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Original Article

Frequency of Complications among Trauma Patients Treated by Traditional Bone Setters Presented to Orthopedics Department, Gujranwala Teaching Hospital Gujranwala.

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ABSTRACT

Background: Traditional bone setters (TBS) are widely consulted for trauma care in developing regions, often leading to severe complications due to inadequate medical knowledge. This practice poses significant risks to patient safety and outcomes.

Objective: The study aimed to evaluate the frequency and nature of complications encountered by trauma patients treated by traditional bone setters.

Methods: This cross-sectional study was conducted in the Department of Orthopedics and Trauma Surgery at Gujranwala Teaching Hospital, Pakistan, from February 1st to April 31st. Ninety-seven patients who received care from TBS and subsequently presented at the Orthopedic outpatient clinic were included. Detailed data on demographics, injury type and site, TBS management techniques, and resulting complications were collected and analyzed using SPSS Version 20.

Results: Among the 97 patients, 63 (64.95%) were female and 34 (35.05%) were male, with ages ranging from 3 to 70 years and a mean age of 33. TBS primarily used sticks and bandages for fracture management. The most common complications were malunion (42.27%), non-union (21%), and joint stiffness (17%).

Conclusion: The high incidence of complications from TBS treatments significantly strains the Orthopedics department. Proposed solutions include integrating TBS into the healthcare system for improved training and regulation or implementing a complete ban on their malpractices.

Keywords: Complications, Cross-Sectional Study, Orthopedics, Traditional Bone Setters, Trauma Patients, Treatment Outcomes, Unconventional Medicine.

INTRODUCTION

In developing countries, a significant portion of fracture treatments is administered by traditional bone setters (TBS), also known as quacks, who lack formal medical training and knowledge(1). TBS are typically lay practitioners skilled in joint manipulation, engaging in the healing and realignment of bones without any formal education in recognized medical procedures(2). The practice of TBS often remains a family tradition, passed down from one generation to the next, typically from father to son. In some cases, it extends to other family members, and occasionally, apprentices outside the family are trained (3-5).

Despite the absence of professional medical training, there is a prevalent belief in many societies that TBS possess superior skills in treating fractures compared to orthopedic surgeons(6, 7). This belief endures across all social classes, irrespective of their level of education. Particularly in urban areas, it is common for patients with fractures to initially seek treatment from traditional bone setters before consulting hospital services(8, 9). Estimates suggest that between 10 to 40% of patients worldwide with fractures and dislocations receive care from non-professional practitioners(10, 11).

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The mismanagement of simple fractures by TBS often leads to complications, posing challenges for orthopedic surgeons(12). These complications, coupled with the socioeconomic consequences for patients, have prompted this study(13). The primary objective is to evaluate the range of complications encountered by trauma patients who were initially treated by traditional bone setters and later presented to the orthopedics department at Gujranwala Teaching Hospital, Gujranwala(14, 15).

This study aims to provide a comprehensive analysis of the repercussions stemming from the treatments administered by TBS. By examining these cases, the study sheds light on the extent of complications arising from non-professional fracture management(16). This assessment is crucial for understanding the impact of traditional bone setting practices on patient outcomes and the additional challenges they present to professional medical practitioners in orthopedics. The findings of this study are expected to contribute valuable insights into the intersection of traditional and modern medical practices, particularly in the context of fracture treatment in developing countries(17, 18).

MATERIAL AND METHODS

This research was structured as a cross-sectional study, undertaken within the Orthopedics Department of Gujranwala Teaching Hospital, Gujranwala. The study's duration spanned from the 1st of February to the 30th of May, 2023. The primary focus was on patients who sought medical attention due to complications following treatment by traditional bone setters (TBS), commonly referred to as quacks, in the Orthopedic Outpatient Department (OPD). A total of 97 patients were meticulously identified and included in this study(5, 19).

The demographic and clinical data of these patients were meticulously recorded using a carefully designed questionnaire. This included their biodata, literacy levels, the nature and location of the injury, the type of management received from the TBS, and the ensuing complications(20, 21).

For the analysis of the collected data, the study employed the Statistical Package for the Social Sciences (SPSS) software, version 20.0. This statistical analysis was aimed at comprehensively understanding the impact and nature of complications resulting from the treatments administered by TBS. The use of SPSS enabled a thorough and precise analysis of the data, facilitating a deeper insight into the demographic characteristics, the nature of injuries, and the subsequent complications experienced by the patients. This methodology, combining detailed data collection with rigorous statistical analysis, was crucial in achieving the study's objectives of assessing the effects of non-professional bone setting practices on patient outcomes(22, 23).

RESULTS

The participants' ages ranged from 3 to 77 years, with an average age of 31 years. The gender distribution was fairly balanced, with 43 (44.32%) male and 54 (55.68%) female patients. A significant majority, 76 (78.35%), resided in urban areas.
Regarding educational background, the study observed a predominant representation of individuals with education below the matriculation level, accounting for 80 (82.47%) of the patients. Those who had attained education up to the intermediate level comprised 14 (14.43%), while a minimal 3 (3.09%) had education above that level. 63 (64.95%) patients had their upper limb involved while 34(35.05%) patients had their lower limb involved. As shown in table 1.

Demographics	Frequency	Percentage
Gender		
Male	43	44.32%
Female	54	55.68%
Residence		
Urban	76	78.35%
Rural	21	21.65%
Education		
Below Matric	80	82.47%
Intermediate	14	14.43%
Above Intermediate	3	3.09%
Limb involved		
Upper limb	63	64.95%
Lower limb	34	35.05%

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Table 1: Demographics

Various complications of TBS treatment were observed; 17 (17.52%) patients have joint stiffness, 21 (21.65%) has non-union, 41 (42.27%) patients goes into malunion and 13 (13.4%) become infected. Other complications observed were compartment syndrome 4(5.1%).

Malunion	Non-Union	Infected	Joint Stiffness	Compartment
41	21	13	17	5
42.27%	21.65%	13.4%	17.52%	5.1%

Table 2: Complications

DISCUSSION

The study highlights the paradoxical preference for traditional bone setters (TBS) over orthopedic surgeons, despite the latter's high success rate in managing bone trauma. TBS predominantly employ conservative methods, using closed reduction and traditional splints for prolonged immobilization. This approach, however, often leads to long-term disabilities.

A notable finding of this study is the higher incidence of complications in females, particularly in urban areas, pointing towards a gender-based disparity in healthcare access or decision-making. The predominance of patients in their twenties can be attributed to their active lifestyle, either for livelihood or recreation, increasing their risk of severe limb injuries. This demographic, therefore, bears the brunt of the adverse effects of TBS treatments, significantly impacting the economic productivity of society.

The study corroborates findings from Onuminya et al., highlighting the common use of sticks and bandages by TBS for fracture management(24). The most frequent complication observed was Volkmann's Ischemic Contracture, aligning with findings from Zulfiqar et al.(12). These complications are a direct consequence of improper bone alignment, reduction, and prolonged immobilization with tight bandages, leading to conditions like malunion, valgus/varus deformities, non-union, and exposed bones. Such immobilization causes joint stiffness, often due to edema, fibrosis of the capsule, ligaments, muscles around the joint, or adhesion of soft tissues.

The study revealed that upper limb complications were more prevalent, with fractures of the humerus being most common. This finding is in line with research by Dada et al. and Memon et al. The preference of TBS to treat simpler fractures of the upper limb might explain this distribution(9).

Worku et al. have shown that complications can significantly decrease and orthopedic care can improve when TBS receive appropriate training. This suggests a potential avenue for mitigating the adverse outcomes associated with TBS treatments(10).

In terms of strengths, this study provides a comprehensive analysis of complications arising from TBS treatments, contributing valuable insights into the intersection of traditional and modern medical practices. However, the study is limited by its cross-sectional design and the focus on a single hospital, which may not fully represent the broader context.

While TBS practices are deeply rooted in certain cultures, their limitations and the complications arising from them highlight the need for integrating traditional practices with modern medical knowledge, particularly in orthopedics. This integration could potentially improve patient outcomes and reduce the socio-economic burden of improperly treated bone injuries.

CONCLUSION

Our study revealed that the management of trauma patients by traditional bone setters, primarily due to their limited expertise, often results in grave complications. The most frequently encountered issues were malunion and non-union, conditions typically associated with good prognoses if managed correctly. These findings underscore the critical need for widespread community education on proper fracture management.

There is an imperative requirement for the implementation of specialized programs aimed at either training traditional bone setters in evidence-based practices or curtailing their malpractice. Such interventions would not only reduce the burden on orthopedic surgeons, who frequently face complex cases as a result of initial mismanagement, but also ensure safer and more effective treatment outcomes for patients. This approach holds the potential to significantly improve patient care and reduce the long-term complications associated with improper fracture treatment.

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