

Community Preferences for the Treatment of Closed Fractures: Traditional versus Modern Approaches in West Sumatra

Abdurrahman Afa Haridhi¹, Vando Fernando Sardi², Rizki Rahmadian³,
Diki Julkarnain⁴, Denny Adriansyah⁵, Viola Shinta Dewi⁶

¹General Practitioner at Sungai Rumbai Public Health Centre Dharmasraya, West Sumatra, Indonesia

²Orthopaedic and Traumatology Department, Faculty of Medicine Andalas University, Dr. M. Djamil Central General Hospital Padang, West Sumatra, Indonesia

³Hip and Knee Consultant Orthopaedic Surgeon at Dr. M. Djamil Central General Hospital Padang, West Sumatra, Indonesia

⁴Orthopaedic Surgeon at Sungai Dareh Regional Public Hospital Dharmasraya, West Sumatra, Indonesia

⁵Orthopaedic Surgeon at Dr. Moewardi Regional Public Hospital Surakarta, Central Java, Indonesia

⁶Diagnostic and Therapeutic Support Services Team Dr. M. Djamil Central General Hospital Padang, West Sumatra, Indonesia

Corresponding author: Abdurrahman Afa Haridhi, MD

DOI: <https://doi.org/10.52403/ijrr.20260586>

ABSTRACT

Background: Traditional medicine is a prevalent practice in developing countries, where it is often the primary healthcare option, especially in rural areas. This study examined the community's preferences for traditional versus modern medicine in treating closed fractures in West Sumatra.

Methods: This cross-sectional descriptive observational study was conducted over two weeks in March-April 2024. The study population consisted of individuals aged 18 and above residing in Padang and Dharmasraya, West Sumatra. Purposive sampling was used, and data was collected through direct interviews and questionnaires. The study included 108 respondents.

Results: The study participants had a mean age of 42.3 years. Half of the respondents had attained a secondary level of education, and the Minang ethnic group constituted the largest proportion at 64%. 65% of respondents are women. 71% of the Padang

respondents preferred modern medicine, while 74% of Dharmasraya population chose traditional medicine as their primary treatment. The decision to choose modern medicine was influenced by a combination of social, economic, cultural, and psychological factors, with an average score of 3.21 for these factors. And the selection of traditional medicine was driven by a mix of social, economic, cultural, and psychological considerations. It is found that there is a relationship between ethnicity, education, occupation, income and participation in BPJS with treatment preferences. However, age, gender, and marital status do not have relationship.

Conclusion: Traditional medicine remains the preferred option in rural areas, while modern medicine is preferred in urban settings. Social factors are the most influential in shaping these preferences.

Keywords: Traditional Medicine, Bonesetter, Closed Fracture, Neglected Fracture, Treatment Preferences

INTRODUCTION

The treatment of fractures, particularly closed fractures, is a critical area where traditional and modern medicine can intersect. Closed fractures, where the bone is broken but the skin remains intact, can be managed through both traditional and modern medical approaches. While modern medicine offers advanced diagnostic tools, surgical interventions, and rehabilitation services, traditional bone setting remains a prevalent practice in many parts of the world, including in Indonesia (1,2).

Fracture treatment has a long history, dating back to ancient Egyptian and Greek civilizations, where techniques for fracture reduction and immobilization apparatus were developed over three millennia. In the past 150 years, advancements in aseptic technique, anesthesia, antibiotics, and internal implants have transformed how orthopedic specialists approach fracture care. Immobilization treatments remain the most widely used method for managing closed fractures. Modern medical textbooks provide detailed guidance on the modes of immobilization, timing for initiating range of motion, and guidelines for return to normal function. Although these fracture patterns may be initially treated by emergency medicine or primary care providers, the standard of care involves referring these fractures to an orthopedic surgeon for definitive management (3).

Traditional medicine has been part of healthcare practices, especially in developing countries with limited access to modern medical facilities. The use of traditional medicine remains widespread, particularly in rural areas, where it is more accessible and often more affordable than modern healthcare services (4,5). In many communities, traditional medicine practitioners, such as traditional bonesetters, are often the first point of contact for individuals seeking treatment for injuries, including fractures (4). A traditional healer can be defined as a person who is recognized by his/her community as competent enough to provide healthcare by

using herbs, animal and mineral substances, or other methods. These methods are based on social, cultural and religious principles, including knowledge, attitudes and beliefs regarding the physical, mental and social well-being that are prevalent in their community. In some region, people recognize two types of (traditional) medical practitioners: priest-healers and herbalists. Herbalists share, to a large extent, the 'causative' and 'technical' thinking of modern medicine. Some herbalists have specialized in treating fractures and dislocations, and are called bonesetters (6).

While these traditional bonesetters may enjoy widespread popularity and acceptance within local communities, they are also frequently known in hospital settings for the failures, complications, and suboptimal outcomes associated with their treatments. As a result, many patients who have received traditional bone setting care are subsequently required to seek remediation and further treatment at hospitals and modern healthcare facilities (7).

Understanding the community's preferences and perceptions towards traditional and modern medicine in the treatment of closed fractures is crucial for developing effective healthcare strategies and promoting integrated approaches to fracture management. This study aims to investigate the community's preferences for traditional and modern medicine in the treatment of closed fractures in West Sumatra, Indonesia.

MATERIALS & METHODS

This cross-sectional descriptive observational study was conducted during March–April 2024 over a two-week period in Padang City and Dharmasraya Regency, West Sumatra, Indonesia.

The study population consisted of individuals aged 18 years and older residing in the study areas. Purposive sampling was employed, and respondents were selected based on their availability and willingness to participate. Data collection was performed through direct interviews and structured questionnaires.

The questionnaire collected demographic information, including age, gender, education level, ethnicity, occupation, income, marital status, and BPJS participation. In addition, the questionnaire assessed social, economic, cultural, and psychological factors influencing respondents' preferences for traditional or modern medicine in the treatment of closed fractures.

Questionnaire validity and reliability were evaluated prior to data analysis. The traditional medicine questionnaire demonstrated item validity values ranging from 0.511 to 1.000, with a Cronbach's alpha coefficient of 0.856, indicating good reliability. Similarly, the modern medicine questionnaire showed validity values ranging from 0.511 to 0.755 and a Cronbach's alpha coefficient of 0.874, confirming acceptable reliability.

Statistical Analysis

Data were analyzed descriptively and analytically to determine relationships between demographic variables and treatment preferences. Statistical significance was determined using p-values, with $p < 0.05$ considered statistically significant.

RESULT

A total of 108 respondents participated in this study. The respondents had a mean age of 42.3 years, ranging from 18 to 82 years. Approximately 65% of respondents were female.

Half of the respondents had attained secondary education, while 40% had completed higher education. The Minang ethnic group represented the largest proportion of respondents (64%). Around 39% of respondents reported a monthly income below Rp. 1,500,000, indicating that a significant portion of the study population had relatively low socioeconomic status.

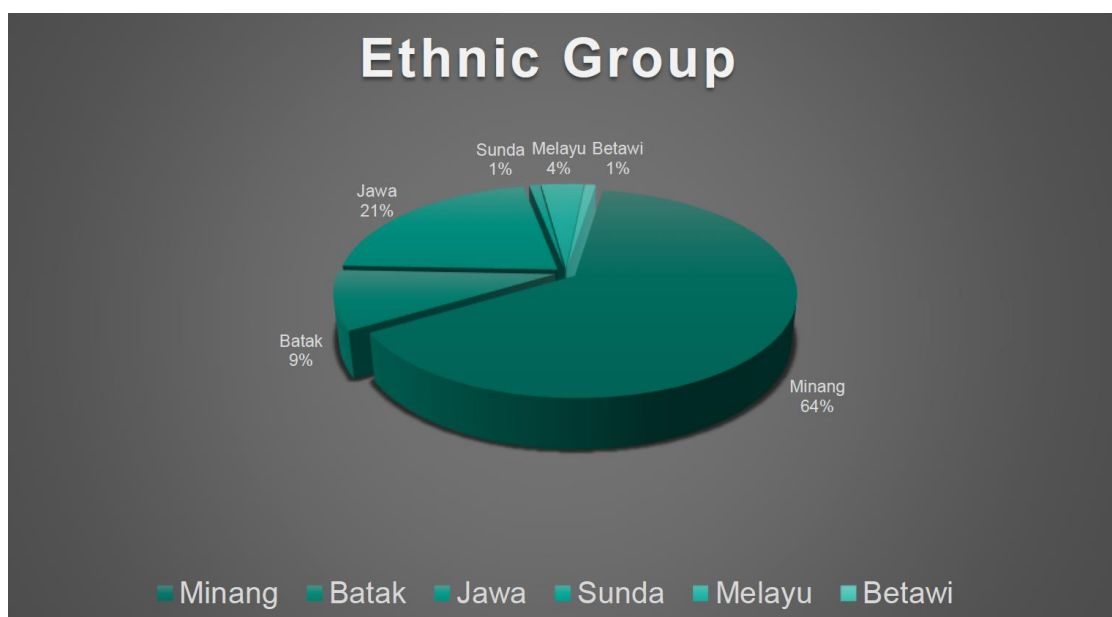


Figure 1 The ethnic composition of the respondents showed that the Minang ethnic group constituted the largest proportion at 64% of the sample. The other ethnic groups represented were not specified in the provided information.

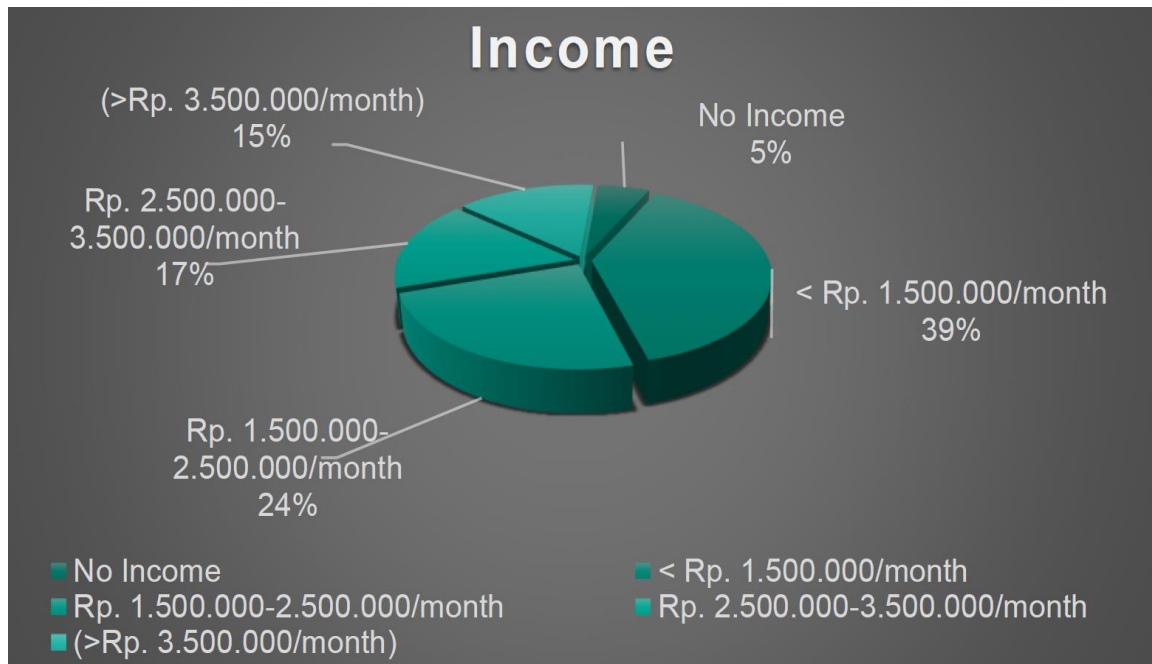


Figure 2 The Distribution of Respondent Income

According to the education level data, on average, the respondents were fairly evenly distributed across different educational attainment levels. Approximately half of the respondents had a secondary education

(high school), while a significant portion had completed a college degree. Additionally, a small minority, comprising 2% of the sample, reported having no formal educational background.

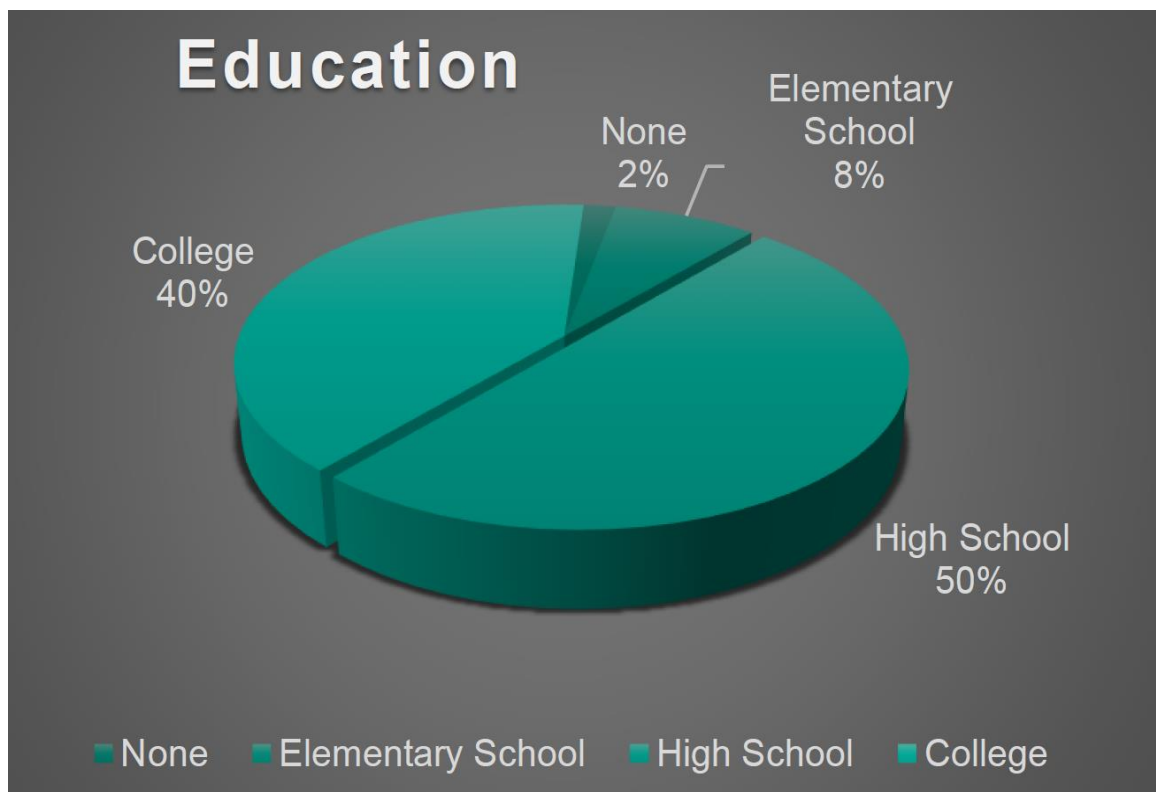


Figure 3 The Data on The Educational Composition

The results demonstrated differences in treatment preferences between urban and rural communities. In Padang City, 71% of respondents preferred modern medicine for the treatment of closed fractures. In contrast, 74% of respondents in Dharmasraya Regency preferred traditional medicine. Overall, treatment preference among respondents was evenly distributed between traditional and modern medicine.

The most influential determinants affecting treatment preferences included:

- **Social factors:** influence from family, friends, and community recommendations.
- **Economic factors:** affordability and accessibility of healthcare services.
- **Cultural factors:** traditions and beliefs related to healthcare practices.
- **Psychological factors:** knowledge, satisfaction, and personal perceptions.

The average scores (score 1 for strongly disagree, 2 for disagree, 3 for agree, and 4 for strongly agree) for respondents choosing modern medicine were:

- Social factors: 3.21
- Economic factors: 3.09
- Cultural factors: 2.67
- Psychological factors: 3.14

Meanwhile, the average scores for respondents choosing traditional medicine were:

- Social factors: 3.18
- Economic factors: 3.14
- Cultural factors: 2.68
- Psychological factors: 3.11

Statistical analysis showed significant relationships between ethnicity ($p = 0.001$), education ($p = 0.001$), occupation ($p = 0.005$), income ($p = 0.019$), BPJS participation ($p = 0.002$), and treatment preference. However, age ($p = 0.582$), gender ($p = 0.343$), and marital status ($p = 0.160$) were not significantly associated with treatment preference. The data analysis indicates that individuals possessing certain demographic and socioeconomic characteristics exhibit a greater propensity to favor modern medical interventions over traditional approaches for the treatment of closed fractures. Specifically, those belonging to particular ethnic groups, maintaining higher educational attainment, employed in specific occupations, enjoying elevated income levels, and enrolled in the national health insurance program, demonstrate an increased likelihood of preferring modern medical treatment modalities. Conversely, factors such as age, gender, and marital status do not appear to significantly influence treatment preferences in this context.

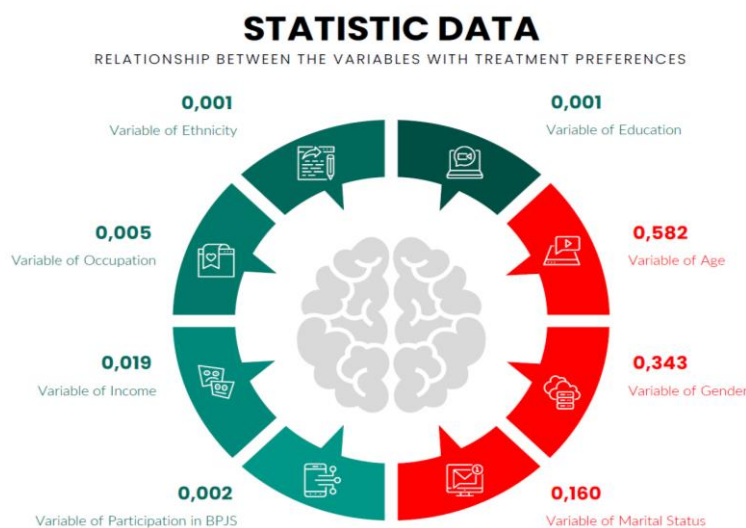


Figure 4 The statistical analysis was performed based on the questionnaire data collected from the respondents.

DISCUSSION

According to a study in Nigeria, the majority of fracture patients initially visited traditional chiropractors and only went to the hospital if serious complications developed. This is often referred to as a "Neglected fracture", where the fracture condition is not treated or handled incorrectly, resulting in delays in treatment or even worse conditions, potentially leading to disability. Despite the risks, many people still believe that using traditional bone setters to treat injuries can be an effective approach. In fact, more than half of the complications encountered in fracture treatment are associated with procedures performed by traditional bone setters. Interestingly, only a small percentage, around 9.25%, of existing neglected fracture cases are attributed to a lack of access to modern healthcare facilities (8–10).

Yanti and Nurhayati identified four factors that influence someone's healthcare preferences, beginning with the first social factor, which includes information factors based on suggestions from others, friends, and family, as well as the influence of the source of the information. Economic factors include cost, energy, and time in the treatment process. Motivation, perception, knowledge, and satisfaction are all psychological factors that influence people's use of treatment. Cultural factors are those that are influenced by consumer habits and behavior based on social class, religion, and ethnicity (11).

Based on our study, the findings reveal a notable difference in the preference for traditional versus modern medicine in the treatment of closed fractures between urban and rural areas in West Sumatra. In urban areas, such as Padang City, the majority of respondents, around 71%, preferred modern medicine. This can be attributed to factors such as better access to healthcare facilities, higher education levels, and greater exposure to modern medical practices. On the other hand, in the rural area of Dharmasraya Regency, traditional medicine, particularly traditional bone setting, remains

the preferred choice for the treatment of closed fractures, with 74% of respondents favoring this approach. However, the overall preference among the respondents was evenly split, with a 50:50 ratio between traditional and modern medicine. The preference in the rural area can be linked to factors such as limited access to modern healthcare services, stronger reliance on traditional practices, and the cultural significance of traditional medicine within the local community (4).

But the questionnaire data in our study reveals that the dominant reason for their healthcare preferences is the social factor, which includes the influence of information from suggestions by others, friends, and family, as well as the impact of the source of such information. Interestingly, the average scores for the various factors, including social, economic, cultural, and psychological, were equally influential in shaping the respondents' preferences for traditional and modern medicine in the treatment of closed fractures, with both groups scoring an average of 3.21 on these factors. The average score for choosing modern medicine was 3.21 for social factors, economic factors, cultural factors, and psychological factors. Similarly, the average score for choosing traditional medicine was also 3.21 for these four factors. This suggests that the respondents' decision-making regarding the choice of treatment is influenced by a balance of these factors, rather than being dominated by a single factor. However, the overall preference for traditional versus modern medicine was evenly split, indicating that both modalities play a significant role in the healthcare-seeking behavior of the community in West Sumatra. Interestingly, the study revealed an even split in the overall preference for traditional and modern medicine in the treatment of closed fractures, with both approaches being equally favored by the respondents. This balanced preference likely reflects the complex interplay of various factors, including social, economic, cultural, and

psychological influences, that shape individuals' healthcare choices.

Another study on the role of traditional medicine in the management of fractures, particularly in areas with limited access to modern healthcare services, reveals how factors such as the perceived efficacy of traditional bone setting, the convenience of quick service, and recommendations from family and friends influence the likelihood of patients seeking traditional bone setting practitioners in northern Ghana (6). Similarly, a study conducted in Nigeria found that patients' perception of the cost-effectiveness and availability of traditional bone setting services, as well as the cultural familiarity and trust in traditional practitioners, contributed to their preference for this form of treatment over modern medical options. The accessibility and affordability of traditional bone setting were key factors, especially for those in rural or underserved communities with limited access to formal healthcare facilities (8).

To address the disparities in healthcare access and preferences, it is crucial for policymakers and healthcare professionals to develop integrated approaches that recognize and incorporate both traditional and modern medical practices. One possible solution is to establish collaborative partnerships between traditional bone setters and modern healthcare providers, as suggested in the study from Ghana. Such partnerships could facilitate the integration of traditional and modern medicine, ensuring that patients have access to a comprehensive range of treatment options that cater to their preferences and needs (8). While the overall preference for traditional versus modern medicine was evenly split, the study highlights the need to develop integrated healthcare strategies that recognize and incorporate traditional medicine practices, particularly in rural areas where access to modern healthcare is limited. The findings underscore the importance of understanding community

CONCLUSION

This study highlights the diverse preferences for traditional and modern medicine in the treatment of closed fractures in West Sumatra, Indonesia. While modern medicine is the preferred option in urban areas, traditional medicine remains a popular choice in rural areas. While the overall preference between traditional and modern treatment approaches was balanced across the study population. Social factors are the most influential in shaping these preferences.

Ensuring accessible and effective healthcare for all necessitates acknowledging the significance of traditional medicine and investigating avenues for combining traditional and modern approaches. This can be accomplished through collaborative work between traditional practitioners, modern healthcare providers, and policymakers, as well as by raising awareness and educating the community.

Declaration by Authors

Ethical Approval: Approved

Acknowledgement: None

Source of Funding: None

Conflict of Interest: No conflicts of interest declared.

REFERENCES

1. Worku N, Tewelde T, Abdissa B, et al. Preference of traditional bone setting and associated factors among trauma patients with fracture at Black Lion Hospital in Addis Ababa, Ethiopia: institution based cross sectional study. *BMC Research Notes*. 2019;12(1):10-15. Available from: <https://doi.org/10.1186/s13104-019-4643-z>
2. Hantonius H, Rasyid HN, Alpharian GT. Orthopaedic emergency cases at Hasan Sadikin Hospital Bandung caused by traditional bone setter practice. *Journal of Orthopaedic and Traumatology Surabaya*. 2018;7(1):77-84. Available from: <https://doi.org/10.20473/joints.v7i1.2018.77-84>
3. Coon M, Denisiuk M, Woodbury D, et al. Closed fracture treatment in adults, when is it still relevant? *Spartan Medical Research*

- Journal. 2022;7(1):1-10. Available from: <https://doi.org/10.51894/001c.28060>
4. Wedam EA, Amoah ST. Traditional bone setting: analysis of contribution and patronage in Northern Ghana. *Ghana Journal of Development Studies*. 2017;14(2):23. Available from: <https://doi.org/10.4314/gjds.v14i2.2>
 5. Nwachukwu BU. Traditional bonesetters and contemporary orthopaedic fracture care in a developing nation: historical aspects, contemporary status and future directions. *The Open Orthopaedics Journal*. 2011;5(1):20-26. Available from: <https://doi.org/10.2174/187432500110501020>
 6. Ariës MJH, Joosten H, Wegdam HHJ, et al. Fracture treatment by bonesetters in central Ghana: patients explain their choices and experiences. *Tropical Medicine and International Health*. 2007;12(4):564-574. Available from: <https://doi.org/10.1111/j.1365-3156.2007.01822.x>
 7. Nwadiaro HC, Nwadiaro PO, Kidmas AT, et al. Outcome of traditional bone setting in the Middle Belt of Nigeria. *Nigerian Journal of Surgical Research*. 2006;8(1-2):44-48. Available from: <https://doi.org/10.4314/njsr.v8i1.54817>
 8. Dukiya JJ. The role of tradomedical centres in road accident victims rehabilitation: a case study of Minna, Nigeria centres. *ISABB Journal of Health and Environmental Sciences* [Internet]. 2015;2(3):11-18. Available from: https://academicjournals.org/journal/JPHE/article-in-press-abstract/the_role_of_tradomedical_centres_in_road_accident_victims_rehabilitation_a_case_study_of_minna_centres_nigeria
 9. Putra DHS, Ismiarto YD. Characteristics of patients with neglected fractures who seek treatment at the bone setter before going to the Hasan Sadikin General Hospital Bandung in 2021. *Orthopaedic Journal of Sports Medicine*. 2023;11(2 Suppl):2325967121S00895. Available from: <https://doi.org/10.1177/2325967121S00895>
 10. Adamtey R, Oduro C, Ocloo K. The importance of traditional healers in the planning of rural healthcare delivery in Ghana: the case of bone-setting services in Loagri and Wungu. *Journal of Science and Technology*. 2015;34(3):55. Available from: <https://doi.org/10.4314/jst.v34i3.7>
 11. Yanti D, Nurhayati N. Perbandingan preferensi masyarakat terhadap obat tradisional dan obat sintetik di Apotek Quality Kota Bekasi Tahun 2019. *Jurnal Ayurveda Medistra* [Internet]. 2022;4(1):1-8. Available from: <https://sinelitabmas.unsoed.ac.id/google-doc/6336863/perbandingan-preferensi-masyarakat-terhadap-obat-tradisional-dan-obat-sintetik-di-apotek-quality-kota-bekasi-tahun-2019>
- How to cite this article: Abdurrahman Afa Haridhi, Vando Fernando Sardi, Rizki Rahmadian, Diki Julkarnain, Denny Adriansyah, Viola Shinta Dewi. Community preferences for the treatment of closed fractures: traditional versus modern approaches in West Sumatra. *International Journal of Research and Review*. 2026; 13(5): 847-854. DOI: <https://doi.org/10.52403/ijrr.20260586>
