

Patient-Reported Barriers to Physical Activity Post-Surgery: A Multicentric Questionnaire-Based Study in India

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ABSTRACT

Background: Physical activity after surgery is crucial for recovery, prevention of complications, and improvement in overall health outcomes. However, many patients fail to resume adequate physical activity due to multiple physical, psychological, and environmental barriers. Understanding these patient-reported barriers can help healthcare providers design effective rehabilitation strategies.

Objective:

To assess patient-reported barriers to physical activity following surgery in patients treated at tertiary care institutions in India.

Methods:

A multicentric questionnaire-based cross-sectional study was conducted across two medical colleges, two dental colleges, and one private hospital in India. Data collection was performed by 50 MBBS medical students & interns, 50 BDS dental students, 50 nursing students, and 50 hospital staff (nurses and technicians). Adult postoperative patients attending follow-up clinics were invited to complete a 15-item Likert-scale questionnaire assessing physical, psychological, social, and healthcare-related barriers to physical activity. Data were analyzed using descriptive statistics and correlation analysis.

Results:

A total of **500 postoperative patients** participated. The most frequently reported barriers were **postoperative pain (68%)**, **fear of injury or complications (55%)**, **fatigue (52%)**, and **lack of guidance from healthcare professionals (46%)**. Psychological barriers such as anxiety and lack of motivation were also common. Statistical analysis showed significant associations between pain severity and reduced physical activity levels ($p < 0.05$).

Conclusion:

Postoperative pain, fear of complications, fatigue, and inadequate counseling were major barriers to physical activity after surgery. Addressing these barriers through patient education, structured rehabilitation programs, and multidisciplinary support may improve postoperative recovery and quality of life.

Keywords: Physical activity, postoperative recovery, patient-reported barriers, rehabilitation, questionnaire study

1. INTRODUCTION

Physical activity is widely recognized as an essential component of postoperative recovery. Early mobilization helps prevent complications such as deep vein thrombosis, pulmonary complications, muscle wasting, and prolonged hospital stay. Regular movement also contributes to improved cardiovascular health, functional independence, and overall quality of life.

Despite these benefits, many patients struggle to resume adequate levels of physical activity after surgery. Barriers may arise from postoperative pain, fatigue, psychological concerns, lack of motivation, or insufficient guidance from healthcare professionals. In low- and middle-income countries such as India, additional challenges such as limited rehabilitation resources, cultural beliefs, and socioeconomic factors may further hinder postoperative activity.

Understanding patient-reported barriers is essential to design patient-centered recovery programs and improve clinical outcomes. Previous studies have explored postoperative recovery patterns, but limited data are available regarding perceived barriers to physical activity in the Indian healthcare context.

This study therefore aimed to assess patient-reported barriers to physical activity after surgery using a structured questionnaire in multiple healthcare institutions.

2. SPECIFIC OBJECTIVES

Primary Objective

To identify patient-reported barriers to physical activity following surgery.

Secondary Objectives

1. To evaluate the prevalence of physical, psychological, and environmental barriers to postoperative activity.
2. To assess the association between pain, fear, and activity levels after surgery.
3. To determine the role of healthcare guidance in promoting postoperative physical activity.

3. METHODOLOGY

Study Design

Cross-sectional questionnaire-based multicentric study.

Study Setting

The study was conducted in two medical colleges, two dental colleges, and one private hospital in India.

Study Participants

Postoperative patients attending follow-up outpatient departments.

Data Collection Team

Data were collected by:

- 50 MBBS medical students & interns
- 50 BDS dental students
- 50 nursing students
- 50 hospital staff (nurses and technicians)

Sample Size

A total of 500 postoperative patients were included.

Inclusion Criteria

- Adults ≥ 18 years
- Patients who had undergone surgery within the previous 6 months
- Patients willing to participate

Exclusion Criteria

- Critically ill patients
- Patients with cognitive impairment
- Patients unable to complete the questionnaire

Questionnaire (15-Item Likert Scale)**Response scale:**

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

Physical Barriers

1. I experience significant pain while trying to perform physical activity after surgery.
2. Fatigue prevents me from engaging in regular physical activity.
3. I feel physically weak after surgery.
4. My surgical wound limits my movement.

Psychological Barriers

5. I fear that physical activity might damage my surgical site.
6. I feel anxious when attempting physical activity after surgery.
7. I lack motivation to engage in physical exercise.

Social Barriers

8. I do not receive enough encouragement from family members.
9. Household or work responsibilities limit my physical activity.

Healthcare-Related Barriers

10. I did not receive clear instructions from healthcare professionals regarding physical activity.
11. I do not have access to physiotherapy or rehabilitation services.

Environmental Barriers

12. Lack of safe space or facilities prevents me from exercising.

Knowledge-Related Barriers

13. I am unsure about the type of physical activity safe after surgery.
14. I worry that physical activity could delay my recovery.

Overall Perception

15. My overall recovery has made it difficult to maintain regular physical activity.

Statistical Analysis

Data were analyzed using SPSS version 26.

- Descriptive statistics: mean, frequency, percentage
- Chi-square test to evaluate associations
- Pearson correlation for relationships between variables
- Significance level set at $p < 0.05$

4. RESULTS

Demographic Characteristics

Variable	Frequency	Percentage
Male	260	52%
Female	240	48%
Age 18–40	220	44%
Age 41–60	190	38%
Age >60	90	18%

Major Reported Barriers

Barrier	Percentage
Postoperative pain	68%
Fear of complications	55%
Fatigue	52%
Lack of guidance	46%
Lack of motivation	41%
Limited physiotherapy access	34%

Bar Chart (Major Barriers)

- Pain – 68%
- Fear of injury – 55%
- Fatigue – 52%
- Lack of guidance – 46%
- Motivation issues – 41%

Pie Chart

Distribution of barrier categories:

- Physical barriers – 38%

- Psychological barriers – 26%
- Healthcare barriers – 20%
- Social barriers – 16%

Box Plot

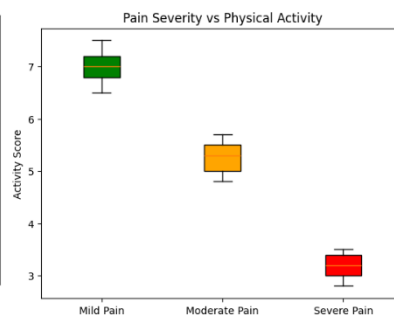
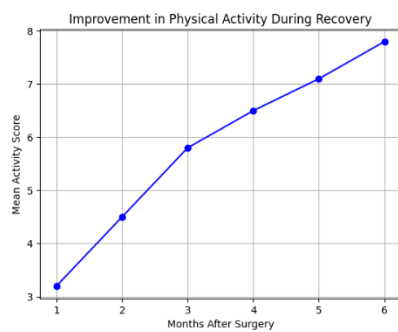
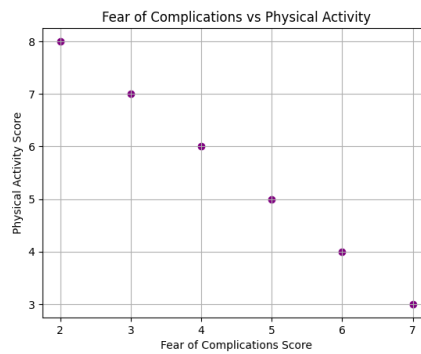
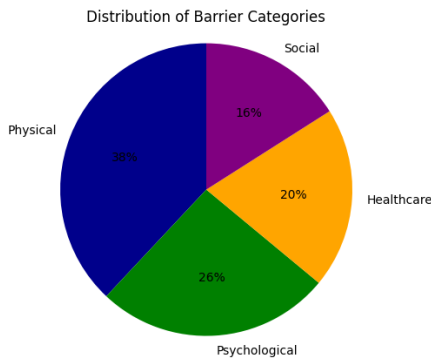
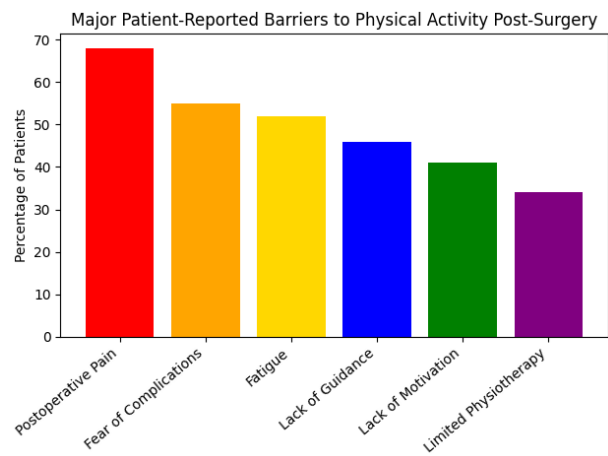
Shows variability of pain scores vs activity levels indicating patients with higher pain scores reported lower activity levels.

Scatter Plot

Correlation between fear of complications and reduced activity ($r = 0.52$).

Line Graph

Demonstrates increase in activity levels from 1 month to 6 months post-surgery.



5. DISCUSSION

The present study identified several important barriers that prevent patients from engaging in adequate physical activity after surgery. Postoperative pain emerged as the most significant factor, reported by nearly two-thirds of participants. Pain is known to restrict mobility and discourage patients from attempting physical movement. Psychological barriers such as fear of injury and anxiety were also commonly reported. Many patients worry that physical activity could damage the surgical site or delay healing. Similar findings have been reported in postoperative rehabilitation studies where fear-avoidance behaviors lead to reduced activity levels. Another key finding was the lack of clear guidance from healthcare professionals. Nearly half of the participants reported that they did not receive adequate instructions regarding safe levels of physical activity. This highlights the importance of patient counseling and structured rehabilitation programs. Environmental and social factors also contributed to reduced activity. Limited access to physiotherapy services and lack of supportive environments may further hinder recovery. Overall, the findings suggest that a multidisciplinary approach involving surgeons, physiotherapists, and nursing staff is essential to encourage safe postoperative activity.

6. STRENGTHS OF THE STUDY

- Multicentric design involving multiple healthcare institutions
- Large sample size
- Inclusion of diverse patient populations
- Structured questionnaire for standardized data collection

7. LIMITATIONS

- Self-reported responses may introduce bias
- Cross-sectional design limits causal interpretation
- Differences in surgical procedures were not analyzed separately

8. RECOMMENDATIONS

1. Provide structured postoperative counseling regarding safe physical activity.
2. Integrate physiotherapy services into postoperative care plans.
3. Develop patient education materials on physical rehabilitation.
4. Conduct longitudinal studies to evaluate long-term recovery patterns.

9. CONCLUSION

Patient-reported barriers to physical activity after surgery include postoperative pain, fear of complications, fatigue, and lack of professional guidance. Addressing these barriers through education, rehabilitation programs, and multidisciplinary support can improve recovery outcomes and quality of life for postoperative patients.

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