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The Efficacy of Papuan Jasmine Leaves (Clerodendrum Chinense) as an Alternative Treatment for Boils in the Papuan Community

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ABSTRACT

This study aims to examine the efficacy of Papuan Jasmine (Clerodendrum chinense) leaves as an alternative treatment for boils (furuncles) in Papuan society, as well as to determine how to prepare and use them traditionally. The study used a descriptive method with a qualitative approach through data collection techniques in the form of interviews, observation, and documentation. The results of the study indicate that Papuan Jasmine leaves have traditionally used Papuan Jasmine leaves as a traditional medicine to treat boils because they have anti-inflammatory and antibacterial properties that can help treat skin infections such as furunculosis, impetigo, and other skin infections caused by Staphylococcus aureus bacteria. The method of use is carried out by heating the leaves over a fire until they wilt, then smeared with pure coconut oil and applied to the affected area. The next day, the boil will burst and the boil will come out. These findings indicate that the use of local plants based on ethnomedicine is still relevant and has the potential to be developed as an affordable alternative traditional medicine for the community

INTRODUCTION

Indonesia is one of the countries with the highest levels of biodiversity in the world (megabiodiversity country), including in terms of medicinal plants. Papua, as the region with the largest forest area in Indonesia, has a forest area of approximately 32 million hectares, or approximately 34% of the total national forest area (Kartikasari et al., 2012). This area is a habitat for approximately 15,000–20,000 plant species, with an endemism rate of 55% (Kartikasari et al., 2012). The potential for this floral diversity makes Papua one of the most important centers of traditional medicinal plant resources in Indonesia.

Globally, the use of traditional medicine remains an important part of the healthcare system. The World Health Organization notes that approximately 80% of the population in developing countries still relies on traditional medicine for primary healthcare needs (World Health Organization [WHO], 2013). In Indonesia, the Basic Health Research (Riskesdas) results indicate that more than 30% of households utilize traditional healthcare services, including the use of herbal concoctions (Ministry of Health of the Republic of Indonesia, 2018). This data demonstrates that plant-based medicine still plays a significant role in the public healthcare system.

In the context of ethnomedicine, the use of medicinal plants is not only related to health aspects, but also to local knowledge systems and cultural practices passed down through generations. Ethnomedicinal studies have proven effective in identifying new bioactive compounds with the potential to be developed into modern medicines (Purwanto, 2002; Walujo, 2009). Many modern medicines originate from the traditional knowledge of local communities, making scientific documentation of traditional healing practices crucial for the preservation and development of knowledge.

One common skin health problem in the community is boils (furuncles), an acute infection of the hair follicles generally caused by the bacteria Staphylococcus aureus (Jawetz et al., 1995). This infection can progress to furunculosis or carbuncles if not treated properly. Clinically, bacterial skin infections are among the ten most common diseases in primary healthcare settings in Indonesia (Ministry of Health of the Republic of Indonesia, 2018). Tropical climates with high temperatures and humidity, such as in Papua, are also risk factors for increased bacterial skin infections.

Access to modern healthcare facilities in some remote areas of Papua remains limited due to geographical conditions and the uneven distribution of healthcare workers (Papua Central Statistics Agency, 2022). This situation encourages communities to maintain traditional healing practices as accessible, economical, and culturally appropriate alternatives.

One of the plants used by Papuans in traditional medicine is Clerodendrum chinense, also known as Papuan Jasmine. This plant is reported to contain secondary metabolites such as flavonoids, tannins, saponins, and steroids, which have anti-inflammatory and antibacterial activity (Bangun, 2012). Pharmacologically, flavonoids are known to inhibit bacterial growth and suppress inflammation through the inhibition of pro-inflammatory mediators (Gunawan, 2000). This content theoretically supports the use of Papuan Jasmine leaves in treating skin infections such as boils.

Although the use of Papuan jasmine leaves has been traditionally practiced by local communities, scientific documentation of this practice remains very limited, particularly regarding the preparation and mechanism of use within the context of Papuan ethnomedicine. Strengthening scientific evidence for traditional healing practices is crucial to increase their validity, safety, and potential for development as phytopharmaceuticals.

Based on this background, this study is important to document and analyze the efficacy of Papuan Jasmine (Clerodendrum chinense) leaves as an alternative treatment for boils (furuncles) in Papuan society, while enriching ethnomedicinal studies and supporting the development of traditional medicine based on local wisdom.

METHODS

This study employed a descriptive method with a qualitative approach. The qualitative approach was chosen because this study aimed to deeply understand the phenomenon of the use of Clerodendrum chinense leaves as an alternative treatment for boils in the cultural context of the Papuan people. Qualitative research is used to examine the natural conditions of objects, with the researcher acting as the key instrument, data collection techniques using triangulation, data analysis being inductive, and research results emphasizing meaning rather than generalization (Sugiyono, 2015).

A descriptive approach is used to systematically describe the facts and characteristics of the object under study, particularly regarding community knowledge, preparation methods, and the practice of using Papuan jasmine leaves in treating boils. Descriptive research aims to provide an accurate picture of the facts and relationships between the phenomena under study (Moleong, 2014).

Data collection techniques included in-depth interviews, observation, and documentation. Interviews were used to obtain direct information from informants regarding their knowledge, experience, and practice of using Papuan jasmine leaves as a traditional medicine. Observations were conducted to directly observe the process of concocting and using the leaves in treating boils. Documentation was used to supplement the data in the form of field notes, photographs, and other supporting documents. The use of these various techniques aimed to increase data validity through triangulation of sources and methods (Bungin, 2012).

Data analysis was conducted inductively through the stages of data reduction, data presentation, and conclusion drawing. This process refers to the interactive analysis model, which states that qualitative data analysis continues until data saturation is reached (Miles & Huberman, 1992). Therefore, the research results are expected to provide a comprehensive understanding of the efficacy and use of Papuan jasmine leaves as an alternative treatment for boils in Papuan communities.

RESULTS AND DISCUSSION

An Overview of Ethnomedicine in the Context of Traditional Papuan Medicine

Research results show that traditional medical practices in Papua are still heavily influenced by local knowledge systems passed down through generations. In this context, ethnomedicine serves as a conceptual framework explaining how communities understand disease, its causes, and treatment methods based on their own cultural perspectives. Ethnomedicine is a branch of medical anthropology that studies traditional health systems and community perceptions of disease and treatment practices (Bhasin, 2007; Walujo, 2009).

The findings of this study demonstrate that the use of Papuan jasmine leaves (Clerodendrum chinense) as a remedy for boils is inseparable from the belief systems and empirical experiences of the community. This is in line with Smith-Hall et al. (2012), who stated that the consumption and use of medicinal plants are influenced by the interaction between the ecological environment, culture, and community health needs. In the Papuan context, limited access to modern health facilities in some remote areas also strengthens the role of traditional medicine as the primary alternative.

Furthermore, Purwanto (2002) emphasized that ethnomedicinal studies are highly effective in identifying potential new bioactive compounds because they are based on empirical community experience. The results of this study support this view, as the use of Clerodendrum chinense as a remedy for boils is based on collective experience that has been socially tested over a long period of time.

Papuan People's Knowledge about Boils (Furuncles)

Based on interviews and observations, Papuans understand boils as painful, pus-filled red bumps. Medically , boils (furuncles) are suppurative infections of hair follicles, generally caused by the bacteria Staphylococcus aureus (Jawetz et al., 1995; Syahrurrachman, 1994). This infection is characterized by a local inflammatory process

involving swelling, redness, and abscess formation (Campbell, 2004).

Although clinically the cause is a bacterial infection, research shows that from certain cultural perspectives—for example, among some Koroway people—boils are also interpreted as a form of customary sanction or punishment from ancestors for violating certain norms. This phenomenon demonstrates a dual understanding of biological and spiritual causes.

According to Zhang (1996), ethnomedicinal systems are not only concerned with healing practices but also encompass a conceptual framework regarding the etiology of disease based on cultural cosmology. Thus, Papuan people's understanding of boils is not solely viewed as a bacterial infection but can also be linked to moral and social dimensions.

However, this study also found that communities have begun to integrate modern medical understanding, particularly regarding hygiene, sanitation, and bacterial infections. This indicates a process of knowledge hybridization between traditional and biomedical systems.

Environmental Factors and Access to Health Services

Papua has unique geographic and ecological conditions, with relatively high humidity and temperatures. This tropical environment has the potential to support the growth of pathogenic microorganisms, including Staphylococcus aureus . Furthermore, limited access to modern healthcare facilities in some remote areas leads to increased reliance on traditional medicine.

According to Peltzer and Pengpid (2019), traditional health practitioners in Indonesia still play a vital role in the public health system, particularly in areas with limited access to medical services. This study's findings support this argument, highlighting the practical, economical, and accessible use of medicinal plants.

This condition shows that traditional medicine is not just a cultural choice, but also a response to social and geographical structures that influence access to health services.

Medicinal Plants for Boils in Local Papuan Practice

Observations show that in addition to Papuan jasmine leaves, several other plants are used to treat boils, such as purple leaf (Graptophyllum pictum), wild betel (Piper betle), turmeric, garlic, and aloe vera. These plants are known to have anti-inflammatory and antibacterial properties.

According to Gunawan (2000), medicinal plants contain secondary metabolites such as flavonoids, tannins, saponins, and alkaloids, which play a role in their pharmacological activity. Flavonoid compounds, for example, have antioxidant and anti-inflammatory properties, while tannins have antibacterial and astringent effects.

The diversity of plant uses demonstrates that Papuans possess a rich traditional pharmacopoeia system that is adaptive to local environmental conditions. This is in line with Rosita et al. (2007), who stated that the diversity of medicinal plant species in Indonesia reflects the interconnected cultural and ecological richness.

Efficacy of Papuan Jasmine Leaves (Clerodendrum chinense) in Treating Boils

Bioactive Content and Pharmacological Activity

Research shows that Papuan Jasmine leaves are believed to have anti-inflammatory and antibacterial properties. This plant is known to contain flavonoids, tannins, saponins, and steroids, which have scientifically proven potential for supporting wound healing and infection prevention. Flavonoids play a role in inhibiting bacterial growth and reducing inflammation by suppressing the production of inflammatory mediators (Gunawan, 2000). Tannins have the ability to precipitate bacterial proteins and accelerate wound healing. Saponins also have mild antiseptic effects that can help prevent the spread of infection.

In the context of boils caused by Staphylococcus aureus , these antibacterial properties become relevant. Jawetz et al. (1995) explained that the bacterium possesses virulence factors such as coagulase and protein A, which facilitate abscess formation. Therefore, the use of

natural ingredients with antibacterial activity may help inhibit the development of the infection.

Traditional Healing Mechanisms

Based on the interview results, the method of using Papuan Jasmine leaves is carried out in the following way:

1. Take one leaf.
2. Heat the leaves over a fire until they wilt.
3. Apply pure coconut oil to the surface of the leaves.
4. Apply the leaves to the boil overnight.

The next day, the boils were reported to have come out and stuck to the leaves.

Scientifically, the heating process can help soften the leaf tissue, facilitating the release of active compounds. Virgin coconut oil itself is known to have mild antimicrobial properties due to its lauric acid content. The combination of the two allows for a warm compress effect while simultaneously applying a natural antibacterial agent.

Campbell (2004) explains that local inflammation causes increased blood flow and the accumulation of phagocytic cells. Warm compresses can help increase blood circulation to the infected area, thereby accelerating abscess maturation. Thus, this traditional practice has a physiological rationale that can be explained biomedically.

Integration of Traditional Knowledge and Modern Science

This research demonstrates the intersection of ethnomedicinal systems and biomedical approaches. Walujo (2013) emphasized that ethnobotanical research plays a crucial role in bridging local wisdom with scientific validation.

Field findings show that people don't completely reject modern medicine, but rather use it as a complement. Alternative treatment using Papuan jasmine leaves is preferred primarily for mild to moderate cases.

This is in accordance with the concept of complementary and alternative medicine (CAM), namely a non-conventional treatment system used as a complement or alternative to medical treatment (Peltzer & Pengpid, 2019).

Social and Cultural Dimensions in the Use of Papuan Jasmine Leaves

Beyond its medicinal aspects, the use of Papuan jasmine leaves has a strong social dimension. Knowledge of this plant is passed down through families and traditional leaders. Informants stated that this practice has been practiced since the 1980s and continues to this day.

According to Walujo (2009), preserving ethnobotanical knowledge is crucial for maintaining cultural identity and the potential for developing national pharmaceuticals. If not properly documented, this knowledge risks being lost due to modernization. This research contributes to documenting these practices systematically and scientifically.

Implications for Development and Potential of Phytopharmaceuticals

The research findings offer the potential for developing Papuan jasmine leaves as a phytopharmaceutical product. However, further research is needed, including:

1. Phytochemical tests to identify specific active compounds.
2. Antibacterial activity test against Staphylococcus aureus in vitro.
3. Long-term toxicity and safety testing.

Purwanto (2002) stated that many modern medicines are derived from plants previously used in ethnomedicinal practices. Therefore, the potential for commercialization must be balanced with conservation and sustainable cultivation.

CONCLUSION

Based on the results of research and discussion regarding the efficacy of Papuan Jasmine leaves (Clerodendrum chinense) as an alternative treatment for boils (furuncles) in Papuan society, it can be concluded that this plant has an important role in traditional ethnomedicine-based medical practices that have been passed down from generation to generation.

Papuans use the leaves of the Papuan Jasmine (Jasmine Susun) as a remedy for boils, believing them to have anti-inflammatory and antibacterial

properties that are effective in treating skin infections, including boils, furunculosis, impetigo, and other skin infections caused by Staphylococcus aureus bacteria . Knowledge of this plant's properties is gained through empirical experience and passed down from generation to generation as part of local wisdom.

The preparation and application method is simple: heat the leaves until they wilt, rub them with pure coconut oil, and then apply them to the affected area. This process is believed to speed up the ripening of the boil, allowing the boil to drain naturally.

Thus, the leaves of Papuan Jasmine (Clerodendrum chinense) have the potential to be further developed through more in-depth scientific research to support their use as a safe, effective, and affordable alternative traditional medicine for the community.

Based on the results of research on the efficacy of Papuan Jasmine leaves (Clerodendrum chinense) as an alternative treatment for boils (furuncles), several recommendations can be put forward as follows:

1. **Education and Socialization Efforts**

Continuous public education and outreach are needed regarding the benefits, processing methods, and use of Papuan Melati Susun leaves as a safe and effective alternative medicine. These activities could involve healthcare professionals, academics, and community leaders to document and broaden local knowledge.

2. **Herbal Product Development**

To increase added value and ease of use, Papuan Jasmine leaves can be developed into ready-to-use herbal products, such as ointments, extracts, herbal teas, or capsules, while maintaining safety, quality, and clinical testing standards. This has the potential to increase the competitiveness of local herbal products at the regional and national levels.

3. **Conservation and Sustainable Cultivation**

To ensure the availability of raw materials, conservation efforts for the Papuan Jasmine plant in its natural habitat and planned cultivation development are necessary. Communities can be encouraged to cultivate this plant in their yards as a form of productive land use while preserving biological resources.

4. **Advanced Research Support**

Further, more in-depth research, particularly pharmacological studies and laboratory tests, is needed to identify the active compounds and clinical effectiveness of Papuan Melati Susun leaves. These scientific findings could strengthen the legitimacy of this plant's use in traditional and complementary medicine.

With these steps, it is hoped that the use of Papuan Jasmine leaves can develop scientifically and sustainably, and provide health and economic benefits for the Papuan people.

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