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**Ministry of Higher Education**  
**And Scientific Research**  
**University of Karbala**  
**College of Medicine**



**“Knowledge, Attitude, and Practice of Mothers of  
Children whose suffers Febrile Seizure, in Holy  
Karbala City, 2023”**

A thesis

Submitted to the Council of College of Medicine at the University of Karbala in  
partial fulfillment of the requirements for a high diploma degree

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

[ مَا كَانَ لِبَشَرٍ أَنْ يُؤْتِيَهُ اللَّهُ الْكِتَابَ وَالْحُكْمَ وَالنُّبُوَّةَ ثُمَّ يَقُولَ لِلنَّاسِ  
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[سورة آل عمران: آية (79)]

## Certification of the Supervisors

We certify that this thesis entitled “Knowledge, Attitude, and Practice of Mothers of Children whose suffers Febrile Seizure in Holy Karbala City,2023” was prepared by **Israa Jawad Abbas** under our supervision at the College of Medicine / University of Kerbala.




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In the view of the available recommendation, I forward this thesis for debate by the examining committee.



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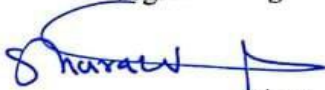
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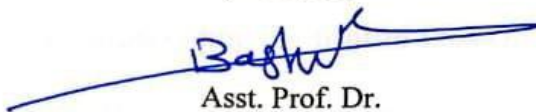
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**To...** Allah my Lord,

My homeland Iraq, the symbol of civilization and the country to which I proudly belong, despite the depth of its wounds.

**To...** My Family.

**To...** To my supervisors for their guidance, encouragement, help & support, I made this project.

I dedicate this work...

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## List of Abbreviations

| Abbreviation | Full Form                                   |
|--------------|---|
| <b>FS</b>    | Febrile Seizure                             |
| <b>SD</b>    | Standard Deviation                          |
| <b>USA</b>   | United States America                       |
| <b>SPSS</b>  | Statistical Package for the Social Sciences |

## **Abstract**

### **Background:**

The American Academy of Pediatrics defines febrile seizure as a seizure accompanied by fever (temperature  $\geq 38^{\circ}\text{C}$  by any method) without central nervous system infection that occurs in infants and children 6 through 60 months of age.

### **Objective:**

This study aims to assess the knowledge, attitude and practices of mothers towards febrile seizure in children under five years in Holy Karbala city and to assess the factors associated with their knowledge, attitude and practice.

### **Subjects and Methods:**

A cross-sectional study was conducted in Karbala governorate on 160 mothers of children who have febrile seizures, attended Karbala Teaching Hospital for Children and Al-Imam Al-Hassan Al-Mujtaba Teaching Hospital in Holy Karbala City using a structured prepared questionnaire. To assess knowledge score, the correct answer was scored one point and the incorrect answer and I don't know was scored zero. To assess attitude score, each item was assessed using one of five subscales: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. And to assess practice score the correct answer was scored one point and the incorrect answer was scored zero.

### **Results:**

The mothers' mean knowledge score was ( $3.23 \pm 1.60$ ) out of eleven points, the mothers' mean attitude score was ( $30.03 \pm 3.89$ ) of a possible 50 points. The mothers' mean practice score was ( $7.76 \pm 1.24$ ) of a possible 14 points.

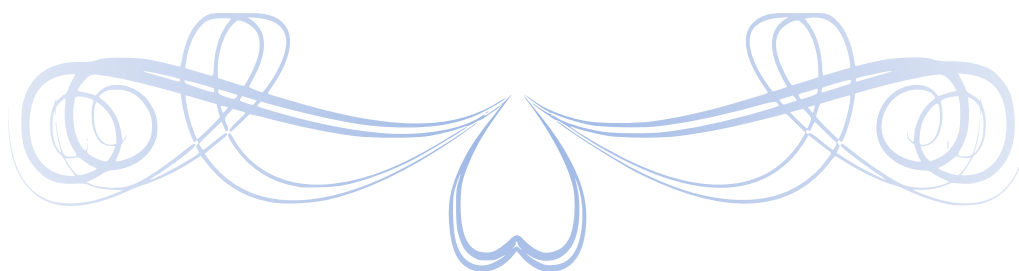
### **Conclusions:**

There were poor knowledge among mothers towards febrile seizure, better knowledge was associated with having higher mothers' educational level, advanced mothers age, employed mothers, high income, and urban residence.

Fair attitude towards febrile seizure, better attitude was associated with having higher father' educational level. Fair practice towards febrile seizure, better practice was associated with having higher age groups mothers.

# CHAPTER ONE

## Introduction



## **1. INTRODUCTION**

Febrile seizure (FS) is the most common type of seizure in the children (Ateşoğlu et al., 2018). The American Academy of Pediatrics (AAP) defines febrile seizure as a seizure accompanied by fever (temperature  $\geq 38^{\circ}\text{C}$  by any method) without central nervous system (CNS) infection that occurs in infants and children 6 through 60 months of age (American Academy of Pediatrics, 2011). It affects children from six months to five years old, with a peak incidence between the ages of 12 and 18 months. (Sayed et al., 2018). It is also one of the most frequent causes of emergency hospital admissions in children under five years of age (Waruiru and Appleton, 2004). The most frequent convulsive occurrence in children less than 60 months of age is febrile seizures, which affect 2% to 5% of all children (American Academy of Pediatrics, 2011).

Febrile seizures can be divided into two types: simple febrile seizure which lasts for fifteen minutes or less and doesn't happen again in a day in neurologically and developmentally normal child. The other is a complex febrile seizure that can last longer than fifteen minutes and can happen again within twenty-four hours if focal features, in child has preexisting neurological challenges multiple time within one febrile event. (Huang et al., 2019). Simple febrile seizures represent 65 to 90 percent of febrile seizures (Waruiru and Appleton, 2004).

Routine neuroimaging after simple febrile seizures is discouraged, it also has no additional diagnostic or prognostic value, and in the case of computed tomography carries a small increased risk of cancer (Hampers and Spina, 2011). Electroencephalography and neuroimaging may be considered in children with neurologic abnormalities on examination and in those with recurrent febrile seizures (Cuestas, 2004).

The risk of death is increased by complex febrile seizures, but not by simple febrile seizures (Smith et al., 2019). It is generally believed that children with simple febrile seizures are not at increased risk for the later development of

a neurologic deficit, and their intelligence and cognitive function are not affected **(Paul et al., 2015)**. Prognosis of febrile seizures, excellent in simple febrile seizure, epilepsy rare, recur in 50% of children who have their first febrile seizure younger than 1 year and 28% if older than 1 year, risk of epilepsy as the general population 1%, increase risk of epilepsy in abnormal neurological event or development, family history of epilepsy and complex partial febrile seizure **(Kliegman and Geme, 2019)**.

Mental retardation has been reported in up to 22 percent of children with febrile seizures who were hospitalized or seen in specialized clinics, found that children who had febrile seizures did not differ in intelligence from their normal seizure-free siblings at seven years of age **(Aliabad et al., 2013)**.

Multiple factors can contribute to febrile seizures. It is generally believed that the cause of febrile seizures is a developing central nervous system's (CNS) susceptibility to the effects of fever, together with underlying genetic predisposition and environmental elements **(Canpolat et al., 2018)**.

Febrile seizures are an age-dependent response of the developing brain to fever during the maturation process, there is an enhanced neuronal excitability that predisposes the child to febrile seizures. Because of this, children under the age of three have a lower convulsion threshold and are more likely to get febrile seizures **(Sharawat et al., 2016)**. Loss of consciousness at the time of convulsion is a consistent feature, foaming at the mouth, difficult breathing, pallor or cyanosis may also occur **(Paul et al., 2015)**.

Diagnosis of this condition is essentially clinical and based on its description provided by parents. However, taking the detailed history of the patient including symptoms in the child, history of recent consumption of antibiotics or drugs given by the parents, and recent history of vaccination are helpful in determining the cause of fever, and examination for upper respiratory tract infections, which are the most common underlying cause of FS, must



certainly be considered. However, the cause of fever in about one-third of these patients cannot be determined (**Trainor et al., 2001**).

Febrile seizures are extremely frightening, emotionally traumatic, and anxiety provoking when witnessed by parents, which make it a very difficult condition for them to deal with (**Huang et al., 2006**).

Most of the parents become anxious and frightened observing their children suffering from a seizure. Some parents even think that their child is dying. Many of them are not only concerned about the prognosis of seizure disorder and safety of that child but also concerned of the safety of their other child/children (**Parmar et al., 2001**). To decrease parental anxiety, it is important that parents have proper knowledge about febrile seizure and its prognosis (**Westin and Levander, 2018**).

The most frequent source of concern for parents is worry for their child's health in the future. Concerns include the possibility of a recurrence, physical disabilities, mental retardation, and even death (**Jones and Jacobsen, 2007**).

Febrile seizure is an alarming event in the lives of both child and parents. Lack of parent's knowledge about the nature of Febrile seizure and how they should deal with it can lead to poor management (**Oche et al., 2013**).

Inadequate knowledge and incorrect attitudes regarding febrile seizures can cause parental anxiety, so correct and suitable knowledge of the relationship between fever and febrile seizures and its usual good prognosis is important for lessening the parental anxiety and worry associated with febrile seizures. Fever phobia may even be developed and each febrile episode of the child can be a nightmare for the parents (**Parmar et al., 2001**).

The lack of knowledge can be overcome with health education which can improve parents understanding and the ability of taking care of their children during the attack, so knowledge about febrile seizure is important for parents, especially knowledge regarding febrile seizures when it will occur, seizure

characteristics, how to do first aid management and how seizures can be prevented. Correct intervention can prevent complications such as head injury, mouth and teeth injury (**Rofiqoh, 2018**).

It is believed that parents' education regarding febrile seizures and how to handle them is crucial to the course of treatment (**Mohsen et al., 2013**). In addition, many studies suggest that febrile seizures often cause stress and anxiety for parents, who often assume it may cause brain damage, future epilepsy attacks, mental retardation, physical injury, and even death (**Mohsen et al., 2013**); (**Mousavi et al., 2018**).

Ten percent of children with seizures have three or more seizures attacks, and one-third of them relapse (**Kimia, et al., 2015**). Fever in these patients is typically caused by upper respiratory tract infections, gastroenteritis, and urinary tract infections (**Chung, 2014**); (**Jones and Jacobsen, 2007**). Fortunately, despite what parents think, this disease is very benign and with good outcome in children and rarely causes brain injuries (**Sadleir and Scheffer, 2007**).

Febrile seizure is considered benign, but new evidence suggests that a small group of children with fever and seizures may develop seizure and epilepsy recurrence (**Seinfeld and Pellock, 2013**). The onset of febrile seizures in children is an unpleasant condition that affects parents physically, psychologically, and behaviorally (**Ghadi and Chakeri, 2020**).

Mothers can exhibit abnormal behaviors due to a lack of information about the disease and its high recurrence rate. Some mothers become confused and afraid when their children have a fever and loss of control, preventing them from taking action to control the anger and its consequences (**TAHERI et al., 2014**); (**Namakin et al., 2010**).

Controlling a child's fever appropriately is the greatest way to avoid this sickness, especially in infants. Well-trained mothers can prevent problems by using simple preventive measures, controlling fever, washing their feet in cool

water, and using antipyretic drugs correctly (**Najimi et al., 2013**); (**AMINI et al., 2009**).

Parents should be advised to observe the time of febrile seizures, put the child on lateral recumbent position (the recovery position); to prevent aspiration and suffocation and helps to keep their airway clear, do not attempt to put anything into their child mouth or shake the child. When the convulsion stops, try to lower the child's temperature using pharmacological and non-pharmacological measures to make them more comfortable (**Millar, 2006**).

In most cases, the only treatment method will be counseling and education. Education is the key to empower parents who have experienced traumatic and terrible events. It is necessary that many parents to be reassured that their child would not die during the seizure and performed necessary measures (**Ghadi and Chakeri, 2020**). Of significant importance is the knowledge on First Aid measures to be implemented when febrile seizures occurs at home. Comprehending parental knowledge, attitudes and practices regarding FC is vital in planning and delivering health education to parents during child well visits (**Hall Parkinson et al., 2015**).

Studies have revealed that parents in less developed countries lack knowledge on convulsion thus, are frightened when faced with the dramatic manifestations of convulsion and hence, perform inappropriate first aid measures (**Chiabi et al., 2016**).

The studies have been conducted on the etiology, manifestations and management approaches of convulsions, but very little information is available about parental knowledge, attitudes and practices (**Abeysekara et al., 2017**).

The best approach for febrile seizures should include establishment of a good communication with parents and have to improve their responses to convulsions at home; it is of specific importance that the families are relieved of

their fears and become capable of intervening optimally with the disease (**Oche et al., 2013**).

A previous study in Iraq was performed on 100 parents of children with FS attending emergency department in Babylon Teaching Hospital, a questionnaire was administered to parents who included items regarding parent knowledge and their first aid practices with FS, about half of the respondents have good level of knowledge, and 38% of parents had a good level of practice. A higher level of understanding regarding practices was shown to have a significant relationship to maternal age (**Shibeeb et al., 2019**).

A cross-sectional study was performed in Saudi Arabia, study was conducted among parents to evaluate knowledge and attitude and to specify practices concerning children with FC. A total of 447 participants' outcomes reflected critical results 67.8% of parents had inadequate knowledge, where unfavorable attitudes were identified for 57%, and 58.4% had good practice (**AlZweihary et al., 2021**).

Also, another study in Japan surveyed parents of 78 children who had experienced a first FS regarding their knowledge and practices, showed that parents without prior knowledge of febrile seizures managed the events less appropriately than parents who had prior knowledge (**Kanemura et al., 2013**).

The authors of a Swedish study concluded that parents were anxious during a febrile seizure because they did not adequately understand the event and did not know how to act in response to a febrile seizure (**Westin and Levander, 2018**).

Moreover, a study in Turkey on parents of 308 children with febrile seizure reported that educational level and economic status are important variables affecting parents' attitudes towards febrile seizures (**Yilmaz et al., 2008**).

A recent prospective study from Germany confirmed that parents experiencing a febrile seizure expressed high levels of anxiety (**Klotz et al., 2021**).

**1.2 Objectives of the Study:**

1. To assess the knowledge, attitude and practices of mothers towards febrile seizures in children under five years in Holy Karbala city.
2. To assess the factors associated with their knowledge, attitude and practice.

# CHAPTER TWO

## Subjects and Methods



## **2. SUBJECTS AND METHODS**

### **2.1 Study Design and Selection of Subjects**

A cross-sectional study was conducted in Karbala governorate on 160 mothers of children who have febrile seizures, attended Karbala Teaching Hospital for Children and Al-Imam Al-Hassan Al-Mujtaba Teaching Hospital in Holy Karbala City.

### **2.2 Data Collection and Time**

The data collection was conducted using convenience sampling over five months duration from the 10th of April 2023 till 15th of August 2023, the interview was done, data collected 3 days per week the interview took 15-20 minutes through face-to-face interviews with providing informed consent to the mothers using a special structured validated questionnaire as the data collection instrument.

### **2.3 Inclusion Criteria**

Mothers of children complaining of febrile seizure aging 6 months-5years old.

### **2.4 Exclusion Criteria**

- Mothers of children have seizures due to other causes such as head trauma, meningitis, hemiplegia.
- Mothers of children with developmental delay and epilepsy

### **2.5 Ethical Consideration**

The study was approved by research ethical committee in the University of Karbala - College of Medicine and approval was taken from Karbala Health Directorate. Verbal consent was obtained from mothers of children with febrile seizure who were assured that all data are confidential before conducting the survey; also, the aim of study was explained for them.

## **2.6 Data Collection Tools**

The questionnaire consisted of five parts and was taken from an article (**Huang et al., 2006**) with some modifications. The first part of the questionnaire consisted of 13 questions regarding sociodemographic information including (the age of the mother and husband, education of the mother and husband, occupation of mother and husband, residence, economic status, type of house, number of rooms in house, numbers of family, numbers of children and age of child.

The second part consisted of 5 questions beliefs about the causes of febrile seizures.

The third part consisted of 11 questions on the mother's knowledge about febrile convulsion including necessary medical evaluation, risk of febrile seizure recurrence or developing subsequent epilepsy, necessity of anticonvulsants, and recommended/non-recommended practices for seizures. This domain consisted of 11 true/false questions with a "don't know" category provided for each.

The fourth part consisted of 10 questions on the mother's attitudes about febrile convulsion treatment, prognosis, examination, daily care, and relevant sociocultural perspectives.

The fifth part consisted of 14 questions on the mother's practices about febrile convulsions. There were 14 yes/no items given, covering recommended and non-recommended practices.

The questionnaire was evaluated by prof.Ali.A.abutiheen-family physician

## **2.7 Questionnaire Score**

### **Assessment of knowledge scores**

Each patient was told to choose one possible answer to the three-choice (yes, no, and I don't know) questions. The correct answer was scored one point and the incorrect answer and I don't know was scored zero. The knowledge scores ranged from (0-11). Each character's average score was determined, and an answer was



classified as "Good" if it scored between 7.4 - 11, "Fair" if it scored between 3.7-7.3, and "Poor" if it scored equal or below 3.6.

### **Assessment of attitude scores**

Each item was assessed using one of five subscales: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. The maximum score was 50. The scores were reversed for negatively-worded items before data analysis. Each character's average score was determined, and an answer was classified as "Good" if it scored between 33.4- 50, "Fair" if it scored between 16.7-33.3, and "Poor" if it scored equal or below 16.6.

### **Assessment of practice scores**

Each patient was told to choose one possible answer to the two-choice (yes, no) questions. The correct answer was scored one point and the incorrect answer was scored zero. The practice scores ranged from (0-14).

R= Recommended practices, N= non recommended practices.

Each character's average score was determined, and an answer was classified as "Good" if it scored between 9.4- 14, "Fair" if it scored between 4.7-9.3, and "Poor" if it scored equal or below 4.6.

## **2.8 Pilot Study**

A pilot study has been conducted in Karbala Teaching Hospital for Children. The interview was done on 20 mothers in 3 weeks duration extended from 15/3/2023 to 7/4/2023 to assess the feasibility of the questionnaire and to overcome any difficult issues that may arise during data collection. The average time needed to complete the interview with each participant is about 15-20 minutes. Responses obtained in the pilot study were not included in the final analysis.

## **2.9 Statistical Analyses**

Information from the questionnaire and all test results from study groups samples were entered a data sheet. The Statistical Package for the Social Sciences program, version 28.0 (IBM, SPSS, Chicago, Illinois, USA) and the Real Statistics Resource Pack software for Mac (Release 7.2) of the Excel 2016 resource pack were used to create the data analysis for this study.

The significance level for all statistical tests with p-values less than 0.05. Mean  $\pm$  standard deviation (SD) was the interpretation used for continuous variables and frequencies and percentages were used to represent categorical data. The means of two groups were compared using an independent samples t-test and the means of three or more groups were compared using ANOVA.

# CHAPTER THREE

## Results



### **3. RESULTS**

#### **3.1 Sociodemographic Characteristics**

The socio-demographic characteristics of the mothers of child with febrile seizure included in the study summarizes in table 1. The majority of mothers fell into two age groups: 17- <26 years (40.0%) and 26- <36 years (40.0%). Only 20.0% of mothers were aged 36-45 years.

A portion of mothers (40.6%) had a primary school education level. Illiteracy was present in 8.8% of mothers, while university education was achieved by 14.4%.

Regarding the occupation of the mother, results were shown that, the majority of mothers were housewives (90.0%). Only 10.0% were employed.

For Paternal Age, fathers were primarily concentrated in two age groups: 20- <30 years (43.1%) and 30- <40 years (42.5%).

The Fathers Education was included Primary school which was the most common educational level for fathers (40.0%). Illiteracy was slightly lower than mothers (8.1%), while university education (including postgraduate) was achieved by 25%.

Results demonstrated that self-employee work for fathers was the most common occupation for fathers (68.8%), followed by being an employee (27.5%). Only a small number were unemployed (2.5%) and retired (1.3%).

Regarding the residence, (61.9%) of the mothers lived in urban areas, while (38.1%) lived in rural areas.

Most mothers reported a middle income (61.3%), while (35.0%) had a weak income and only (3.8%) had a good income. The majority of families lived in owned houses (58.8%). Rented houses (23.8%), with a smaller portion living in slums (17.6%).

In term of the Number of Rooms, the most common house had 2 rooms (43.1%), followed by 3 rooms (27.5%).

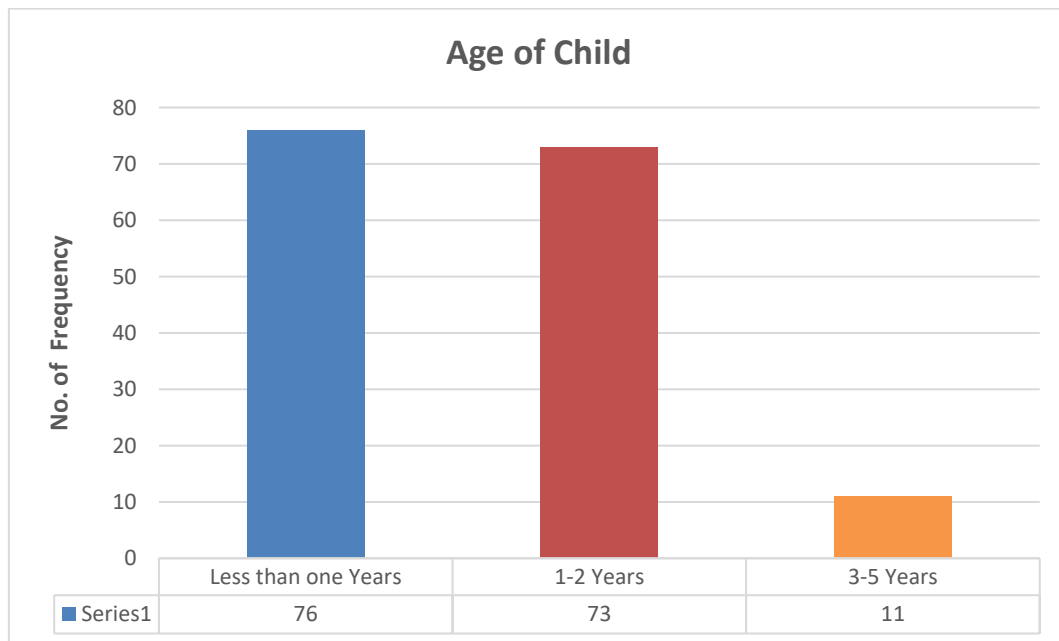
Most families had 5-8 members (71.3%), followed by 3-4 members (24.4%) with smaller proportions having 9-12 members (4.4%). The majority of mothers had 2-4 children (61.3%). The average number had one child (18.1%), while 20.6% had 5-9 children.

**Table 1: Sociodemographic Characteristics of the Mothers Included in the Study**

| <b>Variable</b>                    | <b>Group</b>                  | <b>Frequency</b> | <b>Percentage</b> |
|------------------------------------|-------------------------------|------------------|-------------------|
| <b>Mothers Age Groups (Years)</b>  | 17 - <26                      | 64               | 40.0              |
|                                    | 26 - <36                      | 64               | 40.0              |
|                                    | 36 - 45                       | 32               | 20.0              |
| <b>Educational Level of Mother</b> | Illiteracy                    | 14               | 8.8               |
|                                    | Primary School                | 65               | 40.6              |
|                                    | Secondary School              | 36               | 22.5              |
|                                    | University                    | 23               | 14.4              |
|                                    | Postgraduate                  | 22               | 13.8              |
| <b>Mother Job</b>                  | House Wife                    | 144              | 90.0              |
|                                    | Employee                      | 16               | 10.0              |
| <b>Fathers Age Groups</b>          | 20-<30                        | 69               | 43.1              |
|                                    | 30-<40                        | 68               | 42.5              |
|                                    | 40-50                         | 23               | 14.4              |
| <b>Educational Level of Father</b> | Illiteracy                    | 13               | 8.1               |
|                                    | Primary School                | 64               | 40.0              |
|                                    | Secondary School <sup>1</sup> | 43               | 26.9              |
|                                    | University                    | 37               | 23.1              |
|                                    | Postgraduate                  | 3                | 1.9               |
| <b>Father Job</b>                  | No working                    | 4                | 2.5               |
|                                    | Employee                      | 44               | 27.5              |
|                                    | Retired                       | 2                | 1.3               |
|                                    | Freelance                     | 110              | 68.8              |
| <b>Residence</b>                   | Urban                         | 99               | 61.9              |
|                                    | Rural                         | 61               | 38.1              |
| <b>Income</b>                      | Weak                          | 56               | 35.0              |
|                                    | Middle                        | 98               | 61.3              |
|                                    | Good                          | 6                | 3.8               |
| <b>Type of House</b>               | Owned                         | 94               | 58.8              |
|                                    | Rent                          | 38               | 23.8              |
|                                    | Slum                          | 28               | 17.6              |
| <b>No of Rooms</b>                 | One                           | 39               | 24.4              |
|                                    | Two                           | 69               | 43.1              |

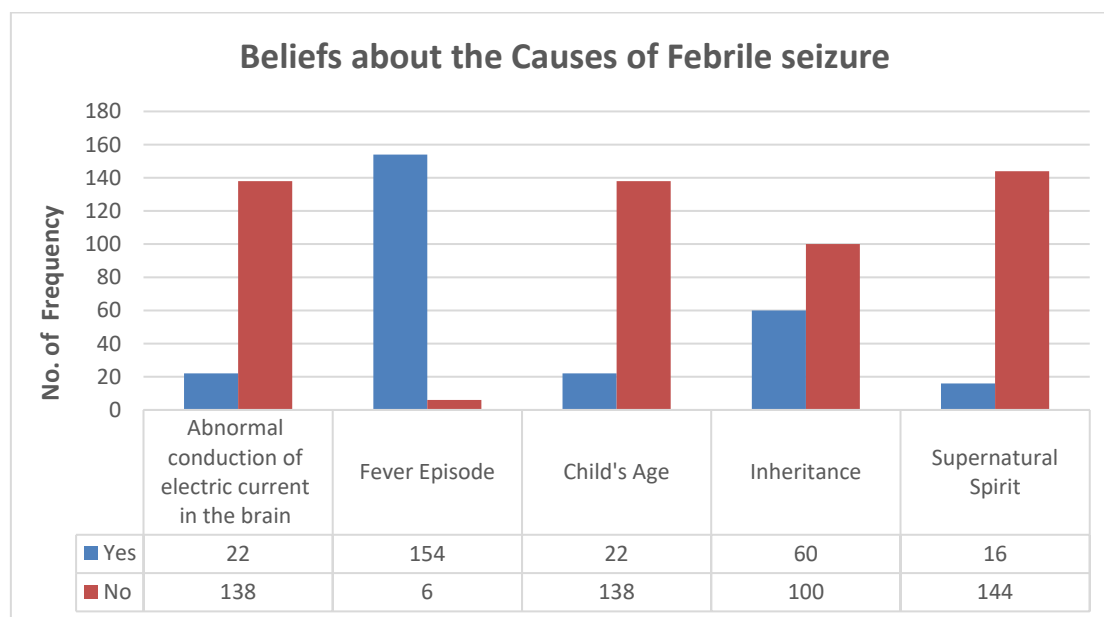
|                      |           |     |      |
|----------------------|-----------|-----|------|
|                      | Three     | 44  | 27.5 |
|                      | Four      | 8   | 5.0  |
| No. of Family Groups | 3-4       | 39  | 24.4 |
|                      | 5-8       | 114 | 71.3 |
|                      | 9-12      | 7   | 4.4  |
| No. of Child Groups  | One Child | 29  | 18.1 |
|                      | 2-4 Child | 98  | 61.3 |
|                      | 5-9 Child | 33  | 20.6 |

Figure (1), show the most of children have febrile seizure less than one year 76(47.5%), while few children have febrile seizure among range age (3-5) years.



**Figure (1): Age of children at onset of febrile seizure.**

Figure (2), the results show mothers beliefs about the causes of febrile seizure, most mothers believed fever episodes (96.25%), while few mothers believed supernatural spirit (10%) was the causes of febrile seizure.



**Figure (2): Mothers' beliefs about the causes of febrile seizure.**

### 3.2.1 Knowledge towards Febrile seizures

This domain consisted of 11 items, for each score (0 – 1); the maximum total score is 11.

Table 2 summarizes the mother's responses to knowledge items about febrile convulsions (n=160).

The results show the percentage of mothers who answered each question correctly indicated by an asterisk (\*) alongside the percentage who answered incorrectly or I don't know. Knowledge regarding the febrile seizure is epilepsy, (68.1%) correctly identified that febrile convulsion is not epilepsy.

For Anticonvulsant drugs are required for every child with febrile seizure, about half (50.0%) knew that anticonvulsant drugs are not required for every child with febrile convulsions. Results were also shown that the knowledge of the participants regarding every child with febrile seizure will have another febrile seizure in the future; a large majority (86.3%) incorrectly understood that. Over half (52.5%) correctly identified that febrile seizure is rare after age 5.

There was a significant misconception that recurrent febrile seizure will cause brain damage (74.4%).

Results were also demonstrated that nearly half (44.4%) were I don't know about the risk of subsequent epilepsy in febrile seizure is rare. And over half (56.3%) incorrectly believed that it is necessary to put a protective device into the mouth to prevent tongue injury during seizure, almost all mothers (90.0%) indicated that incorrectly answered for it is necessary to restrain the child during convulsion. And (60.6%) incorrectly knew that it is necessary to do the mouth-to-mouth resuscitation during seizure.

Nearly half (48.8%) correctly recognized children with febrile seizure can receive immunizations on schedule and (35.0%) correctly believed whether EEG or CT is unnecessary for every child with febrile seizure.

The mean score on the knowledge assessment was  $3.23 \pm 1.60$ , indicating an overall need for improvement in knowledge about febrile convulsions. These findings suggest that educational interventions may be beneficial to improve understanding of febrile convulsions among the mothers.

**Table 2: Mothers Responses to the Knowledge Items about febrile seizure (N=160).**

| Knowledge Items about FS   | Subcategory  | Frequency | Percentage |
|--|--------------|-----------|------------|
| <b>Febrile seizure (FS) is epilepsy</b>                          | Yes          | 20        | 12.5       |
|  | No*          | 109       | 68.1       |
|  | I don't Know | 31        | 19.4       |
| <b>Anticonvulsant drugs are required for every child with FS</b> | Yes          | 55        | 34.4       |
|  | No*          | 80        | 50.0       |
|  | I don't Know | 25        | 15.6       |
| <b>Every child with FS will have another FS in the future</b>    | Yes          | 138       | 86.3       |
|  | No*          | 14        | 8.8        |
|  | I don't Know | 8         | 5.0        |
| <b>FS is rare after the age five</b>                             | Yes*         | 84        | 52.5       |
|  | No           | 15        | 9.4        |
|  | I don't Know | 61        | 38.1       |
| <b>Recurrent FS will cause brain damage</b>                      | Yes          | 119       | 74.4       |
|  | No*          | 14        | 8.8        |
|  | I don't Know | 27        | 16.9       |
| <b>Risk of subsequent epilepsy in FS is rare</b>                 | Yes*         | 47        | 29.4       |
|  | No           | 42        | 26.3       |
|  | I don't Know | 71        | 44.4       |



|  |              |           |      |
|--|--------------|-----------|------|
| <b>It is necessary to put a protective device into the mouth to prevent tongue injury during seizure</b> | Yes          | 90        | 56.3 |
|  | No*          | 19        | 11.9 |
|  | I don't Know | 51        | 31.9 |
| <b>It is necessary to restrain the child during seizure</b>  | Yes          | 144       | 90.0 |
|  | No*          | 6         | 3.8  |
|  | I don't Know | 10        | 6.3  |
| <b>It is necessary to do the mouth-to-mouth resuscitation during seizure</b>                             | Yes          | 97        | 60.6 |
|  | No*          | 8         | 5.0  |
|  | I don't Know | 55        | 34.4 |
| <b>Children with FS can receive immunizations on schedule</b>  | Yes*         | 78        | 48.8 |
|  | No           | 54        | 33.8 |
|  | I don't Know | 28        | 17.5 |
| <b>EEG or CT is necessary for every child with FS</b>  | Yes          | 51        | 31.9 |
|  | No*          | 56        | 35.0 |
|  | I don't Know | 53        | 33.1 |
| <b>Mean Score of Knowledge</b>   |              | 3.23±1.60 |      |
| <b>The correct answer was highlighted as (*)</b>   |              |           |      |

### 3.2.2 Baseline Knowledge Score by Socio-demographic characteristics

Table 3 compares the average baseline knowledge score on a participant's knowledge, according to various demographic characteristics.

Statistically significant differences (p-value < 0.05) are indicated by [S] and non-significant findings are indicated by [NS].

Mother's age range (36 - 45) years had a slightly higher mean knowledge score ( $3.38 \pm 1.64$ ) compared to the younger ( $3.00 \pm 1.57$ ) and 26 - <36 age groups ( $3.35 \pm 1.61$ ). This difference was statistically significant (p-value < 0.05). Results illustrated that mothers with a university degree had the highest mean knowledge score ( $4.00 \pm 1.51$ ), followed by those with a secondary school education ( $3.19 \pm 1.51$ ). Illiteracy was associated with the lowest score ( $2.36 \pm 1.65$ ); this difference was statistically significant (p-value < 0.05).

On the other hand, Employee participants were scored significantly higher ( $4.13 \pm 1.82$ ) than housewives ( $3.11 \pm 1.55$ ) on the knowledge test (p-value < 0.05). For Paternal Characteristics, there were no statistically significant

differences in knowledge scores based on fathers' age groups. And fathers with a postgraduate degree had the highest mean score ( $4.33 \pm 2.08$ ), followed by university ( $3.67 \pm 1.30$ ) and secondary school education ( $3.23 \pm 1.66$ ). Illiteracy was associated with a lower score ( $2.62 \pm 1.76$ ), but the differences between education groups were not statistically significant.

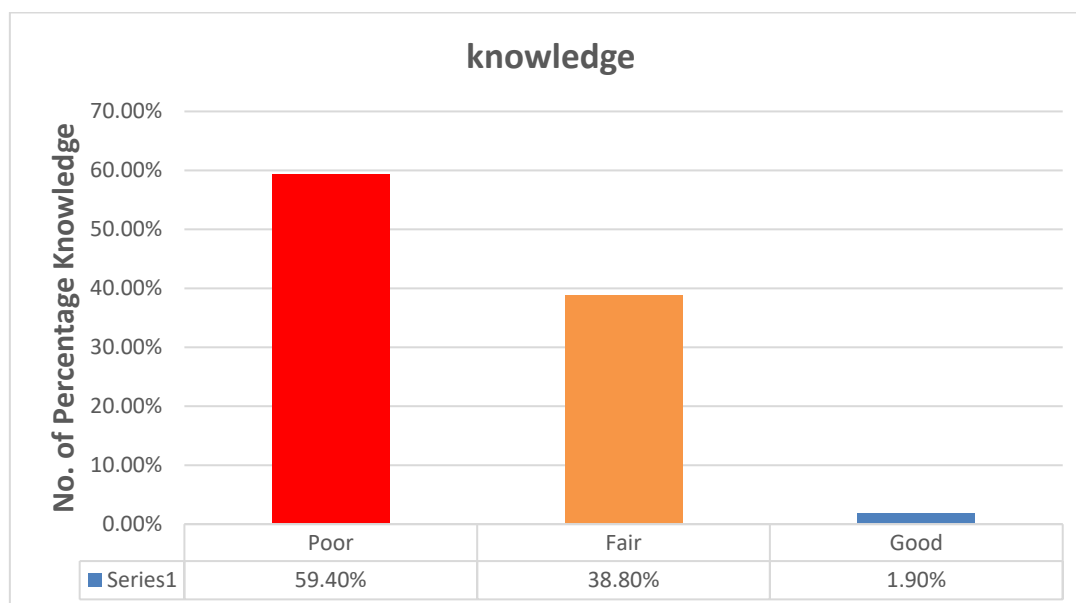
In term of fathers' occupations, it also did not show statistically significant differences in knowledge scores. The effect of socioeconomic factors, results were indicated that mother living in urban areas had a significantly higher mean knowledge score ( $3.41 \pm 1.63$ ) compared to those in rural areas ( $2.90 \pm 1.51$ ) (p-value  $< 0.05$ ).

Income level showed a statistically significant (p-value  $< 0.05$ ). Mothers with a good income had the highest score ( $4.67 \pm 1.51$ ), followed by middle income ( $3.31 \pm 1.62$ ) and weak income ( $2.89 \pm 1.49$ ). No statistically significant differences in knowledge scores were found based on other factors.

**Table 3: Comparison of Mean Baseline Total Knowledge Score According to Baseline Sociodemographic Characteristics of Mothers (N=160).**

| Variable                    | Group            | Knowledge Score | P-value     |
|-----------------------------|------------------|-----------------|-------------|
|                             |                  | <i>Mean±SD</i>  |             |
| Mothers Age Groups (Years)  | 17 - <26         | 3.00±1.57       | <0.001[S] ° |
|                             | 26 - <36         | 3.35±1.61       |             |
|                             | 36 - 45          | 3.38±1.64       |             |
| Educational Level of Mother | Illiteracy       | 2.36±1.65       | 0.002[S] °  |
|                             | Primary School   | 2.92±1.43       |             |
|                             | Secondary School | 3.19±1.51       |             |
|                             | University       | 4.04±1.49       |             |
|                             | Postgraduate     | 3.86±1.88       |             |
| Mother Job                  | House Wife       | 3.11±1.55       | 0.016[S] °° |
|                             | Employee         | 4.13±1.82       |             |
| Fathers Age Groups          | 20-<30           | 3.10±1.49       | 0.763[NS] ° |
|                             | 30-<40           | 3.33±1.72       |             |
|                             | 40-50            | 3.22±1.62       |             |
|                             | Illiteracy       | 2.62±1.76       | 0.523[NS] ° |

|   |                  |           |              |
|---|------------------|-----------|--------------|
| <b>Educational Level of Father</b>  | Primary School   | 3.05±1.51 |              |
|   | Secondary School | 3.23±1.66 |              |
|   | University       | 3.67±1.30 |              |
|   | Postgraduate     | 4.33±2.08 |              |
| <b>Father Job</b>   | No working       | 3.50±1.29 | 0.071[NS] °  |
|   | Employee         | 3.48±1.70 |              |
|   | Retired          | 2.00±1.41 |              |
|   | Freelance        | 3.12±1.57 |              |
| <b>Residence</b>  | Urban            | 3.41±1.63 | <0.001[S] °° |
|   | Rural            | 2.90±1.51 |              |
| <b>Income</b>   | Weak             | 2.89±1.49 | 0.022[S] °   |
|   | Middle           | 3.31±1.62 |              |
|   | Good             | 4.67±1.51 |              |
| <b>Type of House</b>  | Owned            | 3.27±1.64 | 0.431[NS] °  |
|   | Rent             | 3.13±1.58 |              |
|   | Slum             | 3.11±1.28 |              |
| <b>No. of Rooms</b>   | One              | 3.03±1.65 | 0.351[NS] °  |
|   | Two              | 3.01±1.62 |              |
|   | Three            | 3.77±1.48 |              |
|   | Four             | 2.88±1.36 |              |
| <b>No. of Family Groups</b>   | 3-4              | 3.26±1.77 | 0.541[NS] °  |
|   | 5-8              | 3.20±1.57 |              |
|   | 9-12             | 3.14±1.21 |              |
| <b>No. of Child Groups</b>  | One Child        | 3.55±1.74 | 0.123[NS] °  |
|   | 2-4 Child        | 3.24±1.64 |              |
|   | 5-9 Child        | 2.85±1.28 |              |
| ANOVA test (°) & T-test (°°), the significant results of knowledge score according to baseline characteristics of Mother's, (%), p<0.05 considered significantly different, [S]= Significant, [NS]= Non-significant |                  |           |              |



**Figure 3: Knowledge level**

### 3.3.1 Attitudes towards Febrile Convulsions

This domain consisted of 10 items with 5 responses for each item scored (1-5); the maximum total score is 50.

Table 4 summarizes the mothers' attitudes towards febrile convulsions. Results were shown that some participants held some misconceptions about febrile convulsions. About (28.75%) strongly disagreed that FS is due to possession by spirits.

Over a third (24.3%) strongly disagreed that FS progresses to epilepsy. While most recognized frequently temperature monitoring (81.8% strongly agreed), a small number (1.88%) were neutral. Over third (26.8%) believed FS is a life-threatening event, highlighting a potential misconception. Results also demonstrated that there were some poor aspects of mother's attitudes. The overwhelming majority (51.25%) strongly agreed that FS can cause brain damage. Almost two-thirds of the participants (61.88%) were strongly disagreed that folk medicine is necessary. Above half (51.25%) strongly disagreed that FS can be outgrown. There was a strong agreed (78.1%) that children with FS need more attention and care.

About (55.6%) of the participants strongly disagreed lumbar puncture was acceptable when necessary. The shame associated with having a child with FS was very low (only 1% strongly agreed). The mean score on the attitude assessment was  $30.03 \pm 3.89$ , indicating a generally fair attitude towards FS.

**Table 4: Mothers Responses to the Attitude Items about febrile seizure (N=160).**

| Attitude Items   | Strongly disagree<br>N (%) | Disagree<br>N (%) | Neutral<br>N (%) | Agree<br>N (%) | Strongly agree<br>N (%) |
|--|----------------------------|-------------------|------------------|----------------|-------------------------|
| FS is due to possession by spirits                       | 46<br>(28.75%)             | 9<br>(5.63%)      | 36<br>(22.5%)    | 19<br>(11.88%) | 50<br>(31.25%)          |
| FS will become epilepsy                                  | 39<br>(24.38%)             | 19<br>(11.88%)    | 55<br>(34.38%)   | 24<br>(15%)    | 23<br>(14.38%)          |
| Parents should take their child's temperature frequently | 0<br>(0%)                  | 0<br>(0%)         | 3<br>(1.88%)     | 26<br>(16.25%) | 131<br>(81.875%)        |
| An FS attack is a life-threatening event                 | 19<br>(11.88%)             | 21<br>(13.13%)    | 42<br>(26.25%)   | 35<br>(21.88%) | 43<br>(26.88%)          |
| FS can cause brain damage                                | 11<br>(6.88%)              | 14<br>(8.75%)     | 20<br>(12.5%)    | 33<br>(20.63%) | 82<br>(51.25%)          |
| Folk medicine is also necessary                          | 99<br>(61.88%)             | 11<br>(6.875%)    | 41<br>(25.63%)   | 4<br>(2.5%)    | 5<br>(3.125%)           |
| FS can be outgrown*                                      | 82<br>(51.25%)             | 42<br>(26.25%)    | 16<br>(10%)      | 14<br>(8.75%)  | 6<br>(3.75%)            |
| More attention and care are needed for a child with FS   | 0<br>(0%)                  | 2<br>(1.25%)      | 33<br>(20.63%)   | 0<br>(0%)      | 125<br>(78.13%)         |
| If necessary, lumbar puncture is acceptable*             | 89<br>(55.63%)             | 19<br>(11.875%)   | 24<br>(15%)      | 20<br>(12.5%)  | 8<br>(5%)               |
| It is shameful to have a child with FS                   | 116<br>(72.5%)             | 22<br>(13.75%)    | 11<br>(6.875%)   | 10<br>(6.25%)  | 1<br>(0.625%)           |
| Mean Score of Attitude                                   | $30.03 \pm 3.89$           |                   |                  |                |                         |
| <b>The correct attitude was highlighted as (*)</b>       |                            |                   |                  |                |                         |

### 3.3.2 Baseline Attitude Score by Sociodemographic

Table 5 compared the average baseline attitude score on a scale measuring views towards febrile seizure among the participants according to various

demographic characteristics. Statistically significant differences ( $p$ -value  $< 0.05$ ) are indicated by [S] and non-significant findings are indicated by [NS].

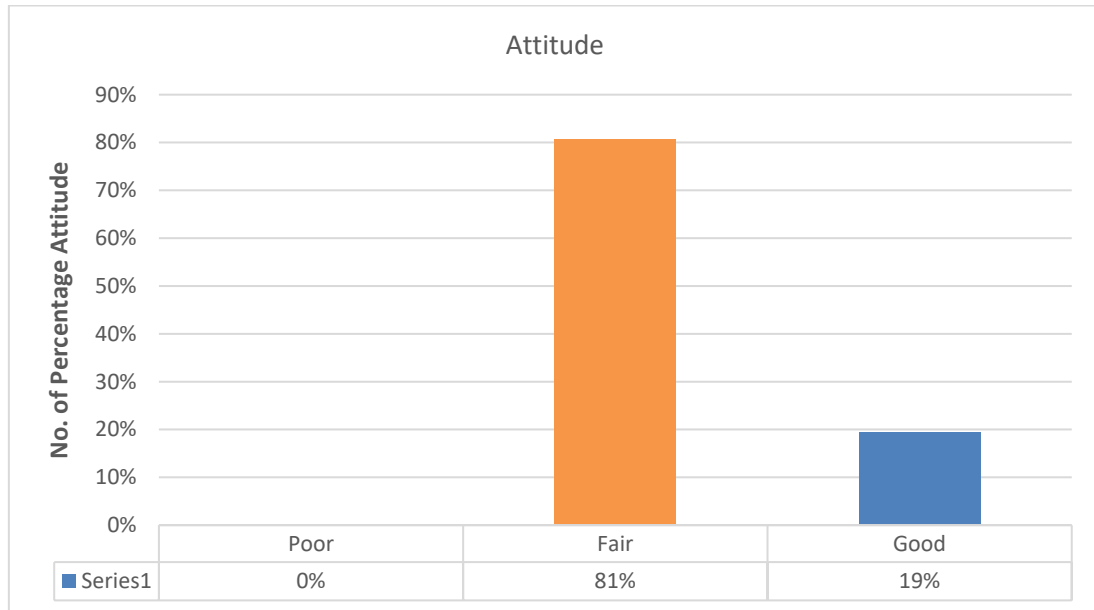
Results were shown that there were statistically significant differences in attitude scores regarding fathers' education level showed a significant difference ( $p$ -value  $< 0.05$ ). Fathers with a university had the highest mean score ( $32.31 \pm 4.11$ ), followed by postgraduate degree ( $31.00 \pm 3.46$ ) and secondary school education ( $30.40 \pm 3.40$ ). Fathers with illiteracy had a lower score ( $29.77 \pm 4.49$ ) compared to other groups. No significant difference in attitude scores was found based on fathers' age or occupation.

In term of socioeconomic factors, there were no statistically significant differences in attitude scores based on mothers age groups, educational level of mother, mother job, residence, income level, or type of housing. And no significant differences in attitude scores were found based on family size, or number of children.

**Table 5: Comparison of Baseline Mean Total Mother's Attitude Score According to Baseline Sociodemographic Characteristics of Mothers (N=160).**

| Variable                    | Group            | Attitude score | P-value      |
|-----------------------------|------------------|----------------|--------------|
|                             |                  | <i>Mean±SD</i> |              |
| Mothers Age Groups (Years)  | 17 - <26         | 30.03±3.59     | 0.061[NS] °  |
|                             | 26 - <36         | 30.16±4.27     |              |
|                             | 36 - 45          | 29.78±3.77     |              |
| Educational Level of Mother | Illiteracy       | 29.64±3.89     | 0.543[NS] °  |
|                             | Primary School   | 30.02±3.48     |              |
|                             | Secondary School | 30.06±4.74     |              |
|                             | University       | 30.8±3.74      |              |
|                             | Postgraduate     | 30.77±3.94     |              |
| Mother Job                  | House Wife       | 30.04±3.88     | 0.681[NS] °° |
|                             | Employee         | 29.94±4.04     |              |
| Fathers Age Groups          | 20-<30           | 30.03±3.51     | 0.541[NS] °  |
|                             | 30-<40           | 30.19±4.28     |              |
|                             | 40-50            | 29.57±3.88     |              |

|   |                   |            |                   |
|---|-------------------|------------|-------------------|
| <b>Educational Level of Father</b>  | Illiteracy        | 29.77±4.49 | <b>0.047[S] °</b> |
|   | Primary School    | 28.98±3.57 |                   |
|   | Secondary School1 | 30.40±3.40 |                   |
|   | University        | 32.31±4.11 |                   |
|   | Postgraduate      | 31.00±3.46 |                   |
| <b>Father Job</b>   | No working        | 31.25±1.50 | 0.654[NS] °       |
|   | Employee          | 29.89±4.32 |                   |
|   | Retired           | 32.50±3.54 |                   |
|   | Freelance         | 30.00±3.79 |                   |
| <b>Residence</b>  | Urban             | 29.90±4.21 | 0.321[NS] °<br>°° |
|   | Rural             | 30.25±3.31 |                   |
| <b>Income</b>   | Weak              | 30.23±3.22 | 0.054[NS] °       |
|   | Middle            | 29.95±4.23 |                   |
|   | Good              | 29.50±4.23 |                   |
| <b>Type of House</b>  | Owned             | 29.56±4.14 | 0.542[NS] °       |
|   | Rent              | 31.05±3.62 |                   |
|   | Slum              | 30.11±3.50 |                   |
| <b>No. of Rooms</b>   | One               | 29.69±3.72 | 0.541[NS] °       |
|   | Two               | 30.13±3.91 |                   |
|   | Three             | 29.89±4.08 |                   |
|   | Four              | 31.63±3.66 |                   |
| <b>No. of Family Groups</b>   | 3-4               | 30.64±3.86 | 0.831[NS] °       |
|   | 5-8               | 29.83±4.00 |                   |
|   | 9-12              | 29.86±1.57 |                   |
| <b>No. of Child Groups</b>  | One Child         | 30.10±3.35 | 0.055[NS] °       |
|   | 2-4 Child         | 30.13±4.11 |                   |
|   | 5-9 Child         | 29.67±3.74 |                   |
| ANOVA test (°) & T-test (°°), the significant results of attitude score according to baseline characteristics of Mother's, $p < 0.05$ considered significantly different, [S]= Significant, [NS]= Non-significant |                   |            |                   |



**Figure 4: Attitude level**

### 3.4.1 Practice towards Febrile seizure

This domain consisted of 14 items, each scored (0 – 1); the maximum total score is 14. According to baseline responses of mothers and their scores, the mean total practice score was (7.76± 1.24).

Table 6 summarizes mother's responses to practice items about febrile seizure. Regarding the appropriate actions, the mother's demonstrated fair practice of critical actions. (19.4%) demonstrated no response about FS.

About (52.5%) of mothers shake and wake the convulsing child, (13.1%) performing heart massage, (13.8%) protecting the baby on a soft surface, (35.6%) stimulating the child, (26.3%) observe seizure manifestations and duration, (7.5%) pry the convulsing child's clenched teeth apart and put something in his/her mouth, (50.6%) restrain the convulsing child, (25.0%) laying the child on their side, (3.1%) attempt to do mouth-to-mouth resuscitation and (1.3%) removing secretions from the mouth and nose was almost indicated as appropriate.



A large majority (81.9%) identified taking the child to the doctor as important. Reducing the child's body temperature was recognized by a significant portion (73.1%). Keeping calm during a seizure was nearly (2.5%).

These findings suggest that while mothers understand some critical actions during a febrile seizure, there are significant misconceptions and knowledge gaps regarding proper management.

**Table 6: Mothers' responses to the practice items about febrile seizure.**

|   | Practice Items   | Yes       |         | No  |         |
|---|--|-----------|---------|-----|---------|
|   |  | N         | (%)     | N   | (%)     |
| N   | No response  | 31        | (19.4%) | 129 | (80.6%) |
| N   | Shake and wake the convulsing child  | 84        | (52.5%) | 76  | (47.5%) |
| N   | Cardiac massage  | 21        | (13.1%) | 139 | (86.9%) |
| R   | Protect child on a soft and safe surface   | 22        | (13.8%) | 139 | (86.9%) |
| N   | Stimulate the convulsing child   | 57        | (35.6%) | 103 | (64.4%) |
| R   | Observe seizure manifestations and duration  | 42        | (26.3%) | 118 | (73.8%) |
| N   | Rush the child to a doctor   | 131       | (81.9%) | 29  | (18.1%) |
| N   | Pry the convulsing child's clenched teeth apart and put something in his/her mouth | 12        | (7.5%)  | 148 | (92.5%) |
| N   | Restrain the convulsing child  | 81        | (50.6%) | 79  | (49.4%) |
| R   | Place the child on his/her side  | 40        | (25.0%) | 120 | (75.0%) |
| R   | Keep calm  | 4         | (2.5%)  | 156 | (97.5%) |
| N   | Attempt to do mouth-to-mouth resuscitation   | 5         | (3.1%)  | 155 | (96.9%) |
| N   | Suck discharge from the child's nose and mouth                                     | 2         | (1.3%)  | 158 | (98.8%) |
| R   | Lower the child's body temperature   | 117       | (73.1%) | 43  | (26.9%) |
|   | Mean Score of practice   | 7.76±1.24 |         |     |         |
| <b>R= Recommended, N= Not recommended</b> |  |           |         |     |         |

### 3.3.2 Baseline Practice Score by Sociodemographic

Table 7 demonstrates how various demographic characteristics are associated with the average score on a practice assessment about febrile seizure.

Statistically significant differences ( $p$ -value < 0.05) are indicated by [S] and non-significant findings are indicated by [NS].

The mean score on the practice assessment was  $7.76 \pm 1.24$ , indicating a need for improvement in understanding appropriate practices for FS management. However, demographic factors did influence the scores to some

extent. Just mother's age is statistically significant all other variables are not statistically significant. Mother's age range (36 - 45) years had a slightly higher mean practice score ( $8.03 \pm 1.18$ ) compared to the younger ( $7.91 \pm 1.09$ ) and 26- <36 age groups ( $7.47 \pm 1.36$ ). This difference was statistically significant (p-value < 0.05).

**Table 7: Comparison of Baseline Mean Total Practice Score According to Baseline Sociodemographic Characteristics of Mothers (N=160).**

| Variable                    | Group            | Practice Score | P-value      |
|-----------------------------|------------------|----------------|--------------|
|                             |                  | <i>Mean±SD</i> |              |
| Mothers Age groups (Years)  | 17 - <26         | 7.91±1.09      | 0.049[S] °   |
|                             | 26 - <36         | 7.47±1.36      |              |
|                             | 36 - 45          | 8.03±1.18      |              |
| Educational Level of Mother | Illiteracy       | 8.36±0.93      | 0.497 [NS] ° |
|                             | Primary School   | 7.63±1.29      |              |
|                             | Secondary School | 7.83±1.13      |              |
|                             | University       | 7.74±1.01      |              |
|                             | Postgraduate     | 7.64±1.59      |              |
| Mother Job                  | House Wife       | 7.78±1.18      | 0.511[NS] °° |
|                             | Employee         | 7.56±1.71      |              |
| Fathers Age Groups          | 20-<30           | 7.88±1.21      | 0.276 [NS] ° |
|                             | 30-<40           | 7.57±1.31      |              |
|                             | 40-50            | 7.91±1.08      |              |
| Educational Level of Father | Illiteracy       | 7.62±1.04      | 0.896[NS] °  |
|                             | Primary School   | 7.69±1.23      |              |
|                             | Secondary School | 7.88±1.07      |              |
|                             | University       | 7.92±1.32      |              |
|                             | Postgraduate     | 7.71±1.65      |              |
| Father Job                  | No working       | 8.00±0.82      | 0.769 [NS] ° |
|                             | Employee         | 7.82±1.13      |              |
|                             | Retired          | 8.50±0.71      |              |
|                             | Freelance        | 7.71±1.30      |              |
| Residence                   | Urban            | 7.69±1.30      | 0.350[NS] °° |
|                             | Rural            | 7.86±1.11      |              |
| Income                      | Weak             | 7.95±1.09      | 0.294[NS] °  |
|                             | Middle           | 7.67±1.28      |              |
|                             | Good             | 7.33±1.75      |              |

|   |           |           |             |
|---|-----------|-----------|-------------|
| <b>Type of House</b>  | Owned     | 7.69±1.13 | 0.511[NS] ° |
|   | Rent      | 7.74±1.64 |             |
|   | Slum      | 8.00±0.94 |             |
| <b>No. of Rooms</b>   | One       | 8.10±1.17 | 0.083[NS] ° |
|   | Two       | 7.74±1.16 |             |
|   | Three     | 7.61±1.38 |             |
|   | Four      | 7.00±1.07 |             |
| <b>No. of Family Groups</b>   | 3-4       | 7.62±1.44 | 0.713[NS] ° |
|   | 5-8       | 7.80±1.18 |             |
|   | 9-12      | 7.86±0.90 |             |
| <b>No. of Child Groups</b>  | One Child | 7.62±1.42 | 0.580[NS] ° |
|   | 2-4 Child | 7.73±1.26 |             |
|   | 5-9 Child | 7.94±0.97 |             |
| <p><b>ANOVA test (°) &amp; T-test (°), the significant results of practice score according to baseline characteristics of Mother's, p&lt;0.05 considered significantly different, [S]= Significant, [NS]= Non-significant</b></p> |           |           |             |

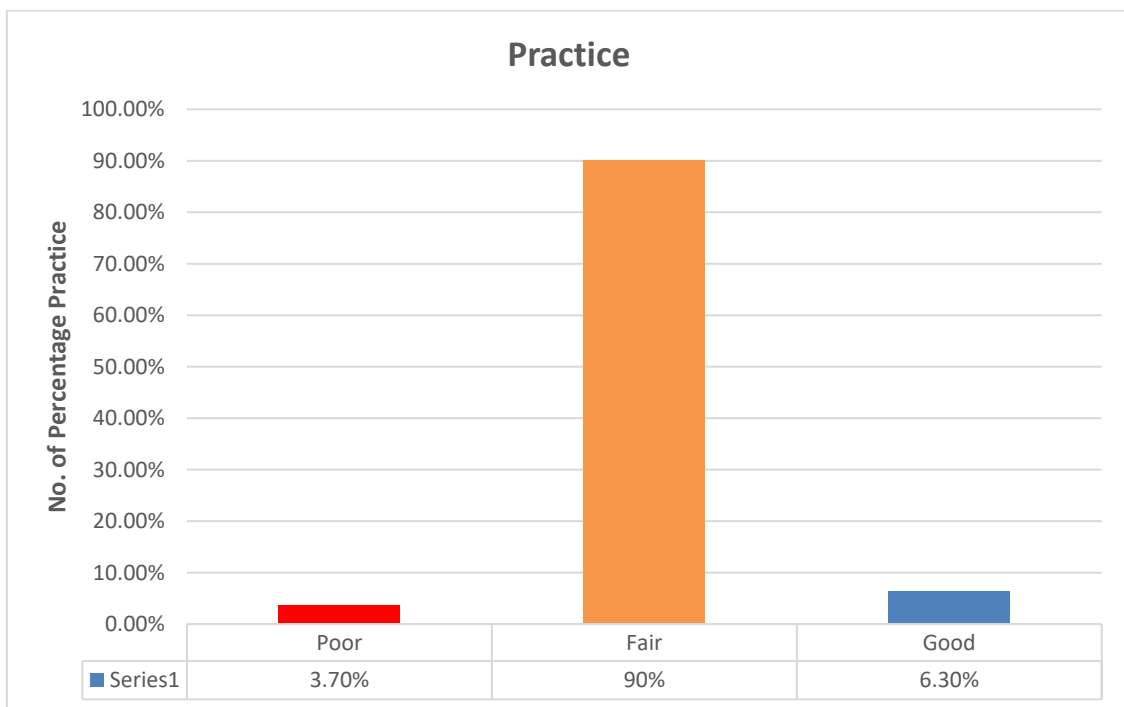


Figure 5: Practice level

# CHAPTER FOUR

## Discussion



## 4. DISCUSSION

The current study showed that the participated mothers in this study were with age ranging (17–45) years, these data was similar the study done in Ghana by (Nyaledzigbor et al., 2016), and the study done in Iraq done by (Shibeeb et al, 2019).

The study stated that 47.5% children were more likely to have first episode of febrile convulsion in age of 6–24 months, this result agreement with (Sharawat et al., 2016) who reported that the majority of FS were noted for the first time in range between 6th and 24th months of age in percentage of 60%.

According to mothers' beliefs about the cause of febrile seizure, fever episode was major causes of febrile seizure 96.25%, these results agreed with the study conducted in Saudi Arabia by (Alfhaid et al., 2020) where 53.7% of the participants they know that fever was the most prominent causes of febrile seizure. Also, agreed with another study done in Japan by (Sakai et al., 2009), and in Turkey by (Kayserili et al., 2008) and in Indonesia by (Syahida et al., 2016). Mothers believed that high fever caused febrile seizures but the study done in India by (Parmar et al., 2001) found that 77.9% parents did not know the fact that the convulsion can occur due to fever and in Libya by (Zeglam et al., 2010) reported only About 20% of mothers had heard or even observed seizures caused by fever.

The mean knowledge score was 3.23 (SD 1.60) out of eleven points. Based on this score, 59.40% of mothers had poor knowledge of febrile seizure, 38.80% had fair knowledge, and only 1.90% reported their knowledge was good.

Regarding the level of knowledge about febrile seizure, (59.40%) of study mothers had poor knowledge toward febrile seizure in children. However, this result was agreed with the study in Sudan by (Kheir et al., 2014), and in Nigeria by (Oche et al., 2013) and also this is almost consistent with the study done in Saudi Arabia by (AlZweihary et al., 2021) and by (Almoussa et al., 2023).

Contradicting these reports, a study conducted in Iraq done by **(Shibeeb et al, 2019)**, the study in Ghana done by **(Wuni et al., 2021)**; **(Nyaledzibor et al., 2016)**, the study in Turkey done by **(Kayserili et al., 2008)** and the study in Indonesia done by **(Syahida et al., 2016)**. These disparities in the level of knowledge among these studies might result from the variations in the baseline characteristics of participants such as socio-demographics and level of education.

The current study found a significant association between mothers' knowledge of FS and increased maternal educational level, university education and higher education levels had better knowledge than groups of lower education. This outcome is in line with a study done in Iraq by **(Abdulla and Sadi, 2015)**; **(Shibeeb et al., 2019)**, in Saudi Arabia by **(AlThaqafy et al., 2023)**, in Sudan by **(Kheir, et al., 2014)** and in Nigeria by **(Oche et al., 2013)**, the explanation for this finding that the educated women had better access to internet and books and they gained information during their studies.

There was a significant association between age of mothers and knowledge level, the higher age groups had a good knowledge, this may be due to they had more experience than young age women. The result of the study done in Iraq by **(Shibeeb et al, 2019)**, found that mothers age had a positive association with knowledge, which is in line with current study. The study done in Cameroon by **(Eta et al., 2021)** found that age group and level of education no significant association with knowledge, which did not coincide with our study.

Employed mothers also had better knowledge than housewives. This outcome is consistent with study done in Saudi Arabia by **(AlThaqafy et al., 2023)**, and a study done in Iraq by **(Abdulla and Sadi, 2015)**. There are several possible explanations for this finding, employed women may have better access to social media and books and they share their experiences with other women in the workplace compared to housewives.

Also, we found mothers with high income had better knowledge than low-income. This outcome is consistent with the study done in India by **(Parmar, et al., 2001)**. This finding may be explained by the fact that mothers with a higher income have a better access to information from sources such as the internet, television, private clinics, and others.

There was association between residence and knowledge, urban areas had better knowledge than rural areas, this result was in line with study done by **(Shibeeb et al., 2019)**; **(Abdulla and Sadi, 2015)**. This finding may be due to the mothers lived in urban areas have a better access to information than mothers lived in rural areas.

The study conducted in Iraq (Baghdad city) reported no significant association between knowledge and parental educational level, urban residence and employed mothers **(Shneshil, 2021)**.

Also, another study done at Riyadh, Saudi Arabia by **(Almoussa et al., 2023)** revealed age, education, occupational status, residence, monthly income was discovered to be not significantly correlated with knowledge, which did not coincide with our study.

Among the 11 items that measured FS knowledge, the mothers seemed to understand was FS is epilepsy, where in 109 (68.1%) mothers disagreed, this result agreement with in Riyadh, Saudi Arabia **(Almoussa et al., 2023)**.

Also, in this study (48.8%) of mothers believed that children with febrile seizure could receive vaccination on schedule, this result agreement with study done in Egypt by **(Elbilgahy and El, 2018)**. (35%) of mothers in this study believed that EEG or CT scans were unnecessary for each child with febrile seizure, this result agreement with study done in Iran by **(Ghadi and Chakeri, 2020)**.

The mothers' mean attitude score toward FS was 30.03 (SD 3.89) of a possible 50 points. Based on this score, (0%) of the mothers were categorized as

having poor attitude, (81%) were had fair attitude levels and (19%) were had good attitude levels. In the present study the mother's level of attitude was found to be fair in the majority (81%). This result agreed to a study done in Riyadh, Saudi Arabia by (**Almoussa et al., 2023**) which reported that most participants had neutral attitude level and also agreed with the findings of study done in Iraq by (**Abdulla and Sadi, 2015**) which found that most participants had fair attitude level, but differs to the findings of study done by (**Syahida et al., 2016**) in Indonesia which stated that the large number of participants had good attitude level and to the study done at Qassim, Saudi Arabia by (**AlZweihary et al., 2021**) in which majority of participants had poor attitude level.

However, there was no statistically significant correlation between the variables under study when we examined the association between parents' basic demographic characteristics and attitude except father' educational level, which found that there was significant association between father' educational level and attitude of mothers toward FS, this result of Current study was in line with study done in Iraq by (**Abdulla and Sadi, 2015**) which found that there was significant association between father' educational level and attitude level, and differs from the study done at Qassim, Saudi Arabia by (**AlZweihary et al., 2021**) which found that there was no significant association between father' educational level and attitude level.

The findings of mothers' attitude toward febrile convulsion showed that, the approximately 81% of studied mothers believed that children with febrile convulsion required frequent measurement of temperature. This result was in an agreement with (**Barzegar et al., 2016**) who stated that, most mothers take their children's temperature frequently during FS.

Regarding seriousness of febrile convulsion, approximately half of studied mothers 51% believe that FS can cause brain damage, this result was in an agreement with (**Barzegar et al., 2016**) who reported in his study that the



majority of mothers believed that FS episode is a serious condition and can cause brain damage.

In addition, the mothers did not have feeling of shame or guilty and embarrassment of having children with FS as the majority of mothers strongly disagree (72.5%) with this statement, the findings of the current study was in disagreement with (**Nyaledzigbor et al., 2016**) who demonstrated that, studied parents had a slightly negative attitude toward FS and approximately half of parents were feeling guilty of having child with FS.

The mothers' mean practice score toward FS was 7.76 (SD 1.24) of a possible 14 points.

Based on this score (3.70%) of the mothers were categorized as having poor practices, (90%) were fair practices, and (6.30%) had good practice levels. In the present study the mother's level of practice was found to be fair in the majority (90%). These findings were consistent with those study done by (**Shibeeb et al., 2019**) which showed that most participants had fair practice level, but differs to the findings of studies done by (**Syahida et al., 2016**) in Indonesia and in Turkey by (**Kayserili et al., 2008**) and the study done in Libya by (**Zeglam et al., 2010**). Which stated that the large number of participants had poor practice level. The result of current study was disagreed the study done at Qassim, Saudi Arabia (**AlZweihary et al., 2021**) which found that most participants had good practice level. Sociodemographic factors could be the contributing factors of the variations in the results between these studies.

A statistically significant association has been found in this study between the age groups of mothers and their practices toward FS, this outcome was consistent with research findings from an Iraqi study (**Shibeeb et al., 2019**), which reported that there was a significant association between advanced maternal age and good practices, this may be due to advanced age group of mothers had more experience about practice towards FS than young age mothers.

In current study, taking a child to the doctor was the most common action performed during a febrile seizure (81.9%), several papers reported that rushing to the doctor or hospital was the parents' primary option when they saw their child suffering from a seizure (**Parmar et al., 2001**); (**Srinivasa et al., 2018**); (**Zeglam et al., 2010**); (**Elbilgahy and El, 2018**) ) and differs from study done in Egypt by (**El, 2020**) found less than one-quarter of parents were took their children to the hospital or clinic without first aids at the time of FS.

Reduce the temperature of the child's body as the secondary common measure (73%) This result was in an agreement with study done in Turkey by (**Kayserili et al., 2008**) but in disagreement with study done by (**Kanemura et al., 2013**) who reported that fifty-one percent of parents don't attempt and don't take any action to lower the child's temperature before the FC attack, and shake and wake up the child who has FS was the third common action (52.5%) this result was in agreement with study done in Iraq by (**Shibeeb et al., 2019**) who reported that Shake and rouse the convulsing child (63.5%).

The others not recommended actions taken by mothers such as mouth to mouth resuscitation, put something in his mouth, shaken their children vigorously, cardiac massage and restrain the child during febrile convulsion attack may be due to the mothers thought that their child heart was arrest and unable to take breathing, also they think that their child may be injured during febrile convulsion or it may be die, all of this inappropriate practice is due to lack of knowledge and practice about FS management.

# CHAPTER FIVE

## Conclusions and Recommendations



## **5. CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Conclusions**

Based on the findings of the present study, it is concluded that:

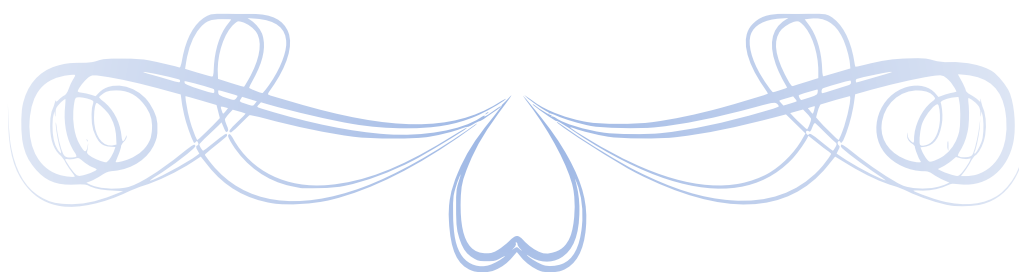
1. There were poor knowledge of mothers towards febrile seizure, better knowledge was associated with having higher mothers' educational level, advanced mothers age, employed mothers, high income, urban residence, poor knowledge is still persisted among mothers regarding febrile seizure and those misconceptions can lead to take inappropriate or even harmful actions in an attempt to control the seizures.
2. Fair attitude towards febrile seizure, better attitude was associated with having higher father' educational level.
3. Fair practice towards febrile seizure, better practice was associated with having higher age groups mothers.

### **5.2 Recommendations**

1. Implement educational programs targeting mothers in Karbala City to improve their knowledge about febrile seizures. These programs should focus on causes, symptoms, first aid measures, and when to seek medical assistance.
2. Organize regular workshops or seminars and providing accurate information about febrile seizures.
3. Establish support groups or online meeting where mothers can share experiences, ask questions, and receive emotional support from others who have children with febrile seizures.
4. Integrate information about febrile seizures into routine maternal and child health services, ensuring that all mothers receive basic education during prenatal and postnatal visits.

5. Conduct further research to identify specific correlates influencing mothers' knowledge, attitudes, and practices regarding febrile seizures in Karbala City. This can guide targeted interventions and policy development.
6. Advocate for policies at the local level that prioritize child health education, including febrile seizures, within broader maternal and child health initiatives.

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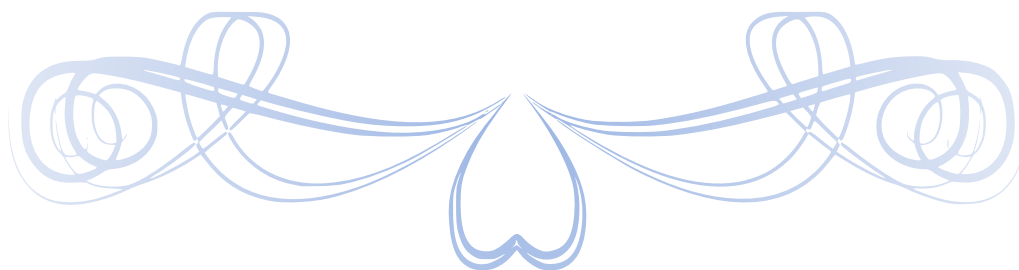
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# APPENDICES



**Questionnaire on Knowledge, Attitudes and Practices  
about Febrile Convulsions**

Dear participant, we greatly appreciate your help in responding to this survey on the knowledge, attitudes and practices of mothers about Febrile Convulsions in children and what is related to them in the city of Holy Karbala. This questionnaire will be without mentioning names, and the information provided will be used for research purposes only and the data will be treated with complete confidentiality and full protection of your privacy.

**Part One: Personal Data**

Questionnaire No.  Date

Mother's Age:

Job Type: Housewife  Employee  Retired  Freelancer

Educational Level of Mother:

|            |                          |                |                          |                  |                          |
|------------|--------------------------|----------------|--------------------------|------------------|--------------------------|
| Illiteracy | <input type="checkbox"/> | Primary School | <input type="checkbox"/> | Secondary School | <input type="checkbox"/> |
| University | <input type="checkbox"/> | Postgraduate   | <input type="checkbox"/> |                  | <input type="checkbox"/> |

Father's Age:

Job Type: Not Working  Employee  Retired  Freelancer

Educational Level of Father:

|            |                          |                |                          |                  |                          |
|------------|--------------------------|----------------|--------------------------|------------------|--------------------------|
| Illiteracy | <input type="checkbox"/> | Primary School | <input type="checkbox"/> | Secondary School | <input type="checkbox"/> |
| University | <input type="checkbox"/> | Postgraduate   | <input type="checkbox"/> |                  | <input type="checkbox"/> |

Residence: Rural  Urban

Income: Weak  Middle  Good

Type of House: Owned  Rent  Slum

Number of Rooms

Number of Family Members

Number of Children

Age of child at onset of Febrile convulsion



**Part Two: Beliefs about the Causes of Febrile Convulsions**

In your opinion, which of the following are the main causes of Febrile convulsion?  
(You can choose more than one answer)

1. Abnormal conduction of electrical current in the brain
2. Fever episode
3. Child's age
4. Inheritance
5. Supernatural spirit (witchcraft or envy)

**Part Three: Knowledge about Febrile Convulsions**

| No. | Knowledge  | Yes | No | I don't know |
|-----|--|-----|----|--------------|
| 1   | Febrile convulsion (FC) is epilepsy  |     |    |              |
| 2   | Anticonvulsant drugs are required for every child with FC  |     |    |              |
| 3   | Every child with FC will have another FC in the future   |     |    |              |
| 4   | Febrile convulsion is rare after the age of five   |     |    |              |
| 5   | Recurrence of FC will cause brain damage   |     |    |              |
| 6   | The risk of subsequent epilepsy for children with FC is rare   |     |    |              |
| 7   | It is necessary to put a protective device into the mouth to prevent tongue injury during convulsion |     |    |              |
| 8   | It is necessary to hold the child during convulsion  |     |    |              |
| 9   | It is necessary to do the mouth-to-mouth resuscitation during convulsion                             |     |    |              |
| 10  | Children with FC can receive the vaccine on schedule   |     |    |              |
| 11  | EEG or CT scan is necessary for every child with FC  |     |    |              |

**Part Four: Attitudes towards Febrile Convulsions**

| No. | Attitudes  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|-----|--|-------------------|----------|---------|-------|----------------|
| 1   | FC is caused by possession by spirits                    |                   |          |         |       |                |
| 2   | FC will become epilepsy                                  |                   |          |         |       |                |
| 3   | Parents should take their child's temperature frequently |                   |          |         |       |                |
| 4   | FC attack is a life-threatening event                    |                   |          |         |       |                |

|    |   |  |  |  |  |  |
|----|---|--|--|--|--|--|
| 5  | FC can cause brain damage   |  |  |  |  |  |
| 6  | Folk (alternative) medicine is necessary to treat the child with FC |  |  |  |  |  |
| 7  | FC can be outgrown  |  |  |  |  |  |
| 8  | More attention and care are needed for a child with FC              |  |  |  |  |  |
| 9  | If necessary, lumbar puncture is acceptable                         |  |  |  |  |  |
| 10 | It is shameful to have a child with FC                              |  |  |  |  |  |

**Part Five: Practices about Febrile Convulsions**

What did you do during your child's first convulsion?

1. No response
2. Shake and wake the convulsing child
3. Cardiac massage
4. Protect the child on a soft and safe surface
5. Stimulate the convulsing child
6. Observing seizure manifestations and duration
7. Take the child to a doctor
8. Pry the child clenched teeth apart and put something in his mouth
9. Restrain the convulsing child
10. Place the child on his side
11. Keep calm
12. Try to do mouth-to-mouth resuscitation
13. Remove secretions from the child's mouth and nose
14. Lower the child's body temperature

**Thank you**

University of Kerbala  
College of Medicine  
Medical Research Bioethical Committee  
No: 23-20  
Date: 14/5/2023



**FINAL APPROVAL LETTER**

**Israa Jawad Abbas**  
Department of Family and Community Medicine \ College of Medicine \  
University of Kerbala

**Title of Project:**  
***"Knowledge, Attitude and Practices of mothers towards Febrile Seizure in Children  
its correlates in Karbala City, 2023"***

This is to certify that proposal provided have satisfactorily addressed the research  
bioethical guidelines.

Please consider the following requirements of approval:

1. Approval will be valid for one year. By the end of this period, if the project has been completed, abandoned, discontinued or not commenced for any reason, you are required to announce to the Committee. And you should inform the committee if the study extends over one year.
2. Please remember the Committee must be notified of any alteration to the project.
3. You must notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that might affect continued ethical acceptability of the project.
4. Always consider the confidentiality of participants' information and/or opinions. And they must never be obligated to participate in the study and can withdraw at any time.
5. At all times you are responsible for the ethical conduct of your research in accordance with the standard bioethical guidelines.
6. The Committee should be notified if you will be applying for or have applied for internal or external funding for the above project.
7. This document does not compensate administrative or ethical approval might be required from hospitals or other authorities.

**Assoc. Professor Ali A. Abutiheen**  
**Chair, Medical Research Bioethical Committee**  
**College of Medicine – University of Kerbala**

جمهورية العراق

  
 وزارة التعليم العالي والبحث العلمي  
 جامعة كربلاء  
 كلية الطب  
 معاون العميد للشؤون العلمية  
 شعبة الدراسات العليا

العدد: 2015 / 111

التاريخ: 2023 / 6 / 15

الى / دائرة صحة كربلاء المقدسة / مستشفى كربلاء التعليمي للأطفال /  
قطاع الحر

مستشفى الامام الحسن المجتبي (عليه السلام) كلية الطب

م / تسهيل مهمة

تحية طيبة:

يرجى تقضلكم بتسهيل مهمة طالبة الدراسات العليا / دبلوم  
عالي / طب اسرة (اسراء جواد عباس) في مشروع البحث الموسوم:

**Knowledge, Attitude, and Practice of Mothers towards Febrile Seizure in  
Children and its Correlates. in Karbala, 2023.**

لغرض اكمال متطلبات البحث، شاكرين تعاونكم معنا خدمة  
للحركة العلمية في بلدنا العزيز

... مع التقدير ...

  
 ا.م.د. علي عبد الرضا أبو طحين  
 معاون العميد للشؤون العلمية  
 2023/6/ 15

**\*\*نسخة منه:**

- مكتب السيد العميد المحترم للتفضل بالاطلاع مع التقدير.
- مكتب معاون العميد للشؤون العلمية المحترم للتفضل بالاطلاع مع التقدير.
- فرع طب الاسرة والمجتمع. للتفضل بالاطلاع مع التقدير.
- شعبة الدراسات العليا/الحفظ.
- الصادرة.



جامعة كربلاء  
كلية الطب  
فرع طب الأسرة  
و المجتمع

إلى / الاستاذ الدكتور علي ابو طحين المحترم

م /تقييم استبانة

تحية طيبة

نظرا للمكانة العلمية والخبرة التي تتمتعون بها نرفق لكم استمارة استبانة مقترحة لرسالة طالب  
الدبلوم العالي في طب الأسرة اسراء جواد عباس المبين عنوانها في ادناه، راجين من جنابكم  
الاطلاع عليها واعطاء ملاحظاتكم القيمة بشأنها ... مع فائق التقدير

**" Knowledge, Attitude and Practices of mothers towards febrile seizure in children and its correlates, in Karbala City, 2023 "**

أ.م.د. بشير مسلم العلي  
استشاري طب المجتمع

2023 / 5/9

## الخلاصة

### خلفية البحث:

تعرف الأكاديمية الأمريكية لطب الأطفال الاختلاج الحراري بأنه اختلاج مصحوب بحمى (درجة حرارة  $\leq 38$  درجة مئوية بأي طريقة) دون عدوى الجهاز العصبي المركزي التي تحدث عند الرضع والأطفال من عمر 6 إلى 60 شهرا.

### الهدف:

تهدف هذه الدراسة إلى تقييم معارف الأمهات ومواقفهن وممارساتهن تجاه الاختلاج الحراري لدى الأطفال دون سن الخامسة في مدينة كربلاء المقدسة وتقييم العوامل المرتبطة بمعرفتهن ومواقفهن وممارساتهن.

### طرائق العمل:

أجريت دراسة مقطعية في محافظة كربلاء على 160 من أمهات الأطفال الذين يعانون من اختلاجات حرارية ، حضروا مستشفى كربلاء التعليمي للأطفال ومستشفى الإمام الحسن المجتبي التعليمي في مدينة كربلاء المقدسة باستخدام استبانة منظمة معدة. لتقييم درجة المعرفة ، تم تسجيل الإجابة الصحيحة نقطة واحدة والإجابة غير الصحيحة ولا أعرف تم تسجيلها صفرا. لتقييم درجة الموقف ، تم تقييم كل فقرة باستخدام واحد من خمسة مقاييس فرعية: 1 = لا أوافق بشدة ، 2 = لا أوافق ، 3 = محايد ، 4 = أوافق ، و 5 = أوافق بشدة. ولتقييم درجة الممارسة ، تم تسجيل الإجابة الصحيحة نقطة واحدة والإجابة غير الصحيحة تم تسجيلها صفرا.

### النتائج:

كان متوسط درجة معرفة الأمهات ( $1.60 \pm 3.23$ ) من أصل إحدى عشرة نقطة ، وكان متوسط درجة موقف الأمهات ( $3.89 \pm 30.03$ ) من 50 نقطة محتملة. كان متوسط درجة ممارسة الأمهات ( $7.76 \pm 1.24$ ) من 14 نقطة ممكنة.

### الاستنتاج:

كانت هناك معرفة ضعيفة بين الأمهات تجاه الاختلاج الحراري ، وارتبطت المعرفة الأفضل بارتفاع المستوى التعليمي للأمهات ، وعمر الأمهات المتقدم ، والأمهات العاملات ، والدخل المرتفع ، والإقامة الحضرية.

موقف معتدل تجاه الاختلاج الحراري ، وارتبط الموقف الأفضل بارتفاع مستوى تعليم الأب.

ممارسة معتدلة تجاه الاختلاج الحراري ، وارتبطت الممارسة الأفضل بوجود أمهات من الفئات العمرية الأعلى.



جمهورية العراق  
وزارة التعليم العالي والبحث العلمي  
جامعة كربلاء  
كلية الطب

معارف ومواقف وممارسات أمهات الاطفال الذين يعانون من الاختلاجات  
الحرارية في مدينة كربلاء المقدسة ، 2023

رسالة

دراسة مقدمة إلى مجلس كلية الطب/ فرع طب الاسرة والمجتمع/ جامعة كربلاء كجزء من متطلبات نيل  
درجة دبلوم عالي في طب الأسرة

من قبل الباحثة

أسراء جواد عباس

بكالوريوس طب وجراحة عامة

بإشراف

الأستاذ المساعد الدكتور بشير عقيل العلي

إختصاص طب المجتمع

المدرس الدكتورة إيناس مؤيد محمد علي

إختصاص طب الأطفال