



**HEALTH SEEKING BEHAVIOR FOR MUSCULOSKELETAL INJURIES AMONG RESIDENTS OF
A RURAL COMMUNITY IN NORTH WEST NIGERIA**

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ABSTRACT

Musculoskeletal injuries are the second largest contributor to disability globally. These injuries require immediate and appropriate care for good outcomes. Care by traditional bone setters (TBS) often result in treatment failure and life-threatening complications. This study assessed health care seeking for musculoskeletal injuries among residents of Biye, a rural community in Kaduna State, North-West Nigeria. This was a cross-sectional descriptive community-based study of 196 adults who consented and were interviewed using a pretested interviewer administered questionnaire. Data on socio-demographic characteristics and treatment history of musculoskeletal injuries were collected and analysed using IBM SPSS[®] software version 23.0. The age group 18 to 24 years predominates, 97 (49.5%) with mean age of 28 ± 9.3 years. There were 136(69.4%) males. Secondary education was the highest level of education attained by 70 (35.7%) and 74(37.8) were subsistent farmers. Forty-four (22.5%) have had injuries where 36 (81.6%) patronized TBS. Patronage of TBS was due to belief in effectiveness of the service 23(64.5%), cheap service 21 (59.2%), proximity 20(56.6%), and sponsor or family influence 15(41.4%). Hospital visit was because treatment involved use of imaging and multiple injuries 3(37.5%) or fear of complications 2(25%). Injuries predominate among young adult males, with high patronage of TBS mostly influenced by family and treatment sponsors. Public health enlightenment on dangers of TBS patronage and correction of misconceptions about orthodox care are necessary.

Keywords: Health seeking, musculoskeletal injuries, traditional bone setters, Nigeria

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INTRODUCTION

Musculoskeletal injuries are a major public health problem and cause a large burden of disability and suffering globally. From 1990 to 2010, the percentage of all disability adjusted life years (DALYs) lost due to musculoskeletal disorders increased from 4.7% to 6.8%. They are ranked as the second largest contributor to disability globally [1]. Musculoskeletal injuries often result from diverse causes; however, in sub-Saharan African countries, road traffic crashes and other accidents remain the most common causes [2, 3]. Other causes include falls, assaults and domestic accidents that could occur within the homes [4].

These injuries require immediate and appropriate care to avoid complications and to assure good functional outcome. In Nigeria, 85% of patients with fractures reported having used the services of Traditional Bone Setters (TBS) [5]. Nonetheless, complications such as non-union, infection, and gangrene are often reported after TBS treatment [5, 6]. Traditional medical practice has been in existence for a very long time. Traditional bone setting, a specialized aspect of this practice, is commonly available in many developing countries of the sub-

Saharan Africa including Nigeria [5, 7]. Despite the much recognized growth in orthodox health care sectors across Africa following the advances in technology and medical research, traditional medical practitioners, and especially traditional bone setting for care of musculoskeletal injury enjoy high patronage from majority of the population [6, 8, 9]. Some reasons attributed to this high and continued patronage may be the increasing burden of musculoskeletal injuries from road traffic accidents (RTAs) as well as other domestic accidents. These RTAs as well as the domestic accidents result in musculoskeletal injuries, thus the attendant need for musculoskeletal care [2, 10]. Other reasons may be the easy accessibility of people in the region to traditional bone setting (TBS) services rather than orthopaedic hospital for proper care. The access includes in term of geographical location, financial and cultural factors [5, 6, 11–13].

Traditional bonesetters (TBS) are specialist in traditional medicine; they are lay practitioners with little or no formal schooling. These TBS have no training in accepted medical practice and acquire knowledge through paternal generational passage, in some cases, through apprenticeship from unrelated persons or neighbours [12]. These practitioners recruit

patients by word of mouth and usually from their surrounding area [12]. The TBS's practice is without the basic knowledge of anatomy and physiology, usually done without recourse to radiological imaging and lacks the principle of infection prevention and control. This results in many failures and complications, some life threatening. These complications include acute compartment syndrome, non-union, mal-union, joint stiffness, contractures, gangrene, chronic osteomyelitis, tetanus infection, amputation and death [6, 8, 14, 15].

Injuries are indeed a public health problem in developing countries. The human suffering, social and economic, that emanate from associated disabilities calls for a critical appraisal of the options of care and management strategies of musculoskeletal injuries, as well as the influencing factors as it is apparent these practitioners enjoy high patronage from the Nigerian population despite their shortcomings. This study assessed the choices of treatment for musculoskeletal injuries and related factors among residents of Biye, a rural community in Kaduna State North-western Nigeria.

MATERIALS AND METHODS

Study area

The study area was Biye, a rural community located in Giwa local government area (LGA) which is one of the 23 LGAs in Kaduna State, North-western Nigeria. The community is located about 6 kilometres from the Ahmadu Bello University Teaching Hospital, a highly specialized tertiary health facility. The community has five distinct Unguwa (settlements), each having a head referred to as Mai-Unguwa. The population of Biye is about 2290, the people are predominantly Hausa speaking Muslims who engage in subsistence farming and animal rearing activities. There is a public primary health care facility manned by community health care workers that provide basic treatment for common ailments.

Study design and sample estimation

A cross-sectional descriptive community-based study of adult members of the community was carried out. The sample size was calculated using the Cochran formula [16]; at 95% Confidence Interval and 5% level of precision and p , the proportion of those who sought for TBS care following injuries from a previous study which was 85% [17] an estimated sample size of 196 was obtained.

Ethical clearance

Permission was obtained from the LGA authorities, the community leadership and heads of households in the community. Ethical approval was obtained from the Ahmadu Bello University Teaching Hospital Health Research Ethics Committee and information about the study was provided to each respondent,

following which verbal informed consent was obtained from each respondent.

Sample collection and analysis

A total of 196 respondents were interviewed. In each settlement, the starting house was that of the Mai-Unguwa, thereafter, every other house with eligible respondent was selected until the desired sample size was obtained. Where there is more than one eligible respondent, only one was selected through simple random sampling. A pretested semi-structured interviewer administered questionnaire was used to collect data from respondents, information elicited on respondent's socio-demographic characteristics, awareness of treatment for musculoskeletal injuries, personal history of musculoskeletal or bone injuries and type of treatment sought whether TBS or orthodox care. Factors that influenced their decisions for the type of care sought were also elicited and whether or not they will recommend such treatment for others in the future and their reasons for such recommendations. The data was analysed with IBM SPSS® software version 23.0. Tables were constructed and cross tabulations of variables were done, results were analysed and presented on tables.

RESULTS

A total of 196 copies of the questionnaire were administered and all were completely filled. This gave a response rate of 100%. The mean age of the respondents was 28 ± 9.3 years. The predominant age group was 18 to 24 years old 97(49.5%); most respondents were males 136(69.4%). The highest level of education attained by majority of respondents was secondary 70(35.7%) closely followed by those who had no formal education 66(33.7%). Most commonly practiced occupations were farming 74(37.8) and trading 70(35.7) [Table 1].

A total of 44 (22.5%) individuals had personal histories of injuries giving a prevalence of 22.5%. The pattern of musculoskeletal injuries showed Road Traffic Injuries (RTAs) as the most common cause, others were falls, domestic accidents, sports injury and injuries sustained from physical assaults [Table2]. Majority of the respondents 36(81.6%) of those who had history of injury sought for care from TBS, the rest visited an orthodox health facility for care [Table 3].

Most respondents in this study, 166 (84.7%), will advise others to seek for care from the TBS, while about half of them, 160(57.1%) believe TBS provide best care for musculoskeletal conditions [Table 3].

Reasons for seeking care from the TBS include belief in effectiveness of the service 23(64.5%), relatively low cost of service 21(59.2%), close location of service 20(56.6%), advice from sponsors or other family members 15(41.4%) as well as spiritual connotations attached to the service provided 6(17.2%). On the other hand, reasons given

for seeking service from hospital were belief in the effectiveness of the service 5(62.5%), influence of sponsors, family or friends 3(37.5%), treatment involved use of imaging 3(37.5%), multiple injuries 3(37.5%), presence of open wounds and fear of complications 2(25%) [Table 3].

Even though there was a preponderance of males of younger and productive age group, test of association did not reveal a statistically significant association between age, sex and other Sociodemographic variables with the choice of options of care among respondents [Table 4].

DISCUSSION

In this study, 81.6% of respondents who were injured had sought for care from TBS. The respondents were predominantly male and in the productive age of the population. This further confirms that injuries mostly occur among young and active age males due to their involvement in injury prone activities. This is similar to findings from other studies where males are more affected than females due to their levels of activity [3, 13, 14, 17, 18]. This age group affected makes up the productive part of the community population, their resultant injuries puts them at risk of patronage of care from TBS with its attendant complications which may result in reduction in productivity and resultant reduction in community wellbeing.

Almost all respondents in the present study knew about treatment for musculoskeletal injuries provided by TBSs, their major sources were word of mouth from friends, family and members of the community as well as the media. This is similar to findings from literature where uncontrolled pronouncements by traditional medical practitioners on the radio and recommendations by family and community members through word of mouth communication largely contribute to the awareness of availability of care for bone injuries by TBS [12, 18]. This enables cultural and geographical accessibility, hence increasing patronage of TBS for musculoskeletal injuries with the attendant negative outcomes.

Decisions to patronize TBS by persons who had injuries were largely influenced by their belief in the effectiveness of the care provided 64.5%, this is further buttressed by the opinion of other members of this community, 57.1%, who even though have not received care from TBS but believe them to be competent. Findings documented by researchers in Makurdi, north-central Nigeria and Calabar, south eastern Nigeria show 14.3% and 20.3% of respondents believe in the superiority of TBS over orthodox practitioners [11, 19]. This erroneous belief that is deep seated in the culture of people may continue to contribute to popularity of the TBS practice, thus ensuring high patronage with resultant complications that further contribute to human suffering. On the contrary, 48.4% of the 90 patients seen at an outpatient

clinic in another study in Tanzania reported negative perception of traditional providers, with most occurring reasons as lack of competency and trust of the TBS. Clients believe that the TBS are not useful and the practice of TBS is unsatisfactory [20]. This may be as a result of difference in study population; the respondents from the present study are drawn from the community while those from the Tanzanian study were patients who had been to the TBS before presenting to the hospital as a result of complications or even dissatisfaction with outcome of treatment by TBS.

Perceived low cost of TBS care was seen as an important factor which influenced patronage of TBS care among respondents in this study. There was predominance of secondary education and absence of formal education among respondents, while their occupations were largely subsistent farming and petty trading. This suggests that majority of respondents lack financial independence or mostly low-income earners, hence, opting for TBS care to avoid catastrophic expenses for health. This finding is quite similar to reports from other authors within Nigeria [11, 13, 14].

Advice from family and friends and especially sponsors of treatment influenced decision to patronize TBS among 41.4% of respondents with injuries. The opinion of other family members who may be involved in payment for care as well as suggesting where treatment is sought is an important practice observed among African societies. Other authors have found that relatives play such important roles in treatment of injuries [3, 9, 11]. About 14.2% of respondents were afraid of losing their limbs to amputation hence they opted to obtain treatment from TBS. The wrong belief that only amputations are offered in orthodox facilities is still widespread, similarly reported in other literature, as 10.8% fear amputation [11].

In Nigeria, more than 80% of patients present to hospitals following visits to TBS and resultant failed treatments or complications [14]. Unknown to their clients, the TBSs' intervention due to underlying inadequacies lead to limb and life-threatening complications that necessitate the limb amputations, as observed in reports from north-western Nigeria of 65.3% [15] and 38.1% [21] in Kano and 62.5% [22] in Kebbi, among children less than 16 years of age treated by TBS.. The respondents from this study would prefer to access care from TBSs for the following reasons; better attention from TBS 13.6%, long hospital waiting time 22.7%, fear of surgery and insertion of foreign body 16.3%, poor attitude of hospital staff 4.3% and the perceived high cost of care 40.4%. Similar reasons were documented by a study from Ilorin, north central Nigeria where 60.4% and 71.0% believe TBS provide better and quicker attention respectively. Even more noteworthy was that most of their study respondents had attained higher levels of education with majority of them

financially independent, unlike those in the present study [13].

Thus, despite presence of factors that should encourage use of orthodox care, some authors report that high demand of TBS services exist irrespective of social class or profession [11, 13]. Several other studies have described situations where injured patients visit the hospital for orthodox care, where they get stabilized and resuscitated before leaving to seek for care from the TBS. While others go through the TBS first for some form of spiritual healing before returning to the hospital, this shows a strong driver for patronage of TBS to have cultural beliefs and undertones [3, 11, 13, 19].

This study found a predominance of musculoskeletal injuries among young adult males. Patronage of TBS for therapy was common, information about the services were spread within the community among members through word-of-mouth communication as well as radio pronouncements by the traditional medical practitioners themselves. Often, the choices of care for injuries were influenced by family, friends and sponsors. Perceived high cost and fear of amputation of limb are factors that ensure continuous patronage of TBS among the study respondents.

To ensure protection of public health, the State and Local Government Authorities need to enlighten the public on the dangers of accessing care from the TBS. At the same time, orthodox services need to be more accessible and affordable so that public utilization is encouraged. While understanding that it may be futile to attempt to totally uproot the entrenched practice of patronising the TBS, options such as understanding the services provided by TBS as well as providing training interventions in effective management, and for the TBS to recognise their limitations to reduce complications from traditional bone setting. in order to improve and or collaborate with trained medical personnel to enable better outcomes of care to the general population should be explored by the State and local government authorities.

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Table 1: Socio-demographic profile of respondents (n=196)

Characteristic	Frequency	Percent
Age group (years)		
18-24	97	49.5
25-34	37	18.8
35-44	28	14.3
45-54	24	12.3
≥55	10	5.1
Mean age = 28(±9.3)		
Sex		
Male	136	69.4

Female	60	30.6
Ethnicity		
Hausa	178	90.8
Fulani	14	7.2
Yoruba	1	0.5
Ibo	1	0.5
Others	2	1.0
Religion		
Islam	192	98.0
Christianity	4	2.0
Highest level of education		
No formal education	66	33.7
Primary	52	26.5
Secondary	70	35.7
Post –Secondary	8	4.1
Marital status		
Single	129	65.8
Married	64	32.7
Widowed	3	1.5
Occupation		
Farmer	74	37.8
Trader	70	35.7
Artisan	34	17.4
Student	8	4.1
Civil servant	5	2.5
Not gainfully engaged	5	2.5

Table 2: Causes of Musculoskeletal injuries among respondents (n=44)

Cause of injury	Frequency	Percent
Road Traffic Accident	20	45.5
Falls	11	25.0
Domestic Accident	7	15.9
Sports injury	4	9.1
Violence/assault	2	4.5

Table 3: Prevalence of injuries, care-seeking patterns and corresponding reasons by individuals who suffered musculoskeletal injuries

Variable	Frequency	Percent
History of musculoskeletal injury (MSS) (n=196)	44	22.5
Care seeking among injured persons(n=44)	36	81.6
Sought care from TBS	8	18.5
Sought care from hospital care		
TBS best treat MSS injuries (n=196)	160	57.1
Will advise others to seek care from TBS (n=196)	166	84.7
Reason for patronage of TBS*(n=36)		
The service is effective	23	64.5
Relative low cost	21	59.2

Proximity to place of residence	20	56.6
Advice from family/sponsors/friends	15	41.4
High cost of hospital care	10	27.6
Spiritual application	6	17.2
Use of local herbs	5	14.2
Long hospital waiting time	5	14.2
Fear of placement of foreign body	5	14.2
Fear of losing the limb(amputation)	5	14.2
Reason for seeking hospital care† (n=8)		
The service is effective	5	62.5
Advice from family/sponsors/friends	3	37.5
Use of imaging (x-rays)	3	37.5
Multiplied injured	3	37.5
Presence of open wounds	2	25.0
Competency of hospital staff	2	25.0
Fear of complications from TBS treatment	2	25.0
Better hygiene	1	12.5
Proximity to place of residence	1	12.5

These were multiple response questions. *There were other reasons proffered for seeking TBS care such as previous bad/difficult hospital experience, trust the Traditional Bone Setter (TBS). While for †hospital care other reasons such as fear to take traditional medications, had witnessed failure of treatment by TBS on someone else.

Table 4: Age-sex distribution and care-seeking patterns among respondents who suffered musculoskeletal injuries (n=44)

Age(years)	Sex	Place Where Care was Sought	
		Traditional Bone Setter	Hospital Frequency (%)
		Frequency (%)	
18-24	Male	11(25.0)	2(4.6)
	Female	8(18.2)	1(2.3)
25-34	Male	8(18.2)	2(4.6)
	Female	0(0.0)	0(0.0)
35-44	Male	2(4.6)	1(2.3)
	Female	2(4.6)	0(0.0)
45-54	Male	1(2.3)	1(2.3)
	Female	1(2.3)	1(2.3)
≥55	Male	0(0.0)	0(0.0)
	Female	3(6.8)	0(0.0)
Total		36(81.8)	8(18.2)

There was no statistically significant association between Sociodemographic variables and option of care for musculoskeletal injuries by the respondents. Fisher's Exact Test result showed sex ($P=0.689$), age ($P=0.428$), level of education ($P=0.229$), marital status ($P=1.000$) and occupation ($P=0.889$).