

Post Operative Pain Management in Orthopedic Surgeries: Identifying Barriers to Effective Care

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Abstract

Postoperative pain management plays a vital role in patient recovery following orthopedic surgeries. Despite advances in surgical techniques and analgesic therapies, pain management remains a persistent issue. This study aimed to identify the barriers to effective postoperative pain management in orthopedic surgeries across public and private hospitals in Mardan, Pakistan. A descriptive cross-sectional study was conducted over 4–6 months, involving 320 adult patients undergoing orthopedic procedures under general anesthesia. Data were collected through a standardized questionnaire, and pain severity was assessed using the Numerical Rating Scale (NRS). Results indicated that pain assessments were not performed consistently in 52.5% of cases, with significant drug shortages (33.8%) and staffing issues (24.2%) reported in public hospitals. Adverse effects such as drowsiness were observed in 87.5% of patients. Private hospitals showed better organizational support but also revealed underreporting of pain by patients. The findings emphasize the need for improved staff training, standardized pain protocols, and patient education to enhance pain management outcomes.

Keywords: Postoperative Pain, Orthopedic Surgery, Barriers, Pain Assessment, Public Hospitals, Private Hospitals

Introduction

Effective pain control following orthopedic surgeries is crucial for patient comfort, faster recovery, and reduced postoperative complications. Studies have reported that a significant proportion of patients experience unrelieved pain following surgical procedures, leading to increased morbidity and decreased patient satisfaction. Despite recognition of pain as the fifth vital sign and advancements in pain relief strategies, healthcare systems often fall short in implementing consistent, effective pain control measures. Pain is a multidimensional experience influenced by physiological, psychological, and emotional factors. Healthcare providers' knowledge, attitudes, institutional practices, and resource availability all influence the efficacy of postoperative pain management. Furthermore, patients' cultural beliefs, education levels, and fear of drug side effects can hinder effective communication about pain. This study aims to explore and document these multifaceted barriers in both public and private healthcare settings, ultimately contributing to better strategies for pain management in orthopedic postoperative care.

Methods

A descriptive cross-sectional study was conducted in multiple hospitals in Mardan over a period of 4–6 months. Ethical approval was granted by the Institutional Review Board of Bacha Khan Medical College, and informed consent was obtained from all participants.

Participants: The study included 320 patients aged 18 and above who had undergone orthopedic surgeries under general anesthesia. Inclusion criteria required patients to report postoperative pain on a Numerical Rating Scale (NRS) of at least 1. Patients with chronic pain conditions, psychiatric disorders, or cognitive impairments were excluded.

Sampling and Data Collection: A convenience sampling technique was employed. Data were collected using a pre-tested structured questionnaire that recorded demographic information, pain intensity (via NRS), and perceived barriers to pain management. Pain intensity was categorized as mild (1–3), moderate (4–6), severe (7–9), and worst (10).

Data Analysis: Data were analyzed using IBM SPSS Version 30. Frequencies and percentages were used to describe categorical variables. Results were organized based on hospital type (public or private) and analyzed for patterns and differences in pain management practices.

Results

Demographics: The majority of participants (58.1%) were aged 18–29, and 54.1% were male. Educational levels varied, with 31.3% being illiterate. Half of the participants were treated in public hospitals and the other half in private facilities.

Pain Intensity: According to the NRS scores, 36.9% of patients reported moderate pain, 30.9% experienced severe pain, 27.2% reported mild pain, and 5% rated their pain as the worst possible.

Barriers in Public Hospitals: In public hospitals, 52.5% of patients reported no pain assessment was performed. 33.8% reported that essential medications were unavailable, while 24.2% cited insufficient staff availability. Negative staff attitudes were reported by 23.8% of patients, and 87.5% of all patients experienced drowsiness from pain medications.

Barriers in Private Hospitals: Pain assessments were more frequent (reported by 75.6% of patients), and organizational factors such as staff availability (92.5%) and drug access (89.4%) were more favorable. However, underreporting of pain was notable, as 56.3% of patients did not voice pain complaints, likely due to cultural or personal hesitation.

Table 3.1: Age of participant: Age of Participants

Age in years	Frequency (n)	Percent (%)
18-29	186	58.1
30-41	55	17.2
42-53	53	16.6
54 and above	26	8.1

Table 3.1 Gender distribution: Gender Distribution

Gender	Frequency (n)	Percent (%)
Male	173	54.1
Female	147	45.9

Table 3.3. Type of hospital: Type of Hospital

Type of Hospital	Frequency (n)	Percent (%)
Public	160	50
Private	160	50

Table 3.2 Education level of participant: Education level of Participant

Education Level of Participants	Frequency (n)	Percent (%)
Illiterate	100	31.3
Primary	58	18.1
Secondary	39	12.2
Higher secondary	39	12.2
Bachelors	76	23.8
Masters	8	2.5

Table 3.1.3 Postoperative pain intensity: Postoperative Pain Intensity

Pain Intensity	Mild n(%)	Moderate n(%)	Severe n(%)	Worst n(%)
	87 (27.2)	118 (36.9)	99 (30.9)	16 (5)

Table 3.1.6 Barriers in public hospital: Barriers in Public Hospital

	Patient Barriers		
Public Hospitals	Pain assessment	Yes	No
		76	84
	Reported complaint of pain	Yes	No
		146	14
	Drowsiness from pain medications	Yes	No
		135	25
	Organizational Barriers		
	Staff availability	Yes	No
		121	39
	Staff attitude	Positive	Negative
		84	76
	Availability of medicine	Yes	No
		106	54

Table 3.1.7 Barriers in private hospital: Barriers in Private Hospital

	Patient Barriers		
Private hospital	Pain assessment	Yes	No
		121	39
	Reported complaint of Pain	Yes	No
		70	90
	Drowsiness from pain medications	Yes	No
		144	16
	Organizational Barriers		
	Staff availability	Yes	No
		148	12
	Staff attitude	Yes	No
		152	8
	Availability of medicine	Yes	No
		143	17

Discussion:

The study identifies key institutional and patient-related barriers to effective postoperative pain management in orthopedic surgeries. Public hospitals face limitations in staff, medication availability, and protocol adherence. These resource constraints affect the timely and consistent assessment of pain, leading to inadequate treatment and higher complication rates. Private hospitals, while better resourced, still exhibit gaps—particularly in patient communication and education. Patients may refrain from reporting pain due to fear of judgment, concerns about addiction, or cultural norms. Additionally, misconceptions about analgesic side effects can lead to

non-compliance with prescribed regimens. These findings reflect existing literature, which suggests that healthcare providers often under dose analgesics due to fear of respiratory depression or addiction. Studies also emphasize the importance of provider education, multidisciplinary collaboration, and multimodal analgesia to ensure adequate pain relief without heavy reliance on opioids.

Conclusion:

Effective postoperative pain management in orthopedic procedures is influenced by both systemic and personal factors. Public hospitals must address organizational challenges, including staff shortages and inconsistent medication supplies. Private hospitals need to foster better patient-provider communication and improve patient education on pain management. Implementation of standardized pain management protocols, enhanced provider training, and patient-centered strategies—including preoperative counseling and use of multimodal analgesia—can significantly improve patient outcomes, reduce complications, and enhance satisfaction.

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