

Handling Fever In Toddlers At Homes In The Village Of Manarap Lama

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Abstract

Background: The prevalence of fever at the age of 0-4 years was 33.4%, cough was 28.7% and diarrhea was 11.4%. Central Agency Statistics in Indonesia (2012), children with fever as many as 90,245 children, in 2013 as many as 112,511 children. From field observations and interviews with some communities, the main problem was that the community had not been able to calculate drug doses for children under five and did not understand how to handle fever in children under five. The purpose is increase the level of knowledge and skill about fever handling of parents who have children under five in Manarap Village. **Methods:** Pre-test and Post-test, Educational counseling, training to measure temperature with a thermometer, training to calculate the dose of fever medicine for children under five, training in handling fever in children under five. The number of respondents are 14 people, total implementation of activities is 1 month, but educational activities and interviews are carried out for 1 day but at different times, then a follow-up plan is made after the activity. **Results:** Increased knowledge can be seen from the post-test value which is higher than the pre-test value, participants can measure body temperature with a thermometer correctly, participants can calculate the dose of paracetamol fever medicine for children under five, participants understand the handling of fever in children under five. **Conclusion:** Community service activities to treat fever in children under five through education have increased the knowledge and understanding of participants from the results of the pretest and post-test with a significant increase in scores. The hands-on practice of using a thermometer, compressing and calculating the right dose helped participants understand.

Keywords: children under five, handling fever;

1. BACKGROUND

The prevalence of fever at the age of 0-4 years was 33.4%, cough was 28.7% and diarrhea was 11.4%. Central Agency Statistics in Indonesia (2012), children with fever as many as 90,245 children, in 2013 as many as 112,511 children (Doloksaribu & Siburian, 2016). Interpersonal Collaboration at Sari Mulia University unites various scientific fields across universities and is implemented in community service activities. Lecturers guide students from all study programs to analyze problems and determine service topics based on problem priorities.

Through field observation activities in the Manarap Lama Village area. Analysis of the problems found that the main priority is calculating the dose of fever medicine in children under five and handling fever in children under five. Previous studies have shown that there are several types of parental/mother knowledge about fever in children. Research conducted by Barbi et al (2017), showed that parental knowledge includes knowledge of fever medicine, drug side effects, and drug dosage forms that work well for children with fever. The results of the study found that 80.7% of parents already knew the right drug to reduce fever, namely antipyretics.

Handling fever in children is very dependent on the role of parents, especially mothers. Mothers are usually the closest people to their children with a gentle attitude. Mothers who understand fever and have good behavior in child care can provide the best treatment for their children (Kristianingsih, 2019). Fever in children under five

often makes parents, especially mothers, stress, anxiety, panic and fear and take them to the doctor. The mother's panic makes the steps to take inappropriate actions, such as the mother compressing with cold water when the child has a fever so that the child is increasingly uncomfortable (Kurniati, 2016).

The problem of fever in children under five in Manarap Lama Village, Banjar Regency is in the form of ignorance of the mother/parents in measuring the right fever temperature, so that sometimes mothers/parents are confused whether the child really has a fever or not. In addition, there is a lack of understanding in giving the right dose of medicine for children under five who have a fever, so the dose given is not right. Knowledge is the most important thing for the formation of actions and behavior in humans. Handling fever in children is very dependent on the role of parents.

Parents who have knowledge about fever and have good behavior in providing care can provide the best fever management for their children. Inadequate knowledge makes the handling of fever less precise so that the mother's behavior tends to be excessive. Many factors can affect knowledge including: education level, occupation, age, experience, information and socioeconomic/income (Notoatmodjo, 2014).

Therefore, the management of fever in children under five really needs to be known and understood by parents. Signs and symptoms that appear in children are very important for parents to know in determining what steps parents should take next. An initial assessment of fever will help determine the management and treatment of fever in children under five.

2. LITERATURE

Fever in Children

Fever is the body's natural process to fight infections that enter the body, when the temperature rises above 37.5°C on examination using a thermometer in the armpit area, and an increase in temperature exceeds 38.0°C on examination of the mouth and anus. The cause of fever in children can be due to infection, environmental temperature or after getting immunizations. Signs and symptoms of fever in children are fussy, reddish skin, warm skin, rapid breathing, chills, dehydration, and no appetite (IDAI, 2015).

What parents can do when their toddler has a fever at home is to provide plenty of water and continue to give breast milk, use clothes that are not thick, give compresses, and give medication to reduce fever according to the advice of doctors or other health workers (Lubis, 2016). The danger sign when a toddler has a fever is characterized by body temperature reaching or more than 40.0°C, the child has a high fever for more than 3 days, the child has a high fever with seizures, the child is difficult to wake up during sleep, the child is very fussy, nausea and vomiting, the child does not want to eat, and experience nosebleeds, bleeding gums (Marcdante et al, 2021).

Fever in children under five can cause complications, namely dehydration and febrile seizures. First aid when a child has a febrile seizure is to move the child to a flat place, position the child to sleep on his side, loosen his clothes, especially the neck, do not force his body to move, keep the position safe, do not put any object in his mouth, say words that calm, observe the condition during the seizure, especially if during the seizure the child has difficulty breathing, or the face is pale/bluish, pay attention to how long the seizures last, and immediately take them to health services if there are signs of lack of oxygen/convulsions do not stop (Emergency Nurses Association, 2017).

Treatment of Fever Children at Home.

Body temperature measurement can be done rectal (anus), orally (mouth), axillary (armpit), and tympanic membrane (in the ear).

Table 1. Body temperature measurement can be done rectal (anus), orally (mouth), axillary (armpit), and tympanic membrane (in the ear)

Measurement Place	Normal Temperature Range
Rectal	36.6°C-38°C(97.9°F-100.4°F)
Ear	35.8°C-38°C(96,4°F-100.4°F)
Oral	35.5°C-37.5°C(95.9°F-99.5°F)
Axial	36.5°C-37.5°C(97.8°F-99.5°F)

Parents should know how to take care of toddlers when they have a fever at home, namely (Carlson, 2018):

- a. Wear light clothes: Wearing thick clothes and blankets can inhibit the process of releasing body heat
- b. Increase rest and reduce activity: Excessive activity and stress will increase the metabolic rate, thereby increasing heat production
- c. Eat what the child wants and drink a lot: Fever can make fluid lost from the body so that the child must drink a lot. While eating is needed to maintain the immune system and make body is not weak
- d. Compress and or wipe the body with warm water (Suntari C, 2019): The recommended compress is with warm water; Use of warm compresses on the forehead, neck, armpit folds and groin folds for 10-15 minutes with a water temperature of 32-35°C; Warm compresses placed on the folds of the body can help the process of evaporation or evaporation of body heat; The use of compresses is only effective in the first 15-30 minutes; Compresses are not recommended as the main therapy to reduce fever because they only reduce heat through evaporation from the body surface, but have no effect on the thermoregulatory center; Wipe the body with warm water (Putri,2020); The technique is modified by combining the block technique (done in places with large blood vessels) and wiping the whole body; Faster effectiveness than warm compresses because the technique of wiping the body will accelerate the vasodilation (widening) of peripheral blood vessels throughout the body; The action begins with compressing at five points (neck, 2 armpits, and 2 groin); Then proceed to wipe the abdomen and chest, or the entire body with warm water using a cloth or small towel; Wiping is done by giving a compress of lukewarm water (32-35 oC) for 10-15 minutes;
- e. Keep the room temperature cool (Canadian, 2017): Use a fan or air conditioner, but do not point it directly at the child's body and head; The goal is that the room temperature is not humid which can trigger an increase in body temperature.
- f. Take fever-reducing drugs (IDAI, 2015): When should fever reducers be given to children?; < 38.3 C No need for febrifuge, extra fluids (drink a lot); 38.3 – 40 C, fussy child Give fever-reducing medication, warm compresses; > 40 C Give fever-reducing medication, warm compresses, call a doctor; Recommended fever-reducing drugs for children: Paracetamol and Ibuprofen;
- g. It is important to have a thermometer at home and know how to use it

Use of paracetamol in children with fever

Paracetamol has the Latin name Acetaminophen, it works by inhibiting the synthesis of prostaglandins, especially in the Central Nervous System (Dugloz, 2016). Termagon syrup and drops, Paraco syrup, Cupanol syrup, Itramol syrup, Novagesic syrup, Grafadon syrup, Alphamol drops and Dumin syrup (ISO, 2019). Paracetamol is also available in combination with other active substances such as: Bodrexin syrup (flu medicine), Alpara syrup (cough flu medicine), Unibebi Cough syrup (cough flu medicine), Paratusin syrup (cough flu medicine), Fludane syrup (cough flu medicine), Hufagrip syrup (cough flu medicine), Demacolin syrup (flu medicine), Termorex plus syrup (flu medicine), Flutop-C syrup (cough flu medicine), OBH combi plus syrup (cough flu medicine), Decolsin syrup (cough flu medicine)) and Siladex syrup (cough flu medicine) (ISO, 2019).

The pathophysiology of fever according to Dlugosz (2016), fever symptoms are produced by the action of cytokines that cause an increase in the temperature reference point in the temperature-regulating center in the hypothalamus. Cytokines as endogenous (heat-producing) pyrogens can cause fever by producing prostaglandins which then increase the hypothalamic thermoregulatory benchmark point. With an increase in the benchmark point, the hypothalamus sends a signal to increase body temperature.

According to the Directorate General of Pharmaceutical Development and Medical Devices (2007), the choice of drugs to treat fever in self-medication are drugs from the analgesic-antipyretic or non-steroidal anti-inflammatory (NSAID) class, such as Paracetamol and Acetosal. Both types of drugs in addition to having a fever-lowering effect, also have a pain-relieving effect. In addition to these two drugs, other NSAIDs can also be used, namely Ibuprofen. According to the Directorate General of Pharmaceutical Development and Medical Devices (2007), the dose of fever-reducing drugs for adults is generally 3-4 times a day. The time limit for using fever-reducing drugs for self-medication is not more than 2 days.

Pharmacological and Non-Pharmacological Therapy of Fever according to Dlugosz (2016), the non-pharmacological therapies for fever management are as follows: Providing adequate fluid intake to prevent dehydration. Fluid intake in children with fever should be increased by at least 30-60 ml (1-2 ounces) of fluids such as health drinks, fruit juices, water per hour. Fluid intake in a febrile adult should be increased by at least 60-120 ml of fluid per hour; Use light clothing, do not use blankets and maintain room temperature at 25.6 °C; Give a warm compress to the patient. Giving warm compresses is effective especially after drug administration. Do not apply cold compresses as this will cause chills and increase the core temperature again.

Fever Pharmacology Therapy drugs used to treat fever (antipyretics) are Paracetamol (Acetaminophen) and ibuprofen. Acetaminophen and ibuprofen are the most commonly used over-the-counter antipyretic drugs. Both drugs have the same effect and safety at the recommended doses. Other NSAIDs such as aspirin can also be used in adults. The maximal drop in body temperature is usually achieved 2 hours after the usual dose of an antipyretic drug.

Although many experience a decrease in body temperature after administration of each (individual) dose of antipyretic drugs, body temperature takes 1 day for body temperature to decrease. The combination of acetaminophen and ibuprofen is not recommended because of the risk of overdose and increased side effects (Dlugosz, 2016).

In giving paracetamol orally, the drug must undergo various processes as follows, among others (Surya, 2018):

- a. Absorption: Paracetamol given orally is absorbed rapidly and reaches peak serum levels within 30 - 120 minutes. The presence of food in the stomach will slightly slow down the absorption of slow-release paracetamol preparations.
- b. Distribution: Paracetamol is distributed rapidly in almost all body tissues. Approximately 25% of paracetamol in the blood is bound to plasma proteins.
- c. Metabolism: Paracetamol binds to sulfate and glucuronide occurs in the liver. Its main metabolism includes inactive sulfate compounds and glucuronide conjugates which are excreted by the kidneys. When patients take paracetamol at normal doses, these toxic metabolites of NAPQI are immediately detoxified into non-toxic conjugates and excreted through the kidneys. It should be noted that a small proportion of metabolized cytochrome P450 (CYP) or N-acetyl-p-benzo-quinone-imine (NAPQI) reacts with sulfhydryl.
- d. Elimination: Paracetamol is excreted through the urine as its metabolites, namely glucuronoid acetaminophen, acetaminophen sulfate, mercaptate and unchanged form.

The right dose of Paracetamol in children is based on 3 things: Child's age, weight and strength of Paracetamol. The recommended dose for children based on body weight is 10 mg – 15 mg/kg BW given every 4 hours-6 hours.

Table 2. The WHO pediatric dosage recommendations

Age	Dosage	Each Time Taking Interval
12-16 years	480 mg – 750 mg	every 4 hours-6 hours
10-12 years	480 mg – 500 mg	
8-10 years	360 mg – 375 mg	
6–8 years	240 mg – 250 mg	
4–6 years	to 240 mg	
2-4 years	to 180 mg	
6 months -2 years	up to 120 mg	
3–6 months	50 – 70 mg	
2–3 months	40 – 60 mg	
< 2 months	not recommended	

Be aware of the side effects of Paracetamol taken by mouth. The side effects of paracetamol are individual as follows: Liver Damage (Hepatotoxic), Skin Reactions, Steven - Johnson Syndrome, Toxic Epidermal Necrosis, Nausea, Vomiting, Stomach Pain, Loss of appetite, Dark urine and yellow skin (Elys, 2017). Sulistinadewi, Nurhaeni, & Gayatri (2012) also found that health education can improve mother's attitude. Providing information is a factor that can influence parents in determining attitudes, so they are able to make the right decisions in dealing with fever in children.

Inadequate knowledge makes the handling of fever less precise so that the mother's behavior tends to be excessive (Notoatmodjo, 2014). The role of parents is very influential on the handling of fever in children. Parents who have different knowledge can lead to different handling of fever in children. Many parents think that if the fever is not treated in children, it will get higher. Because of this misconception, many parents treat low-grade fevers that don't really need to be treated. Parents have

various concerns when their child has a fever (Kelly et al, 2016).

3. METHODS

Starting with the observation of digging problems with the interview method to parents who have children under five in the old Manarap Village area, then an evaluation and determination of the priority of the problem is carried out. Preparation for community service by preparing service materials in education for handling fever in children under five in the Manarap Lama Village area is divided into three materials, namely the concept of handling fever, treating fever in children under five and using paracetamol at the right dose to treat fever in children under five. The dedication of 14 people is due to the large number of community gathering activities and adjusting the capacity of the activity space.

A letter of assignment for community service activities from LPPM Sari Mulia University and a permit for community service activities to Mr. Lurah Manarap Lama from LPPM Sari Mulia University. Students make standing banners with material on handling fever in toddlers at home. Students also prepare thermometers that will be distributed to participants and used during the training using a shared thermometer.

Prepared pre-test and post-test questions to measure the success of the education provided. When interview and health education is carried out, health protocols are also implemented properly. A questionnaire to measure the knowledge created by the team of presenters in accordance with the context of the material presented.

4. RESULTS

Prior to education, participants took a pretest, by answering questions by choosing from the answer choices provided, as many as 11 questions were done for 15 minutes. The pretest score is very low, namely 18 to 45. This shows that the level of knowledge of the community in RT 7 and RT 8, Kelurahan Manarap Lama is still low. After completing the education and training on handling fever for children under five at the house in the Manarap Lama Village area, the participants did a post-test. The results of the pre-test and post-test evaluations of these community service participants are presented in the following table:

Table 3. Pre-test and post-test table

Difference	Number Rank	Name	Pre-test Value	Post-test Value	Score
II	1	Nurul Husna	36	74	38
	2	Risdawati	27	64	37
III	3	Nawingsih	36	68	32
	4	Fatimah	45	85	40
I	5	Siti Aminah	27	62	35
	6	Dewi Kartini	36	72	36
	7	Fitriani	27	62	35
	8	Mary	18	50	32
	9	Fatimatuzahra	18	51	33
	10	Misri	36	62	34
	11	Renawati	18	52	34
	12	Mispawati	27	60	33
	13	Maimunah	27	62	35

Difference	Number Rank	Name	Pre-test Value	Post-test Value	Score
	14	Amah	18	51	33

The results of the post-test were between 50-85 scores, with an increase in the value of 32-40, the first rank with the difference in scores before and after the test is 40, the second rank difference in scores before and after the test is 38 and the second rank is the difference in scores before and after the test is 37. Participants can measure body temperature in the armpit with a digital thermometer that is distributed during the training. Participants can compress and wipe toddlers when they have a fever properly. Participants can give a dose of fever-reducing medication to toddlers correctly.

5. DISCUSSIONS

The priority problems for the people of Manarap Lama Village are the handling of fever in children under five at home and parents do not know the correct dose of medicine for children under five. This is in line with research conducted by Kurniawati, 2016, that the mother's panic makes the steps to take inappropriate actions, such as mothers compressing with cold water when the child has a fever so that the child is increasingly uncomfortable. The results of the pre-test are still very low, namely the value of 18 to 45, this shows that the knowledge of the people of the Manarap Lama Village area is still low in handling fever in children under five correctly.

With education and training on handling fever in children under five, the post-test scores increased significantly by 32 to 40 so that the post-test scores were 50 to 85. This is in line with the research conducted by Kurnianingsih with the results of the analysis showing that there is a correlation between levels of Mother's knowledge about fever with fever treatment with a P-value of 0.000 (<0.05) with an odds ratio of 25.375 (6,357-101.287). With the success of increasing the knowledge of participants, namely mothers of children under five in Manarap Lama Village, in the first, second and third ranks, they received awards from the community service team.

In addition to education, this community service team also provides training to use a thermometer correctly so that service participants can use it correctly and can measure the body temperature of their toddlers when their body temperature rises and can take appropriate action to handle fever in their children. Likewise, education and training were given by applying the correct compression and wiping of children under five and calculating the dose of fever-reducing medication correctly.

The following is a documentation of community service activities for handling fever in children under five at the home of the Manarap Lama Village area: Problem Observation Interview Image Picture of Pre-test Implementation of Community Service Participants Picture of the Opening of Community Service activities attended by the head of the Kertak Hanyar Health Center and the event was officially opened by the bpl Lurah Manarap Lama Picture of the handing over of the Standing Banner for Handling Fever in Children by the head of the community service team to the village head of Manarap Lama Pictures of the education provided by these 3 lecturers of the community service team Image Compressing and wiping training for feverish toddler Picture of Training Body temperature measurement with a digital thermometer Picture of Participants doing Post-test Picture of awarding prizes for first, second and third place participants Photo of this community service team (lecturers and students) with Mr. Lurah Manarap Lama and the head of RT 18 Manarap Lama.



Picture 1. Problem Observation Interview



Picture 2. Pre-test Implementation of Community Service Participants



Picture 3. Opening of Community Service activities attended by the head of the Kertak Hanyar Health Center and the event was officially opened by the bpl Lurah Manarap Lama



Picture 4. The handing over of the Standing Banner for Handling Fever in Children by the head of the community service team to the village head of Manarap Lama



Picture 5. The education provided by these 3 lecturers of the community service team



Picture 6. Compressing and wiping training for feverish toddler



Picture 7. Training Body temperature measurement with a digital thermometer



Picture 8. Awarding prizes for first, second and third place participants



Picture 9. This community service team (lecturers and students) with Mr. Lurah Manarap Lama and the head of RT 18 Manarap

6. CONCLUSION AND SUGGESTION

Education has increased the knowledge and understanding of participants from the results of the pre-test and post-test with a significant increase in scores. Training on the use of thermometers, compressing and wiping children under five with fever and calculating the correct dose for children helped the participants' understanding. Parents

can manage fever at home, give medication according to the dose and take the child to health services if the fever does not subside for 2 days.

The education and training carried out by the Sari Mulia University service team in the Manarap Lama Village, the knowledge gained by the participants can be conveyed to the people of the Manarap Lama Village area so that all the people of the Manarap Lama area understand and can apply it in their daily lives.

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