

Indigenous Knowledge System of Orthopedic Medicine among the Ewe of Ghana

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Abstract

Indigenous Orthopaedic Medicine (IOM) popularly and erroneously called bone setting is an important component of African medical heritage. This knowledge contributed to mending broken bones in indigenous African communities. Among the Ewe of Ghana, there are community-based healers who have deep knowledge about the management and treatment of bone fractures. Indigenous Orthopaedic Medicine is therefore a cultural practice and heritage handed down from generation to generation. This study examines the practice of IOM among the Ewe people of Ghana. The study discusses the origins of the practice of IOM, the institutionalization of the practice, and the geographical and spatial distribution of indigenous orthopaedic doctors in Eweland. In addition, the study elucidates the practice of orthopaedic medicine, the significance of orthopaedic doctors, and the influence of social change on the practice in contemporary times. The study contends that IOM is a cultural heritage and an important medical practice of the Ewe people which responds to the primary healthcare needs of the local communities regarding fracture management and treatment. The study concludes that Indigenous Orthopaedic Doctors (IODs) provide complementary healthcare services to fracture patients who are not economically endowed to access the services of modern orthopaedists at hospitals. IOM is therefore a panacea for fracture treatment in Eweland.

Keywords: Indigenous Orthopaedic Medicine, Fractures, Medical Knowledge, Heritage, Ewe-Ghana

Introduction

According to Yempabe et al., "Extremity injuries such as fractures are a major cause of disability globally, especially in low- and middle-income countries. Much of the disability caused by fractures could be averted by improvements in emergency care, orthopaedic care, and rehabilitation."¹ Studies show that in many African countries, fracture care is provided not only by formal/orthodox medical practitioners, but also indigenous orthopaedic doctors.² Musculoskeletal injuries are a major public health problem and lead to burdens of disability and suffering globally. Between 1990 and 2010, Yempabe et al. asserted that the percentage of all disability increased from 4.7% to 6.8%, ranking as the second largest

¹Yempabe, T. et al. "Factors affecting utilization of traditional bone setters in Northern Region of Ghana. *African Journal of Emergency Medicine*, 11, (2021): 105-110

²Edusei, A. K. et al. "Perspectives in musculoskeletal injury management by traditional bone setters in Ashanti, Ghana." *Afri J Disabil*, 4, 1 (2015): 97. <https://doi.org/10.4102/ajod.v4i1.97>

contributor to disability globally.³ Traditional Bone Setting (TBS) or more appropriately Indigenous Orthopaedic Medicine (IOM) is an important component of African Traditional Medicine (ATM). African Traditional Medicine over the years has contributed tremendously to the primary healthcare needs of many societies especially in Sub-Saharan Africa. This indigenous medicine occupies a central place in the health sector of many African societies.⁴ African Traditional Medicine has been conceptualized as “... the union of body, senses, mind, and soul which enhances positive health in the physical, mental, social, moral, and spiritual welfare.”⁵ Traditional medicine is also defined as “...a body of knowledge and practices which are inexplicable but used to ascertain the causes of diseases, prevent, and eliminate diseases and handed down from generation to generation.”⁶ Indigenous medical doctors predate biomedicine,⁷ have deep knowledge in plants, animals, and mineral substances,⁸ and provide crucial healthcare services to their clients. They include diviners, herbalists, faith healers,⁹ shrine operators, eye specialists, animal bite specialists, throat specialists, spiritualists, veterinary healers, and orthopaedic doctors.¹⁰ These indigenous doctors use plants, herbs, incantations, divination, and other rites in diagnosis, prognosis, and therapeutics.¹¹ Indigenous orthopaedic doctors are experts who managed and treated fractures in African societies. Rachmat and Fiddiyanti defined a fracture as “a loss of continuity of bone or cartilage, either total or partial” and often caused by trauma or physical exertion.¹² The practice of orthopaedic medicine in Sub-Saharan Africa precedes biomedicine and modern orthopaedics.¹³ It is an indigenous healing system and a family practice which was transmitted across generations. Orthopaedic doctors were very popular among rural populations and enjoyed great patronage.¹⁴ Indeed, orthopaedic doctors were usually the first option for the treatment of non-acute fractures.¹⁵ Thus, indigenous orthopaedic

³Yempabe, T. et al. “Traditional bone setters in Northern Ghana: Opportunities for engagement with the formal sector.” *Pan African Medical Journal*, 37, 248 (2020): 1-10.

⁴Setswe, G. “The Role of Traditional Healers and Primary Healthcare in South Africa.” *Health SA Gesondheid*, 4 (2), (1999): 56.

⁵Bannerman, R. H.. “Traditional Medicine in Modern Healthcare Services.” *Sage Journals*, 6 (1980): 733.

⁶Chabot, J.H.C.. *Traditional Medicine in Namnamland*. Unpublished Master of Arts thesis presented to the Institute of African Studies, University of Ghana, Legon. 1980.

⁷Hoff, W. “Traditional Health Practitioners as Primary Health Care Workers.” *Trop Doct.* 27 Suppl. 1 (1997): 52, doi.org/10.1177/00494755970270S116.

⁸WHO. “The Promotion and Development of Traditional Medicine.” *Technical Report Series*, 622 (Geneva: 1978).

⁹Truter, I. “African Traditional Healers: Cultural and Religious Beliefs Intertwined in a Holistic way, Complement and Alternative Medicine.” *SA Pharmaceutical Journal*, (2007): 57-58

¹⁰Bodeker, G. et al. *Policy and Public Health Perspectives on Traditional, Complementary and Alternative Medicine: An Overview*. Geneva, 2007.

¹¹Truter, I. “African Traditional Healers,” *SA Pharmaceutical Journal*, 56.

¹²Rachmat, O. & Fiddiyanti, I. “Fracture causes and types description in Draja Prawiranegara Hospital Serang Indonesia.” *Journal of Health and Dental Sciences*, (2023): 217-226. Doi.10.54052/jhds.

¹³Bannerman, R. H. et al. *Traditional Medicine and Health Care Coverage*. Geneva, 1993.

¹⁴Dada, A.A. et al. “Review of the Practice of Traditional Bone Setting in Nigeria.” *African Health Sciences*, 11 (2011): 262.

¹⁵Friedman, E. “An Action Plan to Prevent Brain Drain: Building Equitable Health System in Africa.” Report by Physicians of Human Rights, Cambridge: MA, USA, 2004; John E. Onuminya. “The Role of Traditional Bone Setter in Primary Fracture Care in Nigeria.” *South African Medical Journal*, 94 (2004): 652; Quansah, E. et al. “Casualty Trends in road traffic accidents.” *Ghana Medical Journal*, 35 (2001): 4-7.

medicine contributed immensely to the primary healthcare needs of many countries in Africa, such as Ethiopia¹⁶, Nigeria¹⁷, South Africa,¹⁸ and Ghana.¹⁹

In Ghana, orthopaedic practice cuts across ethnic groups such as the Akan, Ewe, Dagomba, Gonja, Konkomba, and Nawuri. In the Volta Region of Ghana (Eweland), the practice is common in rural areas across the three dialectic divides of *Ewedome*, *Tongu* and *Anlo*, contributing to the mending of bone fractures. Practitioners provide alternatives to fracture patients who may not want to seek the services of hospitals. However, some patients huddle between modern (hospital) and indigenous orthopaedists, a phenomenon which echoes medical syncretism in Ghana. This study investigates the practice of indigenous orthopaedic medicine among the Ewe of Ghana.

In conducting this study, four research questions were posed: what is the origin of orthopaedic medicine among the Ewe? What is the nature of practice of indigenous orthopaedic care among the Ewe? How important is indigenous orthopaedic medicine to primary healthcare? How has the forces of social change impacted the practice of indigenous orthopaedic medicine in contemporary times? The first section provides an overview of the evolution of orthopaedics in human history. The literature traces the earliest beginnings of orthopaedic practice to the period of antiquity, through to the modern era of biomedicine. Similarly, literature is theorized on orthopaedic medicine within the context of Africa. The study further provides a brief history of the Ewe people of Ghana, dovetails into the origins of the practice of orthopaedic medicine, the institutionalization of the practice, and the geographical and spatial distribution of practitioners in Eweland. In addition, the study discusses the nature, art, skills, methods, materials, and aids employed in mending broken bones. Furthermore, the significance of indigenous orthopaedic doctors to primary healthcare in Ewe society is discussed as well as the influence of social change on the practice in contemporary times. The study concludes that orthopaedic doctors provide complementary healthcare services to patients who are unable to access modern orthopaedic services (hospital), thus, is a panacea for fracture treatment in Eweland.

The Evolution of Orthopaedics in Human History: An Overview

Bone setting, also known in modern medicine as orthopaedics is an ancient medical practice which has a long and rich history.²⁰ The term orthopaedics, coined in the 1700s emanated from two Greek words; *orthos*, 'straight and free from deformity' and *paidos*, meaning 'child'. Orthopaedics therefore means straight child which signifies the importance of children devoid of deformities in their developmental stages.²¹ Though there is limited evidence to the practice of orthopaedics, the little available evidence from fossils show that

¹⁶Kassaye, K. D. et al. "A Historical Overview of Traditional Medicine Practices and Policy in Ethiopia." *Ethiopia Journal of Health Dev.* 20 (2006): 127.

¹⁷Omololu, B. et al. "The Practice of Traditional Bone Setting." *Clin Orthop Relat*, 10 (2008): 2392-2398

¹⁸Truter, I. "African Traditional Healers" *SA Pharmaceutical Journal*, 59.

¹⁹Wedam, E. & Amoah, S. T. "Traditional Bone Setting: Analysis of Contribution and Patronage in Northern Ghana." *Ghana Journal of Development Studies*, 14 (2017): 1 DOI:10.4314/gjds.v14i2.

²⁰Swarup, I. & O'Donnell, J. F. "An Overview of the History of Orthopedic Surgery." *American Journal of Orthopedics*, (2016) 434. www.amjorthopedics.com

²¹Ponseti, I. V. "History of Orthopedic Surgery." *Iowa Orthop J.*, 11 (1991): 59.

the management and treatment of fractures date back to considerable antiquity.²² This practice was characterized by the use of splints in the rehabilitation process²³, trepanation, and crude amputations.²⁴ Fracture care therefore continued from the Stone Age era where sophisticated techniques were developed in the treatment of injuries, though evidence remains limited.²⁵ Research shows that the Shoshone Indians who lived around 700-2000 BCE made splint of fresh rawhide that had been soaked in water²⁶ for the treatment of fractures. Similarly, indigenous groups of South Australia also produced splint from clay which they used in the management and treatment of bone fractures. These clays worked perfectly as plaster casts which gives credence to the importance of fracture care in early human history.²⁷

The ancient Egyptians displayed a great dearth of knowledge in fracture care through the practices of splinting found in a femur and forearm dated approximately to 300 BCE. Similarly, crutches were also used in bone setting as displayed in some carvings made on an Egyptian tomb in 2830 BCE.²⁸ Research has further shown that a medical document, *Edwin Smith Papyrus*, composed by Imhotep, the Egyptian physician, architect, politician, and astrologer described the reduction of dislocated mandible, signs of spinal or vertebral injuries, torticollis, and treatment of clavicle fractures.²⁹ This evidence points to the fact that ancient Egyptians also took pride in practicing bone setting.

Also, the Greeks and Romans contributed to the further the development of orthopaedics. The *Corpus Hippocrates* (460 BCE – 370 BCE), a Greek textbook on medicine applies to the field of bone setting. This textbook described numerous bone fractures, for example, various reductions, maneuvers, and the traction and counter-traction methods regarding musculoskeletal fractures. The *Corpus Hippocrates* also described the mending of clubfoot deformity and the treatment of infected open fractures with pitch cerate and wine compresses.³⁰ These advancements in bone setting further contributed to the correction of deformities which made significant contributions to the field of surgery.³¹ The Middle Ages did not see much advancement in orthopaedics due to the fall of the Roman Empire and the ban placed on the study of anatomy and human dissection by the Christian Church.³² However, the period of Renaissance witnessed the scientific study of anatomy which laid a solid foundation for modern orthopaedics.³³ This period saw the proliferation of many hospitals which solidified orthopaedics as a major medical specialty.³⁴ The discoveries and

²²Colton, C. L. "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*. 4th ed. Philadelphia, PA: Saunders Elsevier (pp.3-32), 2009.

²³Brakoulias, *History of Orthopedics...* cited in Swarup, I. & O'Donnell, J.F. 2016, "A history of orthopedic..."

²⁴Bishop, W. J. *The Early History of Surgery*. New York, NY: Barnes & Noble Books, 1995.

²⁵William. *The Early History...*

²⁶Watson, T. "Wyoming site reveals more prehistoric mountain villages." USA Today. October 20, 2013. <http://www.usatoday.com/story/news/nation/2013/10/20/wyoming-prehistoric-villages/2965263>.

²⁷Bishop, W. J.. *The Early History...*

²⁸Brakoulias. *History of Orthopedics...* cited in Ishaan Swarup & Joseph F. O'Donnell, 2016 "A history of..."

²⁹Brakoulias. *History of Orthopedics...*

³⁰Brakoulias. *History of Orthopedics...*

³¹Bishop. *The Early History of Surgery...*

³²Bishop. *The Early History...*

³³Colton. *The History of Fracture Treatment*. 4

³⁴Ponseti, *History of Orthopedic Surgery*. 60

contributions of scientists such as Louis Pasteur, Robert Koch, and Joseph Lister contributed tremendously to the revolution on surgical management of orthopaedic injuries.³⁵ The modern Era (C19th) saw the invention of x-ray in 1895 by Wilhelm Conrad Ront-gen which enhanced easy diagnosis, assessment, and management of bone fractures. Again, spinal surgery also developed rapidly with Russell Hibbs describing a technique for spinal fusion at the New York Orthopaedic Hospital. Finally, the First and the Second World Wars also served as catalysts in the development of orthopaedic trauma, with increasing attention on open wounds and proficiency in amputations, internal fixation, and wound care.³⁶ The history above points clearly to the fact that orthopaedics began in antiquity and had developed through the ages till contemporary times.

Indeed, the emergence of biomedicine in Sub-Saharan Africa came with the practice of modern orthopaedics. However, the practice had already existed in Africa. The healer who specializes in the treatment of fractures in indigenous African societies is the Indigenous Orthopaedic Doctor, popularly known as traditional bone setter. The bone setter is "...a traditional 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."³⁷ Their practice is widespread across Africa,³⁸ it is a family knowledge and cultural heritage³⁹ which is characterized by apprenticeship and observation.⁴⁰ These practitioners employed materials and aids such as herbs, splints, and numerous skills and arts⁴¹ to manage dislocations, sprains, simple, complex, compound, and multiple fractures,⁴² and enjoyed high patronage from the local people which gives credence to the important roles they played in the primary healthcare sector of Ghana.

The reason for this study is that in spite of the essential contributions of IODs to primary healthcare in Ghana, not much has been documented on their practices,⁴³ hence very little recognition has been accorded this medical knowledge.⁴⁴ Secondly, studies

35Colton. The History of Fracture Treatment. 5

36Brakoulias. History of Orthopedics...

37Oyebola, D. D. Yoruba Traditional Bone Setters: "The Practice of Orthopedic in a Primitive Setting in Nigeria." J. Trauma, 20 (1980): 312; Sandra A. Green. "Orthopedic Surgeons: Inheritors of Tradition." Clin Orth Res. 363 (1999): 258.

38Nwachukwu, B. et al. "Traditional Bonesetters and Contemporary Orthopedic Fracture Care in a Developing Nation: Historical Aspects, Contemporary Status and Fracture Directions." Open Orthopedics Journal, 5 (2011): 20.

39Ogunlusi, J. D. et al. "Why Patients Patronize Traditional Bone Setters." Internet Journal of Orthopedic Surgery. Serial Online, 4 (2007); Available at:

<http://www.ispub.com/ostia/index.php?xmlPrinter=true&xmlFilePath=journal/ijos/vol4n2bone.xml>.

40Rumun, J. "The Socio-Cultural Pattern of Illness and Healthcare in Nigeria." European Journal of Humanities and Social Sciences. 30 (2014): 587.

41Akurugu, C. S. The Role of Traditional Bone Setting in Primary Fracture Care in the Upper West Region: The Cases of Jonga, Gwollu and Dougn Bone Setting Centers. Unpublished Master of Philosophy thesis, University for Development Studies, Tamale, 2011.

42Osemwenkha, S. "Disease Etiology in Traditional African Society." Africa: Rivista trimestrale di studi e documentazione dell'Istituto italiano per l'Africa e l'Oriente, 55: (2000), 583.

43Senah, K. A. Money be Man: The Popularity of Medicine in a Rural Ghanaian Community. Amsterdam: Het Spinhuis, 1997.

44Omonzejele, P. "Current Ethical and other problems in the Practice of African Traditional Medicine." *Journal of Medicine and Law*, 22 (2003), 29; Museru, M., Leshabari, T., Grob, U., & Lisokotal M. "The Pattern of Injured Patients seen in the Orthopedic and Trauma wards at Muhimbili Medical Centre. Dar es Salaam, East and Central Africa." *Journal of Surgery*, 5: (1998) 15.

conducted on IOM have been largely done by modern orthopaedists who usually focus on the complications⁴⁵ that arise out of local fracture care, neglecting the positive contributions of the practice. More revealing is the fact that studies conducted on IOM have been geographically limited to the five northern regions of Ghana and some Akan areas, leaving Eweland in an academic vacuity. This study therefore fills this gap by contributing to the historical foundations of this medical knowledge in Eweland, its contributions to the primary health sector of Ghana, and social change the practice brought about. The significance of this study is that it contributes to literature on medical anthropology and heritage studies.

Study Methodology

This study adopted the qualitative design.⁴⁶ It employed ethnography⁴⁷ in the data collection process. Fieldwork relied on the use of interviews,⁴⁸ participant observations, and photography⁴⁹ to collect data. The researcher visited communities, homes, and workplaces of participants to conduct in-depth interviews with them to understand the stories, histories, and lived experiences regarding indigenous orthopaedic medicine in Eweland. With the consent of participants, photographs were taken during fieldwork to give vivid descriptions of orthopaedic practice in Ewe communities.

In all, sixty-four (64) participants were involved in this study. These include IODs (n=12), fracture patients (n=30), modern orthopaedists (n=4), clinical nurses (n=4), community chiefs (n=4), community members (n=8) and opinion leaders (n=2). Participants were selected from communities such as *Ho*, *Klefe Achatime*, *Akoeffe Avenui*, *Dodome Dogblome*, *Hohoe*, (all in Ewedome), *Dzodze* and *Akatsi* (Anlo); *Mafi Wukpo*, *Mafi Amegakofe*, *Mafi Kpedzeglo*, *Sokpoe*, and *Tefle* (Tongu). The selection and inclusion of the participants is justified in the sense that they have adequate knowledge about the practice of orthopaedic medicine in Eweland. Second, these communities were selected because they were very popular regarding the practice of orthopaedic medicine and experienced high patronage on daily basis. Finally, these communities are representative of the geographical and dialectic configuration of Eweland. As an ethnographic research, data was analyzed using the narrative approach. Regarding ethical considerations, this study was approved by the Ethics Committee for the Humanities, University of Ghana, Legon under the ethical code ECH 272/21-22.

⁴⁵El Hag, M.I.A., & El Hag, O.B.M. "Complications in Fractures treated by Traditional Bone Setters in Khartoum, Sudan." *Khartoum Medical Journal*, 3 (2010):401; Onuminya, J.E. "Performance of Trained Traditional Bone Setter in Primary Fracture Care." *S. Afr Med J.* 96 (2006): 652; Sylvester Omeonu.

⁴⁶Denzin, N. K. & Lincoln, Y. S. *Handbook of Qualitative Research*. Thousand Oaks: CA, Sage, 1994.

⁴⁷Harris, M. *The Rise of Anthropological Theory: A History of Theories of Culture*. New York: T.Y. Crowell, 1968; Creswell, J. W. *Qualitative Inquiry and Design: Choosing among Five Approaches*. London: Sage Publications, 2007; Atkinson, P. & Hammersley, M., "Ethnography and Participant Observation." In Denzin, N. K. & Lincoln, Y. S. (eds). *Handbook of Qualitative Research* (pp.248-261). London: Sage Publications, 1994.

⁴⁸Alshenqueeti, H. "Interviewing as a Data Collection Method: A Critical Review." *English Linguistics Research*, 3, (2014), 39; Michael Angrosino. *Doing Ethnographic Research and Observational Research*. Thousand Oaks: CA: Sage, 2007.

⁴⁹Fairclough, C. M. "The value of photography as a methodology with the social sciences." *ETKILESIM*, 2 (2018), 108.

Findings and Discussions

The Ewe People: A brief History

The Ewe is an ethnic group found in West Africa. This group of people spread across three countries: Ghana, Togo, and Benin. The Ewe of Ghana migrated from *Notsie* in the Republic of Togo to their present settlements and live mainly in the Volta Region. In Ghana, they constitute the third largest ethnic group comprising thirteen (13) percent of the country's population⁵⁰ and occupy three distinct geographical spaces – *Ewedome*, *Tongu* and *Anlo*. This unique group of people are called *Eveawo* (Ewes) and speak *Evegbe* as their language.⁵¹ Geographically, the Ewe are found in the south-eastern part of Ghana and share borders 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.

Some important towns in Eweland include Ho, Hohoe, Kpando, Peki, (Ewedome), Mafi Kumase, Sogakofe, Battor, Mepe, Adidome (Tongu) and Anloga, Keta, Dzodze, Akatsi, Aflao, Agbozume, and Klikor, (Anlo). These towns and other numerous communities appreciate the relevance of indigenous knowledge systems in health and healthcare delivery. For this reason, there exists numerous traditional healthcare providers such as Atikewɔlawo, Gbedalawo, and Amawɔlawo (herbalists), Nuwɔlawo, Trɔsi/Trɔnua, Hunɔ, Bokɔwo, Amegashie, Afakalawo (diviners), Vixelawo (traditional birth attendants) and Fuɔɔɔɔɔɔɔɔɔ or Nublalawo (indigenous orthopaedic doctors - IOD).⁵² However, this study focuses on IODs who complement the services of modern orthopaedists in fracture management and treatment in the Ewe society.

The Origins of Indigenous Orthopaedic Medicine (IOM) among the Ewe of Ghana

Indigenous Orthopaedic Doctors are known in Ewe as Nublalawo or Fuɔɔɔɔɔɔɔɔ. The term Nublalawo comes from a combination of three Ewe words: nu (thing), bla (tie) and lawo (people). This literally means 'people who tie things.' The reason behind the name nublalawo stems from the fact that fractures are tied (bla) with local ropes during the healing process; this takes place after herbs and other aids are applied to the affected body part. The second name for IODs is Fuɔɔɔɔɔɔɔɔ. Similarly, this concept comes from a combination of four Ewe words: efu (bone), ɔɔɔɔ (break), bla (tie), and lawo (people) – 'people who tie broken bones.' Though, the term Fuɔɔɔɔɔɔɔɔ speaks directly to the profession of bone and fracture care, nublalawo is largely used to describe the practitioners.

Data suggests that orthopaedic practice is a natural gift (sefenu) to the Ewe people. Oral accounts show that while the Ewe lived in Ketu (Republic of Benin), they engaged in arduous economic activities such as farming, hunting, lumbering, and trade to sustain their livelihoods. In addition, they also engaged in numerous wars to defend their land and people. These activities sometimes wreaked havoc on people thereby contributing to fractures and dislocations. This phenomenon required the skills of specialists to treat and heal people who suffered fractures. This saw the emergence of IODs among the Ewe. During their migration

⁵⁰Gocking, R. The History of Ghana. London: Greenwood Press, 2005.

⁵¹Ofori, G. Semantic Analysis of Ewe Terms used in the Domain of Agriculture. Unpublished PhD thesis, University of Ghana, Legon, 2008.

⁵²Akakpo, S. B. (2022). "The State and Practice of African Traditional Medicine among the Ewe of Ghana: Contemporary Challenges and Prospects", E-Journal of Arts, Humanities and Social Sciences, Vol. 3 (10), 440.

process from Ketu (Benin) to Tado and Notsie (Republic of Togo), IODs had been part of the journey. This knowledge was Ewe cultural heritage and inheritance (*domenyinu*) handed down across generations from Ewe ancestors. This medical knowledge, skills, methods, aids and art was kept secret, preserved, and transmitted orally to the younger generations in practising families.

Two major narratives underpin the origins of orthopaedic medicine among the Ewe of Ghana. The first narrative traces the origins of the practice to animals while the second traces it to abductions, dreams, and visions. According to an IOD, his grandfather told him a story about the origin of the profession. He narrated that due to numerous wars at *Ketu* (Benin) and the resultant fractures sustained by the warriors, it became necessary to have a remedy for this problem. Accordingly, some herbalists broke the leg of a fowl, applied some herbs to the fracture and tied it with local ropes. The fowl was observed for some time by these herbalists. They realized that the first herb did not work effectively and thus, they applied another set of herbs and continued observing the process of healing. With time, the fowl began to walk gradually until it fully recovered. The IOD pointed to this phenomenon as the real origin of orthopaedic profession among the Ewe; accordingly, the herbs were applied to human beings who suffered fracture thereby initiating the practice among the Ewe.

The second narrative explains the origin of orthopaedic practice through abductions, dreams, and visions. Oral narratives indicated that some IODs got the knowledge of orthopaedics through abduction by *aziza/age/adekpui* (dwarf spirit), revelations by the dwarf spirit through dreams, and spirits of the ancestors. Among the Ewe, the dwarf spirit is believed to be very knowledgeable in herbs and lived in the forest. This spirit often abducted would-be practitioners, confined them for a period in the forest and taught them various herbs and how they could be applied to heal various diseases. The dwarf spirit also taught the would-be practitioners the various aids that could help heal bone fractures, the harvesting of the herbs, the preparation of the herbs, the rules governing the use of the herbs and general practice. Once this was done, the dwarf spirit discharged the would-be-practitioners into the society to begin practice. Oral accounts show that once the practitioner began healing, the dwarf spirit further revealed other notable herbs and other practices through dreams and visions to solidify the practice. Closely related to this medium of knowledge acquisition was revelations by ancestors to family members. Data gathered showed that sometimes if an IOD died prematurely without fully passing on the knowledge to younger ones, the spirit of the deceased practitioner could reveal the practice to a person in the family through dreams and visions. This process has been identified as one of the effective ways of inheriting the practice of orthopaedics among the Ewe:

There are two types of orthopaedic doctors in Eweland—those whose practice is backed by supernatural forces (*gbɔgbɔ*) and those who do not use supernatural forces in their operations. Mothers of twins (*vena*) also qualify to become orthopaedic doctors in Eweland. The reason is that twins (*venɔviwo*) are believed to have innate powers that qualify them to become herbalists, indigenous orthopaedic doctors, traditional birth attendants, diviners and other related healers. Nukunya observed that in the Anlo area of Eweland,

parents who have experienced twin-births and have gone through prescribed rituals automatically qualify to become indigenous orthopaedic doctors.⁵³

Finally, orthopaedic healing was institutionalized in Eweland of Ghana through two major cultural activities. The first is apprenticeship and training and the second is intra-ethnic and inter-ethnic wars. As a family knowledge which was kept secret, this practice was transmitted to younger ones in the family to keep, protect, preserve, and maintain the knowledge. The young ones often undergo apprenticeship and training and are educated informally in the knowledge, art, skills, and methods of mending broken bones. The trainee was taught various herbs, processes of harvesting, preparation of herbs, application of herbs, and the treatment of fractures. This training gave hands-on experience to the trainees who eventually became orthopaedic doctors. The informal training contributed to the institutionalization of orthopaedic medicine among the Ewe of Ghana through constant transmission of the knowledge across generations.

Regarding wars, the intra-ethnic and inter-ethnic wars of the 19th century contributed to the institutionalization of orthopaedic medicine among the Ewe people of Ghana. Following migration and settlement of the Ewe people in the 16th century in Ghana, they fought many wars with the autochthonous Guans over land and other natural resources. In addition, they fought amongst themselves over natural resources such as land, rivers, streams, and especially mountains which served as an important defense element during their early settlements. Scholars such as Amenumey and Afeadie identified intra-Ewe wars such as *Taviefe-Ho*, *Ziavi-Taviefe*, *Matse-Taviefe*, and *Ho-Klefe* and *Dzatsutagba*, *Nunube*, *Kovenue*, and *Sagbadre* wars which took place in *Ewedome* and *Anlo* areas respectively.⁵⁴ These intra-ethnic wars were later climaxed by the invasion of the Akwamu and Asante forces as referenced by Spieth,⁵⁵ Wiegrabe,⁵⁶ and Verdon.⁵⁷ These wars exposed communities to death, fractures, dislocations and severe injuries. Accordingly, these casualties promoted, intensified, and institutionalized the practice of orthopaedic medicine among the Ewe of Ghana.

The Geographical and Spatial Distribution of IODs in Eweland

Indigenous orthopaedic doctors are found in many Ewe communities of the Volta Region. They exist in *Anlo*, *Tongu*, and *Ewedome*. These practitioners spread across towns and villages, providing useful services to patients from both far and near. Their services have made them popular especially among the rural folks. In *Ewedome*, they are found in *Ho Bankoe*, *Taviefe Avenya*, *Klefe Achatime*, *Akoeffe Avenui*, *Ziavi Dzogbe* (Ho Municipality); *Akome*, *Abutia Kpota Woeme*, *Dodome Dogblome*, *Kpedze*, and *Saviefe* (Ho West District); *Adaklu Anfoe* (Adaklu District); *Vakpo* (North Dayi District); *Peki Adzorkoe* (South Dayi

⁵³Nukunya, G. K. *Tradition and Change in Ghana: An Introduction to Sociology*. Accra: Ghana Universities Press, 1992.

⁵⁴Afeadie, P. A. "Early Avenor-Ewe People: Migrations and Settlements." *Transactions of the Historical Society of Ghana*, New Series, 18 (2018): 89; Amenumey, D. E. Kobla. *The Ewe in Pre-Colonial Times*. Woeli Publishing Services: Accra. 1986.

⁵⁵Spieth, J. *The Ewe People: A Study of the Ewe people in German Togo, 1854-1914*. Berlin; Dietrich Reimer, Ernst Vohsen. 1906. 5.

⁵⁶Wiegrabe, P. *Ewegbe Xexle Akpa Enelia*. Berlin. Dietrich Remer: 1938.

⁵⁷Verdon, M. "Redefining Pre-Colonial Ewe Politics: The Case of Abutia." *Africa: Journal of International African Institute*, 50, (1979): 282.

District); *Kpando Dzogbeshanti* (Kpando Municipality); *Gbi Atabu* (Hohoe Municipality); *Tafi* (Afadjato South); and *Ziope, Dohia, Adzonkor* (Agotime Ziope District).

In the *Tongu* area, orthopaedic doctors are found in communities such as *Mafi Kpedzeglo*, *Mafi Wukpo*, *Mafi Amegakofe* and *Mafi Kpordiwla* (Central Tongu District); *Tefle*, *Sokpoe*, *Agave Akplorti*, *Agave Dzebenu* and *Dabala Agbogbla* all in the South Tongu District. In the *Anlo* area, they are found in *Akatsi Gadzekpo*, and *Akatsi Abadzivorkofe* (Akatsi South District); *Wenu* and *Asadame* (Keta Municipality) and *Dzodze-Penyi* and *Tamekofe* (Ketu North Municipality). These practitioners mend broken bones in these communities using indigenous epistemology.

Indigenous Orthopaedic Medicine among the Ewe: Methods, Skills and Art

Indigenous orthopaedic doctors manage and treat many fractures. These healthcare providers deal with close and open fractures as well as simple, complex, compound, and multiple fractures. Open or closed fracture can affect body parts such as the leg, thigh, arm, neck, spine, socket, waist, jaw, clavicle, ribs, knee, pelvic, shoulder, skull, wrist and groin. Once a case is presented to the IOD, treatment commences immediately depending on the practitioner. First, there are rules and regulations governing treatment known as entry and exit requirements. The entry requirements include fees known as *Tuasi ga* (entry money) or *Dɔɔɔadaga* (treatment money) which varies from Gh¢ 150.00 (\$ 12.09) to Gh¢ 500.00 (\$ 40.30) across healers. Other entry requirements include items such as one fowl, one bottle of local gin (*akpeteshie*), and one bottle of Castle Bridge used to offer prayers and libation to the spirits and ancestors to seek their approval and support during the healing process. The fulfillment of these requirements signifies acceptance, commitment, and approval from the family of the patient for treatment to commence. It is important to note that in the modern hospital, the practice of cash and carry exists and there is high cost of treatment as found by Nwachukwu et al.⁵⁸, Omolulu et al.⁵⁹ and Yempabe et al.⁶⁰ in Nigeria and Ghana respectively. Comparatively, care for fractures by indigenous orthopaedic doctors is relatively cheaper as compared to the charges of modern hospitals.

Indigenous orthopaedic medicine is underpinned by certain knowledge, skills, arts, methods and materials which are applied during the treatment and healing process and vary across communities. Treatment of fractures is characterized by search for broken bones, assessing the nature of fracture, aligning broken bones, massaging, application of hot water to melt clotted blood, and draining of clotted blood known as *Nyaɔɔui*. The treatment of fractures also involves application of various herbs, treatment of injuries and wounds, splinting, and pain management. In terms of pain management, some practitioners recommend patients to take pain killers (drugs) to reduce pain while others use pain to determine how effective the herbs are and the extent to which healing is taking place. Local forms of pain management include storytelling, the use of songs, jokes, and playing of local

⁵⁸Nwachukwu, B. et al. "Traditional Bone Setters and Contemporary Orthopaedic Fracture Care in Developing Nations: Historical Aspects, Contemporary Status and Future Directions." *The Open Orthopaedic Journal*, 5 (2011): 20-26

⁵⁹Omololu, B. et al. "The Practice of Traditional Bone Setting" *Clin Orthop Relat*, 10 (2008): 2392-2398

⁶⁰Yempabe, T. et al. "Factors affecting utilization of traditional bone setters in the Northern Region of Ghana." *African Journal of Emergency Medicine*, 11 (2021): 105-110; Yempabe et al. "Traditional bone setters in Northern Ghana: Opportunities for engagement with the formal sector" *Pan African Medical Journal*, 37, 248 (2020): 1-10

games with the patient. All these cultural activities promote diversion therapy where the patient forgets about pain due to these local forms of entertainment.



Figure 1: An IOD treating a patient (Source: Author's fieldwork, Klefe Achatime, 2021)

There are number of materials and aids used in treating fractures. One of them is herbs (Atike/Ama/Egbe/Gbe). There are generally three herbs used in the healing process. Unfortunately, their names were withheld by the IODs due to secrecy. The first herb is used to remove broken particles of bones which often remain inside tissues, nerves and muscles of patients; this herb is applied to remove such particles. The second herb is responsible for melting and bonding broken bones while the third herb hardens the bones. Herbs therefore constitute a crucial aid in the treatment process. Indeed, Aries et al.⁶¹ made similar findings in Northern Ghana where they found that indigenous orthopaedic doctors doubled as herbalists and used different types of herbs to heal fractures and dislocations. Debbarma et al.⁶² further details the use of herbs and spiritual incantations as approaches to healing fractures in indigenous Indian communities.

⁶¹Aries, M J. H. et al. "Fracture treatment by bonesetters in Central Ghana: Patients explain their choice and preferences" *Tropical Medicine and International Health*, 12, 4 (2007): 564-574

⁶²Debbarma, J. et al. "Traditional Bone Setting (TBS): An Ethno-orthopaedic healing practice of Tripura, NE India" *International Journal of Environment and Biodiversity*, 7, 2 (2016): 45-348



Figure 2: A herb being applied to the limb of a patient (Source: author's fieldwork, July 2021, Sokpoe)

The second important material is the splint known variously as *Srede/Ababevi* (*Ewedome*), *Sede (Tongu)* and *Gadza (Anlo)*. The splint is produced from bamboo sticks, palm branches, hard playwood or any other hardwood. The splint can be described as local Plaster of Paris which functions as a supporting aid and holds together disjointed bones in order to prevent overlapping and shifting of the bones. There are two types of the splint – woven and unwoven. Other important aids include white calico ropes and bandage used to tie (*bla*) the splints firmly to the fracture. This is to prevent the broken bones from shaking and shifting from their original positions. There is also the sheanut butter used for massaging fractures and dislocations. These findings are consistent with the works of Rumum⁶³ and Osemwenka⁶⁴ who found rattan cane, palm leaf, and bamboo sticks as important materials used by orthopaedic doctors in caring for broken bones in southeastern Nigeria. In Western medical practices, approaches such as the use of traction devices⁶⁵ (pins, wires, metals, plates), and plaster casts (Plaster of Paris) give insights into the relevance of medical technology in fracture healing. However, the use of indigenous aids and materials by indigenous orthopaedic doctors showcase their mastery of indigenous technology in their profession as indigenous doctors.

⁶³Rumum, J. "The socio-cultural pattern of illness and healthcare in Nigeria" *European Journal of Humanities and Social Sciences*, 30, 1 (2014): 587-598

⁶⁴Osemwenka, S. "Disease etiology in traditional African society" *Africa: Rivista trimestrale di studi e documentazione dell'Istituto italiano per l'Africa e l'Oriente*, 55, 4 (2000): 583-590

⁶⁵Gopalakrishnan, S. "Standard Treatment Guidelines" *TN MSC Times, Bulletin on Essential Drug Therapy*, 1, 5 (1999): 1-3; Elliot, D et al. *ACCNS's Critical Care Nursing*. London: Elsevier.



Figure 3: A splint and white calico ropes applied to a fracture (Source: author's fieldwork, Gbi Atabu, December 2021).

After successful healing, exit rituals must be performed known as *Afla* or *Nuifafa* which differs across the healers. It is performed to cleanse and discharge the patient from the healing center. This ritual is characterized by a payment, *Aflanaga* (exit money) and the presentation of items such as a hen and a cock, two (2) bottles of Castle Bridge, two (2) gallons of palm wine, one yard of white calico and one bottle of powder. These items are used to perform rituals such as sacrifices, prayers and libation to thank the ancestors and other spirits for successful healing. In other centers, no elaborate exit rituals are performed except payment of money which signifies the discharge of a patient from the center to go back home and continue his normal duties.

The Significance of Indigenous Orthopaedic Medicine to Primary Healthcare

Indigenous orthopaedic doctors play fundamental roles in the primary health sector of Eweland. Though there are numerous hospitals that provide services regarding fractures, many people continue to seek the services of IODs in various communities in Volta Region. First, they provide alternative medicine to the people. Many urban and rural inhabitants continue to patronize their services during fractures in spite of the presence of hospitals. The reason for this health-seeking behaviour stems from the fact that many rural residents do not have the financial capacity to patronize the services of the hospital; second, indigenous orthopaedic medicine relates with the local culture, customs, worldviews, and belief systems of the people, hence, the high patronage. This phenomenon gives credibility to the fact that traditional medicine remains important in primary healthcare in Sub-Saharan Africa.⁶⁶

IODs also provide healing. While the hospital provides healing regarding bone fractures, IODs also heal fractures presented to them by their clients. With the use of this

⁶⁶WHO. *WHO Traditional Medicine Strategy 2002-2005*. Geneva, 2002.

indigenous medical knowledge, many people have been healed. The practitioners at Klefe Achatime, and Dodome Dogblome have been practicing for over forty (40) years while those at Mafi-Amegakofe, and Sokpoe have practiced over thirty (30) years where they treated many people. As of first quarter of 2021, the practitioner at Klefe Achatime had discharged fifty (50) patients; Mafi Amegakofe forty (40) patients while the practitioner at Sokpoe had discharged twenty (20) patients, with thirty (30) still receiving treatment at the center. The practitioner at Dodome Dogblome told us that he had treated and discharged over three hundred patients between 2017 and 2022. This shows that indigenous orthopaedic medicine occupies a conspicuous space in the healthcare sector in Eweland.

Finally, indigenous orthopaedic doctors save people from disability. On regular basis, patients present different cases of fracture to these healers. Unlike the hospital where complicated fractures and rotten legs are often amputated, these indigenous healers do not have machines and tools to amputate. For this reason, patients who often present first to the hospital, due to fear of amputation request from orthodox doctors to be discharged in order to seek alternative care from the local healers. Some patients narrated that the use of the Plaster of Paris in the hospital does not allow for proper ventilation, it creates a lot of heat and itching thereby worsening fracture cases which sometimes contribute to amputation. However, with IOM, the realignment of broken bones, the massaging, splinting and the application of herbs contribute to speedy healing without amputation. Again, the patience and care that engulfs the practice of orthopaedic medicine, the social support system, and the good review processes contribute immensely to the healing of fractures. This process saves people from disabilities. The argument is that, when people suffer fracture and they are amputated, they become disabled. Second, when people suffer fracture and are not healed, they become disabled, hence they cannot continue with their normal life. But the fact that IODs heal fractures and do not amputate shows that they save people from disabilities.

Indigenous Orthopaedic Medicine and Social Change in Contemporary Times

The practice of orthopaedic medicine in recent times has experienced certain changes, though not all aspects have changed. The first noticeable change is the use of modern aids and equipment. These aids were not employed in the treatment of fractures in the past, but in recent times they are used to facilitate healing of fractures. These include the use of cotton, bandage, scissors, sterile gauze, Savlon solution, methylated spirits, potassium permanganate, and hand gloves. Scissors is used for cutting bandage, ropes, cotton and other related materials. In the treatment of injuries and wounds, orthopaedic doctors employ potassium permanganate, Savlon solution or methylated spirit to clean and dress wounds. This act is meant to prevent fracture infections. Some other healers recommend the use of drugs, pain killers, and injection as pain relieving mechanisms. The bandage and ropes are used to fasten splints around the fracture to stabilize it for healing to take place. To assist patients in the practice walking and physical exercise, patients are allowed to use crutches and the Zimmer Frame (see Figure 4) instead of the traditional walking stick (*Atitɔdeɲui*).



Figure 4: A patient using a Zimmer Frame to walk (Source: author's fieldwork – archives of an indigenous orthopaedic healer, March 2022, Klefe Achatime).

Finally, there is the use of X-ray photographs (see Figure 5). Radiological assessment in the hospital is a panacea for proper fracture management since it allows for accurate diagnosis and determines appropriate healing options. Indigenous orthopaedic doctors therefore often recommend their clients to go to the hospital to take x-ray photographs.

These photographs assist the local therapists to examine the nature of the fracture and the approach to use in healing. Interestingly, some patients present first to the hospital before returning to the local professionals; in this regard, they come with x-ray photographs. All the twelve orthopaedic doctors who participated in this study had numerous x-ray photographs in their fold which belonged to clients who had received treatment at these healing centers.



Figure 5: An X-ray photograph showing a simple fracture (A) (Source: author's fieldwork – archives of an indigenous orthopaedic healer, March 2022, Klefe Achatime)

Conclusion

This study investigated the practice of indigenous orthopaedic medicine among the Ewe of Ghana. Literature was gleaned on the evolution of orthopaedics in human history, tracing it from the period of antiquity to modern biomedicine. The study gave a brief history of the Ewe people of Ghana and further delved into the origins of indigenous orthopaedic medicine, the institutionalization of the practice and the geographical and spatial distribution of practitioners in Eweland. In addition, the nature of practice, the entry and exit rituals, methods, skills, materials and aids were discussed. Furthermore, the significance of IOM practitioners to primary healthcare in the area of alternative medicine, healing, and prevention of disability in the society was elucidated. The study contends that IOM has been influenced by the forces of social change, hence, the use of modern healthcare aids in the practice. The study concludes that these local doctors provide complementary healthcare services to rural residents who lack financial resources to seek treatment at the hospital. On the basis of this, IOM is a panacea for fracture treatment in Eweland.

Acknowledgements

I write to acknowledge all the participants who contributed tremendously to the success of this study. My heartfelt appreciation goes to the indigenous orthopaedic doctors in Volta Region who provided useful data for this study. I also appreciate the contributions of modern orthopaedists, clinical nurses, and physiotherapists in this study. The study acknowledges the contributions of the patients who gave vital information regarding their experiences in relation to orthopaedic care. Furthermore, I acknowledge the financial support given by the College of Humanities under the University of Ghana BANGA 3 Thesis Completion Grant. This support enabled me to successfully complete my Ph.D. study. Finally, I appreciate the Doctoral Fellowship Award granted me by Prof. Anna Harris of the

Department of Society Studies, Faculty of Arts and Social Sciences, Maastricht University, The Netherlands. This Fellowship gave me an opportunity to travel to the Netherlands to complete my thesis. Prof. Anna Harris, and the Making Clinical Sense Team, I am very grateful for your support.

Declaration of Interest Statement

The author declares no conflict of interest in this manuscript.

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