

WATER TEPID SPONGE REDUCING BODY TEMPERATURE AMONG CHILDREN WITH FEVER: CASE STUDY

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ABSTRACT

Background: Fever is a condition of increased temperature above normal caused by changes in the body's temperature regulation center, where the brain sets the temperature above the normal setting. Nursing interventions to address hyperthermia include warm compresses and tepid water sponges. The tepid water sponge technique affects the reduction of body temperature. This study aims to determine the effect of applying tepid sponge compresses on reducing body temperature in children with hyperthermia

Method: This study uses a descriptive case study design by conducting assessments on a unit case intensively to describe the problem.

Results: The results are after administering tepid sponge therapy for 3 consecutive days for 15 minutes in the forehead, armpits, and thigh folds areas, the child did not feel feverish, and the temperature dropped from 388°C to 372°C with the skin not feeling warm

Conclusion: It was concluded that there was an influence of water tepid sponge in reducing body temperature in children with hyperthermia

Keywords: Body; temperature; sponge

INTRODUCTION

Children are unique individuals with needs according to their developmental stages. As unique individuals, children have various needs that differ from one another according to their growth and development. Physiological needs such as nutrition and fluids, elimination activity, sleep, and others, as well as psychological, social, and spiritual needs, will be seen according to their growth and development (Erita et al., 2019).

Body temperature regulation is a complex process involving various physiological and behavioral mechanisms aimed at maintaining body temperature within a narrow range around 37°C in humans. Effective body temperature regulation is crucial for maintaining optimal cellular function and overall health. Fever is a common health problem, especially in children. According to

Sodikin (2012), fever can be a sign of an increase in the set point in the hypothalamus due to infection or an imbalance between heat production and heat loss. Diseases characterized by fever can attack the body system. Additionally, fever may play a role in enhancing the development of specific and nonspecific immunity in aiding recovery or defense against infections.

Fever can occur when someone experiences health disturbances. Increased body temperature can be caused by reactions to viral, fungal, or bacterial infections that can attack the body, such as coughs, colds, and sore throats. Symptoms that appear in children with fever usually include a body temperature exceeding normal limits in the head and neck areas or throughout the body. Other symptoms include chills in the hands and feet. High fever can cause seizures, dehydration, and inhibit the child's growth

and development. Therefore, fever needs to be handled properly because it will negatively impact the child (Ismoedijanto, 2016).

Fever can endanger the child's safety if not handled quickly and correctly, leading to other complications such as seizures and decreased consciousness. In this regard, fever management needs to be carried out through pharmacological and non-pharmacological measures. Pharmacological measures include administering fever-reducing medications or antipyretics. Non-pharmacological measures involve physical therapies to reduce fever, such as warm compresses, placing the child in a wellventilated room, and providing loose clothing (Zurimi, 2019).

Nursing interventions to address hyperthermia include warm compresses and tepid water sponges. The tepid water sponge technique affects the reduction of body temperature because direct compresses are applied to several places with large blood vessels, leading to increased circulation and capillary pressure. O₂ and CO₂ pressures in the blood increase, and blood PH decreases. Tepid water sponge is also done by wiping the entire body of the client with warm water (Rahayu & Muhsinin, 2022).

Water tepid sponge is a warm compress technique combining block compresses on superficial blood vessels with wiping techniques. WTS is performed on patients with fever by applying warm compresses on three points of the body, such as the forehead, armpits, and both groin areas. Add wiping the abdomen and chest or the entire body. If the cloth is dry, repeat the wiping procedure (Eliza, 2019).

METHOD

This research uses a descriptive case study design by conducting assessments on 1 child respondent who meets the criteria of experiencing fever with a body temperature increase > 37.5°C. The number of respondents in this study is one case

conducted over 3 days. Data collection was done through interviews, observations, interventions, and implementations. The research ethics used are non-maleficence, anonymity, beneficence, justice, and informed consent.

RESULTS AND DISCUSSION

Based on the assessment conducted, it was known that An. A, before the administration of tepid sponge therapy, complained of fever (febrile) with a temperature of 38.8°C, and the patient appeared weak. During a general examination, the results showed a pulse of 103 beats/minute and respiratory rate (RR) of 20 breaths/minute. On the first day, before the tepid water sponge therapy, the temperature was measured at 38.8°C, while after evaluation and body temperature measurement, the result was 38.1°C. On the second day, the body temperature before the tepid water sponge therapy was measured at 38.5°C, and after the therapy, it was evaluated at 37.7°C. On the third day, before the tepid water sponge therapy, the body temperature was measured at 37.9°C, and after the therapy, it was 37.2°C. This nursing intervention focuses on tepid sponge compresses for children with fever. Compresses are a physical method to reduce body temperature in children with fever. This is consistent with Pakpahan (2024), which states that the effectiveness of tepid sponge compresses in reducing the body temperature of children with fever for 3 days showed an average reduction in body temperature before and after the compresses.

The implementation includes identifying the causes of hyperthermia, preparing tools and materials, measuring body temperature before the procedure, compressing with a washcloth in areas with large blood vessels such as the axilla, groin, and neck for 10-15 minutes, wiping the patient's body towards the heart for 15 minutes, maintaining the

water temperature at 26-35°C during the procedure, and recommending the patient wear thin, sweat absorbing clothes after the procedure. This is consistent with the tepid sponge procedure by Rosdal et al. (2012).

The study results show that the average body temperature before tepid water sponge therapy was 38.5°C, and after the therapy, it was 37,7°C, with a temperature decrease of 0.7°C. Fever is a condition of increased temperature above normal caused by changes in the body's temperature regulation center, where the brain sets the temperature above the normal setting. Due to the increase in this setting, the body will produce heat (Lusia, 2015). Fever or febrile is a condition where the body temperature becomes higher than usual and is a symptom of disease (Erveline & Nanang, 2021).

The main nursing action given for hyperthermia diagnosis is tepid water sponge therapy. Consistent with Putri (2020), her research states that tepid water sponge therapy is more effective in reducing the body temperature of children with fever compared to warm water compresses. This is due to the body wiping technique in tepid water sponge therapy, which accelerates peripheral blood vessel vasodilation throughout the body, allowing heat evaporation from the skin to the surrounding environment more quickly compared to the reaction provided by warm water compresses, which rely only on hypothalamus stimulation.

Tepid Sponge combines block and wiping techniques. This compress technique is applied to areas with large arterial vessels, making it easy to quickly transmit signals to the hypothalamus. Additionally, wiping accelerates peripheral blood vessel dilation, facilitating heat transfer from the body to the surrounding area, thus accelerating body temperature reduction (Firmansyah, 2021). The study conducted shows that tepid water sponge therapy in the forehead, armpits, and groin areas results in a decrease in body temperature before and after the therapy. This

is consistent with Anita et al. (2024), who found that tepid water sponge therapy reduces body temperature with an average decrease of 0.7°C.

CONCLUSION

The administration of tepid water sponge therapy is effective in reducing body temperature. This is because the tepid water sponge can accelerate peripheral blood vessel vasodilation throughout the body, allowing faster heat release from the body through the skin.

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CONFLICT OF INTEREST

There was no conflict of interest in this article.

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