Reasons for Patronage of Traditional Bone Setting as an Alternative to Orthodox Fracture Treatment A case of Muleba District, Kagera Tanzania

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ABSTRACT

The study examined the factors for the preference of Traditional Bone Setting (TBS) in the treatment of fractures among Tanzanians. It sought to unfold other reasons for consulting TBS practitioners besides poverty, ignorance and inaccessibility to modern orthopedic services which are commonly associated with the pull factors. From the available literature, though very popular, TBS is associated with complications like malunion, non-union of the fractured bones, and limb gangrene. In order to find out why there is a paradox, the investigation was mainly done in Muleba, a district of Kagera Region where the treatment is most common according to the Institute of Traditional and Alternative Medicine, at Muhimbili University of Health and Allied Sciences. The study revealed that the therapy management groups were often more vocal than their fractured individuals in deciding the model of treatment. And, the fractured people who are financially able, formally educated and geographically closer to orthopedic services are among the adherents of TBS. Besides, the respondents unanimously expressed their dislike of orthopedic amputation, Plaster of Paris (POP), internal and external fixation let alone the length of time spent in hospital for treatment. All these have significant implications including continued use of TBS by rural and urban people for themselves and livestock. Combining X-ray reading and alternative medicine makes TBS sustainable. Thus, in future, it is suggested TBS services be integrated to orthodox treatment so as to control its negative aspects while harnessing its positive aspects.

Key Words*:* Fracture(s), Traditional Bone Setting, traditional bone setters, orthopedic, orthodox treatment

INTRODUCTION

Traditional bone setting which is a traditional mode of treating fractures is gaining a number of adherents despite the development of scientific orthodox treatment and the complications which are normally accompanied by its use. Wedam and Amoah (2017), assert that traditional bone setting is a branch of traditional medicine which is deep-rooted in many countries across the world though with slight differences in style, name and practice from one region to another. In Tanzania, the practice is common in different regions and it is known by different names. For example, it is called *kayunga magufa in Muleba, Omubhunga Magufa in Karagwe* and *bhalungi maguwha among the Sukuma.*

Literature from different scholars such as Manjunatha (2016); Dada, Yinusa and Giwa (2011) and Sina *et al*. (2014), associate the adherence of traditional bone setting with high cost of orthodox treatment, ignorance of the adherents and inaccessibility of the orthodox treatment especially in rural areas. Based on Nigerian experience, Owumi *et al*. (2013) assert that traditional bone setting as an alternative health service is a recognized and specialized form of healing which is available and accessible to all people in rural and urban areas. It is admitted by scholars that traditional bone setting as a component of traditional medicine existed long before the advent of modern or orthodox treatment (*ibid*.). The same scholars show in the literature that orthodox practitioners are against the promotion of traditional bone setting (because of being unreliable and unscientific). Despite the impediments, the treatment still thrives to the extent of having fracture patients who leave orthodox treatment for traditional bone setting. The paper attempted to establish the reasons for adherence to traditional bone setting other than cost, ignorance and inaccessibility of orthodox treatment which are mostly proclaimed as a source of such a patronage. The said reasons are not refuted altogether. However, the said reasons seem not to accommodate all adherents of traditional bone setting who come from different backgrounds such as the affluent who can cover their treatment costs and the educated who are fond of traditional bone setting despite being aware of the complications which might arise out of its uses. The study also aimed at finding out why in some cases the majority of the contemporary fracture victims start by using orthodox treatment before they resort to ending their treatment with traditional bone setting if accessibility and

inaccessibility of orthodox treatment is the major cause of the patronage of traditional bone setting.

As earlier stated, the major reasons for the patronage of traditional bone setting are mostly associated with diversion from high costs of orthodox treatment, ignorance of patients and inaccessibility of orthodox health services especially in rural areas. Dada *et al*. (2009) identified two major reasons for the patronage of traditional bone setting namely cheaper and its accessibility to many people. Khan *et al*. (2015), in their study about the practice and preference of traditional bone setting, in addition to cost and accessibility, found out another reason as being cultural beliefs. The mentioned reasons for the patronage of traditional bone setting seem not to cut across all fracture patients who in fact, come from different backgrounds. The given reasons consider the fracture victims necessarily as being economically disabled, rural dwellers and uneducated. The facts/reasons for the patronage of traditional bone setting which came out of this study, in a way contradict the traditional reasons for the same (cost, ignorance and inaccessibility of orthodox treatment) in a sense that there are fracture victims who are financially capable of covering their treatment costs; in fact some of them are beneficiaries of health insurance. It is also vividly evident that some of the adherents of traditional bone setting begin fracture treatment with orthodox treatment before going to traditional bone setting. Hence, a question arises as to whether inaccessibility to orthodox health services counts. As regards ignorance of patients who visit traditional bone setting, Manjunatha (2016) observes that education has nothing to do with people patronizing traditional bone setting since the patients who attend traditional bone setting have different educational statuses.

Patients from all education levels use traditional bone setting at different times and places. Scholars such as Oluwadia (2015) asserts that the patronage of traditional bone setting cuts across social status, educational qualifications and religious beliefs. On the same opinion, Sina *et al*. (2015) asserts that, "in spite of the complications, TBS continues to have patronage from both the highly educated and the illiterate mainly because of culture, beliefs as well as overcrowding of hospitals with traumatic cases." The popularly mentioned reasons for the preference or use of traditional bone setting are not refuted altogether, they are good and sound but not for all the fracture patients. These reasons, therefore, enhance the need for studies that will accommodate patients from all backgrounds. Basing on the literature consulted and the researcher's

experience and interest, this current study about the patronage of traditional bone setting sought to identify the reasons other than those normally proclaimed and set as the benchmark for future studies about the therapy.

METHODOLOGY

The study involved a total of 103 respondents who were receiving TBS services at the time this study was conducted, or had at one time received fracture treatment at Kazirantemwe traditional bone setting clinic in Muleba, Kagera Tanzania. Since the study was qualitative, respondents were subjected to an in-depth interview in order to extract first-hand information from them. Other few respondents were identified through the information available at the centre (the patients' register) especially their phone numbers which facilitated their encounter with the researcher.

The researcher also interviewed five (four males and one female) different traditional bone setters from different areas of Muleba, a district which was purposely selected following the report from Institute of Traditional and Alternative Medicine, at Muhimbili University of Health and Allied Sciences which showed that TBS as a new area of research in Tanzania despite the fact TBS is applicable throughout the country and that Lake Victoria region is known to have a number of prominent registered traditional bone setters, one among them resides at Kazirantemwa, Muleba and attracts many fracture victims from all over the country the factor which influenced the sampling of Kazirantemwa Traditional bone Setting Centre. Convenience sampling was utilized to capture the fracture patients as well as their relatives who were visiting TBS services at the time of collecting data for this study. The study employed interview guide in order to elicit participants' opinions and perceptions about the reasons for patronizing traditional bone setting. Interview responses were tape recorded and transcribed. Later, qualitative analysis was subjected to respondents' explanatory responses which were later summarized and categorized according to their themes. Representative reliability was enhanced by using the same tool across the study to different groups.

Data was analyzed by applying cross-sectional indexing and non-cross-sectional indexing. On one hand, cross-sectional indexing obliged the author to read the entire text (transcribed data) and create labels or codes to the related data. Non cross-sectional indexing on the other hand was

employed to tape or identify scenarios or situations in the respondents' understanding which could later add new input to the study. Data analysis was accomplished at the end by matching or aligning the emerging factors from the respondents' understanding of health seeking behavior and objectives of the study.

FINDINGS

The findings of this study were organized into sub- themes according respondents' preference and reasons for their choice of traditional bone setting as their fracture treatment and in line with the specific objective of the study which needed to examine other factors for the patronage of TBS other than the commonly mentioned reasons which are matters concerning cost, ignorance and inaccessibility of orthodox health services. The major thing in this study was to examine the influence of cost, ignorance and inaccessibility of orthodox health treatment in influencing preference of traditional bone setting.

Table 1: Social demographic characteristics of the study participants

Variable	Label	Frequency	%
Gender	Male	87	84
	Female	16	16
Total		**103**	**100**
Occupation	Civil Servants	25	42
	Peasants	20	19
	Petty traders and Boda Boda (motorcyclists)	56	54
	Dependants	02	02
Total		**103**	**100**
Health Insurance	Insured	73	70
	Not insured	30	30
Education Level	Primary school level (standard seven)	18	17
	Secondary level and certificate level professional skills	74	71
	Diploma and graduate level	08	08
	Above graduate level	03	03
Total		**103**	**100**

According to the findings, out of one hundred and three respondents, only two asserted to have opted for traditional bone setting because of having insufficient funds and thus unable to attend the orthodox treatment. Despite being forced into traditional bone setting by lack of sufficient funds they did not regret or feel disadvantaged for being treated in a traditional way because they believed in the effectiveness of the treatment. Financial problem as a as a reason for the patronage of traditional bone setting cannot be neglected even though only two out of one hundred and three participants worried about it. The fact that ignorance (in the sense of patients having low education level) as one of the motives for the preference of traditional bone setting was also examined and it was found out that all the respondents had a certain level of education in the sense that some were primary school leavers, while others had secondary school education. The findings show that 74% of the respondents (71 out of 103) had secondary level education and their number made a big portion of the sample which participated in the study by reason of having attended the traditional bone setting. Regarding inaccessibility of orthodox health services as a reason that drove many victims of fracture to attend traditional bone setting instead of orthopedic treatment, the study found out that it ought not to be neglected despite the fact that it was rarely mentioned being one of the factors. As a matter of fact, no single respondent admitted not to have attended orthodox treatment because of its inaccessibility.

In fact, almost all respondents at one time or another attended hospital treatment. Actually, they started with hospital treatment before seeking alternative treatment. Quantitatively, only two patients out of a hundred and three (103) did not go to hospital. According to them (those two), cost and distance from hospital was not a reason that influenced their choices but rather a belief in the efficacy of traditional bone setting. The above findings indicate that high cost in using orthodox treatment, inaccessible orthodox health services and ignorance among the patients are some of the factors which influence fracture patients to opt for treatment by traditional bone setting. They were, however not mentioned by the patients as their pulling factors towards TBS. They were found to be minor. The study examined other reasons for the preference of traditional bone setting and organized them into five groups.

Persistence of illness

More than half of all the respondents (sixty-nine) left the orthodox treatment due to what they considered as persistence of illness. Their fracture took too long to heal when receiving the orthodox treatment. Some stayed in bed for months or years receiving orthodox treatment which made them start looking for an alternative treatment that could hasten their healing. One patient who had resorted to traditional bone setting after having been on orthodox treatment for a long time had this to say,

> "*The need to opt or choose traditional bone setting for fracture treatment is mainly caused by persistence of illness and lack of symptomatic relief after using modern medicine for a long time"*

This reaction expresses something similar to what was said by another fracture victim explaining why he had to leave the orthodox treatment in favour of traditional bone setting, he said,

> *"I did not abscond from hospital, but I was discharged after being admitted for three months, my leg wrapped in a plaster of Paris (POP). I left the hospital still in pains in my leg and the doctors had not told me to return for a check-up after another month. I could not bear the pains, I had to look for an alternative treatment because hospital treatment had taken too long without significant relief."*

Other reasons, more or less similar to those given above, were given by several other respondents who participated in the study. All those respondents who had previously reported to hospital did not assert the preference of traditional bone setting to have been caused by inaccessibility of orthodox health facilities. More than half of all respondents (73 out of 103) had health insurance; the other 30% of the respondents (103) had no health insurance but asserted that the cost of hospital treatment was not a problem or the cause for their shift from orthodox treatment to the traditional one.

Past Fracture Experience

Another paramount reason for the preference of patronage or use of traditional bone setting to the orthodox treatment is the past fracture history of a patient himself/herself or a relative. One remarkable example of such a patient who became interested in traditional bone setting as a result of past experience of other fracture treatments is a patient aged 59 who was involved in a *boda boda* accident and had a leg broken. He attended hospital treatment for two weeks and left the hospital for traditional bone setting. When explaining the reason for his decision, he said:

> "*Back in my twenties, my uncle was involved in an accident in which his legs were terribly broken. His fractures were severe than mine and we thought he would never walk. He was brought here at this same centre. I used to bring him food for a couple of months until he fully recovered. When I got this fracture, my first thought was to come here (at the traditional bone setter), but my relatives took me for hospital treatment where I stayed for two weeks. I insisted on being traditionally treated. I am now doing fine than I was doing at the hospital".*

During the time of interview, the patient referred to above, had stayed three months at the traditional bone setting centre. His hopes of getting healed were very high and he commented:

> *"I came here from hospital in a very serious condition, both legs had fractured. Even sitting was a problem but now I can stand on my own; only that I cannot walk yet. Nevertheless, I believe soon I will be walking as my uncle did."*

Other participants had more or less the same experience. They said they opted for traditional bone setting not because they didn't trust modern medicine but because of their past experience with the traditional bone setting through other fracture victims who were treated in the same manner or their own past experience of being healed by the traditional

bone setter. More than a third (36/103) of all the participants had the same reason for choosing traditional bone setting. One fracture patient had the same experience. He had a relative who was healed by the traditional bone setter; he had gone through the same process by reporting to the hospital but later abandoned the modern treatment for traditional bone setting. After he had spent about ninety days at the traditional bone setting centre, his leg bone had already had union when it was found out that the bone had a malunion and had to be broken again so as to allow proper bone alignment. Unfortunately, the method of breaking the already united bone was very manual and crude. The patient could not tolerate such pain and he opted to have an about turn to hospital. He narrated his experience saying,

> *"I was treated by the bone setter for three months and frankly speaking, I had a relief although the leg had a mal-union. He told me to break the leg again so that it may have a proper union. The problem is that they (traditional bone setters) do not use anaesthesia. I felt I would not bare the pain, so I went back to hospital where the leg was broken again, and was treated for another five months until I got healed as you see me now"*

He admitted being very fond of traditional bone setting and wished he could have used the treatment to an end, but he was discouraged by the barbaric way of breaking the already united pieces of bone in a leg. He still insists to have a belief in the efficacy of traditional bone setting and that always fracture patients tend to make their choice of fracture treatment in favour of traditional bone setting.

Fear of Internal and External Fixation

It was found out in this study that fear of internal or external fixation was a motive behind the choice of some of the fracture patients (participants) to opt for traditional bone setting as a method of treatment for their fractures. Twelve respondents left the orthodox fracture treatment because of the fear of having iron bars internally or externally inserted to support the union of a broken bone. According to the information gathered from the orthopedic surgeon, there are several ways of treating a broken bone, and one of the common ways is medically known as Open Reduction with External Fixation.

This is a procedure which involves placing an extended device on to the injured bone after surgery whereby a surgeon places metal pins or screws above the fracture site to support and immobilize the bones while it heals. The bars used for external fixation are locally termed and *"antena"* in Swahili trying to relate them with the television antenna. Patients have a belief that iron bars fixed in their bodies would in future be harmful. They believe that they might cause cancer and referred to their relatives thought to have been acquired cancer due to having the iron bars inserted in their bodies. External fixation is also disliked because it makes a patient uncomfortable for a long time. Some of the patients claimed that they delay the healing process.

Categorization of Illnesses according to their Treatment

It was interestingly found that some patients have 'readymade' choices to some of health problems. There are health problems which are said to be healed by traditional medicine and others which can be managed by orthodox medicine. As far as fractures are concerned, some patients said that some of the accidents are not caused by normal accidents but are sent or created by people with bad eyes. In that matter, they believed not all fractures are treated in hospital, some need traditional expertise. Despite the fact that the researcher did not find any of the respondents who claimed his or her accident to be caused by people with bad eyes yet some of them still recommended some of the health problems to be treated traditionally, fractures included.

What they think about such health problems resembles what Mbiti (1969) asserts that in some cases patients employ a particular method of treatment depending on their belief about the course of an illness. The same is also observed by Owumi *et al*. (2013) who assert that there is a belief that some diseases and accidents have spiritual components that need to be tackled along with traditional treatment. For example, it was a common phenomenon among the participants of this study to say that they left the hospital after the wound accompanying the fracture had been healed. This is because some patients have a belief that traditional bone setters do much better with fractures than they do with wounds which are well managed by modern treatment. It was also found out by the study that some patients left the orthodox treatment for traditional bone setting believing that the services given by both are equal only that orthodox treatment is too demanding in terms of time and the relationship between

the patient and physician is not balanced. Despite the cost incurred, a patient is considered a subordinate. Patients and their relatives were not happy with hospital routines and timetables such as time for visitation, fixed time for taking medicine, time to rest and the like. Traditional bone setting is relatively flexible hence attractive to facture victims.

Belief that Traditional Bone Setting Heals Quickly

A number of patients who participated in the study said they had left the orthodox treatment because it heals very slowly as compared to traditional bone setting. The same belief is also held by the traditional bone setters themselves who claim to have a treatment mechanism which fastens the healing process of the bone which is called a "bone union". One of the traditional bone setters commented;

> *"Patients come because we make them heal quickly; our treatment is not trial and error because we only deal with the problem which is manageable with our capacity".*

Some fracture patients also agree with the traditional bone setters that traditional bone setting works very quickly on the fractured bone. For instance, a patient who had left the hospital after two weeks of fracture treatment said,

> *"I did not leave the hospital without permission, but I was discharged after I was dressed with the POP and I was not told when I should go back to hospital. I saw it as a delay; that is why I decided to go for a popular traditional bone setter in the village. I went to him because of his history in treating many people with severe injury than mine. I witnessed that many people were healed quickly than those who stayed at the hospital for the same treatment."*

Some of the patients complained to have stayed long in hospital undergoing orthodox treatment but without significant improvement on their fractures. The same patients reported to have experienced quick union of the fractured bones when they started visiting the traditional bone setters. Such people created trust of the public in traditional bone setting. It is also evidently true that traditional bone setters do not advertise their services. Their fame spreads through such witnesses of the fracture patients and their relatives.

DISCUSSION

The study findings clearly articulate that not all fracture victims who choose to be treated by traditional bone setters do so out of ignorance, inaccessibility to health orthodox services or costs of treatment. The study also revealed that some fracture victims start treatment in hospital and end up using traditional treatment. It is also true that some other fracture victims start with traditional treatment and end up in hospital. From the findings, statistics show that more males visited TBS than females. This may be mainly because of the economic activities each group engages in. For example, to be precise, more than half of all the participants of this study who were petty traders and motorcyclists and thus more prone to accidents, were men. That shows why a bigger number of men attended the traditional bone setting. The study revealed that a good number of traditional bone setter attendees were not much faced by cost implications as far as orthodox medicine is concerned, because they were insured. Seventy percent of the participants had health insurance, either directly or indirectly (being a beneficially of an insured person). Traditional bone setter adherents in this study were found to belong to a group of people who are fairly educated to a level above that of secondary school. Only 17% of the participants were primary school leavers. This implies that education plays little or no role in the selection of treatment and in this case, fractures treatment as it was reported by Baffour-awuah, Acheampong and Francis (2018) that education level plays an insignificant role in health seeking behaviour. As per researcher's findings, the health seeking behavior is greatly influenced by the 'need to recover' which in turn determines the means.

Since the 'need to recover' seems to be the drive towards seeking ways of getting better and efficient treatment, a patient is influenced by several factors before he/she selects a type of treatment or changes the type of treatment when one is dissatisfied with the treatment given. This can be well explained by an incident whereby an affluent and well-educated person who flew all the way from Muscat where he lives to Muleba, a study area, to see a traditional bone setter, after having attended treatment in the best orthopedic departments he had been to for a long time but with no positive progress. The 'need to recover' and to recover very quickly is supplemented by the 'Persistence of illness'. Once an illness persists for a long time, a patient loses patience and begins to think of looking for an

alternative treatment. Such an idea makes a patient start questioning the orthodox treatment as being the cause of his 'healing delays'. This explains why a good number of respondents who started their treatment in hospital ultimately left for traditional bone setting. The reason behind their shift was "*Nilikaa muda mrefu hopitali, ila nikaona kama sipati nafuu, ndio maana nimekuja huku"* (I stayed at the hospital for a long time without relief, that is why I came here). Something in common among them was lack of patience. The same is expressed by the orthopedic surgeon who is very upset by the exodus of fracture patients from hospitals to traditional bone setters when commenting that "they have no patience; they must know that the process of a bone union (a proper union) is not done overnight". A campaign is suggested by the researcher to the general public about fractures and their treatment so that people may be aware of the treatment process. 'Hear say' and past experience of people who had had fractures and went to traditional bone setters play a big role in influencing those who are sometimes desperate after having been in treatment in hospitals for a long time.

It has also been revealed by the study that most of the times those stories are always positive. Negative side effects of traditional bone setting such as complications associated with it are not aired out. The stories are so sweet that they attract patients to exit from orthodox treatment. It was found out in the study that only two (2) fracture victims out of one hundred and three (103) who participated in the study reported at the hospital before shifting to traditional bone setters. The phenomenon is not by accident but implies that fracture victims and their relatives consider the orthodox treatment (as far as fracture is concerned) as an emergence treatment which is useful for first aid, diagnosis and pain reliever. Having all that done they find their way to the traditional bone setters. This means nothing than the fact that the members of the public are aware of the efficiency of orthodox treatment in diagnosis of the illness. The same people have a belief that traditional bone setters heal better and quickly than the orthodox treatment does. It is also a plea of a researcher that a general public be helped to shift the "belief" from tradition bone setting to orthodox healing in order to avoid complications which are accompanied by the traditional treatment. According to Kumma *et al*. (2013), the majority believe in the importance of the role of traditional bone setting in fracture treatment despite the fact that the treatment is associated with a lot of complications which might be avoided by the orthopedic treatments. It is evident that people have incorporated their health seeking behaviour to their culture hence, made it hard to change in some of the

perspectives about treatment.

In that line, Varnum *et al*. (2017), assert that there are possible features that facilitate or impede cultural change which include things like tight against loose social norms, whether the society is relatively isolated versus frequent contacts with other cultures and the like; all may affect the degree to which culture is stable or malleable. In the case of this study, it is obvious that the employment of the traditional bone setting is a component culture and health seeking behaviour and is very stable.
This is expressed by the component of the adherents of the traditional bone setting as they come from different social backgrounds (the rich and the poor; the educated and the non-educated; rural and urban dwellers; to mention but a few). A lot of campaigns are needed to make the change possible. It was also revealed that not all fracture victims who visit the traditional bone setters get healed. Some of them go back to hospitals after facing complications when using the traditional fracture treatment. The complications include malunion which necessitates the bone to be broken again so that it may be realigned. The traditional bone setter does that manually without using anaesthesia. The researcher interviewed a few victims, two out of one hundred and three to be exact, who faced this situation and had to return to hospital from which they had earlier vacated. This implies that traditional bone setting, despite being patronized by some of the fracture victims, is not safe per se. In addition, it was found out that traditional bone setters have no prescribed fee to be paid by the patient. This is because they believe their ancestors handled them treatment for free and it should be served to others for free. However, the service is not free per se but a patient is let free to decide what to offer or what one can manage. Before treatment starts, a patient is obliged to pay a small fee which locally goes by the name *entela bishaka* which can be translated as bush clearing fee. After the treatment has been completed the patient offers another fee out of what he can afford, however small. This after treatment fee is called *entashurano* or parting fee. This makes the traditional bone setters to earn very little from the trade which in turn makes it impossible for them to develop in terms of innovations and technological advancement. In short, the trade is static. A kind of integration between traditional and orthopedic bone setting needs to be introduced in order to reduce complications which are associated with traditional bone setting.

CONCLUSION AND RECOMMENDATIONS

It has been clearly found that traditional bone setting is patronized by patients from different backgrounds in terms of education, occupation, income and residence. However, it is also evident that it is accompanied by several complications which sometimes face the users of the treatment. To avoid these complications, it is suggested that a massive campaign which aims at synthesizing about the causes and treatment of fractures be launched all over the country. Secondly, it has been observed that the Council of Traditional and Alternative Health Practitioners of Tanzania engages itself in matters of registration of traditional bone setters. This helps to identify them and know where they are but does not go further to finding out what and how they do their activities. Some trainings should be conducted with the traditional bone setters and of course other traditional healers. This will in a way avoid the complications which traditional bone setter cause to the patients unknowingly. The study gives credit on the traditional bone setters who participated in this study for their adherence to their ethical code of conduct especially, non-publicity for their activities. No poster or any advertisement was found which aimed at influencing the patients to use their services. Though the study did not go into the details of efficacy of the traditional bone setting, it is likely that in some cases, it works. And that is a reason for its patronage by people from different backgrounds.

REFERENCES

Baffour-awuah, D., Acheampong, K. and Francis, Y. (2018). Health-Seeking Behaviour of Orthopedic Trauma Patients Attending Saint Joseph Hospital in Koforidua , Ghana Abstract :, *7*(1), 43–50. https://doi.org/10.9790/1959-0701064350

Dada, A. A., Yinusa, W. and Giwa, S. O. (2011). Review of the practice of traditional bone setting in Nigeria. *African Health Sciences*, *11*(2), 262–265.

Dada, A., Giwa, S. O., Yinusa, W., Ugbeye, M. and Gbadegesin, S. (2009). Complications of treatment of musculoskeletal injuries by bone setters. *West African Journal of Medicine*, *28*(1), 43–47.

Khan, D. I., Saeed, D. M., Inam, D. M. and Arif, D. M. (2015). Traditional Bone Setters; Preference and Patronage. *The Professional Medical Journal*, *20*(09), 1181–1185.

https://doi.org/10.17957/tpmj/15.2944

Kumma, W. P., Kabalo, B. Y. and Woticha, E. W. (2013). Complications of Fracture Treatment by Traditional Bone Setters in Wolaita Sodo , southern Ethiopia, *3*(12).

Manjunatha, V. (2016). Patronising raditional Bone Setting and its Complications. A study in Bangalore. *IOSR-Journal of Dental and Medical Services (IOSR-JDMS*, *15*, 125–130.

Mbiti, J. (1969). *African Religion and Philosophy*. Heinnman,London.

Ndubuisi, O., Omolade, L., Itodo, E., Sunday, P. and Kehinde, O. (2015). Patronage of traditional bonesetters in Makurdi, north-central Nigeria. *Patient Preference and Adherence*, *9*, 275–279. https://doi.org/10.2147/PPA.S76877

Owumi, B. E., Taiwo, P. A. and Olorunnisola, A. S. (2013). Utilization of traditional bone-setters in the treatment of bone fracture in Ibadan North Local Government. *Intern J Hum Social Sci Invent*, *2*(5), 47–57.

Sina, O. J. and M, I. A. (2015). Alternative & Integrative Medicine Traditional Bone-Setters and Fracture Care in Ekiti State , Nigeria, *4*(1), 1–5. https://doi.org/10.4172/2327-5162.1000182

Sina, O. J., Taiwo, O. C. and Ayodele, I. M. (2014). Traditional Bone-Setters and Fracture Care in Nigeria. *Journal of Art, Social Science and Humanities (ISSN: 2350-2258)*, *2*(6), 74–80.

Varnum, M. E. W. and Grossmann, I. (2017). Cultural Change : The How and the Why Cultural Change : The How and the Why, (September). https://doi.org/10.1177/1745691617699971

Wedam, E. A. and Amoah, S. T. (2017). Traditional Bone Setting: Analysis of Contribution and Patronage in Northern Ghana. *Ghana Journal of Development Studies*, *14*(2), 23. https:// doi.org/ 10.4314/gjds.v14i2.2