

Original Research Article

The pattern of traditional and modern bone setting among the people in a selected community in Kano, Nigeria: a comparative study

Muhammad Nuhu Salihu¹, Mamman Muhammad Lawal¹, Abuhuraira Ado Musa^{2,3},
Waheed Taoreed Adigun¹, Faisal Muhammad^{4*}

¹Department of Clinical Services, National Orthopaedic Hospital, Dala, Kano, Nigeria

²Department of Public Health, National Orthopaedic Hospital, Dala, Kano, Nigeria

³Department of Medical Microbiology and Parasitology, Bayero University Kano, Kano, Nigeria

⁴Department of Public Health, Daffodil International University, Dhaka, Bangladesh

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***Correspondence:**

Faisal Muhammad,

E-mail: fokkanya@yahoo.com

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ABSTRACT

Background: Bone setting practices contribute largely to alternative medicine almost all over the world. It's commonly accessible in large parts of rural populations. The aim of the study was to determine the pattern of traditional and modern bone settings among the people in a selected community in Kano, Nigeria.

Methods: The study was a descriptive cross-sectional type of study carried out from January to May 2019 to determine the pattern of traditional and modern bone (TBS and MBS) settings among the people residing in Kano, Nigeria. A simple random sampling technique was used to select a total of 222 study participants from the selected community. In this study, a face-to-face interview technique was used to collect the information from the study participants using a semi-structured questionnaire. The data were analyzed using a statistical package for social sciences (SPSS) 22.0 version.

Results: In this study, about 34.7% were between 31-35 years and most of the respondents (28.4%) had secondary school level of education. Slightly above nine-tenths (90.1%) of the respondents stated that TBS is more preferable than MBS and the reason for preference were fear of amputation/operation (51.0%), lack of knowledge (32.0%), the attitude of health personnel (28.0%) and fear of the application of plaster of paris (25.0%).

Conclusions: The finding of this study reveals more than half of the respondents had enough knowledge of both traditional and modern bone settings. The public should be educated about the modern method of bone setting and the complications of traditional bone setting.

Keywords: Traditional one setting, Modern bone setting, Public health, Pattern, Kano

INTRODUCTION

Evolution is the process of change in all forms of life over generations, in this process, a man has put a continuous effort into evolving practices as well as methods for improvement of his health.¹ However due to the passage of time; several arts have vanished as a result of modern medical sciences. Although the traditional bone setting

(TBS) is still in existence despite all the criticism and adversities.¹ Bone setting practices contribute largely to alternative medicine almost all over the world (more especially in the context of Asia, Africa, and South America). It's commonly accessible in large parts of rural populations.² TBS provides most of the primary fracture care in Nigeria and many developing countries across the globe.³ In many developing countries including Nigeria,

the treatment of injuries using traditional methods remain popular among the people despite the availability of modern health care services.^{4,5} In Nigeria about 90.0% of primary fracture care is provided by the traditional bone setters more especially in rural communities.^{2,6}

Traditional bonesetters are characterized to have no formal training in modern orthopedic care, although they are mostly trained by their family members as part of ancestral heritage.^{7,8} These practices lack the basic scientific principles of fracture management and infection prevention and control.⁹

In Nigeria, both traditional and modern bone settings are in existence for many decades; although they are parallel to each other. There is huge distrust as well as a sense of rivalry between the traditional and modern bone setters. Modern bone setters (orthopedists) believe that the traditional bone setters are untrained care providers; on the other way round the traditional bone-setters believe that the informal training they receive from their ancestors is superior to orthodox medicine.^{3,10}

The aim of the study was to determine the pattern of traditional and modern bone setting among the people in a selected community in Kano, Nigeria.

METHODS

Research design, period and setting

This was a descriptive cross-sectional type of study carried out from January to May 2019 to determine the pattern of TBS and MBS setting among the people residing in Zangon Dakata Community of Ungogo Local Government Area (LGA) in Kano State, Nigeria.

Target population

The target populations of this study were all the people residing in the Zangon Dakata Community of Ungogo, Kano, Nigeria. Ungogo is a Local government area in Kano state, Nigeria. Its secretariat is in the town of Ungogo to the north of the city of Kano. It has an area of 204 km² and a population of 369,657 at the 2006 census.

Sample size determination and sampling technique

The sample size for this study was calculated using the standard formula

$$N = \frac{z^2 \times p \times q}{d^2}$$

Therefore,

N= sample size, z= value of standard normal distribution (z-distribution) at 5% level of significance or 95% confidence limit (z=1.96), p= practice of bone setting= 85% = 0.85,

$$q = 1 - p$$

d= precision level (5%). Therefore,

$$N = \frac{(1.96)^2 \times 0.85 \times 0.15}{(0.05)^2}$$

A 10% non-response of 195.9 was predicted and a total of 222 respondents were recruited. A simple random sampling technique was used to select the study participants from the selected community.

Data collection and analysis

In this study, a face-to-face interview technique was used to collect the information from the study participants using a semi-structured questionnaire. Before the data collection, verbal informed consent was taken from all the study participants. The collected information was analyzed using a statistical package for social sciences (SPSS) 22.0 version. A chi-square test was performed to find the association between knowledge on methods of bone settings and socio-demographic characteristics of the study participants. A p value of ≤ 0.05 was considered statistically significant.

RESULTS

Table 1 shows that 34.7% were between 31-35 years, followed by 31.1% who were between 26-30 years and 89.2% of them were male. Most of the respondents (28.4%) had secondary school level of education, 26.1% had diploma/NCE, 23.4% had primary level of education and only 8.6% had bachelor and above level of education. About 23.0% of the respondents were government jobholders, 20.7% were unemployed, 20.3% were private jobholders, 19.4% were farmers, and close to seven-tenths (69.4%) were married.

Figure 1 shows that more than half (55.0%) of the respondents had enough knowledge on both traditional and modern bone settings, 28.8% of them had enough knowledge on traditional bone settings and only 16.2% had enough knowledge on the modern bone setting.

Table 2 shows that 56.8% of the respondents mentioned that traditional bone setting is the method commonly used in their community, 25.2% mentioned the modern method and 18.0% of them mentioned that both traditional and modern methods were commonly used in this community. Slightly above nine-tenths (90.1%) of the respondents stated that TBS is more preferable than MBS and the reason for preference were fear of amputation/operation (51.0%), lack of knowledge (32.0%), the attitude of health personnel (28.0%) and fear of the application of plaster of paris (25.0%). Little below three-fifths (59.5%) of the respondents mentioned that the traditional method is an easily accessible method of bone setting in this community, 21.6% of them mentioned both (traditional and modern) and 18.9% stated that the modern method is

a more accessible method of bone setting in this community.

Table 3 shows that the age of the respondents ($p < 0.001$), educational level ($p < 0.001$), occupation ($p = 0.043$), and

marital status ($p = 0.001$) were significantly associated with the level of knowledge on methods of bone setting. However, the gender of the respondents was not significantly associated ($p = 0.573$) with the level of knowledge on methods of bone setting.

Table 1: Socio-demographic characteristics of the respondents (n=222).

Socio-demographic variables	Frequency	Percentage (%)
Age (years)		
≤25	29	13.1
26-30	69	31.1
31-35	77	34.7
≥36	47	21.1
Gender		
Male	198	89.2
Female	24	10.8
Educational level		
No formal education	24	10.8
Primary	52	23.4
Secondary	63	28.4
Diploma/NCE	58	26.1
Bachelor and above	19	8.6
Others	6	2.7
Occupation		
Unemployed	46	20.7
Private job	45	20.3
Government job	51	23.0
Business holder	43	19.4
Farmer	12	5.4
Housewife	20	9.0
Others	5	2.2
Marital status		
Married	154	69.4
Single	26	11.7
Divorced/separated	42	18.9

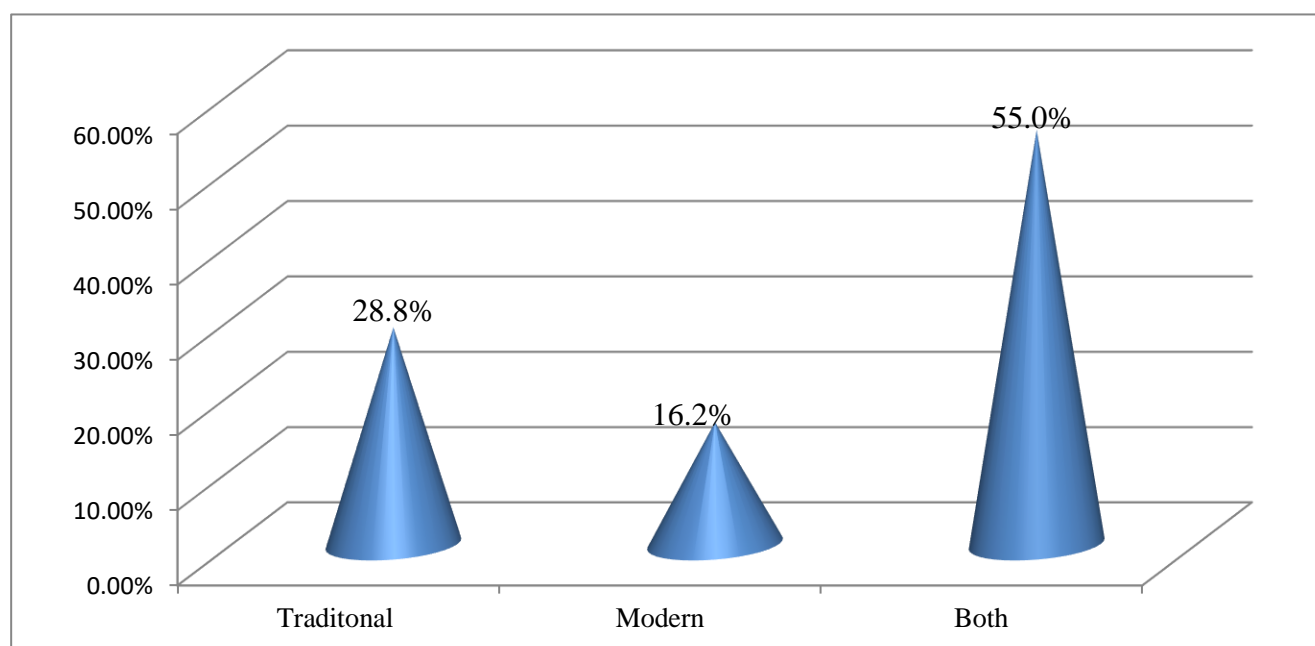


Figure 1: Knowledge on methods of bone setting (n=222).

Table 2: Distribution based on preferable method of bone setting and reasons (n=222).

Items	Frequency	Percentage (%)
Method of bone setting commonly used in your community		
Traditional	126	56.8
Modern	56	25.2
Both	40	18.0
TBS is more preferable than MBS method		
Yes	200	90.1
No	22	9.9
Reason for preferring TBS (n=200)		
Lack of knowledge	64	32.0
Fear of application of plaster of paris	50	25.0
Fear of amputation/operation	102	51.0
Attitude of health personnel	56	28.0
Easily accessible method of bone setting in your community		
Traditional	132	59.5
Modern	42	18.9
Both	48	21.6

Table 3: Association between knowledge on methods of bone setting and socio-demographic characteristics of the respondents (n=222).

Variables	Knowledge on methods of bone setting				Chi square	Df	P value
	Traditional	Modern	Both	Total			
Age (years)							
≤25	14	4	11	29	34.398	6	0.000
26-30	11	23	35	69			
31-35	19	8	50	77			
≥36	20	1	26	47			
Gender							
Male	55	32	111	198	1.113	2	0.573
Female	9	4	11	24			
Educational level							
No formal education	18	3	3	24	93.290	10	0.000
Primary	30	11	11	52			
Secondary	12	12	39	63			
Diploma/NCE	2	7	49	58			
bachelor and above	1	1	17	19			
Others	1	2	3	6			
Occupation							
Unemployed	7	2	37	46	21.553	12	0.043
Private job	14	8	23	45			
Government job	15	7	29	51			
Business holder	14	9	20	43			
Farmer	5	4	3	12			
Housewife	7	5	8	20			
Others	2	1	2	5			
Marital status							
Married	31	19	104	154	18.696	4	0.001
Single	12	7	7	26			
Divorced/separated	21	10	11	42			
Total	64	36	122				

DISCUSSION

This study determined the pattern of traditional and modern bone setting among the people in a selected community in Kano, Nigeria. More than fifty percent

(55.0%) of the respondents had enough knowledge of both traditional and modern bone settings. In Nigeria, the traditional bone setters enjoy more confidence and patronage from people than modern bone

setters.⁴ Traditional bonesetters were practicing long before the modern bone setters. It's usually passed from father to son; however, the outsiders may also receive the training through an apprenticeship.⁶ The traditional bone setting method was found to be the most commonly used method in this community as stated by more than fifty percent of the respondents; only 25.2% of them mentioned the modern method. In Nigeria there is a shortage of orthopedic surgeons, that's why the TBS is playing a vital role in filling this gap.³ A study reported that the density of orthopedic surgeons is 0.22 per 100,000 population in Nigeria which is very low compared to 9.2 per 100,000 population in the United States of America.^{3,11} Slightly above ninety percent of the respondents stated that TBS is more preferable to MBS. The practice of TBS has partly rooted in wrong socio-cultural beliefs. There are pervading sentiments and beliefs that traditional bone setting treatment is more effective than the modern bone setting.^{5,9} The reasons for preference were fear of amputation/operation (51.0%), lack of knowledge (32.0%), the attitude of health personnel (28.0%), and fear of the application of plaster of paris (25.0%). A study found that the contributing factor for TBS patronage was the aversion for implants and the fear of amputation associated with MBS.¹²

Close to sixty percent of the respondents mentioned that the traditional method is an easily accessible method of bone setting in this community. This is consistent with the finding of a similar study.¹³ Another similar finding was reported from a study conducted in Nigeria aimed to review the entire subject of traditional bone setting in Nigeria.¹⁴ In the present study; the age of the respondents, educational level, occupation, and marital status were found significantly associated with the level of knowledge on methods of bone setting. However, the gender of the respondents was not significantly associated with the level of knowledge on methods of bone setting.

Limitations

This study was conducted in a selected area in Kano State, Nigeria. Therefore, the findings of the study cannot be generalized for all settings. Limitations included the sample size and the sampling technique used in the study which had more chances of bias.

CONCLUSION

The finding of this study revealed more than half of the respondents had enough knowledge of both traditional and modern bone settings. However traditional bone setting was found to be the most commonly used method in this community and the reasons for the preference were fear of amputation/operation, lack of knowledge, the attitude of health personnel, and fear of the application of plaster of paris. The age of the respondents, educational level, occupation, and marital status were significantly associated with the level of knowledge on methods of bone setting.

Recommendations

During this research work, the researchers observed that: the public should be educated about the modern method of bone setting and the complications of traditional bone setting. There is a need for proper training and the traditional bone setters should be educated on the referral system in the case of complicated fracture. Government should increase the availability of a modern method of bone setting with the reach of the masses. There is a need for collaboration between the traditional and modern bone setters to bridge the gap between them with the ultimate goal of improving the outcomes of bone-setting treatment in Nigeria.

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