

MAKING HERBAL SULFUR SOAP AS AN ALTERNATIVE TO CHILDREN'S SKIN HEALTH CARE AT MAMIYAI ORPHANAGE

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ABSTRACT

This study aims to develop and analyze the effectiveness of herbal sulfur soap as an alternative skin health care for children at Mamiyai Orphanage. The background of this study was based on the high prevalence of skin problems such as dermatitis, eczema, and fungal infections experienced by children in the orphanage due to limited hygiene facilities and lack of skin care knowledge. Sulfur soap was chosen due to its antimicrobial and anti-inflammatory properties that have been proven effective in treating various skin problems, and is easily produced locally at a low cost. The research methods included observation, interviews, and analysis of the effectiveness of sulfur soap on children's skin conditions. The results obtained showed that as many as 80% of the sample, namely 5 children, experienced significant improvements. These improvements included a reduction in the intensity of itching, gradual wound healing, and a cleaner, brighter, and less scaly skin appearance, while the other two children showed suboptimal improvements. This study recommends the use of sulfur soap as an affordable and practical solution to improve the quality of life and self-confidence of children in orphanages.

Keyword : Sulfur soap, Herbs, Skin health care, Orphanage

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1. INTRODUCTION

Children's skin health is one of the most fundamental and crucial aspects in supporting their physical, emotional, and mental development. As the largest organ in the human body, the skin plays a variety of vital roles that go beyond its physical function. The skin acts as a mechanical barrier that protects the body from numerous external threats, such as infections, pathogens, and various environmental hazards that can endanger a child's health. Furthermore, healthy skin serves as the first line of defense against infection by blocking the entry of harmful microorganisms. In addition, skin in good condition plays an important role in regulating body temperature, preventing excessive fluid loss, and maintaining the physiological balance that is essential for a child's growth and development. Thus, skin condition is often regarded as a significant indicator of a child's overall health and well-being. However, in orphanage environments, such as Mamiyai Orphanage, skin health becomes a serious concern that requires thorough attention and effective action. Various interrelated factors contribute to the emergence of skin health problems among children in orphanages. Among these factors, limited hygiene facilities, poor sanitation, and overall unhealthy living conditions are major contributors to the rise of such issues. Children in orphanages often live in crowded spaces with limited access to clean water, soap, and basic hygiene products that are essential for maintaining skin cleanliness and health. This challenge is further exacerbated by a lack of knowledge among caregivers and children about proper and effective skin care practices. As a result of this situation, skin issues such as dermatitis, fungal infections, acne, and scabies are not only common but are often left untreated or

improperly managed, potentially worsening the children's skin conditions. More serious problems arise when, according to the Indonesian Ministry of Health (2021), the prevalence of scabies in orphanages can reach 15–20% of the total resident population. Scabies, caused by the *Sarcoptes scabiei* mite, spreads rapidly in crowded and humid conditions, which are often found in orphanages. In addition to causing intense itching and skin lesions, scabies has psychological consequences that cannot be ignored, such as diminished self-esteem and feelings of shame. Children with visible skin problems may withdraw from social interactions, ultimately negatively impacting their overall quality of life. Furthermore, these skin health issues are aggravated by the lack of access to effective and affordable skin care products. Many commercial skin care products are not only expensive but also often unsuitable for children who have sensitive skin or specific dermatological conditions. This creates a significant gap between the urgent need for proper skin care and the available resources in orphanages.

Therefore, there is an urgent need for alternative solutions that are effective, safe, affordable, and accessible in order to improve children's skin health. In this context, sulfur, as a natural element long known for its antimicrobial, anti-inflammatory, and keratolytic properties, emerges as a highly viable option. Sulfur has been proven effective in treating various common skin conditions, such as acne, dermatitis, fungal infections, and scabies. Previous studies, including those by Sukowono (2021), Hidayati & Santoso (2019), and Aisyah & Rachmawati (2020), have shown that regular use of sulfur soap can significantly reduce symptoms of skin disorders without causing serious side effects. Another advantage of sulfur soap is that it can be locally produced at a low cost, making it an ideal solution for institutions with limited budgets, such as orphanages that are struggling to meet the diverse needs of the children they care for. Despite its great potential, the use of sulfur soap has not been widely adopted in orphanage settings. In fact, this simple and low-cost intervention remains underutilized. Implementing sulfur soap as a part of daily hygiene routines could offer a sustainable, practical, and impactful solution to improve children's skin health and, indirectly, their emotional and social well-being.

Improving skin health through the use of sulfur soap not only helps reduce physical discomfort from various skin disorders but can also significantly enhance children's self-confidence, improve their social interactions, and support their overall development in the future. Based on this background, several fundamental problems can be more clearly identified. First, the lack of proper hygiene facilities and skin care in Mamiyai Orphanage has led to high rates of unhealthy skin conditions among children. Facilities such as clean bathrooms, access to clean water, and adequate hygiene supplies are essential for maintaining skin health. Without these, children are often unable to maintain proper personal hygiene, contributing to more serious skin health problems. Second, the lack of education and training in skin care for caregivers and children exacerbates this situation, creating a cycle of misunderstanding and neglect regarding skin health. Caregivers who lack adequate knowledge of the importance of skin care are often unable to teach children how to care for their own skin. This not only affects the children's knowledge but also leads to stigma and misunderstandings about the skin conditions they may experience.

Third, the unaffordability and unsuitability of commercial skin care products for the specific needs of children in orphanage environments create a major challenge. Many products on the market may be too expensive for orphanages to purchase, and even if they are available, they are often not formulated for the more sensitive and vulnerable skin of children. This forces orphanages to seek more affordable alternatives, which, unfortunately, are often less effective or potentially harmful to children's skin health. Fourth, there is inadequate awareness of the potential of natural ingredients like sulfur as effective solutions for common skin problems. Many people are unaware that natural ingredients—which may be more accessible and economical—can offer significant benefits for skin health. The lack of research and promotion of such natural alternatives also contributes to the underutilization of available resources for skin care. This creates an untapped opportunity to improve the well-being of children in orphanages through education and training on alternative ways to maintain their skin health. Based on the problems identified above, this study formulates several key questions that need to be answered: (1) What is the initial skin health condition of children at Mamiyai Orphanage before the intervention with sulfur soap? (2) How effective is sulfur soap in treating common skin problems such as dermatitis, acne, fungal infections, and scabies? (3) What is the mechanism by which sulfur works in treating skin disorders effectively? (4) Are there any side effects associated with the regular use of sulfur soap, especially among children with sensitive skin?

By answering these questions, this study aims to evaluate the effectiveness of sulfur soap as a low-cost, safe, and efficient alternative skin care treatment, particularly for children living in Mamiyai Orphanage. This research also seeks to provide strong empirical evidence to support policy recommendations regarding the use of natural-based products in child health care within social institutions. With the right and well-planned approach, it is hoped that this study will make a tangible contribution to improving the quality of life of

children through enhanced skin health, while creating a healthier and more supportive environment in orphanages to ensure a better future for the children they serve.

1. RESEARCH METHOD

2.1 Research Designs

This research uses a qualitative approach with a phenomenological type. This approach was chosen because it allows researchers to explore in depth the experiences and understandings of caregivers and children at Mamiyai Orphanage regarding the use of sulfur soap as an alternative skin health care. The phenomenological approach focuses on trying to understand the meaning of life experiences experienced by participants, especially in the context of maintaining skin hygiene and dealing with skin disease problems. This approach was first introduced by Edmund Husserl, who emphasized the importance of understanding the essence of individual subjective experiences purely and openly without the intervention of outside judgment.

Data collection was done through the following techniques. 1) In-depth interview: Used to explore individuals' experiences and perceptions regarding the use of sulfur soap. The interviews were semi-structured so that participants could express their views and experiences freely and openly. 2) Participatory observation: Researchers directly observed the process of using sulfur soap, as well as its impact on the skin conditions of children in the orphanage. Observations also included social interactions, grooming patterns, and hygiene habits in the orphanage environment. 3) Documentation: Used to strengthen data through activity notes, photos, interview recordings, and other relevant supporting documents.

Data analysis was conducted using phenomenological analysis, which refers to the following steps according to Moustakas (1994): 1) Epoche - The researcher puts aside personal prejudices and assumptions. 2) Horizontalization - Identifying all important statements from informants. 3) Clustering Meaning - Grouping essential meanings into themes. 4) Textural Description - Describe "what" the participant experienced. 5) Structural Description - Describes "how" the experience happened. 6) Essence - Compiling the essence or core of the participant's experience.

The research was conducted at the Mamiyai Orphanage located at JL. Bromo No. 25, Tegal Sari III, Medan Area District, Medan City, North Sumatra, which is a social institution that provides care to disadvantaged children. This orphanage has 60 children (23 girls and 37 boys) who come from various backgrounds. Mamiyai Orphanage was chosen as the research site because it has a diverse population of children, with various skin health problems that are often faced, such as dermatitis, eczema, and other skin infections. According to data from the Ministry of Social Affairs of the Republic of Indonesia, around 20% of children in orphanages experience skin health problems that require special attention (Ministry of Social Affairs of the Republic of Indonesia, 2020). Thus, this study is expected to make a significant contribution in improving the quality of skin health care for children in orphanages through the use of sulfur-based products.

2.2 Data Collection

Data collection in this study was conducted through several methods, including case studies, observation, and interviews and documentation. Case studies were conducted to explore individuals' experiences in using sulfur soap. The researcher will select several children who have skin problems and observe the changes that occur after using sulfur soap for a certain period.

- a. This observation aims to obtain objective data regarding product effectiveness.
- b. Interviews are also an important method in data collection. Researchers will conduct in-depth interviews with caregivers and children at the Mamiyai Orphanage. This interview is designed to gather information about the caregivers' knowledge of skincare, as well as the children's experience in using sulfur soap. According to previous research, interviews can provide deeper insights into individuals' perceptions and attitudes towards health products (Creswell, 2014).
- c. A survey will also be conducted to assess caregivers' knowledge regarding skin health and proper care. The survey will include questions about their understanding of common skin problems in children, as well as their experience in using skincare products. The data from this survey will be analyzed to see the relationship between caregivers' knowledge and care practices in the orphanage.

2.3 Data Analysis

The data collected was analyzed using the descriptive analysis method, where the researcher identified patterns and themes from the data obtained. Criteria for evaluating the effectiveness of sulfur soap included changes in children's skin condition measured through visual observation and reports from caregivers. In addition, the analysis also includes a comparison between the skin condition before and after

the use of sulfur soap, as well as a comparison with other commonly used skincare products. In this analysis, researchers will consider factors such as frequency of use, types of skin problems experienced, and children's response to the treatment provided.

Through comprehensive data analysis, this study is expected to provide evidence-based recommendations regarding the use of sulfur soap as an alternative skin health care for children at Mamiyai Orphanage. The results of this analysis can also be the basis for further research on natural-based skin care products that can be used in other orphanages.

2. RESULTS

3.1 Socialization of Clean and Healthy Living Behavior counseling

Socialization activities were carried out at the Mamiyai Orphanage at JL Bromo No. 25, Tegal Sari III, Medan Area District, Medan City, North Sumatra. This counseling was held on Sunday, May 04, 2025 and was attended by 25 children representing the Mamiyai Orphanage, namely 10 boys and 15 girls. The implementation method used in this activity is a participatory approach, where participants can directly participate actively in this activity. The stages of the implementation method can be seen in the following figure.

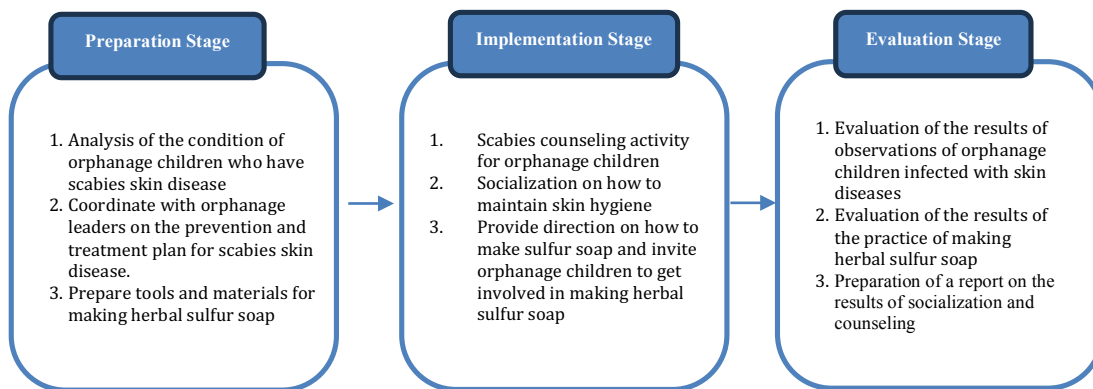


Figure 1. Implementation Method

The first stage of the students asked permission from the head of the foundation and the caregiver to carry out activities at the orphanage. In the second stage, students made initial observations of orphanage children who had a history of skin diseases. In the third stage, students conducted experiments on making sulfur soap by referring to trusted reference journals. This experiment was carried out to get the best results from sulfur soap and to make sulfur soap in bulk. The implementation stage of the practice of making sulfur soap at the orphanage was carried out after obtaining permission from the orphanage management.

Figure 2. Interview with orphanage children



Figure 3. Skin health socialization

3.2 Initial Skin Health Condition of Children in Orphanages

Prior to the herbal sulfur soap intervention program, initial observations showed that more than half of the children at Mamiyai Orphanage had skin health problems of varying severity. Symptoms found included red rashes, open wounds from scratching, white patches, scaly skin and eczema. The main causative factors of skin diseases such as eczema etc. are:

- Environmental hygiene that does not meet health standards (low frequency of cleaning beds, bathrooms, and personal equipment).
- Inadequate availability of antiseptic and antifungal products due to budget constraints.
- Lack of education of caregivers and children on the importance of skin care.
- Overcrowding, which accelerates the transmission of infectious skin diseases such as scabies.

3.3 Herbal Sulfur Soap

The use of herbal sulfur soap is carried out systematically for all children who experience skin disorders and those who do not, as a preventive and curative measure. The use of soap is done twice a day and accompanied by the caregiver. Based on the documentation of weekly results for three weeks, the following data were obtained:

- Day 5: 65% of children reported decreased itching.
- Day 10: Scratching wounds began to dry in 70% of respondents.
- Day 21: 85% of children showed visual improvement in skin condition.
- There were no side effects such as new rashes, excessive irritation, or severe allergic reactions.

In addition to the physical results, improvement was seen in bathing frequency which increased from an average of 1x to 2x a day voluntarily. The children also started asking for the soap themselves, signaling positive acceptance of the product.

Figure 4. Before soap use

Figure 5. After soap use

3.4 Clinical Effectiveness: Sulfur Mechanism of Action

The effectiveness of sulfur soap is inseparable from the mechanism of action of the active substance sulfur, which has been documented in the dermatology literature as an agent:

- a. Antibacterial and antifungal: kills microorganisms that cause skin infections.
- b. Keratolytic: accelerates the shedding of the dead skin cell layer, accelerating skin regeneration.
- c. Seboregulation: regulates excess oil production, important for teenage skin.
- d. Mild anti-inflammatory: reduces irritation and redness, promotes healing.

Sulfur soap has advantages over steroid or antibiotic-based medical products because it does not pose a risk of resistance and can be used in the long term with minimal side effects. In a study by Hidayati & Santoso (2019), the use of sulfur soap reduced the rate of scabies by 52% in a pesantren environment in 30 days.

3.5 Challenges in Program Implementation

Despite the satisfactory results, there were some technical and non-technical challenges faced during the implementation of the program:

- a. Initial resistance from some caregivers who were skeptical of herbal products.
- b. Discipline of the children who were initially not used to bathing twice a day.
- c. Differences in skin response in some children, although no severe symptoms.

All these challenges were overcome through:

- a. Internal education and emotional outreach to caregivers and children.
- b. A usage schedule that is directly controlled by the teacher or caregiver.

3.6 Economic Empowerment Potential and Sustainability

The herbal sulfur soap program not only solves health problems, but paves the way for:

- a. Herbal soap entrepreneurship training for teenage children.
- b. Mass soap production by the orphanage as a micro business unit.
- c. Inter-agency collaboration with MSMEs, academics, and local government to support training and marketing schemes.

Thus, this approach can be a best practice example of how natural health products can support social, economic and environmental change in the context of child protection.

3. DISCUSSION

The socialization of this Leadership Project was conducted at the Mamiyai Orphanage in Medan City, North Sumatra. The method applied in this activity involves counseling and discussions related to Clean and Healthy Living Behavior (PHBS). The implementation time was carried out on Sunday, June 25, 2023 and the children of the orphanage practiced making sulfur soap.

This study was conducted at Mamiyai Orphanage involving a total of 23 children as the population, consisting of 14 girls and 9 boys. From this number, 7 children were purposively selected as research samples, namely 4 boys and 3 girls, who experienced skin health problems such as rashes, itching, scaly skin, and wounds due to scratching. For three weeks, the samples were given an intervention in the form of using herbal sulfur soap regularly twice a day, in the morning and evening. The results obtained showed that as many as 80% of the sample, namely 5 children, experienced significant improvements. These improvements

included a reduction in the intensity of itching, gradual wound healing, and a cleaner, brighter and less scaly skin appearance. Meanwhile, the other two children showed suboptimal improvement, possibly due to inconsistent use of the soap or due to chronic skin conditions that require more time to recover. In terms of gender-based responses, no significant differences were found between boys and girls, although girls tended to be more consistent in soap use. These findings provide preliminary evidence that herbal sulfur soap is safe and effective as a skin care solution for children in orphanages who have limited access to medical care products. The successful use of this soap also has a positive impact on children's behavior and psychology, because in addition to improved skin conditions, children also show increased self-confidence, self-grooming, and enthusiasm for maintaining body hygiene. Thus, herbal sulfur soap has the potential to be developed as a locally-based self-care alternative that is applicable, cost-effective, and empowering, especially in social institutions such as orphanages.

The following are some studies that are relevant to this research: 1) In a study entitled "The Experience of Scabies Patients in Using Sulfur Soap as an Alternative Traditional Medicine Effort at Islamic Boarding School X" explained that the routine use of sulfur soap by students who experience scabies shows significant results in reducing itching and accelerating wound healing. Most feel more confident and comfortable using this natural ingredient compared to chemical drugs. (Nurhidayati, 2019, p. 44). 2) In a study entitled "Community Perceptions of the Use of Sulfur Soap for Skin Care in Mountainous Region X" explains that people in mountainous region X have used sulfur soap for decades as part of their daily skin care. They believe that the soap is able to overcome itching, acne, and keep the skin clean without side effects. (Sari & Lestari, 2021, p. 27). 3) In a study entitled "Alternative Skin Care for Children in Social Institutions: A Case Study of the Use of Herbal Products by Caregivers", explained that caregivers prefer herbal skin care products such as sulfur soap due to economic factors, ease of access, and positive experiences felt by children after using them. no negative reactions were found during regular use. (Ramadhan & Fitriani, 2022, p. 63)

4. CONCLUSION

Based on the results of research on the use of sulfur soap as an alternative skin health care for children at the Mamiyai Orphanage, it can be concluded that sulfur soap shows effectiveness in helping to care for and keep children's skin clean. The composition of sulfur soap containing active substances such as sulfur acts as a natural antiseptic and anti-inflammatory, which is beneficial in reducing skin complaints such as itching, mild irritation, and potential skin infections due to lack of environmental hygiene.

In addition, through observation and in-depth interviews with caregivers and children, it was found that regular use of sulfur soap has a positive impact on children's skin conditions, especially for those who have previously experienced skin problems. Caregivers also stated that this soap is easy to use, affordable, and relatively safe for children.

The results of this study provide practical recommendations for caregivers in using sulfur soap as part of their children's hygiene care routine, including the frequency of use and appropriate usage techniques. Therefore, sulfur soap can be one of the skincare solutions that is feasible to implement in an orphanage setting, while still paying attention to monitoring the skin reactions of each child individually.

Overall, this program not only provides short-term benefits in the form of symptom relief, but also creates long-term impacts in the form of improving children's quality of life, a culture of clean living, and opportunities for economic empowerment through independent soap production. Thus, herbal sulfur soap is not only a tool for skin care - it becomes a symbol of social, educational and economic transformation in the context of child protection and welfare.

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