

Robotic Surgery: Preparing Perioperative and PACU Nurses for Evolving Roles in Patient-Centered Technology-Enhanced Care

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Introduction

Robotic surgery enhances surgical precision, intraoperative decision-making, and minimally invasive procedures. However, it introduces unique physiological and technical challenges that directly affect perioperative and PACU nursing. Nurses must adapt to these complexities while ensuring patient safety, monitoring, and high-quality, patient-centered care throughout the perioperative and postoperative periods.

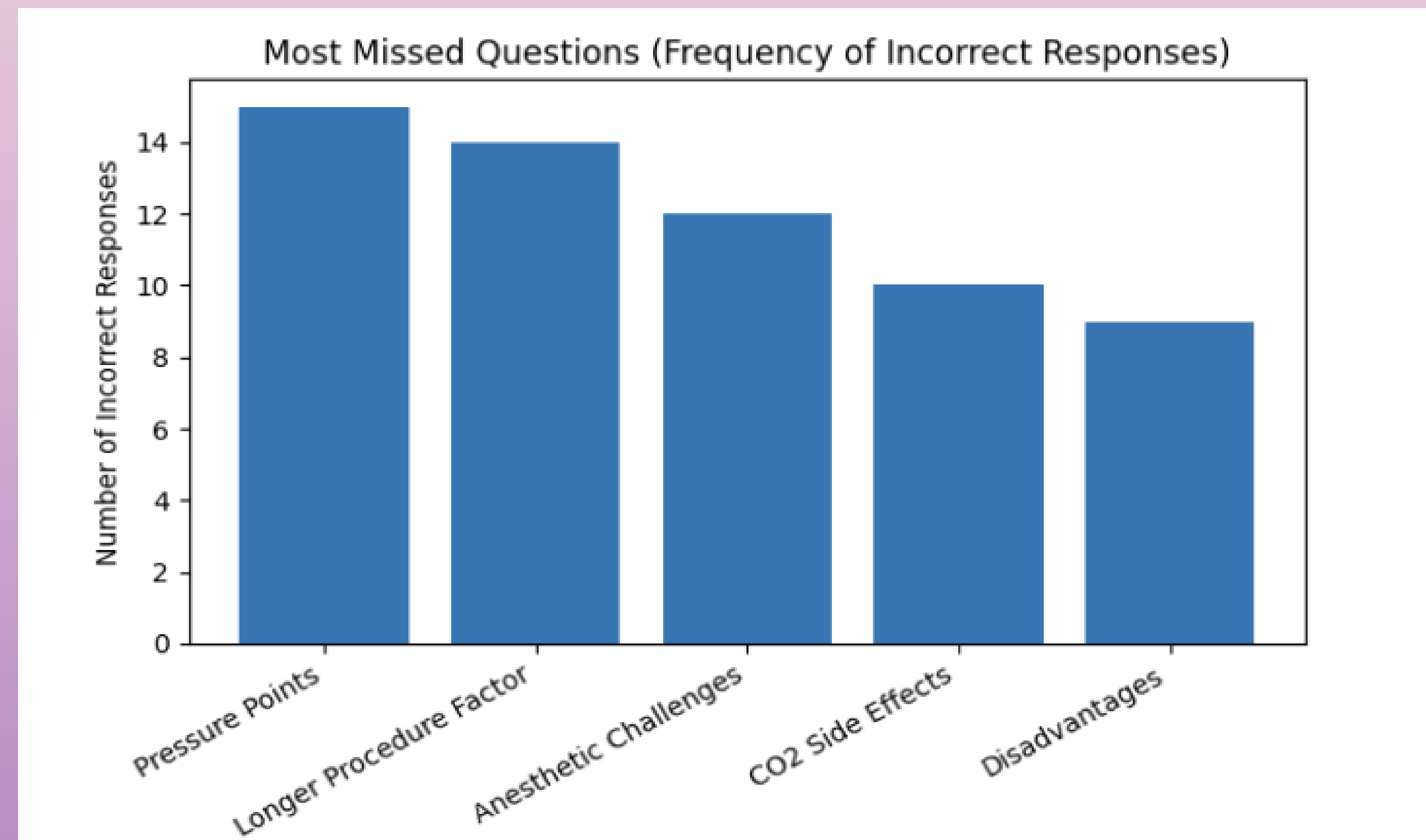
Identification of the Problem

Despite the growing use of robotic surgery, many perioperative and PACU nurses report knowledge gaps in positioning, insufflation, anesthesia, and complication recognition. This project highlights the evolving nursing role and identifies educational opportunities to improve preparedness, patient safety, and team collaboration..

Methods

A two-part approach was used:

- (1) A comprehensive review of current literature to identify best practices and educational recommendations for nursing in robotic surgery.
- (2) A targeted staff knowledge survey was administered to perioperative and PACU nurses to assess their baseline understanding and perceived confidence in managing patients undergoing robotic procedures. Survey results informed targeted educational recommendations.



Conclusion and Implications

Robotic surgery introduces new demands on perioperative and PACU nurses, requiring specialized knowledge of positioning, physiologic changes, anesthetic management, and complication recognition. Addressing these educational needs can enhance preparedness, support patient safety, and improve outcomes. Future research should assess the impact of structured robotic surgery education on nurse performance, patient outcomes, and professional confidence

Outcomes/Results

The literature confirmed that robotic surgery increases surgical precision but adds complexity to nursing care, particularly regarding intraoperative monitoring and postoperative vigilance.

Survey findings revealed:

- Variability in nurses' knowledge of positioning strategies
- Hemodynamic effects of insufflation
- Anesthetic implication
- Limited confidence in recognizing rare but serious complications.

These gaps highlighted the need for structured, role-specific education.

