Original Article

Traditional Bone Setter's Practice, Complications; Even in 21st Century

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ABSTRACT

OBJECTIVE: To assess the factors for desiring the traditional bone setters in our community & their complications.

METHODOLOGY: This retrospective study was conducted at Department of Orthopaedic Surgery & Traumatology, LUMHS Jamshoro from February 2018 to March 2020. Total 87 cases presented at Orthopaedic outpatient clinic after appearing Traditional Bone Setters. Age group from 06 to 81 years through musculoskeletal trauma existing with complications secondary to bonesetter's treatment were included. Data was collected on predesigned proforma through record of department after approval from ERC. All the patients received traditional bone setter's handling. The data was obtained & analyzed on SPSS version 21.

RESULTS: Total 87 patients, 58(64.36%) were male & 29(33.33%) female M:F ratio 2:1. minimum age 6 years to maximum of 81 years. The mean age was 16.48±32 and 11 patients were under the age of 12 years. Regarding the level of education, 23(26.5%) were illiterate, 23(26.5%) had primary & 17(19.5%) secondary education, 24(27.5%) were graduate or with higher education. Common mode of injury was road traffic accidents reported in 69(79%), 17(19.5%) had history of falls and assaults in 3 (3.5%). Among them, 13(15%) farmers, 12(14%) businessmen, 11(12.6%) were students, 10(11.5%) Government employee, 9(10%) laborers, 8(9%) teachers, 7(8%) unemployed, 6(6.89%) housewives, 4(4.6%) doctors, 3 (3.5%) female nurses, 2(2.3%) drivers, 2(2.3%) patients were male nurses. Regarding contact to bonesetter, patients went by themselves were 7(8%), 80(92%) patients were referred by different sources.

CONCLUSION: It has been found that traditional bone setters in our community increase the rate of complications like mal-union, nonunion, and bone infections. Still people are being attracted to bone setters despite of all complications.

KEYWORDS: Traditional bone setters, Practice, Complications

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INTRODUCTION

Traditional bone setter's (TBS) treatment is skill and due to lack of public attention and non-availability of modern facilities has survived more than 3,000 years[1]. Traditional bone-setters also having a support of all classes of our community from the illiterate to the extremely knowledgeable society. In most communities, there is a general conviction that TBS is better than Orthopaedic practitioners in fractural treatment[2].

A century before, Hugh Owen Thomas, an allopathic medical practitioner started Orthopaedic treatment inherited from his forefathers. An unskilled clinician in allopathic medicine who took the experience from forefathers, had no any proper guidance in current Orthopaedics, of fracture treatment. At least 10-40% of patients with fractures and dislocations are treated by unexperienced experts worldwide. The traditional bone setter is a layman for the treatment of fracture and joints[3,4].

Eighty percent (80%) of the population on the rural areas fails to get modern treatment for orthopedic problems[5]. Studies have found, over the years that bone fracture patients transfer from their residence to the conventional orthopedic clinic for treatment. Therefore, most bone settlers use the traditional approach[6].

Bone setters use traditional method by using herbs splints and massage to manage fractures[7]. Numerous reasons to support conventional bone-setters include: simple accessibility, fast delivery, concern for implants and foreign items like musculoskeletal traction devices, ease and versatility in traditional treatment, discomfort with orthopedic community and lack of awareness regarding the new centers[8].

Ogunlusi and his colleagues have identified other preference factors. The factors include fear for metal work within and outside the limbs verses the convenience and flexibility of TBS, the familiarity with TBS and unknown to the modern Orthopaedic facility[9].

The traditional bone environment has always been practiced and is found in almost every community in

the world. The results of bone treatment are good for closed fractures, but unacceptable for open and complex fractures[7].

The use of bandages with a paste of the leaves, roots, herbal medicine made with Turmeric(Haldi) and sometimes cow dung results in worsening of the condition[1,5]. The splint content is modified every four days, so that the medicinal substance is reapplied by the conventional bonesetter and the leg is massaged, which leads to further worsening of complications[10].

The close binding splints and immobilization of the patient limb in an abnormal position act as a tourniquet, leading to venous occlusion and an interruption of the blood supply, which results in complications like Volkman's Ischemic Contracture deformity, bone and joint infection and limb threatening gangrene, which needs proximal amputation and often death due to tetanus and septicemia[11]. Since we attend the number of patients in OPDs and emergency, treated by potters ending with complications are challenging for orthopedic community. We planned to conduct a study to evaluate current practice and report their complications.

METHODOLOGY

This retrospective study was conducted in the Department of Orthopedic Surgery and Traumatology at Liaquat University of Medical & Health Sciences Jamshoro from February, 2018 to March, 2020. Total 87 following cases presented at Orthopaedic outpatient clinic after appearing Traditional Bone Setters . Age group was from 06 to 81 years through musculoskeletal trauma existing with complications secondary to bonesetter's treatment were included. Bio-data about the patient, mode of injury, reason to communication traditional bone setter with complications after being managed by TBS were obtained. Statistics as that those forced the patients attempt to TBS like family, friend or self and thought for attending to TBS like belief, cheaper service, quicker service, attitude of hospital staff, fear of surgery or infection, implant were asked. Impressions about outcome of treatment by the bone setters and finally, patient's advice to others who have similar conditions were documented and recorded into prepared pro-forma. The data was obtained & analyzed on SPSS version 21.

RESULTS

There were total 87 patients, 58(64.36%) were male & 29(33.33%) patients were female M:F ratio was 2:1. minimum age of 6 years and maximum of 81 years. The mean age was 16.48±32 and 11 patients were under the age of 12 years.

Regarding the level of education, 23(26.5%) were illiterate, 23(26.5%) had primary education, 17(19.5%) had secondary education, 24(27.5%) were graduate or with higher education.

Regarding the mode of injury, road traffic accidents was reported in 69(79%) patients, 17(19.5%) had history of falls and assaults in 3(3.5%).

Among them, 13(15%) farmers, 12(14%) businessmen, 11(12.6%) were students, 10(11.5%) Government employee, 9(10%) laborers, 8(9%) teachers, 7(8%) unemployed, 6(6.89%) housewives, 4 (4.6%) doctors (pediatrician, Gynecologist, Physician, otorhinolaryngologist), 3(3.5%) female nurses, 2 (2.3%) drivers, 2(2.3%) patients were male nurses.

Regarding contact to bonesetter, patients went by themselves were 7(8%), 80(92%) patients were referred by different sources.

Various Factors regarding preferring traditional bonesetters are described in Table I. Among them most common factor was advice by family or friends, followed by Traditional bone setter's affordability and fear of surgery. Musculoskeletal complications after bone setter treatment are mentioned in Table II. Malunion and nonunion of fractured bones were the most common complications reported.

TABLE I: FACTORS FOR PREFERRING TRADITIONAL BONE SETTERS

Factors for Referral	No. of Patients	Percentage
Relatives/friends advised for bone setters	23	13.8%
Traditional bone setter' affordable	18	10.8 %
Fear of surgery	18	10.8%
Delay of treatment in Government hospitals	14	8.4%
Fear of metallic implant	13	7.8%
Traditional bone setters are easily available	11	6.6%
Relatives/friends going to bonesetters	11	6.6%
People have greater faith in bone setters	9	5.4
Referral to hospital which was far away	8	4.8%
Not satisfied with hospital treatment	7	4.2%
Traditional bone setters are more reliable	7	4.2%
Fear of amputation	6	3.6%
Quick service of bone setters	6	3.6%
Poor attitude of hospital staff	5	3%
Fear of cast with plaster of Paris	4	2.4%
Fear of tertiary hospital	4	2.4%
Brought to bone setters against patient's wish	2	1.2%

TABLE II: MUSCULOSKELETAL COMPLICATIONS AFTER BONE SETTER'S TREATMENT

Complication	Fre-quency	Percentage
Malunion	24	27.58%
Nonunion	15	17.24%
Osteomyelitis	7	8%
Cellulitis	5	5.7%
Osteoarthritis knee following intra-articular fracture	5	5.7%
compartment syndrome	5	5.7%
Unreduced chronic dislocation	4	4.6%
Septic knee	4	4.6%
Avascular necrosis of femoral head	3	3.4%
Gangrene of limb	3	3.4%
Gangrene of digit	3	3.4%
Unreduced physeal injuries	3	3.4%
Septic hip	2	2.3%
Volkmann's ischemic contracture	2	2.3%
Myositis ossificans	1	1.1%
Total	**87**	**100%**

DISCUSSION

The practice of traditional bone setter was long before the modern orthopedics was emerged in the developing countries.[12] Complications emerging from the treatment of TBS are challenging for Orthopaedic specialists**.**

In our study males were enormous in number that attend traditional bone setter for Orthopaedic issues. The mean age was 31.17 years with S.D 16.48 that shows predominate young adult patients are more injured and seeking more towards TBS. It is surprising in this study, that majority of literate patients 77% received treatment from TBS including senior doctors. Similar results were shown in a study conducted in India[1].

Based on our study results, education and occupation was not a criterion for the choice of modern treatment by a qualified Orthopaedic surgeon or by a TBS. Most of the patients wish to seek TBS on basis of very low-cost treatment as mentioned in Table I. These results also support published by other studies on TBS[13-16].

In this study, the contact with TBS by patient was referral through others which is 92% as compared to self-contact which is only 8% which contradict to another study[17].

This result is similar to a study that about 41% individuals from the West Indies approached for the management to TBS through middle-men[13].

In our study Road traffic accident was the major mode of injury pattern (79%) followed by history of fall and assault (19.5% & 3.5% respectively). Similar study was conducted in Pakistan showed that history of fall was the dominant mode of injury to seek TBS (60%) and RTA was on 2nd most cause 40%[18].

Different complications had been found in most of the patients in our study [Table II]. There were 27.5% mal-union, infection was 20% (Cellulitis 5.7%, bone infection 8%, joint infection 6.9%), Non-union 17.24%, Gangrene that needs amputation 6.8%.

Mal-union remains the most common complication and similar result were shown by other authors[19, 20].

It is estimated that there are approximate 70,000 traditional bone setters in our neighboring country, providing treatment to 60% of the entire trauma[21]. A similar study published in 2016 revealed similar results in terms of complications and reasons for referral for traditional bone setters[22,23]. However, the data about our traditional bone setter's is limited in reputed published journals and also the responsibility-of bone setters in our society still remained uncertain[1].

The large number of population lives in rural areas where all health facilities are not available. The community feels reluctant to seek Orthopedic surgeon[24].

Limitation: The limitation of study was small sample size, poor patients respond rate and single center Data.

CONCLUSION

We concluded that despite of musculoskeletal complications, bone setters are practicing since generations and the population has false belief and over-confidence on bonesetters.

It has been found that traditional bone setters in our community increase the rate of complications like mal-union, nonunion, and bone infections. Still people are being attracted to bonesetters despite of all complications. Close fractures are mostly being treated by bonesetters while open and poly-trauma patients are brought to tertiary hospitals. Our community, still is of opinion that fractures managed well by bonesetters. Fractured patient is dependent on others for treatment, so most of society prefers bonesetters, because their services are cheap, easily available. On other hand, most of hospitals in periphery lack Orthopaedic surgeons and modern facilities.

RECOMMENDATIONS

Still in 21st century our people with simple musculoskeletal trauma suffer from complications and hospitals remain overburdened & society suffers a lot. Banning their practice is not practicable in this country because all efforts to curb quackery have failed. So we have to train them for public cause. Awareness to the community through different sources including orthopedic surgeons is the solution.

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AUTHOR CONTRIBUTIONS

Ali R:	Data collection
Tunio ZH:	Study design
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Baloch RA:	Data analysis
Jokhio MF:	Literature review
Maher IK:	Proof reading

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