



Case Study of Implementation Compresses (*Allium Cepa L.*) to Reduce Fever in Toddlers Post DPT Immunization

Heni Heryani¹, Lusi Lestari¹

¹Department of Midwifery, STIKes Muhammadiyah Ciamis, Indonesia

Correspondence author: Heni Heryani

Email: heryaniheni05@gmail.com

Address : Jalan K.H Ahmad Dahlan No. 20 Kecamatan Ciamis, Kabupaten Ciamis, Propinsi Jawa Barat, 46216

Submitted: 9 August 2022, Revised: 14 September 2022, 23 November 2022, Published: 20 June 2023

DOI: [doi.org/ 10.56359/gj.v4i1.85](https://doi.org/10.56359/gj.v4i1.85)



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

ABSTRACT

Objective: The purpose of this study was to determine the effect of shallot compresses on reducing fever in children under five after DPT immunization.

Method: The method used is a Qualitative method with a single case study approach. The study was conducted on toddlers immunized by DTP who had a fever in the Utama Village. Toddlers with a fever are given shallot compresses on the armpits for 15 minutes, and then their body temperature is measured

Result: The study's results on a 7-month-old girl toddler, at 08.00 WIB on July 7, 2022, were given DPT exercise and had a fever with a body temperature of 38.4°C. First, a compress is given to the toddler's armpit for 15 minutes. After that, a re-evaluation was carried out; with the measurement results, there was a decrease in body temperature to 37.1°C.

Conclusion: Onion compresses can reduce fever in toddlers after DPT immunization. This can be used as alternative midwifery care to deal with the side effects of DPT immunization.

Keywords: compress, onion, fever, DPT

Introduction

The current direction of health development focuses on promotive and preventive efforts without leaving the curative and rehabilitative aspects. One of the preventive efforts is the implementation of the immunization program. Immunization can prevent and reduce the incidence of morbidity, disability, and death due to Immunization Preventable Diseases (PD3I), estimated at 2 to 3 million deaths each year (Kementerian Kesehatan RI, 2021). Immunization is an effort to actively generate/enhance a person's immunity to a disease so that if one day they are exposed to the disease, they will not get sick or only experience mild illness. One type of

immunization must be given to children is DPT (Diphtheria, Pertussis, Tetanus)(Kementerian Kesehatan RI, 2021).

DPT immunization is an effort to give diphtheria, pertussis vaccine, and tetanus toxoid, which aims to generate active immunity against diphtheria, pertussis, and tetanus simultaneously. Giving DPT immunization will have side effects, generally suffering from fever or fever. Which is the body's adaptive response to immunization. If the baby's body is fever (body temperature $> 37.5^{\circ}\text{C}$), usually the baby is fussy or constantly cries because it is uncomfortable (Puspariny et al., 2021).

The first aid given by parents to overcome the high-temperature rise, in general, is by giving chemical-based fever-reducing drugs such as paracetamol or salicylic (Medhyna & Putri, 2020). In addition, antipyretics are recommended to relieve concerns about high fever and febrile convulsions. A study reported that antipyretics used before immunization and after a fever occurred after immunization could significantly reduce antibody concentrations so that the effectiveness of vaccination was (Yufinanda, 2018).

The current paradigm of midwifery services has undergone a shift. Over the past decade, midwifery care has been implemented by combining conventional and complementary services and has become an important part of midwifery practice. Complementary midwifery services are an option to reduce medical interventions (Septi Arimurti & Aini, 2020).

How reduce fever can be done physically (non-pharmacologically) by using heat energy through conduction and evaporation methods. One example of this method of conduction and evaporation is a warm compress. One of the hot compress innovation methods that can be done is the combination of shallots (*Allium Cepa* Varieties *Ascalonicum*)(Harnani et al., 2019).

Not many parents nowadays give herbal concoctions. This herbal concoction has been passed down from generation to generation and is no less effective as a fever reducer (Medhyna & Putri, 2020). Will make it easier to apply to infants or children, as well as people who have difficulty taking medicine (Mahasuari et al., 2020). So the formulation and purpose of this case study are to determine the effect of red onion compost on reducing fever in children under five after DPT immunization.

Objective

The formulation and purpose of this case study are to determine the effect of red onion compost on reducing fever in children under five after DPT immunization.

Method

The research method used is qualitative with a single case study approach. Based on the implementation of Evidence-Based Practice (EBP), there are five stages, namely (1) asking questions (PICO), (2) looking for relevant evidence, (3) evaluating evidence, (4) implementing evidence, (5) evaluating the implementation of EBP (Aliviameita & Puspitasari, 2020). The first step is to ask PICO questions based on EBP. For example, the question arises, "is the onion compress effective for reducing fever in toddlers who have fever after DTP immunization?". Then do a search using electronic media, namely Google Scholar, ScienceDirect, and PubMed. Then the results were analyzed so that references were found regarding shallot compresses to reduce fever in toddlers after DTP immunization.

The study was conducted on toddlers immunized by DTP who had a fever in the Utama Village. Informed consent was carried out to explain the implementation procedure and ask for

approval from the family. Toddlers with a fever are given shallot compresses on the armpits for 15 minutes, and then their body temperature is measured. Data collection was taken from the results of observations, interviews and related internet literature sources. The final stage in this process is evaluation. The evaluation was conducted to determine the effectiveness of the onion compress.

Results

Standards of Midwifery Care based on the Decree of the Minister of Health Number 938/Menkes/SK/VIII/2007, starting from the assessment, formulation of diagnoses and formulation of midwifery problems, planning, implementation, evaluation and recording of midwifery care.

The results of the study on An. A 7-month-old woman, having her address at the main village, at 08.00 WIB on 7 July 2022, was given DPT immunization at the Posyandu Cihideung, Main Village. Furthermore, the assessment was carried out online through the Whatsapp application. The mother of toddler A reports the temperature measurement results by sending a photo of the measurement results on the thermometer. The result of the temperature measurement is 38.4⁰C.

Based on the study's results, the data analysis was that toddler A had a fever after DPT immunization. Therefore, this care plans to give onion compresses for 15 minutes. The implementation of this care is giving shallot compresses for 15 minutes which is carried out independently by the mother of toddler A. This red onion compress consists of 20 grams of grated red onion mixed with enough eucalyptus oil. The onion compress is compressed on the toddler's armpit for 15 minutes. After compressing the onion for 15 minutes, an evaluation was carried out by repeatedly measuring the child's body temperature. The mother again sent the temperature measurement results via the WhatsApp application, with the measurement result of 37.1⁰C.

From the implementation results, it can be proven that the onion compress carried out consistently for 15 minutes can reduce the toddler's body temperature

Discussion

Setiawandari's Istiqomah (2021) research used a quasi-experimental method, with a pre and post-test design method, on 20 children aged 1-12 months. The research resulted that onion compresses can reduce fever in children after DPT immunization. The results of data analysis obtained $p = 0.001$. This is in line with this case study that, based on an evaluation of children aged seven months, it is proven that compresses using shallots can reduce fever in children after DPT immunization (Setiawandari, Istiqomah, 2021).

The difference lies in the sampling. Setiawandari's Istiqomah research (2021) used a sample of 20 people, while this case study only used one person using the PICO method. In addition, the benchmark results used a thermometer instrument and then analyzed using the Shapiro Wilk test, while in this case study, it was evaluated after giving red onion compresses. Handling fever can be handled by two methods: the provision of pharmacological and non-pharmacological treatment. One non-pharmacological use is the use of onion extract. Red onion (*Allium Cepa L*) can be used for compressing because it contains organic sulfur compounds, namely Allylcysteine Sulfoxide (Alliin). Cuts or slices of onion bulbs will release the enzyme alliinase, which destroys the formation of blood clots to make blood circulation smoother. As a

result, the heat from within the body can be more easily channelled into peripheral blood vessels, and the fever will decrease (Harnani et al., 2019).

Management of fever using essential onion oil can reduce fever in infants after DTP immunization. Other ingredients in shallots are glutamic acid, a natural essence (natural flavour enhancer); there are also volatile propyl disulfide and propyl methyl disulfide compounds. If used according to the right dose, shallots can be used as a decrease in body temperature, especially in children aged 1-5 years who experience an increase in body temperature (BD et al., 2018). Red onion scours attached to the skin's surface make the veins change the size, which is regulated by the anterior hypothalamus to control heat loss, resulting in vasodilation (widening) of blood vessels and inhibition of heat production. As a result, blood is redistributed to surface veins to increase heat dissipation. This vasodilation causes increased heat dissipation through the skin, enlarged pores, and evaporation of heat (sweating) which is expected to decrease body temperature to reach a normal state again (Setiana E, 2020).

Conclusion

Shallot compresses can reduce fever in toddlers after DPT immunization. This can be used as alternative midwifery care to deal with the side effects of DPT immunization. In addition, midwives can educate mothers with toddlers on how to do early treatment to reduce fever in toddlers immunized with DPT without being given chemical drugs.

Conflict of Interest

No declare.

Ethical consideration

This research has received ethical approval from the Health Research Ethics Commission of the University of Muhammadiyah Gombong Number 182.6/II.3.AU/F/KEPK/VII/2022.

Funding

This research was funded by STIKes Muhammadiyah Ciamis with contract number 029/LPPM Mucic/VI/2022.

Acknowledgement

We thank STIKes Muhammadiyah Ciamis for providing support so that this research can be carried out properly.

References

1. Aliviameita, A., & Puspitasari. (2020). *Evidence Based Midwifery*. UMSIDA Press.
2. BD, faridah, yusefni, elda, & myzed, ingges dahlia. (2018). Pengaruh Pemberian Tumbukan Bawang Merah Sebagai Penurun Suhu Tubuh Pada Balita Demam Di Puskesmas Lubuk Buaya Kota Padang Tahun 2018. *Jik- Jurnal Ilmu Kesehatan*, 2(2), 136–142. <https://doi.org/10.33757/jik.v2i2.128>
3. Harnani, N. M., Andri, I., & Utoyo, B. (2019). Pengaruh kompres bawang merah terhadap penurunan suhu tubuh pada pasien demam thypoid di RS PKU Muhammadiyah Gombong. *Jurnal Urecol*, 6(6), 361.
4. Kementerian Kesehatan RI. (2021). Profil Kesehatan Indonesia 2020. In *IT - Information*

Technology.

5. Mahasuari, N. P. S., Trisna, N. K. C. A., Karyawati, N. K., & Pawarrangan, A. B. S. (2020). Uji Hedonik Produk Boreh Penurun Demam dari Bawang Merah (*Allium cepa* L.) Dan Kulit Batang Pule (*Alstonia scholaris* L.). *Jurnal Ilmiah Medicamento*, 6(2), 84–88. <https://doi.org/10.36733/medicamento.v6i2.845>
6. Medhyna, V., & Putri, R. U. (2020). Pengaruh kompres bawang merah terhadap penurunan suhu tubuh bayi saat demam pasca imunisasi di wilayah kerja polindes pagar ayu musi rawas. *Maternal Child Health Care J*, 2(2), 107–118.
7. Puspariny, C., Kurniati, D., & RY, G. A. (2021). Pengaruh Pemberian Imunisasi Dpt Terhadap Kenaikan Suhu Tubuh Bayi Di Puskesmas Purbolinggo Lampung. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 12(2), 292. <https://doi.org/10.26751/jikk.v12i2.1050>
8. Septi Arimurti, I., & Aini, R. (2020). Asuhan Umum Kebidanan Komplementer Complementary General Midwifery Care. *Jurnal Abdi Masyarakat*, 1(1), 80–85.
9. Setiana E. (2020). *Pengaruh Kompres Bawang Merah Terhadap Penurunan Suhu Tubuh Anak Demam* [Repository Universitas Muhammadiyah Purwokerto]. <http://repository.ump.ac.id/10019/>
10. Setiawandari, Istiqomah, M. D. S. X. (2021). Innovation of Shallot (*Allium Ascalonicum* L) Essential Oil for Fever Reduction in Infants Post- DTaP Immunization. *Jurnal Ilmu Kesehatan*, 14(03), 187–195. <https://journal2.unusa.ac.id/index.php/JHS/article/download/2048/1441/10613>
11. Yufinanda, A. R. (2018). Pengetahuan ibu mengenai penggunaan antipiretik pada anak di bawah dua tahun untuk mengatasi demam setelah imunisasi. *Jurnal Farmasi Komunitas*, 5(1), 32–36.