



Enhancing Interprofessional Collaboration Through Interlevel Perioperative Simulation

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Abstract

Background: Perioperative care requires effective interprofessional collaboration, yet students often have limited opportunities to practice teamwork prior to clinical rotations.

Purpose: To evaluate whether a 7-week interlevel perioperative simulation improves perceptions of collaboration.

Methods: Senior BSN and first-year nurse anesthesia students completed a 7-week interlevel simulation program. Pre- and post-intervention SPICE-R2 surveys were analyzed.

Outcomes: Significant improvements were observed in total SPICE-R2 scores ($p < 0.05$).

Implications: Interlevel simulation may enhance collaborative readiness prior to perioperative clinical practice.

Introduction + Background

- Effective teamwork and communication are essential in perioperative nursing.
- BSN graduates and SRNAs often lack intraoperative collaboration experience prior to practice.
- **Workforce need:** Perioperative nursing faces ongoing shortages, with limited exposure in BSN programs contributing to low career interest (Xie & Munday, 2024).
- **Graduate preparation:** SRNAs must be ready for real-world collaboration in the OR, where anesthesia providers and nurses function as integral team members.
- **Purpose:** To foster collaboration, role clarity, and interest in perioperative nursing while preparing SRNAs for clinical realities.

Framework

Lave & Wenger's Communities of Practice Theory (1991):

Learning occurs through shared participation. Builds collaborative identity. Enhances role understanding and confidence. Simulation fosters a **community of practice** between BSN and SRNA students.

Review of the Literature

- **Teamwork in perioperative care:** Collaboration across roles is essential for patient safety and outcomes (Dabney, 2022; Gros et al., 2021).
- **Simulation as education:** Evidence shows simulation strengthens clinical knowledge, communication, and teamwork (Buljac-Samardzic et al., 2020; Hibberson et al., 2021).
- **Perioperative studies with professionals:** In situ simulations show improved role clarity and situational awareness among surgical and anesthesia teams (Armour et al., 2019; Gros et al., 2021; Khalafi et al., 2024).
- **Student-focused studies:** Undergraduate and graduate nursing students report improved teamwork attitudes and confidence after simulation, though outcomes vary by design and learner experience (Leithead et al., 2019; Martinez et al., 2023).
- **Gap in knowledge:** No studies yet on combined BSN + SRNA perioperative simulation.
- **Relevance:** Addressing this gap may enhance teamwork readiness and increase BSN interest in perioperative careers.

Methods

Design: Quality improvement project with pre- and post-intervention surveys.

Setting: UW Oshkosh Surgical Nursing Simulation Center.

Participants: Senior BSN students and first-year DNP nurse anesthesia students.

Instrument: SPICE-R2 (validated measure assessing perceptions of teamwork, role clarity, and the impact of collaboration on patient outcomes).

Process: Seven -week interlevel lab and simulation program including positioning, equipment failure, ultrasound-guided IV placement, and induction workflow activities with structured debriefing.

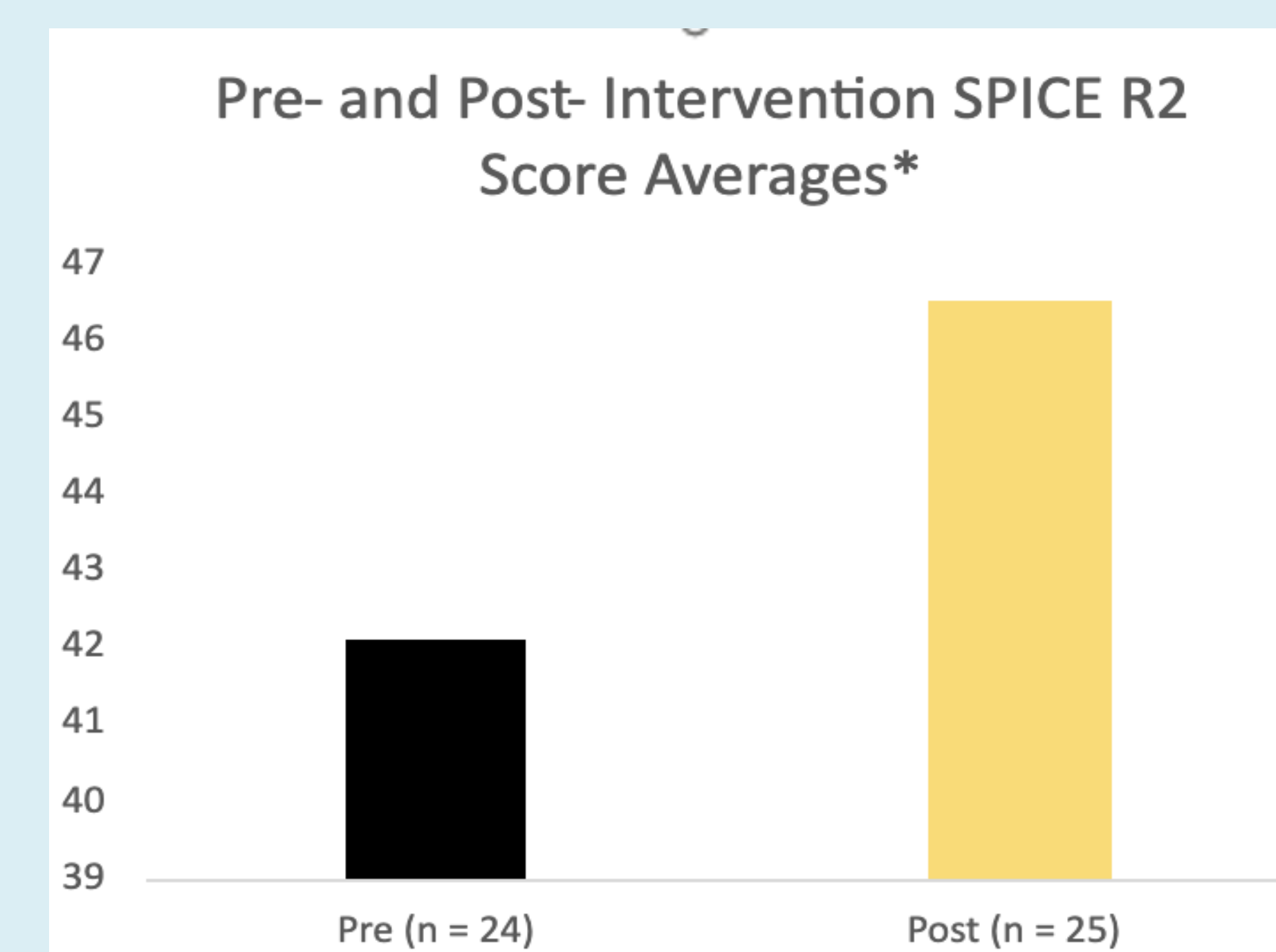
Data Analysis: A one-way ANOVA was conducted to compare pre- and post-intervention total SPICE-R2 scores. A multivariate analysis of variance (MANOVA) examining subscale differences (teamwork, roles/responsibilities, and perceived impact on patient outcomes) is planned

PICOT Question

Among BSN and DNP nurse anesthesia students, does participation in a 7-week interlevel perioperative simulation program improve perceptions of interprofessional collaboration as measured by SPICE-R2?

Results

Mean total SPICE-R2 scores increased from 42.13 (pre-intervention) to 46.52 (post-intervention), demonstrating a statistically significant improvement following the interlevel simulation ($p = .001$).



Implications for Practice

Interlevel simulation may strengthen collaborative readiness prior to clinical entry by improving role clarity and teamwork perceptions. Structured interprofessional training provides early exposure to intraoperative communication and coordinated practice.

Relevance to Nursing in Wisconsin

The long-term goal of this project is to strengthen Wisconsin's perioperative workforce. Integrating interlevel simulation into UWO's perioperative immersion experience enhances collaborative readiness before clinical placement. Strengthening role clarity and teamwork prior to graduation may support smoother transition to perioperative practice and high-quality, team-based care statewide.

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