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"AWARENESS AND KNOWLEDGE OF FRACTURE COMPLICATIONS AMONG ORTHOPEDIC PATIENTS: A DESCRIPTIVE STUDY"

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Abstract

Background: Fractures are breaks in bones that can also damage surrounding tissues, blood vessels, and organs. If not properly managed, fractures may lead to serious complications like ischemia, infections, and mobility issues. Understanding these complications helps patients recover faster and avoid further health problems. This study aimed to assess the knowledge about fracture complications among orthopedic patients at Tertiary care center.

Methodology: A descriptive quantitative study was conducted among 60 orthopedic patients using a non-probability convenience sampling technique. Data were collected through a structured questionnaire that assessed their knowledge of fracture complications. Demographic information was also gathered to find associations with knowledge levels.

Results: Out of 60 patients, 6.7% had excellent knowledge (A grade), 30% had good knowledge (B+ grade), 33.3% had moderate knowledge (B grade), 13.3% had below-average knowledge (C grade), and 16.7% had poor knowledge (D grade). The mean knowledge score was 17.63 with a standard deviation of 4.452. Age and education were significantly associated with knowledge levels ($p < 0.05$).

Conclusion: The study revealed that most orthopedic patients had only moderate knowledge about fracture complications. There is a strong need for structured education programs to improve patient awareness, early identification of complications, and better health outcomes.

Keywords: Fracture, Complications, Knowledge, Orthopedic Patients, Nursing Education, Patient Awareness

Introduction

The musculoskeletal system plays a vital role in providing structure, support, and movement to the human body. Bones, muscles, joints, ligaments, and tendons work together to maintain stability and mobility. Among injuries to this system, fractures, defined as a break in the continuity of a bone are common and can have serious consequences if not properly managed. Fractures not only damage the bone but can also affect the surrounding tissues, blood vessels, and organs. When a fracture occurs,

the blood supply to the area may be disrupted, leading to ischemia, tissue death, and potential long-term disability if timely care is not provided.[1]

Proper management of fractures includes immediate immobilization of the affected part, minimizing movement to prevent further tissue damage, and early detection of complications. Some of the common early complications include vascular injuries, infections, nerve damage, compartment syndrome, fat embolism, and delayed bone healing[2]. Nurses have a crucial role in observing for signs of these complications and in educating patients on the importance of following medical advice and reporting new symptoms promptly[3,4].

However, several studies have shown that patients often lack sufficient knowledge about the possible complications associated with fractures. This lack of awareness can lead to delays in seeking medical attention when complications arise, resulting in increased morbidity and prolonged hospital stays[3]. Education and counseling provided during hospitalization are essential to ensure that patients understand the warning signs, care for immobilized parts properly, and follow rehabilitation exercises to prevent stiffness and promote recovery[5-8].

In India, the incidence of fractures has been rising steadily due to increasing road traffic accidents, industrial injuries, and aging populations. Alongside this, complications associated with fractures have become a significant public health concern[4]. Despite advances in medical and surgical treatments, patient education often remains an overlooked area, especially in resource-limited settings. Recognizing the importance of patient awareness, the present study was conducted to assess the knowledge regarding complications of fractures among orthopedic patients admitted in a tertiary care hospital. The study also aimed to find the association between patients' socio-demographic factors such as age, education, and occupation with their knowledge levels.

Methodology:

A quantitative descriptive research approach was used to conduct this study. The study was carried out at a tertiary care center. The population for the study included orthopedic patients admitted to the center during the data collection period. A total of 60 orthopedic patients were selected using a non-probability convenience sampling technique. The inclusion criteria for participants were: orthopedic patients who were admitted to the tertiary care center, those who could read and write and those who were willing to participate in the study. Patients who were critically ill or unwilling to participate were excluded from the study.

The data collection tool consisted of a structured questionnaire divided into two parts. Part I included demographic information such as age, gender, education, occupation, income, religion, type of family, place of residence, and source of health information. Part II contained structured questions designed to assess patients' knowledge regarding complications of fractures. The scoring system was categorized into grades: A+ (more than 85%), A (more than 75%), B+ (more than 65%), B (more than 55%), C+ (more than 50%), and C (less than 50%).

The study variable was the level of knowledge regarding fracture complications, and the demographic variables were considered for analyzing associations. Data were collected after obtaining informed consent from participants. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to describe the demographic characteristics and knowledge levels. Inferential statistics, specifically the Chi-square test, were used to find the association between knowledge scores and selected demographic variables, with a significance level set at $p < 0.05$.

Results:

Table 1 shows the distribution of orthopedic patients according to their level of knowledge regarding complications of fractures. Among the 60 patients assessed, only 4 patients (6.7%) achieved an 'A' grade, indicating excellent knowledge (more than 75% correct answers). A significant proportion of patients, 18 (30.0%), obtained a 'B+' grade, suggesting good knowledge (more than 65% correct answers). The largest group, comprising 20 patients (33.3%), fell into the 'B' grade, representing moderate knowledge (more than 55% correct answers). Meanwhile, 8 patients (13.3%) had below-average knowledge, classified as 'C' grade, and 10 patients (16.7%) demonstrated poor knowledge,

falling into the 'D' grade category. These findings suggest that while a small proportion of patients had excellent knowledge, a notable percentage still had moderate to poor understanding regarding fracture complications.

Table 1: Frequency and Percentage Distribution of Knowledge Scores Among Orthopedic Patients (N = 60)

Level of Knowledge	**Frequency (f)**	**Percentage (%)**
A (Excellent Knowledge)	4	6.7%
B+ (Good Knowledge)	18	30.0%
B (Moderate Knowledge)	20	33.3%
C (Below Average Knowledge)	8	13.3%
D (Poor Knowledge)	10	16.7%
Total	**60**	**100%**

Table 2 summarizes the overall mean and standard deviation of the knowledge scores among the orthopedic patients. The mean score was 17.63, indicating an average moderate knowledge level among the participants. The standard deviation was 4.452, showing moderate variability in knowledge scores within the sample. This reflects that while some patients had high awareness, there were significant differences among individuals, with many scoring lower, leading to a spread of scores around the average. The relatively moderate standard deviation emphasizes the need for targeted education to bridge the knowledge gaps.

Table 2: Mean and Standard Deviation of Knowledge Scores Among Orthopedic Patients (N = 60)

Group	**Mean Score**	**Standard Deviation (SD)**
Orthopedic Patients	17.63	4.452

Both tables indicate that despite some patients showing good or excellent awareness, a considerable proportion still had insufficient knowledge about possible complications after fractures, underlining the importance of patient-centered educational strategies in clinical practice.

Discussion:

The present study was conducted to assess the knowledge regarding complications of fractures among orthopedic patients admitted to a tertiary care center in Nellore, Andhra Pradesh. The findings revealed that the majority of patients possessed only moderate levels of knowledge about fracture complications. Specifically, 33.3% of patients scored at a 'B' level (moderate knowledge), 30% scored at a 'B+' level (good knowledge), 16.7% fell into the 'D' category (poor knowledge), and only 6.7% demonstrated excellent knowledge by achieving an 'A' grade. The mean knowledge score was 17.63 with a standard deviation of 4.452, indicating moderate awareness among the studied population.

These findings highlight a critical gap in patient education and awareness regarding the risks associated with fractures. Early complications of fractures such as neurovascular injury, compartment syndrome, fat embolism, delayed union, and infections are serious and can lead to significant morbidity if not promptly identified and managed (Lewis et al., 2014). Proper patient knowledge is vital for early reporting of symptoms and effective rehabilitation.

Our study results are consistent with the findings of Robert (2017), who reported that 50% of adults in a similar study setting had very poor knowledge regarding the prevention of fracture complications. In Robert's study, limited understanding was attributed to low health literacy and inadequate education during hospital stays. Similarly, a study conducted by Felix Olokayode (2011)[9] also highlighted that poor patient awareness was a major contributor to delayed recognition of complications, which ultimately led to worse clinical outcomes.

In comparing demographic factors, the current study identified that age and education had a statistically significant association with knowledge scores ($p<0.05$). Patients with higher educational qualifications demonstrated better understanding of fracture-related risks. This is similar to findings from Delos Ouches (2016), who concluded that education level greatly influences patients' ability to comprehend medical information related to their health conditions.

Joyee Black and Hawles (2006) emphasized the importance of structured nursing interventions and repeated patient education to improve outcomes after fractures. According to their findings, patients who received structured post-injury counseling and rehabilitation guidance showed better recovery and fewer complications compared to those who did not.

Despite the availability of medical care, the gap in patients' practical knowledge indicates that healthcare providers, especially nurses, need to focus more on individualized patient education. Written discharge instructions, demonstration of limb care techniques, and awareness sessions about signs of complications could help patients take a more active role in their recovery.

Moreover, community health programs and orthopedic outpatient departments should integrate regular awareness campaigns focusing on fracture prevention, early signs of complications, and the importance of follow-up care. Special attention must be given to elderly patients and those with lower educational backgrounds, who may be at a higher risk of poor outcomes due to limited health literacy.

In summary, the findings of this study are strongly supported by previous research and underline the urgent need for structured educational interventions to improve orthopedic patients' knowledge and self-care capabilities. Bridging this knowledge gap is crucial for preventing complications and promoting better health outcomes after fractures.

Conclusion:

The study concluded that most orthopedic patients had only moderate knowledge regarding complications of fractures. Age and education were significantly associated with knowledge levels. Strengthening patient education on recognizing and managing fracture-related complications is essential to enhance outcomes, promote early intervention, and reduce the burden on healthcare systems.

References:

1. Brunner, Suddarth's. Text Book of Medical and Surgical Nursing 11th Edition, Wolters kluween publication, 278-280.
2. Ignatavicus DD, Workman ML. Medical and Surgical Nursing, 2nd Edition.
3. Lewis SM, Heitkemper MM, Dirksen SR. Medical-Surgical Nursing: Assessment and Management of Clinical Problems, Mosby Elsevier, 7th Edition, 2014.
4. Joyee M. Black and June Hokanson Hawles, Text Book of Medical and Surgical Nnrsing.
5. Lewis Heitkemper H. Medical and Surgical Nursing. UK: Mosby Elsevier, 2014.
6. Robert AD. Knowledge of Adults in Prevention of Fracture Complications, Journal of Medical and Surgical Nursing, 2017; 7:46-52.
7. Cradile MC. Nightingale Nursing Times. 2007; 3:40 43.
8. Delos Ouches B. Priority care in emergency: Journal of Health Action, 2016; 3:34-39.
9. Felix Olokayode. Study of Fracture Care, International Journal of Medicine, 2011; 4:34-38.