



## Knowledge and Home Management of Febrile Convulsion among Mothers Attending Infant Welfare Clinics in Selected Primary Health Care Centres in Ondo State, Nigeria

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### Abstract

**Introduction:** Globally, febrile convulsion is one of the common paediatric crises in medical practice that is responsible for the increase in morbidity and mortality rates among children under five. Meanwhile, a lack of understanding regarding the management and prevention of febrile convulsions in children has caused many mothers to use risky, inadequate and unconventional medical care. **Aim:** This study, therefore, assessed the knowledge and home management practices of febrile convulsion among mothers in Ondo State, Nigeria. **Methods:** A descriptive research design was utilized. The study was conducted in four selected Primary Health Centres in Owo local government, Ondo State. A simple random sampling technique was used to select 125 respondents. Data was collected using an adapted structured questionnaire. Informed consent was obtained from the participants. Data was analysed using Statistical Package for Social Sciences (SSPS) version 23. Results were presented using descriptive and inferential statistics. The hypothesis was tested at a 0.05 level of significance. **Result:** The study revealed a good knowledge level (60.0%) of febrile convulsion and its causes, poor perception of febrile convulsion (54.4%), and an adequate practice level (77.6%) of home management practices for febrile convulsion treatment. Major factors influencing the use of modern healthcare facilities were; distance from health facility and high cost of treatment. However, a significant relationship was found between mothers' knowledge and practices adopted in managing febrile convulsions at home ( $P=0.001$ ). **Conclusion:** Although, most participants showed a good understanding of febrile convulsions, however, some still have a poor perception of it, therefore, healthcare professionals need to educate mothers on the warning signs and clarify misconceptions regarding conventional medication to ensure appropriate home management of childhood convulsions.

**Keywords:** Knowledge, Perceptions, Home management, Febrile convulsion, Mothers.  
<https://dx.doi.org/10.4314/bjnhc.v6i1.2>

### Introduction

Globally, febrile convulsions are acknowledged as a common paediatric emergency in the field of medicine (Owusu, 2022). The prevalence of febrile

convulsions in children under five years of age worldwide was estimated to be between 2% and 5% (Agordoh *et al.*, 2019). Within the paediatric population, the prevalence rates may range for various

age groups. The frequency of febrile convulsions in Western nations likewise varies from 2% to 5% (Buttery *et al.*, 2022). Conversely, a substantially greater frequency of roughly 21.5% has been documented in Sub-Saharan Africa (Akpan & Ijezie, 2017). Particularly, 10% to 18% of children in Nigeria experience febrile convulsions (Buttery *et al.*, 2022). Furthermore, between 25% and 52% of all paediatric episodes of status epilepticus are caused by febrile convulsions (Buttery *et al.*, 2022)

According to the National Institutes of Health, a febrile convulsion is a type of seizure that typically occurs in children or infants between the ages of three months and five years, accompanied by a fever but without any signs of an intracranial infection (Esposito *et al.*, 2018). The definition of a febrile convulsion, however, has been modified by the International League against Epilepsy (ILAE), which defined febrile convulsion as a seizure that typically happens in children after the age of one month and is linked to a feverish illness. It is not, however, brought on by a central nervous system infection, and it does not meet the criteria for other acute symptomatic seizures. (Esposito *et al.*, 2018).

Four to ten percent (4-10%) of children under the age of five suffer from febrile convulsion (FC), (Anjum *et al.*, 2018). It is also one of the most common reasons for hospital admissions in children under the age of five. The condition is primarily caused by a spike in body temperature. Most parents, especially women, may experience emotional trauma as a result of their children's convulsion (Eta & Gaelle, 2021).

In Nigeria, malaria, pneumonia, urinary tract infections (UTIs), septicemia, and viral infections are among the major causes of febrile convulsions (Akpan and Ijezie's 2017). Poor management strategies may result from a lack of knowledge of these disorders (Eta & Gaelle, 2021). (Akpan & Ijezie, 2017; Leung & Hon, 2018). Children who experience febrile convulsions are susceptible to encephalopathy, epilepsy, and other problems. Research has also shown that mothers with higher levels of education typically control convulsions better when they happen (Abaribe, *et al.*, 2023)

Parents and other caregivers may find an episode of febrile convulsion alarming, which can cause anxiety and panic in mothers, particularly when they fear that their children may die during the seizure episode (Abubakari *et al.*, 2021). This in addition to ignorance and unfavourable perceptions is frequently the cause of the different therapies that parents and other caregivers give to convulsing children, especially in rural areas (Eta & Gaelle, 2021). Some of these risky procedures also involve applying palm oil, onion leaves, and cow's urine to the bodies of afflicted children during convulsive episodes.

Meanwhile, some mothers attempt to resuscitate their unconscious children affected by febrile convulsion by making incisions on their bodies, while others cause burn damage to the affected child while others transport the afflicted child to local herbalists and spiritualists (Abdali & Abdulrazaq, 2022). As a result, children under the age of five frequently experience higher rates of morbidity and mortality as a result of inadequate and

unconventional care (Bigargma, *et al.*, 2021).

Parental involvement is the initial step in managing children who have convulsions, as these episodes typically transpire at home. As such, parents need to have a sufficient understanding of febrile convulsion, especially about the timing of the disease, its clinical presentation, seizure management, and prevention (Agordoh, *et al.*, 2019). Notably, after febrile convulsion events, parents clinging to false beliefs and unfavourable impressions, will dramatically lower the quality of life for children and their loved ones (Bigargma, *et al.*, 2021). It is against this background that the study seeks to assess the knowledge and management of febrile convulsion among mothers attending infant welfare clinics in some selected primary health care centres in Ondo State. The specific objectives are;

- ✧ To find out the perception of febrile convulsion among the respondents
- ✧ To evaluate the home management practices adopted in the treatment of febrile convulsion among the respondents
- ✧ To identify the factors influencing the use of modern healthcare facilities in the treatment of febrile convulsion among the respondents.

S/N	Selected health facilities	Weekly average number of clinic visits
1.	Basic Health Centre, Iyere	38
2.	Primary health centre, Oke-Mapo	55
3.	Primary health centre, Okedogbon	37
4.	Basic Health Centre, Emure-Ile	30
	<b>Total</b>	<b>160</b>

Study participants were proportionally selected from each of the selected health centres as follows;

### Methods and Materials

This descriptive-cross-sectional study was conducted between June to July 2023 in four selected primary health care centres in Owo, which is situated in the Northern senatorial zone of Ondo State in Southwestern Nigeria.

**Inclusion Criteria:** Mothers who attend infant welfare clinics in the selected health centres, and consented to participate in the study.

**Exclusion Criteria:** This study excluded those mothers who refused to give their consent

**Sample size Determination:** The sample size was estimated using the Taro Yamane formula (Yamane, 1973).

Where,  $n$  = minimum sample size

$$N = \text{Total population}$$

$$e = \text{constant (0.05)}$$

$$114 = 125$$

### Sampling technique

Four primary healthcare centres were purposively selected because they have a large number of mothers attending their infant welfare clinics. The selected health facilities are:

SN	Health Facility	Number Of Visits	Total Visits In All Centres	Proportional Allocation Of Participants	Number Of Participants
1	Basic health centre, Iyere,	38	160		
2	Primary health centre, Oke-Mapo, number of participants	55	160		
3	Basic Health Centre, Emure-Ile	30	160		
4	Primary Health Centre, Okedogbon	37	160		

Total: 125

The instrument for data collection was an adapted questionnaire from a previous study (Abubatari *et al*, 2021). The questionnaire was divided into four sections: the socio-demographic variables of the respondents, level of knowledge and causes of febrile convulsion, perception about febrile convulsion and its home management, home management practices, and factors influencing the use of modern facilities in the treatment of febrile convulsion by respondents. The questionnaire was made available in both English and Yoruba languages. Ethical approval for the study was obtained from the Achievers University Health Research Ethics Committee and approval to collect data was obtained from the management of Owo local government. secretariat with ref no OWLG/7961/T/144 after presenting a letter of introduction from the Department of Nursing Science, Achievers University, Owo. In addition, the researcher obtained informed consent from the respondents. Principles of confidentiality and anonymity were maintained throughout the study. Participation was also made to be entirely voluntary and participants who were not

willing were informed that they were free to decline to participate at any time without suffering any negative consequences.

Data was collected by the researcher and two trained research assistants. The data collected was checked for errors, and analysis of data was done using IBM Statistical Package for Social Sciences version 23.0. Descriptive and inferential statistics were used. Chi-square test was used for Hypotheses at 0.05 level of significance. Knowledge of febrile convulsion was assessed using a structured validated questionnaire on interval scales of "0 to 13" while an 8-item 3-point Likert scale of agreed, disagreed and undecided with an interval scale '0 to 16' was used to assess the respondents' perception of febrile convulsion.

### Results

Analysis of the socio-demographic characteristics of the respondents shows that; majority 42(33.6%) were aged above 19-25 years, followed by 39(31.2%) between 26-30 years, while the remaining

23(18.4%) were between 31-35 years, and 21(16.8%) were aged above 35 years. Also, slightly below three-quarter 89(71.2%) of them were Christians, while 36(28.8%) are Muslims. Similarly, 72(72.0%) of them were married, whereas 23(18.4%) were single. In addition, more than two-fifths 59(47.2%) of them were from the Yoruba tribe, while 41(32.8%) were Igbos. Likewise, the majority of respondents 71(56.8%) had up to tertiary education and 32(25.6%) had at least secondary education. Furthermore, more of the respondents 46(36.8%) were self-employed, 31(24.8%) were civil servants, about one in twenty 27(21.6%) were full housewives. Similarly, more than three-quarters 98(78.4%) had between 1-3

children, while the remaining 27(21.6%) had above 3 children.

**Knowledge of Febrile Convulsion and its Causes**

Table 1 below presents the level of knowledge of febrile convulsion among the participants. The majority 97 (77.6%) have heard about febrile convulsion and more than three-quarters 98 (78.4%) have been taught how to manage the condition. Also, more than four-fifths 103 (82.4%) correctly defined febrile convulsion and 96 (76.8%) said it is majorly caused by malaria. Similarly, 102 (81.6%) affirmed that a body temperature above 38° c is considered a fever and can cause febrile convulsion.

**Table 1:** Respondents’ knowledge of Febrile Convulsion and its Causes

Statements	Yes	No
Have you ever heard about febrile convulsion?	97 (77.6%)	28 (22.4%)
Have you been educated on how to manage high fever and/or convulsions in children?	98 (78.4%)	27 (21.6%)
Do you know that convulsion is a dangerous sign in children?	96 (76.8%)	29 (23.2%)
Febrile convulsion is an illness caused by a spike in body temperature of children	103 (82.4%)	22 (17.6%)
Febrile convulsion is majorly caused by malaria	29 (23.2%)	96 (76.8%)
Do you know that a body temperature above 38° c is considered fever and can cause febrile convulsion?	102 (81.6%)	23 (18.4%)
Febrile convulsion is common among children between 6 months to 5 years	91 (72.8%)	31 (27.2%)
Twitching of the face and stiffening of the neck are clinical manifestations of febrile convulsion	91 (72.8%)	31 (27.2%)
Loss of consciousness is also a clinical symptom of febrile convulsion	93 (74.4%)	32 (25.6%)
Febrile convulsions are best treated by health professionals	101 (80.8%)	24 (19.2%)
Untreated convulsions can lead to serious complications in children	97 (77.6%)	28 (22.4%)
Febrile convulsion can result in brain damage if not properly managed	88 (70.4%)	37 (29.6%)
Do you think that febrile convulsion is the same as epilepsy?	58 (46.4%)	67 (53.6%)

**Perception of Febrile Convulsion**

Table 2 revealed the respondents' perception of febrile convulsion. Less than half 56 (44.8%) of respondents believed that febrile convulsion is caused by spiritual attacks from the enemies and 51 (40.8%) think that any child who has

febrile convulsion is possessed by evil spirits. Furthermore, 73 (58.4%) held the opinion that febrile convulsion is a side effect of immunizations given to children. However, 71 (56.8%) believe that it is a shameful thing for parents to have a child with febrile convulsion.

**Table 2: Respondents' Perception of Febrile Convulsion**

STATEMENTS	AGREED	DISAGREED	UNDECIDED
Febrile convulsion is caused by spiritual attacks from the enemies	56 (44.8%)	62(49.6)%	7(5.6%)
Any child who has febrile convulsion is possessed by evil spirits	51 (40.8%)	65(52%)	9(7.2%)
Febrile convulsion is a side effect of immunizations given to children	52(41.6%)	62(49.6%)	11(8.8)
Any child diagnosed with febrile convulsion will develop epilepsy later in life	64 (51.2%)	56 (44.8%)	5(4%)
Febrile convulsion is hereditary	60 (48.0%)	55 (44%)	10(8%)
Children diagnosed with febrile convulsion can still continue having their immunizations on scheduled days	70 (56.0%)	40(32%)	15(12%)
Febrile convulsion cannot be treated	46 (36.8%)	72(57.6%)	7(5.6%)
It is a shameful thing for parents to have a child with febrile convulsion	71 (56.8%)	49(43.2%)	5(4%)

**Home Management Practices for Treatment of Febrile Convulsion**

Table 3 also revealed the home management practices of febrile convulsion among the participants. The majority 92 (73.6%) said they had once cared for a child with febrile convulsion, however, 61(84.7%) affirmed that the child was treated in the hospital while only 6(8.3%) were treated at home.

Although, 59 (47.2%) said the affected child had another health problem previously. Some of the dangerous home management practices used by few mothers include pouring cow's urine on the child's body 37 (29.6%), herbal concoctions 45 (36.0%), making small incisions on the child's body and taking to a herbalist 30 (24.0%). However, a few 22 (17.6%) of the respondents did nothing.

**Table 3: Respondents' Home Management Practices for Treatment of Febrile Convulsion**

STATEMENTS		YES	NO
Have you ever cared for a child with febrile convulsion?		92 (73.6%)	33 (26.4%)
If yes, where was the child treated?	At home	6	8.3%
	Hospital	61	84.7%
	Traditional healers	2	2.8%
	Church/spiritual home	3	4.2%
Did the child have another health problem known to you or treated before now?		59 (47.2%)	66 (52.8%)
If yes, did the child have drugs prescribed for the illness?		48 (38.4%)	77 (61.6%)
Tepid sponging the child		94 (75.2%)	31 (24.8%)
Bathing the child with cold water		100 (80.0%)	25 (20.0%)
I administered Paracetamol syrup		105 (84.0%)	20 (16.0%)
Putting a spoon in the child's mouth		91 (72.8%)	34 (27.2%)
I restricted the child's movement to prevent injury		93 (74.4%)	32 (25.6%)
I poured cow's urine on the child's body		37 (29.6%)	88 (70.4%)
I smeared the body with certain herbal preparations		45 (36.0%)	80 (64.0%)
I made small incisions on the child's body and took to a herbalist		30 (24.0%)	95 (76.0%)
I took the child to a nearby hospital		102 (81.6%)	23 (18.4%)
I did nothing		22 (17.6%)	103 (82.4%)

**Factors Influencing the use of Modern Healthcare Facilities in the Treatment of Febrile Convulsion**

Table 5 revealed the factors influencing the use of modern healthcare facilities in the treatment of febrile convulsion among the respondents. The major

factors identified were; far distance to health facilities (80.8%), High cost of hospital treatment, e.g. drugs and laboratory tests (86.4%) and poor knowledge of mothers about their child's healthcare (88.0%)

**Table 4: Factors Influencing the use of Modern Healthcare Facilities in the Treatment of Febrile Convulsion**

Statement	Yes	No
The health centre is far from my home/ there is a bad road	101 (80.8%)	24 (19.2%)
Healthcare workers have an unpleasant attitude	86 (68.8%)	39 (31.2%)
Fear of hospital stress, protocol, and delay	92 (73.6%)	33 (26.4%)
High cost of hospital treatment, e.g. drugs, test	108 (86.4%)	17 (13.6%)

Lack of trust in the effectiveness of orthodox treatment	97 (77.6%)	28 (22.4%)
Preference for traditional and spiritual care	98 (78.4%)	27 (21.6%)
The busy schedule of mothers	80 (64.0%)	35 (36.0%)

**Hypothesis Testing**

**H<sub>02</sub>:** There is no significant relationship between mothers’ knowledge and

practices adopted in managing febrile convulsion at home.

**Table 5:** Relationship between Knowledge and Practice of Managing Febrile Convulsion

		Level of practice			Chi-square	df	P-value
		Good practice	Poor practice	Total			
Level of knowledge	Good knowledge	76 60.8%	0 0.0%	124 96.9%	55.965	1	0.001
	Poor knowledge	21 16.8%	28 22.4%	49 39.2%			
Total		<b>97</b> <b>77.6%</b>	<b>28</b> <b>22.4%</b>	<b>125</b> <b>100.0%</b>			

Table 5 shows the relationship between knowledge and practices adopted in managing febrile convulsions at home. From the table, the calculated Chi-square is 55.965, the df is 1 with a p-value of 0.001. Therefore, because the p-value is less than the significant value of 0.05, the null hypothesis is rejected. Hence, there is a significant relationship between mothers’ knowledge and practices adopted in managing febrile convulsions at home.

**Discussion**

The study seeks to assess the knowledge and management of febrile convulsion among mothers attending infant welfare clinics in some selected primary health care centres in Ondo State. Findings from our study revealed that most of the respondents had up to tertiary education which could be linked to their good knowledge of febrile convulsion, this was similar, though higher than that was observed from previous studies (Abaribe

*et al.*, 2023, Bigargma *et al.*, 2021) but different from the observed value by Eta and Gaelle (2021) in Cameroon. This difference may be due to sociocultural or geographical differences. In addition, the findings of this study showed that parents have good knowledge of the signs and symptoms of the condition such as twitching of the face and stiffening of the neck; this supports the findings of similar studies (Abaribe *et al.*, 2023, Eta and Gaelle 2021) where the majority of the mothers gave good description of the illness. This might be a result of their constant presence during the seizure episodes.

A significant number of the respondents, despite knowing febrile convulsion still hold different perspectives on the condition. On perception of febrile convulsion, it was observed that about two-thirds of the respondents still believed that febrile convulsion is caused by



spiritual attacks from the enemy. This has also been reported in other studies within and outside Nigeria (Eta & Gaelle 2021; Bigargma *et al.*, 2021; Akpan *et al.*, 2017). Also, quite a number of mothers (43.2%) believe that it is a shameful thing for parents to have a child with febrile convulsion. Mothers' false beliefs about febrile convulsions most likely informed the decision to stop the convulsions with harmful and improper measures.

The use of unorthodox management practices such as putting a spoon in the child's mouth as found in this study was also reported by Akpan *et al.*, (2017) which can result in damage to soft tissues and teeth when a child is convulsing as these hard objects (spoon) are forced into their mouth to stop them from clenching their teeth. According to Akpan *et al.*, the majority of children who suffered orofacial injuries during a febrile convulsion did so as a consequence of a spoon being forcefully inserted into the mouth; the injuries are; tooth displacement, avulsion, laceration and bruises of the soft tissues, including the lips, tongue, mucosa, and commissures. Few of the respondents approved of treating febrile convulsions with a mixture made from cow's urine. In western Nigeria, it's fairly popular to treat seizure episodes with a combination made from cow's pee. Jarret *et al.*, 2012, reported that pre-hospital treatment for some children with febrile convulsions who presented to a tertiary health facility in Nigeria used the preparation of cow's urine. Giving a child experiencing convulsions a mixture made from cow's urine is typically linked to a poor outcome (Jarrett *et al.*, 2012). The use of Cow urine was higher in this study than the previous study reported by Akpan *et al.* in Uyo. The observed difference may be

due to cultural variation in the two settings.

Other responses given such as making incisions on the body, and smearing the body with certain mixtures are also harmful practices reported in various studies (Akpan & Ijezie 2017; Agordoh, Amoah, & Konla 2019; Bigargma *et al.*, 2021; Eta & Gaelle 2021). Mothers who employ these indigenous practices believe it is effective in the home management of Febrile Convulsion. It is imperative that women are apprised of the possibility that some customary practices could result in the demise of their kid or a chronic neurological impairment.

Distance of health facility, high cost of hospital facility, fear of hospital stress, protocol & delay, lack of trust in the effectiveness of orthodox treatment, were major factors influencing the use of modern healthcare facilities in the treatment of febrile convulsion identified in this study. This is similar to the findings of Andriamiharisoa *et al.* (2022) who highlighted the cost of hospitalization, travel time, and distance to healthcare facilities as significant barriers influencing the use of healthcare facilities in the treatment of febrile convulsion. Improving the quality of care and lowering the cost and duration of travel to medical facilities may encourage vulnerable populations suffering from febrile illnesses to seek care sooner.

### **Conclusion**

This study adds to the existing knowledge of febrile convulsion by clearly revealing that most mothers had an idea of febrile convulsion. However, it was observed that, though the knowledge is there, there are still some perceptions about febrile convulsion which inform some harmful management practices. Hence it is

important for Nurses especially to intensify the education of parents and the public on febrile convulsion. This will correct some harmful practices which will in turn decrease conditions such as aspiration pneumonitis and extended hospital stays brought on by subpar practices.

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