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ORIGINAL RESEARCH

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## EFFORT TO REDUCE ANXIETY LEVELS AMONG MOTHERS USING FEBRILE CONVULSIONS EDUCATIONAL PACKAGE

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### Abstract

**Background:** Parents often experience anxiety when seeing their children having febrile convulsion. It may be due to lack of knowledge about febrile seizure and the way of handling it.

**Objective:** This study aims to analyze the education package of febrile convulsion and its effect on mother's anxiety.

**Methods:** This was a quasi-experimental study with pretest posttest with control group design. Eighty-one participants were selected, which randomly assigned to be two groups that 41 participants in control group and 40 participants in intervention group. Anxiety was measured using State Anxiety Inventory in Indonesian version. Data were collected from March to Mei, 2017. Data were analyzed using Wilcoxon-test.

**Results:** The results showed that the mean of anxiety level in the intervention group before intervention was 77.40 and decreased to 35.78 after intervention, while the mean of anxiety level in the control group was 68.17 before intervention and decreased slightly to 64.17 after intervention. The p-value of the difference between control and intervention group was 0.001 (<0.05).

**Conclusion:** There was a significant effect of education package about febrile convulsion on mother's anxiety level. It is suggested that febrile convulsion educational package can be used as an alternative therapy to reduce anxiety levels among mothers.

**Keywords:** febrile convulsion; anxiety; education package

## INTRODUCTION

A febrile convulsion is a convulsion accompanied by fever (temperature 100.4°F or 38°C, measured by any methods) without central nervous system infection, which occurs among infants and children in 6 through 60 months of age ([American Academy of Pediatrics, 2011](#)). A febrile convulsion is one of the neurological disorders that are often encountered in children. Generally, this disease has a good prognosis. Most of the patients can be perfectly cured. However, around 25-30% of them may experience recurrent febrile convulsion. The mortality rate

of children with febrile convulsion also ranged from 0.64 to 75% ([Fuadi, Bahtera, & Wijayahadi, 2016](#)). Thus, febrile convulsion in children is quite worrying their parents.

Anxiety is a common problem for parents who experience pediatric febrile convulsion. It comes from the wrong perception of febrile convulsion due to the lack of knowledge among mother. Similarly, a study result by Rofiqoh ([2014](#)) in Pekalongan also found that the factor associated with a cause of the mother's anxiety in children febrile convulsion

is a lack of pediatric febrile convulsion knowledge among them ([Rofiqoh, 2014](#)).

The lack of this knowledge can be overcome with education. Education can improve mother's understanding and the ability for taking care their children in the case when children had a febrile convulsion ([Hockenberry, Wilson, & Rodgers, 2016](#)). This educational effort is expected to be one of the interventions to overcome anxiety. In contrast, some hospitals in Pekalongan district did not have this program intervention optimally. As preliminary study in Pekalongan that conducted by the researcher found that the recent educational program of febrile convulsion was only in short information necessary without any media. Besides, the media play a role in improving the understanding of mothers about learning materials ([Umar, 2017](#)). As a result, this condition will not educate mothers effectively. It can be seen by a previous study in Pekalongan that found the knowledge among 95 mothers who faced pediatric febrile convulsion was low by 64.2% ([Rofiqoh, 2014](#)). Therefore, this low knowledge among mother may not decrease the level of their anxiety.

Parents' anxiety affects both physical and behavioral aspects. The physical response experienced by parents occurs at the time of the pediatric febrile convulsion happen, as shaking, dyspepsia, anorexia, and sleep disorder ([Jones & Jacobsen, 2007](#)). Meanwhile, the manifest of behavioral response can be shown by the way of their caring to a child in negatively. Anxiety can lead to a narrowed field of vision ([Stuart, 2014](#)). Zeglam, Alhmadi, and Beshish ([2010](#)) in Libia also found that most of the parental behavior for giving caring for their child is not appropriate when their child sustain febrile convulsion ([Zeglam, Alhmadi, & Beshish, 2010](#)). The previous study by Wals, Edwards, and Fraser in Australia states that the negative behavioral aspects of parents when their child fever including giving more frequent antipyretic administration or antipyretic administration with double doses ([Walsh,](#)

[Edwards, & Fraser, 2008](#)). This negative parental behavior can cause negative impacts such as damage to the liver and kidneys of children. In addition, this incidence may increase as febrile convulsion is at risk of recurrence. However, the risk of recurrence of febrile convulsion increases the incidence of anxiety experienced by the mother. Maternal anxiety responses may recur when their child has a fever; firstly, because the fever is one of the most common complaints when mother bring the children to health services ([Purnasiwi, Lusmilasari, & Hartini](#)). Fever only is enough to make the mother in worry. Furthermore, it will increase, especially if their child has a convulsion. To sum up, briefly, the condition while parents have an anxiety sometimes makes the parents take irrational decisions, so it is not effective in providing appropriate care for children, whereas the role of parents is very important in the care for the recovery of sick children ([Hockenberry et al., 2016](#)). Based on the background of the problem, the researcher is interested to examine the effect of education package of febrile convulsion on mother's anxiety in children febrile convulsion.

## METHODS

### *Study design*

This was a quasi-experimental study with pretest posttest with control group design. Pretest and intervention were performed on the second day during hospitalization, while posttest was performed on the third day. Meanwhile, the pretest among control group was conducted at the second day of hospitalization and posttest was performed on the third day as well.

### *Setting*

The study was conducted in RSUD Kraton Pekalongan and RSUD Kajen. These two hospitals have same characteristics on hospital policy to receive patients with public health insurance (Jamkesmas), and most nurses were graduates of nursing diplomas, and the ratio of nurses with patients is on average 1: 5-6.

### *Sample*

The population was the mother who has children with febrile convulsion. The sampling technique was consecutive sampling that was conducted for 3 months (March – May 2017). The respondents were 81 respondents divided randomly, which 40 respondents for the intervention group and 41 for the control group. The inclusion criteria were mothers whose children had been treated for the second day with a simple febrile convulsion, the mother could read and write as well as willing to be a respondent. Respondents who experienced communication barriers, had children with complex febrile convulsion and faced a child convulsion with epilepsy were exceeded.

### *Intervention*

The State Anxiety Inventory (SAI) was used to measure anxiety. The researcher conducted pretest before the treatment in the second day of hospitalization and posttest after given treatment that was in the third day, among the intervention group. The intervention group was educated about febrile convulsion by using febrile convulsion educational package in the form of flipchart and booklet that contain definitions, risk factors, complications, normal temperature range, how to use a thermometer, convulsion prevention, and convulsion management. These three last messages were demonstrated using props. Provision of intervention was conducted by researcher. On the other hand, in the control group, the researchers also measured the pretest on the second day of child hospitalization and posttest on the third day. The control group received only hospital-based treatment for febrile convulsion in children. After SAI posttest measurements on the third day, control group was given an educational package of febrile convulsion as in the intervention group.

### *Instrument*

A questionnaire of SAI adopted from Spielberger ([Spielberger & Gorsuch, 1983](#)),

was used to measure the anxiety among sample. It has been translated into the Indonesian language at Faculty of Humanities, University of Indonesia. The validity and reliability of the questionnaire were conducted by researcher with r-value count by 0.4-0.884, and Cronbach alpha value were 0.939. The questionnaire consisted of 20 questions about feelings of tension, fear and worries of adverse events as well as symptoms of an increased activity of the autonomic nervous system. Each question item has a choice of 1 = no answer at all, 2 = little, 3 = enough, 4 = very. The score range between 20-80, where the lowest score of 20 shows a mild anxiety and a high score of 80 indicates anxious weight.

### *Ethical consideration*

The ethics committee of the Faculty of Medicine and Health Sciences, University of Muhammadiyah Yogyakarta approved the protocol of study in February, 2017 (078/EP-FKIK-UMY/II/2017).

### *Data analysis*

Wilcoxon test was used as the data analyze in this study because the data distribution was not normal.

## **RESULTS**

The result of this research was in bivariate and univariate analysis. Table 1 showed the majority of respondents in the control group (75.6%) aged between 25-45 years, most of them (95.1%) passed only from primary education, did not work (68.3%), used the health insurance (BPJS), and the frequency of convulsion among them was one time (70.7%). Respondents in the intervention group were productive age (80%) that ranged from 25 to 45 years old. The majority of education level among them was basic education by 95%. In addition, most of them did not work (80%), used health insurance (BPJS) by 87.5%, and the frequency of convulsion was one time 31 (77.5%).

**Table 1** Frequency distribution based on the characteristics of respondents

Characteristics	Control		Intervention	
	N= 41	Percentage (%)	N = 40	Percentage (%)
Age				
< 25 years	10	24.2	8	20
25-45 years	31	75.6	32	80
Education level				
Basic	39	95.1	38	95
Medium	2	4.9	2	5
Employment Status				
Employed	13	31.7	8	20
Unemployed	28	68.3	32	80
Hospital costs				
Health Insurance	33	80.5	35	87.5
Non- Health Insurance	8	19.5	5	12.5
Frequency of Convulsion in Children				
One time	29	70.7	31	77.5
> One time	12	29.3	9	22.5

**Table 2** The average distribution of respondents based on the anxiety score before and after treatment

Assessment	Mean	Standard of Deviation	Min-max	95% CI	P value
Control					
Before	68.17	11.11	33-80	64.66-71.68	0.002 *
After	64.17	12.53	24-80	60.14-68.05	
Intervention					
Before	77.40	3.58	61-80	76.25-78.55	0.001*
After	35.78	12.6	22-71	31.73-39.83	
Average value difference					
Control	4.07	9.45	-9-50	1.09-7.06	0.001*
Intervention	41.63	12.90	9-59	37.5-45.75	

\*= Wilcoxon test

Based on the range in the Table 2, the average score of anxiety in the control group among 41 respondents on the second day was 68.17, with a minimum score were 33 and a maximum score was 80. The measurements on the third day showed the average score of anxiety was a little bit decrease by 64.17, which ranged from 24 to 80. P-value obtained was 0.002, which is smaller than  $\alpha$  (0.05).

In the intervention group, the result showed the average score of anxiety among 40 respondents before treatment that was 77.40 (min: 61, max: 80). In another side, the measurements after intervention showed 35.78 for the average score of anxiety, ranged from 22 to 71. The reduction of the average of anxiety score before and after treatment in the control group was 4.07, whereas in the intervention group was 41.63. In addition, the bivariate analysis showed the effect of

education package of febrile convulsion to mother's anxiety in pediatric febrile convulsion by p-value 0.001.

## DISCUSSION

Based on the results of the study among control and intervention group showed most of the respondents aged between 25-45 years, approximately around 95% in both groups had basic education. The maturity of age and level of education is the potential for rational thinking and activity for looking sources or information related to the disease of his son to increase knowledge ([Notoatmodjo, 2012](#)).

Job status analysis in control and intervention groups showed most of the mother did not work by 68.3% and 80%, respectively. Although, most of the mothers did not work

which means all of the financial support in their household is from their husband, however, interestingly, in both groups, up to 80% of mothers used health insurance. Thus, it may help the mother for the cost of hospitalizing their child. The existence of health insurance will reduce the burden of mother to financing childcare in the hospital ([Kurniawan & Intiasari, 2012](#)).

In another side, the characteristic of a febrile frequency, in both groups, found most of the cases were the first febrile convulsion. Thus, it may be a cause of the low mean differences between the control group and intervention group, which around 9.23%. The frequency of convulsion in children is one of the risk factors for increasing a fear and a trauma for parents related to the condition of the children. It leads to increase parents' anxiety scores ([Rofiqoh, 2014](#)).

The result showed that the average mother's anxiety score on the second day of the childcare in the control group was 68.17 and in the intervention group was 77.40. The score indicates high anxiety. The results of this study were in accordance with the research ([Kolahi & Tahmooreszadeh, 2009](#)) at the Mofid Children's Hospital and Ju, McElmurry, Park, McCreary, M. Kim, and E.J. Kim ([Ju et al., 2011](#)) in Korea, with the results, showed the majority of mother experienced severe anxiety when their child has a febrile convulsion.

According to the previous study, the severe anxiety which experienced by mothers in children who had febrile convulsion, caused by the worries of the mother about the impact of febrile convulsion to the child such as brain damage, children injured, the inability of breathing, unconscious, and even died ([Walsh et al., 2008](#)). Other factors that cause severe anxiety among mother are the unclear causes of fever and ignorance of parents in assisting children with convulsion ([Kolahi & Tahmooreszadeh, 2009](#)).

This study also showed the average score of maternal anxiety in the control group on the third day of hospitalization, was quite high

(64.17), then the initial score was 68.17. There was only a slight decrease in the mean maternal anxiety score between the second and third treatments by 4.07. Moreover, study found that there was significant difference of mother's anxiety score on second and third-day child care febrile convulsion ( $p\text{-value} = 0.002$ ).

Interestingly, the level of anxiety in the control group on the second and third days of treatment showed no significant difference. On the third day of treatment, generally, the child has been handled by health personnel thus their condition has improved. Basically, it makes parents more relieved with the condition of his son, so the worry is slightly reduced. However, from the table above can be seen that the average of mother's anxiety score on the second day and third day of care tend to be still high. Even on the third day of treatment, there were 9 respondents (22%) who experienced an anxiety score increase and 10 respondents (24.4%) with an anxiety score similar to the second day. It can be seen that, even though the child is already in the health service, but it still makes the parents worried. Therefore, anxiety experienced by parents can occur even for a long time. By the child having a convulsion, parents will assume a harmful impact will be experienced by their child. This is in accordance with a national population-based study in the United Kingdom by Verity, Greenwood and Golding who argued that parents in children with febrile convulsion may experience months of anxiety and 25% of parents think their children experience behavioral disorders ([Ju et al., 2011](#)).

In the intervention group, the average mother's anxiety score on the third day of childcare was sufficient to decrease after receiving febrile convulsion education. The average score decreased by 41.63. On the third day of treatment, it shows all respondents (100%) have decreased anxiety score. P value obtained 0.001, which means there is a significant difference between mother's anxiety score before and after education about febrile convulsion. Similarly, there was a mean difference for the anxiety score between the control group and the intervention.



The mean difference of mother's anxiety score before and after treatment in control group and intervention was 37.45. The bivariate analysis resulted in P-value 0.001. It is shown that there is significant influence between education packages of febrile convulsion to mother anxiety in children febrile convulsion treated at the hospital. The previous study stated that mother with pediatric febrile convulsion whose knowledge of febrile convulsion were less, most likely to experience severe anxiety (Rofiqoh, 2014). Maternal anxiety occurs because of the high maternal perception of uncertainty about the condition of children with febrile convulsion, such as uncertainty about the causes of fever and treatment, not knowing how to help children with convulsion, lack of access to information about febrile convulsion and fear of death, brain damage, mental retardation, behavioral disorders and fear of recurrent febrile convulsion in their child (Alligood, 2014; Ju et al., 2011).

Providing educational packages will improve knowledge. It is appropriate with the previous research (Peyman & Jangi, 2015) among 60 female students in high school, which confirmed that the provision of health education increases students' knowledge, attitudes and behavior of students about AIDS. Health education is all activities to provide and enhance the knowledge, attitude, practice, whether individuals, groups or communities in maintaining and improving their own health (World Health Organization, 2012). Likewise, the provision of educational packages of febrile convulsion will improve maternal knowledge.

The method of providing structured health education, using two-way communication and health education media such as flipcharts and booklets, and procedural demonstrations as well, will facilitate the acceptance of learning materials for mothers. The way in receiving health education easily is more likely to improve mother's knowledge. Good knowledge of a febrile convulsion will decrease the perception of a mother about uncertain child's condition, in another word, it

will improve good perception in the health condition of their child because basically, the prognosis of febrile convulsion is largely cured perfectly (Fuadi et al., 2016).

According to Mishel's Uncertainty in Illness's theory of nursing, knowledge affects a person's response to an event because knowledge affects a person's uncertainty. If knowledge is good, it will reduce the uncertainty condition of a person and decrease anxiety (Alligood, 2014). Naviati's study of parents' anxiety in children who were hypothalamic also showed that the provision of good information would decrease the anxiety of the parents when the child is hospitalized (Naviati, 2011).

## CONCLUSION

There is a significant influence of education package about febrile convulsion to mother's anxiety in pediatric febrile convulsion treated in the hospital. It is recommended for nurses to increase the parent's knowledge in children febrile convulsion by giving education about febrile convulsion, so it can decrease the parent's anxiety.

### Declaration of Conflicting Interest

None declared.

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### Author Contribution

All authors contributed equally in this study.

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