



## Compress Onions (*Allium Cepa*) As A Nonpharmacological Therapy in Febris Toddlers

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### ARTICLE INFO

#### Article history:

Received 11 January 2021  
Accepted 21 March 2021  
Published 25 June 2021

#### Keyword:

Febris  
Toddler  
Compress  
Onion.

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DOI: 10.30604/jika.v6i2.1097

### ABSTRACT

Cases of fever in toddlers are a health problem that continues to increase. WHO statistics show there are 18-34 million cases per year. One of the nonpharmacological treatments that can be done to lower body temperature in toddlers is to compress onions. This study aims to find out the effect of giving onion compresses as a decrease in body temperature in toddlers aged 1-5 years with febris in the Tanjung Sengkuang Health Center Work Area of Batam City in 2020. This research design uses experimental Quasi with a one group pre-test and post-test design approach. Sample withdrawal techniques use purposive sampling. The respondents in this study were 32 respondents. Data analysis techniques To test the hypothesis is the Paired Sample T-Test test. The results of the data analysis were obtained that after the therapy of The Onion Compress experienced a decrease in body temperature by (p-value < 0.05). Conclusion: onion compresses can be used as an alternative to reduce fever in toddlers. The authors suggest the need to increase the role of nurses in Puskesmas by involving families to utilize alternative therapies based on evidence from research results and evidence.

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### INTRODUCTION

Fever is an acute response to various diseases, the most common of which is infection (Fortunato 1996) which occurs when the body temperature rises above the normal range, when responding to certain diseases or invasions by pathogens (Wong et al. 2014). Fever is a physiological response characterized by an increase in body temperature above normal (De Bont et al. 2015) which is the most common cause in children with prevalence of events ranging from 15-25% for cases of primary care and emergencies (Sands et al. 2012) but, it has a low prevalence of primary care services which is estimated to <1% in serious infections for children. (Van den Bruel et al. 2007) This number can increase by up to 25% in emergencies (Nijman et al. 2013)

According to data on visits to pediatric health facilities in Brazil, about 19% to 30% of children are examined for fever. Research by Jalil, Jumah, & Al-Baghli in Kuwait shows that most children aged 3 months to 36 months experience an average of six fever attacks per year. The incidence and prevalence of fever incidence of each country is different. The

incidence of febrile seizures in the United States and Europe ranges from 2% - 5%. When compared to the United States and Europe, the incidence of fever in Asia, doubled. In Japan the incidence rate of fever is quite high, which is around 8.3% - 9%, even in Guam the incidence of fever reaches 14% (Nijman et al. 2013).

Febris is a sign that the body is fighting an infection or bacteria that makes it sick. Febris can be a sign that the child's immune system is functioning properly. Febris can also occur after the child gets immunized. Measurement of body temperature in various bodies has a limit of the value or degree of febris namely axilla / armpit >37.2 °C, oral / oral temperature >37.8 °C, rectal / temperature >38 °C, forehead temperature and temperature in the ear membrane above 38 °C. Temperature measurements in oral and rectal more indicate actual body temperature, but this is not recommended unless absolutely certain of safety, especially in children, World Health Organization (WHO, 2018) put the number of cases of febris in toddlers worldwide reached 18-34 million. Children are susceptible to fever, although the symptoms experienced are milder than adults. In almost all

endemic areas, the incidence of fever occurs in children aged 0-5 years. According to data on visits to pediatric health facilities in Brazil, about 19% to 30% of children are examined for fever. Toddlers who have a fever in Asia are about 10-15% associated with symptoms or signs of a disease. (Nijman et al. 2013)

World Health Organization (WHO) estimates the number of cases of fever worldwide reaches 16-33 million with 500-600 thousand deaths annually (Wardiah, 2016). According to data on visits to pediatric health facilities in Brazil, about 19% to 30% of children are examined for fever. Research by Jalil, Jumah, & Al-Baghli in Kuwait shows that most children aged 3 months to 36 months experience an average of six fever attacks per year. The incidence and prevalence of fever incidence of each country is different. The incidence of febrile seizures in the United States and Europe ranges from 2% - 5%. When compared to the United States and Europe, the incidence of fever in Asia, doubled. In Japan the incidence rate of fever is quite high, which is around 8.3% - 9%, even in Guam the incidence of fever reaches 14%.

Based on 2019 data, it turns out that the number of febrile fever sufferers in Batam city in 2019 was 591 people according to age (1-5 years) and Batam City health centers, namely: Tanjung Sengkuang (162 people), Tg. Uncang (89 people), Tiban Baru (57 people). Based on the results of data from the dinkes, the highest number of Febris sufferers is in the Health Center of Tanjung Sengkuang Batam City (Munawaroh, 2019).

Factors that include affecting the frequentness of children experiencing pain are tropical regions, where Indonesia is included in tropical climates, so many children suffer from tropical diseases, tropical areas are good for germs to multiply, one of the tropical diseases is influenza, pireksia, dengue fever, abdominal typhoid, chikungunya fever, morbili, diphtheria, pertussis, tetanus and diarrhea. Various diseases are usually increasingly prevalent in the transitional season. The occurrence of weather changes affect changes in children's health conditions. The condition of the child from healthy to sick resulting in the body temperature reacting to increase the temperature referred to as fever. Fever is defined as an increase in body temperature to  $>38.0$  °C. High fever is the cause of febrile seizures (Sofyan I, 2016). Febris has a distinctive feature compared to other fevers.

Negative impacts of febris that can harm children include dehydration, lack of oxygen, neurological damage, and febrile convulsions. Febris must be handled properly so that the occurrence of negative dampak becomes minimal (Arisandi & Yofita, 2012). The impact of Febris on children include dehydration (lack of body fluids), lack of oxygen and fever above  $42$  °C can cause neurological causes. Children under 5 years old (toddlers) especially 6 months to 3 years are at risk of febrile seizures. Febris is often accompanied by other symptoms such as headaches, decreased appetite (anorexia), weakness and muscle pain (Arisandi & Yofita, 2012).

The use of herbs and food crops as a source of medicine has become an ancient practice and is considered an important aspect of health (Pandey, Rastogi & Rawat 2013). *Allium Cepa* has been used traditionally because of its improved characteristics in the management of various diseases. (Kabra, A. 2010). *Allium cepa* is commonly known by many conventional or other alternative names such as Egyptian onions, regular onions, onions and many more. Onions are an important spice as well as commercial vegetables. (Khusro, A., Aarti, C., Preetamraj, J., and Panicker, S. 2013). But today onions as an alternative treatment are widely used in Asian countries, namely Pakistan and Indonesia. Among the majority use onions for the treatment

of various diseases. In countries with low-developed countries are often used as external and internal treatments to cure various diseases such as indigestion, skin infections, fever etc. (Silambarasan and Ayyamar, 2015; Sharma et al., 2014; Hayta et al., 2014; Jaradat et al., 2016) *Allium cepa/onion* It has been described as a potent antimicrobial agent to fight disease infections. Many bacteria, fungi, and viruses are found to be susceptible to different solvents *Allium cepa* extract sulfur compounds are shown to be the main active antimicrobial agents present in onions (Vazquez-Armenta et al. 2014)

Based on this background, researchers are interested in trying to see the effect of the use of onion compresses in lowering febris in toddlers?

## METHOD

This study is quasi experimental research that uses a one group pre-post test design approach. Sample withdrawal by purposive sampling technique to test hypotheses is done using the Paired Sample T-Test. The study sample amounted to 32 toddlers (aged  $\geq 1-5$  years) who experienced febris. Onion compresses are done on all limbs by giving elusan / massage on the axilla, back and chest. Compresses are carried out for 10 minutes with a fever temperature category of  $37.2$ °C and measured with a digital thermometer. This research was carried out in the working area of Tanjung Sengkuang Health Center Batam city in 2020.

### Tools and Materials

The tools and materials used in this study were grated onions, telon oil, 4 siung shallots, 1 ceper plate, 1 teaspoon, kitchen knife, thin clothing, digital thermometer, respondent data sheet, stopwatch, balpoin and observation sheet

### Processing

The onions that have been provided are thoroughly washed and stripping on the skin, then shredded and put on a ceper plate that has been provided then add a grated shallot with 2 teaspoons of telon oil, mix well and compress ingredients ready for use

### Implementation Stage

Explain and demonstrate the procedure of compressing onions to the toddler's family to position the toddler in a comfortable position, close the onion compress material (*allium cepa*), measure the temperature before the action of the compress on the toddler, Rub the scouring of onions on the child's body parts such as ubun-ubun, back, stomach, thigh folds and axillary of the child for 10 minutes, wear clothes that are thin and easily absorb sweat in toddlers, Keep in mind the comfort of the toddler during the action, taking a measurement back to the toddler's body temperature every 15 minutes after the compress action is given. Clean the tools and materials that have been used again

### Evaluation Stage

Pay attention to the child's reaction or response, immediately stop the action if the child shows a seizure or shivering reaction and evaluate the results of the child's body temperature measurement on the observation sheet.

## RESULT AND DISCUSSION

The general data in this study is in the form of characteristics of frequency distribution respondents from each of the following characteristics

**Table 1.**  
**Distribution of Frequency of Respondent Characteristics Based on Gender, Maternal Education and Toddler Body Temperature.**

| Characteristic                     | n         | Percentage (%) |
|------------------------------------|-----------|----------------|
| <b>Gender</b>                      |           |                |
| Man                                | 19        | 59,3           |
| Woman                              | 13        | 40,7           |
| <b>Mother's Education</b>          |           |                |
| Primary school                     | 14        | 43,7           |
| Secondary school                   | 15        | 47             |
| College                            | 3         | 9,3            |
| <b>Body Temperature (Pretest)</b>  |           |                |
| 37,2°C – 37,5°C                    | 3         | 9,38           |
| 37,6°C – 37,9°C                    | 29        | 90,62          |
| <b>Body Temperature (Posttest)</b> |           |                |
| 37,2°C – 37,5°C                    | 29        | 90,62          |
| 37,6°C – 37,9°C                    | 3         | 9,38           |
| <b>Total</b>                       | <b>32</b> | <b>100</b>     |

**Table 3.**  
**Difference in Body Temperature Drop Before and After Being Given Onion Compress**

|                           | Mean   | t      | N  | Sig. (2-tailed) |
|---------------------------|--------|--------|----|-----------------|
| Pair 1 Pretest - Posttest | 0.5187 | 10.944 | 32 | .000            |

Based on the Paired Sample t-test table obtained a significance of  $0.000 < 0.05$  then it can be concluded that there is a significant difference between the average value before treatment and the average value after treatment where there is an influence of onion compresses on the decrease in body temperature in febrile toddlers. The average temperature change after treatment is 0.5187

## DISCUSSION

Based on the Paired Sample t-test table obtained a significance of  $0.000 < 0.05$  then it can be concluded that there is a significant difference between the average value before treatment and the average value after treatment which can be concluded that there is an effect of onion compresses on the decrease in body temperature in febrile toddlers. The average temperature change after treatment was 0.5187 the results of this study were in line with the study Vedjia Medhyna & Utami Putri, (2020) with the title of the effect of onion compresses on the decline in the baby's body temperature during fever Post immunization that is collected onion compresses affect the decrease in the baby's body temperature during post-immunisation fever. Similar research was conducted by Suryono (2012) about the effectiveness of onions against the decline in body temperature in children febrile 1-5 years. Obtained the results of body temperature before 37.98°C, body temperature after 37.58°C, obtained a p value of 0.000 can be concluded there is a difference in the

The results of the analysis on the table 1 showed that the majority of respondents were male, namely 19 respondents (59.3%) and the female gender was 13 respondents (40.7%). Most of the education levels of mothers of high school educated respondents were 15 (47%), the respondent's body temperature was mostly with the results of pretest body temperature measurements of 37.6 °C – 37.9 °C which is 29 (90.62%) and vice versa there was a decrease in body temperature sufferers at posttest 37.6 °C – 37.9 °C which is 3 (9.38%)

**Table 2.**  
**Data Normality Test with Kolmogorov-Smirnov Test**

| Data                    | Kolmogorov smirnov | Asymp sig (2- tailed) | Conclusion                                   |
|-------------------------|--------------------|-----------------------|--|
| <i>Pretest-Posttest</i> | 0.131              | 0.200                 | Sig. (2-tailed) > 0,05 (Normal distribution) |

Normality test results from pretest and posttest using One group Pretest and Posttest using Kolmogorov-Smirnov Test which shows  $0.200 > 0.05$  thus can be collected normal distribution data.

body temperature of children with fever before and after the administration of onions.

Onions (*Allium cepa*) have potential therapeutic benefits against acute diseases caused by collagen deposition, inflammatory cell infiltration, and fibrosis. Onions along with their bioactive compounds, quercetin, apigenin, and selenium are known to exert antivirals, antifibrotic antioxidants, anti-inflammatories, antiasthmatic and hepatoprotective properties (Kumar & Pandey, 2013; Marefati et al., 2018; Suleria, Ass, Anjum, Saeed, & Khalid, 2015). Onion (*Allium cepa*) is a plant belonging to the family Alliaceae, popularly known as bulbs or onions, widely cultivated for thousands of years is a plant with a rich source of organic sulfur components, s-methyl-cysteine sulfoxide, phenolic acid, cycloalliine, flavonoids, sterols (stigmaterol, -sitosterol and cholesterol), sugar, saponins and very small quantities of essential oil components. Sulfur compounds, including alkyls, alkenyl sulfoxide and its derivatives, are the main active compounds present in the components of onion bulbs. Sulfur compounds in onions range from 10 mg / g in fresh samples and 30 mg / g in dry samples (Lawson, 1998). This sulfur compound plays an important role in the medicinal properties of onions such as anti-microbial, redox regulation agents, anti-cancer, anti-diabetes, anti-inflammatory, immunomodulator and cardioprotective properties (Martins et al. 2016). Cure diseases with plants, it has been around since thousands of years ago. Onions (*A. cepa*) are members of the genus *Allium* that has been widely used since early Egypt and Rome, as shown by the relics of onions found in the burial chambers of the pharaohs and reported in the writings of 1st-century Roman naturalist Pliny the Elder, who claimed onions

were effective against 28 types of diseases (Block, 1990). Onions are not only known as herbal medicine, but also have other properties such as antiviral, antihypertensive, antifungal and antiparasitic activity. In addition, onions have antihyperlipidemia, antibacterial, antioxidant, hypoglycemic and anti-inflammatory characteristics (Botsoglou, Govaris, Christaki, & Botsoglou, 2010).

## CONCLUSION

From a series of studies that have been done, researchers can draw the conclusion is the onion compress performed on all limbs by giving elusan / massage on the axillary, back and chest for 10 minutes with in febris toddlers can be said to be effective with changes in the average temperature after 0.5187. thus the use of onion compresses in ferbir toddlers can be used as a nonpharmacological alternative therapy.

## Conflict of Interest statement

The author declares that there is no potential conflict of interest in relation to the authorship and publication of this article.

## Funding

Not Applicable

## Kontribusi Penulis

Seluruh penulis memiliki kontribusi yang sama dalam penulisan laporan penelitian ini baik dari tahap penyusunan kerangka berpikir hingga interpretasi hasil dalam laporan penelitian.

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