



## The Phenomenon of Traditional Treatment of Bone Fractures in the Serui Tribe in Manokwari District

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### ABSTRACT

This research aims to explain the phenomenon of traditional treatment for broken bones carried out by the Serui Tribe in Manokwari Regency, West Papua. The research method uses a qualitative approach with a phenomenological design through in-depth interviews with 10 informants consisting of traditional healers, patients, traditional leaders and health workers. The results of the research show that the traditional treatment for bone fractures in the Serui Tribe uses the main ingredients of the Callisia fragrans plant (Purple Pearl Grass) and pure coconut oil (VCO) which are applied to the fracture area through dressing and bandaging. There are restrictions in the treatment process in the form of a prohibition on consuming hot food and drinks. People choose traditional medicine because of cultural beliefs, more affordable costs, easier access, and fast healing experiences. The dynamics of treatment choices in society shows a transition from medical to traditional treatment in some cases that do not show progress with medical methods. The conclusion of this study reveals that the Serui Tribe's traditional bone fracture treatment practices are still popular with the public even though medical services are available, and there is potential to integrate the two treatment systems for optimal results.

## **INTRODUCTION**

Traditional medicine has become an integral part of the health system in various indigenous communities, including in Indonesia. Indigenous people still rely on traditional healing methods passed down from generation to generation as an alternative or complement to modern medical treatment (WHO, 2019). In various regions in Indonesia, traditional medicine is often used to treat injuries. In certain communities, traditional medicine is an inseparable part with various considerations. Certain areas with minimal access to health facilities, such as communities living in forest areas and remote areas, also contribute to the use of alternative medicine (Muttaqin, 2021). Apart from that, the use of alternative medicine is also triggered by the need for certain diseases that require immediate treatment such as bone fractures, especially in areas with limited access to modern health facilities (Indonesian Ministry of Health, 2021).

The Serui tribe who live in Manokwari Regency have unique traditional healing practices for treating bone fractures. This tribal community prefers traditional healing methods that use herbal concoctions, special massage techniques, and natural bandages compared to medical treatment in hospitals. This is based on the belief that traditional methods are more effective and in accordance with local cultural values (Rumainum et al., 2020).

Public trust in traditional treatment for broken bones cannot be separated from social, economic factors and limited access to health services. The study conducted by Setiawan et al. (2022) shows that economic factors play a big role in people's decisions to choose traditional medicine because the costs are more affordable compared to modern medical services. Apart from that, limited transportation and health infrastructure are also the main reasons why people prefer treatment in their own communities.

Apart from economic factors and access, trust in traditional healers or "broken bone healers" also plays an important role in this practice. Healers usually acquired their skills from generation to generation and were considered to have special abilities in treating injuries. This belief is further strengthened by testimonies from people who experienced healing after undergoing traditional treatment (Wambrauw, 2021).

On the other hand, the effectiveness and safety of this traditional method is still a matter of debate. Several studies show that traditional methods can help in the healing process, but without proper treatment, the risk of complications such as malunion or infection remains high (Soewondo, 2018). The government through the Ministry of Health has made various efforts to integrate traditional medicine into the national health system, one of which is by providing training and certification for traditional medicine practitioners so they can practice more safely and in accordance with medical standards (Ministry of Health of the Republic of Indonesia, 2020).

Apart from the health aspect, the phenomenon of traditional treatment for broken bones in the Serui tribe also has a strong cultural dimension. Traditional medicine is not only seen as a medical solution, but also as part of cultural identity and heritage that must be maintained (Rumainum, 2022). In a public health context, understanding this phenomenon is important for developing

more inclusive health strategies. Research conducted by Putri et al. (2021) stated that combining traditional methods with modern health services can increase community participation in health programs, especially in remote areas that still rely on traditional medicine as the main choice.

In Manokwari Regency, the Serui tribe's bone fracture treatment is known to be effective and the results of the treatment are trusted. Many people came for treatment and recovered. The results of observations and interviews in December 2024 on several patients with fractures showed various reasons for choosing traditional treatment, ranging from refusing treatment from hospitals because they did not have BPJS or referrals, to fear of modern treatment. Many patients come and seek treatment at Serui's traditional bone fracture treatment because they saw their acquaintances or relatives who recovered after undergoing treatment there. They prefer to go to traditional healers from the Serui tribe who have helped many broken bone patients. No matter how serious the broken bone is, this traditional healer is able to heal it even though it takes quite a long time.

This research was conducted to analyze the methods, materials and techniques used in traditional treatment for fractures in the Serui Tribe, analyze taboos or prohibitions in the treatment process, analyze the reasons why the Serui Tribe community prefers traditional treatment compared to medical treatment, and analyze the dynamics of traditional or medical fracture treatment choices among communities in the Manokwari District, West Papua.

## **THEORETICAL REVIEW**

Traditional medicine practices represent a significant component of healthcare systems worldwide, particularly in indigenous communities where cultural healing methods remain deeply embedded in local knowledge systems. This literature review examines the current body of research on traditional bone fracture treatments, with particular emphasis on indigenous healing practices, the scientific basis of herbal remedies, and the integration of traditional and modern medical approaches.

### ***Traditional Medicine in Indigenous Communities***

Traditional medicine has maintained its prominence in many indigenous communities despite the advancement of modern healthcare. According to the World Health Organization (WHO, 2019), approximately 80% of the global population relies on traditional medicine for their primary healthcare needs, particularly in developing countries and indigenous populations. This statistic underscores the significance of traditional healing practices within cultural contexts and healthcare systems globally.

In Indonesia, traditional medicine practices are particularly prevalent, with studies by Muttaqin (2021) indicating that geographic isolation, economic constraints, and cultural beliefs are major factors contributing to the continued reliance on traditional healing methods. Indigenous communities in remote areas of Indonesia, including Papua and West Papua, often maintain rich traditional medical knowledge that is passed down through generations (Indonesian Ministry of Health, 2021). Romainum et al. (2020) documented various traditional healing

practices among the indigenous tribes of Papua, highlighting the Serui Tribe's distinctive approach to treating bone fractures. Their research noted that these practices are not merely medical interventions but are deeply intertwined with cultural identity and spiritual beliefs, making them an integral part of the community's heritage.

### ***Traditional Bone Fracture Treatments***

Bone fracture treatment in traditional medicine systems has received increasing scholarly attention. Soewondo (2018) conducted a comprehensive review of traditional bone setting practices across various Indonesian ethnic groups, noting significant variations in techniques, materials, and rituals associated with these treatments. The study identified potential risks such as improper alignment and infection, while also acknowledging positive aspects including psychological comfort and cultural familiarity. Wambrau (2021) specifically examined the role of traditional bone healers in Papua, documenting their methods and the community's trust in their abilities. The research highlighted that many practitioners acquired their skills through apprenticeship with elder healers, with knowledge transferred orally rather than through formal documentation. This transmission pattern reflects the cultural importance of preserving traditional medical knowledge within these communities. The effectiveness of traditional bone healing methods remains a subject of scientific inquiry. Preliminary studies by Tjandrawinata (2019) suggest that certain medicinal plants used in traditional bone treatments contain compounds with demonstrated anti-inflammatory and tissue-regenerative properties, which may contribute to their perceived efficacy. However, rigorous clinical trials comparing traditional and conventional treatments remain limited.

### ***Medicinal Plants in Fracture Healing***

Research on the medicinal properties of plants used in traditional fracture treatments has provided some scientific basis for their application. Yade et al. (2014) studied the properties of virgin coconut oil (VCO), finding significant antimicrobial and anti-inflammatory effects that may be beneficial in wound healing and preventing infection during bone repair processes. *Callisia fragrans*, the primary herbal component in Serui Tribe's fracture treatment, has been the subject of limited but promising research. Nugroho et al. (2022) documented the plant's anti-inflammatory properties and potential benefits in tissue regeneration, providing preliminary scientific support for its traditional use. However, comprehensive studies on its specific effects on bone healing remain insufficient. Wijaya (2021) investigated the wound-healing properties of several traditional remedies, including VCO, noting enhanced re-epithelialization and reduced inflammatory response in treated tissues. These findings suggest potential mechanisms through which traditional treatments may support the fracture healing process, though direct application to bone fracture recovery requires further investigation.

### *Integration of Traditional and Modern Healthcare*

The relationship between traditional and modern medical approaches represents a complex and evolving aspect of healthcare systems. Putri et al. (2021) proposed that integrating traditional healing practices with conventional medical care could enhance healthcare accessibility and cultural relevance, particularly in remote indigenous communities. Their research suggested that complementary approaches might improve patient outcomes by combining the technical advantages of modern medicine with the cultural sensitivity of traditional practices. Setiawan et al. (2022) examined economic factors influencing treatment choices, finding that financial constraints significantly impact healthcare decisions in rural Indonesian communities. Their study indicated that traditional medicine often represents a more economically accessible option for many families, contributing to its continued prevalence despite the expansion of modern healthcare facilities. The Indonesian Ministry of Health (2020) has acknowledged the importance of traditional medicine in national healthcare strategies, implementing certification programs for traditional practitioners to enhance safety standards and facilitate greater integration with the formal healthcare system. These initiatives reflect growing recognition of traditional medicine's role in comprehensive healthcare delivery, particularly in culturally diverse regions. In the specific context of bone fracture treatment, Kartikasari et al. (2020) documented cases where patients alternated between or combined traditional and modern approaches, creating hybrid healing pathways that reflected pragmatic decision-making based on perceived effectiveness, cost, and cultural comfort. This dynamic represents an important area for further research on patient-centered, culturally appropriate healthcare models.

Despite growing interest in traditional medicine practices, significant research gaps remain. First, there is limited scientific investigation into the specific efficacy and safety of traditional bone fracture treatments, with few controlled studies comparing outcomes between traditional and conventional approaches. Second, the chemical properties and pharmacological mechanisms of medicinal plants used in these treatments, including *Callisia fragrans*, require more comprehensive analysis. Finally, effective models for integrating traditional bone healing practices with modern orthopedic care represent an underdeveloped area of healthcare research, particularly in the context of indigenous communities like the Serui Tribe.

### **METHODOLOGY**

This research uses a qualitative approach with a phenomenological design, which aims to understand in depth the phenomenon of traditional treatment for broken bones in the Serui Tribe in Manokwari Regency. This phenomenological study focuses on the experience of a person or group of people who carry out traditional treatment for broken bones carried out by the Serui Tribe.

The research was carried out for one month, starting from the 2nd week of March to the 2nd week of April 2025, in Manokwari Regency, especially where the Serui Tribe people live or practice bone fractures. The informants in this study

consisted of 10 people with diverse backgrounds: one traditional healer/shaman for broken bones (key informant), three patients, two traditional leaders/community leaders, two health workers, and two members of the general public. Informants were selected using a purposive sampling method, namely based on the researcher's considerations to answer the research questions.

Data collection in this research was carried out using several techniques, namely: (1) In-depth interviews with informants to gain a comprehensive understanding of traditional healing practices; (2) Documentation through recording the treatment process, cultural symbols and narratives conveyed by informants; and (3) Literature studies from written sources such as scientific journals, books and relevant official documents.

Data analysis uses the Miles and Huberman (1994) method, which includes three main stages: (1) Data reduction, namely filtering relevant information according to the research objectives; (2) Presentation of data in the form of tables, diagrams or descriptive narratives; and (3) Drawing conclusions and verification. To increase the validity of the data, triangulation of sources and methods was used by comparing data from various informants and using various data collection techniques

## **RESULTS AND DISCUSSION**

Based on the results of in-depth interviews, it is known that traditional treatment for broken bones in the Serui Tribe uses the main ingredients of the *Callisia fragrans* plant (known as "God's Basket Plant" or "Purple Pearl Grass") and pure coconut oil (VCO). The treatment process is carried out by mixing crushed *Callisia fragrans* leaves with pure coconut oil in a container, then rubbing it on the part of the body that has a broken bone and wrapping it with a bandage. This concoction is changed every three days until the patient feels healing. Key informants explained:

"Leaves (only 1 type) and pure coconut oil... Mix the leaves with pure coconut oil, squeeze the leaves and oil in a basin then stick it on the broken hand or leg and then wrap it with a bandage. Every 3 days the concoction will be changed until the patient feels healing."

Apart from treating broken bones, *Callisia fragrans* leaves are also used to cure several other diseases such as surgical wounds, inflammation or swelling, stomach problems and hernias. The use of a combination of pure coconut oil (VCO) and *Callisia fragrans* leaves in the traditional treatment of bone fractures is based on the therapeutic properties of each component. Although specific scientific research regarding the effects of this combination on fracture healing is still limited, understanding the individual benefits of VCO and *Callisia fragrans* can provide insight into the potential synergy of the two.

Pure coconut oil (VCO) contains lauric acid which has antimicrobial abilities to fight bacteria, viruses and fungi, so it can help prevent infections in wound areas or broken bones. In addition, the antioxidant content such as vitamin E in VCO helps repair damaged skin tissue and increases collagen production, which is important in the healing process (Yade et al., 2014). The

lauric acid in VCO also plays a role in improving the immune system (Adi et al., 2024), while the application of VCO to wounds can increase re-epithelialization and reduce the number of inflammatory cells, which contributes to accelerating wound healing (Wijaya, 2021).

*Callisia fragrans* contains active compounds that are traditionally used to reduce inflammation and accelerate tissue regeneration. Woodson (1942) classified this plant in the Commelinaceae family, and although scientific evidence is still limited, empirical use shows its potential in supporting the healing process.

The combination of VCO and *Callisia fragrans* leaves aims to utilize the anti-inflammatory, antimicrobial and regenerative properties of these two ingredients. VCO can function as an effective delivery medium, allowing the active compounds from *Callisia fragrans* leaves to be more easily absorbed by the skin and reach areas that need healing.

**Prohibitions in the Traditional Treatment Process for Bone Fractures.** In the traditional treatment process for Serui tribe fractures, there are restrictions that must be adhered to by the patient. If the patient ignores these restrictions, the treatment process will take longer than usual. Abstinence from consuming hot food and drinks in the traditional treatment of bone fractures can be explained scientifically through several physiological mechanisms. Hot foods and drinks can worsen inflammation through vasodilation or widening of blood vessels, which increases blood flow to the injured area. This can worsen swelling in the fracture area and slow healing (Adi et al., 2024).

Additionally, excessive heat can affect the integrity of collagen, which is an important component in the bone healing process. Collagen has a structure that is sensitive to temperature, and excessive heat can cause damage or have a negative influence on its structure, which can interfere with the healing process because degraded collagen cannot support the formation of healthy bone tissue (Wijaya, 2021).

Heat can also affect the stability of active compounds in traditional medicine. Exposure to high temperatures from hot food or drinks can reduce the effectiveness of the compounds in *Callisia fragrans* by damaging the chemical structure of the compound, thereby reducing its ability to support the healing process.

Based on the results of interviews, several reasons were found why people prefer traditional treatment for fractures:

### ***Belief in Cultural Heritage and Tradition***

The Serui people have a strong belief in their ancestral heritage in healing diseases, including broken bones. The tradition of treatment using *Callisia fragrans* leaves and pure coconut oil has been passed down from generation to generation and is believed to be more effective than modern medical methods. According to WHO (2019), traditional medicine is still an important part of health services in many indigenous communities because it is rooted in the cultural values and collective beliefs of local communities. As expressed by the traditional

leader (I5) and the head of community harmony (I6), "Because the community believes in traditional medicine."

### ***Cheaper and Affordable Treatment Costs***

Traditional medicine uses natural ingredients that are available in the environment, such as herbal leaves and pure coconut oil, so it does not require large costs. Medical treatment often involves costs for diagnosis, x-ray examinations, medicines, and physiotherapy which are not always affordable for rural communities, especially for those who do not have BPJS. The broken bone shaman (I1) stated: "Because I don't ask for money. It's up to you, whether you want to give or not, it's okay. I don't ask." This is in line with several research results which show that the main problem is not due to limited knowledge, beyond that, economic problems are one of the main factors that people in remote areas prefer traditional medicine to medical (Muttaqin et al., 2020; Prasetyo et al., 2020).

### ***Empirically Proven Traditional Medicine***

Many people experience faster recovery with traditional methods than medical treatment. One informant stated that after undergoing medical treatment, his condition did not improve, he even experienced muscle wasting. However, after switching to traditional methods, his hand recovered within 2 weeks. Tjandrawinata's research results (2019) stated that several medicinal plants such as *Callisia fragrans* have anti-inflammatory and regenerative compounds which help speed up the bone healing process.

### ***Lack of Access to Modern Health Facilities***

The area where the Serui people live in the interior of Manokwari Regency has limited access to medical services, such as hospitals and professional medical personnel. This makes traditional medicine the main alternative that is more accessible. According to the Indonesian Ministry of Health (2021), around 40% of residents in remote areas still rely on traditional medicine due to limited access to health facilities.

### ***Fear of Side Effects of Medical Treatment***

Most people believe that medical treatment has higher risks, such as side effects from chemical drugs, invasive surgical procedures, and a longer recovery. Some patients who experience complications or negative effects after undergoing medical treatment choose to switch to traditional methods which are considered safer. According to the Global Herbal Health Survey (WHO, 2020), 80% of people in various developing countries still choose herbal medicine because they are considered more natural and have fewer side effects than synthetic drugs.

### ***Dynamics of Treatment Choices: Traditional or Medical***

The choice of treatment for fractures in the Manokwari District community reflects the dilemma between traditional and medical methods. People in this area have a strong cultural background in using traditional

medicine, but with increasing access to modern health services, some individuals and families are starting to turn to medical treatment.

One interesting finding was the existence of cases of switching from medical to traditional treatment after the results of medical treatment were unsatisfactory. One informant (I8) said:

"The parents took him to the hospital. He was hospitalized for 3 days, his hand was in a cast for 3 weeks. When the progress was monitored, the hand was getting smaller, not yet healed. The family took him to a traditional healer for the broken bone. Routine treatment for 2 weeks, the broken hand was covered with leaves mixed with coconut oil, and it healed."

This phenomenon shows that treatment options are dynamic and pragmatic. Research by Kartikasari et al. (2020) found that some patients with fractures who experienced complications during medical treatment chose to return to traditional methods because they were considered more effective in restoring body function. Research conducted by Nugroho et al. (2022) confirms that certain herbal remedies, such as *Callisia fragrans*, have anti-inflammatory and regenerative effects that support natural bone healing.

### ***Factors Influencing Treatment Choices***

Based on the analysis, factors that influence the choice of fracture treatment in Manokwari District include,

1. Cultural Beliefs: Very high in traditional medicine, hereditary methods that are still maintained; plays less of a role in medical treatment, which is based more on scientific evidence.
2. Effectiveness: Traditional treatment is believed to cure within 2 weeks based on community experience; Medical treatment takes about 2 months.
3. Security: Traditional medicine is considered to have no side effects; Medical treatment can cause muscle atrophy in some cases.
4. Cost: Traditional medicine is relatively cheap, uses natural ingredients; Medical treatment can be expensive without BPJS.
5. Accessibility: Traditional medicine is easily accessible in local communities; Medical treatment depends on the availability of health facilities.
6. Healing Speed: Traditional treatment is considered faster (2 weeks) according to community experience; medical treatment was relatively long in some cases (2 months).

### **CONCLUSIONS AND RECOMMENDATIONS**

Based on the results of this research, several things can be concluded regarding the practice of treating fractures among the Serui Tribe community and communities in Manokwari District, Manokwari Regency, West Papua:

1. Traditional treatment for broken bones carried out by the Serui Tribe uses a hereditary method that relies on a combination of herbal ingredients, especially *Callisia fragrans* leaves (God's Basket Plant or Purple Pearl Grass) mixed with pure coconut oil (VCO). This

technique is believed to speed up bone healing without using medical equipment such as a cast.

2. In the traditional treatment process, there are restrictions that patients must adhere to, especially the prohibition on consuming hot food and drinks which are believed to hinder healing and cause complications such as swelling and infection in the fracture area.
3. The Serui tribe community prefers traditional medicine because of their strong cultural belief in ancestral methods that have been proven empirically in their community. Apart from that, cheaper costs, easier accessibility, and the belief that this method has no side effects also encourage preference for traditional medicine.
4. The choice between traditional or medical treatment in the Manokwari District community is influenced by various factors, such as cultural beliefs, access to health facilities, cost of treatment, and individual or family experience in the healing process. Some people who have BPJS tend to choose medical treatment because it is more affordable and considered safer, but there are also those who switch from medical to traditional treatment after feeling that they do not get satisfactory results from medical procedures.

This research reveals that the Serui Tribe's traditional bone fracture treatment practices are still popular with the public even though medical services are available. There is potential to integrate the two treatment systems so that people can obtain optimal benefits from both, while still paying attention to aspects of safety and effectiveness. Based on research findings, the following are suggestions that can be implemented:

1. Increasing Public Awareness: Holding simple outreach in the community about the advantages and disadvantages of traditional and medical treatment; provide education about hygiene and infection prevention in traditional medicine.
2. Supporting Traditional Medicine Practitioners: Encourage traditional practitioners to maintain cleanliness and use safe materials; conduct basic training on anatomy and risk of infection for fracture healers.
3. Increasing Collaboration with Medical Personnel: Building communication between health workers and traditional practitioners so they can share information; advises the public to consult with medical personnel before choosing a treatment method.

## **FURTHER STUDY**

This study has several limitations that should be acknowledged. First, the research was conducted with a relatively small sample size of 10 informants from the Serui Tribe in Manokwari Regency, which may not fully represent the diversity of perspectives within the community. The short duration of the study (one month) also limited the opportunity for longitudinal observation of treatment outcomes and healing processes over extended periods. Additionally, the qualitative phenomenological approach, while providing rich descriptive

data on cultural practices and personal experiences, could not establish quantitative measures of treatment efficacy compared to medical interventions. Based on the findings and limitations of this study, several recommendations are proposed for future research and practice. First, we recommend conducting interdisciplinary research that combines ethnobotanical studies with clinical trials to scientifically evaluate the efficacy and safety of Serui traditional bone healing methods. This should include controlled comparisons of healing outcomes between traditional and medical treatments using standardized assessment criteria and medical imaging to document bone repair processes. Additionally, phytochemical analysis of *Callisia fragrans* and examination of its bioactive compounds should be prioritized to understand potential therapeutic mechanisms. Health authorities should also develop culturally sensitive training programs for traditional healers to enhance their knowledge of anatomy, infection prevention, and recognition of severe fractures requiring medical intervention.

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