be deliberate in the dissemination of information on childhood seizures through radio, community visits, and even within the hospital. The mainstream media (television and radio) were responsible for the knowledge of 15.1% of the respondents and this was similar to the finding by Angilaye in Illorin.[12] Social media also played a role in the dissemination of information in our study more than the health care providers (22.7% versus 18.1%). Social media is patronized highly by parents/caregivers presently and may rise in popularity as a source of information. Earlier studies did not report on the role of social media as social media was not yet active.

As many as 46(21.1%) of respondents had not heard about seizures which were higher than the less than five percent in an earlier study in Port Harcourt,[10] Cameroun,[14] Saudi Arabia.[15] The higher knowledge rate in an earlier study in Port Harcourt may be because the study was conducted in just the neurology clinic[10] while ours is a closer reflection of a community cohort that involved respondents from neurology and non-neurology clinics. In this study as well as others, about half of the respondents attributed the aetiology of childhood seizures to medical causes[12,13,16-18] while in several reports caregivers incorrectly attributed the causes to spiritual forces (evil spirits, angry gods, evil spirit attack, witchcraft)[7,11,13,14,16] a behaviour which could delay right intervention and worsen stigmatization and abuse.

Jerking of the body, clenching of teeth, and upward rolling of the eyes were the commonly known symptoms of seizures in this study. This finding is similar to reports within and outside Nigeria.[10-17] These symptoms are what have been passed on from generation to generation and are quite frightening to caregivers.[10] These symptoms of childhood seizures most easily recognized are the convulsive ones. The non-convulsive symptoms may not be easily recognized. They include the sudden arrest of movement and poor academic performance due to multiple seizures which caregivers should be also taught.

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The majority of respondents have the erroneous belief that seizures could be contagious 176(80.7%) similar to the report by Frank-Briggs in Port Harcourt,[10] Bisi-Onyemachi in Enugu,[17] Deresse et al in Ethiopia[19] and Alhazzani et al in Saudi Arabia.[15] The impact of this erroneous belief is that of stigmatization, refusal to play with children with seizures,[14-18] avoidance, not enrolling them in schools, and being denied admission into schools.[14-18] Other include social isolation, marriage refusal in the future,[14-18] refusing treatment, and denying them employment.[15] The attitude of caregivers to children with seizures is often negative in low- and middle-income countries and in this study majority of respondents believe that a child with a seizure disorder should not go to school 187(85.8). This was similar to the report from rural Tanzania[20] where 65.3% of respondents said children with epilepsy should not attend school. This may be to avoid the child injuring himself if a seizure happens outside the home. They may also feel the child may disgrace or embarrass them if the convulsion happens outside the home. This will however affect the academics of these children. Other negative attitudes towards children with childhood seizures in this report as well as in other reports include that children with epilepsy should not play with other children[14,15,16,19] This is stigmatization against children with seizures and will lead to a psychological disorder, children will have fewer friends or no friends, can cause low self-esteem even in adulthood.[9]

In this study, more than 80% of respondents believe that seizure is treatable with more than 90% suggesting orthodox treatment. This was similar to other reports globally.[10,13-15,18] This high percentage was documented by both community and hospital-based studies and is commendable and may show low resistance to orthodox treatment options. Almost half of the respondents in this study still recommended the use of traditional medicine in addition to orthodox medicine which is not surprising because many of the respondents believe in spiritual causes of childhood seizures. A similar finding was reported by Eseigbe in Kaduna[11] and Alhazzani et al[15] in Saudi Arabia. When it comes to actual interventions that is what people did in an attempt to treat seizures at home we found that the commonest interventions were putting palm kernel oil in the mouth and body, putting onions on the mouth and eye, massaging the body as well as putting a spoon in the mouth, pouring water on the child, and giving the child urine to drink. Similar harmful interventions were reported in other studies.[8,10,11] These harmful interventions could cause complications such as burns, aspiration pneumonitis, chemical conjunctivitis, dental loss, and even death.

Less than a third of the caregivers did the proper intervention of taking the child to the hospital, lying the person on the floor, and removing harmful objects away from the child. This report agreed with those by Eseigbe et al in Kaduna[11] and Frank-Briggs in Port Harcourt.[10] The proper home intervention for seizures is deficient and its knowledge needs to be scaled up to reduce the risk of injury and complications.

Implications of the study: This study has showed that the knowledge and application of first aid during seizures has remained poor even though this is the 21st century. This may because the source of information is passed down from generation to generation from members of the non-health sector who are not properly enlightened about childhood seizures. There is a need for health care providers to step up on information dissemination to break the cycle of misinformation. There is also a need to inculcate first aid seizure management of seizures in the school curriculum which will ultimately improve the knowledge base of the present and future generation. Online first aid management of seizures may also be organized.

Strengths and limitations of the study: The strength of this cross sectional study is that it involved respondents who had children with and without seizure disorders therefore the responses were not one-sided but balanced from two different angles. The limitation is that it may be prone to recall bias since respondents may not remember all that was done during seizures. It is recommended that future study will be among respondents whose children were admitted for seizure disorders. They will give more accurate information on what they did during the present seizure which can be properly assessed as correct or incorrect. They will then be educated and trained on proper first aid management

Conclusion

The knowledge attitude and home intervention during childhood seizures is poor among the respondents in this study and may worsen injury and complications from seizures. Clinicians play a major role in dissemination of accurate information to parents, children and the community at large.

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Knowledge, attitude, and home interventions for childhood seizures are poor among caregivers in this study. The school and health facilities are poor sources of information while family and friends are very important sources of information. It is recommended that standard first aid management of seizures should be taught both in schools and at the community level.

Declarations

Ethical consideration: Ethical approval for this study was received from the Rivers State Hospital Management Board

Authors' contribution: Wonodi, W handled concept, data collection, discussion, conclusion and Onubogu, UC - data collection, methodology, and results. Both authors reviewed and gave final approval for the publication.

Conflict of interest: None

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