



Childhood Convulsion: Home-care and Complications Seen in Children Presenting with Convulsion at the Federal Medical Centre Asaba, Delta State

C. O. Okike¹, O. C. Ajaegbu¹, O. D. Emeagui¹, L. E. Abonyi¹ and V. U. Muoneke^{2*}

¹*Department of Paediatrics, Federal Medical Centre, Asaba, Delta State, Nigeria.*

²*Department of Paediatrics, College of Medicine, Faculty of Medical Sciences, University of Nigeria, Enugu Campus, Nigeria.*

Authors' contributions

This work was carried out in collaboration among all authors. Author COO designed the study, wrote the protocol and wrote the first draft of the manuscript. Authors OCA and ODE performed and managed the statistical analysis of the study. Author LEA contributed in the literature searches. Author VUM managed the literature searches and wrote the final draft of the manuscript. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JAMMR/2020/v32i2330741

Editor(s):

(1) Dr. Nicolas Padilla-Raygoza, University of Celaya, Mexico.

Reviewers:

(1) MaryJoy Umoke, Alex Ekwueme Federal University Ndufualike Ikwo, Nigeria.

(2) Fernanda Paula Cerântola Siqueira, Brazil.

(3) Asogwa, Oluchukwu Chukwemeka, Alex Ekwueme Federal University Ndufu Alike Ikwo, Nigeria.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/63602>

Received 10 October 2020

Accepted 17 December 2020

Published 30 December 2020

Original Research Article

ABSTRACT

Background: Convulsion, a common neurological disorder resulting from abnormal electrical activities in the brain with morbidity and mortality depending largely on the cause of the convulsion and interventional practices. Outcome is often worsened when agitated parents/caregivers ignorantly deploy harmful home practices.

Objective: This study evaluated different home care offered to a convulsing child and their impact on the child.

Methods: This was a prospective study involving all children who came in with convulsion to the Paediatric Department of the Federal Medical Center, Asaba over a study period of 14 months. A Researcher administered pre-tested questionnaire was used to assess the types of home care given. Physical examination was carried out on all the patients while using a Chest radiogram to confirm cases of suspected aspiration.

Results: One form or more of harmful traditional home care was administered to 84% of the study children, 48% percent had palm kernel oil applied to the skin and other parts of the body while 33.3% of the convulsing children had spoons forcefully inserted into their mouths. The most common complication was massive blood loss from scarification marks in 60% of the subjects while fear of death was a common cause for concern in 56% of the parents. The relationship between the socio-economic status of the parents and the caregiver to a convulsing child was seen to be statistically significant ($p < 0.005$).

Conclusion: Homecare/treatment for childhood convulsion is a common practice among caregivers necessitating an urgent need for mass education and enlightenment on proper management of convulsion.

Keywords: Convulsion; home care; harmful home practices; children; Asaba; mass education.

1. INTRODUCTION

Convulsion is a paroxysmal, time-limited change in motor activity and/or behaviour that results from abnormal electric activity in the brain [1]. Convulsion is a common neurological disorder in paediatric age groups whose morbidity and mortality depends largely on the cause of the convulsion and intervention that the child receives at home during the episode [2]. Convulsion can be largely divided into febrile and non-febrile [2]. The care a convulsing child receives is often influenced by the parent's knowledge of what convulsion is and how best to manage it [3]. Unfortunately, the knowledge on home-care of a convulsing child in our environment is very poor with lots of erroneous myths unlike obtains in Western countries [2-4]. These erroneous beliefs are often interwoven with cultural, religious beliefs of the people and these are handed down to subsequent generations.

The sudden onset of convulsion with accompanying impairment and loss of consciousness is always a fearful experience for most parents [2,3]. Amidst confusion and extreme anxiety, care givers and neighbors' may take actions that have grave consequences for the child [3]. These actions include application of palm kernel oil into the orifices, application of pepper mixed with scent leaf (*Ocimum gratissimum*) into the eyes and other orifices, forceful administration of cow urine into the mouth, making of scarification marks on the body, burning of the feet/buttocks and other harmful practises [2-8]. These practices may be born out fear of demise of the convulsing child [5,6]. Complications arising from these harmful home interventions that could increase morbidity and mortality include, possible aspiration pneumonitis, burns injury, cornea opacification, and contractures among others [2,3,5,7,8].

The socio-economic status (SES) of the parent/caregiver has been shown to influence the interventions that a convulsing child receives at home [9]. Other factors that might influence the home-care offered to a convulsing child include, cultural beliefs, religious beliefs, influence by extended families and neighbours, poor knowledge of what convulsion is and the appropriate measures to be taken [9]. Though similar works have been done in other parts of the country, there are associated socio-cultural-religious beliefs in the country and these beliefs often influence the choice of home treatment offered to the child. This study is therefore aimed at evaluating the mythical belief of care-givers about convulsion, home remedies offered to a convulsing child, complications of such remedies, and the effect of SES on the choice of remedies offered to a convulsing child.

2. MATERIALS AND METHODS

This prospective study was carried out at the Paediatric Emergency Room and the Paediatric Neurology Unit of Federal Medical Centre, Asaba, Delta State, Nigeria over 14months; January 2019-February 2020.

Federal Medical Center Asaba is one of the tertiary hospital facilities in the state with multi-disciplinary departments that caters for patients from Delta and Anambra states. Ethical approval was obtained from the ethical committee at FMC Asaba. All children aged 28 days - 18 years who were admitted into CHER or seen at the Paediatrics neurology unit of FMC Asaba with complaint of convulsion were recruited for this study. Informed consent was obtained from the parents/ guardians of the children before enrollment into the study while assent was also obtained from children > 7years. A detailed medical history including information on type of convulsion, time of onset and relief, type of initial

home treatment administered was obtained and physical examination was carried out on all the study children. Approximately 120 standard pretested interviewer-administered questionnaires with close and open-ended questions were used to obtain information from the mothers of the recruited study children. Socio-economic classification was determined using Olusanya's method of social classification which has 3 different stratification - Low, Intermediate and Upper [10].

Data were primary and analyzed with Statistical Package for Social Sciences (SPSS) version 23. Data presentation was done using frequency tables. Chi-square and Fisher's exact test were used to test for significant association of categorical variables. Data presentation was done using frequency tables. Differences were deemed to be statistically significant where P value <0.05.

3. RESULTS

A total of 120 children who presented with convulsions were recruited for this study with a male to female ratio of 1:1.1. Majority (71.7%) were of Igbo extraction, 97.5% were of the Christian Faith, 72.5% were from middle SES, while febrile seizure (39.2%) was the most common cause of convulsion among the children Table 1.

The majority of the parents (89.2%) have good knowledge of what convulsion is, while (10.8%) demonstrated poor knowledge. Sixty-three percent (63%) attributed the cause of convulsion to fever/malaria, 22.5% did not have any idea of the possible cause of convulsion, 11.7% felt it was due to spiritual-attack, while 1.7% and 0.8% believed it was hereditary and due to brain disorder respectively. The most common cause of concern among the parents was the fear of death (56.0%), followed by physical disability (25.0%) and mental retardation (19.0%). Neighbors influenced the choice of home care given to a convulsing child in 36.0% of the cases followed by the grandmother's intervention (24.0%), cultural beliefs (21.0%), previous experience 14.0% and religious believe 5.0%.

Concerning actions taken on a convulsing child, forceful insertion of spoon/objects into the mouth (33.3%), and physical restriction (24.2%) were the most common actions taken. Sixteen percent of the children were rushed to the hospital without any home treatment while 13.3% were

rushed to the church/prayer house. Scarification marks were made on the body of 6.6% of the children, beating and burning parts of the child's body with fire was done in 3.3% (See Table 2).

Table 3 shows various local remedies applied on the body and also forcefully applied into the orifices of a convulsing child. Palm kernel oil was applied on the body of 48% of the children, olive/anointing oil on 24.4%, mixture of spices (scent leave, onion, pepper) on 12.1%, onions only on 9%, and mother's urine 6.5%.

Complications associated with home interventions include blood loss from scarification marks (60% of the cases), burn injury to the limbs (28%), aspiration (8%), and tooth dislodgment (1%) (See Table 4).

The use of harmful practices to abort convulsion at home was more prevalent among parents from low and middle SES compared to those from high SES. ($p < 0.05$) (See Table 5).

4. DISCUSSION

The abrupt onset of convulsion is often a dreadful, frightening, and emotionally traumatizing experience for the parents who most often out of fear deploy several home remedies to abort the convulsion. Unfortunately, most of these home interventions in our environment are harmful and have contributed significantly to the morbidity/mortality of these children [2,3,5,7,8].

The majority of the parents had good knowledge of what convulsion is (89.2%). However, the knowledge of parents in our study on how best to manage a convulsing child at home prior to hospital presentation appears low. This finding is similar to works done by Anigilaje et al. [5] in Ilorin and Onankpa et al. [8] in Zaria where it was reported that no mother correctly and safely managed convulsion at home prior to a hospital visit. Conversely, 9.5% and 16% of mothers in a study done in Malaysia [11] and United Kingdom [4] respectively managed their convulsing children safely at home before taking them to the hospital. The difference may not be unrelated to the fact that there is a high level of ignorance among our populace, interwoven with erroneous diverse socio-cultural and religious beliefs unlike the Malaysian and UK population with better knowledge and health-seeking behavior. Thirty-six percent of the actions taken on the convulsing children in this study were influenced by

neighbours while grandmothers supervised home treatment offered to 25% of the subjects. This finding is lower than 70% documented by Anigilaje et al. [5]. Though the intervention initiated by neighbours may be injurious but it highlights the impact of the age-long African tradition of 'be your neighbour's keeper' and the need for mass education on safe home management of convulsions.

The fear of death (56.0%) was the main concern expressed by the parents when their children had convulsion. This is in consonance with the outcome of several studies [6,12,13]. The fear of

death may explain why 33.3% of the parents in the index study forced a spoon into the child's mouth to prevent the convulsing child from clinching their teeth which they erroneously believe will lead to an instant death of the child. Only 15% of the parents rushed their children to the hospital without offering any form of care while 84.2% offered some form of home-care prior to presentation to the hospital. No parent correctly and safely managed the convulsing child at home by putting the child in the decubitus position, loosening tight clothing, cushioning the head and removing every harmful object around the child.

Table 1. General characteristics of the study population

Variables		Frequency	Percentage (%)
Age	28 days- 5 years	82	68.3
	6-10 years	25	20.8
	11-15 years	13	10.8
Gender	Male	56	46.7
	Female	64	53.3
Tribe	Igbo	86	71.7
	Anioma	16	13.3
	Benin	8	6.7
	Hausa	2	1.7
Residence	Others	8	6.7
	Urban	86	71.7
	Rural	34	28.8
religion	Christian	117	97.5
	Muslim	2	1.7
	Traditional	1	0.8
Socioeconomic status	High	23	8.3
	Middle	87	72.5
	Low	10	19.2
Diagnosis	Febrile seizure	47	39.2
	Seizure disorder	46	38.3
	Meningitis	11	9.2
	Cerebral malaria	7	5.8
	Sepsis	9	7.5
Outcome	Discharge	117	97.5
	DAMA	2	1.7
	Death	1	0.8

Table 2. Action taken when a child is convulsing

Variable	Frequency	Percentage
Rush child to hospital	19	16.0
Rush child to church (prayer house)	16	13.3
Put spoon into the mouth	40	33.3
Beat/flog the child	4	3.3
Burn part of the child's body	4	3.3
Put scarification marks on the child	8	6.6
Holding//restriction of the child	29	24.2
Lie the child on the side	NIL	NIL

Table 3. Agents used on a convulsing child

Variables	Frequency	Percentage
Mothers urine	8	6.5
Palm kernel oil	59	48.0
Olive/anoointing oil	30	24.4
Onions	11	9.0
Mixture of spices (scent leaf, garlic, ginger, chili pepper)	15	12.1

Table 4. Complications following harmful home care

Variable	Frequency	Percentage
Blod loss from scarification marks	15	60.0
Tooth dislodgment	1	4.0
Aspiration	2	8.0
Burn injury to the limb	7	28.0

Table 5. Relationship between harmful home practices with SES of the parents

	SES			Total	χ^2	p- value	95% CI
	Low	Middle	High				
Harmful home-care	22	77	2	101	34.4	<0.0005	0.000-0.025
No harmful home-care	1	10	8	19			

The index study showed that several local remedies were used to abort convulsion at home, of which use of palm kernel oil (48.0%) was the commonest. This finding is different from what was reported by Familusi et al. [14] Jarret et al. [7] in Ibadan and Anigilaje et al. [5] in Ilorin where forceful administration of cow urine mixture was the most common home remedy administered to a convulsing child. This is not surprising because of socio-cultural differences between the study populations. Whilst Ilorin and Ibadan share similar socio-cultural characteristics, Asaba where the current study was carried out has different socio-cultural beliefs. One of the consequences of forcing palm kernel oil into the mouth of these convulsing children is chemical aspiration leading to chemical pneumonitis which was evident in 8% of the subjects. Application of oil on the skin of a convulsing child as found in this study, could exacerbate the already raised body temperature which in turn would predispose the children to febrile status.

Blood loss from scarification marks (60.0%) was the commonest complication seen on these children followed by burn injury to the limbs (28.0%), aspiration (8.0%), and tooth dislodgment (4.0%). There is a common belief among the populace that convulsions are due to "black blood" and incision making leads to letting

out of this 'black blood' which is believed to offer healing to the child as well as prevent re-occurrence of the convulsion. Onankpa et al. [8] found higher incidences (90%) of scarification marks associated with blood loss amongst convulsing Hausa/Fulani children in Sokoto, Northwest Nigeria. While massive blood loss following scarification marks was the commonest complication in this study, Anigilaje et al. [5] reported aspiration pneumonitis (63.4%) as the most prevalent complication in convulsing children on home management. The 28.0% burn injury documented in this study is similar to 21.4% documented by Anochie and Graham-Douglas [15] in Port-Harcourt. The similarity in the culture of the people could explain this similar finding as both Asaba and PortHarcourt are within the South-South of Nigeria.

This study interestingly showed that the SES of the parents significantly influenced the form of home-care a convulsing child received. Parents of high SES were less likely to unwittingly engage in harmful home interventions for their convulsing children. This is probably due to the parents' high level of education and high financial capacity to care for their children. The use of harmful home-care on a convulsing child was commoner among parents from low and middle SES. The finding in the index study is not different from what was reported by Ofovwe et al.

[3] that rural women of low SES were more likely to inadvertently indulge in harmful practices to abort convulsion compared to women of high SES. Ignorance and poverty might have accounted for these findings.

5. CONCLUSION

The appropriate knowledge of convulsion and its causes is high among the parents, but this did not reflect on the practice of safe home management of convulsion as unwholesome, pre-hospital treatment of convulsion is still common among caregivers. There is a need for aggressive enlightenment of the populace on safe home management of convulsion as this will reduce complications that may arise from these practices. It is equally important that other health professionals outside the hospital setting are trained on the proper methods of resuscitating convulsing children.

CONSENT

Informed consent was obtained from the parents/guardians of the children before enrollment into the study while assent was also obtained from children > 7 years.

ETHICAL APPROVAL

Federal Medical Center Asaba is one of the tertiary hospital facilities in the state with multi-disciplinary departments that caters for patients from Delta and Anambra states. Ethical approval was obtained from the ethical committee at FMC Asaba.

ACKNOWLEDGEMENTS

We wish to thank all the research assistance and the parents for their assistance and co-operation.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Johnston MV. Seizure disorder. In: Kliegman RM, Behrman RE, Jenson HB, Santon BF (eds.). Nelson Textbook of

- Paediatrics, 17th ed. Philadelphia: Saunders. 2007;2457-2470.
2. Oche OM, Onankpa OB. Using women advocacy groups to enhance knowledge and home management of febrile convulsion amongst mothers in a rural community of sokoto state, Nigeria. PAMJ. 2013;14.49.1703.
3. Ofofwe GE, Ibadin OM, Ofofwe EC, Okolo AA. Home management of febrile convulsion in an African population: A comparison of urban and rural mother's knowledge, attitude and practice. J Neurol Sci. 2002;200:49-52.
4. Rutter N, Metcalfe DH. Febrile convulsion-what do parents do? BMJ. 1978;2:1345-1346.
5. Anigilaje EA, Anigilaje OO. Childhood convulsion: Inquiry about the concerns and home management among mothers in Tegbesun, a peri-urban community in Ilorin, Nigeria. ISRN Paediatrics. 2012;1-6.
6. Parmar RC, Sahu DR, Bavdekar SB. Knowledge, attitude and practice of parents with febrile convulsion. J Postgrad Med. 2001;47:19-23.
7. Jarrett OO, Fatunde OJ, Osinusi K, Lagunju IA. Pre-hospital management of febrile seizures in children seen at the university college hospital, Ibadan, Nigeria. Ann Ibd. Pg. Med. 2012;10:6-10.
8. Onankpa BO, Oche GM, Tahir Y. Febrile convulsion: Home management amongst hausa/Fulani mothers in North West Nigeria. Sahel Med J. 2011;14:195-198.
9. Iloeje SO. Impact of sociocultural factors in febrile convulsions in Nigeria. Afr. J Med Sci. 1989;8:54-58.
10. Olusanya O, Okpere E, Ezimokhai M. The impact of social class in voluntary fertility control in a developing country. W Afr Med J. 1985;4:205-212.
11. Deng CT, Zulkifli HI, Azizi BH. Parental reactions to febrile seizures in Malaysian children. Med J Malaysia. 1996;4:462-468.
12. Kolahi AA and Tahmoorezadeh S. First febrile convulsion inquiry about knowledge, attitudes and concerns of the parents' mothers. Eur. J. Pediatr. 2009; 2:167-171.
13. Kurugol NZ, Tutuncuoglu S, Terkgul H. The family attitudes towards febrile convulsion. Indian J Pediatr. 1995;1:69-75.

14. Familusi JB, Sinnette CH. Febrile convulsion in Ibadan children. Afr J Med Sci. 1971; 2:135-149.
15. Anochie I, Graham-Douglas IB. Non-accidental injuries associated with convulsions in Port Harcourt, Nigeria. Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology. 2000;2.
16. a. ILAE. Guidelines for epidemiologic studies on epilepsy. Epilepsia. 1993;34:592–596.

© 2020 Okike et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

*The peer review history for this paper can be accessed here:
<http://www.sdiarticle4.com/review-history/63602>*