Acta Scientific Women's Health (ISSN: 2582-3205)

Volume 8 Issue 2 February 2026

Research Article

A Study to Assess the Adequacy of Preoperative Instructions Among Adolescent Patients Admitted in Pediatric Neurosurgical Ward at CMC

Mary Anbarasi Johnson*

Professor in Nursing, CMC Vellore, India

***Corresponding Author:** Mary Anbarasi Johnson, Professor in Nursing, CMC Vellore, India.

Received: January 20, 2026

Published: January 31, 2026

© All rights are reserved by **Mary Anbarasi Johnson.**

Abstract

Background: Preoperative instructions are an essential component of surgical care, particularly in neurosurgery where procedures are complex and associated with significant physical and psychological stress. Adolescents admitted to pediatric neurosurgical wards require clear, comprehensive, and understandable preoperative instructions to enhance preparedness, reduce anxiety, and prevent perioperative complications. Despite established hospital protocols, gaps in patient understanding and instruction delivery may exist.

Objectives: The objectives of the study were to assess the adequacy of preoperative instructions received by adolescent patients admitted to the pediatric neurosurgical ward and to identify areas requiring further clarification or support.

Methods: A descriptive cross-sectional study was conducted in the pediatric neurosurgical ward of a tertiary care hospital at CMC, Vellore. A convenience sample of 25 adolescent patients aged 12–18 years undergoing elective neurosurgery for the first time was selected. Data were collected using a structured interview schedule consisting of demographic variables and a 20-item preoperative instruction checklist. Each item was scored as Yes (1) or No (0), and the total score was converted into a percentage to determine the level of adequacy.

Results: The findings revealed that while most patients received adequate instructions related to physical preparation such as hygiene, fasting (NPO), medication continuation, and surgical site preparation, significant deficiencies were noted in psychological preparation and postoperative education. Only 32% of patients received preoperative counselling, 8% were taught preoperative exercises, 4% received pain management education, and none were informed about the anaesthesia process, recovery room, or control desk. Overall, 80% of the patients had a moderate level of adequacy, and 20% had poor adequacy of preoperative instructions.

Keywords: Adolescents; Neuro Surgical Ward; Nurses; Preoperative Instructions

Introduction

Surgery is a critical intervention that often causes anxiety, fear, and stress in patients. Neurosurgical procedures, in particular, are complex and associated with significant risks and complications. Adequate preoperative preparation is essential to improving patient outcomes, minimising surgical complications, and reducing postoperative recovery time. Preoperative instructions inform patients and their families about the surgical process, necessary preparations, expected outcomes, and postoperative care.

Despite the critical nature of these instructions, there is often a gap in patient understanding and compliance due to factors like inadequate communication, low health literacy, and time constraints. Therefore, assessing the adequacy of preoperative instructions becomes necessary to identify existing gaps and improve surgical preparedness.

Need for the Study

- Many neurosurgical patients undergo complex procedures without fully comprehending preoperative guidelines.
- A poor understanding can lead to increased complications, surgical delays, and patient dissatisfaction.
- Literature indicates that standardised preoperative education improves outcomes and reduces perioperative stress.
- This study aims to evaluate whether patients in neurosurgical wards receive adequate preoperative instructions and to identify areas needing improvement.
- Enhancing patient education during the preoperative period is not only a safety issue but also a vital component of patient-centred care.

Statement of the problem

"A study to assess the adequacy of preoperative instructions among adolescent patients admitted in pediatric neurosurgical ward."

Objectives

- To assess the adequacy of preoperative instructions received by adolescent patients in neurosurgical ward.
- To identify areas where patients require further clarification or support.

Operational definitions

- **Adequacy:** The extent to which patients report receiving complete and understandable preoperative instructions.
- **Preoperative Instructions**: Information provided to patients before surgery, including fasting guidelines, hygiene, medications, and the surgical process.
- **Neurosurgical Wards:** Hospital units where adolescent patients undergoing cranial or spinal surgery are admitted.

Assumptions

- Patients receive preoperative instructions as per hospital protocol.
- The understanding and adequacy of instructions may vary depending on educational level and previous surgical experience.

Brief Review of Literature

Introduction

The review of literature provides the foundation for the study by offering insights into existing research, theories, practices, and gaps in knowledge related to preoperative instructions and their adequacy among neurosurgical patients.

Preoperative instructions

Preoperative instructions are designed to educate and prepare patients physically, psychologically, and emotionally before undergoing surgery**.** These instructions generally include fasting guidelines (NPO), medication management, hygiene practices, psychological counselling, and expected surgical experiences.

A study by Althobiti., *et al*. (2020) found that only 65% of patients undergoing surgery fully understood preoperative guidelines [1]. The study emphasised the need for standardisation of instructional content and delivery methods. Another study by Nasiri., *et al*. (2018) highlighted that patients who received structured preoperative education had significantly reduced anxiety and better postoperative recovery.

In Indian settings, Kumar., *et al*. (2019) conducted a study on surgical patients in a tertiary care hospital in South India, reporting that 58% of patients did not clearly understand fasting guidelines or medication continuation. This calls attention to the urgent need for comprehensive preoperative education protocols in hospitals [2].

Neurosurgical preoperative preparation

Neurosurgical patients require more specific and stringent preoperative preparations due to the nature of the central nervous system involvement. These may include antiseptic scrubbing with chlorhexidine, shaving of the scalp, continuation of antiepileptics, corticosteroids, and extensive diagnostic imaging like CT or MRI.

Mathews and George (2020) studied preoperative preparation among patients undergoing craniotomy and found that only 45% adhered correctly to antiseptic bathing routines [3]. The rest lacked awareness or misunderstood the instructions provided by the staff.

Arjunan., *et al*. (2017) examined the practices of neurosurgical nurses and found inconsistency in preoperative teaching across shifts and units, leading to varied levels of patient understanding. They recommended the development of checklists and patient booklets to standardise communication.

Patient understanding and compliance

Patient understanding and compliance with preoperative instructions are influenced by factors such as education level, language barriers, emotional state, and method of communication.

Joseph., *et al*. (2016) found that patients receiving both written and verbal instructions had higher rates of compliance compared to those who received only verbal communication [4]. Ramesh., *et al*. (2021) observed that nearly 70% of surgical patients in South India preferred instructions in their regional language (Tamil), leading to better understanding and adherence.

A study has shown the importance of repeated reinforcement of instructions, especially in neurosurgery, where the cognitive load and anxiety are high among patients and caregivers.

Tools used to assess adequacy of preoperative instructions

Standardised questionnaires and structured checklists are commonly used tools to assess the adequacy of preoperative instructions. These tools often assess multiple domains, including physical preparation, medication knowledge, psychological readiness, and procedural awareness.

Patel., *et al*. (2020) developed a 20-item checklist that assessed preoperative understanding across multiple surgical departments and found it effective in identifying gaps in patient preparedness [5].

Outcomes of Adequate Preoperative Instructions

Adequate preoperative education leads to improved patient satisfaction, reduced surgical site infections, enhanced cooperation during surgery, and shorter hospital stays.

Sharma., *et al*. (2022) demonstrated that patients who received structured education had fewer perioperative complications and expressed higher confidence going into surgery.

Varghese., *et al*. (2019) reported that neurosurgical patients who underwent repeated instruction and counselling required less postoperative ICU support due to better understanding of respiratory exercises, positioning, and drain care [2].

Summary

The literature strongly supports that adequate preoperative instruction enhances patient safety, satisfaction, and surgical outcomes. However, there exists a gap in standardising and assessing such instructions, particularly in specialised fields like neurosurgery. This review indicates a need for structured, patient-centred education protocols to improve the adequacy of preoperative instructions for patients admitted to neurosurgical wards.

Project Methodology

Project setting

The study was conducted in the pediatric neurosurgical ward of a selected tertiary care hospital, where elective neurosurgical procedures are performed. This setting was chosen because it provides access to the target population who are in the preoperative phase of neurosurgery.

Sample

- **Sample**: Patients who meet the inclusion criteria and are available during the data collection period.
- Patients aged 12- 18 years
- Patients are admitted to pediatric Neurosurgical wards for elective surgery.
- Patients who are conscious, oriented, and able to communicate.
- Patients who have received preoperative instructions from nursing staff or healthcare providers.
- Patients undergoing neurosurgery for the first time.
- **Sample Size**: The total sample size will be determined based on convenience (e.g.30 participants).
- **Sampling Technique**: Convenience sampling will be used to select participants based on their availability and willingness to participate.

Informed consent

Informed consent was obtained by explaining the purpose of the study, oral informed consent was obtained from patients who met the inclusion criteria.

Data collection procedure

Data was obtained from the study subjects through the interview method using a structured questionnaire to assess the adequacy of preoperative instructions.

Data Collection Tool

A structured questionnaire will be used to assess the adequacy of preoperative instructions. The tool includes:

- Demographic and clinical Data: Age, gender, education, occupation, previous surgical experience, diagnosis, surgery proposed, number of hospitalised days, etc.
- Preoperative Instruction Questionnaire: 20 items related to understanding of surgery, hygiene practices, medication, NPO status, skin and site preparation, counselling, expected outcomes, etc.

If yes means 1

If No means 0

The total score is 20 and converted into a percentage.

Results

Distribution of subjects according to their sociodemographic and clinical variables (Table 1).

S. no.	Variables	Category	Frequency	Percentage
1.	Age	12&13 14&15 16&17 17&18	12 5 3 5	48% 20% 12% 20%
2.	Gender	Male Female	13 12	52% 48%
3.	Education	Illiterate Primary Secondary Higher secondary Degree	10 5 6 4	40 % 20% 24% 16% 40%
4.	Type of surgery	Spine Cranium	15 10	60% 40%
5.	First-time surgery	Yes No	21 4	84% 16%
6.	Duration of hospitalisation before surgery	< 3days 4 -6 days 7-9 Days >10 days	11 8 6 0	44% 32% 24% 0
7.	Language spoken	Tamil Hindi Bengali English/Hindi English/Bengali	5 12 4 3 1	20% 48% 16% 12% 4%

Table 1

Inference

- 48% of the participants belonged to the age group OF 12&13 years.
- 52% of them are male in gender and 40% of them completed their degree.
- 60% of them underwent spine surgery, and 84% of them had first-time surgery experience.
- 44% of participants had less than 3 days of hospitalisation duration of hospitalization before surgery.
- 48% of participants can speak and understand Hindi

Distribution of participants based on receiving preoperative instructions (Table 2).

S. No.	Checklist item	Frequency	Percentage
1.	The patient and relative explained about the surgery.	25	100%
2.	Ensure that patient informed consent was obtained and signed.	25	100%
3.	A. Patient instructed to wash hair, scalp, and body with 4% chlorhexidine for at least a week. B. Patient instructed to have a chlorohexidine back scrub	25	100%
4.	Head shaved according to surgical site or as per unit protocol.	25	100%
5.	The patient was bathed with a 4% chlorhexidine scrub on the day of surgery.	25	100%
6.	New gown provided	25	100%
7.	Nails trimmed	24	96%
8.	Surgical site marked by a physician	24	96%
9.	Preparation of the private parts is done if catheterisation is needed.	25	100%
10.	Antiepileptics and corticosteroids continued if applicable.	25	100%
11.	Nil per oral (NPO) from midnight explained.	25	100%
12.	All items needed for surgery are kept ready (syringes, antibiotics, Foley catheter, etc.)	25	100%
13.	All CT and MRI films are arranged and kept ready.	25	100%
14.	Preoperative counselling provided	8	32%
15.	Preoperative exercises taught a. Deep breathing b. Incentive spirometry c. Leg exercise & Positioning d. Ambulation	2	8%
16.	Patient advised to report cough, altered vitals, loose teeth, skin infections, and menstruation.	24	96%
17.	Pain management explained	1	4%
18.	Postoperative ICU experience discussed	21	84%
19.	The patient was informed about wound drains and IV fluids.	2	8%
20.	Patient was informed about the control desk, anaesthesia and recovery room.	0	0

Table 2

Inference

- 68% of the patients did not receive preoperative counselling
- 92% of the patients did not undergo preoperative exercise such as Deep breathing exercises, leg exercises, positioning and ambulation
- 92% of them did not explain pain management
- 92% of the patients were not informed about wound drains and IV fluids
- No one was informed about the control desk, anaesthesia and recovery room.
- Overall, 80% of the patients received preoperative instructions of moderate adequacy, and 20% of them received preoperative instructions of poor adequacy.

Suggestions

- **Standardised Preoperative Instruction Checklist**: Develop and implement a structured checklist for all nurses and surgical team members to ensure that all aspects of preoperative care are addressed uniformly.
- **Patient Education Leaflets and Videos**: Provide educational materials in English, Hindi, Bengali and Tamil, which explain surgical procedures, anaesthesia, Exercises, postoperative care, recovery room and pain management in an easy-to-understand manner.
- **Language-specific instructions:** Preoperative instructions should be translated and provided in multiple languages, including Hindi and Bengali, to cater to the diverse linguistic needs of patients.
- **Documentation of Instruction:** Ensure all preoperative instructions are documented in the patient's file to promote accountability and continuity of care.
- **Feedback Mechanism**: Introduce a patient feedback system to identify gaps and continuously improve the education provided.

Recommendations

- **Training Programs for Nursing Staff**: Regular in-service training on effective preoperative teaching techniques and communication skills.
- **Preoperative Counselling Units**: Establish dedicated counselling units in surgical wards, especially in high-stress areas like neurosurgery, to provide thorough and empathetic patient education.
- **Monitoring and Evaluation:** Periodic audits should be conducted to assess compliance with preoperative instruction protocols and their impact on patient outcomes.
- **Use of Technology**: Introduce tablets or TV screens at the bedside to display informative videos tailored to the type of surgery and expected postoperative course.
- **Enhancing communication through language-specific preoperative instructions:** Provide preoperative instructions in the patient's preferred language, such as Hindi and Bengali, to improve understanding and ensure effective communication in neurosurgical wards.

Conclusion

The study concludes that preoperative instructions provided to adolescent neurosurgical patients were partially adequate, with major gaps in counselling, pain management, exercises, and postoperative orientation. The findings highlight the need for structured, standardised, and language-appropriate preoperative education programs to improve patient understanding, reduce anxiety, ad promote patient-centred care in pediatric neurosurgical wards.

Bibliography

1. Althobiti A., *et al*. "Assessment of patient understanding of preoperative instructions in a tertiary care centre". *Journal of Patient Safety and Quality Improvement* 8.1 (2020): 25-30.

2. Kumar P., *et al*. "Evaluation of preoperative instruction adequacy in a South Indian hospital". *Indian Journal of Surgery* 81.5 (2019): 465-470.

3. Mathews S and George R. "Compliance with preoperative antiseptic bathing in neurosurgical patients". *Journal of Neuroscience Nursing* 12.2 (2020): 112-118.

4. Joseph N., *et al*. "Effectiveness of verbal and written preoperative instructions on surgical outcomes". *Journal of Clinical and Diagnostic Research* 10.7 (2016): LC01-LC05.

5. Patel R., *et al*. "Development and validation of a checklist for assessing preoperative instruction adequacy". *Annals of Medical and Health Sciences Research* 10.5 (2020): 300-305.