

EFFECTIVENESS OF ALOE VERA COMPRESS IN REDUCING FEVER AFTER DPT IMMUNIZATION

Miftahul Hakiki¹, Setiana Andarwulan²

^{1,2}Universitas Dr. Soekardjo (UNIDSOE), ²Universitas PGRI Adi Buana Surabaya

Correspondence author : miftahulhakiki@stikesbanyuwangi.ac.id

ABSTRAK

DOI	https://doi.org/10.33024/jkm.v12i9.23524	Received	2025-11-17
Revised	17 September 2026	Accepted	27 September 2026
Published/Available Online	30 September 2026	License	CC BY 4.0

Latar Belakang: Peningkatan suhu tubuh merupakan salah satu kejadian ikutan yang dapat terjadi setelah imunisasi DPT. Penanganan nonfarmakologis, termasuk pemberian kompres lidah buaya, merupakan pendekatan yang perlu diteliti lebih lanjut untuk mengetahui perubahan suhu tubuh setelah penggunaannya.

Tujuan: Mengetahui perbedaan suhu tubuh balita sebelum dan sesudah pemberian kompres lidah buaya pascaimunisasi DPT di wilayah kerja Puskesmas Licin tahun 2024.

Metode: Penelitian ini menggunakan desain pra-eksperimental dengan rancangan *one-group pretest-posttest*. Sampel berjumlah 34 balita yang mengalami peningkatan suhu tubuh setelah imunisasi DPT. Suhu tubuh diukur sebelum dan sesudah pemberian kompres lidah buaya. Data dianalisis menggunakan uji *Wilcoxon signed-rank*.

Hasil: Sebelum intervensi, suhu tubuh terbanyak adalah 37,8°C pada 14 responden (41,2%). Setelah intervensi, suhu tubuh terbanyak adalah 37,5°C pada 12 responden (35,3%). Sebanyak 10 responden (29,4%) mengalami penurunan suhu sebesar 0,2°C dan 24 responden (70,6%) mengalami penurunan sebesar 0,3°C. Hasil uji *Wilcoxon* menunjukkan perbedaan suhu tubuh yang bermakna secara statistik antara sebelum dan sesudah intervensi ($p < 0,001$).

Kesimpulan: Terdapat penurunan suhu tubuh yang bermakna secara statistik setelah pemberian kompres lidah buaya. Namun, karena penelitian tidak menggunakan kelompok kontrol, penurunan suhu belum dapat dipastikan disebabkan secara khusus oleh lidah buaya.

Kata Kunci: Balita, Imunisasi DPT, Kompres Lidah Buaya, Suhu Tubuh.

ABSTRACT

Background: Increased body temperature is one of the adverse events that may occur following DPT immunization. Non-pharmacological approaches, including aloe vera compresses, warrant further investigation to assess changes in body temperature following their application.

Objective: To examine differences in body temperature before and after the application of aloe vera compresses among toddlers following DPT immunization in the working area of Licin Community Health Center in 2024.

Methods: This study employed a pre-experimental design using a one-group pretest-posttest approach. The sample consisted of 34 toddlers who experienced increased body temperature following DPT immunization. Body

temperature was measured before and after the application of aloe vera compresses. Data were analyzed using the Wilcoxon signed-rank test.

Results: Before the intervention, the most frequently recorded body temperature was 37.8°C, observed in 14 participants (41.2%). After the intervention, the most frequently recorded temperature was 37.5°C, observed in 12 participants (35.3%). Ten participants (29.4%) experienced a temperature reduction of 0.2°C, while 24 participants (70.6%) experienced a reduction of 0.3°C. The Wilcoxon signed-rank test indicated a statistically significant difference between pre-intervention and post-intervention body temperatures ($p < 0.001$).

Conclusion: A statistically significant reduction in body temperature was observed following the application of aloe vera compresses. However, because this study did not include a control group, the observed reduction cannot be attributed specifically to aloe vera.

Keywords: Aloe Vera Compress, Body Temperature, DPT Immunization, Toddlers.

INTRODUCTION

The DPT (Diphtheria, Pertussis, and Tetanus) immunization is a type of immunization aimed at preventing diphtheria, pertussis, and tetanus. The DPT vaccine contains diphtheria toxoid, a toxin from the diphtheria bacterium that has been inactivated and rendered harmless, but still stimulates the immune system to produce antibodies that effectively fight the disease. (Sari, 2024)

Diphtheria is an infectious disease that affects the throat and can cause serious complications and even death. This disease is caused by the bacterium *Corynebacterium diphtheriae* and has the potential to be highly contagious, primarily affecting the upper respiratory tract. To prevent this disease, the DPT immunization is given as an injection to children at several ages: 2, 3, 4, and 18 months, as well as at age 5 years.

Post-Immunization Adverse Events (AEFI) are all illnesses and deaths that occur within one month of immunization. AEFI commonly occurs after a child has been immunized, including the DPT vaccine. This occurs due to a post-immunization reaction. The success or failure of the immunization can be determined immediately after the immunization, indicated by a rise in the baby's body temperature or swelling around the injection site. (Hety & Susanti, 2020) So the signs and symptoms of Post-Immunization Adverse Events (KIPI) DPT include: Fever, namely body temperature reaching $>37.5^{\circ}\text{C}$, Pain, swelling and redness at the injection site, Muscle pain throughout the body, Weak body, Decreased appetite, Difficulty sleeping, The baby will cry continuously and Ge. (Sari, Izzah, & Harmen, 2018)

Fever is a condition where the body temperature is above normal, $>38^{\circ}\text{C}$ measured rectally, $>37.8^{\circ}\text{C}$ orally, and $>37.2^{\circ}\text{C}$ axillary. Fever occurs in children mostly due to changes in the heat center (thermoregulation) in the hypothalamus. Diseases characterized by fever can affect the body's systems. Generally, fever is not dangerous, but if the fever is very high, it can be dangerous for the child.¹ Until now, mothers often ignore fever, because it is not considered an illness, so not all mothers take action to reduce the fever with non-pharmacological.

According to the World Health Organization (WHO) in 2020, the number of fever cases worldwide reached 11-20 million, with an estimated 128,000-161,000 deaths annually. In Indonesia, an estimated 800-100,000 people suffer from fever throughout the year. 91% of fever cases affect children aged 3-19 years. (WHO, 2020). Fever cases in East Java (2021) ranked third for three consecutive years, after diarrhea and tuberculosis of the meninges. In 2019, there were 17,606 cases, in 2020, there were 13,397 cases, and in 2021, there were 224,071 cases. (JATIM, 2021) The results of a preliminary study of secondary data at the Banyuwangi Health Office on the coverage of fever visits in December 2021-December 2022, there were 1,280 cases. A secondary data survey report on morbidity data in the Licin Community Health Center work area in 2022 found 269 cases of fever in toddlers and 234 cases of fever in 2023 and 167 cases of fever after immunization. In January-April 2024, there were 32 cases of fever after DPT immunization. And most parents treat fever in their children after immunization by using cold/warm water compresses, using Baby Fifer and administering chemical drugs. The preparation phase of this study began in June 2024 and included a literature review, proposal development, preparation of research instruments, and administrative arrangements. The study was subsequently designed to examine changes in body temperature following the administration of aloe vera compresses among toddlers experiencing increased body temperature after DPT immunization in the working area of Licin Community Health Center.

The occurrence of fever after DPT immunization is caused by biological interactions such as viruses and bacteria. Pyrogens act as antigens and trigger an immune system response. Calcium activates white blood cells (leukocytes), allowing them to phagocytose pyrogens and produce IL-1. IL-1 is responsible for increasing T-helper cells and triggering prostaglandin production in the hypothalamus, stimulated by endogenous and exogenous pyrogens. T-helper cells work to fight infection, while prostaglandins are responsible for causing fever. (Hadianti, et al., 2015).

The hypothalamus raises the body's temperature set point, causing the body to produce and store heat. During the period of reaching the new set point, the body shivers and feels cold despite the increased body temperature. Once the new set point is reached, the cold phase disappears, and the body enters the next phase, where the body feels warm and dry, commonly known as febrile. During this phase, the skin usually becomes warm and red due to vasodilation. (Rejeki & Hadinegoro, 2024)

Reducing or controlling fever in children can be done in various ways, including administering antipyretics (pharmacological) and physical (non-pharmacological). The use of antipyretics (pharmacological) has side effects, namely causing bronchospasm, gastrointestinal bleeding, decreased kidney function and can inhibit serum antibody suppression. 4 Physical (non-pharmacological) fever reduction is done by using heat energy through conduction and evaporation methods. The conduction method is the transfer of heat from one object to another through direct contact. When warm skin touches something warm, heat transfer will occur through evaporation so that the transfer of heat energy turns into gas. (Patricia & Griffin, 2019)

Compresses don't always have to be warm. Another method that can be used for children with fever is a compress with aloe vera. Aloe vera is a leading agricultural commodity and is used for compresses. Compresses using aloe vera are more effective in accelerating heat removal from the body due to its saponin content. Aloe vera also contains lignin.7 Aloe vera contains a high water content and saponin and lignin compounds. Lignin is one of the components in aloe vera that helps reduce fever. Saponin and lignin function as heat absorbers in the body, then transfer this heat to the aloe vera flesh, which can then lower body temperature. This heat absorption can occur and penetrate into the pores and cells, thereby reducing fever. (Barus, 2021)

Seeing that aloe vera has been proven to be useful in helping to treat fever in children and in the Licin community, aloe vera has never been used as a complementary alternative to reduce fever in children after immunization, the researcher is interested in conducting research on "The Effectiveness of Aloe Vera Compresses to Reduce Fever After DPT Immunization in the Licin Community Health Center Work Area in 2024."

RESEARCH METHODS

This study employed a pre-experimental design using a one-group pretest-posttest approach. (Nursalam, 2020) As this study did not include a control group, the design was intended to assess changes in body temperature following the intervention rather than establish a definitive causal effect of aloe vera compresses.. The effect of the treatment was assessed by measuring the pre-test and post-test scores. (Sugiyono, 2019).The research preparation phase began in June 2024 and included literature review, proposal development, preparation of research instruments, and administrative arrangements. Ethical approval was obtained from the Health Research Ethics Committee of Sekolah Tinggi Ilmu Kesehatan Banyuwangi on September 10, 2024

A population is a group of subjects or objects with certain characteristics being studied. (Aziz, 2019) The population in this study was all toddlers who received DPT immunization in the Licin Community Health Center working area in September 2024, a total of 674 toddlers.

A sample is a portion of the number and characteristics possessed by a population. (Sugiyono, 2019) The sample used was a portion of toddlers who experienced fever after DPT Immunization in the Licin Community Health Center working area during September 2024, obtained 34 children according to the inclusion criteria.

Inclusion criteria are general characteristics of a target population that will be studied. Scientific considerations serve as a guideline in determining inclusion criteria. (Nursalam, 2020)

The criteria for this study were:

1. Toddlers residing in the Licin Community Health Center's work area
2. Toddlers who have a fever after immunization and have not taken medication
3. Mothers who were cooperative and willing to respond
4. Toddler temperature criteria of 37.2–38°C
5. No antipyretic medication was given

Sampling technique is a sampling technique used to determine the sample to be used in research. Various sampling techniques are used. The sampling technique used in this study is accidental sampling. Accidental sampling is the process of selecting respondents to be used as samples who happen to be encountered by the researcher. (Sugiyono, 2019)

The data normality test used was the Wilcoxon Signed Rank Test, which aims to determine the influence of the independent and dependent variables. The Wilcoxon Signed Rank Test was used to analyze the pre-post (before and after) model of the study. To facilitate calculations, the researchers utilized computer assistance, namely SPSS.

ETHICS AND PARTICIPANT PROTECTION

Ethical approval was obtained from the Health Research Ethics Committee of the Banyuwangi College of Health Sciences (Sekolah Tinggi Ilmu Kesehatan Banyuwangi) under reference number 351/01/KEPK-STIKESBWI/IX/2024, dated September 10, 2024. Research activities conducted before ethical approval were limited to preparatory activities that did not involve recruitment, intervention, or collection of individual participant research data.

. Following the issuance of ethical approval, the research will proceed from the data collection stage through December 2024. Prior to the study, each respondent will be informed about the procedures and the benefits of the research.

RESEARCH RESULTS

Custom Data

Body Temperature Before and After Aloe Vera Compress Intervention

Table 1. Respondent characteristics based on body temperature before and after the aloe vera compress intervention at the Licin Banyuwangi Community Health Center in 2024.

Body temperature	Aloe Vera Compress			
	Before		After	
	F	%	F	%
37,3 °C	-	-	1	2,9%
37,4 °C	-	-	7	20,6%
37,5 °C	-	-	12	35,3%
37,6 °C	2	5,9%	8	23,5%
37,7 °C	7	20,6%	5	14,7%
37,8 °C	14	41,2%	1	2,9%
37,9 °C	9	26,5%	-	-
38,0 °C	2	5,9%	-	-

Based on table 1 shows that the body temperature of toddlers before giving aloe vera compress was at a temperature of 37.8 ° C as many as 14 respondents (41.2%), with the lowest temperature of 37.6 ° C as many as 2 respondents and the highest temperature of 38.0 ° C as many as 2 respondents. And after the intervention of giving aloe vera compress, the body temperature of toddlers aged 0-2 years was mostly at a temperature of 37.5 ° C, namely 12 respondents (35.3%) with the lowest temperature of 37.3 ° C and the highest temperature of 37.8 ° C, each as many as 1 respondent. From the data above, the lowest temperature which was originally 37.6 ° C became 37.3 ° C, and the highest temperature which was originally 38.0 ° C became 37.8 ° C. And the highest temperature decreased by 0.3 ° C

Table 2. Reduction in body temperature before and after administration of aloe vera compresses to toddlers after immunization at the Licin Banyuwangi Community Health Center in 2024.

Decline	Frequency	Percentage
0,2 °C	10	29,4%

0,3 °C	24	70,6%
--------	----	-------

Source: Primary Data (2024)

Based on table 2, it shows that on average there was a decrease of 0.3 °C for 24 respondents (70.6%) and a decrease of 0.2 °C for 10 respondents (29.4%).

The Effect of Aloe Vera Compresses on the Incidence of Fever Following DPT Immunization in the Licin Community Health Center Work Area in 2020

Table 3. Results of Data Normality Test

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Suhu	,155	68	,000	,946	68	,006
a. Lilliefors Significance Correction						

Based on the results of the normality test using Shapiro-Wilk, a significance value of <0.05 was obtained, so it can be concluded that the distribution is not normal, so the Wilcoxon test was used.

Table 4. Wilcoxon Test Results

Ranks				
		N	Mean Rank	Sum of Ranks
After - Before	Negative Ranks	34 ^a	17,50	595,00
	Positive Ranks	0 ^b	,00	,00
	Ties	0 ^c		
	Total	34		
a. After < Before				
b. After > Before				
c. After = Before				

Test Statistics ^a	
	After - Before
Z	-5,332 ^b
Asymp. Sig. (2-tailed)	,000
a. Wilcoxon Signed Ranks Test	
b. Based on positive ranks.	

Based on the results of the Wilcoxon test analysis using SPSS with a significance level of $\alpha = 0.05$ (5%), the value of $p = 0.000 < \alpha 0.05$ was obtained, so the alternative hypothesis was accepted and the null hypothesis was rejected, meaning that there was an effect of the effectiveness of aloe vera compresses to reduce post-DPT immunization fever in the Licin Community Health Center work area in 2024.

DISCUSSION

Toddler Body Temperature Before Aloe Vera Compress

Table 1 shows that nearly half of the toddlers' body temperature before aloe vera compress was 37.8°C (14 respondents, 41.2%). Based on tabulated data, the toddlers with the most fevers were 12-24 months old (25 respondents, 73.5%), 20 (58.8%) were male, and the remaining 14 (41.2%) were female. Two respondents had a fever with a minimum temperature of 37.6°C and two with a maximum temperature of 38.0°C.

Fever is defined as a body temperature above normal, measured rectally (>38°C), orally (>37.8°C), and axillary (>37.2°C). Fever in children is largely due to changes in the heat center (thermoregulation) in the

hypothalamus. Diseases characterized by fever can affect any body system. Generally, fever is not dangerous, but if the fever is very high it will be dangerous for the child. (Swarnata & Surya, 2022)

Fever in children occurs when the heat-dissipating mechanism is unable to maintain the rate of heat production, resulting in an abnormal increase in body temperature. There are several causes of fever in children, including viral or bacterial infections, prolonged exposure to the sun, or toddlers engaging in physical activity outside, resulting in direct exposure to the hot sun, and also side effects from immunizations. (Suwanti, Purwanto, & Darsini, 2023)

Researchers argue that based on the tabulation of research data on toddlers who experienced fever in the Licin Community Health Center work area, 20 respondents (58.8%) were male. Researchers assume that gender can influence the incidence of fever in children. Boys tend to be more susceptible to fever due to less efficient immunoglobulin production, making them more susceptible to germs or bacteria. In addition, boys tend to be more active than girls, so increased muscle activity can cause an increase in body temperature. For toddlers aged 12-24 months, namely 25 respondents (73.5%), Researchers assume that at toddler age, children begin to learn to walk but do not yet have good balance, so they often fall and get injured. This can trigger an inflammatory response that causes the production and release of internal pyrogens, which are substances that can cause fever.

The results of this study are also supported by previous research conducted by (Edhis, Mamentu, & Harun, 2024) where there is a lot of physical activity so it is easy to experience fever.

Toddler Body Temperature After Aloe Vera Compress

Table 1 shows that the majority of toddlers' body temperatures after aloe vera compresses were 37.5°C (12 respondents, 35.3%). Ten toddlers experienced a 0.2°C decrease in body temperature: 6 with normal nutritional status, 4 with malnutrition (29.4%), and 24 with a 0.3°C decrease in body temperature (23 with normal nutritional status and 1 with overnutrition (70.6%).

Aloe vera compresses are more effective in accelerating heat loss due to their saponin content. Aloe vera also contains lignin. Aloe vera contains a high water content and both saponin and lignin. Lignin is one of the components in aloe vera that helps reduce fever. Saponin and lignin function as heat absorbers in the body, then transfer this heat to the aloe vera flesh, thereby lowering body temperature. This heat absorption can occur and penetrate into the pores and cells, so that the fever can go down. (Barus, 2021)

Researchers argue that the results of this study are in accordance with the theory where aloe vera compresses have been proven effective in reducing the incidence of fever by reducing body temperature by 0.2 °C - 0.3 °C within 30 minutes with 3 compresses at a time and carried out according to the SOP. The results of the study showed that mothers were very enthusiastic about following each stage carried out by the researchers. Respondents were given counseling about aloe vera compresses and their benefits for reducing high body temperature (fever). Enthusiastic about participating in this activity, respondents considered that giving aloe vera compresses had no side effects that could harm their children, and the ingredients used were also easy to find and did not require the hassle of buying medicine to reduce their children's body temperature. The factor that influenced the success of giving aloe vera compresses was education. Based on the characteristics of respondents based on education level, it showed that the majority of respondents had junior high school education as many as 19 respondents (55.9%), high school as many as 8 respondents (23.5%) and college as many as 3 respondents (8.8%). With the educational history of the respondents, respondents could easily accept the information and could practice it easily at home. This can be seen from the decrease in body temperature between 0.2 °C and 0.3 °C after applying an aloe vera compress. (Amelia, Putri, & Rosdiana, 2023)

Besides education, another factor influencing the reduction of body temperature in toddlers is employment. Mothers who are unemployed have a greater opportunity to care for their children, especially in providing aloe vera compresses. Based on the characteristics of the respondents, almost all of them (30 respondents or 88.2%) were unemployed. Therefore, mothers were able to participate effectively in this research and carefully follow the researcher's instructions and guidance, resulting in a faster reduction in body temperature compared to respondents who work outside the home. Of course, they must be smart about their time and time, which can reduce their concentration.

Nutritional status can also influence the speed of temperature reduction in toddlers with fever. Based on infant characteristics, it was found that toddlers with normal nutritional status (29 respondents or 85.5%) experienced a faster temperature reduction due to improved metabolic processes and immunity in toddlers with normal nutrition.

The Effect of Aloe Vera Compresses on Post-Immunization Fever.

Based on the analysis results in Table 3, the Wilcoxon test using SPSS with a significance level of $\alpha = 0.05$ (5%) obtained a value of $p = 0.000 < \alpha 0.05$. Therefore, the alternative hypothesis is accepted and the null hypothesis is rejected, meaning there is an effective effect of Aloe Vera Compresses in Reducing Post-DPT Immunization Fever in the Licin Community Health Center Work Area in 2024.

Aloe vera is one of the agricultural commodities that is considered a superior commodity. Aloe vera has a soft and cool texture, so children really like it. Compresses using Aloe vera will be more effective in accelerating heat removal from the body because it contains saponin compounds. Aloe vera also contains lignin.⁷ Aloe vera has a very high water content, and also contains saponin and lignin compounds. Lignin is one of the ingredients in aloe vera in reducing fever. Saponin and Lignin function as heat absorbers in the body and then transfer the heat to the aloe vera flesh and then can lower body temperature. This heat absorption can occur and penetrate into the pores and cells, so that the fever can be reduced. Aloe vera contains 95% water which functions to remove heat. This aloe vera compress uses the principle of conduction. Through this method, heat from the respondent's body can be transferred into the aloe vera. Conduction occurs between the temperature of the aloe vera and the surrounding tissue, including the blood vessels that pass through the area, which can lower the temperature. (Pangesti & Murniati, 2023)

Researchers believe that applying aloe vera compresses is effective in lowering a child's body temperature, gradually returning it to normal. Theoretically, researchers believe that aloe vera contains a high water content and contains saponins and lignin compounds. Lignin is one of the components in aloe vera that helps reduce fever. Based on Table 5.10, an average decrease of 0.3°C was experienced by 24 respondents (70.6%) and a decrease of 0.2°C by 10 respondents (29.4%).

The results of this study are in line with research conducted by (Amelia, Putri, & Rosdiana, Penerapan Terapi Kompres Aloe vera Pada Anak Demam, 2023) with a compression duration of 15 minutes 1 time compressing which explains the average temperature of respondents before aloe vera compress was 37.6°C with the lowest temperature of 37.8°C and the highest temperature of 38.6°C and there was a difference after aloe vera compress was given in decreasing body temperature, the average body temperature was 37.4°C , so it can be concluded that there is an effect of giving aloe vera compress on reducing the incidence of fever in toddlers. The findings demonstrated a statistically significant reduction in body temperature following the administration of aloe vera compresses. Among the 34 participants, 10 experienced a temperature reduction of 0.2°C , while 24 experienced a reduction of 0.3°C . The Wilcoxon signed-rank test indicated a statistically significant difference between pre-intervention and post-intervention measurements ($p < 0.001$).

However, these findings should be interpreted cautiously because the study employed a one-group pretest-posttest design without a control group. Consequently, the observed temperature reduction cannot be attributed exclusively to aloe vera compresses. Other factors, including natural temperature changes over time and the physical cooling effect of the compress, may have contributed to the results. Further controlled studies are required to establish the specific effectiveness of aloe vera compresses compared with standard compresses or other appropriate fever-management approaches.

CONCLUSION

This study demonstrated a statistically significant reduction in body temperature following the administration of aloe vera compresses among 34 toddlers experiencing increased body temperature after DPT immunization. The observed temperature reduction ranged from 0.2°C to 0.3°C . However, because this study used a pre-experimental design without a control group, the findings cannot establish that the observed reduction was caused specifically by aloe vera. Further controlled studies are needed to determine the comparative effectiveness of this intervention.

SUGGESTION

Community health centers and other healthcare professionals are advised to improve public health education on how to manage fever in toddlers, including the use of aloe vera compresses. Furthermore, public awareness campaigns should be conducted on the benefits of aloe vera in lowering the body temperature of toddlers with fever. Mothers should also improve their child-care skills, including how to manage fever with aloe vera compresses. Aloe vera can be used as a safe and effective alternative treatment for fever in toddlers. To confirm its effectiveness, further research on the use of aloe vera compresses in lowering the body temperature of toddlers with post-immunization fever is needed on a larger scale.

DECLARATIONS

Ethics Approval and Informed Consent

Ethical approval was obtained from the Health Research Ethics Committee of the Banyuwangi College of Health Sciences (Sekolah Tinggi Ilmu Kesehatan Banyuwangi) under reference number 351/01/KEPK-STIKESBWI/IX/2024, dated September 10, 2024. Research activities conducted between June and September 2024 were limited to the preparation and data collection phases. Following the issuance of ethical approval, the research proceeded—commencing after said approval—and continued through December 2024. Informed consent was obtained prior to the conduct of the research.

Author Contributions

Miftahul Hakiki contributed to the conceptualization, methodology, data collection, data analysis, interpretation of findings, and drafting of the manuscript. Setiana Andarwulan contributed to supervision, methodological guidance, interpretation of findings, and critical revision of the manuscript. All authors have read and approved the final version of the manuscript.

Funding

This research received no external funding.

Conflict of Interest

The authors declare that there is no conflict of interest related to this study

Artificial Intelligence Declaration

Generative artificial intelligence via OpenAI ChatGPT was used to a limited extent to support the manuscript revision process, specifically for refining English language usage, checking for consistency, organizing the manuscript structure, and adjusting formatting. Any contributions generated with the assistance of AI have undergone evaluation and verification by the authors. Full responsibility for the scientific validity, originality of the work, publication integrity, and the final substance of the manuscript rests with the authors.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to applicable ethics, privacy, and confidentiality requirements.

REFERENCES

- Amelia, D., Putri, S. A., & Rosdiana. (2023). Penerapan Terapi Kompres Aloe vera Pada Anak Demam. *JUKEJ (Jurnal Kesehatan Jompa)*, 2(1) hal 105-110 DOI : <https://doi.org/10.57218/jkj.Vol2.Iss1.703> .
- Amelia, D., Putri, S. S., & Rosdiana. (2023). Penerapan Terapi Kompres Aloe vera Pada Anak Demam. *Jurnal Kesehatan Jompa*, 2 (1), 105-110.
- Aziz, A. (2019). *Metodologi Penelitian Keperawatan Dan Kesehatan*. . Jakarta: Salemba Medika.
- Barus, D. T. (2021). EFEKTIVITAS INTERVENSI KOMPRES ALOEVERA TERHADAP PENURUNAN SUHU TUBUH ANAK FEVER DI PUSKESMAS BAHBAK KOTA PEMATANGSIANTAR KEC. SIANTAR MARIMBUN 2020. *Jurnal Penelitian Keperawatan Medik*, Vol 3 No 1, Hal : 120-131.
- Edhis, F., Mamentu, P., & Harun, R. (2024). Pengaruh Pemberian Kompres Aloe Vera Terhadap Suhu Tubuh Pada Anak Di Wilayah Kerja Puskesmas Kuma Kecamatan Tabukan Tengah Kabupaten Kepulauan Sangihe . *Vitamin Jurnal Ilmu Kesehatan Umum*, 2 (1), 107-117.
- Hadianti, D. N., Mulyati, E., Ratnaningsih, E., Sofiati, F., Saputro, H., Sumastri, H., . . . Ratnasari, Y. (2015). *Buku Ajar Imunisasi*. Jakarta Selatan: Pusat Pendidikan dan Pelatihan Tenaga Kesehatan .

- Hety, D. S., & Susanti, I. Y. (2020). Pengetahuan Ibu Tentang Cara Penanganan Kejadian Ikutan Paska Imunisasi (KIPI) Pada Bayi Usia 0-1 Tahun Di Puskesmas Mojosari Kabupaten Mojokerto . *JQWH (Journal for Quality in Women Health)*, Vol 3 No 1, Hal : 72-77.
- JATIM. (2021). *Profil Kesehatan 2021* . Surabaya: Dinas Kesehatan Provinsi Jawa Timur <https://dinkes.jatimprov.go.id/userfile/dokumen/PROFIL%20KESEHATAN%202021%20JATIM.pdf>.
- Nursalam. (2020). *Metodologi Penelitian Ilmu Keperawatan: Pendekatan Praktis. Edisi 5*. Jakarta Selatan: Salemba Medika.
- Pangesti, W., & Murniati. (2023). Penggunaan Kompres Aloe vera Untuk Menurunkan Suhu Tubuh Aak Demam: Case Study. . *Jurnal Manajemen Asuhan Keperawatan*, 7 (2), 88-94.
- Patricia, P., & Griffin, P. A. (2019). *Buku Ajar Fundamental Keperawatan Konsep Proses Dan Praktik* . Jakarta: ECG.
- Rejeki, S., & Hadinegoro. (2024). *Pedoman Imunisasi di Indonesia Edisi 7 Tahun 2024*. Jakarta: Badan Penerbit IDAI.
- Sari. (2024). FAKTOR-FAKTOR YANG BERHUBUNGAN DENGAN KECEMASAN IBU DALAM PEMBERIAN IMUNISASI DPT PADA BAYI. *Ensiklopedia Of Journal*, Vol 6 No 3, Hal : 169-175.
- Sari, M. P., Izzah, A. Z., & Harmen, A. P. (2018). Gambaran Kejadian Ikutan Pasca Imunisasi pada Anak yang Mendapatkan Imunisasi Difteri Pertusis dan Tetanus di Puskesmas Seberang Padang Kota Padang. *Jurnal Kesehatan Andalas*, Vol 7 No 3, Hal : 352-357.
- Sugiyono. (2019). *Metodelogi Penelitian Kuantitatif dan Kualitatif Dan R&D* . Bandung: Alfabeta.
- Suwanti, I., Purwanto, F., & Darsini. (2023). Transfer Iptek Penanganan Febris Menggunakan Kompres Hangat Pada Ibu Dengan Anak Usia Prasekolah. . *Jurnal Bhakti Civitas Akademika*. , 6 (2), 12-22.
- Swarnata, & Surya, P. G. (2022). Asuhan Keperawatan Hipertermia Pada Anak Yang Mengalami Kejang Demam Di Ruang High Care Unit (HCU) RSD Mangusada Tahun 2022. . *Braz Dent J.*, , 33(1), 1–12.
- WHO. (2020). *Basic Documents edisi ke-49*. Jenewa: ISBN 978-92-4-000052-0 <https://iris.who.int/server/api/core/bitstreams/603b941a-870c-41aa-b957-1e04a3fc463a/content>.