

Recognition of Parent's Knowledge, Attitude and Practice Regarding Febrile Seizures in Children Under-Five

Hanaa I. El Sayed*

Lecturer of Pediatric Nursing, Faculty of Nursing, Menoufia University, Egypt

*Corresponding author: hanaaahmed15@yahoo.com

Received November 01, 2019; Revised December 05, 2019; Accepted December 13, 2019

Abstract Background: Febrile seizures (FS) are the most common seizure disorder in children that are extremely frightening, emotionally traumatic and anxiety-provoking by parents. Therefore, this study aimed to examine parents' knowledge, attitude, and practice regarding febrile seizures in children under-five. **Methods:** A descriptive design was utilized. **Settings:** This study was conducted in the Pediatric department at Birket El Sabah Central Hospital. **Sample:** Convenient sample of 75 parents of children with FS (55 mothers and 20 fathers). The data were collected through a structured interview questionnaire to assess parents' knowledge, attitude and practice. **Results:** The findings revealed that the mean \pm SD of the children of the enrolled parents was 23.97 ± 12.26 months and mean \pm SD of parents was 29.86 ± 4.36 . The majority of parents (86.7%) knew that fever can cause convulsion. Less than half of the studied sample (46.7%) had a thermometer in the home. The minority of parents (13.3%) carry out first aids before getting the child to the hospital. **In conclusion:** The findings concluded that there are needs for teaching programs to enhance the knowledge, attitude and practice level of parents regarding febrile seizures. **Recommendation:** Ongoing in-service education programs must be designed and implemented at Pediatric units to improve parent's knowledge, attitude, and practices regarding prevention and proper management of febrile children.

Keywords: knowledge, attitudes, practice, febrile seizures, children under-five

Cite This Article: Hanaa I. El Sayed, "Recognition of Parent's Knowledge, Attitude and Practice Regarding Febrile Seizures in Children Under-Five." *American Journal of Nursing Research*, vol. 8, no. 1 (2020): 72-81. doi: 10.12691/ajnr-8-1-8.

1. Introduction

Febrile seizures (FS) are common neurological disorders in children [1,2]. It usually occurs with a temperature of 38°C or higher ruling out central nervous system infection, metabolic disturbance or history of a febrile seizure [3,4]. FS is an age-dependent response of the immature brain to the fever that enhances neuronal excitability that disposes the child to the febrile seizures [5].

In developed countries, up to sixty percent of children have experienced a febrile episode before the age of five [6]. The rate of febrile children admitted to the emergency unit is 20-30% in the world and recurrence is 30% [7,8]. It occurs in children between six months and five years with a peak incidence between 12 and 18 months of age [4]. There is a higher incidence in some ethnic groups, in Guamanians (14%), Japanese (6%-9%), Indians from 5%-10% and South Korea was 6.92% [9,10]. In Egypt, the incidence of febrile convulsion is 5 % with a peak prevalence at 18 months and twice as common in boys than girls. From 2-7% of those children may develop epilepsy during the adolescent stage [1,11].

The cause of febrile seizures is multifactorial results from the vulnerability of the developing central nervous system to the effects of fever with underlying genetic predisposition with environmental factors [12]. There are many risk factors such as male gender, family history, fever, prenatal and natal complications, hypocalcemia, hypoglycemia, microcytic hypochromic anemia, Zinc deficiencies, prematurity and certain vaccinations [3,13]. These risk factors detected by thorough history taking, examination and investigation [14,15].

A febrile seizure is divided into two types are simple and complex. The simple seizure is characterized by a duration less than 10-15 minutes and generalized tonic-clonic, tonic, clonic or atonic [16]. Complex seizures are characterized by one or more of the following features as focal onset and duration longer than 15 minutes with frequent episodes during the first 24 hours [17]. Symptoms can range from mild to more severe shaking or tightening of the muscles, breathing difficulty, contraction of the muscles of the face, involuntary moaning, crying, twitching and vomiting [18].

Treatment is redirected to the underlying causes of fever rather than the symptom of a seizure [4]. Children experienced a simple febrile seizure are the potential risk

of adverse outcomes which include injuries due to falling or bumping into objects, biting self, pneumonia due to fluid aspiration, side effects of medications, reduce in IQ, increased risk of epilepsy, recurrent febrile seizures, and death [19,20].

Despite having a good prognosis of FS, it is a difficult condition for parents to handle [21,22]. Sources of concern include fear of the recurrence, mental retardation, physical disabilities, disturbance in the parents' sleeping pattern and family's quality of life [23]. Misconceptions regarding fever can lead to aggressive and dangerous practices comprising overdosing with antipyretics and sponge bathing with alcohol [24].

Extremely frightening and emotionally traumatic of the parents leading to overprotection, limitation of child activities, sleep disorders or other functional disorders for weeks and reduction in the quality of life [25,26]. The best approach for FS is the establishment of good communication with parents to improve their responses to relieve parent's fears, empowers them to cope better with the frightening experience and become capable of intervening optimally with the disease [9,27,28].

Initial nursing assessment and management is aimed at maintaining oxygenation and minimizing the risk of complications. The key responsibilities of the nurse are involving temperature monitoring, pharmacological and non-pharmacological methods of temperature regulation, maintaining child comfort, ensuring adequate hydration and assisting in the treatment of the underlying cause [29]. Nurses should provide confident and honest information to parents in both written and verbal methods including the causes of febrile convulsion and the risk of subsequent events, management of fever and lifestyle modifications [9,13,30]. Nursing care should be directed toward the child and family for helping them to cope with the psychological and sociological problems related to disease [31,32]. Therefore, the purpose of the study was to examine parent's knowledge, attitude, and practices regarding febrile seizures in children under-five.

Operational definitions

Knowledge: it refers to awareness of parents with under- five children concerning febrile convulsion.

Attitude: A predisposition or a tendency to respond positively towards patients or situations.

Practice: The actual application of an idea, belief, or the method as opposed to theories relating to it.

Febrile seizure: it is defined as age-specific seizures associated with a temperature of 38.0°C or higher unprovoked by central nervous system infection, trauma or metabolic abnormality.

Under-five children: it refers to children from six months to five years of age.

2. Methods

2.1. Research design

A descriptive design was carried out to conduct this study.

2.2. Sample and Setting

Convenient sample of 75 parents of children with FS under-five were represented in this study (55 mothers and 20 fathers). The study was conducted in the Pediatric department at Birket El Sabah Central Hospital, Egypt.

Inclusion Criteria includes:

1) Parents of children between 6 months to 5 years old presenting with febrile seizures without central nervous system infection.

2) Parents who gave their informed consent to participate in the study.

Exclusion Criteria include:

1) Acutely ill child.

2) Parents not giving consent.

3) Children with any other cause of convulsion

2.3. Instrument for Data Collection

A structured interview questionnaire was adopted from (33) for data collection after a review of past and current literature associated with febrile seizures based on the study objective and literature review of similar studies. It contained 4 sections divided into the following:

Section 1: Socio-demographic characteristics of the studied sample including children age, sex, diagnosis, parent's age, level of education and previous training.

Section 2: Parents' responses to knowledge of febrile seizures, the questionnaire comprised 13 questions. It is subcategorized into two choices (Yes and No).

Section 3: Parents' attitude about febrile convulsion, the questionnaire comprised 9 questions. It is subcategorized into two choices (Yes and No).

Section 4: Parents' practices toward management of febrile convulsion, the questionnaire comprised 15 questions. It is subcategorized into two choices (Yes and No).

2.4. Scoring System for Parent's Knowledge

The scoring system of this study as the following: the correct response carried one score and the wrong response carried zero scores. The maximum score for knowledge was 13, attitude score was 9 and practice score was 15, with a total score of 37 for all. The obtained score for each domain was multiplied by 100 and divided by the total questions in the domain.

- The overall scoring for knowledge ranged from 0 to 13 (for each correct answer score is one, for incorrect answer score is zero for all 13 questions) and divided into three incremental sections ($13/3 = 4.3$). Later, this reclassified the parent's knowledge into three groups of 0, 4.4, and 8.7. The lower limits indicate poor, fair and good knowledge respectively.
- The attitude score ranged from 0 to 9 (for each correct answer score is one, for incorrect answer zero, for a total of 9 questions) and grouped into three incremental sections ($9/3 = 3$). This divided the parent's attitude into three groups of 0, 4 and 7 as the lower limits for poor, fair, and good attitude respectively. Additionally, the attitude was divided into 2 groups (using the median attitude score as the divider); a score > median score was considered a

positive attitude, and a score < median was considered as a negative attitude.

- The practice score ranged from zero to 15 (for each correct answer score is one, for incorrect answer zero, for a total of 15 questions) and grouped into three incremental sections ($15/3 = 5$). This divided the mothers' practice into three groups of 0, 6, and 11 as the lower limits for poor, fair and good practice respectively.

2.5. Reliability

The reliability of the instruments was applied to determine the extent to which items in the questionnaire were related to each other.

2.6. Validity

In the beginning, the tool was translated into Arabic language and tested for validity assurance, the instrument was provided to five juries including two professors of pediatric nursing, two assistant professors of pediatric nursing and one assistant professor in pediatric. The modifications were done to ascertain their relevance and completeness.

2.7. Ethical Consideration

Informed verbal consent was obtained from the parents participating in this study after explanation of the study purpose. Confidentiality and anonymity of parents' data were assured through coding all data & clarifying that participation in the study was voluntary and parents could withdraw from the study.

2.8. Pilot Study

Pilot study was carried out on 10% (7 parents) of the sample selected and interviewed to test the practicability, applicability, consistency, clarity and feasibility of the tool to estimate the needed time to fill them.

2.9. Procedure

Official permission to carry out the study was obtained from the director of the hospital after giving an official letter from the Dean of the Faculty of Nursing with the explanation purpose of the study as well as the method for data collection. A meeting was conducted with the director of the setting to obtain permission for conducting research with demonstration purposes.

The researcher introduced herself to the parents who shared in the study (73.8% of mother and 26.2% of fathers) and explained the purpose in addition to methods of data collection in the period from November 2018 to June 2019 in the Pediatric department at Birket El-Sabah Central Hospital, Egypt. Data collection was accomplished using a self-administered questionnaire sheet. Data were collected 3 days a week for three hours a day to include a total of 75 parents who met the inclusion criteria. The researcher using a specially designed questionnaire consists of four parts; socio-demographic characteristics, knowledge,

attitudes, and practices of the parents regarding febrile convulsion.

Data collection for the study was conducted for a period of eight months from November 2018 to June 2019.

2.10. Data Processing and Analysis

Data was coded and transformed into specially designed form to be proper for the computer entry process made on the basis of the objective. Data were analyzed using the IBM Statistical Package of Social Science (SPSS) version 20. Graphics were done using Excel program Quantitative data were expressed as mean and standard deviation ($M \pm SD$). Qualitative data was expressed in the number and percentages.

3. Results

The results of this study depict socio-demographic characteristics of the studied sample, the mean \pm SD of the children of the enrolled parents was 23.97 ± 12.26 months. Children were admitted to a hospital diagnosed with pneumonia and gastroenteritis (58.7% and 41.3 % respectively). It was illustrated that the mean \pm SD of studied parents was 29.86 ± 4.36 and 48.0% of them between 20 -< 25 years old.

Figure 1 illustrated that the majority of children (60%) aged between 6 < 24 months and the remaining aged between 24 -<48 and 48- 60 months (28% and 12% respectively).

Figure 2 showed the distribution of children gender; it was revealed that male children outnumbered female children by a percentage of 60 % as compared to 40%.

Figure 3 showed the parent's educational level. It was illustrated that half of the parents (50.70%) had a secondary school and 26.70% of them had preparatory school. Also, the minority of them had technical institute and bachelor degree (14.70% and 6.70 % respectively).

Figure 4 represented parents' previous training in febrile convulsion. It was shown that none of the parents had any previous training in febrile convulsion.

Table 2: reflected parent's responses to the knowledge of febrile convulsion, it was clear that the majority of parents (86.7%) knew that fever can cause convulsion and 85.3% recognized that FS is not epilepsy. Moreover, 86.7% of parents considered FS risky at 3m - 5 years old and never cause brain damage (70.7%). Meanwhile, 36.0% of them used traditional medication as therapy and 32.0 % knew that higher fever increases the risk of FS. In this study, 32.0% of the studied sample believed that higher fever increased the risk of FS and the minority of parents (13.3%) considered family history risk for FS. Recurrent fever increase risk of FS and EEG or CT is not necessary in child with FS (6.7% and 6.7% respectively).

Table 3 displayed parent's attitude about childhood febrile convulsion. As illustrated in the table, the majority of the parents (92.0%) believed that it is not a stigma to have a child with febrile convulsion. Besides, two-thirds of studied parents are measured temperature frequently (66.7%). The minority of the parents (21.3%) expected that relatives of a child will get the disease and 20.0% of

them give more attention to children (21.3% and 20.0% respectively). On other hand, the minority of them is believed that febrile convulsion occurs at night, it couldn't be expected to have febrile convulsion and febrile convulsion not infectious (6.7%, 13.3% and 13.3% respectively).

Table 4 represented parent's practices toward the management of febrile convulsion. This table revealed that all parents (100%) put the child on a smooth and safe place. Also, the majority of parents (86.7%) observed features and duration of FS and 93.3% of them didn't control or handling the child. Moreover, 82.7% of parents not stimulate children with FS. The study showed that less than half of studied parents (46.7%) had a thermometer in

home and 48% of them know how use it correctly. The minority of parents (13.3%) carries out first aids prior getting the child to the hospital and 13.3% of them remove secretions from the child's mouth and nose. Approximately, one third of studied sample (32%) was doing cardiac massage.

Table 5 depicts the total level of parent's knowledge, attitude and practice regarding febrile seizures. It was revealed that the mean ± S.D for knowledge, attitude and practice were 6.72±1.31, 3.48 ±1.49 and 10.6±1.82 respectively). The present study illustrated that there were fair parent knowledge, negative attitude and good practices (7, 3 and 11 respectively).

Table 1: Socio-demographic characteristics of studied sample

Demographic characteristics		Frequency (No=75)	Percentage (%)
Child Age	6 months -< 24 months	45	60 %
	24 -<48 months	21	28%
	48 -< 60 months	9	12%
	Mean ± SD: 23.97 ± 12.26		
Child Sex	Male	45	60.00%
	Female	30	40.00%
Diagnosis	Pneumonia	44	58.7%
	Gastroenteritis	31	41.3%
Parents age	20 -< 25 years	36	48.00%
	25 -<30 years	19	25.3%
	30 -< 35 years	11	14.7%
	35 -< 40 years	9	12.00%
	Mean ± SD: 29.86 ± 4.36		
Education Level	Primary School	1	1.3 %
	Preparatory school	20	26.7%
	Secondary school	38	50.7%
	Technical institute	11	14.7%
	Bachelor degree	5	6.7%
Training sessions about febrile convulsion	Yes	0	0.0%
	No	75	100%

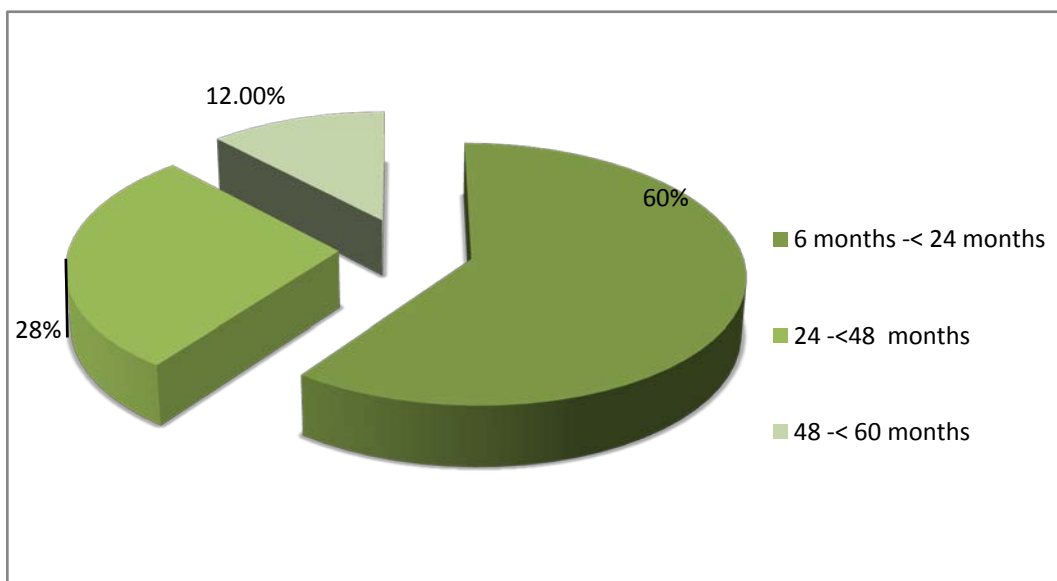


Figure 1. Distribution of children age

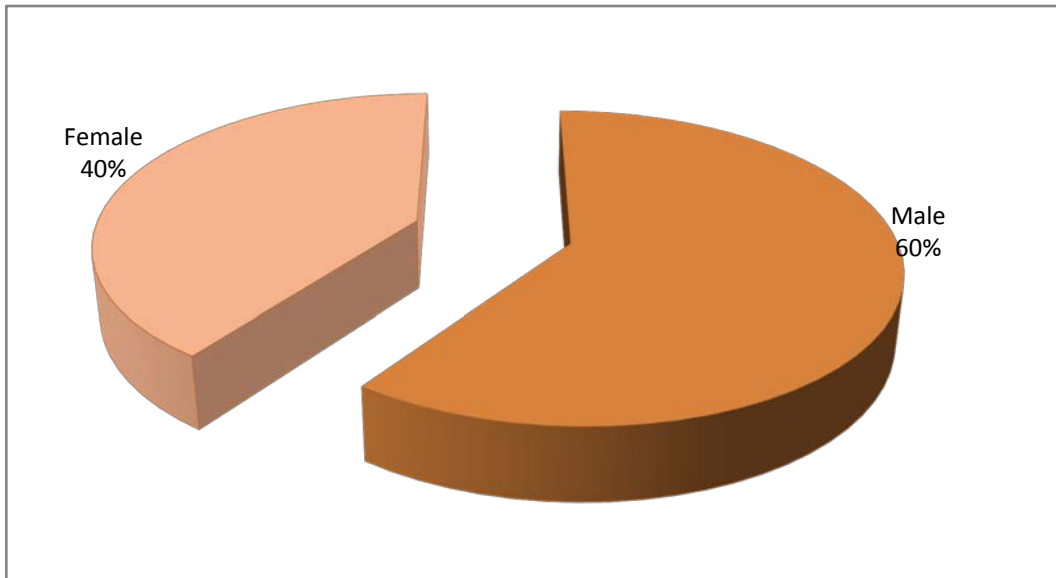


Figure 2. Distributing of children gender

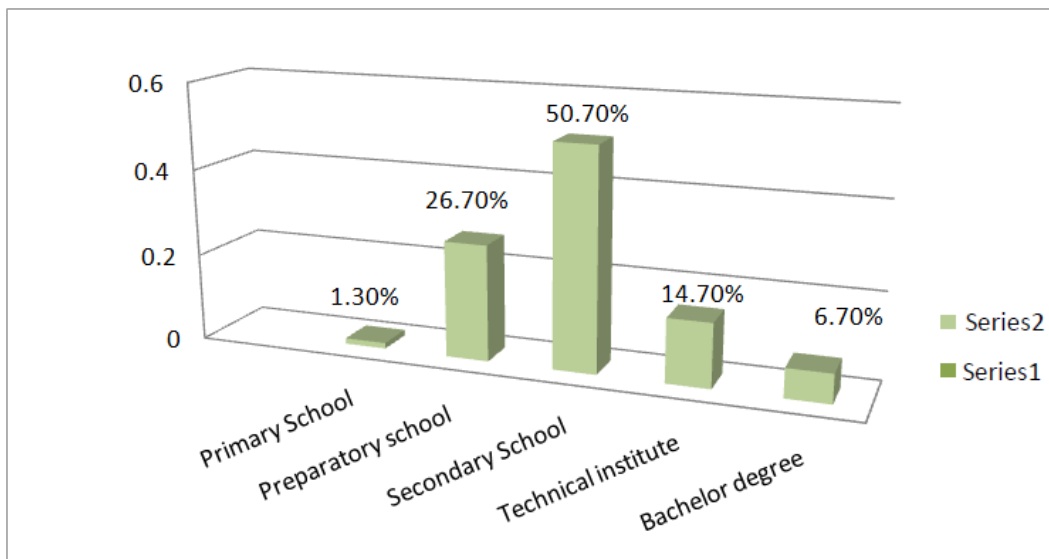


Figure 3. Parents educational level

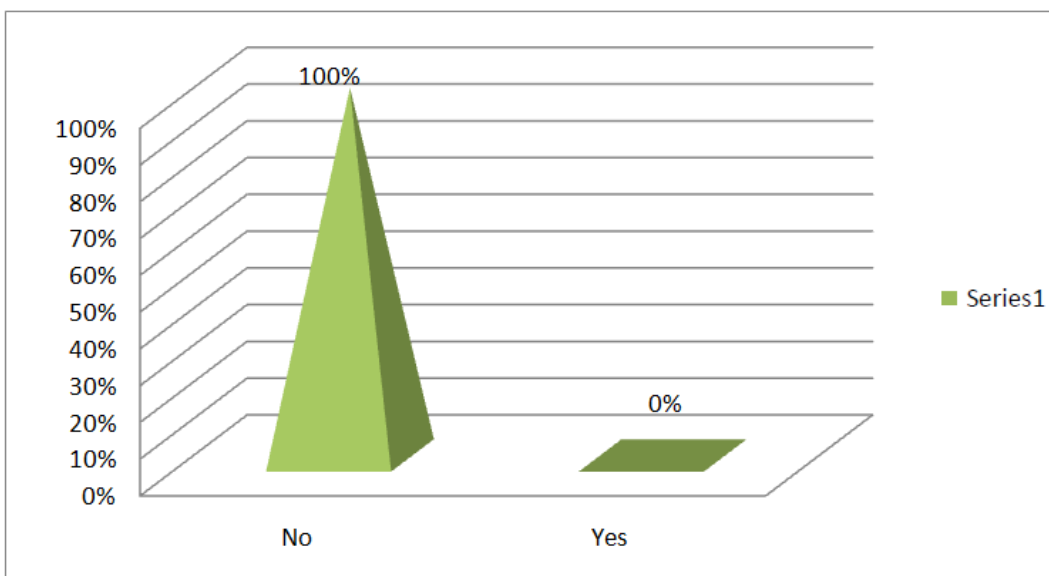


Figure 4. Parent's previous training in febrile convulsion

Table 2. Parent's responses to the knowledge of febrile convulsion

Questions	Responses			
	Correct		Incorrect	
Knowledge	No	%	No	%
Fever can cause convulsion	65	86.7%	10	13.3%
Febrile convulsion is epilepsy?	64	85.3%	11	14.7%
Febrile convulsion at 3m - 5 years is risky	65	86.7%	10	13.3%
Growth retardation increase risk of FS	62	82.7%	13	17.3%
Family history of convulsive disorder increase the risk of FS	10	13.3%	65	86.7%
Recurrent fever increase risk of FS	5	6.7%	70	93.3%
Higher fever increase the risk of FS	24	32.0%	51	86.0%
Medication needed for every child with FS	9	12.0%	66	88.0%
EEG or CT is necessary in child with FS	5	6.7%	70	93.3%
Febrile convulsion can progress to epilepsy	64	85.3%	11	14.7%
Febrile convulsion is fatal	51	68.0%	24	32.0%
FS can lead to brain damage	53	70.7%	22	29.3%
Traditional medication is necessary as therapy	27	36.0%	48	64.0%

Table 3. Parents' attitude about childhood febrile convulsion

Questions	Responses			
	Correct		Incorrect	
Attitude	No	%	No	%
Is it a stigma to have child with febrile convulsion	69	92.0 %	6	8.0 %
Don't know how to deal with febrile convulsion	46	61.3 %	29	38.7%
Would you expect that relatives of the child will get the disease	16	21.3%	59	78.7%
Could febrile convulsion occurs at night	5	6.7%	70	93.3%
It couldn't be expected to have febrile convulsion	10	13.3%	65	86.7%
Would more febrile convulsion attacks will occurs	40	53.3%	35	46.7%
Could febrile convulsion be infectious	10	13.3%	65	86.7%
Is child with febrile convulsion needs more attention	15	20.0%	60	80.0%
Should parents measure the temperature of child frequently	50	66.7%	25	33.3%

Table 4. Parent's practices toward the management of febrile convulsion

Practices	Responses			
	Correct		Incorrect	
	No	%	No	%
Reduction of temperature	61	81.3%	14	18.7 %
Put the child on smooth and safe place	75	100.0%	0	0.0 %
Put the child on lateral position when the child is drooling	56	68%	24	32%
Being calm	65	86.7%	10	13.3%
Observation of features and duration of FS	65	86.7%	10	13.3%
Carry out first aid prior getting the child to the hospital	10	13.3%	65	86.7%
Shaking the child who had FS attack	5	6.7%	70	93.3%
Open the child's mouth and put something in to prevent tongue biting	10	13.3%	65	86.7%
Resuscitate the child with FS by mouth to mouth	51	68.0%	24	32.0%
Remove secretions from the child's mouth and nose	10	13.3 %	65	86.7%
Doing cardiac massage	24	32%	51	68%
Control and handling of child with FS	70	93.3%	56.7	93.3%
Stimulation of the FS child	62	82.7%	13	17.3%
Did you have a thermometer in the house	35	46.7%	40	53.3%
Did you know the use of thermometer correctly	36	48%	39	52%

Table 5. Total levels of knowledge, attitude and practice regarding febrile seizures

	Total score of knowledge	Total of attitude	Total of practice
Mean± S.D	6.72±1.31	3.48±1.49	10.6±1.82
Median	7.0000	3.0000	11.0000
Range	3.00-10	1.00-6.00	5.00-13.00

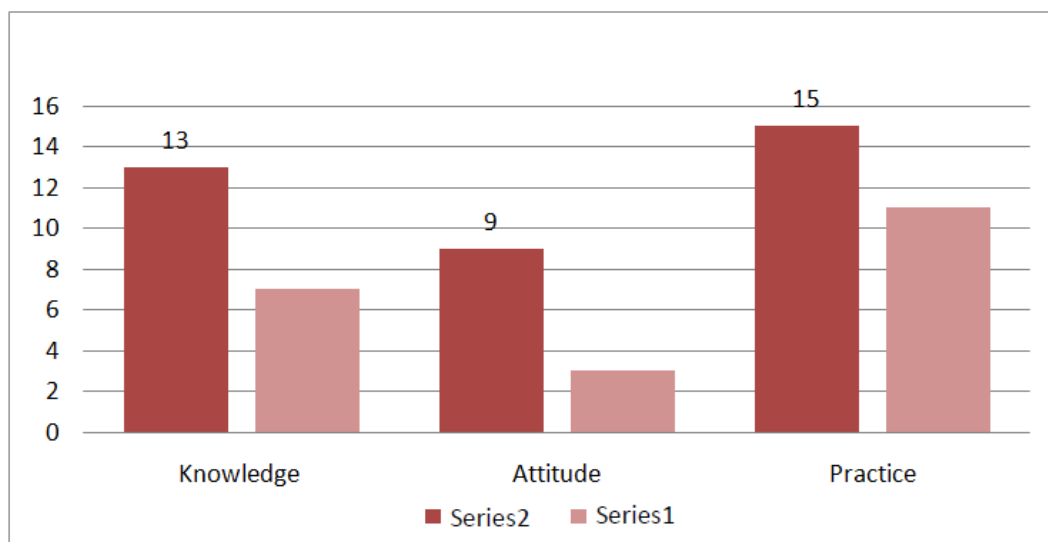


Figure 5. Median score of parent's knowledge, attitude and practice

4. Discussion

Febrile seizures are very frightening, emotionally traumatic and anxiety-provoking by parents. As regards socio-demographic characteristics of the studied sample, it was revealed that the mean \pm SD of children were 23.97 ± 12.26 and 60% aged between 6 < 24 months and the remaining aged between 24 < 48 and 48- 60 months (28% & 12% respectively). This finding is consistent with the study found that the majority of FS range between 6 to 24 months in percentage of 60 % (34). Also, this was similar to study revealed that the age distribution was 64.4% of cases from < 6m -18 months of age and the rest 35.6% of cases were 24 < 60 months [4]. This may rendered to the age-dependent response of the immature brain to fever with neuronal excitability disposes children to febrile seizures.

According to the distribution of children gender, it was revealed that male children outnumbered female children by a percentage of 60 % as compared to 40%. This result was supported by the findings illustrated that male children are more than female by a percentage of 63% as compared to 37% [27]. Also, this study was supported by a study revealed that 54% of cases were male and 46% of cases were female [25]. This was demonstrated by a study revealed that boys are predisposed to infection as they have an XY chromosome and X chromosome is strongly related to the production of immunoglobulin [35].

Concerning children diagnosis, they were admitted hospital diagnosed with pneumonia and gastroenteritis (58.7% and 41.3 % respectively). This was consonance with a study mentioned that upper respiratory tract infection was the most common cause of febrile illness (77.8%) followed by 22.2% of children diagnosed with gastroenteritis [4]. Also, this study was supported by study reported that approximately 70% of all pediatric visits from respiratory tract infection and gastroenteritis [36]. This may render to the immature immune system which causes a frequent attack of infections. Therefore, it's important to educate parents about factors related to the occurrence of fever and febrile seizures.

Regarding the parent's age, it was illustrated that mean \pm SD of studied parents were 29.86 ± 4.36 and 48.0% of

them between 20 < 25 years. This was similar to study mentioned that the majority of studied sample (43.3%) between 20 to less than 25 years old. While, 36.67% of parents aged between 26 to less than 30 years [30]. In this respect, this study reported that more than half of the studied sample (56.0%) aged between 20 to less than 30 years [37]. This demonstrates needs for providing information about febrile seizures to prevent inappropriate reactions and complications.

Concerning the education level, it was revealed that half of the parents had a secondary school (50.70%) and 26.7% of them had preparatory school. Also, the minority of them had technical institutes and bachelor degree (14.70% & 6.7% respectively). This was similar to the study reported that 46.7% of studied sample had secondary school [38]. As well as, another study highlighted that 41.8% of the studied sample had a high school diploma [39]. This result was contradicted with a study reported that 70% of the samples were either illiterate or had a primary level of education [27]. Also, these results were inconsistent with study revealed that the vast majority of the studied sample was highly educated [40]. So, providing information about febrile seizures is necessary to correct misconceptions and improve parent's knowledge, attitude and practice.

Regarding parents' previous training in febrile convulsion, the present study showed that none of the parents had any previous training in febrile convulsion. This was disagreement with a study reported that most of the parents (90%) received information from the general practitioner and maternity center [41]. These finding illustrated the need for improving awareness and provide more insight between fever and convulsion. This is compatible to study emphasized the importance of educational interventions to modify the parents' behaviors and improve knowledge about fever [42].

Concerning parent's responses to the knowledge of febrile convulsion, it was clear that the majority of parents (86.7%) knew that fever can cause convulsion and 85.3% recognized that FS is not epilepsy. Moreover, 86.7% of parents considered FS risky at 3m - 5 years old and never cause brain damage (70.7%). This was in line with the studies reported that the majority of the studied sample

had knowledge about febrile convulsions [33,43]. This was disagreement with a study reported that the majority of the studied sample believed that FS episode is a serious condition that can cause brain damage [21]. These results may be associated with communication with health care providers and past experience of the disease.

In this study, 32.0% of the studied sample believed that higher fever increased the risk of FS and the minority of parents (13.3%) considered family history risk for FS. This was disagreement with a study reported that 54.6% of the studied sample knew the family history of convulsion is a factor that increases the risk of FS (44). So, parents should be informed that FS may run in families and providing educational courses are essential for keeping parents up-to-date through covering brief ideas about the course of the condition, first aid training and warning signs for further assessment.

Also, it was illustrated that the minority of parents believed that recurrent fever increase risk of FS and EEG or CT is not necessary for the child with FS (6.7% and 6.7% respectively). This was consistent with similar studies reported that the majority of the parents had poor knowledge of febrile convulsion [45,46,47,48]. Although, these results were contradicted with a study reported that 40% of parents believed that a computed tomography (CT) scan of the brain should not be done for a child with FS [35]. As well as, the study found that 76.4% of parents thought that there is no necessity for a CT scan [49]. These misconceptions about febrile convulsion by parents may attribute to a young age which can lead to the use of harmful interventions.

The current study revealed that 36 % of parents were used traditional medication as a therapy. This was in agreement with study reported that 44% of the studied sample giving Paracetamol syrup to the child having a fever to prevent febrile convulsion [50]. This demonstrated that there are needs for counseling parents about the disease, measures to be taken when the child is convulsing, and first aid is very crucial. Hence, parents must be informed that most febrile convulsions spontaneously recover with excellent long-term prognosis.

Concerning parent's attitude about febrile convulsion, it was illustrated that the majority of the parents (92.0%) believed that it is not a stigma to have a child with febrile convulsion (92.0%). This was in line with a study reported that the minority of studied sample (3.5%) stated that they were ashamed of having a child with FS [25]. This was contradicted with a study mentioned that unfortunately convulsion still carries a stigma in our society and people may wrongly attribute unwarranted characteristics to the child and face many psychosocial difficulties [30]. This clarifies the need for educational programs to normalize their life.

According to the results of the current study, it was illustrated that the majority of parents measured temperature frequently, know how to deal with febrile convulsion and believed that more febrile convulsion attacks will occurs (66.7%, 61.3 %, and 53.3% respectively). This may rendered to past experience of the disease. Meanwhile, less than one quarter of studied parents expects that relatives of children will get the disease and a child with febrile convulsion needs more attention (21.3% & 20.0% respectively). This was

contradicted with a study reported that 54.6% of the studied sample considered the family history of convulsion increases the risk of FS [44]. Hence, parents should be informed that FS may run in families and it is essential to know about the parental concerns and anxieties and establish a meaningful dialogue to allay these fears effectively.

On other hand, the minority of them (6.7%) believed that febrile convulsion occurs at night and 13.3% of parents couldn't expect to have a child with febrile convulsion This was in agreement with study illustrated that 77.9% of the parents were unaware of the entity of febrile convulsion [44]. So, creating awareness and counseling provide appropriate changing of attitude and conception of parents regarding the proper control of febrile children.

Concerning parent's practices toward management of febrile convulsion, it was revealed that all parents (100%) put the child on a smooth and safe place and majorities of them reduce children temperature, being calm (81.3%, 86.7% & 86.7% respectively). This was in line with the study mentioned that a large percentage reducing the temperature, putting the child in a safe place and in a lateral position [33]. This was inconsistent with another study mentioned that the majority of parents were unable to use a thermometer correctly [51]. This may due to direct contact with the child during the febrile attack and gaining knowledge from health care providers. Therefore, continuous demonstrating of skills to parents is essential to promote lifestyle modification, prevent aspiration, recurrent fits and progression to epilepsy.

Also, the majority of parents (86.7%) observed features and duration of FS and 93.3% of them didn't control or handling the child. Moreover, 82.7% of parents did not stimulate children with FS. This was agreed with another study revealed that the majority of studied sample (88%) observe seizure manifestations and duration [27]. This may be due to past experience about fever and febrile convulsion and from acquiring knowledge from health care providers.

The study showed that less than half of studied parents (46.7%) had a thermometer in- home and 48% of them know how to use it correctly. In this respect, another study reported that 46.1% of the studied samples have a thermometer at home [33]. The minority of parents (13.3%) carry out first aids before getting the child to the hospital and 13.3% of them remove secretions from the child's mouth and nose. This was similar to the study illustrated that 25% of studied parents immediately go to the hospital or clinic at the time of their children got febrile convulsion without first aids [27].

Also, the current findings were consistent with the results of the study found less than one-quarter of the studied sample took their children to the hospital or clinic without first aids at the time of FS [31]. This may be due to fear and anxiety of parents which makes it difficult for them to deal with a child during attack. So, there is a need to impart additional skills that empower parents to undertake appropriate measures like tepid sponging and administering an antipyretic agent and avoid harmful practices.

The results also showed that the majority of parents remove secretions from the child's mouth and nose

(86.7%). This was matched with a study mentioned that forty-six percent of respondents remove discharges from the child's mouth and nose during attacks to avoid aspiration [27]. This was similar to a study reported that 50.6% of mothers eliminated secretions and kept the child in lateral position when the child is drooling [48]. This was contradicted with study mentioned that many of the studied samples was doing incorrect practices such as removing secretions from the child's nose and mouth [33]. So, continuous training programs for parents regarding precautions and management of febrile convulsion is very important to prevent complications.

Approximately, one third of studied sample (32%) doing cardiac massage. In this respect, another study mentioned that 38.3% of parents were doing cardiac massage [52]. Moreover, 93.3% of them didn't control or handling the child and 82.7% not stimulate children with FS. This was disagreement with another study showed that they were doing incorrect practices such as stimulation of the child [33]. The present study depicts that mean \pm S.D for knowledge, attitude and practice were 6.72 ± 1.31 , 3.48 ± 1.49 & 10.6 ± 1.82 respectively. There were fair parent knowledge, negative attitude, and good practice (7, 3 and 11 respectively). A higher level of understanding regarding practices was shown to have a significant relationship to positive history of FS and level of educations.

5. Conclusion

Based on the findings of the current study, the parents of children who admitted hospital with FS had a variety of different answers in knowledge, attitude and practices and they were not conducting optimum first-aid practices.

6. Recommendations

Based on the findings of the current study, the following recommendations can be suggested:-

1- Well organized educational program should be applied for all parents of children with febrile seizures in order to improve their information and comply with therapeutic treatment.

2- Written guidelines for febrile convulsion should be available in pediatric units and should be updated periodically to suite the new trends on febrile seizures.

3- Adequate training for parents regarding the effective management of fever in children will help in changing the attitude and practice of parents regarding the proper control of febrile children.

4-Ongoing in-service education programs must be designed and implemented at Pediatric units to improve parent's knowledge and practices on the basis of actual needs.

References

- [1] Hekal, A., El-Mashad, G and Omar, Z. (2019). Zinc Status in Children with Febrile Convulsion. Menoufiya University. Faculty of Medicine. Pediatrics Department. Retrieved from <http://www.eulc.edu.eg/eulc>.
- [2] Massoud, M., Nawar, E., Eissa, H and Abd El Moneim, E. (2018). Studying the relation between iron deficiency anemia & febrile seizures in children in Benha. Banha University. Faculty of Medicine. Department of pediatrics. Retrieved from <http://www.eulc.edu.eg/eulc>.
- [3] Kumar, N., Midha, T and Kumar, Y. (2019). Risk Factors of Recurrence of Febrile Seizures in Children in a Tertiary Care Hospital in Kanpur: A One Year Follow Up Study. *Ann Indian Acad Neurol.* 2019 Jan-Mar; 22(1): 31-36.
- [4] Sayed, A., Hashem, E and Gad, E. (2018). Diagnostic Approaches for Children with Febrile Seizures Admitted to Assiut University Children Hospital. Assiut University. Faculty of Medicine. Department of pediatrics. Retrieved from [eulc.edu.eg/eulc](http://www.eulc.edu.eg/eulc).
- [5] Sharawat, IK., Singh, J., Dawman, L., Singh, A. (2016). Evaluation of risk factors associated with first episode febrile seizure. *J Clin Diagn Res* 2016; 10: SC10-3.
- [6] Kamel, Y., El-Tellawy, M., Embaby, M and Abdel hamed, Z. (2019). Iron study in children presented with febrile convulsion. Assiut University. Faculty of Medicine. Department of Pediatrics. Retrieved from [eulc.edu.eg/eulc](http://www.eulc.edu.eg/eulc).
- [7] Anand, A.; Salas, A., Mahl, E. (2015). Cerebral Abscess Presenting as a Complex Febrile Seizure. *Pediatr. Emerg. Care* 2015, 31, 499-502.
- [8] Tastan Y. (2001). Fever and sepsis. İstanbul University Cerrahpaşa Medical Faculty Continuous Medical Education Activities Pediatric Emergency Symposium, İstanbul, 57-68.
- [9] Paul, SP., Kirkham, EN and Shirt, B. (2015). Recognition and management of febrile convulsion in children. *US National Library of Medicine National Institutes of Health Search database Nurs Stand.* 2015 Aug 26; 29(52): 36-43.
- [10] Byeon, JH., Kim, GH and Eun, BL. (2018). Prevalence, incidence, and recurrence of febrile Seizures in Korean children based on national registry data. *J Clin Neurol.* 2018; 14: 43-7.
- [11] El Shafie, A., Abou El-Nour, E., El-Hawy, M and Barseem, Z. (2017). Study of iron deficiency anemia in children with febrile seizures. *Menoufiya Medical Journal.* Vol. 31, No. 3 (July-September 2018). Retrieved from <http://www.eulc.edu.eg/eulc>.
- [12] Millichap, J. (2019). Treatment and prognosis of febrile seizures. In: Post TW, editor. *Up To Date.* Waltham, MA: [Google Scholar].
- [13] Gundapu, G., Bhavani, M., Kiran, M., Bathula, N and kumar, A. (2017). Safety and Prevention Of Febrile Seizures In Pediatrics, *International Journal of Medical Research and Pharmaceutical Sciences* Volume 4 (Issue 2): February 2017.
- [14] Tu-fang, YF., Wang, LW., Wang, ST., Yeh, TF and Huang, CC. (2016). Postnatal steroids and febrile seizure susceptibility in preterm children. *Pediatrics.* 137 (4).
- [15] Audenaert, D., Van Broeckhoven, C and De Jonghe, P. (2006). Genes and loci involved in febrile seizures and related epilepsy syndromes. *Hum Mutat* 2006; 27: 391-40.
- [16] Hockenberry, M and Wilson, D. (2013). *Wong's Nursing Care of Infants and Children.* 9th ed. St. Louis: Elsevier-Mosby.
- [17] El-Bradie, E. (2016). Serum Zinc Level in Children with Simple Febrile Convulsions. Faculty of Medicine. Tanta University. Retrieved from [eulc.edu.eg/eulc](http://www.eulc.edu.eg/eulc).
- [18] Kimia, A., Bachur, R., Torres, A and Harper, MB. (2015). Febrile seizures: emergency medicine perspective. *Curr Opin Pediatr.* 2015; 27(3): 292-297.
- [19] Yousef, M. (2008). Risk Factors and Management of Febrile Convulsions. Assiut University. Faculty of Medicine. Retrieved from [eulc.edu.eg/eulc](http://www.eulc.edu.eg/eulc).
- [20] Westin, E and Levander, M. (2018). Parent's experiences of their children suffering febrile seizures. *J Pediatr Nurs.* 2018; 38: 68-73.
- [21] Barzegar M, Valizadeh S and Gojazadeh, M. (2016). The Effects of Two Educational Strategies on Knowledge, Attitude, Concerns, and Practices of Mothers with Febrile Convulsive Children. *Thrita.*; 5: e33411.
- [22] Leung, A., Hon, M., Leung, T and Fhkam, F. (2018). Febrile seizures: an overview. *S National Library of Medicine. National Institutes of Health.* Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6052913/>.
- [23] Clarke, P. (2014). Evidence-Based Management of Childhood Fever: What Pediatric Nurses Need to Know? University of Florida, Gainesville. *Journal of pediatric Nursing.*
- [24] Impicciatore, P., Nannini, S., Pandolfini, C and Bonati, M. (1998). Mothers' knowledge of, attitudes toward, and management of fever in preschool children in Italy. *Prev Med* 1998; 27(2):268-73.

- [25] Bhattacharyya, M., Karla, V and Gulati, S. (2006). Intranasal midazolam vs rectal diazepam in acute childhood seizures. *Pediatr Neurol* 2006; 34:355-9.
- [26] Kızılay, D., Kirdok, A., Senem, P., Demet, M and Polat, M. (2017). Information is Power: An Interventional Study on Parents of Children with Febrile Seizures. *J Pediatr Res* 2017; 4(2): 53-8.
- [27] Shibebe, N and Altufaily, Y. (2019). Parental knowledge and practice regarding febrile seizure in their children. *Medical Journal of Babylon*. Year: 2019 /Volume: 16 | Issue: 1 | Page: 58-64.
- [28] Wassmer, E and Hanlon, M. (1999). Effects of information on parental knowledge of febrile convulsions. *Seizure*. 8 (7): 421-3.
- [29] Raftery, S. (2002). Febrile convulsions assessment treatment and education. *World of Irish Nursing* 10 (3), March 2002 Pp. 27-28.
- [30] George, J. (2012). A Study To Assess The Effectiveness Of Structured Teaching Programme Regarding Knowledge On Management Of Febrile Convulsion Among Mothers Of Under Five Children In Rajarajeswari Medical College And Hospital, Bangalore. Rajiv Gandhi University Of Health Sciences, Bangalore, Karnataka.
- [31] Najimi, A., Dolatabadi, NK., Esmaili, A and Sharifirad, GR. (2013). The effect of educational program on knowledge, attitude and practice of mothers regarding prevention of febrile seizure in children. *J Educ Health Promot* 2013; 2:26.
- [32] Adele P. (1999). *Child health nursing Care of the child and family*. 1st ed. New York. Lippincott publication.
- [33] Abdulla, M and Abdulhadi, FS. (2015). Knowledge, attitudes, and practices (KAP) regarding Febrile Convulsions among Iraqi under 5 children's mothers attending pediatric department in a teaching hospital in Baghdad. *Int J Adv Res* 2015; 3: 973-83.
- [34] Sharawat, IK., Singh, J., Dawman, L., Singh, A. (2016). Evaluation of risk factors associated with first episode febrile seizure. *J Clin Diagn Res* 2016; 10: SC10-3.
- [35] Washburn, TC, Medearis, DN and Childs, B. (1965). Sex differences in susceptibility to infections. *Pediatr*. 1965; 35: 57-64.
- [36] Teagle, AR and Powell, CV. (2014). Is fever phobia driving inappropriate use of antipyretics? *Arch Dis Child*. 2014; 99(7): 701-2. View Article. PubMed.
- [37] Abdel Gawad, Z., Helaly, N and Khamis, G. (2016). Mothers' Care for Children with Febrile Convulsion. Alexandria University. Faculty of Nursing. Department of Pediatric Nursing. Retrieved from eulc.edu.eg/eulc.
- [38] Oche, OM and Onankpa, OB. (2013). Using women advocacy groups to enhance knowledge on home management of febrile convulsion among mothers in a rural community of Sokoto State, Nigeria. *Pan Afr Med J*. 2013; 14(1): 49.
- [39] Abd Rabo, A., Abd El-Aziz, M and Sabry, S. (2018). Mothers Care of Children Regarding Febrile Convulsion under Five Years at Homes. Banha University. Faculty of nursing. Department of community health nursing. Retrieved from eulc.edu.eg/eulc.
- [40] Talebi, S., Shahrabadi, H., Vahidi, A., Sabzevar, S and Siyavoshi, M. (2016). Mothers' management of fever of children in Sabzevar. *Journal of Nursing and Midwifery Sciences* 2016; 3(2): 32-39.
- [41] Syahida, JA., Risan, NA and Tarawan, VM. (2016). Knowledge and attitude on febrile seizure among mothers with under five children. *AMJ* 2016; 3: 649-54.
- [42] Eefje, G., Nick, A., Geert, J and Jochen, W. (2014). Parents' knowledge, attitudes, and practice in childhood fever: an internet-based survey. *British Journal of General Practice* 2014; 64 (618): e10e16.
- [43] Chiappini, E., Parretti, A., Becherucci, P., Pierattelli, M., Bonsignori, F., Galli, L and Martino, M. (2012). Parental and medical knowledge and management of fever in Italian pre-school children. *BMC Pediatr*. 2012 Jul 13; 12: 97.
- [44] Akpan, M and Ijezie, E. (2017). Knowledge of febrile convulsion among mothers attending the paediatric clinic of university of Uyo teaching hospital, Nigeria. *International Journal of Pediatric Research*. convulsion. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed>.
- [45] Abeysekara, MS., Weerasekara, MP., Wijesena, BV., Perera, RA., Sriyani, KA., Kuruppu, NR. (2017). Mothers' knowledge, beliefs and practices regarding febrile convulsions and home management. (OURS 2017 Iraqi J Commun Med 2008; 4:285-90.
- [46] Ali, AM. (2008). Iron deficiency anemia and febrile seizures case control study in children under 5 years. *Iraqi J Commun Med* 2008; 4: 285-90.
- [47] Kim, D., Lee, Y., Lee, J., Jeong, J., Kim, J and Choi, M. (2009). Perceptions and practices of fever: survey for parents with febrile child.
- [48] Ofovwe, GE., Ibadin, OM., Ofovwe, CE and Okolo, O. (2002). Home management of febrile convulsion in an African population: a comparison of urban and rural mother's knowledge, attitude and practice. *J Neurol Sci*.
- [49] Parmar, R and Bavdekar, S. (2001). Knowledge, attitude and practices of parents of children with febrile.
- [50] Nyaledzigbor, M., Adatar, P., Kuug, A., Abotsi, D. (2016). Mothers' knowledge, beliefs and practices regarding febrile convulsions and home management: A study in Ho, Ghana. *Journal of Research in Nursing and Midwifery (JRNM)* (ISSN: 2315-568) Vol. 5(2) pp. 030-036.
- [51] Mohammadi, M. (2010). Febrile seizures: four steps algorithmic clinical approach. *Iran J Pediatr* 20 (1):5-15.
- [52] Kwak, R and Kim, J. (2014). Caregivers' Knowledge, Concerns and Management of Pediatric Febrile Convulsions. *Child Health Nurs Res*. 2014 Jul;20(3):149-158.

