Original Article

The effect of educational program on knowledge, attitude and practice of mothers regarding prevention of febrile seizure in children

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ABSTRACT

Background: Febrile convulsion is one of the most common problems in children aged 5 months to 6 years. The aim of this study was to explore the effectiveness of an educational program on mothers for prevention of febrile seizure in children. **Materials and Methods:** In this clinical trial study, 88 mothers were chosen who were divided into intervention and control groups, randomly. Data of the control and intervention groups were collected in two stages, before intervention and 1 month after intervention, by a validated and reliable questionnaire. The intervention consisted of three educational sessions, each one lasting for 60 min. Data were analyzed using chi-square, t-test and paired t-test. **Findings:** Age average of subjects in the intervention group and in the control group was 26.75 and 26.84 years, respectively. The results showed a significant increase in the knowledge ($P < 0.001$), attitude ($P = 0.04$) and practice ($P = 0.01$) in the intervention group 1 month after intervention compared with that before intervention, while such an increase was not seen in the control group. **Conclusion:** This study confirmed the efficiency of educational interventions in improving mother's knowledge, attitude and practice regarding prevention of febrile seizure in children.

Key words: Education, febrile seizure, mothers

INTRODUCTION

Febrile seizure is one of the most common problems in childhood, typically occurring in 2–5% of the children at 3 months to 5 years of age.[1-3] The peak incidence of disease is at 18 months, and it is disappears after the children turn 6 years old.[4]

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Psychosocial impacts, cognitive disabilities, hospital's bed occupancy, prolongation of hospitalization and increased health costs are the complications of febrile seizure in children. In addition, more than 50% of children under 1 year of age experience recurrent febrile seizure and in 15% of the cases, there are more than one recurrent seizures.[5]

In a 12-year follow-up regarding neurological complications resulting from febrile seizure, it was determined that 20% of children suffer from delayed neurological development and abnormalities, 10% from neurological defects and 5% suffered from learning disability.[6] While a simple prevention through controlling fever and washing feet and using antipyretics can prevent incidence of the disease and seizure complications resulting from fever in children.[7]

A relatively high prevalence of this disease due to the simultaneous combination of two major phenomena at a time, i.e. fever and seizure in children, cause severe anxiety in their parents so that sometimes they announced that their children are dying. Followed by observing the first febrile seizure, many

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parents are afraid and every time their children have fever, it can be disturbing and problematic for them; however, despite what parents think, fortunately, this disease in children is benign and is easily preventable, and rarely causes cerebral injuries.[8,9]

Informing parents by providing adequate knowledge and awareness regarding fever and seizure and related easy prevention is an important step to decrease concerns and anxiety in them. In a study on 154 parents with children suffering from febrile seizure, Sheringham stated that 54.3% of the trained individuals had an appropriate knowledge and that there was a direct correlation between parents' knowledge and practice.[10] In the study of Flury, 91% of parents had severe anxiety when confronted with febrile seizure, and the intensity of anxiety in untrained subjects was significantly higher than in trained individuals.[11] Parmer, in a study on 140 parents of children with febrile seizure in India, showed that 59.3% of the parents were not aware of this disease and only 20% of them were familiar about the normal level of body temperature that, ultimately, the necessity of education for parents has been emphasized in the study.[12] Given what was mentioned earlier, the present study aimed to review the effect of education on the knowledge, attitude and practice of mothers regarding prevention from febrile seizure in children.

MATERIALS AND METHODS

This study was an experimental and prospective study conducted on mothers with children under 2 years of age referred to the Health Care Centers of Isfahan City in 2009. Eighty-eight study subjects participated in the study quantitatively with calculation of 95% confidence interval and 80% power of test and 10% difference (44 subjects in the intervention group and 44 subjects in the control group).

Sampling was done in a multi-stage method and was generally due to the homogeneous texture of each region. Of the geographic areas of Isfahan City, one area was randomly selected in terms of cultural, social and economical features. In the next stage, the health care centers existing in each area were identified and one center was randomly selected that was dedicated either to the intervention or the control group.

The inclusion criteria included having a 2-year-old child, presence of full household information and call number as well as completing a written consent form at the beginning of the study and after receiving information about the study objectives. The exclusion criteria also included unwillingness to continue participation in the study and absence more than an education session.

Data collection was done through a questionnaire consisting of the following parts: six questions about demographic characteristics of mother, father and child, 13 knowledge questions about child's body temperature, factors influencing incidence of seizure, methods to reduce body temperature during fever, 20 questions regarding febrile seizure in child, one question that evaluated the inner practice guide concerning the prevention of febrile seizure and, finally, the practice check list about fever-reducing behaviors in order to prevent febrile seizure, including 12 self-reported questions completed by the mothers. The scoring method of the questionnaire in the knowledge part was 1 score for each correct answer and 0 for each wrong answer, and in the attitude part the score range of each question varied from 1 to 5, so that "completely disagree" scored 1, "disagree" 2, "I have no idea" 3, "agree" 4 and "completely agree" scored 5. In the practice part, given the practice and performance of the mother, correct practice was scored 1 and incorrect practice was scored 0. The scale scores of knowledge, attitude and practice were calculated out of 100. The inner practice guide questions about prevention of febrile seizure were calculated as frequency form. Assessment of the validity of the above-mentioned questionnaire was conducted through face and content validity; thus, the questionnaire was provided given reliable articles and sources and for assessment of content validity was given five experienced professors in various areas, and was reviewed by the researchers and a number of the views and comments applied in the questionnaire. In the previous stage, in order to assess the face validity, it was given to 10 mothers (homogenous and non-participated) and the explanations, questions and shortages inside the questionnaire were evaluated. The reliability of the questionnaire was assessed on 25 mothers through internal consistency and Cronbach's alfa 70% was obtained in this regard. Two other identical health care centers (two selected centers as control and intervention group) were used in order to select mothers for implementation of reliability and validity of the questionnaire. Before implementation of the educational intervention, practice checklist and questionnaire were completed in both the intervention and the control groups and, thereafter, the educational intervention was conducted for the intervention group during 1 week in three sessions, with each session lasting for 60 min, based on Standard Educational Materials,[13,14] through lecture, questions and answers, group discussion and practical show (the way to measure child's body temperature with thermometer and child's feet washing). Moreover, other told and training aids such as educational slides, posters, educational leaflets, pamphlets and white board were used in order to help proper understanding of contents by mothers and prevention from misunderstanding as well as mothers' visual sense involvement in learning (due to high importance of this sense in learning). One month after the educational intervention, the questionnaire and checklist were completed by both the intervention and the control groups. During the pre-intervention and post-intervention interval, by implementation coordination, it was tried not to provide any information to the control group; however, at the end of the study, all the information provided to the intervention group was also presented to the control group.

In this study, the data were analyzed through Software SPSS version 15. Independent t-test was used to compare the mean of the studied variables between the intervention and the control groups and also to assess their mean changes. Paired t-test was used in each group to evaluate changes in the pre-intervention and post-intervention interval and Chi-square

was used to evaluate and compare differences in demographic variables between the intervention and the control groups. $\alpha = 0.05$ was considered as the significant level for all the tests.

RESULTS

Mean age of mothers in the intervention and control groups was 26.75 ± 3.9 and 26.84 ± 4 years, receptively, and also mean age of children in the intervention and control groups was 11.93 ± 5.5 and 12.91 ± 5 months, respectively. Mothers of the intervention and control groups were identical in terms of education ($P = 0.344$). In terms of demographic variables, there was no significant difference between the groups [Table 1].

After the educational intervention, a significant increase was established in the mean score of knowledge ($P < 0.001$), attitude ($P = 0.04$) and practice ($P = 0.01$) of mothers in the intervention group compared with the pre-intervention time, while there was no significant change in the mean score of the mentioned variables before and after the intervention in the control group. Furthermore, in the pre-intervention time, there was no significant difference between knowledge, attitude and practice of mothers in the intervention and control groups; however, in the post-intervention time, independent t-test showed a significant difference between the intervention and control groups in terms of mean score of knowledge, attitude and practice [Table 2].

Before the intervention, there was no significant difference in frequency distribution of the inner practice guide in the two groups; however, after the educational intervention, there was a significant difference in terms of increased self-confidence due to timely action ($P = 0.03$) and inner calmness due to timely action ($P = 0.03$) between the intervention and control groups. Frequency distribution of fear of suffering from complication of febrile seizure in

Table 1: Frequency distribution of demographic variables in the study subjects

Demographic characteristics	Intervention		Control		Test result
	Number	Percent	Number	Percent	
Employment status					
Housekeeper	44	100	43	95.45	$P = 0.151$
Employee	0	0	2	4.55	
Elementary	6	13.6	5	11.4	
Educational level					$P = 0.344$
Secondary	8	18.2	6	13.6	
Under high school	7	15.9	2	4.5	
High school graduated	16	36.4	20	45.5	
University	7	15.9	11	25	
History of maternal seizure					$P = 0.557$
Positive	2	4.54	1	2.27	
Negative	42	95.46	43	97.73	

Table 2: Comparing mean scores of knowledge, attitude and practice in mothers regarding prevention of febrile seizure in children before and 1 month after the educational intervention

Variable	Group	Pre-intervention		Post-intervention		Result of paired t-test
		Mean	SD	Mean	SD	
Knowledge	Intervention	52.48	10.8	66.78	9.9	$P < 0.001$ T = 7.58
	Control	53.63	11.9	53.86	13.1	$P = 0.87$ T = 0.16
	Result of independent t-test	$P = 0.63$ T = 0.47		$P < 0.001$ T = 5.21		
Attitude	Intervention	74.09	8	76.15	7.79	$P = 0.04$ T = 2.06
	Control	73.02	3.7	72.43	3.78	$P = 0.44$ T = 0.76
	Result of independent t-test	$P = 0.42$ T = 0.8		$P = 0.005$ T = 2.85		
Practice	Intervention	81.06	10	85.41	7.43	$P = 0.01$ T = 2.46
	Control	81.32	8.1	80.94	7.68	$P = 0.77$ T = 0.28
	Result of independent t-test	$P = 0.89$ T = 0.13		$P = 0.01$ T = 2.59		

Table 3: Frequency distribution of factors influencing preventive actions from febrile seizure in children after the educational intervention in the intervention and control groups

Inner practice guide	Pre-intervention				Post-intervention			
	Intervention		Control		Intervention		Control	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Fear of suffering from complications resulting from seizure	24	54.5	25	56.8	28	63.6	23	52.3
Test result	$P = 0.83$				$P = 0.28$			
Inner calmness due to timely action	14	31.8	13	29.5	28	63.6	17	38.6
Test result	$P = 0.817$				$P = 0.01$			
Establish and increase self-confidence	16	36.4	20	45.5	25	56.8	15	34.1
Test result	$P = 0.386$				$P = 0.03$			

the child similar to before the intervention showed no significant difference between the two groups ($P = 0.28$) [Table 3].

DISCUSSION

The results showed that mothers of both groups had no significant difference in terms of employment status, educational level and history of seizure. Employment status was of high importance due to duration of implemented cares by mothers so that previous studies have shown that there was a significant relationship between educational level and knowledge of mothers about febrile seizure.[15,16] Accordingly, it can be concluded that, in the present study, the two groups had identical demographic characteristics.

Before the educational intervention, mothers had a moderate mean score of knowledge. In the study of Ptabi, knowledge of mothers about febrile seizure was at a moderate level.[17] Nevertheless, unlike knowledge level, attitude of mothers was in a better situation. It seems likely that severe anxiety of mothers from febrile seizure has been mentioned in many studies.[11,18]

After the educational intervention, mean scores of attitude, knowledge and practice of mothers had a significant increase in the intervention group and, unlike the pre-intervention time, there was a significant difference between the control and intervention groups in the post-intervention time. It seems that using educational content suitable with the target group and also using group discussion and practical show were important roles in increasing the knowledge, attitude and practice of mothers, particularly about attitude and practice of mothers, despite a relative good situation; the educational intervention could also promote the mean score of attitude and practice. In the study of Huang, it has been stated that group education and group discussion have a major role on increasing knowledge, attitude and practice of parents concerning febrile seizure.[19] In the study of Talebian also, knowledge, attitude and practice of trained mothers was significantly higher than in non-trained mothers; in addition, they mentioned that promotion of knowledge, attitude and practice of mothers had a positive effect on their children.[20] Using an effective educational method, Murphy *et al*, could reduce the anxiety of mothers and promote their practice in reading thermometer and control fever.[21]

Unlike the present study, Edwards could not change the attitude of participants for using antipyretics in the management and preventing of children's fever.[22] It seems that the applied educational methods have an important role in changing the attitude of the participants.

Febrile seizure in children is a frightening and anxious event for parents. Previous studies have shown that fear of parents from incidence of febrile seizure has many impacts on families such that it causes impairment in life, parental behaviors and relationship of parents with children.[23,24] Frequency distribution of inner practice guide after the educational intervention showed that the percentage of mothers who mentioned inner calmness and establishing self-confidence due to timely action as factors influencing preventive actions from febrile seizure in children significantly increased in the intervention group, and this indicates that educational intervention increased the self-confidence of mothers in timely action in prevention from febrile seizure. Flury *et al*, announced that increased knowledge of parents about febrile seizure preventively and before its incidence in children can reduce the anxiety and concern of parents when it begins in a child.[11] The limited time of the study and also lack of prolonged follow-up for mothers regarding the status of knowledge, attitude and practice are the main limitations of the present study. Further studies are recommended to be conducted in a longer duration.

Ultimately, the educational intervention aiming to control the fever in order to prevent from febrile seizure of children under 2 years of age by increasing the knowledge and attitude of mothers could also improve their practice and performance. Furthermore, educational intervention could increase the self-confidence and inner calmness of mothers due to timely action.

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