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ILLUSTRATION OF THE APPLICATION OF SHALLOT RUBBINGON DECREASING BODY TEMPERATURE IN CHILDREN AGED 2-5 YEARS WITH FEVER IN DESA KEMOJING, KEMANGKON DISTRICT PURBALINGGA REGENCY

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Abstract

Febris fever is a condition in which body temperature rises above normal due to an increase in the temperature-regulating center located in the hypothalamus. Red Onion can be used for compress because they contain the organic sulfur compound Allylcysteine Sulfoxide. After applying an onion compress, body temperature decreases because blood flow returns to the blood vessels near the skin's surface, thus optimizing heat dissipation.To determine the effectiveness of applying onion compress to children with fever. This study used a descriptive case study approach and was conducted in Kemojing Village. After applying onion compresses for three days, with each session lasting 15 minutes, the children's body temperature decreased. The initial body temperature was 38.4°C, which decreased to 36.8°C by the end of the third day. Using onion compresses on children with fever can effectively reduce their body temperature.
Keywords: Febris, Red Onion Compress

Abstrak

Febris fever is a condition in which body temperature rises above normal due to an increase in the temperature-regulating center located in the hypothalamus. Red Onion can be used for compress because they contain the organic sulfur compound Allylcysteine Sulfoxide. After applying an onion compress, body temperature decreases because blood flow returns to the blood vessels near the skin's surface, thus optimizing heat dissipation.To determine the effectiveness of applying onion compress to children with fever. This study used a descriptive case study approach and was conducted in Kemojing Village. After applying onion compresses for three days, with each session lasting 15 minutes, the children's body temperature decreased.

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1. INTRODUCTION

Children are the seeds of a new generation, the assets that will inherit the nation's ideals and become the nation's next generation. The future of the nation and state lies in the hands of today's children (Arifin, N & Susanti, 2024).

Febrile fever is a condition where the body temperature is higher than normal due to an increase in the temperature-regulating center located in the hypothalamus. This type of disease is accompanied by a fever that can attack the body's defense system. Fever also plays a role in boosting the immune system, restoring or protecting against infection (Purwanti, 2023).

According to the World Health Organization (WHO), in 2020, there were an estimated 4,470 million cases of febrile fever worldwide, and this number is decreasing. Compared to 2019, with 5,678 million cases, the incidence of febrile fever, also known as hyperthermia, remains a major problem in Indonesia, as the number of febrile fever sufferers increases every year (Central Java Health Office, 2021). In Indonesia alone, there are 800 cases per 100,000 population each year. Cases of Febris disease in Indonesia are higher compared to other countries, especially in tropical areas, reaching 80-90%, 600,000-1.3 million cases 349-0d with a death rate of more than 20,000 occurring each year according to Harnani, (2020) in Lazdiaetal., (2022).

Fever accompanied by other signs or symptoms of illness is reported to affect approximately 10 to 15 percent of children in Asia. According to data from the Bukittinggi City Health Office, the number of fever cases reached 2,156 in 2022, increasing to 2,748 cases after re-registration in 2023. Globally, the number of individuals experiencing similar conditions is estimated to range from 16 to 33 million, with 500,000 to 600,000 deaths per year.

Treatment of fever in children can involve pharmacological and non-pharmacological prevention. Non-pharmacological measures to reduce fever in children include monitoring the child's body temperature, applying warm compresses, and using traditional remedies such as shallots.

Red onion rubs can also lower a child's body temperature when experiencing a fever, a common practice. Furthermore, red onions are readily available and abundant (Setiawan, 2023).

Red onions can be used for compresses because they contain the organic sulfur compound Allylcysteine Sulfoxide. After a red onion compress, body temperature decreases because blood flow returns to the blood vessels near the skin's surface, optimizing heat release. The resulting vasodilation triggers increased heat loss through the skin, causing pores to open and encouraging evaporation through sweat, ultimately lowering body temperature (Hayunie et al., 2020).

Research by Suryono (2023) showed a difference in temperature before and after applying shallot ointment to children with fever. The results showed that the child's temperature before

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applying the shallot ointment was 38°C, but after applying the shallot ointment, the temperature decreased to 37.6°C, proving the effect of the shallot ointment on lowering the child's body temperature (Damayanti, 2023).

Research by Cahyaningrum (2024) showed that the average body temperature after applying the shallot ointment was 37°C, with a minimum temperature of 36.3°C and a maximum of 37.5°C. Research by Anugerah (2022) demonstrated a decrease in body temperature after applying the shallot ointment for 15 minutes.

In accordance with the background, the author will conduct a study entitled "Description of the Administration of Red Onion Rubs to Reduce Body Temperature in Children Aged 2-5 Years with Febris" with the reason that administering Red Onion Rubs has been proven to help reduce fever in children's bodies.

2. RESEARCH METHOD

This type of research uses a descriptive design. The subject in this case study used one patient with the criteria of a woman who was a febrile patient with a temperature above 37.5°C. The tools and materials in this study used a thermometer, observation sheet, clock, telon oil, plate, mortar, washcloth, shallot, jarik cloth/thin blanket. for 3 days for 1x a day. This research took place in Kemojing Village, Kmangkon District, Purbalingga Regency. In this study, 4 cloves of shallots were crushed and mixed with 2 teaspoons of telon oil on the stomach, right and left armpits, back, neck folds, arm folds for 15 minutes. After 15 minutes, clean the area affected by the shallot and re-measure using a thermometer.

3. RESULTS AND DISCUSSION

HASIL

The author selected one respondent, An. S, aged 5 years, for 3 days, with a daily application of shallot ointment. This respondent met the established criteria: a respondent aged 2-5 years, with a Febris problem, and whose parents were willing to participate.

On the first day, June 25, 2025, the client's body temperature before the shallot ointment was 38.4°C. The client was then given the shallot ointment for 15 minutes. After the procedure, the client's body temperature was 37.9°C. On the second day, June 26, 2025, the body temperature before the shallot ointment was 38.3°C. The client was then given the shallot ointment for 15 minutes. After the procedure, the client's body temperature was 37.6°C.

On the third day, June 27, 2024, the client's body temperature before the shallot application was 37.4°C. The shallot application was then applied for 15 minutes. After the application, the patient's body temperature was 36.8°C.

DISCUSSION

From the case study, data was obtained from the client's mother. An assessment of An. S was conducted on June 25, 2025, in Kemojing Village. Data was obtained through interviews with the client's mother and direct observation. An. S's general identity was determined as a 5-year-old female Muslim. Vital signs revealed a body temperature of

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38.4°C, a respiratory rate of 22 breaths per minute, and a pulse rate of 102 beats per minute. The client's skin felt warm, and her lips appeared dry.

Febrile fever is a condition in which body temperature rises above normal limits due to an increase in the hypothalamic temperature regulator. Most fevers in children result from changes in the heat center (thermoregulation) in the hypothalamus and are the body's response to an infection that attacks the body's systems. One factor contributing to fever due to hyperthermia is unpredictable and extreme weather conditions, which often weaken the immune system, triggering physical and psychological discomfort. Low temperatures or cold weather cause viruses and bacteria to multiply more rapidly, making the body more susceptible to infection and inflammation caused by viruses/bacteria, leading to various diseases. Therefore, the hypothalamus sends signals to produce heat, increasing body temperature above normal, which causes a fever in children (Febri, 2020).

Researchers implemented this by mashing 4 cloves of shallots, equivalent to 2.3 grams, not too finely, mixed with 2 teaspoons of telon oil and applying it to the folds of the neck, back, stomach, right and left axillae, and the folds of the arms and stomach of the child for 15 minutes. Mashing the shallots aims to ensure the contents of the shallots are fully effective and produce the enzyme allinase when crushed. Allin compounds are known to evaporate at temperatures of 200-400°C and react within 10-60 seconds. Therefore, to prevent this reaction from occurring too quickly, oil is added to the crushed shallots to reduce the risk of irritation (Mufida & Jansen, 2021). Other components of shallots that can lower body temperature are phlorogusin, cycloaliin, metialiin, and kaempferol. Other contents of shallots such as propyldisulfide and pulic metaldisulfide compounds are easily evaporated so that the whole body shallot rub causes strong vasodilation in the skin, which allows accelerated heat transfer from the body to the skin (Hayuni et al., 2019).

On the 1st day, June 25, 2025, the body temperature before the red onion rub was performed was 38.4°C, then the client was given a red onion rub for 15 minutes. After the procedure, the body temperature was 37.9°C. On the 2nd day, June 26, 2025, the body temperature before the red onion rub was performed was 38.3°C, then the client was given a red onion rub for 15 minutes. After the procedure, the body temperature was 37.6°C. On the 3rd day, June 27, 2024, the body temperature before the red onion rub was performed was 37.4°C, then the client was given a red onion rub red for 15 minutes. After the procedure, the body temperature was 36.8°C.

Febrile fever is a condition characterized by an increase in body temperature above normal. A fever is defined as a temperature above 37.5°C, while a normal temperature is considered between 36.5°C and 37.5°C (Novikasari et al., 2021).

Shallots can be used for compresses because they contain the organic sulfur compound allylcysteine sulfoxide. After applying a compress using shallots, body temperature decreases because blood flow returns to the blood vessels near the skin's surface, optimizing heat dissipation. The resulting vasodilation triggers increased heat loss through the skin, causing pores to open and encouraging evaporation through sweat, which lowers body temperature. Hayunietal., (2020).

Based on the results of body temperature measurements of An. S after being given a shallot rub, the average value on day 1 was 0.5°C, day 2 was 0.7°C, and day 3 was 0.6°C. According to Lazdiaetal., (2022), the average body temperature before treatment was 37.97°C, after treatment it decreased to 37.57°C, for 15 minutes, administered twice daily,

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with a standard deviation of 0.046. The median and mode of body temperature before treatment were 38.0℃ and after treatment it was 37.6℃.

One medicinal plant that can be used to control fever is the shallot. Shallots contain the organic sulfur compound Allycysteinesulfoxide (Alliin). Crushed shallots release the enzyme allinase, which acts as a catalyst for alliin, reacting with skin tissue to help dissolve blood clots and improve blood flow. Furthermore, its essential oil content also supports smooth blood circulation. Other compounds in shallots, such as cycloaliin, phloroglucin, kaempferol, and methylaliin, also play a role in lowering body temperature.

Shallots (Allium cepa Ascalonicum variety) can be used as a compress by applying it because they contain the organic sulfur compound allylcysteine sulfoxide. Sliced shallot bulbs release the enzyme allinase, which breaks down blood clots, improving blood circulation and allowing heat from within the body to be more easily distributed to the peripheral blood vessels, reducing fever. The warming effect of shallots works by utilizing heat energy through conduction and evaporation, which is the transfer of heat from one object to another through direct contact. When warm skin touches something warm, heat transfer occurs through evaporation, transforming the heat energy into gas (Arifin & Susanti, 2022).

The effectiveness of applying shallot ointment to Febris's child was proven in a study that obtained data from the initial assessment, with a body temperature of 38.3°C. Before the shallot ointment was applied, there was a significant decrease to normal. After being given red onion rub therapy until the last day of implementation, the body temperature was 37.2℃. Red onion rub can also lower a child's body temperature when experiencing fever but is rarely used by the community, besides red onions are also easy to obtain and very abundant (Medhyna & Putri, (2020).

In addition, shallots contain phlorogusin, cycloaliin, methyaliin, kaempferol, and the volatile compounds propyl disulfide and propyl methyl disulfide. Applying shallots to the body triggers vasodilation in the skin, allowing body heat to move more quickly to the skin's surface (Hayunie et al., 2019).

The results of this study align with research conducted by (Rismawan, 2019) which states that applying shallot compresses to children is effective in lowering body temperature. Parents can administer shallots to children with fevers, which can reduce fever complications. This is further supported by research conducted by Suryono and colleagues regarding the Effectiveness of Red Onions as a Body Temperature Reducer in Children with Febrile Aged 1-5 Years in Tertek Hamlet, Pare District, the AKP journal shows that the average body temperature before being given was 37.97℃ after being given treatment decreased to 37.57℃, for 15 minutes carried out 2 times a day with a standard deviation of 0.046. The median mode of body temperature before being given treatment was 38℃ and after being given treatment it became 37.6℃ (Lazdiaet al., 2022). Thus, it can be concluded that giving red onion rub to children with fever can reduce the child's body temperature.

4. CONCLUSION

On June 25-27, 2025, the application of red onions to children was effective in reducing body temperature. The results showed that the respondent's body temperature before the

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application of red onions reached 38.4°C. After the application of red onions for 15 minutes within 3 days, the results were 36.8°C.

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