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Effectiveness of Traditional Bone-Setting for Arthritis in West Africa: A Review

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ABSTRACT

Traditional bone setters (TBS) remain important musculoskeletal care providers across West Africa. Their role is well documented for fractures, dislocations, and soft-tissue injuries, but their effectiveness in treating chronic degenerative conditions such as osteoarthritis (OA) and inflammatory arthritis is far less clear. This review synthesizes the available literature on TBS practice in West Africa, examines reported outcomes and complications, explores reasons for continued patronage, and identifies gaps in evidence specifically regarding arthritis care. Published studies and reviews consistently report that TBS are widely used because of accessibility, lower cost, cultural acceptability, and perceived efficacy; however, most rigorous research focuses on acute trauma (fractures) rather than chronic joint disease. Observational and hospital-based series document substantial rates of complications (malunion, non-union, gangrene, chronic osteomyelitis) when TBS manages complex fractures, and expert statements call for improved engagement, training, and integration to reduce avoidable harm. There is a notable absence of controlled trials or longitudinal studies assessing clinical outcomes of TBS treatments for OA (pain, function, radiographic progression) or inflammatory arthritis; most evidence is anecdotal or derived from patient surveys. We conclude that while TBS may provide symptomatic relief and psychosocial benefits to some arthritis patients, there is insufficient high-quality evidence to support their effectiveness in modifying disease or reliably improving long-term function. Research priorities include prospective outcome studies for arthritis patients treated by TBS, implementation research on collaborative models with orthodox care, and culturally informed strategies to enhance referral pathways and patient safety

Keywords: Traditional bone setters, arthritis, osteoarthritis, West Africa, complementary medicine.

INTRODUCTION

Traditional bone-setting (TBS) is a longstanding, culturally embedded healthcare practice that continues to play a significant role in musculoskeletal care across West Africa, particularly in countries such as Nigeria, Ghana, Benin, and Togo. Rooted in indigenous knowledge systems [1], TBS combines manual manipulations, splinting, massage, herbal therapies, and, in some cases, spiritual or ritual interventions. Historically, traditional bone setters were the primary providers of musculoskeletal care before the introduction of formal orthopedic medicine. Even with the expansion of modern healthcare facilities, TBS remain widely patronized, especially in rural and peri-urban communities, due to factors such as accessibility, affordability, cultural acceptability, and trust [2].

Several studies have documented that TBS are frequently the first point of care for patients experiencing fractures, dislocations, sprains, and other acute musculoskeletal injuries. They operate outside the formal health system but often maintain substantial community influence and credibility [3]. Patients may consult TBS for geographical proximity, lower treatment costs, shorter waiting times, or the belief that traditional methods are more effective or safer than hospital interventions. The practice is often interwoven with local beliefs about the body, illness, and healing, which reinforces its social and cultural significance [4].

While traditional bone-setting has been well studied in the context of acute trauma, the role of TBS in managing chronic musculoskeletal conditions, such as osteoarthritis (OA) and inflammatory arthritis (IA), is far less well

understood. Osteoarthritis, a degenerative joint disease characterized by progressive cartilage loss, joint pain, and stiffness, is a growing public health concern in West Africa due to aging populations, rising obesity rates, and increased life expectancy [5]. Similarly, inflammatory arthritides such as rheumatoid arthritis impose significant morbidity, disability, and socioeconomic burdens on affected individuals. Access to formal rheumatology and orthopedic care in many parts of West Africa is limited, making traditional bone-setters a potentially important source of care for these chronic conditions [6].

Despite the widespread use of TBS services for arthritis, rigorous data evaluating clinical outcomes, including pain reduction, functional improvement, and disease modification, are scarce. Most available information is anecdotal, derived from patient surveys, or extrapolated from experiences with acute fractures [7]. Consequently, the effectiveness of TBS in managing arthritis remains largely unknown, raising critical questions about patient safety, treatment efficacy, and integration with formal healthcare systems.

Chronic musculoskeletal diseases such as osteoarthritis and inflammatory arthritis are prevalent in West Africa and contribute to significant disability, reduced quality of life, and economic hardship for patients and their families. Access to orthodox medical care for arthritis is often limited by geographic, financial, and human resource constraints, resulting in delayed diagnosis, inadequate treatment, and disease progression. In this context, traditional bone setters often serve as the default healthcare providers for patients with chronic joint conditions [8]. While TBS may provide symptomatic relief through massage, splinting, and herbal remedies, there is growing concern about the safety and efficacy of these interventions for arthritis. Unlike fractures, where alignment and immobilization are critical, chronic degenerative or inflammatory conditions require ongoing management, including pharmacologic therapy, physiotherapy, and lifestyle modifications [9]. Without evidence-based guidelines, TBS may inadvertently cause harm, delay access to appropriate care, or fail to address underlying disease mechanisms.

Complications associated with TBS interventions, well-documented for fractures, include malunion, non-union, gangrene, chronic osteomyelitis, and neurovascular injuries. It is plausible that similar or additional complications may arise when managing chronic arthritis, particularly if patients use aggressive manipulation or prolonged herbal applications. Furthermore, the absence of standardized training, regulation, or referral mechanisms poses challenges for patient safety and health system integration [10]. Despite these risks, patients continue to patronize TBS due to trust, cultural beliefs, and limited alternatives, highlighting a critical knowledge gap regarding both the effectiveness and safety of traditional interventions for arthritis. This review seeks to provide a comprehensive understanding of traditional bone-setting (TBS) practices in the management of arthritis in West Africa by addressing several interrelated objectives. Primarily, it aims to synthesize existing literature on the use of TBS for both osteoarthritis and inflammatory arthritis, evaluating reported clinical outcomes such as pain relief, functional improvement, and the impact on disease progression. The review also examines the complications and adverse effects associated with TBS care, providing a critical assessment of safety concerns inherent in these traditional practices. Furthermore, it explores the sociocultural and economic factors driving continued patient patronage of TBS services despite the availability of modern medical care, including beliefs, perceptions of efficacy, accessibility, and cost considerations. By identifying gaps in evidence and highlighting areas requiring further investigation, the study proposes directions for future research, policy development, and integration strategies to enhance patient safety and care effectiveness. The review is significant in offering a culturally informed perspective on arthritis management, guiding community outreach, patient education, and potential collaboration between traditional and formal healthcare providers. Ultimately, it seeks to improve health equity, particularly for rural and underserved populations, by ensuring that musculoskeletal care is both accessible and evidence-based while respecting local traditions.

METHODOLOGY

A comprehensive and pragmatic literature search was conducted to identify relevant studies and reports on traditional bone-setting (TBS) practices in West Africa and, where applicable, across sub-Saharan Africa. The search targeted indexed journal articles, systematic reviews, hospital case series, ethnographic studies, and grey literature to capture a broad spectrum of evidence on the topic. Specific search terms included "traditional bone setters," "traditional bonesetting," "arthritis," "osteoarthritis," "West Africa," "outcomes," and "complications," ensuring that the review encompassed both the clinical and sociocultural dimensions of TBS. Recognizing that most primary research focuses on fracture management rather than chronic musculoskeletal conditions, we deliberately included studies that reported on patient outcomes, treatment complications, and factors influencing the utilization of TBS. Additionally, national and regional reviews, consensus statements, and systematic analyses of TBS practice were consulted to provide context on its prevalence, safety concerns, and the cultural and socioeconomic drivers that sustain its use. Grey literature sources were included to capture local and unpublished insights, offering a more nuanced understanding of TBS in real-world settings. Collectively, this search strategy ensured a robust and

representative synthesis of available evidence on TBS, its outcomes, and its role in musculoskeletal care across the region.

Findings

Traditional bone setters (TBS) continue to play a prominent role in musculoskeletal care across many African communities, particularly in Nigeria and Ghana, where they serve as a commonly accessed first point of care [11]. A combination of cultural trust, lower cost, easier geographic accessibility, and dissatisfaction with formal healthcare services drives a significant proportion of patients with fractures or other musculoskeletal conditions to seek TBS interventions. In some Nigerian regions, estimates suggest that TBS provide the majority of fracture care, highlighting their entrenched role in local health-seeking behaviors [12]. When it comes to arthritis, including osteoarthritis (OA) and rheumatoid arthritis (RA), TBS employs a diverse array of interventions. These typically include massage and joint manipulation, application of topical herbal poultices or oils, use of splints or bandages, heat treatments, oral herbal remedies, and, in some cases, ritual or spiritual therapies. The primary aim of these interventions is symptomatic relief, particularly pain reduction and improved mobility, although approaches vary significantly between practitioners and communities [13].

However, the evidence supporting the effectiveness of TBS care for arthritis remains extremely limited and of low quality. Peer-reviewed literature largely lacks randomized controlled trials or robust longitudinal studies assessing outcomes for OA or RA, with most research focused on fracture or trauma care [14]. Consequently, claims of efficacy for arthritis are often based on anecdotal reports, patient satisfaction surveys, or short-term symptom relief observed following manual therapy. Safety concerns also emerge from lessons learned in fracture care, where TBS interventions have been associated with complications such as non-union, malunion, infection, compartment syndrome, gangrene, and even death. While arthritis management differs from fracture treatment, practices like overly tight splinting or use of unsterile topical applications could similarly pose risks, including skin injury, burns, or delayed presentation to formal medical care [15]. Despite these risks, patients frequently choose TBS care due to cultural familiarity, lower costs, proximity, rapid perceived improvement, fear of surgical interventions, and social endorsement. Recognizing these factors is critical for designing effective public health strategies that balance safety with culturally acceptable care pathways.

DISCUSSION

The literature indicates that traditional bone-setters (TBS) remain widely utilized and may provide meaningful symptomatic relief and culturally resonant care for some patients with arthritis. However, robust evidence supporting the long-term efficacy of TBS for osteoarthritis (OA) or inflammatory arthritis, such as rheumatoid arthritis (RA), is lacking, and there is no conclusive proof that their interventions alter disease progression [16]. Most reliable inferences about safety and outcomes are drawn from fracture management studies, which reveal significant risks when complex injuries are handled outside formal orthopedic systems. Current research gaps highlight the need for prospective studies comparing standardized TBS interventions to usual care or co-management models, assessing outcomes including pain, function (e.g., WOMAC for OA), quality of life, medication use, and healthcare-seeking patterns [17]. Qualitative investigations into TBS techniques, practitioner training, and patient beliefs about disease and healing are also critical. Implementation research exploring collaborative models, incorporating training, referral systems, supervised practice, and basic hygiene or splinting standards, can reduce harm and improve referrals [18]. Policy implications emphasize engagement rather than demonization; basic TBS training in danger-sign recognition, safe splinting, and formal referral pathways, combined with community education on urgent red flags and strengthening accessible musculoskeletal services, represents a balanced strategy to enhance safety, improve care, and respect cultural practices.

Recommendations for clinicians, researchers, and policymakers

To strengthen the management of traditional bone setters (TBS) in osteoarthritis (OA) and rheumatoid arthritis (RA), several coordinated actions are recommended for researchers, clinicians, health systems, and policymakers. Researchers should prioritize prospective cohort studies and pragmatic clinical trials that specifically evaluate the outcomes of TBS interventions for OA and RA, ensuring the use of standardized outcome measures to allow comparability and evidence-based conclusions [19]. Such studies will help clarify the safety, effectiveness, and best practices for TBS involvement in musculoskeletal care. Clinicians and health systems should develop culturally sensitive referral pathways that bridge traditional and formal healthcare, alongside short, competency-based training modules for TBS. These modules should focus on the recognition of medical emergencies, infection prevention, and safe patient handling, thereby reducing complications while respecting local practices. Policymakers and funding agencies are encouraged to support participatory implementation research that tests integration models combining training, supervision, and structured referral networks. Additionally, funding should prioritize community-based educational programs that inform patients about safe musculoskeletal care options and the potential benefits of coordinated TBS and formal care [20]. By adopting these recommendations, stakeholders can

enhance patient safety, improve outcomes, and foster an evidence-based framework that harmonizes traditional practices with modern medical standards.

CONCLUSION

In conclusion, traditional bone setters (TBS) remain a prominent and culturally embedded source of musculoskeletal care in West Africa, particularly for communities with limited access to formal healthcare. While TBS interventions may provide symptomatic relief and psychosocial support for patients with osteoarthritis and rheumatoid arthritis, current evidence is largely anecdotal and of low quality, with no robust studies demonstrating long-term disease modification or functional improvement. Lessons from fracture management underscore potential risks, including complications from improper splinting, manipulation, or unsterile practices, highlighting the need for caution in arthritis care. To optimize patient outcomes, there is an urgent need for prospective studies, pragmatic trials, and qualitative research to evaluate the safety, efficacy, and patient perspectives of TBS interventions for chronic arthritis. Integrating culturally sensitive training, referral pathways, supervised practice, and community education can bridge traditional and formal care, enhancing patient safety while respecting local beliefs. Strengthening research and policy frameworks will be essential to harmonize TBS practices with evidence-based musculoskeletal care in the region.

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