A Study on Fracture Management by Traditional Bonesetters and its Effects to Clients in Lungalunga Constituency, Kwale County in Kenya

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List of Abbreviations

TBS Traditional Bone Setter / Setting

MOH Ministry of Health

Abstract

The purpose of the study was to establish fracture management by Traditional Bone Settings (TBS) and its outcome among the clients in Lungalunga constituency, Kwale County. Data collection was carried out in March 2019. The study was carried out among TBS and 30 people who had undergone treatment by TBS in the last two years. The study adopted a descriptive observational research design with aspects of both qualitative and a quantitative component.

Sampling was done by "snow-balling", whereby the village heads assisted in identifying the TBS and the people who have sought treatment from TBS. Structured interviews were used together with observational checklist filled by the investigators together with six research assistants who were trained on how to use the research tools.

Muslims comprised of 93% of the respondents, 23% of the respondents had never gone to school, 50% of the respondents had steady income. The referral system of TBS practice is purely through friends and relatives and is not limited to seeking services of locally available TBS only, but also those from neighbouring countries like Tanzania. Four out of the five TBS in the study had practiced for more than 10 years. Some of the practitioners had acquired their knowledge through mainstream medicine while others learnt from their grandmothers and grandfathers .Besides practicing bone setting, farming, fishing, and treating other medical conditions were also practiced by TBS.

1.0 Introduction

In the process of evolution man has put a continuous effort in developing methods and practices for improvement of his own health. With passage of time, many of such arts have disappeared due to modern medical sciences. But one that refuses to die is the art of traditional bone setting. In spite of criticism and adversities this age old art has managed not only to survive but also to flourish in every sector of society (Tapasa, Dharma and Niharika, 2017). A Traditional Bone Setter (TBS) is a traditional practitioner of joint manipulation, who educate themselves from tradition and takes up the practice of managing and treating without having had any formal training in accepted medical procedures. Bone setting practice is common in large parts of rural populations and contributes largely to the alternative medicine, especially in context of Asia, Africa and South America. TBS are easily accessible, cheaper and believed to give quick results (Onuminya, 2004).

With the devolution of the health sector in Kenya (MOH, 2014, Ghai, 2008), it would be assumed that the healthcare delivery and healthcare seeking behaviours have improved and that quality healthcare is available for all. However, in Kwale County the TBS still practice the skills that have been passed on from generation to generation (Warungu, 2016).

With the better improved roads in Kenya today, the modes of transport have improved. This has come with the rise of motorcycle usage and increased road traffic accident that leaves the people having all sorts of traumatic conditions ranging from mild to severe cases that leave the patients in wheelchairs or in worst cases in coma or dead.

In Kwale County, the trend is not different but their health seeking behaviour is unique. When the people of Kwale sustain a fracture, many prefer going to the TBS instead of getting admitted in the orthopaedic wards. According to literature, one important reason for doing so is that this treatment method is thought to help them to heal faster than when they use orthodox medicine (Ongugo et al, 2012).

From the previous studies carried out in Africa on traditional bone setting, there have been reported cases of complications like non-union, mal-union, traumatic osteomyelitis and limb gangrene. However, that has not limited the communities from seeking health care from the TBS (OlaOlorun, Oladiran and Adeniran, 2001). Recently, from self-testimony, a friend of one of the investigators who is a soccer player from the Bandari football club sustained a tibial fracture and instead of going for modern methods of fracture management, he chose to seek a TBS for treatment. This act brought the practice of TBS in Kenya into the limelight.

Science based medicine is referred to as modern medicine, Western medicine, or orthodox medicine. In our report we refer to it as orthodox medicine. TBS is seen as a form of traditional or alternative medicine. We will refer to it in this report as TBS.

2.0 Literature Review

World Health Organization (2002) describes traditional bone setting as that health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to diagnose and treat fracture in human body. In a further explanation, Ekere (2003) states that, traditional medicine is based on the belief that: the natural resources have active therapeutic principles that heal occult supernatural forces, power to change active principles which can be manipulated by those who know how to produce marvellous results. This implies that Africans belief in using the natural way to treat illnesses than the orthodox medicine that was brought from the western societies (Omololu, Ogunlade and Gopaldasani, 2008).

In an earlier study in Nigeria, superstition, ignorance and poverty are the basis for continued patronage despite complications (Udosen, Etiuma and Ugare, 2005). The fact that the patrons of this service cut across every strata of the society including the educated and the rich (Thanni, 2000) indicates that it is not only poverty and ignorance which takes them there. Mostly, Africans do believe that diseases and accidents have spiritual components that need to be tackled along with treatment. The major and commonest problems treated by them are fractures and dislocations (Thanni, 2000). There are however many complications attributed to the TBS.

2.1 Factors influencing the community to seek services of traditional bone setters

Dada established some of the reasons that has contributed to the continued use of traditional bone setting in African countries (Dada et al, 2011). They include cheaper fees, easy accessibility, quick service, cultural belief, utilization of incantations and concoction, pressure from friends and families.

2.1.1 Cost

Traditional bonesetters generally charge lower fees than modern hospitals. The reason for the cheaper fees being charged by the bonesetters in Sudan as identified by Chris is because of a strong conviction and belief that the spirits will desert the treatment centres and make the medicine powerless, and in some cases, make the practitioners go mad or die when monetary rewards become the primary driver (Chris, 2011). Dada identified the mode of payment in Nigeria as being through multiple little payments and even payments in kind of clothes and live animals are allowed (Dada et al, 2011). This indicated that there are practitioners who do not necessarily collect money from their patients, but do request for things that serves as money substitute. (Olaolorun et al, 2011). Some patients make pledges, which they redeem voluntarily at the end of successful treatment. In Nigeria, when a patient is dissatisfied with the TBS treatment he or she is free to stop seeking their services at will without cost (Onuminya, 2004).

2.1.2 Poverty

Another factor that is directly related to the cost of the service is poverty. This is the state of one who lacks a certain amount of material possessions or money. The United Nation measured poverty and defined it as those who are living below $1.25/ day. In October 2015, the World Bank updated the international poverty line, a global absolute minimum, to $1.90 per day. In Sub-Saharan Africa, 41% of the population lives below the poverty line while in Kenya the percentage below the poverty line is 36%. It may therefore be difficult for them to afford the cost that will be required for orthodox medicine, hence, the adoption of traditional means of fracture treatment as an alternative. Omolulu estimated the cost of

managing a child's forearm fracture for sound union in about 6-8 weeks to cost $35, which is too expensive for many people (Omololu et al, 2002). Chris in his work also identified ignorance and poverty as being the basis for the continual patronage of traditional bonesetters (Chris, 2006).

2.1.3 Culture

According to CHAPS, culture defines who we are (CHAPS, 2000). It shapes our identity and behaviour. Culture does not always remain the same; instead it changes with time and new conditions. All of us have learned ways of being, of eating, of loving, of caring for the sick. And in different ways, all of us decide how to change what we were taught to match current circumstances. Our awareness of our own power to change cultural traditions and beliefs; or to bring back and re-enliven cultural practices that we believe are useful, can be very important in promoting health within our own communities.

For people living in rural areas, traditional healers often provide the only available medical care. From a previous study, a recipient said, "The traditional healer is equipped with knowledge skill and insight that reaches deep into the core of one's psychosocial and spiritual being. S/he is able to nurture a kind of hope that orthodox medicine does not yet offer".

2.1.4 Health facilities infrastructure

This may influence the utilization of the traditional bone setters' services in that availability and proximity of health facilities to the populace can determine the choice of service delivery point. The major players in the health sector include the Ministry of Health (MOH) and Ministry of Local Authorities. Other players are non-governmental organizations, faith-based organizations and the private sector. The private sector includes the TBS (MOH, 2010). Health services in Kenya are delivered through a network of approximately 6761 health facilities with the public health system accounting for 51% of the total. This total comprises of 453 hospitals, 721 health centres, 3356 dispensaries, 154 nursing and maternity homes, and 1938 health clinics or medical centres (MOH, 2010).

2.2 To establish the roles of the traditional bonesetters in the community

The traditional bonesetter (TBS) is a person who is recognized by the community in which he lives as competent to set bones. S/he is a lay practitioner of joints manipulation. He/she is the unqualified practitioner (in the western training) who takes up the practice of healing without having had any formal training in accepted medical procedures (Agaja, 2000).

According to Onuminya (2004), the diagnosis of fracture is based on physical assessment and experience of the TBS. Pain, swelling, tenderness, limb shortening or deformity, presence of a gap between broken fragments, abnormal movement and loss of function of a limb following trauma are recognized as physical signs of fracture. On the basis of physical assessment, the TBS will describe a fracture as open or closed, displaced or un-displaced, single or multiple in relation to the part of the limb involved. Some of the TBS rely on the reports of X-ray films done in orthodox hospitals to further describe fractures as complete or incomplete, simple or complex. They appreciate the danger associated with open fractures, but some of them claim that they have knowledge of herbs that can be used to heal the wound. Most TBSs will attempt to treat the wound with herbs and some employ the services of a nurse to manage the wound for them.

2.3 Complications associated with traditional bone setting

The principle and the common mode of immobilization of fractures in the traditional bone setting is application of tight splint at the fracture site (Eshete, 2005). These traditional fracture splints are made from bamboo, rattan cane and palm leaf axis. These materials are knitted together to form a mat-like splint which are usually wrapped round the fracture site tightly. The immobilization is done most of the time without basic knowledge of anatomy, physiology or radiography which make limb and life threatening complications inevitable. These complications vary from acute compartmental syndrome, tetanus, deformities, chronic osteomyelitis, gangrene, amputation and death (Omololu, Ogunlade & Alonge, 2003 and Udoh & Chinedu, 2011).

2.3.1 Compartment Syndrome

Compartment syndrome is a painful condition that occurs when pressure within the muscles builds to dangerous levels. This pressure can decrease blood flow, which prevents nourishment and oxygen from reaching nerve and muscle cells. Compartment syndrome develops when swelling or bleeding occurs within a compartment. Because the fascia does not stretch, this can cause increased pressure on the capillaries, nerves, and muscles in the compartment. Blood flow to muscle and nerve cells is disrupted. Without a steady supply of oxygen and nutrients, nerve and muscle cells can be damaged.

Compartment syndrome can be either acute or chronic. Acute compartment syndrome is a medical emergency. It is usually caused by a severe injury and unless the pressure is relieved quickly, permanent disability and tissue death may result. This does not usually happen in chronic compartment syndrome. Compartment syndrome most often occurs in the anterior (front) compartment of the lower leg (calf). It can also occur in other compartments in the leg, as well as in the arms, hands, feet, and buttocks.

2.3.2 Osteomyelitis

Osteomyelitis is an infection of the bone caused by *Staphylococcus aureus* bacteria and rarely a fungus. This disorder usually occurs as a result of an infection in one part of the body that is transported through the bloodstream to a bone in a distant location. Symptoms may include pain in a specific bone with overlying redness, fever and weakness (NORD, 2005). Acute osteomyelitis is a serious bone inflammation that can result from a previous trauma, puncture wound, surgery, bone fracture, abscessed tooth, or infection of soft tissue, the ear or sinus. The long bones of the arms and legs are most commonly involved in children while the feet, spine, and hips are most commonly involved in adults.

2.3.3 Gangrene

Gangrene is a condition that occurs when body tissue dies. It is caused by a loss of blood supply due to an underlying illness, injury, and/or infection. Fingers, toes, and limbs are most often affected, but gangrene can also occur inside the body, damaging organs and muscles.

2.3.4 Tetanus

Tetanus, also known as lockjaw, Tetanus is caused by an infection with the bacterium *Clostridium tetani*, which is commonly found in soil, saliva, dust, and manure. The bacteria generally enter through a break in the skin such as a cut or puncture wound by a contaminated object. They produce toxins that interfere

with muscle contractions, resulting in the typical symptoms. Tetanus is an infection characterized by muscle spasms. In the most common type, the spasms begin in the jaw and then progress to the rest of the body. These spasms usually last a few minutes each time and occur frequently for three to four weeks. Spasms may be so severe that bone fractures may occur. Other symptoms may include fever, sweating, headache, trouble swallowing, high blood pressure, and a fast heart rate. Onset of symptoms is typically three to twenty-one days following infection. It may take months to recover. About 10% of those infected die (Atkinson, 2012).

2.4 Integration of TBS into the county health care delivery system

All too often, public health programs in Africa do not consider the importance of culture. Many overlook the cultural specifics of a place, specifics that define health ad behaviour. Health programs often fail to find a balance that recognizes the importance of tradition and, at the same time uses culture to help address today's health problems (Burris and Christenson, 2007). Before the emergence of Western invention, every society stipulated methods of doing things even with relation to health. These methods are engrained in the culture and tradition of the people. As it is done in every other aspect, there are traditional means of treating the sick whenever there is the need to do so. African traditional medicine (alternative medicine) therefore has an important place in the healthcare delivery system among Africans, including in coast region of Kenya.

According to Omololu, Ogunlade and Gopaldsani (2008), traditional medicine has been the first port of call before western or orthodox medicine and a last resort when all orthodox efforts fail. From this assertion, it is indicated that African people firstly put traditional medicine into consideration, whenever they are to undergo any treatment before looking at western method.

On the whole, traditional healers were long practiced before orthodox medicine was introduced into the developing world. Many developing nations have integrated traditional practitioners into mainstream healthcare. For example, prenatal and birthing attendants, chiropractors and herbal practitioners have each found places in established healthcare schemes (World Health Organization, 2000). Even in cities like Bangalore in India where health care facilities are easily accessible, traditional bone setting continues to flourish. The art of traditional medicine is so wide that different experts have emerged to have their own area of specialization (Owumi and Jerome, 2012). There is therefore no disputing the fact that some aspects of traditional medical knowledge system is well structured and organized and has survived through generations to maintain harmony between body, mind and soul within its socio-cultural and religious context. However, different experts have emerged within their ranks including herbalists, bonesetters, psychiatrists, and traditional birth attendants among others (Owumi and Jerome, 2012).

3.0 Aim of the study

The science and technology of the management of injuries of the musculoskeletal system has changed dramatically over the years. There has been a major shift from conservative methods to a more aggressive surgical approach for treatment of some fractures. This change has been driven by health economics especially demand and supply for healthcare and, market equilibrium. The move was a realization that in the treatment of a fracture, it is not the bone alone that matters, but also the soft tissues, and especially the muscles whose function must be preserved by active use within the limits imposed by necessary splinting and redeveloped by graduated activity when the splint is removed. In many developing countries, the traditional care of diseases and afflictions remain popular despite civilization and the existence of modern health care services. Some orthopaedic patients in Lungalunga Constituency still seek traditional care from TBS rather than visiting the modern health facilities provided by the MOH of Kwale County. In Kenya, the methods and procedures in which the bonesetters use has not been documented nor has the practitioners attended formal education hence the need to carry out an observational study to better understand the techniques and effectiveness of the practice.

Therefore, the objective of this study was to establish fracture management by TBS and its effects to clients in Lungalunga constituency, Kwale County.

4.0 Methodology

4.1 Study design

This study adopted a descriptive observational research design with aspects of both qualitative and a quantitative components.

4.2 Study area

The study was carried out in Lungalunga constituency in Kwale County. The constituency covers an area of 2,803.8 sq. Km and has a population of 153,354 (KDHS, 2009). It's made up of four (4) administrative wards; Pongwe, Dzombo, Mwereni and Vanga.

4.3 Study population

This study targeted TBS in Lungalunga Sub-County and people who had undergone treatment by TBS in the last two years.

4.3.1 Inclusion Criteria

Any person from any ward in Lungalunga who had undergone bone setting by TBS or who were TBS themselves.

4.3.2 Exclusion Criteria

There were no specific exclusion criteria other than not providing consent or opting out of the study before completion of the interview.

4.4 Sampling

Sampling was done using "snow-balling", a non-probability sampling technique. The village heads assisted in identifying the TBS and the people who had sought treatment from TBS.

4.5 Sample Size

Due to lack of documented data on the prevalence of fractures in Lungalunga constituency, the sample size was determined by the degree of variability whereby the minimum suggested sample is 30 and upper limit is 1000.

Upon consent, we observed the practice of five bone setters – one in each ward of Lungalunga Sub-County. We also interviewed 30 people who had undergone treatment by TBS in the last two years to learn more about their experience and why they preferred the traditional bone setters over the orthodox medicine.

4.6 Data collection procedure

Following approval from the ethics committee, a pilot study was carried out in Mombasa town to test the feasibility of the data collection tool.

Subsequently the actual data collection took place in Lungalunga sub-county. Structured interviews were primarily used to collect the needed information. The interviewer went to the homes of the people who had received services of TBS and interviewed them. They also visited the TBS who were either at their place of work or home and interviewed them then filled an observational checklist after observing and noting the techniques used.

4.7 Data Analysis and Presentation

The data was analysed using excel. The information was analysed and presented using graphs, tables and charts. Qualitative data was analysed using the deductive approach.

4.8 Ethical Consideration

The researcher sought consent form all the relevant authorities while conducting the research starting with Pwani University Ethics Review Committee to the Kwale County MOH. The certificate of ethical approval was obtained on 30th May 2018 with ethical approval number ERC/EXT/004/2018. The researcher respected the confidentiality and anonymity of the respondents where they signed an informed consent form and the participants participated voluntarily without being bribed or forced to. The researcher ensured that the study was conducted in a free and fair manner and no harm was done to the respondents and that the research was independent and impartial to avoid any form of biasness.

5.0 Data Analysis and Presentation

In this section the findings of the study are presented in two paragraphs. First, the findings from the interviews with people who had sought services from the TBS. Secondly, the findings from the interviews with and observations of TBS practices in Lungalunga.

Lungalunga constituency has four wards. The study was done in two wards because one of the wards was very far from the rest and transport became a challenge. The other ward that was left out of the study was due to inability to reach the local authorities of the ward thus making it impossible for the interviewers to engage the targeted respondents. Several respondents indicated that they did not only visit TBS in Kenya but also crossed the border to Tanzania to get services from TBS there.

5.1 Social demographic characteristics of the community members by percentage

In this section we present the findings from the interviews with 30 people who had received services from TBS in the past two years. We first present the socio-economic background of the respondents, followed by the findings on various study questions.

Table 1: Sex, age and level of education of the 30 respondents who sought TBS services

Age					Sex		Level of education			
Under 20	20-30	31-45	46-60	Over 60	male	female	Prim.	Sec.	tertiary	Nil
3%	23%	27%	37%	1%	67%	33%	47%	23%	7%	23%

Table 2: Marital status and occupation of the 30 respondents who sought TBS services

Marital status				Occupation			
single	married	divorced	Widowed	employed	unemployed	Self-employed	Student
27%	63%	3%	7%	23%	17%	50%	10%

Table 3: Religion and wards of the 30 respondents who sought TBS services

Religion		**Ward**	
Muslim	Christian	Lungalunga/vanga	Kikoneni/pongwe
93%	7%	43%	57%

Figure 1: Respondent source of information about TBS

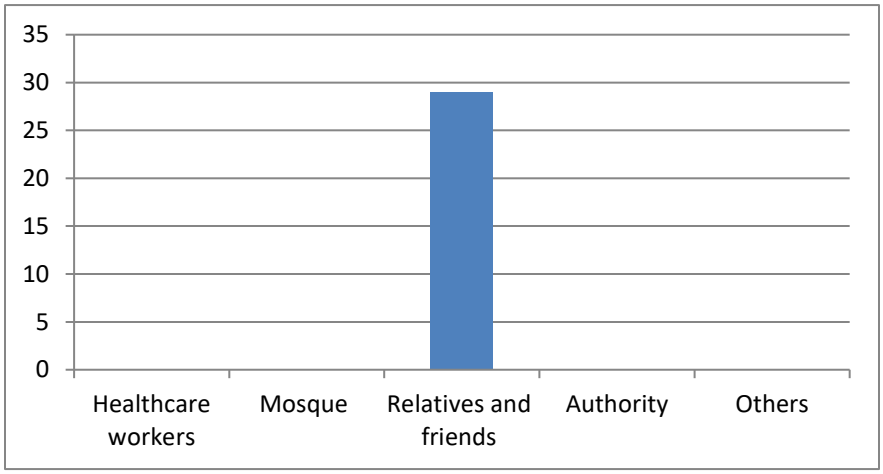


Figure 2: Conditions treated by TBS

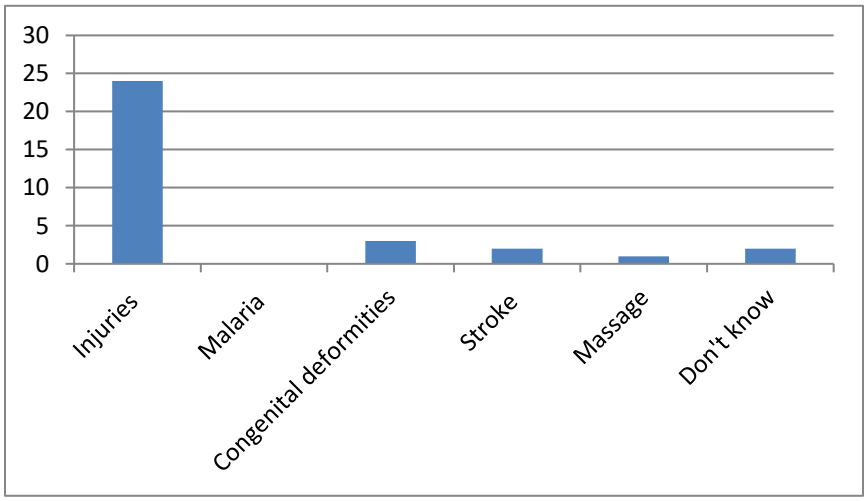


Figure 3: How injury was sustained

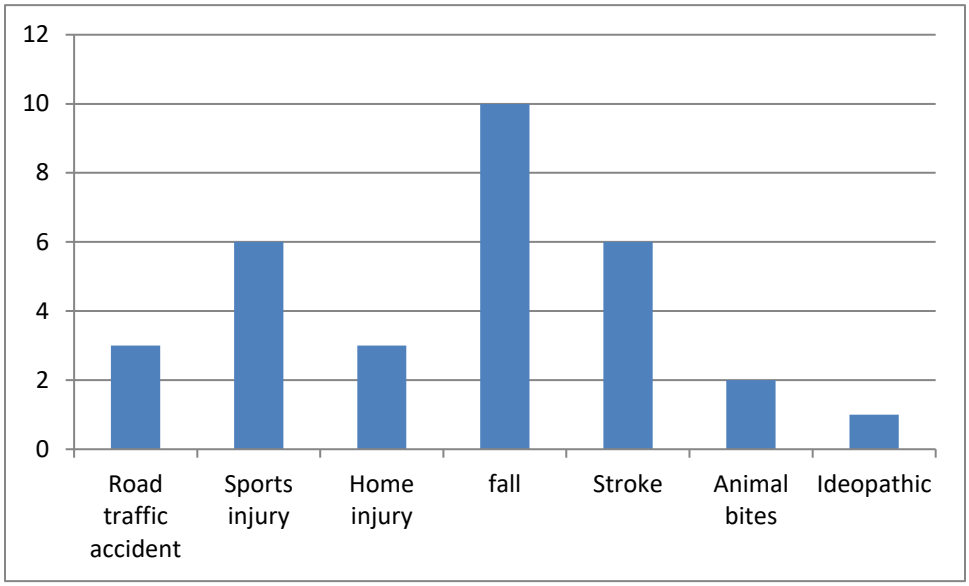


Figure 4: What type of injury was sustained?

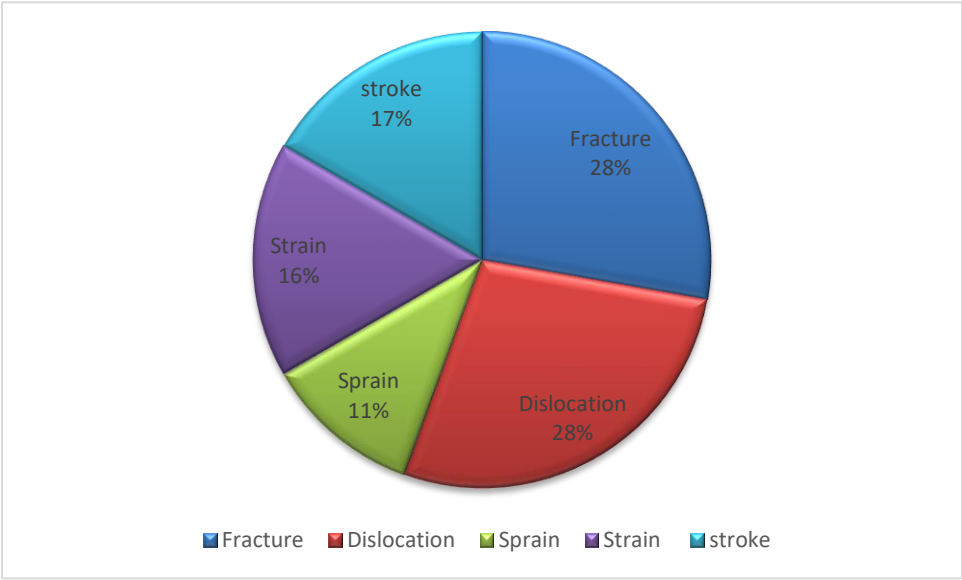


Figure 5: Respondent's referring person

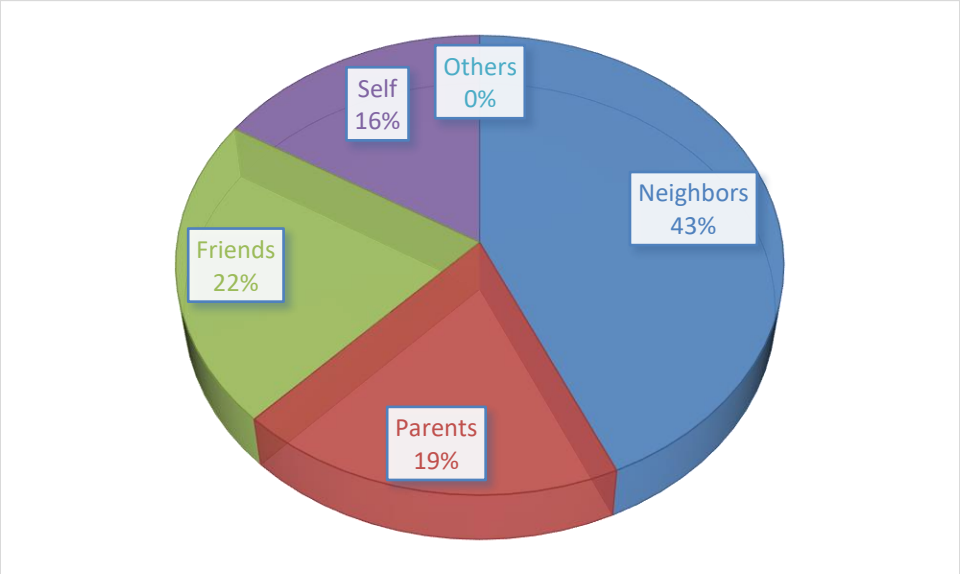


Figure 6: Respondents' reasons for seeking TBS services

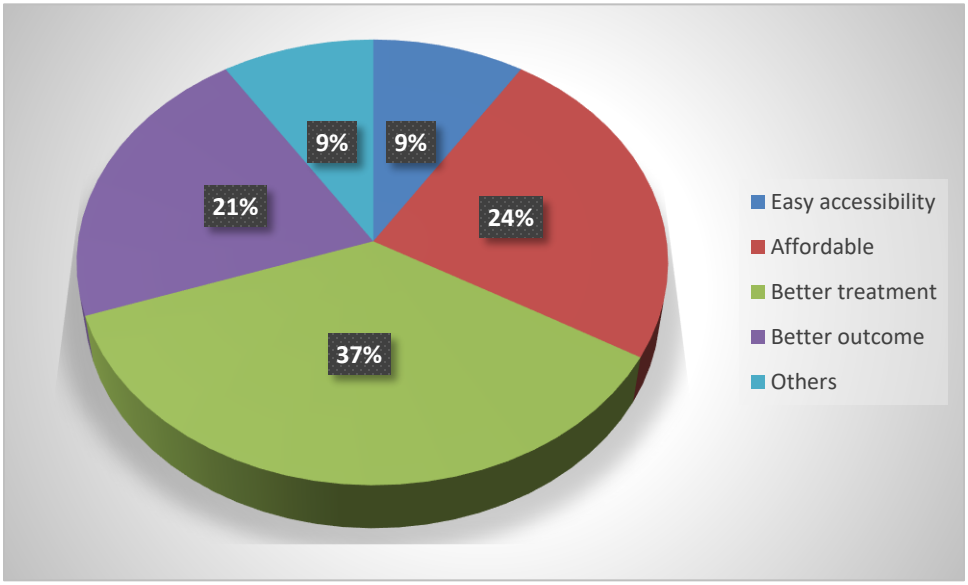
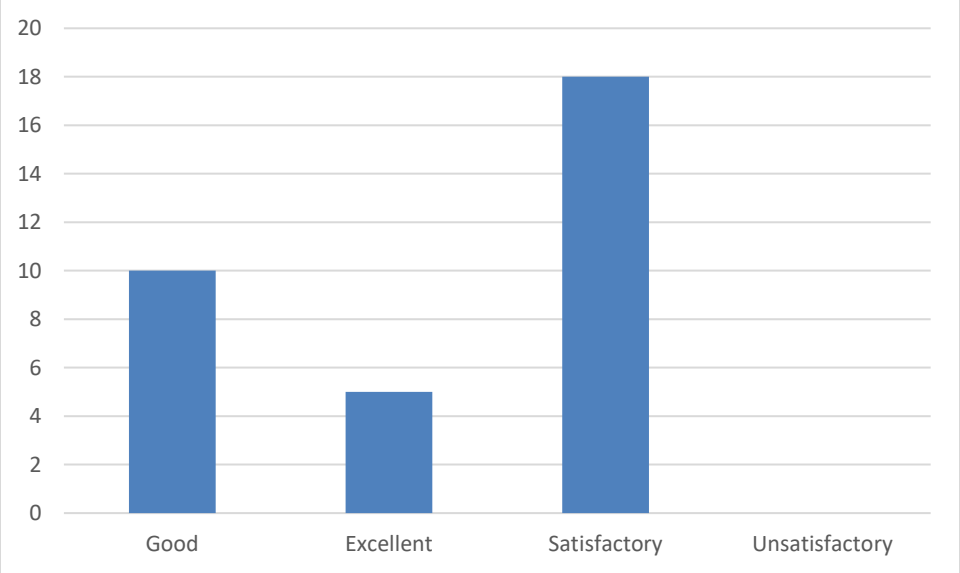


Figure 7: Respondents' assessment on quality of care given by TBS

Figure 8: Respondents' thinking about the outcome of care given



All 30 (100%) of the respondents stated that they would recommend the TBS to other people with similar problems. They gave the following reasons:

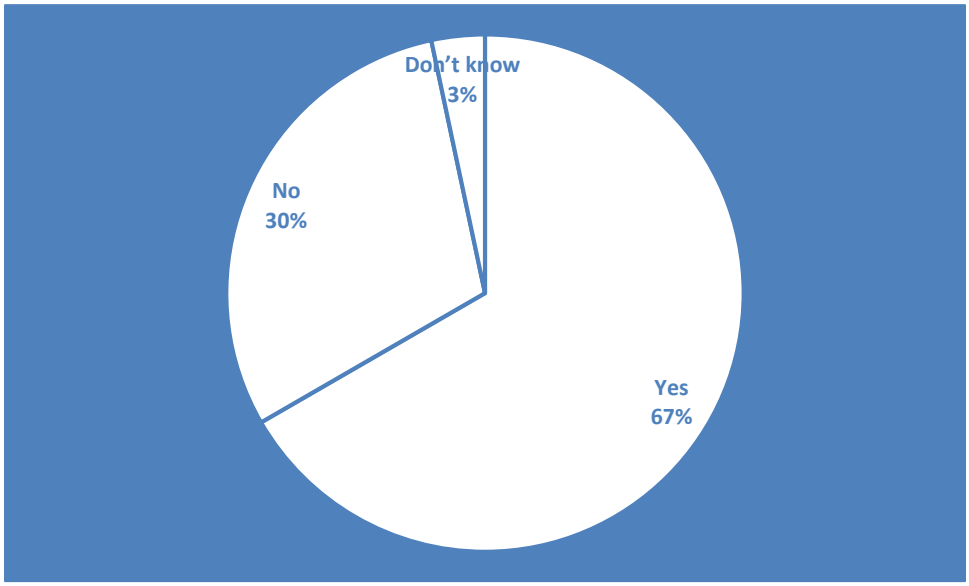
- Speedy recovery
- No complications
- Good service
- Better treatment
- Natural medicine
- Good outcome
- Quick service and affordable
- Competent TBS
- Readily available
- Experienced
- Convenience
- Various treatment techniques
- They refer what they can't handle

The respondent's view on improvement of TBS practice

Two of the respondents did not see any area for improvement of the management by TBS. The others gave the following areas for improvement:

- To be recognized by the government
- To be recognized by MOH and Hospitals around
- Improve accessibility as most of them operate in areas where the roads are poor thus making it hard to reach them
- Create educational and training centres for them
- Get X-ray machines
- Government to build a hospital for them
- Get an assistant
- Get funded by the government
- Get modern equipment
- Get modern analgesics

Figure 9: Respondents' thoughts on whether TBS should be integrated within the formal healthcare system



Respondents gave varied reasons of whether TBS should be integrated within the formal healthcare system or not. Those who did not think it was a good idea to integrate the TBS, gave the following reasons:

- It would make the services expensive
- They believe in natural herbs/ medicine
- Reduction of accessibility and availability of natural herbs/ medicine
- It will reduce the quality of services offered
- Dislike of mainstream hospitals
- It would bring confusion

Those who thought it would be a good idea to include TBS within the formal sector, gave the following reasons:

- It would improve the services
- It would enable the TBS to refer patients to modern hospitals if need be
- TBS has adopted some western medicine procedures
- Improve accessibility of health services
- It would reduce electro-therapy
- Improve recovery period

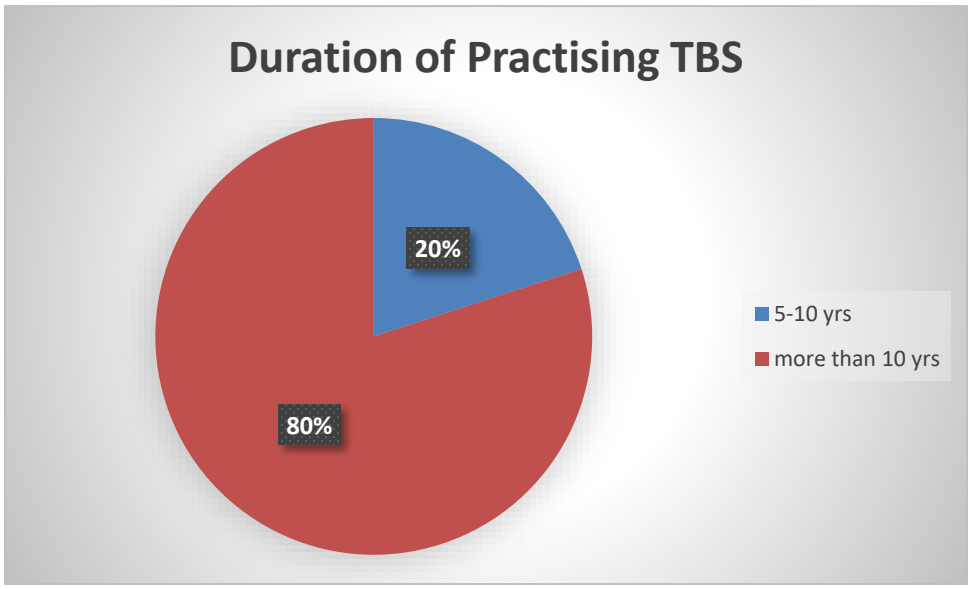
5.2 Data analysis of TBS practice

In total we interviewed / observed five TBS about their practices.

Table 4: Demographic data on five TBS practitioners operating in Lungalunga

DEMOGRAPHIC DATA	
Sex	
Male	4
Female	1
Age	
46-60	3
over 60	2
Marital status	
Single	0
Married	5
Divorced	0
Level of education	
Primary	2
Secondary	1
Tertiary	1
Never in school	1

Figure 11: Duration of practice of the five TBS practitioners operating in Lungalunga



From the interviews done, it was discovered that the TBS acquired their knowledge in different ways including learning from the formal healthcare system, from their grandparents and parents and from

other TBS. It also came out clearly that those practicing TBS don't solely rely on it for a living but also engage themselves in other economic activities e.g. farming, fishing treating other conditions and tourism.

The methods TBS use to be able to determine whether their clients have fractures or not are by looking at the alignment, palpating the injured part, comparing the injured limb with the one that's not injured and through observing the presence or absence of a swelling. After the treatment and application of the traditional bone setting, the TBS has to ascertain whether the fracture healed or not. They do this by observing for decreased swelling, checking if the injured part is smooth or is still bumpy, continuously massaging the injured part (this helps them assess through feeling), and making sure the making sure that the traditional bone setters applied are maintained for the required duration; one month for a child, two months for adults.

Most of the clients who seek the services of TBS are in pain. The TBS relieves the pain by the use of ice packs, calling a doctor to administer analgesics, giving paracetamol, using herbs, trying to calm the patient, application of some oil they call *karafuu* mixed with sesame (*Sesame Indicum*). If pain persists, some of the TBS instruct their clients to buy analgesics while others refer them to a formal hospital.

In case a beneficiary of the TBS services develops complication, the TBS is able to tell or identify this by looking for any swellings and touching to determine the extent of pain and fell for any bumps. Once they know that there are complications, the TBS refer the patients to the hospital, advice the clients to do some x-rays, or use hot water with clean cloth to massage or clean the injury.

The TBS believe that the services they offer are advantageous to the community because they are cheap, readily available and speed the recovery time. There are decisions that are supposed to be made regarding TBS practices. The TBS practitioners feel that both they and government should make the decisions regarding what the TBS should do and should not do. They also feel that the decision of seeking TBS services should be made by patients and guardians or parents if the patient is a child.

Just like any other practices, TBS also has its own challenges. There are times when the patients are not sure if the injury is healed, so the TBS has to continue treating them without any payment. Also, some patients come in pain and the TBS cannot relieve it, so they are forced to call formal healthcare workers to administer analgesics, for example in cases of shoulder dislocation.

6.0 Discussion

In Lungalunga constituency, the practice of bone setting is widely spread. Before the study was conducted, it was assumed that collecting data would be a challenge as we thought only few people would be practicing and visiting those practitioners. This informed the choice of a small sample size to work with and the choice of snow ball sampling. Actually, it was difficult to reach the respondents, not because they were not there, but more because of accessibility of many of the areas.

In Lungalunga constituency, the practice of bone setting has been there for long. Before the study was conducted, it was assumed that collecting data would be a challenge hence the choice of a small sample size to work with and the choice of snow balling sampling.

As 23% of the respondents had never gone to school, one could easily interpret that TBS was wide spread because of poverty caused by the illiteracy. However, as 50% of the respondents were self-employed and had steady income from different trades they were involved in, this suggests otherwise. The whole community is close knit and they all had knowledge of TBS practice as well as services offered in the modern hospital. The referral system of TBS practice is purely from friends and relatives and is not limited to the community members only. We had a case of tourists who had been referred to the system all the way from Diani in Ukunda to Shimoni in Lungalunga ward. The factors emerging as contributing to the widespread use of TBS, in descending order of frequency are: better treatment received from the bonesetters; affordable services; better outcome as compared to those from modern hospitals; TBS are easily accessible; trust in the TBS practitioners and, lastly, parents' preference once their kids sustain injuries.

Getting the TBS practitioners was easy since they are known across the region and each of them has an expertise that they are known for ranging from management of fractures, dislocations, sprains and strains. Lungalunga constituency being located at the border of Kenya and Tanzania, bone setting extends to Tanzania.

Traditional bone setting has been practiced in Lungalunga for many years. Four of the five TBS practitioners in the study had practiced for more than 10 years. The practitioners had acquired the knowledge through different means. Besides practicing bone setting, they involve themselves in other economic activities due to the low earnings they get from it

In orthodox medicine, we anticipate certain complications associated with specific fractures. The TBS practitioners were not bothered with major complications after they had treated a patient. Among the complications known to them were infection of wounds in an open fracture and swelling after application of traditional splints. Once such a complication would occur, they would either treat them with herbs or send them to the mainstream hospitals. This indicated that the bonesetters did not have sufficient knowledge about complications. To them a fracture healing or pain going away was enough for them to declare a patient had healed.

That TBS practitioners refer their clients to modern hospitals can be seen as a sign of incorporation of western medicine in their practice. They would send clients to the hospital to get X-ray done and they would also use western analgesics to treat pain. Some medics from modern hospitals did seek treatment from TBS practitioners. One of the respondents who is a formal health worker working in one of the clinics in Lungalunga said that he had sought the treatment from TBS since the herbs used make one heal faster

compared to orthodox medicine. He said that at times he prefers to refer the patients who have musculoskeletal injuries to the TBS practitioner than to the modern hospital.

It is undeniable fact that in Lungalunga, orthodox medicine and TBS are coexisting and there is collaboration between the formal health workers and the TBS. The distance of the modern hospitals from the people has contributed to the continued practice of TBS. According to the people in Lungalunga, TBS has nothing attached to their spiritual beliefs, it is purely treatment just like the modern hospitals and this acceptance of the practice in the region has made it thrive.

On officially incorporating TBS in the mainstream orthodox medicine, there was no clear opinion on whether this would be an idea the majority would advocate for or not. This was mainly due to the fear of the unknown, not being sure whether it would have positive or negative effects to the practice.

6.1 Conclusion

TBS practice can be improved to serve the people of Lungalunga effectively. There was an initial plan of the government to profile all the practitioners but along the way the project did not kick off. Looking at the expertise of the practitioners, they have hands-on skills and none of them would want to ruin their reputation. If TBS practitioners would be recognized by and offered support from the Ministry of Health, they would do much better and probably help the county government meet their UHC goals faster.

6.2 Recommendation

The MOH should create awareness of the traumatic incidences happening in the area and come up with clear guideline on how the injuries sustained should be managed. These guidelines should clearly indicate what should be done by the TBS or the formal healthcare system. The MOH should also conduct more research on the herbs used by TBS practitioners to know exactly what speeds up healing in the herbs that lacks in the western medicine. By so doing, they will be working with the TBS practitioners and they will get to understand medicine better and once they are educated, it will be easy to incorporate them in MOH system. Since the MOH hospitals are far away from most of the people living in Lungalunga, the TBS practitioners can be profiled and certified to offer primary health care and with little support from the government,. This will empower them more and even encourage more citizens to seek the services for which they have been registered.

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