Knowledge, Attitudes and Home Management Practices of Mothers of Children with Febrile Seizures among Aged Less Than 6 Years in Iran, 2014

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ABSTRACT

Background: Febrile seizure is one of the most common kind of seizure in the children. Majority of mothers had adequate information about febrile seizures, but there were still mothers' negative beliefs about febrile seizures and these misconceptions can lead to inappropriate or even harmful actions to control seizure in the child.
Aim: To explore k knowledge, beliefs and practices related to immediate home management among mothers of children with febrile seizures.
Methods: The present study is a descriptive- analytical comparative study which includes 156 mothers who referred to "17- Shahrivar" health care center and neurology clinic in Rasht city and attended in the study. 78 patients were in the recurrence group and 78 patients were in the non-recurrence group. Data were collected through a questionnaire consisting of knowledge, attitude and home management questions, and finally, the data were analyzed using descriptive statistics and analytical statistics (independent t-test, Spearman and Pearson correlation coefficient).
Results: The findings showed that the majority of the units in the group with and without recurrence were male. The mean score of knowledge in children' mothers without recurrence was higher than children' mothers with recurrence ($p < 0.023$). The majority of mothers in both groups had a positive attitude .None of the mothers in both groups performed well.
Conclusion: In this study, mothers' knowledge level is low which, in its turn, is effective in the treatment and recurrence trend of seizure. This issue highlights the necessity of educating mothers through medical centers and mass media.
Key word :Awareness, Attitude. Febrile seizure, Children, Mothers

INTRODUCTION

Febrile seizure is the most common kind of seizure in the children[1]. Febrile seizure is associated with a temperature above 38 degrees (rectal or tympanic) without central nervous system infection, metabolic disorder and no previous history of seizure[2,3]. Febrile seizure may appear from 6 months to 6 years with maximum incidence of 18 months[3]. The prevalence rate of febrile seizure varies in different regions of the world and is related to social, economic, environmental, and genetic factors[1], which occurs in 4-10% of under-six children[4]. The prevalence rate of febrile seizure was reported 2%-5% in Europe and America , 6%-9% in Japan,0.5% - 1.5% in China, 4.1% in Switzerland, 2.9% in Greece, 10% - 5% in India,14% in Guam[5].

But some factors have been reported to be effective on febrile seizure incidence including positive family history, perinatal events, evolutionary delay, male gender, breastfeeding duration, high fever, low birth weight, increased blood bilirubin or infants whose mothers consume alcohol and cigarettes[6]. 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[7]. The emergence of distressing phenomenon of febrile seizure in children have significant physical, psychological, and behavioral effects on parents[8]. Lack awareness about disease nature, besides causing anxiety and abnormal behaviors especially in mothers, can confront them to problems in later stages and recurrence of the disease, which appears at least in 30% of cases. The major concern of parents about this disease is inappropriate fever control in children[9]. The results show that mothers do not have the proper knowledge and home management to control the child's fever, while the mother, as the first children' caregiver, has the greatest role in maintaining their health. Therefore, it is imperative for mothers to obtain sufficient knowledge, awareness and home management in this field[10].

The research of Abeysekara .et al showed that the majority of mothers (77.4%) had adequate information about febrile seizures, but there were still mothers' negative beliefs about febrile seizures and these misconceptions can lead to inappropriate or even harmful actions to control seizure in the child[11]. In the study of Shibeeb .et al, 57% of mothers had poor knowledge and 62% of them had poor home management[12]. In the study of Elbilgahy .et al in Egypt, 89.8% of mothers had poor knowledge and 64.4% of them had poor practice about this disease before education[13]. In the study of Kanemura, 76.8% of parents had no information about febrile seizures. [14] 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. [15] Therefore, assessing mothers' basic information is imperative as a criterion for the

development and initiation of compiled training programs by the responsible authorities as well as educating and modifying the knowledge, attitude and home management to prevent febrile seizures in children. In this way, the mothers may be more sensitive to seizure following fever in their children by increasing their knowledge and attitude, and also can direct mothers to appropriate behavior such as lowering the fever and preventing seizures in the child by increasing and enhancing their attitudes about the severity and complications of seizure. This study was aimed to compare the knowledge, beliefs and practices related to immediate home management among mothers of children with febrile seizures with and without recurrence.

MATERIALS AND METHODS

The retrospective study is based on descriptive- analytical comparative. The research environment was Internal Department of Pediatric, Medical Center and Neurology Clinic, 17- Shahrivar Hospital, Rasht in 2014. The study population consisted mothers of children between the 6 months and 6 years with febrile seizure. Inclusion criteria included mothers of children with febrile seizure without electrolyte and metabolic disorders and central nervous system infection. Data were collected for 2 months from December to February in 2014. We did not consider any exclusion criteria except patients ignored to be involved in the current study. For data collection, the records (cases) of 6 months to 6 years children who were referred to the Medical educational Center of the research site were investigated and parents were contacted via the numbers inserted in their case.

Overall, 156 individuals, including 78 patients were in the recurrence group and 78 patients were in the non-recurrence group. The mothers were filled out and signed written prepared questionnaire. The research's data were collected using a two-part tool, which the first part includes demographic information and the second part includes a questionnaire designed to measure knowledge, attitude and home management of parents about fever and seizure and consisted of 50 items including 20 items about knowledge, 12 items about attitude and 18 items about home management. This tool is extracted from questionnaires of Talebian and Sajjadi and Huang et al. [10, 16, 17] Knowledge defined as parental knowledge about febrile seizure, including possible causes of febrile seizures, 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. Correct answers received 1 point; incorrect and “don’t know” answers received no score.A maximum and minimum score were considered 40 and zero respectively. Accordingly, scores of 0 to 20 indicate poor knowledge, 20-30 moderate knowledge, and 30-40 high knowledge. Attitude questions are scored from 1 to 5 based on a 5-point Likert scale. The highest score is 60 and the lowest is 12. A score below 36 is considered a negative attitude and a score above 36 is a positive attitude.The answers were set as "yes" – "No" questions about" determining of home management "item, there was score 1 for "yes" and non-score for "No". The highest score was 18 and the lowest score was zero. Scoring zero to 9 were confirmed poor home management, 9- 13 moderate home management, and scores above 13 were considered as good.

Content validity was used to determine the tool scientific validity. Content validity coefficient was calculated as 0.7 and content validity index was 0.7 -1 for all of the items in this questionnaire. The Richardson Coder reliability coefficient 20 was used to determine the internal consistency of questions in the knowledge and home management section. To test the reliability, the re-test method will be performed at the beginning of the sampling. Tool reliability in re-test was estimated to be more than 90%. At first Kolmogorov-Smirnov test was done to examine the normality distribution of these variables in order to compare mean of knowledge, attitude and home management rate of children with febrile seizure with or without recurrence. Collected data were analyzed by SPSS software version 16 and using descriptive statistics (mean and standard deviation) and analytical statistics (independent t-test, Spearman and Pearson correlation coefficient). Pearson correlation coefficient was used to assess relationship for knowledge and attitude, but Spearman correlation coefficient was used to correlate home management with these two variables.

RESULTS

The results of this study show that 156 mothers of children with febrile seizure were evaluated in two groups with and without recurrence seizure.

A total of 156 mothers were interviewed, their mean age was 30.3±5.37, they lived in rural areas. Results showed that the mean age of the mothers in the non-recurrence group was 30.00±4.95year and in the recurrence, group was 30.65±5.97 yea, which had not significant difference (P>0.05). Compared to mothers of children with non-recurrent seizures, there was a higher proportion of mothers who had attained a lower level of education (51.3% of the mothers in the non-recurrence group and 59% mothers in the recurrence group had under-diploma education). 94.9% of the mothers in the non-recurrence group and 96.2% of the mothers in the recurrence group were housewives. 53% of families in the non- recurrence group and 56.4% in the recurrence group lived in the city.

The results also showed that the mean age of the children in the non- recurrence group was 35.4±17.85 months and in the recurrence, group was41.85±18.32 months. 53.84% of the children were male and the rest were female. 60.89% of the cases under the study were the first child of the family. 71.15% of children had a positive family history about seizure. 73.07% of children had a history of anti-seizure drug use. The first seizure age of 81.41% of children was under 2- year. (Table 1)

Statistical analysis showed that the mean score of knowledge in children's mothers without recurrence was (29.5±3.8), which is higher than children's mothers with recurrence (28.1±3.9) and this difference was statistically significant (P = 0.023).

The majority of mothers had a positive attitude in the group with recurrence (98.7%) and in the group without recurrence (100%).The mean score of attitude in children's mothers without recurrence (45.5±4.1) was approximately equal to the attitude score of children's mothers with recurrence (45.78 ± 4.5) and there was no significant difference between the attitude scores of the two groups with and without recurrence. The mean score of home management in children's mothers without recurrence is 8.58 ± 1.68 (higher than children's mothers with recurrence 8.48± 1.64) and this difference has not been statistically significant.

The results of correlation analysis showed that there was no correlation between attitude and home management.In this study, the majority of mothers stated that the best way to tepid songing is cold water. Three-quarters of mothers believed that any child with febrile seizure would suffer from seizure recurrence, and recurrent seizure and fever would cause brain damage. (Table 2) 71.2% of mothers believed that fever and seizure were a life-threatening event. 19.2% of them believed that having a child with febrile seizure is shameful. (Table 2) 75.6% of the mothers could open the sealed (closed) teeth of the seizure- child and put something between his (her) mouths. The majority of mothers in this study gave oral breathing and cardiac massage to the seizure- child. (Table 3)

Table1: Demographic information of the child in the first and recurrent FC groups

P value	recurrent group		Non recurrent group		Frequency / Individual variables	
	Percent	Number	Percent	Number		
0.74	44.9	35	47.4	37	Girl	child sex
	55.1	43	52.6	41	Boy	
	100	78	100	78	Total	
0.3	21.79	17	35.89	28	9-25	Child's age (Month)
	30.76	24	29.48	23	25-41	
	19.23	15	21.79	17	41-57	
	28.20	22	12.82	10	57-72	
	100	78	100	78	Total	
	41.85		35.4 17.85		Mean and standard deviation	
0.86	59	46	62.8	49	1	Birth order
	29.5	23	28.2	22	2	
	10.3	8	6.4	5	3	
	1.3	1	2.6	2	4<	
	100	78	100	78	Total	

Table 2: Percentage of parents answering correctly on knowledge-oriented questions in the first and recurrent FC groups

Knowledge-oriented questions	Total (n=156)	First (n=78)	Recurrent (n=78)
1. The appropriate temperature of the baby's body is 36.5-37.2 ° C	114(73.1%)	64(82.1%)	50(64.1%)
2. The most suitable place for Baby temperature control is axillary	143(91.7%)	74(94.9%)	69(88.5%)
3. Acetaminophen syrup is a good medicine to reduce fever in children	110(70.5%)	74(74.9%)	52(66.7%)
4. The best way for tepid sponging is cold water	7(4.5%)	3(3.8%)	4(5.1%)
5. Fever control is the most essential way to prevent seizure	142(91%)	73(93.6%)	74(74.9%)
6. Febrile seizure is more common at ages 6 months to 6 years	107(68.6%)	59(75.6%)	48(61.5%)
7. FC is epilepsy	73(46.8%)	39(50%)	34(43.65)
8.Anticonvulsant drugs are required for every FC child	42(26.9%)	23(29.5%)	19(24.4%)
9.Every FC child will have another FC	117(75%)	55(70.5%)	62(79.5%)
10. FC is rare after age 6	70(44.9%)	41(52.6%)	29(37.2%)
11.Recurrent FC will cause brain damage	136(87.2%)	68(87.2%)	62(79.5%)
12.Risk of subsequent epilepsy in FC is rare	29(37.2%)	29(37.2%)	58(37.2%)
13.It is necessary to put protective devices into mouth to prevent tongue injury during convulsion	39(23.1%)	21(26.9%)	18(23.1%)
14.It is necessary to restrain the child during convulsion	67(42.9%)	34(43.6%)	33(42.3%)
15. It is necessary to do mouth-to-mouth resuscitation during convulsion	82(52.6%)	42(53.8%)	40(51.3%)
16. FC child can be immunized on schedule	90(57.7%)	42(53.8%)	48(61.5%)
17.EEG or CT is necessary for every FC child	28(17.9%)	15(19.2%)	13(16.7%)
18. Hereditary factors are effective in causing seizures in a child	128(82.1%)	62(79.5%)	66(84.6%)
19. Children with FC can receive immunizations on schedule	83(53.2%)	44(56.4%)	39(50%)

20. Prenatal injuries can cause febrile seizure in a child	68(43.6%)	38(48.7%)	30(38.5%)

Table 3: Percentage of parents answering correctly on Attitude-oriented questions in the first and recurrent FC groups

Attitude-oriented questions	Tatal (n=156)	First (n=78)	Recurrent (n=78)
1. FC is due to possession by spirits	22(12.8%)	10(12.8%)	12(15.4%)
2. FC will become epilepsy	54(34.6%)	21(26.8%)	47(60.2%)
3. Parents should take their child's temperature frequently	127(81.4%)	64(82%)	63(80.8%)
4. An FC attack is a life-threatening event	111(71.2%)	54(69.2%)	57(73.1%)
5. Febrile seizure repetition can cause brain damage	140(89.7%)	69(88.4%)	171(91%)
6. Folk medicine is also necessary	29(18.8%)	15(19.2%)	14(18%)
7. FC can be outgrown	124(79.5%)	67(85.9%)	57(73.1%)
8. More attention and care are needed for a child with FC	156(100%)	78(100%)	78(100%)
9. If necessary, lumbar puncture is acceptable	71(45.5%)	31(39.7%)	40(51.2%)
10. It is shameful to have a child with FC	30(19.2%)	18(23.1%)	12(15.4%)
11. Childs with seizure are special patients and should always be controlled.	132(84.6%)	72(76.9%)	60(92.3%)
12. The febrile convulsion is curable	145(92.9%)	71(91.1%)	74(94.9%)

Table 4: Percentage of parents answering correctly on practice-oriented questions in the first and re current FC groups

Practice-oriented questions	Total (n=156)	First (n=78)	Recurrent (n=78)
1. use a mercury thermometer to control my child's ever	110(70.5%)	60(76.9%)	50(64.1%)
2. To control the fever, place the thermometer on the child's axillary for 5-7 minutes	101(64.7%)	58(74.4%)	43(55.1%)
3. Lower the child's body temperature	153(98.1%)	77(97.7%)	76(97.4%)
4. Reduce baby clothing during baby fever	155(99.4%)	78(100%)	77(98.7%)
5. Give more fluid to your baby during fever	123(78.8%)	63(80.8%)	77(98.7%)
6. Protect the child on a soft and safe surface	123(78.8%)	63(80.8%)	77(98.7%)
7. Place the child on his/her side	49(31.4%)	21(26.9%)	28(35.9%)
8. Keep calm	62(39.7%)	37(47.4%)	25(32.1%)
9. Observe seizure manifestations and duration	141(90.4%)	74(94.9%)	67(85.9%)
10. Rush the child to a doctor	151(96.8%)	75(96.2%)	76(97.4%)
11. Shake and rouse the convulsing child	99(63.5%)	45(57.7%)	54(69.2%)
12. Try to pry the convulsing child's clenched teeth	118(75.6%)	60(76.9%)	58(74.4%)
13. Attempt mouth-to-mouth resuscitation	147(94.2%)	76(97.4%)	71(91%)
14. Suck discharge from nose and mouth	82(52.6%)	39(50%)	43(55.1%)
15. Perform cardiac massage	150(96.2%)	75(96.2%)	75(96.2%)
16. Restrain the convulsing child	83(53.2%)	43(55.1%)	40(51.3%)
17. Stimulate the convulsing child	100(64.1%)	52(66.7%)	48(61.5%)
18. Not to take any specific action	55(35.3%)	34(43.6%)	21(26.9%)

DISCUSSION

The current study we showed that 34.6% of mothers (findings of mothers' knowledge) in this study believed that children with fever and seizure could receive vaccination as usual. In Elbilgahy study, 21.5% of mothers believed that these children can receive routine vaccinations.[13] However, febrile seizures have been reported following injections of the MMR virus vaccine and triple vaccine (DTP) and these children should receive routine vaccination[8]. In the present study, 95.5% of mothers stated that the best way to tepid sponing is cold water. In the study of Abeysekara, 31% of mothers used cold water to wash baby's body, while in the study of Kollahi, 20% of mothers put feverish child in warm water[11,18]. FijenDemir .et al performed study in Turkey in 2012 and concluded that some parents used physical methods such as the cold and alcohol to reduce temperature. However, the use of these physical methods to reduce fever is not recommended in fever treatment guidelines and texts and may be associated with negative and contradictory effects of fever. Severe complications, such as hypoglycemia, coma, or even death can be observed in a febrile child due to rubbing with alcohol[19]

In the present study, 75% of mothers believed that any child with febrile seizure would suffer from seizure recurrence. In the Kayserili study, 81.6% of mothers believed that recurrent seizures may occur[20]. Results from studies have shown that children with several risk factors are at higher risk for seizure recurrence[6].

The majority of mothers (87.2%) in this study believed that recurrent febrile seizure would cause brain damage and other studies confirmed this issue[11,12,20,21]. The studies have shown that febrile seizure attack begins with persistent seizure in 25% of cases, which can cause long-term effects on the nervous system, such as speech disorders, mental retardation, cerebral palsy and epilepsy[22].

In this study, 46.8% of mothers believed that febrile seizure is the same epilepsy and 33.3% of mothers did not know any information about it. In the study of Kayseri, 28.7% of mothers, 55% of mothers in the study of Syahida, and 52% of the mothers in the study of shibeeb in Iraq believed that febrile seizure was the same epilepsy[12,20,21].

In the present study, 26.9% of mothers, 88% of mothers in research ofAbeysekara, 50% inthe research of Shibeeb and 48.4% of parents inthe research of Kayserili believed that anti-seizure drugs is needed for all children with febrile seizure. [11, 12, 20] Intermittent or continuous anti-

seizure therapy is not recommended for children with a history of one or more febrile seizures. Prophylaxis anti-seizure drugs may reduce incidence of febrile seizure recurrence, if febrile seizure is complex and prolonged. Daily anti-seizure drugs usage are not routinely recommended[8].

9.6 of mothers in this study believed that EEG or CT scans were necessary for each child with fever and seizure. In the study of Kayserili, 84.4% of parents believed that an EEG was needed for each child with febrile seizure[20]. Therefore evidence suggests that ECG is recommended in patients whose neurological examination or evolutionary abnormality is abnormal. [8] 82.1% of mothers believed that hereditary factors were effective in seizure incidence in children. In the Shibeeb's study, 34% of mothers believed that febrile seizure has a positive relationship with family history[12].

The present study showed that 45.5% of mothers believed cerebrospinal fluid sample (if needed) from waist should be taken from a child who suffer from fever and seizure. 57.4% of parents in the study of Kayserili and 55% of mothers in the study of shibeeb believed that Cerebro – spinal fluid (CSF) punctuation was acceptable, if needed[12,20]. Based on evidence, lumbar puncture is recommended to detectmeningitis in children under 12-month after the first febrile seizure[8].

Findings of mothers' attitude in this study showed that 19.2% of mothers in the present study and 52.3% in the research ofAbeysekara and 49.2% of the mothers in the research of Kayserili believed that having a child with febrile seizure is shameful[11,20].

In the present study, 14.1% of mothers believed that febrile seizure was due to possession by spirits in children . 10.2% of mothers in the study of Abeysekara and 45.8% of mothers in the study of Elbilgahy, 96% in the study of Oche Mansur in Nigeria, believed that febrile seizure originates from the evil spirit[11,13,23].

In this study, 34.6% of mothers believed that febrile seizure would lead to epilepsy. While 80% of mothers in the study of Elbilgahy, 65% of mothers in the study of Abeysekara believed that febrile seizure would become epilepsy. [11, 13] The risk factors for epilepsy incidence in children with febrile seizure included evolutionary and neurological disorders history in the child, complex febrile seizures, epilepsy family history in the first- or second-degree family[6].

The findings of home management on fever and seizure showed that in this study, 75.6% of mothers opened sealed baby teeth and placed something in her (his) mouth which was along with the studies of Oche Mansur and Elbilgahy[13,23]. But in other studies, few mothers have tried to do this[4,11,12,20].

In the findings of Elbilgahy in Egypt, the majority of mothers (71%) gave oral breathing to the seizure child.[13] While, in the present study, 5.8% of mothers, (14%) in the non-recurrence group and (4.9%) in the recurrence group in the findings of Kayserili in Turkey gave the child oral breathing during a seizure[20].

In the studies of Srinivasa 9%[4], in the studies of Kayserili (14%) of the mothers in the non - recurrence group, (4.9%) in the recurrence group gave a heart massage to the seizure child. [20] while the majority of mothers in the study of Elbilgahy and the present study gave a heart massage to the seizure child[13]. These results suggest that mothers thought that their child suffered from Cardiac arrest and respiratory apnea and is dying, and began heart massage and oral breathing. These inappropriate actions are caused by a lack of knowledge about disease and its control.

In the mentioned studies, the majority of mothers did not take any specific action during their child's seizure[4,12,20]. And in the present study, 35.3% of mothers did not take any special action during their baby's seizure. In addition, further studies with greater population need to be establish to evaluate the role of mothers' knowledge for controlling seizure in children diagnosed with febrile seizure.

Limitations of the research included the mental status of the units under study when completing the questionnaire, which could affect how to respond the questionnaire, and since it is difficult to recall some details about the occurrence of seizures, it may affect the results of the study and may be out of the researcher's control. The researcher's judgment was also based on parental responses because the researcher was not directly present at the time of the seizure occurrence and non-probability sampling method is among other limitations of this study.

CONCLUSION

According to the results of this study, mothers' knowledge level is low and, which in its turn, is effective in the treatment trend and recurrence of seizure and this issue raises the need to educate parents, especially mothers. Also education programs is required for parents on fever control and prevention of febrile seizure through mass media. In health centers, useful information is given to parents of children about febrile seizure, complications, treatment and prognosis.

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