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Orthopaedic surgeons versus traditional bone setters: A comparative analysis of healing systems and patronage of two Ghanaian therapists

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Abstract: Fracture management and treatment in Ghana is a sole prerogative of two healers. In the hospital, orthopaedic surgeons are the specialists in charge of bone setting, while at the community level, traditional bone setters mend broken bones using indigenous knowledge systems. These two specialists constitute the gatekeepers of bone setting in Ghana, who use biomedical and indigenous epistemologies to heal fractures, respectively. Using the qualitative approach, and with evidence from the Volta Region of Ghana, this study engages in a comparative analysis of the healing systems and patronage of orthopaedists and traditional bone setters. The study argues that orthopaedic surgeons use scientific and biomedical knowledge in healing, while traditional bone setters use indigenous customs, traditions, methods, and skills to heal fractures. Second, these specialists use different approaches and methods in mending broken bones. At the center of this study lies the factors that influence the patronage of the services of these two therapists. The study finds expertise, advanced medical technology, infection management, and first aid as factors responsible for the patronage of the services of orthopaedic surgeons. On the other hand, the good review process, social support system, the use of herbs, and local knowledge motivate people to seek the services of traditional bone setters. The study concludes that orthopaedic surgeons and traditional bone setters constitute the panacea for fracture treatment in Ghana and thus, a collaborative work between these two practitioners can bridge the gap for sustainable and quality healthcare delivery in bone setting.

Keywords: Bone fracture, Ethnography, Healing systems, Hospital, Orthopaedic surgeons, Patronage, Phenomenology, Therapists, Traditional bone setters

1. Introduction

According to Yempabe et al. (2021: 105), "Extremity injuries such as fractures are a major cause of disability globally, especially in low- and middle-income countries. Yempabe and his colleagues further argued that much of the disability caused by fractures could be averted by improvements in emergency care, orthopaedic care, and rehabilitation. Studies show that in many African countries, fracture care is provided not only by formal/orthodox medical practitioners, but also by traditional bone setters (Edusei et al., 2015). Akakpo (2024: 363) suggested that the hospital is a well-organized social system which provides comprehensive therapeutic services to all its clients, including patients with fractures. On the other hand, Onyaemechi et al. (2021: 1367) opined that "The practice of traditional bone setting dates a long way back and is common in many developing countries in Africa, South America, and the Indian subcontinent." They further asserted that in most low- and middle-income countries, traditional bone setters still play an integral role in trauma and fracture care. A fracture, according to Rachmat and Fiddiyanti (2023: 217) denotes "a loss of continuity of bone or cartilage, either

total or partial" and often caused by trauma or physical exertion. A fracture is also a medical condition characterized by a broken bone. Yempabe et al. (2020: 2) observed that musculoskeletal injuries are a major public health problem and cause a large burden of disability and suffering globally. They further narrated that from 1990 to 2010, the percentage of all disability increased from 4.7% to 6.8%, ranking as the second largest contributor to disability globally. These musculoskeletal injuries are classified as simple, complex, compound, and multiple fractures. A simple fracture is a type of fracture which does not damage the skin with open wounds. However, complex, compound, and multiple fractures are open fractures with open wounds, injuries, displacement, and overlapping of bones. They are also associated with nerve injury, damage to tendons and ligaments, infections, and bleeding, among others (Akakpo, 2023; Rachmat & Fiddiyanti, 2023). Studies show that musculoskeletal injuries include anterior posterior dislocation, oblique dislocation, dislocation of joints, damaged ligaments, and fracture dislocations (Kuubiere et al., 2015). Rachmat and Fiddiyanti (2023: 218) noted that musculoskeletal diseases which occur in the muscles, tendons, joints, bones, and fractures remain reasons for disability and death across the world. This phenomenon calls for the healing of such fractures to prevent disabilities in society. In Ghana, the treatment of bone fractures is the sole prerogative of orthopaedic surgeons and traditional bone setters. It is estimated that 52 to 78% of orthopaedic patients utilize the services of traditional bone setters in Ghana (Yempabe et al., 2021) due to many factors. This study investigates the healing systems implemented by orthopaedic surgeons and traditional bone setters in managing fractures in Ghana, citing evidence from the Volta Region.

Four research questions were posed for this study: 1. What is the nature of healing regarding modern orthopaedics (hospital)? 2. What is the nature of healing regarding traditional bone setting (community)? 3. What factors influence the patronage of orthopaedic surgeons and traditional bone setters in Ghana? 4. How can the gap between orthopaedic surgeons and traditional bone setters be bridged to ensure sustainable and quality healthcare delivery of bone fractures? The first section of this study engages with literature, detailing the two major healing systems in Ghana – biomedicine and traditional medicine. The literature review also focuses on specific healing practices in both the hospital and the community. Secondly, the study provides a brief overview of the evolution of orthopaedics in human history, tracing it from the primitive man through to the Stone Age era, the Middle Ages, the contributions of the Egyptians, Greeks, and Romans, through to the period of the Renaissance, and to contemporary biomedicine. Again, the methodological framework is discussed. In addition, the practice of bone setting by orthopaedic surgeons and traditional bone setters is examined, detailing the methods, equipment, materials, and skills used in mending broken bones. Furthermore, the study puts a spotlight on the factors that account for the patronage of the services of orthopaedic surgeons and traditional bone setters in Ghana. Finally, attention is paid to collaboration and integration debates and arguments regarding biomedicine and traditional medicine, highlighting concrete steps towards achieving collaboration and integration between orthopaedic surgeons and traditional bone setters in order to ensure sustainable and quality healthcare delivery in relation to fracture care in Ghana.

2. Literature review

2.1 What is a healing system?

According to Kirmayer (2013: 1), "Notions of healing are central to any system of medicine." MacLennan (1996: 569) notes that "…healing systems have universal elements and cultural specific features which include affliction, defined roles for patients and healer, place and time of healing rituals, specific symbolic actions with healing efficacy, and consequent expectations for recovery." Accordingly, it is observed that great diversity exists in healing systems with a simple and basic logic of transforming an individual from sickness to wellness (Kirmayer, 2013). A healing system can be conceptualized as a simple and complex processes, methods, approaches, skills, equipment, materials, and people involved in providing therapeutic solutions and remedies

to sick people (patients). Kpobi and Swartz (2019: 1) argued that "health seeking in many African countries typically involves making use of multiple healing systems, including indigenous and faith systems, as well as biomedical systems. These different systems have co-existed for many years in Africa, including Ghana." Similarly, research has shown that across the world, systems of healing fall into two main domains: biomedicine and non-biomedical healing systems (Quah, 2003: 2000).

Quah (2003: 1997) conceptualized biomedicine as a practice and substance of the Western tradition of healing. Bates (1995) labels it as "Galean" and "epistemic" while Kuriyama (1999) calls it "Greek" and "Hippocratic." Similarly, other scholars described it as "Western medicine" which is classical, while contemporary scholars and researchers described it as "biomedicine" which is a modern concept (Leslie & Young, 1992; Ordin, 2023: 21). Traditional medicine on the other hand " is a body of knowledge, practices, measures, ingredients, interventions of all types, material or other which have allowed the African to arm himself against sickness and to alleviate suffering or ill-health" (Chabot, 1980: 11). Bannerman also operationalized traditional medicine as follows:

> …a total body of knowledge, techniques for the preparation and use of substances, measures, practices, whether explicable or not that are based on personal experience and observation handed down from generation to generation, either verbally or in writing, and are used for the diagnosis, prevention, or elimination of imbalances in physical, mental or social well-being (Bannerman, 1980: 731).

Biomedicine as a healing system is informed by the ethos of science (Merton, 1973: 268) that sets the evaluation of standards in the search for safe and effective therapeutic procedures (Quah, 2003: 2000). This medicine involves systematic study of empirical phenomena to produce a body of certified knowledge guided by a set of norms. Zuckerman (1988: 513) notes that biomedicine is a science, a social enterprise and "a set of social arrangements for developing, certifying, and communicating knowledge." Kirmayer (2013: 1) argued that common medicine practices in biomedicine include the use of medicines that are drunk, smoked, injected, or otherwise taken into the body; methods of getting things out of the body by emetics, cathartics, purgatives, bloodletting or surgery, manipulation of the body through touch and gestures or with specific materials among others. These practices constitute the healing system in biomedicine that are scientific and evidence based.

However, Abdullah (2011), cited in Akinnawo and Akpunne (2018: 51) points out that traditional medicine, also known as folk medicine, ethno-medicine, native healing, or complementary or alternative medicine, is the oldest form of healing system known to man. It is ancient, culture-bound, and embedded in the traditions, customs, and belief systems used to deal with various diseases (Akinnawo & Akpunne, 2018: 51). In Africa, there are different healing systems (Truter, 2007) that are informed by the culture, religious beliefs, and environment of a group of people. These varied forms of healing systems are holistic in nature and characterized by identification, assessment, and classification of diseases and treatments (Marshall, 2005). Treatment modules include various approaches used to identify and ascertain causes of diseases such as divination, sacrifices to the gods, and interviews (White, 2015), spiritual cleansing (Olupona, 2004), spiritual protection (Westerlund, 2006), exorcism (Insoll, 2010: 42), and the use of sounds (Avorgbedor, 2000). Furthermore, other methods of healing include the use of plants and animal substances (Yusuf, n. d: 33), application of herbs and clay (White, 2015), Counselling (Ayim-Aboagye, 1993), and adherence to moral codes of society (Wiredu, 1983). These methods and approaches constitute healing systems in indigenous African societies including Ghana.

Obviously, the orthopaedic surgeon who works at the hospital employs the biomedical module in mending fractures while the traditional bone setter who works in the community applies indigenous epistemologies in healing broken bones. It is important to understand the healing systems of these two therapists and how these two varied systems influence health-seeking behaviour in terms of patronage. However, studies conducted by scholars such as Hamidu (2018), Wedam and Amoah (2017), Kuubiere et al. (2015), Kuubiere et al. (2013),

Akurugu (2011), and Darimani (2007) did not focus on healing systems of orthopaedic surgeons and traditional bone setters. For instance, Akurugu, Hamidu, Wedam and Amoah in their respective works focused on the contributions of traditional bone setters to primary healthcare in Upper West, Tamale Metropolis and Northern Ghana respectively while the works of Kuubiere and his colleagues focused on the incidence of clavicular fractures and reasons that account for the patronage of traditional bone setters in northern Ghana. Furthermore, Darimani used photography to document the arts and activities of traditional bone setters in Gwollu, Upper West Region of Ghana, while Yempabe et al. (2020 & 2021) paid attention to how traditional bone setters can be offered the opportunity to be incorporated into the formal health sector and factors that inform utilization of traditional bone setters in northern Ghana respectively. Clearly, these studies failed to do a comparative analysis of the healing systems and practices that engulf the works of orthopaedic surgeons and traditional bone setters in Ghana. This study therefore fills this void by doing a comparative analysis of the healing systems of these two therapists and how their practices influence patronage in Ghana. This study is significant as it contributes to knowledge on health-seeking behaviour and healthcare practice which is central to the field of medical anthropology. The next section focuses on the evolution of orthopaedics in human history.

2.1. The evolution of orthopaedics (bone setting) in human history

Orthopaedics (bone setting), an ancient medical practice has a long and rich history (Swarup & O'Donnell, 2016: 434). Ponseti (1991: 59) argued that the concept of orthopaedics emerged in the 1700s from two Greek words; *orthos*, which means 'straight and free from deformity', and *paidos* which translates 'child'. This concept represents the importance of ensuring that children are free from all forms of deformity during their growth and developmental stages. Colton (2009, p. 3) pointed out that though there is limited evidence regarding the origins and practice of orthopaedics, research shows that it began with primitive man. Brakoulias (2016) affirmed this position by stating that the management and treatment of fractures existed in primitive times, as exemplified in the fossils of primitive man. Evidence of bone setting was found in the use of splints, trepanation, crude amputations, and rehabilitation processes (Bishop, 1995). Interestingly, during the Stone Age era, the practice of bone setting continued with the development of sophisticated techniques in the treatment of injuries, though evidence is limited (Bishop, 1995). However, Watson (2013) averred that the Shoshone Indians who lived around 7000 -2000 BCE developed a splint from fresh rawhide soaked in water to treat bone fractures. Similarly, indigenous tribes in South Australia developed a clay splint for the healing of fractures (Bishop, 1995). This clay splint illustrates contemporary Plaster of Paris, which gives credence to the practice of orthopaedics in early human history.

Ancient Egyptians displayed a great dearth of knowledge in orthopaedics. The practice of splinting was found in a femur and forearm dated approximately 300 BCE; similarly, carvings and paintings on an Egyptian tomb in 2830 BCE showed the use of crutches, an important of equipment in modern day orthopaedic treatment. Further advancements in orthopaedic practice were made by the Egyptian physician, architect, politician, and astrologer Imhotep. Imhotep developed a medical document, the *Smith Papyrus,* which clearly described the reduction of dislocated mandible, spinal and vertebral injuries, and clavicular fractures (Brakoulias, 2016). This evidence showcases the dearth of knowledge that ancient Egyptians displayed in orthopaedic practice. Regarding the contribution of the Greeks and Romans, Bishop (1995) noted that the *Corpus Hippocratis* (460 BCE – 370 BCE), a Greek medical textbook, described numerous fractures that were treated in the Greek society, such as maneuvers, traction and counter tractions, and various reductions associated with musculo-skeletal fractures. This textbook also describes other forms of fractures, such as treatment of infected open fractures and mending of clubfoot deformities using pitch cerate and wine compresses (Brakoulias, 2016). These advancements in orthopaedics and the mending of these varied bone fractures laid a solid foundation and contributed immensely to the field of surgery (Bishop, 1995).

Unfortunately, the fall of the Roman Empire contributed to the decline in orthopaedic practice as the Christian Church banned the study of anatomy and human dissection (Bishop, 1995). In spite of this, the period of Renaissance witnessed increase in the scientific study of anatomy which laid a solid foundation for modern orthopaedics (Colton, 2009). During the period of the Renaissance, modern hospitals emerged, paving way for the development of orthopaedics as a major medical specialty (Ponseti, 1991, p. 60). Interestingly, the discoveries and contributions of scientists such as Joseph Lister, Robert Koch, and Louis Pasteur revolutionized the practice of orthopaedics through surgical management of bone fractures (Colton, 2009). Brakoulias (2016) further confirmed that in the 19th Century, Wilhem Conrad Ront-gen invented x-ray in 1895 to enhance easy diagnosis, assessment, and management of orthopaedic injuries and fractures. Similarly, Russell Hibbs, an orthopaedic surgeon in New York Orthopaedic Hospital, developed a technique for spinal fusion through spinal surgery. The emergence of the First and Second World Wars further served as a catalyst for the development of orthopaedics as fractures of different forms occurred during these two great wars, contributing to the increasing attention to open wounds, proficiency in amputation, internal fixation, and wound care (Brakoulias, 2016). These developments through the various historical epochs paved the way for modern day orthopaedic practice, which exists as a healing system within the Ghanaian healthcare system.

However, prior to the emergence of biomedicine in Ghana, orthopaedic practice existed across indigenous societies such as Akan, Ewe, Dagomba, Gonja, Nawuri, and Konkomba, among others. This practice was embedded in local ontologies and epistemologies. The specialist in charge of orthopaedics in the local communities was the traditional bone setter, "…a practitioner of joint manipulation, who educates himself/herself from tradition and takes up the practice of healing without having any formal training in accepted procedures" (Green, 1999). These local healers were widespread across Africa, Asia, and South America (Osemwenkha, 2000: 583) and treated sprains, dislocations, simple, complex, compound, and multiple fractures (Nwachukwu et al., 2011, p. 20). Traditional bone setters employed different methods and approaches, materials, art, aids, and skills (Akurugu, 2011) in mending broken bones. Examples of some materials used by traditional bone setters include hot water, splints, palm leaf, bamboo sticks, herbs, and rattan cane (Eshete, 2005: 102), among others. The practice of traditional bone setting was a family knowledge, a natural gift, and characterized by apprenticeship and observation (Rumum, 2014: 587). This knowledge was passed on from generation to generation and was a cultural and family heritage (Ogunlusi et al., 2007).

As observed by scholars such as Pantelic et al. (2015) and Sorsdahl et al. (2010), traditional medicine and biomedicine have been in co-existence in many societies across Africa. In Ghana, people from different socio-political and religious backgrounds explore both allopathic and indigenous healing systems to treat their ailments, diseases, and other health conditions (Busia, 2005). Accordingly, patients patronize the services of orthodox and traditional medicine practitioners. They visit the hospital as well as engaging with local healers to find solutions to their problems. Patients who suffer fractures patronize the services of orthopaedic surgeons as well as traditional bone setters in finding solutions to their fractures. This phenomenon makes orthopaedic care syncretic (Akakpo, 2025). This study engages in a comparative analysis of the healing systems practiced by orthopaedic surgeons in the hospital and traditional bone setters in the local communities. The study also investigates the factors that influence the patronage (utilization) of the services of these two Ghanaian therapists. The study finally discusses the ways of bridging the gap between these two therapists in order to promote sustainable and quality health delivery in relation to bone fractures in Ghana.

3. Research methodology

3.1. Study design

For the purposes of this study, the qualitative research design was adopted. This approach relies on interviews, observations, Focus Group Discussions, and documents to study a phenomenon in a natural setting. Qualitative

design focuses on the lived experiences of people in a natural setting (Azaglo & Kemevor, 2022) and explores interpretive and naturalist mediums to investigate its subject matter. In the same parameter, Muhoja (2024: 175) argued that qualitative method enables a researcher to gain in-depth understanding from the insider's perspective. This approach uses multiple sources such as interviews, life stories, empirical materials, visual texts, case studies, personal experiences, and observations among others to investigate a social phenomenon (Ugwu & Eze, 2023: 20). This design is leveraged on the constructivist ontology and interpretivist epistemology where knowledge production is socially constructed (Hlover & Botchway, 2021). The reasons for the implementation of this design stems from the fact that it is flexible ((Ugwu & Eze, 2023: 20)), provides in-depth understanding of a social phenomenon and provides authentic data. This study uses interviews, participant observations, and visual texts (photography) to collect data.

3.2. Study setting

This study was conducted in the Eweland (Volta Region) of Ghana. This region shares boundaries with Oti Region to the North, Volta River to the West, Republic of Togo to the East and the Gulf of Guinea to the South. Volta Region is divided into eighteen (18) administrative districts, with each having its own district capital. In terms of health infrastructure, it has one teaching hospital (Ho), one regional hospital (Hohoe) and numerous district hospitals, health centers, polyclinics, and Community Health and Planning Services (CHPS) which spread across towns, communities, and villages in the region. There are other private health facilities dotted around communities in the region with most of them located in Ho, the regional capital. However, the Ho Teaching Hospital, affiliated to the University of Health and Allied Sciences (Ho) and Saint Anthony's Hospital (Dzodze) are the two specialist hospitals that engage with bone fractures in the region. In relation to the topography of traditional medicine, bone setters cut across the three Ewe dialectic divides. They are found in *Ewedome* (Central Volta), *Tongu* (River bank settlers) and *Anlo* (inhabitants along the coast/lagoons). Some communities where traditional bone setters operate include Klefe Achatime, Dodome Dogblome, Gbi Atabu, Sokpoe, Agave Dzebenu, Agave Akplorti, Mafi Wukpo, Mafi Amegakofe, Mafi Kpedzeglo, Mafi Kpordiwla and Akatsi Abadzivorkofe among others. The two specialist hospitals and the various communities which host traditional bone setters provided the avenue for participants to be recruited for this study.

3.3. Participants and recruitment

Sixty-four (64) participants were recruited to participate in this study. These include ten (n=10) traditional bone setters, thirty (n=30) patients, four (n=4) orthopaedic surgeons, four (n=4) clinical nurses, two (n=2) physiotherapists, four (n=4) community chiefs, four (n=4) opinion leaders and six (n=6) community members. The biomedical staff were recruited from Ho Teaching Hospital and Saint Anthony's Hospital. The other participants were recruited from Ho, Hohoe, Dzodze, Sokpoe, Mafi Amegakofe, Mafi Wukpo, Mafi Kpedzeglo, Klefe Achatime, Akoefe Avenui, Dodome Dogblome, Akatsi and Tefle. The purposive sampling technique was used to recruit participants as the researcher believed that the participants had adequate knowledge about the phenomenon under study.

3.4. Data collection methods and analysis

Due to the nature of the study, ethnography (Creswell, 2007: 68-69) and phenomenology (Qutoshi, 2018: 125; Van Manen, 2017) were adopted as data collection methods. The reason for using ethnography was to describe and interpret the practice of orthopaedics from a natural setting – the hospital and community. On the basis of this, the researcher visited hospitals, homes, and workplaces of participants to collect data. Regarding phenomenology, it was essential for the researcher to collect data on the lived experiences of bone setters, orthopaedic surgeons, patients, and other participants in relation to bone setting. As Teherani et al. (2015), cited

in Neubauer et al. (2019: 91) argued, phenomenology is essential as the method describes and interprets a social phenomenon from the perspective of those who have experienced it. This assertion forms the basis for adopting this second approach. Accordingly, interviews, participant observations, and photography were employed to collect data. Guanah (2022, p. 202) observed that photography constitutes a form of documentation that communicates a message, promotes and preserves cultural values and knowledge. He further noted that photography is important as it allows actors, performers, and dramatists to be captured in 'still' form, which can later be viewed (Guanah, 2022: 205). Justifiably, photography was used in order to capture the practice of bone setting in order to preserve and promote this medical knowledge in Ghana. The researcher conducted sixty-four in-depth interviews (Alshenqueeti, 2014, p. 40) with participants and recorded their responses (Angrosino, 2007), with the point of saturation (Hennink et al., 2017) being the guiding principle. Finally, data was analyzed using the descriptive qualitative approach of abstracting and storytelling, guided by McLeod (2024) narrative analysis and Shava et al. (2021) content analysis.

3.5. Ethical clearance

This article forms part of a broader doctoral research project entitled "*An Ethnographic Study of Traditional Bone Setting among the Ewe of Ghana*" presented to the School of Graduate Studies, University of Ghana, Legon in January 2023. Due to the health-oriented nature of this study, it was important to observe ethical principles in this study as it revolved around the health of human subjects. Accordingly, the researcher applied for Ethical Clearance from the Ethics Committee for Humanities, University of Ghana, Legon, and approval was granted under the Ethical Code ECH 272/21-22. The researcher therefore observed principles such as informed consent, voluntary participation, duty to inform, confidentiality, and anonymity, among others, to strengthen the ethical framework of the study.

4. Findings

4.1. The Practice of Bone Setting in the Hospital – Orthopaedic Surgeons

Fracture treatment is an important aspect of biomedicine in contemporary times, and the specialist responsible is the orthopaedic surgeon. Data gathered from the field indicated that the hospital provides comprehensive management and services to clients who present to orthodox medicine practitioners. The hospital has specialists in diverse fields who provide crucial services to clients and patients with fractures are not left out. The clinical staff of the hospital make use of certain Standard Treatment Guidelines (STGs) (Gopalakrishnan, 1999: 1) in their practice. The STGs are principles prepared as a tool to assist and guide orthodox healthcare staff such as doctors, dispensers, and pharmacists, among others, in the discharge of their duties. With the use of the STGs, clinical staff of the hospital are able to diagnose, prognose, prescribe, and provide quality care and delivery to their clients. Gopalakrishnan (1999) further explained that the STG is used to inform treatment choices and in the overall management of clients. This phenomenon gives credence to the fact that the hospital can provide comprehensive services to ensure therapeutic solutions to all its clients, including people with fractures.

The practice of bone setting in the hospital is embedded in a multiplicity of methods and approaches. The first method or approach is the implant of metal or traction devices in the affected body part. Data shows that there exists skin traction, skeletal traction, and manual traction. Skeletal traction is a process that involves the use of metals, plates, pins, and wires to join broken bones together. This process is conducted through surgery with the sole aim of ensuring bone alignment. Very often, the method is applied to complex, compound, and multiple fractures. Skin traction method involves the use of bandages and an arm sling to grip the broken bones while the manual traction approach involves the pulling and repositioning of broken bones to ensure proper alignment.

Detailing this process of healing fractures in the hospital, Elliot et al. (2007: 512) explained:

Traction may be required as part of fracture management, and involves the application of a pulling force to fracture or dislocated bones. There are three types of traction: 1. skeletal, where the traction pins are anchored to the bone (i.e. Steinmann pin); 2. skin, where the body is gripped, as in the use of slings and bandages; 3. manual which is applied by a clinician pulling on a body part, such as in the reduction of dislocation.

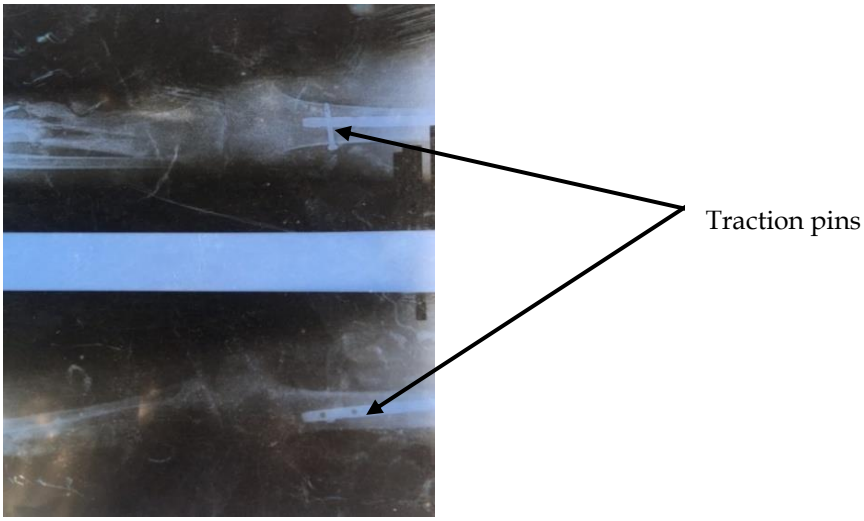

Figure 1: Traction pins implanted in a broken bone.

(**Source:** Akakpo, 2025: 16)

Elliot further argued that the manual traction may be applied to maintain traction during such care manouevres as logrolling or repositioning of the traction. The principles of traction are therefore to achieve the goal of alignment of bones while preventing complications. More important is the fact that the application of the traction must be properly done by the clinician in order to avoid excessive pain, complications, and worse injuries. To achieve proper application of traction, a clinician must be guided by certain principles and methods. An orthopaedic surgeon expressed:

> To ensure proper traction, the hold on the body must be adequate and secure; the clinician must provide counter traction characterized by minimal friction and the line and magnitude of the pull must be properly maintained. In line with good practice, the clinician must engage in frequent checks on the patient and the traction in order to ensure that it is functioning properly. This must be done in order to be sure that the patient is not suffering any additional injury as a result of the application of the traction (Source: author's fieldwork, July 2021).

The observation above points to the fact that the traction method is an important method applied in the management and treatment of fractures. However, it is guided by certain principles in order to ensure proper healing of fractures.

The second approach of healing fractures in the hospital is the application of the Plaster of Paris (POP). The POP is a well-known method of managing fractures in the hospital. The various types of POP that can be applied include lime plaster, cement plaster, gypsum plaster, and fiber glass. The application of the POP is also aimed at mobilizing and realigning broken bones. The POP is applied to the entire fracture region of the patient. In cases where there are wounds and injuries, a window flap is created through which the wound is dressed regularly. A clinician who applies the POP must be knowledgeable in anatomy and physiology in order to know the nature of alignment, the positions of bones, and how they align with tissues, nerves, and tendons. Depending on the nature and degree of fracture, a patient could be in the POP for a month or more until total healing takes place. The hospital also employs a method known as manipulation under general anesthesia. This process involves the application of anesthesia to put a patient to sleep while the fracture or dislocated bones are

realigned. The role of anesthesia is to prevent the patient from experiencing excessive pain in the process of realigning or repositioning the broken or dislocated bones.

Furthermore, the hospital also practices amputation. Amputation method involves the removal of the limb of a patient. This method can be applied to the leg (tibia, fibular, or the femur), ankle, below knee, knee bearing, and above knee. This approach is very critical to the health of the patient. However, it is important to note that orthopaedic surgeons do not insist on amputation because of patient rights. Though they may recommend amputation based on the nature of the fracture, some conditions must be fulfilled before it can be conducted. The first is the acceptance from the patient/family. Second is the general health of the patient. The general health of a patient is categorized into two – general good health and general bad health. The general bad health means the tissues around the fracture are not viable, the vessels are weak, the nerves are dead and getting rotten. This situation implies there is no life in that part of the body, hence, amputation must be recommended. However, this situation is further hinged on the general good health of a patient. This means that the patient has good blood pressure, good sugar levels, patient is not sick in the midst of the fracture, and is not malnourished. Once all these conditions are in place and a patient agrees for amputation, it is carried out.

Finally, the mending of fractures in the hospital comes with cleaning and dressing of wounds and injuries to prevent infections, observation of some dietary restrictions, pain management, and regular exercise and practice. The clinical nurses administer some pain-relieving pills, tabs, and drugs; but often, injections are administered in order to reduce pain. The physiotherapists ensure that the patient engages in regular exercise, teaches patients how to walk using crutches, walker or Zimmer Frame. This regular exercise and practice are geared towards strengthening the bones in order for patients to resume their normal duties. To be sure that healing is actually taking place, the patient takes regular x-ray photographs which serves as the basis to determine the extent to which healing is taking place. Radiological assessment therefore plays a vital role in healing fractures.

4.2. The Practice of Traditional Bone Setting – Traditional Bone Setters

Traditional bone setting in Volta Region is undergird by certain knowledge, skills, art, methods, and materials which are generally applied in mending fractures. The healing methods consist of search for broken bones, using the bare hand to assess the nature and degree of fractures, pulling of broken bones to ensure realignment, manual manipulation of dislocations, draining of blood clots from the fracture through incisions, massaging, cleaning and dressing of wounds, and application of hot water. In addition, other healing methods include application of herbs, splinting of fracture, pain management, casualty handling, and admission and non-admission of patients. Traditional bone setters engage with simple, complex, compound, and multiple fractures. These types of fractures are characterized by severe pains especially during the realignment of the broken bones. To avert excessive pains, bone setters recommend the use of pain relievers in a form of drugs and injections. However, indigenous pain management mechanisms such as the use of jokes, riddles, proverbs, storytelling, playing of local games, songs and local community histories are employed especially in situations where the patient is admitted in the house of a bone setter.

Traditional bone setters in the Volta Region apply a number of materials and aids in healing fractures. Materials include splint, herbs, white calico ropes, and shea nut butter. As a result of the influence of social change, they now use bandage, sterile gauze, liniment, talcum powder, methylated spirit, potassium permanganate, savlon solution, hydrogen peroxide, cotton, and kidney dish among others. However, the splint, herbs, and white calico ropes constitute the most important materials and aids in the healing process. Herbs (*atike, amatsi, egbe* or *gbe*) constitute the foundation of traditional bone setting. These herbs are applied to fractures to perform three functions – search and removal of broken bone particles from the skin (between tissues, muscles, broken bones), melting and bonding of broken bones, and hardening of broken bones. These herbs are applied systematically to ensure healing of broken fractures.

Figure 2: A bone setter applying herbs to a fracture.

(**Source:** Author's fieldwork, April 2021, Sokpoe)

The splint is another important aid used in the healing of fractures. Splint in Ewe is referred to as *Gadza* (*Anlo*), *Sede* (*Tongu*), and *Srede* or *Ababevi* (*Ewedome*). These splints can be woven or unwoven, and their main function is to serve as supporting aids in holding broken bones together for healing to take place. Some are produced from hardwood, hard plywood, palm branches, and bamboo sticks. They can be described as local tractions or POP.

Figure 3: A woven splint made from bamboo sticks.

(**Source:** Author's fieldwork, April 2021, Mafi Amegakofe)

The white calico ropes are used to tie (*bla*) the splint firmly to the fracture to prevent shaking and shifting of broken bones from their original positions. In recent times, bandage and white calico ropes are used together in the mobilization process. The shea nut butter is used to smoothen and soften the skin to enhance easy and proper massaging of fractures. While the application of the liniment reduces pain and melts broken bones, talcum powder hardens broken bones as it has peppermint. Finally, modern healthcare aids such as cotton, gloves, sterile gauze, potassium permanganate, hydrogen peroxide, savlon solution, scissors, and methylated spirits are used in the management and healing of fractures. These aids are used to ensure hygienic healing conditions to prevent infections from the patient to the healer and vice versa.

4.3. Comparative analysis of Orthopaedic Surgeons and Traditional Bone Setters

A detailed analysis of the two healing systems indicates that modern orthopaedics and traditional bone setting operate within two different settings. Modern orthopaedics is influenced by the ethos of science while traditional bone setting is influenced by indigenous epistemologies such as customs, traditions, and belief systems. While modern orthopaedists use a set of standardized principles which produce certified knowledge, is scientific, verifiable, and reliable, traditional bone setting is engaged with no standardized principles. The knowledge systems and practices are inexplicable and are largely unverifiable. For instance, the issue of herbs melting broken bones and at the same time hardening broken bones is inexplicable. However, its inexplicability does not rule out the fact of its efficacy and effectiveness.

In addition, while modern orthopaedists use multiple healing processes such as traction methods, manipulation under general anesthesia, the use of POP, amputation and surgeries, traditional bone setters operate a unilineal healing system where the major healing activities include application of herbs, massaging, application of hot water, and splinting. Whether simple, complex or multiple fractures, the herbs, splints and ropes are used, making it a one-way healing system.

Furthermore, while modern orthopaedic surgeons use advance medical technology, traditional bone setters use local technology. Indeed, orthopaedic surgeons use numerous tools and equipment in mending broken bones. Orthopaedic surgery is conducted using different types of forceps (toothed, non-toothed, short, long etc.), different types of scissors (Mayo, Suture, Metzenbaum), needle holder, Kocher, knife handler, retractors, bone nibbler, bone holding clamps, bone cutter, bone lever, plate bender, drill sleeve, screw driver, depth gauge, bone saw, periosteal elevator, chisel, drill bits, kirschner wire, combi hole plate, and mallet among others. On the other hand, traditional bone setters use splints and white calico ropes as their major equipment, with herbs and shea nut butter serving as other supporting aids for bone treatment.

This phenomenon points clearly to the fact that modern orthopaedics and traditional bone setting are two healing systems that patients explore to remedy their fractures. Accordingly, these two healing systems have the potential to influence patronage (utilization), hence the need to engage with data on factors that influence the patronage of the two therapists in Ghana.

4.4. Factors underpinning the Patronage of Bone Setting in the Hospital and Community

Data gathered from the field indicated that a number of factors underpin the utilization of orthopaedic services in the hospital as well as traditional bone setters in the community. It has been observed that the hospital is a well-organized social system with a structured bureaucracy, trained professionals and experts, and advanced medical technology. On the basis of this, patients with fractures patronize the services of orthopaedic surgeons to remedy their problems. Findings reveal that three categories of patients hobble between the services of orthopaedic surgeons and traditional bone setters. These include patients who presented to the hospital for treatment and have been discharged, patients who have received formal treatment from the hospital and due to some reasons have requested to be discharged in order to seek alternative care practices, and patients who due to some reasons escaped from the hospital to seek the services of traditional bone setters. These categories of clients have been influenced by certain factors regarding their health-seeking behaviour.

Participants argued that the reasons for the patronage of modern orthopaedic services at the hospital stems from the fact that the hospital provides quality and sustainable first aid care, proper care, treatment and management of injuries, good infection management, proper pain management, existence of trained expertise and professional staff, and the availability of advanced medical technology. These factors have influenced many patients to seek the services of orthopaedic surgeons in the hospital. A patient expressed his view:

> In 2017, I was knocked down by a car when I was riding my motorbike to a fuel station. I was sent to the Ho Teaching Hospital for treatment. Upon arrival, the clinical nurses treated my

> injuries, dressed my wounds, administered first aid, and gave me some medicine and injections to reduce pain. Later, they took an x-ray photograph which indicated that I suffered a simple fracture. A surgery was conducted later and for about two months, I started walking after numerous review processes (Source: interview with a patient, July 2021, Ho)

It is argued from the above extract that the availability of clinical nurses, radiographers, and orthopaedic surgeons provided the needed relief to this patient. The collaborative work between these experts culminated in the effective healing of the patient. Thus, it is argued that the expertise and technology of the hospital motivate people to seek orthopaedic services in the hospital.

Interviews conducted on the field also indicated that a number of factors are responsible for the patronage of traditional bone setters. First, the practice resonates with the local customs, traditions, and belief systems. Healing of fractures also comes with a social support system where family members become active participants in the healing process. A patient narrated:

> When I left the hospital and presented myself to the traditional bone setter, I received a lot of support from the people around me. Anytime I want to drink water, someone is there to provide it. If I want to urinate, there is someone there to support me; even when I want to reposition myself on bed, there is someone there to support me. But with the hospital, I had to do all these things by myself with the help of a walking stick. To me, I think the social support system of traditional bone setters is better compared to the hospital. (Source: Author's field interview – Fractured in-patient; April, 2021, Taviefe Avenya).

In addition, treatment by traditional bone setters is characterized by utmost care and patience, good review processes conducted every three days, recommendations and testimonies from community members, and the fast process of healing. These factors constitute features of traditional bone setting which influence patronage of their services. However, participants argued that some practices of the hospital serve as demotivating factors for patients. This consequently prevents them from seeking the services of orthopaedic surgeons. These factors include the fear of amputation, fear of surgery, multiple surgeries, cost of treatment, the concerns raised about the Plaster of Paris, the attitude of some biomedical staff, and the workload of doctors prevent many clients with fractures from resorting to traditional bone setters.

It must be emphasized that irrespective of the factors that influence the patronage of the hospital and community practitioners, one thing is clear that bone setting is a prerogative of orthopaedic surgeons and traditional bone setters, and many factors influence patients to decide as to which of the two therapists they should consult to heal their fractures. Having said that, it is important to engage with the debate of bridging the gap between these two therapists in Ghana.

4.5. Collaborating for Sustainable and Quality healthcare delivery in Bone Setting

There have been a lot of debates concerning integration and collaboration between biomedical and indigenous healing systems. WHO (2013) noted that there have been numerous calls for the integration of the different healing systems in Ghana. As indicated earlier, numerous factors influence health-seeking behaviour regarding biomedical care as well as accessibility factors with indigenous healing systems (Ae-Ngibise et al., 2010). Akpalu et al. (2010) argued that as a result of this phenomenon, there have been calls for and attempts at collaboration between the biomedical system and various alternative systems. However, much of the collaboration focuses on primary healthcare programmes, with few studies describing partnership with a specific mental health focus. There have also been some collaborative efforts between biomedical systems and indigenous faith healing systems in Ghana (Kpobi & Swartz, 2019: 1). The first noticeable collaboration between biomedicine and herbal medicine occurred in 1940, where Dr. Oku Ampofo left government service to set up his private firm in Mampong Akwapim, Akwapim North District, and recognized the activities of herbalists to practice alongside

doctors, a phenomenon which contributed to the establishment of the Center for Scientific Research into Plant Medicine in Ghana in 1976 (Evans-Anfom, 1986); however, in 2011, the name was changed to Center for Plant Medicine Research.

Throughout post-colonial Ghana, numerous attempts at collaboration have been made with collaborative activities between herbalists, priests, traditional birth attendants, and traditional surgeons. The Ministry of Health developed the Primary Health Training for Indigenous Healers Programme (PRHETIH) to improve upon the methods of healing of these indigenous medical practitioners (Warren et al., 1982; Asase, 2023). This effort was meant to strengthen the primary health sector of Ghana by exploring the diverse healing systems to ensure sustainable and quality healthcare. To further give credence to the relevance of traditional medicine in contemporary healthcare in Ghana, a four-year Bachelor of Science programme in Herbal Medicine was introduced at Kwame Nkrumah University of Science and Technology, Kumasi, in the year 2001. The establishment of the Department of Herbal Medicine was pivoted on certain key pillars – focusing on practical application of herbal medicine principles and guidelines, contribution to manpower development, integration of herbal medicine with mainstream healthcare, and collaboration with research institutions to ensure the safety and quality of herbal medicines in Ghana (Asase, 2023: 2). This programme was established to essentially contribute to the growth of the herbal medicine industry in Ghana.

Interestingly, in 2011, the Ministry of Health, in the quest to promote integration of biomedicine and herbal medicine implemented a pilot study that introduced herbal units in Ghanaian hospitals. Through this initiative, small herbal medicine units were established in seventeen (17) hospitals across the country (Kpobi & Swartz, 2019: 3) with the aim of complementing biomedicine and giving patients the choice to patronize herbal medicine. Asase (2023, p. 2) further argued that over the years, remarkable progress and achievements have been made in the field of Herbal Medicine. He noted that, in 2019, the Institute of Traditional and Alternative Medicine (ITAM) was established by the University of Health and Allied Sciences (UHAS), Ho, with the mandate to develop and promote all traditional complementary and alternative medicine practices through research, education, and advocacy. In the same vein, the Department of Pharmacognosy and Herbal Medicine, University of Cape Coast (UCC) and University of Ghana (UG), respectively, also play crucial roles in capacity building in the field of traditional medicine. These efforts give insights into the relevance of traditional medicine in Ghana.

In spite of these strides, findings show that there has not been any collaboration between orthopaedic surgeons and traditional bone setters in Ghana. However, participants asserted that collaboration between orthopaedic surgeons and traditional bone setters is important as both therapists will chat a common path towards quality healthcare delivery to clients. This collaboration will empower traditional bone setters in their practice, and acquire knowledge in modern and best practices of healing fractures. In addition, collaboration will mean that traditional bone setters will learn new methods and skills of healing fractures that are scientific in nature. To achieve this greater collaboration, the government will secure funds to organize workshops, seminars, and meetings where both practitioners will meet and dialogue on best practices and improved service delivery. On the other hand, orthopaedic surgeons will learn traditional methods of healing fractures which will add to their biomedical knowledge. They will learn about herbs, the production of splints, and conduct scientific research into the efficacy of herbs used by traditional bone setters which will eventually lead to the development of these herbs as critical orthopaedic aids on the market. With this collaboration, the goal of Ghana's National Health Policy (2020) which focuses on improving collaboration with various stakeholders in order to attain good health for the general population, will be achieved in the area of bone setting in Ghana.

Finally, concrete steps to achieve collaboration and integration include formalizing the activities of traditional bone setters through licensing and registration of their services. A participant expressed:

> One major way of integrating traditional bone setters into the modern healthcare system is through registration and licensing of their operations. If they are registered officially in the

> region and receive government support, it will contribute immensely to fracture care. This will mean that the government agencies will constantly monitor and regulate their activities so that they can complement the services of the hospital (Source: field interview with an opinion leader, May 2021, Ho).

Secondly, the government and other healthcare organizations must organize human capacity development programmes, workshops, and seminars for traditional bone setters as a way forward for the integration process. These programmes can bring on board orthopaedists to engage with traditional bone setters, learn the different systems of healing, and contribute to collaborative healing practices in fracture care. In addition, government must develop and implement a national policy framework on integration. The lack of a document on integration of Traditional Medicine, especially on bone setting, is a bane to achieving collaboration and integration. Hence, government must rise beyond the Traditional Medicine Practice Act, Act 575, to develop a more robust integration policy document in the area of bone setting. Finally, there must be advocacy programmes on the need to integrate traditional bone setters into the primary healthcare system in Ghana. To achieve this, government, non-governmental organizations, faith-based organizations, policy think tanks, and individuals must come on board to create awareness on the relevance of cultural knowledge in promoting healthcare in Ghana. These concrete measures, if implemented will ensure sustainable and quality healthcare delivery in the area of bone setting in Ghana.

5. Recommendations

The study recommends that just as the government created the herbal medicine unit in hospitals in Ghana which are doing well, it can add a unit for traditional bone setters at the hospital to complement the work of orthopaedic surgeons. This can begin as a pilot project in some selected hospitals in the country and based on its success, a full-scale project can be rolled out across the country.

6. Conclusion

This study engaged in a comparative analysis of the healing systems of orthopaedic surgeons and traditional bone setters. It theorized literature on healing systems and narrowed it down to the differences between biomedical and traditional healing systems. The study further provided a brief overview of the evolution of orthopaedics in modern history, tracing it from the primitive man through to the Stone Age era, the Middle Ages, the contributions of the Egyptians, Greeks and Romans through to the period of Renaissance and to contemporary biomedicine. Of more revealing is the fact that the study thoroughly discussed the practice of healing bone fractures by orthopaedic surgeons and traditional bone setters. It was found that while orthopaedic surgeons depended on standardized scientific principles, verifiable, reliable, and certified knowledge to heal bone fractures, traditional bone setters explore local knowledge, customs, herbs, splints, white calico ropes, and shea nut butter among others to heal. While orthopaedic surgeons used advanced medical technology to heal bone fractures, traditional bone setters use local technologies. In effect, these two healing systems have the potential to influence health-seeking behaviour where certain factors such as expertise, proper care, and treatment of wounds, infection management, first aid services, good review process, the social support system, care and patience of traditional bone setters, the fear of amputation, fear of surgery, and concerns of the Plaster of Paris form the basis for the patronage of the services of the two therapists. Collaboration is therefore the way forward where both therapists can work together to promote sustainable and quality healthcare delivery to patients with fracture in Ghana.

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References

1. Ae-Ngibise, K., Cooper, S., Adiibokah, E., Akpalu, B., Lund, C., & Doku, V. (2010). 'Whether you like it or not people with mental problems are going to go to them': A qualitative exploration into the widespread use of traditional and faith healers in the provision of mental health care in Ghana. *Int. Rev Psychiatry*, *22*: 558–567. https://doi.org/0.3109/09540261.2010.536149.
2. Akakpo, S. B. (2023). *An ethnographic study of traditional bone setting among the Ewe of Ghana*. Doctor of Philosophy thesis submitted to the School of Graduate Studies, University of Ghana, Legon.
3. Akakpo, S. B. (2024). Why patients patronize the services of traditional bone setters: A phenomenological analysis of lived experiences of patients in the Volta Region, Ghana. *African Social Science and Humanities Journal*, *5* (4): 363-380.
4. Akakpo, S. B. (2025). Medical syncretism in the context of bone setting (fracture) in Ghana: A descriptive qualitative study. *Ghana Journal of Development Studies*, *22* (1): 1-32.
5. Akinnawo, E. O. & Akpunne, B. C. (2018). Challenges of African traditional healing: Implication for the development of indigenous psychology. *International Journal for Psychotherapy in Africa*, *3* (1): 51-65.
6. Akpalu, B., Lund, C., Doku, V., et al. (2010). Scaling up community-based services and improving quality of care in the state psychiatric hospitals: The way forward for Ghana. *Afr J Psychiatry*, *13*: 109–115. https://doi.org/10.4314/ajpsy.v13i2.54356.
7. Akurugu, C. S. (2011). *The role of traditional bone setting in primary fracture care in the Upper West Region: The cases of Jonga, Gwollu and Doung bone-setting centers.* Unpublished Master of Philosophy Dissertation presented to the Department of African and General Studies, University for Development Studies, Tamale.
8. Alshenqeeti, H. (2014). Interviewing as a data collection method: A critical review. *English Linguistics Research, 3* (1): 39-45.
9. Angrosino, M. (2007). *Doing ethnographic and observational research*. Thousand Oaks, CA: Sage.
10. Asase, A. (2023). Ghana's herbal medicine industry: Prospects, challenges and ways forward from a developing country perspective. *Front. Pharmacol*, *14* (1267398). doi: 10.3389/fharm.2023.1267398.
11. Avorgbedor, D. (2000). Bildung Dee Hoo! Sonic articulations in healing and exorcism practices of the Anlo-Ewe. *The World of Music, 42* (2): 9-24.

12. Ayim-Aboagye, D. (1993). *The function of myth in Akan healing experience: A psychological inquiry into two traditional Akan healing communities*. PhD thesis, Dept. of Theology, Uppsala University.

13. Azaglo, A. K., & Kemevor, A. K. (2022). Design components in the celebration of Hogbe festival of Battor Traditional Area in Ghana. *Journal of African History, Culture and Arts*, *2* (2): 75-82.

14. Bannerman, R. H. (1980). Traditional medicine in modern healthcare services. *Sage Journals*, *6*: 731-748.

15. Bishop W. J. (1995). *The early history of surgery.* New York: Barnes & Noble Books.

16. Brakoulias, V. (2016). *History of orthopaedics*. WorldOrtho Website. Retrieved from https://pioa.net/documents/Historyoforthopaedics.pdf. Accessed October 6, 2016.

17. Busia K. (2005). Medical provision in Africa: Past and present. *Phytother Res*., *19*: 919–923. htps://doi.org/10.1002/ptr.1775.

18. Chabot, J. H. C. (1980). *Traditional medicine in Namnamland*. Unpublished Master of Arts thesis presented to the Institute of African Studies, University of Ghana, Legon.

19. Colton, C. L. (2009). The history of fracture treatment. In Browner B. D., Jupiter, J. B., Levine, A. M., Trafton, P. G., & Krettek, C. (Eds.), *Skeletal trauma: Basic science, management, and reconstruction* (pp. 3-32, 4th edition). Philadelphia, PA: Saunders Elsevier.

20. Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches.* London: Sage Publications.

21. Darimani, B. (2007). *Photographic documentation and description of the arts and activities of the traditional bone setters' clinic of Gwollu*. Unpublished B.A. Dissertation presented to the Department of General Art Studies, Kwame Nkrumah University of Science and Technology, Kumasi.

22. Edusei, A. K., Owusu-Ansah, F. E., Dogbe, J. A., Morga, J., & Sarpong, K. (2015). Perspectives I musculoskeletal injury management by traditional bone setters in Ashanti, Ghana. *Afri J Disabil*, *4* (1): 97. https:doi.org/10.4102/ajod.v4il.97.

23. Elliot D., Aitken, L. & Chaboyer, W. (2007). *ACCNS's critical care nursing*. London: Debbie Lee, Elsevier.

24. Eshete, M. (2005). The prevention of traditional bone setter's gangrene. *The Journal of Bone and Joint Surgery, 86-B* (1): 102-103.

25. Evans-Amfom, E. (1986). *Traditional medicine in Ghana: Practice, problems, and prospects*. Accra: Ghana Academy of Arts and Sciences.

26. Gopalakrishnan, S. (1999). Standard Treatment Guidelines. *TN MSC Times, Bulleting on Essential Drug Therapy*, *1* (5): 1- 3.

27. Green, S. A. (1999). Orthopedic surgeons: Inheritors of tradition. *Clin Orth Res*., *363*: 258-263.

28. Guanah, J. S. (2022). Photography and the use of Photographs in Photoplay Magazines: An analysis of Atoka, a photoplay Magazine. *Journal of African History, Culture and Arts*, *2* (4): 201-213.

29. Hamidu, T. A. (2018). *Contribution of traditional bonesetters in the primary health delivery system in Tamale Metropolis*. Unpublished Master of Philosophy Dissertation presented to the Department of Public Health, School of Allied Health Sciences, University for Development Studies, Tamale.

30. Hennink, M. M., Kaiser, B. N., & Marconi, V.C. (2017). Code saturation versus meaning saturation: How many interviews are enough? *Qualitative Health Research*, *27* (4): 591-608.

31. Hlovor, I. K., & Botchway, T. P. (2021). COVID-19 and the borderlands in Africa: Some reflections on Ghana's approach. *African Journal of Social Science Education*, *1* (1): 69-91.

32. Ponseti, I. V. (1991). History of orthopedic surgery. *Iowa Orthop J*., *11*: 59-64.

33. Insoll, T. (2010). Talensi animal sacrifice and its archaeological implications. *World Archaeology, 42* (2): 234-245. http://dx.doi.org/10.1080/00438241003672856.

34. Kirmayer, L. J. (2013). The cultural diversity of healing: meaning, metaphor, and mechanism. *Heart Views, 14* (1): 39-40. doi:10.4103/1995-705x.107123.

35. Kpobi, L., & Swartz, L. (2019). Indigenous and faith healing in Ghana: A brief examination of the formalizing process and collaborative efforts with the biomedical health system. *African Journal of Primary Health Care & Family Medicine*, *11* (1): 1-5, https: //doi.org/10.4102/phcfm.v11i1.2035.

36. Kuriyama, S. (1999). *The expressiveness of the body and the divergence of Greek and Chinese medicine*. New York: Zone Books.

37. Kuubiere B. C., Abass, A., & Mustapha, I. (2013). Fracture complications after treatment by traditional bone setters in Northern Ghana. *Advances in Applied Science Research*, *4* (6): 207-211.

38. Kuubiere, B. C., Abass, A., & Majeed, S. F. (2015). Patients preference for traditional bone setters in northern Ghana. *Al Ameen Journal of Medical Sciences*, *8* (2): 115-118.

39. Leslie, C. & Young, A. (Eds.) (1992). *Paths to Asian medical knowledge, comparative studies of health and medical care series*. Berkeley and Oxford: University of California Press.

40. MacLennan, A. H., Wilson, D. H., & Taylor, A. W. (1996). Prevalence and cost of alternative medicine in Australia. *Lancet, 347*: 569–73.

41. Marshall, R. (2005). Caribbean healers and healing: Awakening spiritual and cultural healing powers. In Moodley, R., & West, W. (Eds.), *Integrating Traditional Healing Practices into Counselling & Psychotherapy* (pp. 73-84). Thousand Oaks, CA: Sage Publications.

42. McLeod, S. (2024). *Narrative Analysis in Qualitative Research*. 1-20. DOI: 10.13140/RG.2.2.30491.07200

43. Muhoja, M. S. (2024). Character and content dynamics in healthcare interventions by emerging faith-based organizations: An ethnographic perspective in urban Tanzania. *African Social Science and Humanities Journal, 5* (2): 171-185. https://dx.doi.org/10.4314/asshj.v5i2.6.

44. National Health Policy (2020). *National Health Policy: Ensuring healthy lives for all*. Accra: Ministry of Health.

45. Neubauer, B. E., Witkop, C. T., & Varpio, L. (2019). How phenomenology can help use learn from the experiences of others. *Prospect Med Educ*, *8*: 90 97. https://doi.org/10.1007/s40037-019-0509-2.

46. Nwachuku, B. U., Okwesili, I. C., Harris, M. B., & Katz, J. N. (2011). Traditional bone setters and contemporary orthopedic fracture care in developing nations: Historical aspects, contemporary status and future directions. *The Open Orthopaedic Journal*, *5*: 20-26.

47. Ogunlusi, J. D., Okem, I. C., & Oginni, L. M. (2007). Why patients patronize traditional bone setters. *Internet Journal of Orthopedic Surgery*. Serial Online, 4. Retrieved from http://www.ispub.com/ostia/index.php?xmlPrinter=true&xmlFilePath=journal/ijos/vol4n2bone.xml.

48. Olupona, J. K. (2004). Owner of the day and regulator of the universe: Ifa divination and healing among the Yoruba of South-Western Nigeria. In M. Winkelman & P. M. Peeks (eds.), *Divination and healing: Potent vision,* (pp. 103-117). Tucson, AZ: University of Arizona Press.

49. Onyaemechi, N. O., Menson, W. N. A., Goodman, X., Slinkard, S., Onwujekwe, O. E., Enweani, O. N., Nwankwo, O. E., Nwomeh, B. C., Nwariaku, F., & Ezeanolue, E. E. (2021). Complications of traditional bone setting in comtemporary fracture care in low-and middle-income coutries: A systematic review. *Trop Med Int Health*, *26*: 1367-1377. https://doi.org/10.1111/tmi.13662.

50. Ordin, S. (2023). Foundations of Biomedicine. *International Journal of Alzheimer's Disease Research*, *2* (1): 21-26.

51. Osemwenkha, S. (2000). Disease etiology in traditional African society. *Africa: Rivista trimestrale di studi e documentazione dell'Istituto italiano per l'Africa e l'Oriente*, *55* (4): 583-590.

52. Pantelic, M., Cluver, L., Boyes, M., Toska, E., Kuo, C., & Moshabela, M. (2015). Medical pluralism predicts non-ART use among parents in need of ART: A community survey in KwaZulu-Natal, South Africa. *AIDS and Behavior*, *19*: 137-144. Doi: 10.1007/s10461-014-0852-6.

53. Quah, R. S. (2003). Traditional healing system and the ethos of science. *Social Science and Medicine*, *57* (10): 1997-2012.

54. Qutoshi, S. B. (2018). Phenomenology: A philosophy and method of inquiry. *Journal of Education and Educational Development, 5* (1): 215-222.

55. Rachmat, O., & Fiddiyanti, I. (2023). Fractures causes and types description in Draja Prawiranegara Hospital Serang Indonesia. *Journal of Health and Dental Sciences*, 217-226. Doi: 10.54052/jhds.

56. Rumun, J. (2014). The socio-cultural pattern of illness and healthcare in Nigeria. *European Journal of Humanities and Social Sciences*, *30*: 587-598.

57. Shava, G. N., Hleza, S., Tlou, F. N., Shonhiwa, S., & Mathonsi, E. (2021). Qualitative Content Analysis. *International Journal of Research and Innovation in Social Sciences*, *4* (7): 553-558.

58. Sorsdahl, K., Stein, D. J., Grimsrud, A., Seedat, S., Flisher, A. J., Williams, D. R., et al. (2009). Traditional healers in the treatment of common mental disorders in South Africa. *J Nerv Ment Dis*, *197* (6): 434-441.

59. Swarup, I., & O'Donnell, F. (2016). An overview of the history of orthopedic surgery. *American Journal of Orthopedics*, 434-438. Retrieved from www.amjorthopedics.com.

60. Truter, I. (2007). African traditional healers: Cultural and religious beliefs intertwined in a holistic way, complement and alternative medicine: *SA Pharmaceutical Journal*, 56-60.

61. Van Manen, M. (2017). But is it phenomenology? *Qualitative Health Research*, *27* (6): 775-779.

62. Warren, D., Bora, G., Tregoning, M., & Kliewer, M. (1982). Ghanaian policy towards indigenous healers – The case of the primary health training for indigenous healers (PRHETIH) program. *Soc Sci Med*, *16* :1873–1881.https://doi.org/10.1016/0277-9536 (82)90448-8.

63. Watson, T. (2013). Wyoming site reveals more prehistoric mountain villages. *USA Today.* Retrieved from http://www.usatoday.com/story/news/nation/2013/10/20/wyoming-prehistoric-vil-lages/2965263.

64. Wedam, E. & Amoah, S. T. (2017). Traditional bone setting: Analysis of contribution and patronage in northern Ghana. *Ghana Journal of Development Studies, 14* (2). DOI: 10.4314/gjds.v14i2.

65. Westerlund, D. (2006). *African indigenous religions and disease causation.* Leiden: Brill NV.

66. White, P. (2015). The concept of diseases and health in African traditional religion in Ghana. *Herv.teol.stud*, *71* (3). http://dx.doi.org/10.4102/HTS.V71I3.2762.

67. WHO (2013). *Traditional medicine strategy 2014-2023*. Geneva: World Health Organization.

68. Wiredu, K. (1983). Morality and religion in Akan thought, in H.O. Odera & D.A. Wasola (eds.), *Philosophy and Cultures,* (pp. 13-28). Nairobi: Bookwise Ltd.

69. Yempabe, T., Edusei, A., Donkor, P., Buunaaim, A., & Mock, C. (2020). Traditional bone setters in northern Ghana: Opportunities for engagement with the formal sector. *Pan African Medical Journal*, *37* (248): 1-10.

70. Yempabe, T., Edusei, A., Donkor, P., Buunaaim, A., & Mock, C. (2021). Factors affecting utilization of traditional bonesetters in the Northern Region of Ghana. *African Journal of Emergency Medicine, 11*: 105-110.

71. Yusuf, N. (n. d.). *Traditional medicine and health care delivery system in Nigeria* (pp. 32-44).