

## ORIGINAL ARTICLE

**KNOWLEDGE AND ATTITUDE OF PARENTS TOWARDS THE FIRST SEIZURE EPISODE IN CHILDREN IN YAOUNDE, CAMEROON**

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**Abstract**

**Aim:** Seizures are common in the pediatric age group and occur in approximately 10% of children. Parents often experience anxiety and fear if seizures in the child occur in their presence at home. Parental response is mostly determined by their knowledge on seizures. The aim of this study was to assess the knowledge and attitudes of mothers towards the first seizure of their children in the Cameroonian context.

**Material and Methods:** A cross sectional and descriptive study was conducted in Yaounde in Cameroon, over a period of six months. Included in the study, were mothers whose children were hospitalized for seizures. The seizure had to be the very first in the child, and had never occurred in the other siblings.

**Results:** A total of 100 mothers were interviewed. Most mothers (88%) had heard of convulsions, and the main source of information was mothers and/or relatives in 89.8% of the mothers. Upward eye deviation was the most common description in 35.1% of the mothers. According to the mothers, the main causes of seizures were high fever (47%) and malaria. However, 20.9% had no idea whatsoever of the cause. The main consequences according to the mothers were, death (32.1%), and mental disorders (22.9%). Besides some mothers admitted they had no idea (20.2%). As to their knowledge on the management of seizures only, 20.9% admitted they will rush the child to a hospital for urgent treatment. Almost all (98%) were frightened during the seizures, and the main reason for this fear was that the child might die (91%).

**Conclusion:** Parental knowledge on seizures was insufficient which explains their inappropriate attitudes. Parents should therefore be well educated on seizures with emphasis on the importance of appropriate home responses.

**Keywords:** seizures, child, attitude, mothers, Cameroon

**Introduction**

Seizures are common in the paediatric population and affects about 10% of children. (1) Febrile seizures affect 6.1% of paediatric hospitalizations in Cameroon. (2) Generally, seizures occur at home, and as a result parents are the first to be involved in their management. Their knowledge and attitudes are therefore determinant prognostic factors. Several studies have shown that parental knowledge on seizures are lacking, and as a result when faced with the dramatic manifestations of seizures, parents are frightened and therefore tend to perform inappropriate first aid gestures. (3-7) Seizures could have an impact on the psychomotor development of the child, and this depends on the age of the first seizure, type of seizure, duration and delay in management. (8) The aim of this study was to determine the knowledge of parents on seizures and identify their attitudes at home when confronted with a first seizure in their children.

**Methods & Materials**

This was a cross-sectional descriptive study conducted over a period of six months (from March to August 2014) in the General Paediatric unit of the Yaounde Gynaeco-Obstetric and Paediatric Hospital, a referral hospital in the capital city of Cameroon. The children came directly from home or from neighbouring health centres. Enrolment in the study was consecutive, and we included all mothers whose children were hospitalized for seizures (the seizure had to be the first ever episode in the child). Also it had to be the first amongst the siblings in the household. This was to eliminate bias that could arise from previous parental education following previous seizures. We excluded from our study any child presenting with paroxysmal phenomenon mimicking seizures, and children less than one month (to be sure of eliminating neonatal seizures which could be atypical and occur unnoticed by the mother). Mother - infant pairs who met our inclusion criteria were enrolled in the study. The mothers were then interviewed and the data obtained were entered into a questionnaire designed for this study. The mothers were interviewed the next day following admission, when the child was stable. Variables collected were: socio-demographic characteristics of the mothers (age, profession, marital status and level of education); parental knowledge on seizures (description, causes, and consequences), parental practices and attitudes (emotional response and fears) towards the seizure.

We used Microsoft Excel 2007, to calculate frequencies and percentages.

Authorization to carry out the study was obtained from the authorities of the Yaounde Gynecologic-Obstetric and Paediatric Hospital, and ethical clearance from the ethical committee of the hospital. A written informed consent was obtained from all the parents who accepted to participate in the study. Health education was given to the mothers during hospitalization and at discharge, on the home measures to be taken in case of seizures.

**Results**

We enrolled 100 participants in the study. The mean age of the mothers was 33.9±18.5 years (range 18 to 55 years), and most (85%) belonged to the 20 to 40 years age group; 29% working in the informal private sector; 69% were unmarried, and 57% and 19% had secondary and primary education respectively. However 18% had university education and 6% were illiterate.

Regarding the children, the mean age of presentation was 4±4.2 years (range 1 month to 12years). The most represented age group was 12 to 24 months (n=42). There was a male predominance with a male: female ratio of 1.2:1. We noted that 89% of the seizures occurred in a context of fever and the main aetiologies of the fever were malaria (59.8%) and meningitis (9.8%). The majority of the mothers (88%) had

heard of convulsions. The main source of information was from parents and/or relatives in 79 (89.8%) of the cases, radio/TV and patient itself in 3 (3.4%) each, school in 2 (2.3%) and health care personnel in 1 (1.1%). Fifty four (54%) of mothers could not recognize the seizures. Description of the seizures by the mothers are given in Table 1.

**Table 1: Description of seizures**

Description of seizures	Number (%)
Upward eye deviation	80 (35.1)
Rigidity	40 (17.5)
Salivation	34 (14.9)
Agitation/trembling	27 (11.8)
Stretching/contractions	25 (11)
Chewing/teeth gnawing	10 (4.4)
Fixated sight	5 (2.2)
Loss of consciousness	3 (1.3)
Trance	2 (0.9)
Yelling	1 (0.4)
Loss of sphincter tone	1(0.4)
<b>Total</b>	<b>228*(100)</b>

Note: \*A participant could have one or more descriptions.

The main causes of the seizures as cited by the mothers were: high fever in 54(47%), malaria in 19 (16.5%), "spleen" in 5(4.3%), anemia in 4 (3.5%) n=4), meningitis in 3 (2.7%), apnea in 2 (1.7%) and witchcraft, emotional shock and chills in 1 (0.9%) patient each. However, in 24 (20.9%) of the responses, some parents had no idea whatsoever of the cause. The main consequences of seizures as cited by the mothers are depicted in Table 2.

**Table 2: Consequences of seizures according to the mothers**

	Number (%)
Death	35 (32.1)
Mental disorders	25 (22.9)
Paralysis	8 (7.3)
Epilepsy	6 (5.5)
Learning difficulties	3 (2.8)
Psychomotor retardation	2 (1.8)
No consequence	2 (1.8)
No idea	22 (20.2)
Others*	6 (5.5)
Total	109 (100)

Note: \*Others: coma, fright, recurrence, growth retardation, child stubbornness

Almost all parents (98%) were frightened by the seizure, and the main reason for this, was that the child might die (91%), become spirit possessed or have aggravation (2% each) or have suffocation, meningitis, coma (1% each). Concerning their knowledge on the home management of seizures only 31 (20.9%) admitted they will immediately take the child to a hospital for urgent treatment. Thirty-two (21.6%) made the child inhale a strong odour, 22 (14.9%) placed the child's head into a latrine and 11 (7.4%) had no idea of what to do.

**Discussion**

Most parents were quite educated which is explained by the fact that this study was conducted in an urban area. The level of education is a factor that governs the perception and behaviour of parents towards a particular disorder, especially seizures. Studies have shown correlations, both between the level of education and the lack of knowledge about seizures; and secondly between the level of anxiety and the level of education. (7,9-11)

In our study, the majority of parents had heard about seizures. This observation is similar to that reported in a Scandinavian study in 1999 (12), and in Nigeria in 2012. (13) We noted however, in our study that 12% of the mothers had never heard of seizures before. This contrasts with the results of Flury et al in Switzerland who observed that 44% of the mothers had no knowledge on seizures. (7) This difference can be explained by the fact that information on seizures was conveyed by word of mouth (via parents or relationship); thus a higher probability of being exposed to the same information even if it is not reliable. We found that information on seizures was mainly from the entourage, whereas in Nigeria in 2012, Anigilaje et al found that the radio (42.2%) and family (32.5%) were the main sources of information. (13) Although the information came mostly from conventional sources as the radio, the authors pointed out that the convulsions were always perceived by mothers as a mysterious phenomenon. Therefore beliefs conveyed by the entourage were better accepted even if sometimes erroneous. (13)

More than half (54%) of the mothers did not recognize a seizure, yet the majority had heard of it. Many factors could explain this: (i) the unreliability of the information received as it came mostly from the entourage (ii) the fact that the parents in the study had never witnessed a seizure; (iii) fright which might make the parents lose their lucidity and as a result not retaining the nature of the seizure. Parents were especially shocked by the facial expression of the convulsing child, and most describe the event as an 'upward eye deviation'. Similarly in France, Chamberlan-Tison et al in 2013 noted the same observation. In their study, many parents said that the general appearance of the child looked deformed by the seizure. (3)

Fever was the main cause of the seizure as cited by parents. Van Stuijvenberg et al in the Netherlands noted a similar finding, whereas, in other studies in rural areas especially in Africa (4,6,14) and Asia (15) , most

mothers thought seizures were due to witchcraft (4,6), a disease called "spleen" (14) or egg consumption (6). The term 'spleen' used in this context is a common term used by traditional healers as the cause of fever in a child, because according to them fever is due to the dysfunctioning of the spleen, and should be treated with scarifications in the left hypochondrium.

In our study "spleen" and witchcraft were cited by 4.3% and 0.9% of the mothers, respectively. It is also worth mentioning that the majority of the mothers in our study had a relatively accurate knowledge of the causes of seizures: fever, malaria and meningitis.

The main consequences feared by the parents interviewed were death and mental disorders. Other researchers have noted similar findings. (3,16,17) Chamberlan-Tison et al explained that parents feared the worst because during the seizure, the child's general appearance changed suddenly with a loss of consciousness. The combination of these factors terrified parents and nurtured the fear of death. (3) Parental knowledge concerning the management was mostly wrong and diverse. Indeed, the management in most cases consisted in letting the child to inhale a strong odour (like alcohol, smoke from burnt tissue or pepper, whiskey) or putting the child's head in the latrine with the hope that the strong odour from the latrine will stop the seizures. In the case of smoke inhalation, the child might inhale carbon monoxide contained in the smoke, which will affect the central nervous system aggravating the convulsions. (18) Very few parents (20.9%) knew that they must take the child to the hospital urgently in case of seizures. It is very likely that the information received from the entourage was inappropriate, as well as the insufficient information from health professionals on seizures greatly influenced this poor knowledge on the initial management of seizures at home. According to Anigilaje et al in Nigeria, seizures are regarded as a mysterious phenomenon in the community, and traditional beliefs are so much rooted in the minds of the parents that information even from conventional sources such as healthcare professionals, radio, and television are not easily adhered to. (13)

During the seizure almost all (98%) the mothers indicated they were very anxious and frightened. A seizure is a phenomenon which occurs brutally and often associates eye deviation, rigidity and loss of consciousness. All these manifestations are regarded as mysterious (4), and terrifying (3) for parents who interpret them diversely and often think the worse is yet to come for their child. Lack of precise and adequate information from health professionals largely contributes to this.

The main limitation of the study was the fact that the study was done in an urban context where most mothers are literate, and thus cannot reflect the knowledge and practices of the rural population where most mothers are illiterate. Also the study was hospital-based and would not reflect practices of the parents in the community, who did not come to the hospital.

## Conclusion

Overall, parental knowledge on seizures was insufficient, which explains their inappropriate attitudes towards seizures. It is therefore important that parents be well-educated on seizures, emphasizing on the importance of appropriate home responses.

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