

## Health Education based on 10 Steps at Mother Knowledge Level in Handling Febrile Seizure on Toddler

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### Abstract

Febrile seizure rate on toddler was quite high and tended to increase every year. This was because as toddler experiencing febrile seizures they were not properly handled by the parents. Febrile seizure in toddler if not treated quickly can affect the increasing in seizure frequency and can cause death. The capability of mother in handling febrile seizure must be based on the right knowledge of febrile seizure. The purpose of this study was to determine the level of knowledge of the mother before and after health education based on 10 steps in handling febrile seizure on toddler in Bandar Lampung Adventist Hospital. Experimental research method with one group pretest-posttest designed with random sampling technique approach involving 80 mothers with 0 to 5 year old who had fever being hospitalized. The researchers prepared 10 images of steps in handling febrile seizures randomly and asked the respondents to arrange the pictures according to their knowledge. The results were observed to determine their knowledge rearranging as pretest data. Afterward, health education was given about 10 correct steps. Thereafter, reobserved was made and the knowledge in arranging 10 images was obtained as post test data. The knowledge score before health education was 20.75% and after was 83.75%. While the analytical test used paired t test. The results showed a significant relationship between knowledge before and after health education.  $p \text{ value} = 0.00 < 0.05$ . The results showed that the value of  $t_{\text{count}} (14.26) > t_{\text{table}} (2.26)$ . Increased knowledge in mothers reduced the risk of recurrence of febrile seizures in toddler and the nurse who had not taught these steps needed to run regularly to the mothers whose child was being hospitalized.

**Keywords:** Febrile seizure, knowledge, ten steps.

## Introduction

A febrile seizure is a seizure that occurs due to an extracranium process in the absence of a neurologic defect and is usually experienced by children. This is due to the rise in body temperature or rectal temperature exceeds 38° C (Sodikin, 2012). There are two types of seizures, they are simple febrile seizures and complex febrile seizures. A simple febrile seizure lasts less than 15 minutes and does not recur within 24 hours. While prolonged complex febrile seizures, relapse more than once in 24 hours and are local (Bernstein, 2016).

Early childhood fever will look strange for a few moments, the eyes (will start) bulging or sometimes flickering and spinning, both hands and both feet stiffen, sometimes followed by convulsions, when the child's seizures unconsciously not respond when called and children will also experience breathing disorders and finally the child will regain consciousness. Generally febrile seizures will stop by itself in less than 5 minutes and does not reoccur in 24 hours (Sujono & Suharso, 2010). Febrile seizures are the most common neurologic abnormalities in children, 1 in 25 children will experience one febrile seizure. This is because children under 5 years of age are very vulnerable to various diseases caused by the non fully developed immune system (Harjaningrum, 2011).

According to the consensus statement on Febrile Seizures, febrile seizures are occurring between the ages of 6 months to 5 years, related to fever but no evidence of intracranial infection or certain circumstances. The high degree of fever (that is) considered sufficient for the diagnosis of febrile seizures is 38° C or more but the actual temperature at the time of seizure is often unknown. Febrile seizures occur in 2-4% of children between 6 months and 5 years of age. A child who had experienced a seizure without a fever, then but the febrile seizure reoccurs, is not included as a febrile seizure. Seizures with fever in infants younger than 1 month are not included as a febrile seizure (Soetomenggolo, 2010).

The cause of febrile seizures until now has not been known with certainty. Febrile seizures do not always arise at elevated temperatures, sometimes a medium fever

can cause seizures (Taslim, 2013). The main trigger factor for febrile seizures is fever itself. A fever that is able to cause a febrile seizure, can be caused of anything. For example upper respiratory tract infections, gastroenteritis, urinary tract infections, acute otitis media, and could also be febrile after immunization (Fauzyah, 2012).

Based on the phenomenon in Indonesia, febrile seizures often occurs when the fever is not handled properly by parents, such as not immediately giving a compress to the child when the seizure occurs and even brought their child to the shamans, which actually causes a delay to the health professionals in dealing with the febrile seizures. The mother's behavior at the time of the seizure is to put in a spoon into the mouth of the child, give the child some coffee and sugar into the child's mouth, spray the child's body seizures, smearing some shrimp paste and onion into the child's body, and putting the talisman near the child's body. Such behaviors based on the data from Indonesian Pediatrician Organization account for 35% of cases of febrile seizures treated and may be greater in unrecorded cases. WHO estimates that in 2005 there were more than 21.65 million people with febrile seizures and more than 216 thousand of them died. Also in Kuwait from 400 1-month-3-year-old children with a history of seizures, about 77% of them have experienced febrile seizure (IDAI, 2013). The incidence of febrile seizures is estimated to reach 4-5% of the population in the United States, South America, and Western Europe. However in Asia the incidence of higher seizures such as in Japan is reported between 6-9% of febrile seizures, in India there are 5-10%, 14% in Guam, 0.35% in Hong Kong and 0.5-1.5% in China (Lusia, 2015).

In Indonesia reported 3-4% of children aged 6 months - 5 years experienced febrile seizures in 2012-2013. Febrile seizures are strongly related with age, almost no cases has ever been found under the age of 6 months and after 6 years (Wibisono, 2015). Based on survey data obtained from Bandar Lampung Health Office, 80% of cases of simple fever seizures, and 20% are complex febrile seizures, about 8% lasts longer (more than 15 minutes), 16% repeated within 24 hours. While the survey data taken from the General

Hospital Abdul Moeloek Bandar Lampung in 2014, (it is) known 262 children who have febrile seizures and in 2015, 127 children who have experienced febrile seizures. Febrile seizures are among the 10 biggest diseases in Abdul Moeloek General Hospital Bandar Lampung.

Pharmacologic treatment can be done by giving diazepam injection 0.3 mg/kgBW or diazepam rectal, if BB less than 10 kg dose given is 5 mg, and BB more than 10 kg dose given 10 mg. Non-pharmacological treatment that can be done is to tilt the head or position the child tilted, loosen tight children's clothing, especially around the neck, do not put something into the mouth, measure body temperature and give oxygen (Ngastiyah, 2012).

Quivedo (2017) and Safitri (2016) said that 10 handling steps can be done in the order and have their respective rationale: 1) Do not panic/stay calm. Panic will not make things easier, even because of parent's unhappiness and panic, the suffering of a child who has a fever and a seizure can get worse. 2) Tilt the child to prevent the tongue from getting bitten and covering the airway. Tilting the child's position when a seizure occurs is more important so that the child does not swallow or choke on fluids if vomiting is at risk of disturbing the respiratory system. 3) Insert rectal medication into the child's rectum. Intermittent diazepam per intermittent (onset) when fever onset may be an option in children with high risk of recurrence of severe febrile seizures. 4) Do not restrain movement when the child has a seizure. Do not try to restrain the child's movement or stop the seizure by force, because it can cause injury. When the child has a fever; blankets and thick clothes will cause the evaporation to be blocked and increase body temperature. 5) Do not put anything into the child's mouth. Inserting spoon, wood, parent fingers, or other objects into the mouth, or giving a drink while the child is having a seizure, risks causing airway obstruction if the wound. 6) Exclude any sharps around the child clean the environment around the child's bed of hard and sharp objects so that the risk of injury due to hard or sharp objects when seizures can be avoided. 7) Loosen children's clothing even around the neck. Blankets and thick

clothes will cause evaporation to be blocked and increase body temperature. 8) Measure the child's body temperature. measuring the child's body temperature is absolutely done to determine a child has a fever or not. 9) Provide warm compresses on the child's forehead. How to lower the temperature more safely is to use ordinary water that is compressed on the armpit, thigh and forehead folds. The use of warm water compresses is useful to lower the temperature on the surface of the body, it happens because the body heat will be used to evaporate compressed water. This will slow down the body temperature, rapidly draining the temperature should be avoided and not recommended. 10) Give a fever medicine after the child is aware, If a child has a high fever try to lower the child's body temperature by compressing the forehead and body of the child with warm water, then give a febrifuge after the child conscious. Take to a doctor or hospital if the seizure lasts 5 minutes or more, the body temperature is more than 40° C, the seizure does not stop with rectal diazepam, focal seizures, after unconscious or paralyzed child seizures. Mother's capability in handling toddler fever must be based on the right knowledge of febrile seizures.

The purpose of this research is to know the level of knowledge of mother before and after health education about 10 steps of handling febrile seizures in children at Bandar Lampung Adventist Hospital.

## **Research Method**

This research method was experimental method with pretest onegroup approach and posttest design. Independent variable in this research was mother knowledge about handling febrile seizure before health education, whereas dependent variable in this research was mother knowledge about handling of febrile seizures after health education. The population of this study were mothers with children who had fever being hospitalized at Advent Bandar Lampung hospital. Samples in this study were 80 mothers with children aged 0 to 5 years who had a fever and being hospitalized. The sample was selected using random sampling

technique. This withdrawal used a lottery technique which was considered a simple way by using the coin method. The measuring tool used was the image media consisting of 10 steps handling seizures in children and the instrument used the observation sheet Score assessment if the answer statement is true then the value is 1, while the answer statement is wrong then the value is 0 (Hidayat, 2012). Assessment for knowledge was done by check list, by comparing the highest score score multiplied by 100% then the results in the form of percentage interpreted in quantitative data.

Preparation procedures prepared by researchers were 10 pictures of fever seizure handling measures. Researchers asked respondents to compose 10 pictures of febrile seizure measures according to the knowledge of each respondent. Researchers observed (check list) level of knowledge of respondents in the preparation of 10 images of fever seizure handling measures to be used as pretest data. Researchers provided health

education or interventions on the 10 correct steps in the treatment of febrile seizures in children. Researchers observed the level of knowledge of respondents to compose 10 images of fever seizure measured in children after the intervention was given used as posttest data. Significant difference test between knowledge of mother before and after health education about 10 steps handling febrile seizures in children obtained by testing hypotheses with paired t-test. In the two-party testing criteria, if  $t < t_{table}$  then  $H_0$  accepted and the price of  $t_{count}$  the absolute value, if  $t_{hitung} > t_{table}$  then  $H_a$  accepted. So it was not seen (+) or (-), where sought from the distribution table "t". can be obtained by establishing a significant degree and degrees of freedom of dk. In the study use values of 0.05 and  $dk = n-1$  (Hidayat, 2012).

**Research Results**

In table 1, it was found that 80 respondents

**Table 1 Percentage of Age, Education and Respondent Employment Status (n = 80)**

	Status	Amount	Percentage
Age	25-29	26	32.50%
	30-34	29	36.25%
	35-39	25	31.25%
Education	Secondary School	4	5.00%
	High School	54	67.50%
	Diploma 3	22	27.50%
Occupation	House Wife	39	48.75%
	Government Employee	17	21.25%
	Entrepreneur	24	30.00%

were junior high school, high school, and D3 education, from 25-39 years of age, and three types of jobs: housewives, teachers/civil servants, and entrepreneurs. Based on table 1 highest age of respondents aged 30-39 years as many as 54 people, the lowest age aged 25-29 years as many as 26 people, education with the highest number of respondents high school as many as 54 people, education with the lowest number of respondents SMP as much 4 people, households as many as 39

people, the work of respondents with the lowest number was 17 civil servants.

Table 2 showed maternal knowledge score about 10 steps of fever seizure in children before and after health education.

In table 3 and 4, there was a significant difference between the knowledge of the mother before and after health counseling about 10 steps of handling febrile seizures in children by performing t-paired test.  $p \text{ value} = 0.00 < 0.05$ , there was a significant difference

**Table 2 Maternal Knowledge Score about 10 Steps of Fever Seizure in Children Before and After Health Education**

No	10 Steps to Handle Febrile Seizures in Children	Pre Test Value	Percentage	Post Test Value	Percentage
1	Do not panic / stay calm	54	67.50%	80	100.00%
2	Tilt the child to prevent the tongue from getting bitten and covering the airway	13	16.25%	79	98.75%
3	Put the rectal drug into the child's rectum	7	8.75%	71	88.75%
4	Do not rein in movement when the child has a seizure	10	12.50%	71	88.75%
5	Do not put anything into the child's mouth when the child is seizure	13	16.25%	56	70.00%
6	Remove any sharp objects around the child	10	12.50%	59	73.75%
7	Loosen children's clothing even around the neck	5	6.25%	55	68.75%
8	The child's body temperature	17	21.25%	68	85.00%
9	Give a warm compress on the child's forehead	11	13.75%	60	75.00%
10	Give hot medication after the child is conscious	23	28.75%	74	92.50%
	<b>Average</b>	<b>16.30</b>	<b>20.75%</b>	<b>67.30</b>	<b>83.75%</b>

**Table 3 Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	After	83.7000	10	11.55710	3.65468
	Before	19.9000	10	17.71032	5.60050

**Table 4 Paired Samples Test**

		Paired Differences							
		95% Confidence Interval of the Difference							
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	T	df	Sig. (2-tailed)
Pair 1	After – Before	6.38000	14.14842	4.47412	53.67883	73.92117	14.260	9	.000

between the level of knowledge of the mother about the handling of febrile seizures. Based on the results of data analysis showed that the value of t arithmetic (14.26) > t tabel (2.26).

**Discussion**

Analysis of the above data and table 2 showed that the respondents' knowledge about the 10 steps of handling febrile seizures

in children before health education at Advent Bandar Lampung Hospital at a very low level of knowledge in accordance with the interpretation in quantitative data, and the average value of the percentage obtained was 20.75%. Showed respondents who had a very low level of knowledge. Very low level of knowledge due to the average mother who had no experience to deal with febrile seizures. This was influenced by the lack of experience and had never received education about measures to manage febrile seizures in children (Sodikin, 2012 & Notoatmodjo, 2010).

The results of research conducted by Erwin (2010) in Wonorengo Village Pesing Village Purwosari District showed that 10 out of 50 mothers know less about knowledge of febrile seizures and attitude to overcome febrile seizures in children. Results of research conducted by Parmar et al. (2012) reported that 77.9% of parents of patients whose children had febrile seizures had no knowledge of seizures and 90% thought their children would die. The incidence of febrile seizures in Indonesia reached 2-4% from 2005 to 2006 not handled properly (Iksan, 2011).

Febrile seizures were often experienced by children under five who had a congenital nature easily got health problems and usually occurs at the beginning of a fever, the child looked strange for a while, then stiff, convulsed, and rolled his eyes. The child responded for some time the breathing disrupted, and the skin looked darker than usual. After the seizure the child returned to normal. When a febrile seizure occurred, it expected to calm down. However, when the attack continued for more than 5 minutes, found medical help immediately. Families, especially mothers who had lack of knowledge mostly showed panic or assume his son possessed (Sujuno & Suharsono, 2010).

The value of mother's knowledge about 10 steps of handling febrile seizures in children after health education was given in table 2. It Showed the percentage result was 83.75%. These results were classified at a very high level of knowledge with knowledge interpretation.

Factors that influence mother's behavior in handling fever include knowledge, mother's

ability in handling febrile seizures should be based on correct knowledge about febrile seizures. Such knowledge required learning through formal and non-formal education, through experience in interacting with children who were experiencing seizures as well as in-depth experiences of others. Personal experience could be used as an effort to improve by repeating the experience gained in solving the same problem as the handling of children febrile seizures. What was not important in facing seizures and handling a child with febrile seizures was the maturity or maturity of the mother so that the mother could behave positively (Taslim, 2013).

The above data results were supported by research conducted by Arip (2014) which stated that prior knowledge of febrile seizures was  $20.60 \pm 5.94$ . After counseling, the level of knowledge about febrile seizures increased significantly was  $39.90 \pm 2.69$  ( $p < 0.05$ ). Such knowledge included the etiology, definitions, risk factors, prevention, management and complications of febrile seizures. Individual counseling and leaflets could be used as a tool to increase parental knowledge about febrile seizures.

The result showed significant difference between the knowledge of the mother before and after health counseling about 10 steps of handling febrile seizures in children by performing t-paired test.  $p$  value =  $0.00 < 0.05$ , there was a significant difference between the level of knowledge of the mother about the handling of febrile seizures. Based on the results of data analysis showed that the value of  $t$  arithmetic ( $14.26$ )  $>$   $t$  tabel ( $2.26$ ). Handling education of febrile seizures was necessary when the child was in a high fever condition, where there was a high risk in children to experience seizures. So that education should be given to the respondent, in order to have the knowledge to handle seizures in the right way. Proper handling could save the condition of a child who had a seizure. So that no trauma occurred in children due to wrong handling in the condition after the seizure. One way that could be done to improve the knowledge of respondents was to provide counseling 10 steps on handling seizures in children (Quivedo, 2017).

Seizures were a frightening event for every

parents. At the time of the seizure, mostly parents would assumed that their child was about to die. Such anxiety should be reduced in some way; 1) Convince parents that febrile seizures generally had a good prognosis. 2) Tells you how to handle seizures. 3) Provide information about possible seizures again. 4) Provision of prophylactic drugs to prevent recurrence of seizures is effective, but it must be remembered the existence of drug side effects (IDAI, 2016). It's important in Increasing knowledge of febrile seizures in the mother will reduce the risk of recurrence of febrile seizures in children.

### **Conclusion**

The results of this study indicated the importance for the mother of the patient as a source of knowledge and self-evaluation that can motivated the mother in providing handling technic of febrile seizures in children and information about the handling of febrile seizures. By providing knowledge about 10 steps of handling febrile seizures to mothers, then found an increase in mother's knowledge in handling febrile seizures in in toddler. To improve mother's knowledge especially about febrile seizures and able to do relief action when children experience febrile seizures that could reduce the risk of recurrence. While for the field of nursing and health personnel as input to further improve health education services, especially in handling febrile seizures in children and the nurses needed to run the 10-step program regularly to the mothers whose child was being hospitalized.

Researchers could distribute their informations to patients who had children with febrile seizures, so that they knew how to handle children with seizures and can prevent the occurrence of febrile seizures. Research field as a material that could be developed in subsequent research using other methods.

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**Ernawati Siagian:** Health Education Based on 10 Steps at Mother Knowledge Level

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