

Awareness and Practice of Febrile Convulsions First Aid Among Parents of Convulsing Children Admitted to Hospitals in Khartoum 2022

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Abstract

Introduction: Febrile convulsion (FC) is a convulsive episode accompanied by fever in children under five years old. It is a common cause of hospital admissions and can induce fear and anxiety among parents and caregivers. Educating parents and caregivers about FC first aid and home management is crucial to alleviate these concerns.

Objectives: This study aimed to assess the awareness and practice of FC first aid among parents of convulsing children admitted to hospitals in Khartoum. It also aimed to determine the socio-demographic data of parents, evaluate their knowledge about FC, assess their practices towards convulsing children, and correlate them with age, socioeconomic status, level of education and recurrence of FC.

Methodology: A cross-sectional hospital-based study was conducted on 288 participants from Ibrahim Malik Teaching Hospital, Turkish Hospital, Ahmed Gasim Hospital for Pediatric, Omdurman Hospital for Children, and Albuluk Hospital.

Results: The study included 219 mothers (76%), 36 fathers (12.5%), and 33 others (11.5%). Less than half of participants were between 20-30 years old (46.9%), 59% had a medium socioeconomic status, and 37.8% had a secondary level of education. Regarding knowledge about FC, 57.3% of participants had average knowledge, 17% had poor knowledge, and 25.7% had good knowledge. However, when it came to practice, the majority exhibited poor practice (89.9%), with only 10.1% demonstrating average practice.

The study also found a correlation between the knowledge and practice of parents with their age, educational level, and income. However, there was no significant association with recurrence of FC.

Conclusion: The study emphasizes the need for improved education and awareness among parents and caregivers regarding FC first aid and home management. There is a gap between knowledge and practice, highlighting the importance of targeted interventions and educational programs to enhance the care and management of convulsing children.

Keywords: Febrile Convulsions, Caregivers, Khartoum Hospitals, Sudan.

1. Strengths and Limitations of this Study

The study recognizes that by assessing the knowledge and practice of parents towards FC, there is an opportunity for improvement. Identifying gaps in understanding and behavior can lead to targeted interventions and educational programs that can positively impact outcomes related to FC.

Given that the study is conducted in Sudan, it holds particular relevance for the local context. Understanding the knowledge and practice of parents towards FC in Sudan can provide insights into cultural norms, beliefs, and attitudes surrounding this issue within the country.

1.1 Limitation

Not all cases come to the hospital so it was difficult to obtain sufficient information. Also, Some parents refuse to participate in the study so it takes more time than expected to collect data.

2. Introduction

2.1 Background

A febrile seizure (FS) is the most prevalent form of convulsive disorders observed in children below the age of five. It manifests in 2%-5% of them, making it a significant contributor to emergency hospital admissions among children [1]. Evidence has demonstrated that children with febrile illness and convulsion take about 20% of children who visit paediatrics emergency rooms worldwide, and this percentage increases to 25 - 35% in sub-Saharan Africa [2].

A comparatively high prevalence of this disease due to the contemporary combination of two major appearances at a time, i.e., fever and seizure among children, induce severe anxiety in their parents. Sometimes, they stated that their children were dying. After recording the first febrile seizure, parents became worried, and every time their children had a fever, it was disturbing and problematic for them; however, despite what parents think, fortunately, this disease in children is benign, easily preventable, and rarely causes cerebral injuries (3). The unjustifiable fear and anxiety associated with fever by a large number of parents and even some healthcare providers is to an extent, which is categorized as fever phobia [4]. So informing parents by providing adequate knowledge and awareness regarding fever, seizure, and related easy prevention is an important step in decreasing concerns and anxiety [3]. Accurate management of fever is still not clear to the public although it is very prevalent therefore; parents perceive it as a disease rather than a symptom [5]. Studies from all over the world regarding parenteral beliefs about fever and its management reveal that nothing has been changed on their part in their perception of fever [6].

The parental fear of fever and febrile convulsion is a major problem with serious negative consequences affecting daily familial life [7]. Little is known about how parents could deal with FC and their knowledge about febrile convulsion's home management, however, such knowledge is important because parents are the first ones who deal with the fever and the convulsion of the child [8]. Fever may be a sign of both infectious and non-infectious

disorders [9]. Infectious diseases are one of the leading causes of morbidity in developing countries like Pakistan where infectious diseases share 95% burden in all paediatric illnesses [8]. Fever is a common symptom associated with infections in childhood [10]. In the United States about 12% of parents cannot describe clinically considerable fever adequately, 46% among them believe that fever alone can damage the brain, and 8% considered fever as the main cause of death thus more than 63% of parents were found very much worried about fever in their children [11]. In an Indian study, 92% of parents failed to define normal temperature, 65% of parents were administering an inadequate dosage of fever medicine to their children, and about 63% of them feared an uncontrollable rise in temperature [4].

This study aims to assess awareness and practice of febrile convulsion first aid among parents of convulsing children admitted to hospitals in Khartoum, determine the socio-demographic data of the parents (e.g. ages, sex, residence, socioeconomic status, level of education), assess the knowledge and practice of the parents towards FC, and correlate knowledge and practice of the parents with their age, level of education, income and recurrence of febrile convulsion.

3. Methodology

3.1 Study Design

A descriptive cross-sectional hospital-based design was used. Data was collected between April 2022 and June 2022.

3.2 Study Area

The data was collected from the paediatrics department at Ibrahim Malik Teaching Hospital, Turkish Hospital, Ahmed Gasim Hospital for Paediatrics, Omdurman Hospital for Children, and Albuluk Hospital. All of these hospitals receive a large number of patients daily.

3.3 Population of Study

The population of interest in this study were parents of children admitted to the emergency department with previous episodes of convulsion at home and aged between 6 months and 5 years who were consented to be a part of this study. Independent variables in this study were: age, sex, residence, socioeconomic status, and level of education, and its dependent variables were knowledge and practice of parents towards febrile convulsion (FC).

3.4 Sampling Technique and Sample Size

A simple random sampling technique was used, and the sample size was calculated using the following formula $n = z^2 \times p \times q / d^2$ Where n is the required sample size, z is the confidence level (1.96), P is the expected prevalence (0.25), q is $1 - p = (0.75)$, and the d is marginal error (0.05)

$$n = (1.96)^2 \times 0.25 \times 0.75 / (0.05)^2 = 288$$

Therefore the sample size = 288

4. Data Collection

Structured questionnaires were administered through face-to-face

interviews, ensuring accurate data collection. The questionnaire was composed of an interface and 4 main parts with a total number of 31 questions, the interface of the questionnaire explains the aim of the study additionally assuring the participant on confidentiality grounds, the 4 main parts of the questionnaire included the following aspects socio-demographic data such as sex, age,

4.1 Socio Economically Status, Level of Education

The knowledge part included data on the cause of febrile convulsions, and the relationship between febrile convulsions, epilepsy, and brain damage. Also if the participant was aware of diagnosing the convulsion, beliefs about first aid outcome, symptoms of febrile convulsions, source of his knowledge, and if febrile convulsion is preventable.

The preventive behavior part included measures of his/her behavior towards preventive measures and the practice part which included questions reflecting his/her practices towards the convulsing child. In order to assess parents' knowledge and practice regarding febrile convulsions, a total of 12 questions were asked. The overall knowledge level was determined based on the number of questions answered correctly. Parents who answered more than 9 questions correctly were considered to have good knowledge, while those who answered 6-9 questions correctly were considered to have average knowledge. Parents who answered less than 6 questions correctly were categorized as having poor knowledge.

Similarly, a total of 14 questions were asked to evaluate parents' practice. Parents who answered more than 11 questions correctly were classified as having good practice, while those who answered 5 - 10 questions correctly were considered to have average practice. Parents who answered less than 5 questions correctly were categorized as having poor practice.

Furthermore, the socioeconomic status of the parents was determined based on their income. Parents with an income ranging from 10,000 to 36,000 SDG per month were classified as having low economic status. Those with an income between 36,000 and 104,000 SDG per month were considered to have medium economic status. Lastly, parents with an income exceeding 104,000 SDG per month were categorized as having high economic status.

4.2 Data Availability Statement

The collected data has been organized and recorded in an Excel spreadsheet referenced as number.

4.3 Data Analysis Plan

Collected data was analysed using SPSS (Statistical Package for the Social Science) version 24 software program. The data was presented as narratively, and as tables. The data was analyzed, and P value < 0.05 was considered significant.

4.4 Ethical Consideration

Ethical approval was obtained from Alzaiem Alazhari University (AAU) authorities and the Ministry of Health-Khartoum state. Verbal consent from each one of the study subjects was taken after

explaining the purpose of the study to ensure their ethical rights. Any participant had the right to withdraw at any stage of the study. Confidentiality was considered and the information was used only for research purposes.

5. Results

Two hundred and eighty-eight questionnaires were analyzed, 219 (79%) of the respondents were mothers, 36 (12.5%) were fathers, and 33 (11.5%) others. The socio-demographic data revealed that nearly half, or 135 respondents (46.9%), were in the age range of 20-30 years old. In terms of socioeconomic status, 170 respondents (59%) belonged to the medium category. Additionally, 109 (37.8%) had a secondary educational level.

The main source of information for most respondents was obtained from the hospital, accounting for 39.2%, while 9.7% mentioned that they did not receive any information about FC and its causes, despite being admitted to the hospital.

5.1 About Parents Knowledge Regarding FC:

About two-third of respondents 187(64.9%) were aware that FC was caused by fever. One hundred and forty (48.6%) believed that it can't develop into epilepsy, 148 (51.4%) of them thought that FC can result in brain damage. Among participants, 153 individuals (53.1%) believed that fever comes gradually, whereas 93 respondents (32.3%) stated that fever should rise suddenly in order to trigger the convulsion, while the rest of 42 (14.6%) have no idea. Approximately two third of parents 200 (69.4%) recognized convulsion as eyes rolling up, 172 (59.7%) interpreted convulsion as abnormal shaking and twitching all over, while 169(58.7%) perceived them as shivering. A smallest percentage of 47(16.3%) described it as dancing movement, and only 18 (6.3%) described them as slow purposeless movement.

Furthermore, 164(56.9%) determined the age of FC is between 6 month and 5 years. 130 (45.1%) believed that seizure type should be tonic-clonic. Fifty of them (17.4%) thought it was associated with colour change during the attack. One hundred and sixty-two (56.3%) specified the duration of seizure must be less than 15 minutes, and 193 (67%) knew that FC is preventable.

According to data analysis more than half of the respondents 165(57.3%) had an average knowledge, 74(25.7%) with good knowledge, and 49 (17%) with poor knowledge.

During analysis it was demonstrated that knowledge was highly affected by the level of education(p value =0.00), age (p value=0.035), socio-economic status (p value=0.00) which had marked effect on knowledge, while there was no significant association with recurrence of FC (p value = 0.118).

5.2 About Parents Practice Regarding FC:

The most common response from parents when their child had a fever was to give them antipyretics, with 77.8% of parents doing so. Another 14.2% of parents chose to bring their child to the clinic. During a seizure, some parents used ice water sponges

(36.5%), fanning (8.7%), tepid sponging (8.3%), or breastfeeding (4.2%) as a response.

When their child had a convulsion, about two-third of parents (64.6%) rushed them to the doctor, while 34.7% tried to lower their child's body temperature. A small percentage (16.3%) had no response at all. In terms of first aid for convulsions, 89.9% of parents had poor practice, 10.1% had average practice, and none showed good practice.

Data analysis revealed that educational level, age, and socioeconomic status had a significant effect on parental practice (p-value = 0.00). However, there was no significant association found between the recurrence of convulsions and parental practice (p = 0.052).

In conclusion, despite having average knowledge (57%), the

majority of respondents have poor practices (89.9%).

6. Discussion

Febrile convulsions (FC) are a very common childhood problem. Certain research papers have found out that the awareness of parents towards febrile convulsion first aid has higher outcomes if they were properly done. We conducted the study to assess the awareness and practice of febrile convulsion first aid among parents of convulsing children admitted to hospitals in Khartoum, and correlating their knowledge and practice with their age, socioeconomic status and level of education.

About knowledge, the study showed that the overall knowledge was good, and it was influenced by age, educational level, and socioeconomic status. However, it does not appear to be influenced by the recurrence of FC. Tables (1-4)

		Age										P value
		<20 years		20-30 years		30-40		40-50		Above 50		
		Count	%	Count	N %	Count	N %	Count	N %	Count	N %	
Knowledge	Poor Knowledge	8	16.3%	21	42.9%	14	28.6%	5	10.2%	1	2.0%	.035*,b
	Average Knowledge	17	10.3%	66	40.0%	58	35.2%	20	12.1%	4	2.4%	
	Good Knowledge	3	4.1%	48	64.9%	17	23.0%	4	5.4%	2	2.7%	
Practice	Poor Practice	28	10.8%	114	44.0%	81	31.3%	29	11.2%	7	2.7%	.019*,b,c
	Average Practice	0	0.0%	21	72.4%	8	27.6%	0	0.0%	0	0.0%	
	Good Practice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	

Table (1) shows: the correlation of knowledge and practice of the participants to their ages

		Level of education								P value
		2ndry level		Never went to school at all		Primary level		University level		
		Count	%	Count	N %	Count	N %	Count	N %	
Knowledge	Poor Knowledge	16	32.7%	15	30.6%	15	30.6%	3	6.1%	.000*
	Average Knowledge	67	40.6%	17	10.3%	42	25.5%	39	23.6%	
	Good Knowledge	26	35.1%	10	13.5%	10	13.5%	28	37.8%	
Practice	Poor Practice	102	39.4%	41	15.8%	63	24.3%	53	20.5%	.000*,b
	Average Practice	7	24.1%	1	3.4%	4	13.8%	17	58.6%	
	Good Practice	0	0.0%	0	0.0%	0	0.0%	0	0.0%	

Table (2) shows: the correlation of knowledge and practice of the participants to their level of education

		Income						P value
		Low		Medium		High		
		Count	Row N %	Count	Row N %	Count	Row N %	
Knowledge	Poor Knowledge	29	59.2%	19	38.8%	1	2.0%	.000*, ^b
	Average Knowledge	60	36.4%	99	60.0%	6	3.6%	
	Good Knowledge	15	20.3%	52	70.3%	7	9.5%	
Practice	Poor Practice	95	36.7%	156	60.2%	8	3.1%	.000*, ^b
	Average Practice	9	31.0%	14	48.3%	6	20.7%	
	Good Practice	0	0.0%	0	0.0%	0	0.0%	

Table (3) shows: the correlation of knowledge and practice of the participants to their income

		Is this the first time to have a febrile convulsion or it's recurrent				P value
		First time		Recurrent		
		Count	Row N %	Count	Row N %	
Knowledge	Poor Knowledge	34	69.4%	15	30.6%	.000*, ^b
	Average Knowledge	118	71.5%	47	28.5%	
	Good Knowledge	43	58.1%	31	41.9%	
Practice	Poor Practice	180	69.5%	79	30.5%	.000*, ^b
	Average Practice	15	51.7%	14	48.3%	
	Good Practice	0	0.0%	0	0.0%	

Table (4) shows: the correlation of knowledge and practice of the participants to the recurrence of febrile convulsion

The findings also revealed that over one-third of participants were with secondary educational level (37.8%) and most of them had average knowledge (40.6%). On the other hand, university-educated participants (24.3%) had the highest percentage of good knowledge (37.8%). Therefore, this study highlights the importance of education on the practice of febrile convulsion first aid. This agrees with multiple research papers that proved that for better outcomes and practice the use of educational intervention programs and mothers' support groups have influenced positively improving mother's knowledge, home management & attitude about FC [12-14]. The lack of knowledge causes fear of fever and febrile convulsion, impacting daily life. Education can help reduce anxiety and uncertain actions while dealing with febrile convulsions by mothers, so increasing awareness and reducing stress can help improve their performance during the seizure [15]. The findings also showed that parents with lower incomes demonstrated the highest percentage of poor knowledge among the

overall participants (59.2%). This finding agreed with study which showed that the higher levels of understanding were associated with higher socioeconomic status and higher educational levels. Other factors like age also affects knowledge and attitude as was shown by this study (table 1) [16]. Also, study showed that the higher levels of practice were associated with higher maternal age [17].

Furthermore, studies showed that the practices of the parents with poor knowledge towards seizures were inappropriate and harmful [18,19]. Analysis showed the overall knowledge of the participants was average (57.3%) despite that, the overall practice was poor (89.9%). These findings agreed with studies which showed the same result [17,20]. However, it contradicts with study which revealed that caregivers had low levels of pre-existing knowledge regarding FC [21].

The study further revealed that the overall practice was affected by factors such as age, educational level, and socioeconomic status. Surprisingly, the recurrence of FC didn't have an impact on parents' practice. This is inconsistent with study, which demonstrated a significant association between higher levels of practice and an increase in the number of episodes experienced by parents as well as advancing in maternal age [17].

The authors recommend advancing knowledge as well as improving practice through different means in order to achieve better outcomes. We support studies that recommended further education in the paediatric clinic or via mass media, and study which recommended that written and verbal information should be provided together whenever it's possible [7,19,22,23]. The authors also advocate for more studies to discuss why participants with good knowledge about FC still have poor practices towards it [24].

7. Conclusion

Febrile convulsion is common pediatric problem hence awareness and good initial practice at home lead to favorable outcome. The participants in this study showed an average knowledge but despite that their initial home practice is poor, which indicates a gap between knowledge and practice. It also showed that the knowledge and practice of participants is related to their age, level of education and their income, and has no relation to the recurrence of FC.

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