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Case Study

The role of tradomedical centres in road accident victims rehabilitation: A case study of Minna, Nigeria centres

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General bone problems and backaches is as old as man on earth and it use to be associated with old age. But bone related problems nowadays are more of accident causation globally. The competition occurring between the traditional and orthopedics hospital on patients with bone related problems call for harmonization in the furtherance of the "health for all" goal of MDG, hence the emergence of the name 'tradomedical'. This study investigated the role of the bone setters in the rehabilitation of accident victims with dislocation and bone fractures in Minna, where there is dearth of modern bone specialist institutions and personnel. Six tradomedical bone setters centre were surveyed and found to be relatively cheaper, socio-culturally acceptable and accessible. The study find out that 60% of accident victims with bone fractures find their way directly to bone setters centres, 30% left orthodox hospital after bodily healing to bone setters, while only 2% left those bone setters to orthopaedic hospital in other parts of the country. It is therefore recommended that the government, NGOs and CBOs should assist the tradomedical practitioners in building a more hygienic environment and calibration of their concoction for proper integration and co-recognition in the health delivery sector.

Key words: Bone setter, orthopaedic, rehabilitation, road accident, tradomedical.

INTRODUCTION

Traditional medicine has been the approach or method of medicine that is customarily basedon the application of herb concoctions and they are therefore referred to as herbalists. They use herbs to cure many diseases and management of bone therapy. Akubue (1995) defined phytomedicine(phytobiophysics) as an aspect of health care delivery process which emphasises rational exploitation and utilization of plant based resources such as herbal preparations and infusions made from bark oftree stem, leaves and roots. Alternative medicine which is synonymous with tradomedical is defined by David (1997) in his write-up as medical interventions that are neither taught in medical schools nor generally available in hospitals.

Okafor (1995) is of the opinion that accurate identification of the most useful plants is needed and thatproper harvesting methods should be used to eliminate destructive exploitation. In particular, herbal

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plant merchants should be given proper orientation on how to conserve herbal plants. It has been recommended that for the sustenance ability of ethno-medical research and developments, there is the need to recognize that plant resources must be conserved through aggressive cultivation and anaction plan on how to document available medicinal plants which serve the traditional healers and the formation of organized groups of rural people for the protection of bio-resources.

A Managing Director, Abllat Company Nigeria Limited - makers of Yoyo Bitters - MrAbiolaOluwatobi noted that the traditional medicine sub-sector had created several jobs for youths in the country and would become a top source of foreign exchange for the nation if the government creates an enabling environment for it to thrive as also opined by Micheal (1993). He debunked the insinuations that traditional medicines practitioners are illiterate herbalists, saying most of his company's employees are qualified doctors and pharmacists who produce products of international standards in a clean environment. In fact, according to James et al. (2009), in recent times, alternative medicine has been growing in popularity and getting increasing attention and interest, but as documented in the Traditional Medicine Policy and Regulatory Framework (Ossy et al., 2010; WHO, 2001, 2006, 2010; BDCP, 1995; Anthony, 2011), there are currently 107 registered herbal medicines in Nigeria, none is listed on the essential drugs list.

There are some tradomedical bone setters in Nigeria, most especially in Lagos where many road accidents victims especially the motor cyclist popularly known as 'okada' seek treatment. In fact, the name B P Frank Trado Medical Orthopaedic Clinic rings bell in Ajegunle area, Ikorodu road, of Lagos state. Well-to-do people and highly placed in society patronized such centres, according to Saturday Vanguard news paper (5th August 2011).

Backache is one of theclaimed ailmentsown by the physicians, surgeons, orthopedicians and even the neurosurgeons, not to forget the chiropractors and osteopaths too. But it all depends on the patient, where ever he may stray over and a lot of factors influence their decision. Traditional bone setting is a secret that is zealously guarded and oils and herbs that are used vary from country to country.

BACKGROUND OF THE STUDY AREA

Minna, the present state capital of Niger State derived its initial growth following the opening of the Kano-to-Baro railway (1911) and the extension of the Lagos-to-Jebba line (1915) to a junction in Minna, the town became a major collecting point for agricultural products. Geographically, the town lies between latitude 9° 38' - 9° 45' N and Longitude 6° 33' - 6° 39' East, and is about 135 km away from Abuja, the Federal Capital Territory (FCT), Nigeria south-west. According to Basher (2001), the Town experienced a growth rate 7.9% within the first period of Niger State creation which is far above the national population growth rate of 2.83% given by the National Population Census of 1991.

Historically, the Ghagyis (Gbaris) who are the first settlers of the town are known for their annual festival that involve spiritual ignition and spreading of fire called Mi-na (later changed to Minna) on their hill top settlement. Traditional healers called 'Boka' thrived a lot among them to the extent that even in the present dispensation, Gbagyi people still practice their 'Knunu' and still patronise the 'Ashigbeda' despite their romance with the two missionary religions, although, the continuous influx of immigrants into the town for socio-economic and political reasons have aggravated the volumetric traffic flow and road related hazards within the township. Also, the continuous distribution of motorcycle by both government parastatals and NGOs to workers and youths as palliative measures, for poverty eradication and youth empowerment have worsen the situation, hence the need for studies like this.

Aim and objectives of study

The aim of this study was to assess the relevance and efficiency of the tradomedical bone setters in the rehabilitation of accident victims for better symbiosis in the health delivery policy in Nigeria. And this is to beachievedthrough the following objectives:

1. Assess the frequency and severity of road accident with bone fractures in Minna,
2. Identify and examine the activities of the existing traditional bone setters in the town,
3. Assess the factors that influence the choice of treatment centres by accident victims with bone fractures and,
4. Examine the relationship that exists if any, between the modern hospitals and the traditional bone setters.

Methodological approach of the study

Studies of this nature generally require the use of both primary and secondary data collection technique. Direct personal observation and oral interview was conducted on the patients and operators of the six identified traditional bone setters' centres in the town to collect information on mode of operation, years of experience and rate of patronage. Table 1 shows the location of the six centres and their practitioners.

Secondary datawere sourced from Minna General Hospital and Ibrahim BadamasiBabangida Specialist Hospital that mostly handle such cases. Materials were also sourced from the annual report of the Federal Road Safety Corps (FRSC) and the Traffic Unit of the Nigeria Police Force Minna Command. Other relevant agencies and literatures were also consulted.

Table 1. Locations of traditional bone setters in Minna Metropolis.

S/N	Location	Name of practioner	Commencement year
1	Limawa	Alh. Bawa	1920
2	Mekira	Alh. Bello	1900
3	Ekpagi	Ibrahim Mohammed	1980
4	Bosso	Mal. Muasu	1960
5	Matunbi	Alh. Muhammed Abdul	1980
6	Gwada	Mal. Usman	1900

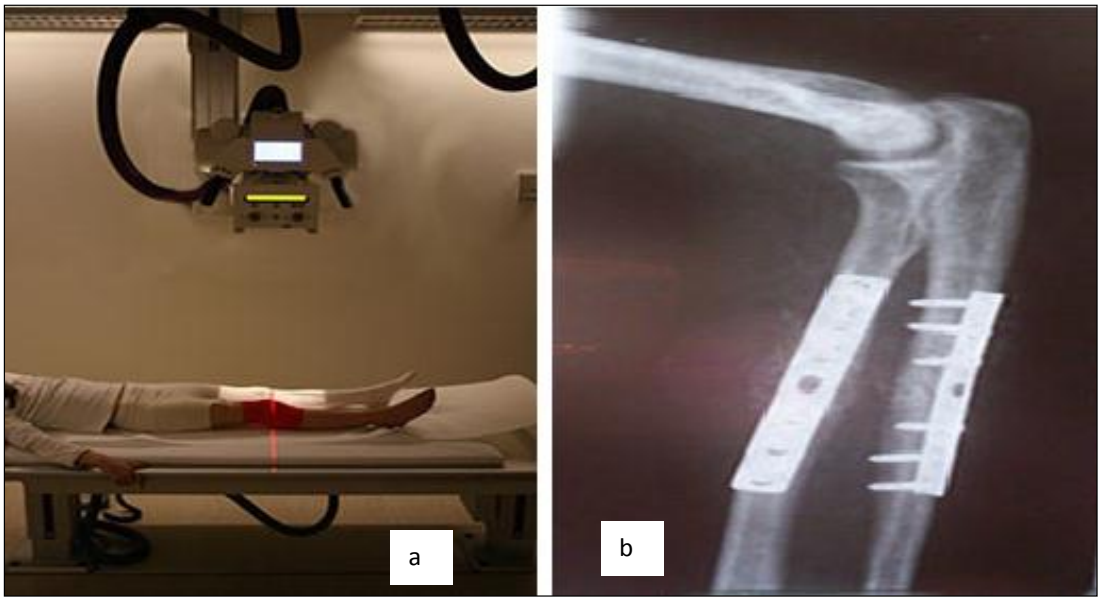

Figure 1. a. Radiography to identify eventual bone fractures after a knee injury.b. Orthopaedic implants to repair fractures to the radius and ulna.

REVIEW OF RELEVANT LITERATURE

Literature has it that many developments in orthopedic surgery resulted from experiences during wartime. On the battlefields of the Middle Ages, the injured were treated with bandages soaked in horses'blood which dried to form a stiff, but unsanitary, splint.Originally, orthopedic surgery was restricted to the correcting of musculoskeletal deformities in children.Arthroscopy is believed to have been pioneered in the early 1950s by Dr. Masaki Watanabe of Japan (1911 – 1995) who perform minimally invasive cartilage surgery and reconstructions of torn ligaments (Medical Health Central, 2015). Arthroscopy helped patients recover from the surgery in a matter of days, rather than the weeks to months required by conventional, 'open' surgery. While Arthroplasty on the other hand is an orthopaedic surgery where the articular surface of a musculoskeletal joint is replaced, remodelled or realigned by osteotomy or some other procedure. It is an elective procedure that is done to relieve pain and restore function to the joint after damage by arthritis or some other type of trauma. As well as the standard total knee replacement surgery, the uni-compartmental knee replacement, in which only one weight-bearing surface of an arthritic knee is replaced, is a popular alternative (see Figure1a and b for medical surgery operation) (Weiss et al., 2014; Weiss and Elixhauser, 2014).

Tradomedical operations

Khapatcchi is a word commonly used by Indian bone setters for a variety of splints made from recyclable materials. These bone setters knew their anatomy well and treated with utmost caution. There were complications which an over enthusiastic bone setter caused but such incidents were not uncommon with qualified orthopedic surgeons too. The bone setters were available on the narrow streets of Muslim quarters of Old Gwalior.

Back ache was also treated as documented in colonial literature by a lithesome lady dancing on her heels over

the back of a patient while holding on to a tree trunk. The right amount of pressure which is needed to pop in the disc was known to these beautiful qualified well endowed women. The Roman Physicians used the 'Feather Treatment' by tickling the back with a feather and sponging alternatively with hot and cold water. Lower back ache was a regular post orgy phenomenon in the days of Julius Caesar.

Delhi has the largest number of bone setters in India. In fact there is a street leading to the Cargo Section of the airport that is lined with shops of bone setters jostling with cargo offices. Most of them have a picture of a well muscled man showing the many ways he can treat the pathological bone. At the end, it is always written 'ShartiyaIllaj', which means guaranteed treatment. The bone setting tradition in India has always a relationship with the sport of wrestling. The wrestlers know the fine art of manipulation of sprains and strains and therefore they are also called Ustad.

In Mongolia, bone setting in is a very interesting subject. Soon after an accidental bone fracture or a dislocation of a bone, the Mongols think about nothing else than approaching the "Bariachi", a bone setter, who has no medicines and no surgical instruments. The Bariachi just holds the fractured or dislocated part of the sufferer's body with his or her own hands, twisting it here and there, for some time, without any pain on the patient. This born healer, who is just a lay man, neither spells any charms nor performs any rituals, but will then advice the patient to take some rest. These bone setters cure bone disorders perfectly. After the treatment, there will be no complain at all, however serious the injury may be. The injured person will be normal soon after getting such a treatment.

The strange thing about this treatment is that these healers have neither any medical knowledge nor do they know any charms or magic. They are just ordinary lay persons having no training of any kind. They are born as bone setters. Their hands work as magical instruments. Such healers come from a family of traditional bone setters. Their sons and daughters are all bone setters. At times, the children of such a family do the same work as their elders. But generally they do not allow their young children to practice bone setting, as they do the treatment on contract, like a business. If the case is serious and the patient is wealthy, they will demand more money for the treatment. Otherwise, they are quite generous and do not take any fee from a poor person. But if a wealthy person does not pay adequately, the treatment may be defective. In this case, it is not possible for the patients to approach another such healer, because, according to their professional rule, no one can interfere with a case which is dealt with by another traditional healer. So, a Mongolian knows very well that he has no alternative but to pay whatever the bone setter demands, if he wants to be cured perfectly.

It is not surprising to know that the actual art and science of bone setting may have trickled down the Silk Route. Mughal armies is said to have brought this technique with them as they came to India invading from the north. The knowledge of manipulation and healing was well known since centuries. When the British occupied India, they found a well reinforced orthopedic system in perfect practice. Medical practitioners attached to the East India Company picked up this art.

Howe et al.(2006, 2009) recognized the fact that some individuals, wholly uneducated in other respects, may acquire wonderful dexterity in reducing luxations. Among the famous bone-setters of history are several members of the Sweet family, of Rhode Island, and Kittredge, of New York (Vitals, 2015), all of whom reduced luxated bones by manipulation processes alone when physicians and surgeons were clinging to cumbersome methods and apparatus(see Figure 2 for a typical surgical operation in the orthopedic theater).

Natural bone-setters are not without ability; they have not practiced their arts for years and learned nothing. But, to say that they can rival an experienced surgeon in the successful manipulation of dislocated, sprained or anchylosed articulations is to be ready to champion the marvellous upon a slight provocation. A regular practitioner of little experience in bone-setting, though he be a fair anatomist, cannot handle a luxated limb as expertly or adroitly as a bone-setter of large experience; and here comes the opportunity for a contrast which exalts the specialist, and reflects upon the educated physician. The latter fails to reduce a luxation through lack of experience, and the bone-setter comes in and succeeds; the quack has beaten the skilful surgeon. This may not be credible; the confident bone-setter has been victorious over an inexperienced practitioner, in fact many believed they are unbeatable (Balogun and Amagiya, 2011). In ordinary life a graduate in medicine, obstetrics and surgery passes as an expert in all the various branches, yet may be a poor representative of either.

Once one did not know much about the manipulating plan of reducing dislocations, it always creates an excellent opportunity for bone-setters to ply their arts. At present, every practical surgeon knows all about a joint, and rarely, if ever, fails to reduce a luxated bone in a few minutes. The kinds of dislocations are now compared one with another, and each is known to yield to a definite manipulative effort. With a patient insensible from the effects of an anaesthetic, the average practitioner may, by varied trials, reduce a dislocation of the shoulder; but if the injury be displacement of the long heads of the biceps from the bicipital groove, the random pulling and hauling may fail, and the bone-setter my also fail; as he is not up to the specialties in diagnostic skill.

The experienced surgeon, however, recognizes the supine and flexed state of the forearm, the tense condition of the biceps, and the fact that the head of the humerus is not out of the socket, though the scapulohumeral articulation be somewhat restricted in its

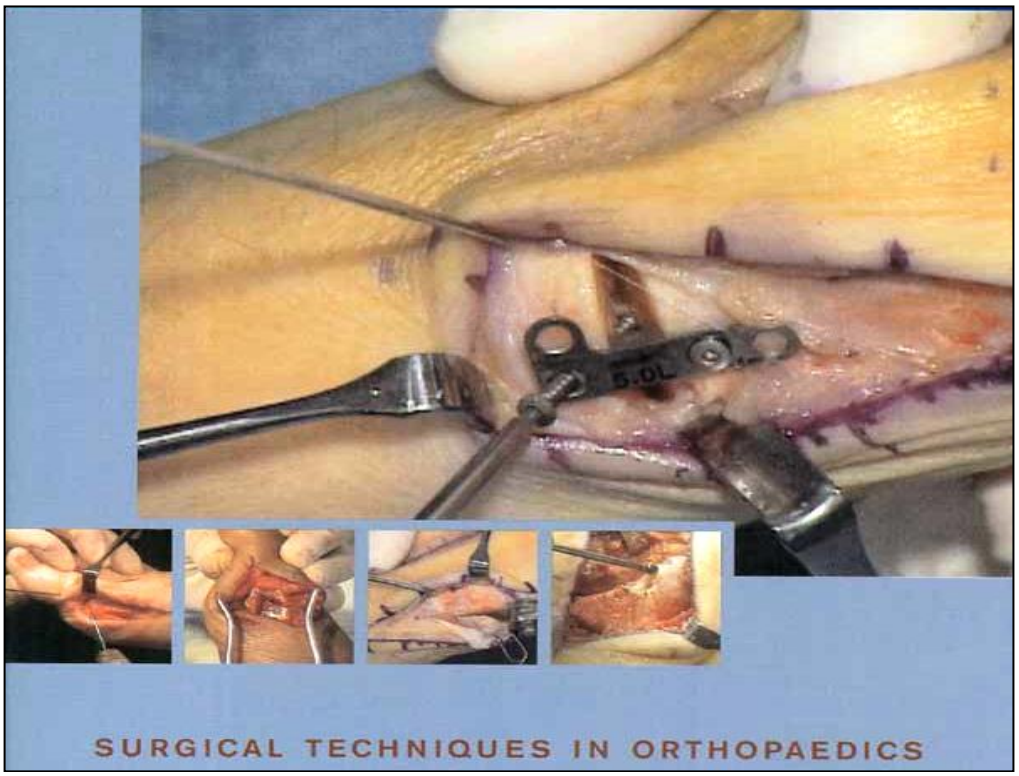

Figure 2. Typical surgical operation in the orthopaedic theatre.

range of motion. By utilizing the method of exclusion, the surgeon arrives at a conclusion- there is no fracture, no dislocation and more than a sprain- what, then, is the trouble? Is the long head of the biceps displaced? It is possible; evidence of the lesion cannot be excluded, and may be speculated upon- may be subjected to a test. While the forearm is flexed and the arm is forcibly revolved inwards and then outwards, the displaced tendon will be forced out of its new position, to fall into the groove it has left. But the surgeon cannot determine whether he is to rotate the arm- the humerus- inwards or outwards? In a fleshy limb in most cases, the point cannot be determined by outward palpation, though the attitude of the limb may help in the differential diagnosis.

ACCIDENT RATE IN MINNA AND BONE SETTERS ACTIVITIES

Accident occurrences in Minna are more of human error than vehicular or environmental factors. Some major intersections like Shiroro junction and other areas like Paiko road have recorded high frequency of road crashes. Before the banning of commercial motorcycle (okada, achaba and going) in the state capital, frequent knock down of commercial motorcycle riders due to reckless riding are common occurrences along the major roads in the town. In fact, the accident ward in the general hospital is nicknamed Chinchen ward after a motorcycle model. Table 2 clearly reveals the trend in road accident in Minna metropolis for four years. Vulnerability to natural hazards and transport related accidents is on the increase globally demanding for appropriate remedies (Blakie et al., 1994). There seem not to be a clear trend pattern in the number of accident except that total accidents tend to increase, hence the thriving of those tradomedical personnel in bone setting.

Operational activities of the bone centre

Tradomedical bone setting activities is a hereditary skill that does not require any formal educational, and the operation is as old as the community themselves. Individuals discover his/her skill when challenges of domestic accident involving dislocation occur.

In terms of operation facilities, they all carry out their treatment with the use of common tools like; guinea corn stick, cotton wools, chickens' fat and oil, coconut oil, bandages and many undisclosed items because of secrecy (Figure 3). It is discovered that any complicated or compound fracture cases are sometimes referred to orthopaedic centres. The centres have the problem of record keeping of patient since they partially operate on humanitarian bases. However,Table 3 gives some of their details in terms of key operators and frequency of operation.

Table 2. Accident record in Minna metropolis (2010 – 2013).

S/N	Months	2010		2011		2012		2013	
		No. injured	No. killed	No. injured	No. killed	No. injured	No. killed	No. injured	No. killed
1	January	22	2	15	1	16	0	32	5
2	February	45	14	6	4	14	1	42	11
3	March	14	2	23	1	5	3	39	1
4	April	27	2	11	4	23	10	49	1
5	May	20	4	34	14	16	13	27	2
6	June	16	17	25	2	12	4	25	0
7	July	36	15	7	1	21	2	10	2
8	August	10	1	14	0	41	8	19	3
9	September	35	8	17	4	50	6	25	0
10	October	15	2	13	1	69	21	33	0
11	November	24	2	18	0	7	1	19	2
12	December	13	0	-	-	40	2	73	0
Total		277	68	183	32	314	71	393	27

Source: FRSC Research and Statistics Department Minna Command (RS 7.2).

Figure 3. The sticks (guinea corn stick) use in stretching the fracture point.

Table 3. The six major tradomedical bone centres in Minna.

Question	Neighbourhoods/wards					
	Limawa	Makira	Ekpagi	Bosso	Matunbi	Gwada
Years of establishment	1920s	1900s	1980s	1960s	1980s	1900s
Name of the practitioner	Alh. Bawa	Bello	Ibrahim Mohammed	Mal. Muasu	Alh. Muhammed Abdul	Mal. Usman
Mode of operation	Daily/home services	Daily/Home services	Daily/Home services	Daily/Home Services	Daily/home services	Daily/ home services

Table 3. Contd

Number of patient per week	20	30	60	30	40	10
Complication per month	-	-	1	-	-	-
Direct from accident scene or indirect	Both	Both	Both	Both	Both	Both

Source: Field Survey 2014.

Figure 4. Patients receiving treatment at Alh. Bello centre after author crash.

Advertisement of centres is been carried out naturally based on the level of success recorded over time. Admission of clients is generally based on humanitarian tendencies where charges are not fixed, but charges depend on the ability of the clientto pay.Some of these centres receive over 60 patients in a week mostly from motorcycle crash (Figure 4). Since the whole trade is on humanitarian bases which also affect their revenue generation, there is no standard building structure to house the clients hence the call for assistance from government and NGOs (Joseph, 2012).

Findings

Traditional bone setting activities in Minna can be said to be thriving in the face of modern orthopaedic specialist within and around the state, the levels of human deformity resulting from road crash is of major concern. The following are some of the major findings of the study:

1. That accident rate in Minna is on the increase even though the death rate appears to be decreasing.
2. The major intra-urban road crash with bone fracture issues is more in motorcycle collision with cars. In fact, some general hospital wards are called ‘ChinchenWard’.
3. That traditional bone setting activities in Minna is hereditary as in other parts of the world and that all the family members contribute to the success of the profession.
4. That people with bone problems often oscillate between hospital and local centres depending on the rate of recovery from the accident. Although pathetic cases that require amputation end up in modern hospitals.
5. That the treatment charges at the modern hospitals often put-off many accident victims with bone issues thereby encouraging more patronage of local centres.
6. The local bone treatment centres lack standard building structure and environmental hygiene. This may not be unconnected with their poor revenue generation from clients.

7. It is also very obvious from the study that the local bone setters hardly receive any direct assistance from the government to bust their operation in other to fully complement the modern hospitals treatment.

CONCLUSION AND RECOMMENDATION

Traditional bone setting is as old as human settlement that has resisted all challenges from modern technological development. The skill is hereditary with some tutelage of the young ones within the compound over the years. An earlier study in Nigeria by Osujih (1993) also reported that in developing countries where in addition to the dearth of orthodox medical services, institutions and personnel, African tradition medicines are cheaper, socio-culturally accessible and acceptable. Although modern education and socio-vices seems to be threatening its hereditary characteristics where youths no longer stay at home nor value such things. The operation has stood the test of time which must be admitted and strengthened by all through human capacity development (Becker, 1962). The following recommendations are therefore put forward based on these findings:

1. The traditional bone setters should be encouraged to standardize their operating centres for better habitability. This may involve soft loan and other aids.
2. Certification at national and regional levels for practitioners and the organization of Mandatory Continuous Development Programmes (MCDP) will be necessary for standardization of operations.
3. There should be more collaboration between the modern and local bone setters for effective management of patients rather than witch hunting and indirect hostile competition.
4. That 30% left orthodox hospital after bodily healing to bone setters, while only 2% left those bone setters to orthopedic hospital in other parts of the country.

Conflict of interests

The author(s) did not declare any conflict of interest.

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