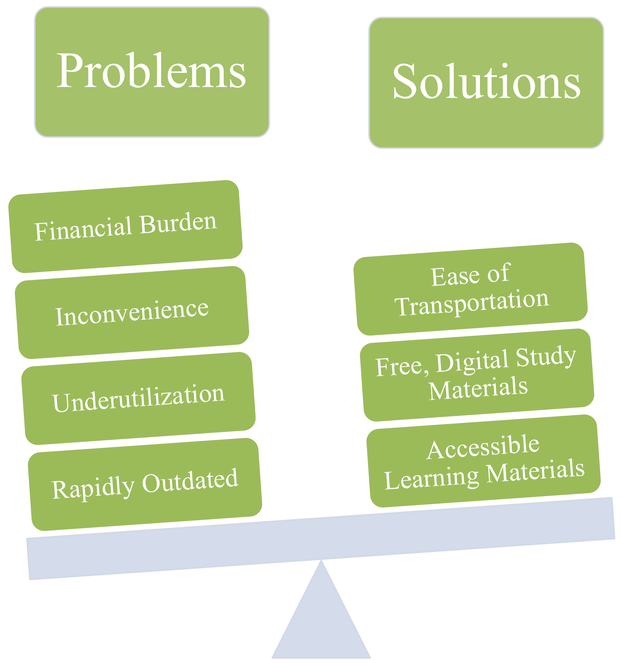
Effectiveness of an Open Education Resource

Kaitlyn Harris and Savannah Pieper
Southern Illinois University Edwardsville

PROBLEM INTRODUCTION



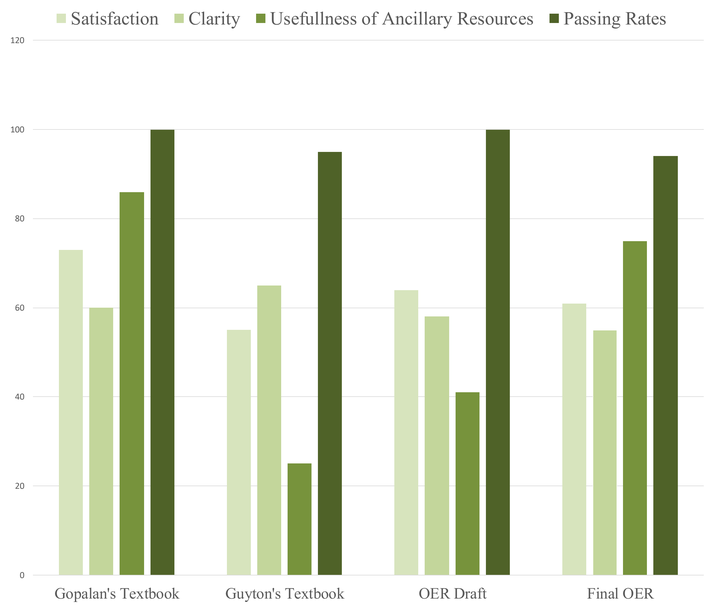
PROJECT METHODS

Survey-Based Study
- Clarity
- Satisfaction
- Accessibility
- Ease of Transport
- Supplemental Materials

Educational Resources
- Dr. Gopalan's Essentials of Physiology for Nurse Anesthetists
- Guyton and Hall's Textbook of Medical Physiology
- Dr. Gopalan's OER Draft
- Dr. Gopalan's Final OER

Objective
- Identify the benefits and drawbacks of OERs in a nurse anesthesia program.

EVALUATION



LITERATURE REVIEW

Affordability
- OERs reduce the financial strain on students – traditional textbooks cost up to $1,200 a year.

Satisfaction
- Mixed results; some students prefer digital resources while other students prefer printed materials.

Equity
- OERs help to bridge socioeconomic gaps.

Student Success
- OER implementation is linked to better grades, retention, and course completion rates.

CONCLUSIONS

This OER improved accessibility and cost but lagged in satisfaction and performance.

Traditional textbooks have higher satisfaction and clarity ratings.

Younger students showed greater acceptance of OERs.

This OER would benefit from content clarity and more ancillary resources.

Final thought: Further research is needed to optimize OERs for nurse anesthesia education to ensure both cost-effectiveness and academic success.

IMPACT ON PRACTICE

Enhanced Accessibility, Affordability, and Student Outcomes
- Reduces financial burden
- Allows instant, 24/7 access to learning materials.
- Supports higher retention rates and grade averages.

Long Term Implications
- Establishes a sustainable model for future nurse anesthesia education.
- Potential to improve overall student satisfaction and learning efficiency.
- Saves universities money on textbook procurement and replacements.

Advancement of Equitable Education
- Closes socioeconomic gaps, benefits underprivileged students.

References

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SCHOOL OF NURSING

Emotional Intelligence Training: A Standardized Post Simulation Debrief for SRNA Students

Molly Fleming, BSN, SRNA & Elizabeth Penick, BSN, SRNA
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PROBLEM INTRODUCTION

Nurse anesthesia students at SIUE complete an emotional intelligence training curriculum to enhance their ability to navigate a challenging situations in the clinical setting.

The progression thus far includes, A MSCEIT (EI) evaluation upon admission, four in-person training modules to discuss the four branches of emotional intelligence, and a high-fidelity simulation experience.

Following the simulation, it was observed that a formal debriefing process would benefit this training and should be implemented to conclude the training session.

PROJECT METHODS

Pre Training
- Students take pre MSCEIT upon program admission
- IRB approval obtained prior to the start of the study

Training
- Four pre-designed training sessions on the emotional intelligence branches completed in classroom
- Previously designed and adapted high fidelity simulation experience completed
- Plus/ Delta tool development to enhance feedback opportunities

Post Simulation
- Structured debrief session completed with Gather, Analyze, and Summarize model
- Evaluation of the debriefing session via DASH-SV tool
- Students complete the post MSCEIT

IMPACT ON PRACTICE

The ability to provide immediate and individualized feedback post simulation

Providing students with an introduction to emotional intelligence training to help build skills for the future in a safe setting.

Improving patient outcomes by fostering better communication skills through emotional intelligence training.

Debrief session provided opportunity for validation and open communication where students can discuss shared experiences

LITERATURE REVIEW

The literature review was completed to identify simulation debrief strategies to foster participants learning and engagement.

1. Optimizing the debriefing environment
2. Facilitator discussion techniques
3. Utilization of evaluation tools

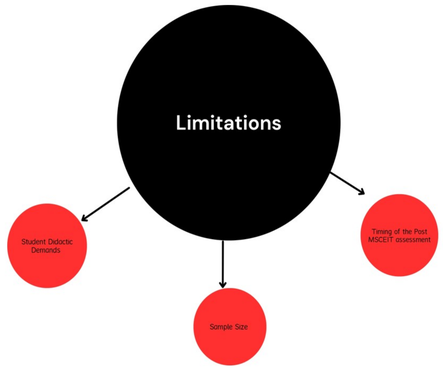
EVALUATION

A post debrief evaluation was completed utilizing the DASH-SV tool. This evaluation was provided in-person to ensure a 100% return rate of the 32 participants. The debrief scores exceeded the benchmark proposed by the researchers. Demonstrating a positive response to the experience.

Post MSCEIT scores were obtained after the simulation experience to compare to baseline emotional intelligence scores. No statistical improvements were noted in overall scores. Statistically significant decreases were observed in 6 areas.

CONCLUSIONS

Emotional intelligence is a unique skill that can enhance nurse anesthesia students' ability to navigate clinical challenges. The success of the standardized debrief helped to solidify learning objectives for student participants and fostered a safe communicative space for decompression. However, project facilitators recognize the need for continued efforts to impact a positive change in baseline MSCEIT scores among nursing anesthesia students.



Enhancing Knowledge of the Anesthesia Machine: Alternative Learning Styles for SRNAs

Marissa Tucker, BSN, SRNA & Shelby Murphy, BSN, SRNA
Southern Illinois University Edwardsville

PROBLEM INTRODUCTION

Importance of the Anesthesia Machine in Clinical Practice

- The anesthesia machine is critical in anesthesia practice to safely deliver and monitor anesthetic gases during surgical procedures.
- Certified Registered Nurse Anesthetists (CRNAs) must thoroughly understand the machine's components, functions, and troubleshooting protocols to prevent patient harm.
- The American Society of Anesthesiologists (ASA) mandates a standardized Pre-Anesthesia Checkout (PAC) to ensure all anesthesia machines are functioning properly before patient use.

Challenges Faced by SRNAs in Mastering the Anesthesia Machine

- The anesthesia machine is a **highly complex** piece of equipment that incorporates multiple gas delivery systems, safety mechanisms, and alarm systems.
- **Traditional learning methods**, such as textbooks, PowerPoint presentations, and written rubrics, often fail to provide the comprehensive understanding acquired via hands-on experience and visual reinforcement.
- SRNAs traditionally have **limited exposure** to real-world machine checkouts before entering their first clinical rotations, resulting in anxiety and uncertainty in their ability to perform essential safety checks.
- The **variability in machine designs** across different clinical sites further complicates SRNA learning, as each machine has unique operational and troubleshooting protocols.

Identified Gaps in SRNA Knowledge and Competency

- At Southern Illinois University Edwardsville (SIUE), faculty and student feedback indicated a lack of confidence and proficiency among SRNAs when performing anesthesia machine checkouts.
- Observations revealed inconsistencies in student performance, with some struggling to recall proper checkout procedures or troubleshoot basic machine malfunctions.
- A gap exists between didactic learning and practical application, underscoring the need for a more engaging, multimodal approach to anesthesia machine education.

LITERATURE REVIEW

Challenges in Learning the Anesthesia Machine

- Traditional teaching methods (textbooks, PowerPoints) are the least effective of all learning styles.
- SRNAs struggle with knowledge retention and skill application pertaining anesthesia machine checkouts.

Benefits of Video-Based Learning

- Enhances **knowledge retention, engagement, and procedural skill proficiency** compared to text-based learning.
- Allows for **self-paced review**, reinforcing key steps of the **Pre-Anesthesia Checkout (PAC)**.
- Supports **multimodal learning** (visual, auditory, kinesthetic), therefore improving skill acquisition.

Importance of Standardized Assessment

- **Rubric-based evaluations** help measure competency and provide structured feedback.
- Ensures SRNAs develop **confidence and proficiency** before entering clinical practice.

Need for Improved Training

- **Over-reliance on automated machine checkouts** can lead to overlooked errors and safety risks.
- Combining **video instruction with hands-on practice** bridges knowledge gaps and enhances clinical readiness.

PROJECT METHODS

Objective:

- Improve SRNA competency in anesthesia machine operation through a video-based educational intervention.

Setting & Participants:

- First-year SRNAs (n = 32) at Southern Illinois University Edwardsville (SIUE).

Intervention:

- A step-by-step instructional video was created, demonstrating the Pre-Anesthesia Checkout (PAC) following 2008 ASA Guidelines (see examples in Figures 1 and 2).
- The video was provided before hands-on lab practice, allowing students to review the process before skill application.

Figure 1.

Figure 2.

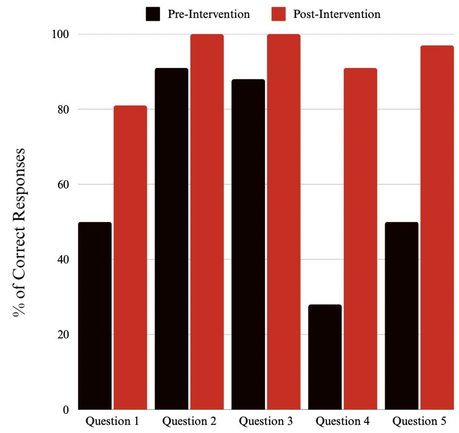
EVALUATION

Data Collection & Evaluation:

- **Pre- and post-intervention surveys** measured SRNA knowledge, confidence, and learning preferences.
- Surveys included **multiple-choice, Likert-scale, and open-ended questions**.

Key Findings:

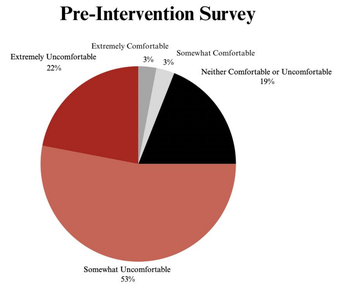
- **Scores on knowledge-based questions improved by 32.6%** on average (**p = 0.016**, statistically significant).

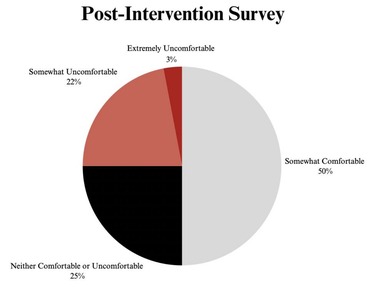


EVALUATION

Key Findings

- **47% increase** in students feeling "somewhat comfortable" with the anesthesia machine.
- **19% decrease** in students feeling "extremely uncomfortable."





FEEDBACK/IMPACT ON PRACTICE

Student Feedback:

- 97% preferred video tutorials over traditional PowerPoints and textbooks.
- 100% agreed the video prepared them for the anesthesia machine checkoff.
- 100% recommended using the video for future students.

Improved SRNA Competency & Confidence

- SRNAs demonstrated **increased knowledge and confidence** in performing anesthesia machine checkouts.
- Post-intervention data showed a **statistically significant improvement** in understanding and skill application.

Long-Term Educational Benefits

- The video tutorial can be integrated into the nurse anesthesia curriculum for future cohorts.
- Potential for expansion to include other anesthesia equipment and procedures to further support student learning.

LIMITATIONS

Small Sample Size

- Findings are based on a **single cohort of 32 SRNAs**, limiting generalizability.

Self-Reported Data

- Confidence levels were assessed through **subjective survey responses**, which may introduce bias.

Limited Equipment Availability

- Video was filmed in a **lab setting**, lacking access to some **clinical tools (e.g., suction, nitrous oxide).**

Timing of Hands-On Practice

- Unexpected scheduling changes led to **lab practice occurring after skill checkoffs**, potentially affecting confidence and performance.

Lack of Long-Term Follow-Up

- No data collected on **knowledge retention over time** or clinical application beyond the initial assessment.

CONCLUSIONS

Video-Based Learning is Effective

- Improved **SRNA knowledge retention, confidence, and clinical readiness** for anesthesia machine checkouts.
- Statistically significant **increase in test scores and comfort levels** post-intervention.

Multimodal Education Enhances Learning

- Combining **video tutorials with hands-on practice** supports diverse learning styles.
- Video-based instruction allows for **self-paced review and reinforcement** of key concepts.

Future Implications

- Potential for **integration into nurse anesthesia curriculum** for sustained impact.
- Future expansions could include **additional anesthesia equipment and refresher modules**.

SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE

SCHOOL OF NURSING

Enhancing Medical Education with 3D Printing: A DNP Initiative

Brian Tillery, BSN, SRNA
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PROBLEM INTRODUCTION

The integration of 3D printing into medical education shows significant potential to enhance anatomical understanding, surgical planning, and communication between healthcare providers and patients. However, challenges remain in its widespread implementation, particularly in areas like anesthesia. This project at Southern Illinois University Edwardsville (SIUE) aims to address gaps in second-year nurse anesthesia students' understanding of tracheal stenosis by incorporating 3D-printed models to offer realistic, interactive learning experiences. The study highlights 3D printing's ability to bridge theoretical knowledge and practical application, ultimately improving healthcare delivery, patient care, and the overall educational experience for students.

PROJECT METHODS

Consult with stakeholders to explore topic, uncovering needs/gaps/issues; presented 3D printing proposal

Conducted literature review on 3D printing in medical education

Created 3D printed models of both pathologic and physiologic tracheas at SIUE's MakerLab

Implemented project with SIUE nurse anesthesia students on 'difficult airway day', featuring tracheal stenosis and 3D model simulations

Evaluated project using post-implementation Qualtrics surveys with objective and subjective metrics

IMPACT ON PRACTICE

Enhance understanding of complex medical concepts

- Improved visualization of anatomical structures, such as tracheal stenosis, enhances comprehension
- Hands-on interaction with 3D models bridges the gap between theory and practice
- Increased student confidence in managing difficult airway scenarios, preparing them for real-world applications

Integrating 3D models in medical education can improve clinical outcomes

- Exposure to realistic, interactive models helps students retain knowledge and develop skills
- Potential for better clinical performance, as students are better prepared for more complex cases
- Long-term benefits include enhanced patient safety through more effective clinical decision-making

Widespread adoption of 3D printing could revolutionize medical training

- Expansion of 3D-printed models to include patient-specific conditions can improve care
- 3D models offer a scalable, reproducible, and ethical alternative to traditional teaching methods
- The integration of 3D printing into curricula may inspire further innovation in medical education tools

CONCLUSIONS

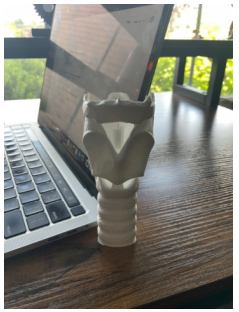
3D printed models enhanced anesthesia education, improving tracheal stenosis understanding

Hands-on experience increased students' confidence in airway management procedures

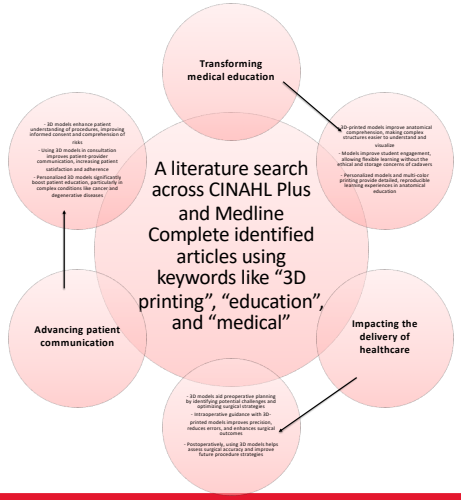
Findings support integrating 3D printing into medical training for interactive, patient-centered learning

Future focus: refine educations approaches, expand anatomical models, extend training duration

Continued research could revolutionize medical training and clinical practice with 3D printing



LITERATURE REVIEW



EVALUATION

- Significant increase in students' understanding of tracheal anatomy and 3D models' role in visualization
- Improved student confidence in managing anesthetic care for patients with tracheal stenosis
- High student satisfaction, with many strongly agreeing the session enhanced their knowledge and provided educational value
- Hands-on experience with 3D models was perceived as a valuable tool for both theoretical and practical learning

- Small sample size (29 post-survey participants) limits the generalizability of results
- Potential timing bias, with rushed post-survey responses affecting data accuracy
- Selection bias due to the researcher's familiarity with participants could have influenced responses
- Time constraints during the session limited the depth of student interaction with 3D models

Special thanks to Dr. Jenna Tebbenkamp, Dr. Chaya Gopalan, Dr. Sinan Onal, and those at SIUE's MakerLab

Reducing Stress in SRNAs

Robert J. Elston, BSN, SRNA
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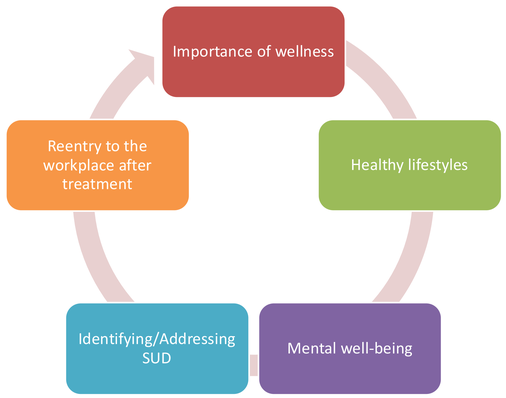
PROBLEM INTRODUCTION

- SRNAs experience elevated stress levels when compared to CRNAs. Stress levels = 7.2-7.9/10 vs 4.2/10
- They experience depression, burnout, and a decreased sense of well-being.
- SRNAs may turn to maladaptive coping mechanisms such as drug or alcohol use.
- Exit interviews at a large midwestern university NA program indicated a need for changes to the wellness program.
- 27 of 32 respondents identified the wellness submission process as an additional source of stress during training.

LITERATURE REVIEW

- Extensive literature review focused on sources and effects of stress, best methods of coping with it, and wellness programs for SRNAs.
- Contributors to SRNA stress levels include didactic coursework, financial issues, scholarly projects, bullying, family obligations, and unfamiliar, high-stress environments.
- 70% of SRNAs experience bullying and verbal abuse; 85.48% comes from CRNAs.
- Physical activity and mindfulness can help reduce stress by 47%.
- Must overcome perceived barrier of lack of time versus benefit of physical activity or mindfulness.
- COA requires five areas of wellness to be addressed to maintain accreditation and AANA created framework to guide programs.
- Earlier introduction to wellness and use of e-portal associated with better stress management.



PROJECT METHODS

John's Hopkins model for improvement >>> What are we trying to accomplish? What change will result in improvement? How do we know it was an improvement?

SMART goals: specific, measurable, achievable, relevant, and time bound.

Goal: decrease stress by streamlining wellness submission process at SIUE by the end of summer 2024 semester.

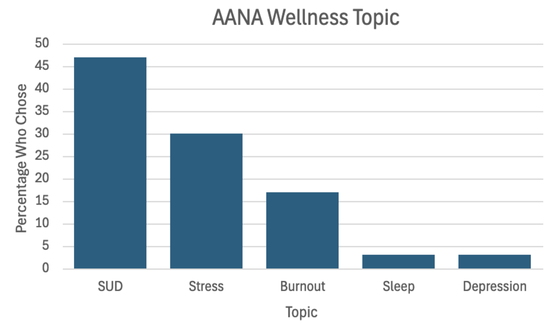
Stakeholders include program director, assistant program director, faculty members, and students.

Implementation: results of literature review and new submission process presented to participants via Power Point presentation in class during summer 2024 semester.

Post-test used to collect and quantitatively analyze data. Results lead to a change in practice for the stakeholders.

EVALUATION

- 1 month after completing the new wellness submission participants were sent a three question, Likert based post-test. A score of 1 correlated with strongly disagree, and 5 correlated with strongly agree.
- Post-test evaluated if the new process reduced time to complete submission, was easier to submit, and reduced stress.
- 30 of 32 participants completed post-test allowing for 95% confidence interval and 5% margin for error.
- Median and mean score for each question was 5 which indicates a strong correlation to reducing stress, time required to complete the submission, and that it was easier to complete.



IMPACT ON PRACTICE

- Use of an online submission form was incorporated into SIUEs wellness program to help reduce stress amongst NA program students.
- Reduction of SRNA stress levels increases patient safety, and SRNA wellness.

CONCLUSIONS

- Identifying the best ways to manage SRNA stress and reduce the number of stressors is tantamount to student well-being.
- Exploration of didactic delivery methods, preceptor training, and utilization of online stress management methods should be investigated.
- Continual revision and refinement of wellness programs will be required as research and NA programs develop over time.

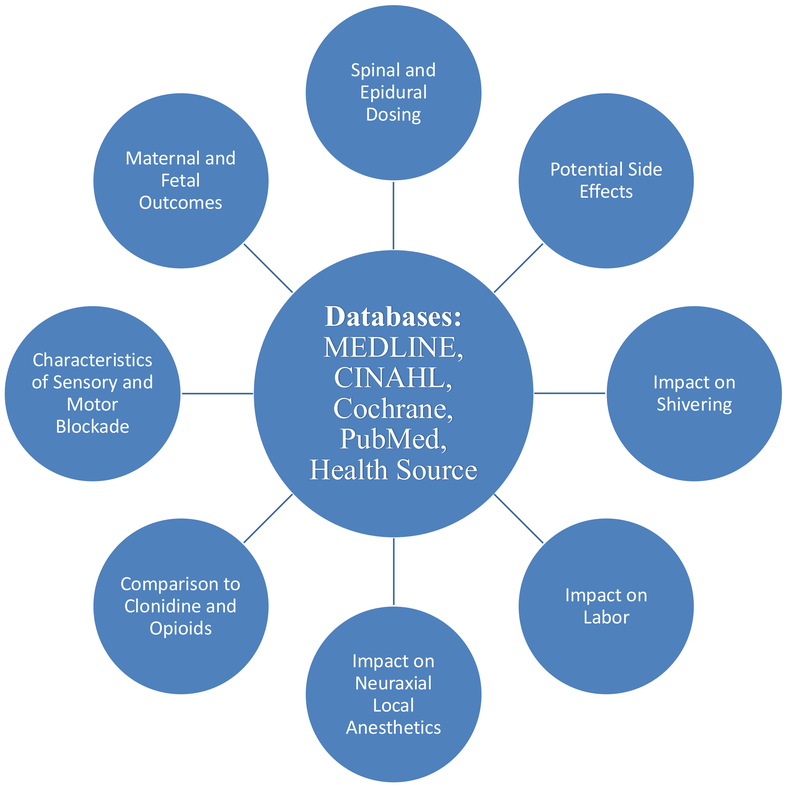
Optimal Neuraxial Dexmedetomidine Dosing for Obstetric Patients

Madeleine Caito, BSN, SRNA
Southern Illinois University Edwardsville

PROBLEM INTRODUCTION

- Neuraxial anesthesia, the standard for pain management during labor and cesarean section, is commonly enhanced with adjuvant medications (Li et al., 2020; Wang et al., 2022).
- Dexmedetomidine, a selective alpha-2-agonist with potent sedative and analgesic properties, has been gaining popularity as a novel neuraxial adjuvant (Schwartz et al., 2022).
- OB anesthesia providers at a Level 3 Perinatal Center in central Illinois routinely administer neuraxial dexmedetomidine for laboring mothers but lack an evidence-based dosing protocol.
- Evidence-based dosing guidelines that maximize patient benefits while minimizing potential complications are needed.

LITERATURE REVIEW



PROJECT METHODS

Obtain IRB and Stakeholder approval

Review current literature on neuraxial dexmedetomidine use in OB patients

Determine optimal dosing parameters that maximize benefit and minimize complications

Synthesize findings into an evidence-based dose chart

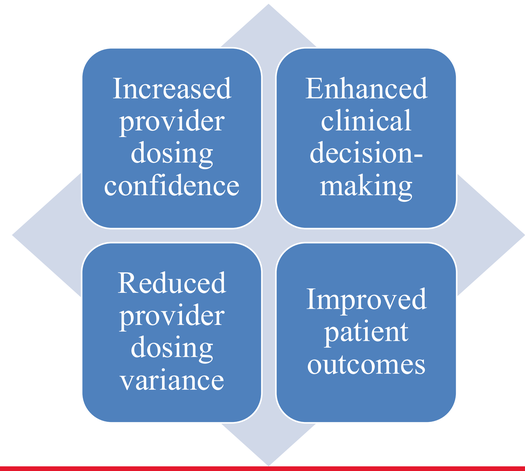
Introduce dose chart to OB anesthesia providers at host facility

Evaluate provider buy-in and satisfaction with the dose chart via anonymous survey

EVALUATION

- Respondents agreed the evidence-based dose chart supported safe and effective OB anesthesia management.
- Respondents found the tool clinically useful, flexible, easy to navigate, and easy to integrate into workflows.
- Respondents indicated a high level of satisfaction with the tool, as the average satisfaction ranking on a 10-point scale was 9.67.
- Most respondents (80%) indicated they plan to continue using the tool in their OB practice.
- Project recommendations included laminating the tool and improving accessibility in OB work areas.

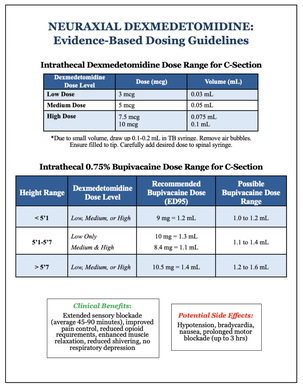
IMPACT ON PRACTICE



CONCLUSIONS

- Although this project successfully obtained buy-in for the new evidence-based dose chart, whole department buy-in for a non-FDA-approved, novel anesthetic technique is difficult.
- Ongoing literature reviews should focus on new high-quality RCTs on neuraxial dexmedetomidine administration in obstetric patients in the United States.
- This topic should be revisited in a few years as more research becomes available.

EVIDENCE-BASED DOSE CHART



NEURAXIAL DEXMEDETOMIDINE: Evidence-Based Dosing Guidelines

Intrathecal Dexmedetomidine Dose Range for C-Section

Dexmedetomidine Dose Level	Dose (mcg)	Volume (mL)
Low Dose	3 mcg	0.03 mL
Medium Dose	5 mcg	0.05 mL
High Dose	7.5 mcg 10 mcg	0.075 mL 0.1 mL

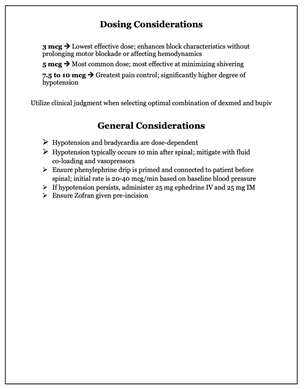
*Due to small volume, draw up 0.1-0.2 mL in TB syringe. Remove air bubbles. Ensure filled to tip. Carefully add desired dose to spinal syringe.

Intrathecal 0.75% Bupivacaine Dose Range for C-Section

Height Range	Dexmedetomidine Dose Level	Recommended Bupivacaine Dose (EZ95)	Possible Bupivacaine Dose Range
< 5'1	*Low, Medium, or High*	9 mg = 1.2 mL	1.0 to 1.2 mL
5'1-5'7	*Low Only* *Medium & High*	10 mg = 1.3 mL 8.4 mg = 1.1 mL	1.1 to 1.4 mL
> 5'7	*Low, Medium, or High*	10.5 mg = 1.4 mL	1.2 to 1.6 mL

Clinical Benefits:
Extended sensory blockade (average 45-90 minutes), improved pain control, reduced opioid requirements, enhanced muscle relaxation, reduced shivering, no respiratory depression

Potential Side Effects:
Hypotension, bradycardia, nausea, prolonged motor blockade (up to 3 hrs)



Dosing Considerations

3 mcg → Lowest effective dose; enhances block characteristics without prolonging motor blockade or affecting hemodynamics
5 mcg → Most common dose; most effective at minimizing shivering
7.5 to 10 mcg → Greatest pain control; significantly higher degree of hypotension

Utilize clinical judgment when selecting optimal combination of dexmed and bupiv

General Considerations

- Hypotension and bradycardia are dose-dependent
- Hypotension typically occurs 10 min after spinal; mitigate with fluid co-loading and vasopressors
- Ensure phenylephrine drip is primed and connected to patient before spinal; initial rate is 20-40 mcg/min based on baseline blood pressure
- If hypotension persists, administer 25 mg ephedrine IV and 25 mg IM
- Ensure Zofran given pre-incision

References

Dexmedetomidine in Peripheral Nerve Blocks

Kelly Fleri, BSN, SRNA
Southern Illinois University Edwardsville

PROBLEM INTRODUCTION

- Peripheral nerve blocks have become increasingly popular in multimodal pain management.
- Inconsistent use of dexmedetomidine in peripheral nerve blocks by anesthesia providers at the host facility.
- Seeking a way to extend single-shot peripheral nerve blocks as an alternative to ON-Q continuous catheters.
- Aimed to review the literature on dexmedetomidine use in peripheral nerve blocks & develop dosing guidelines.

PROJECT METHODS

Team
- Define the problem with the stakeholders and the team lead.

Research
- Complete literature review on dexmedetomidine as an adjuvant in peripheral nerve blocks.

Dosing Guidelines
- Develop an evidence-based dosing guideline for dexmedetomidine use in peripheral nerve blocks.

Presentation
- Introduce findings in-person and virtually via PowerPoint & voiceover.

Evaluation
- Voluntary participation in QR code-linked Qualtrics post survey.

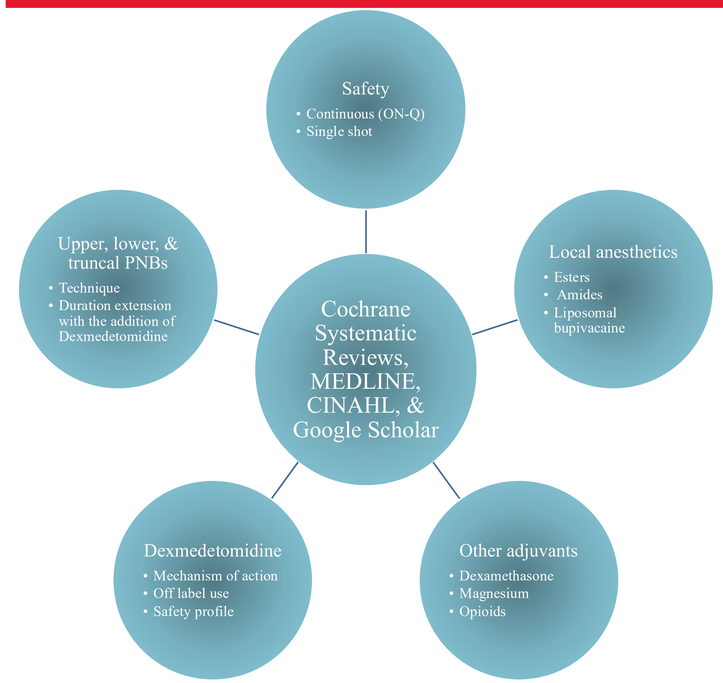
IMPACT ON PRACTICE

Short Term	Long Term	Steps
• Culture shift towards using 50-60 mcg of dexmedetomidine in PNBs.	• Widespread use of dexmedetomidine as a PNB adjuvant to lengthen analgesia and possibly replace continuous catheters.	• The immediate response was positive. • Block nurse who sets up each day agreed to help remind or give the option of having it available.

CONCLUSIONS

- Dexmedetomidine is an alpha 2 agonist that has sedative, anxiolytic, and analgesic effects.
- Dexmedetomidine works synergistically with local anesthetics to lengthen PNBs.
- Ideal PNB adjuvant dose is 50 – 60 mcg or 0.5 mcg/kg
- Higher dosing is associated with decreased nausea, but also decreased BP and HR.

LITERATURE REVIEW



EVALUATION

Survey Results

When asked about the likelihood of using dexmedetomidine in PNBs after this presentation, six indicated they were more than likely to use it, and three were less likely to use it.

The block nurse present stated a willingness to ask and remind providers about adjuvants when grabbing medications and supplies for them.

Based on the survey results, two out of 10 participants performed peripheral nerve blocks.

Link to Reference List

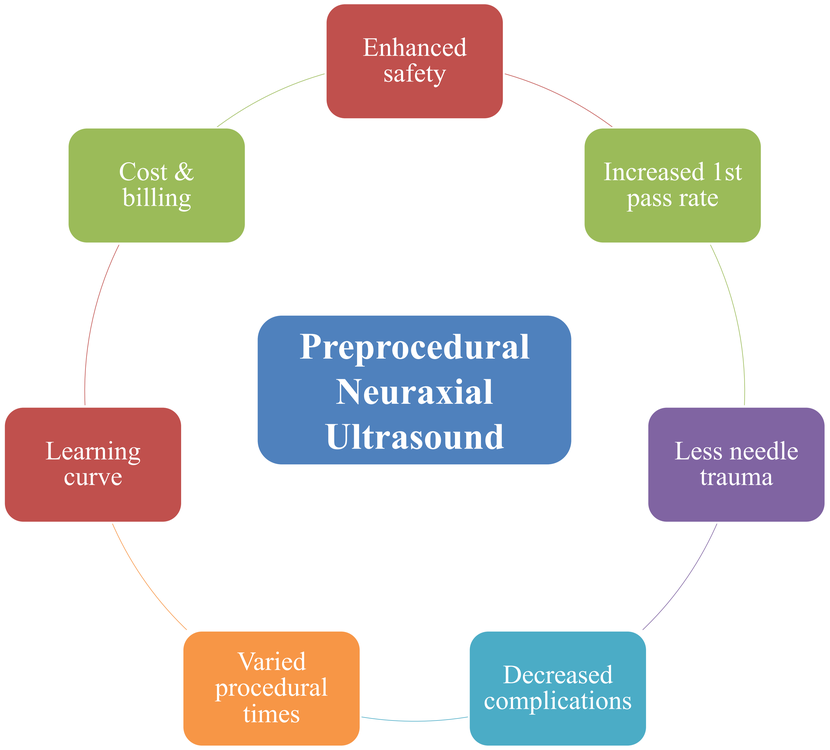
Ultrasound and Neuraxial Anesthesia in Obstetrics

Melonica Kozil, BSN, SRNA & Miyoung Luangphisay, BSN, SRNA
Southern Illinois University Edwardsville

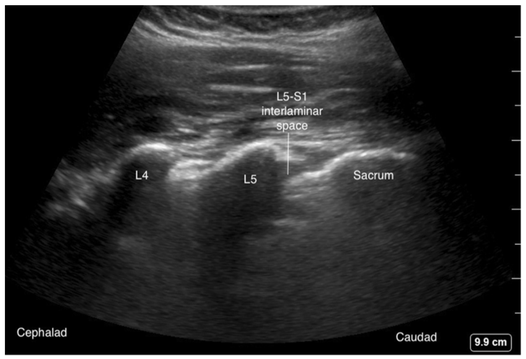
Problem Introduction

- There were 3,667,758 births in the US in 2022 (Osterman et al., 2024).
- Central neuraxial blocks (CNBs) are preferred for labor analgesia and anesthesia (Mhyre & Sultan, 2019).
- Physiologic changes in pregnancy and obesity can make CNBs difficult (Kula et al., 2017)
- Obesity rate of pregnant women in the US is >50% (Paredes et al., 2021).
  - Increased risk of cesarean delivery (Taylor et al., 2019)
- Preprocedural ultrasound for neuraxial anesthesia may help decrease the
  - Incidence of GETA for cesarean delivery
  - Risk of maternal aspiration
  - Difficult or failed airway (Kula et al., 2017; Taylor et al., 2019)

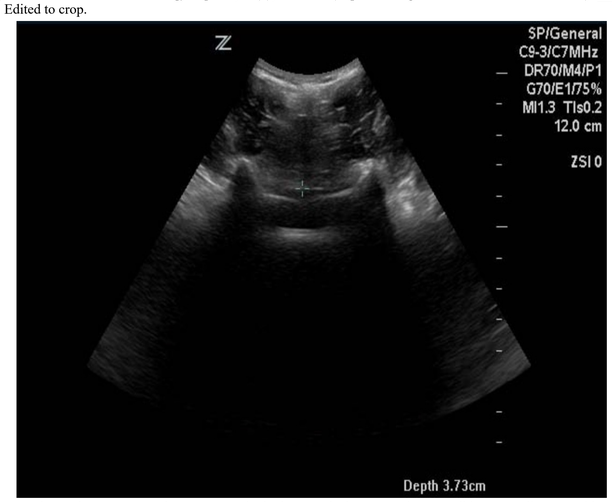
Literature Review



Neuraxial Ultrasound Views



Parasagittal interlaminar (oblique) view of sawtooth sign. Adapted from "Ultrasound imaging of the spine for central neuraxial blockade: A technical description and evidence update," by H. Kalagara, H. Nair, S. Kolli, G. Thota, and V. Uppal, 2021, *Current Anesthesiology Reports*, 11(3), 326–339 (https://doi.org/10.1007/s40140-021-00456-3). CC BY 4.0. Edited to crop.



Transverse interspinous process view. From "Spinal Ultrasound," by C. Arzola, M. Balki, J. Carvalho, E. Goldszmidt, C. Margarido, R. Mikhael, Y. Ohashi, N. Siddiqui, & P. Wieczorek, n.d., University Health Network (https://pie.med.utoronto.ca/OBAnesthesia/ OBAnesthesia_content/OBA_spinalUltrasound_module.html#top). Copyright (2013) by University Health Network. All rights reserved.

Project Methods

- This project was a nonexperimental pretest-posttest design.
- Participants were OB anesthesia providers at a Level 3 Perinatal Center in central Illinois.
- The findings from the literature review and a stepwise guide for preprocedural neuraxial US were introduced via PowerPoint and recorded video.
- A live demonstration of the technique was also presented.
- A hands-on session with a model, US, and the stepwise guide followed.

Evaluation

- Qualtrics pretest & posttest:
  - Assessed effectiveness of the presentation & hands-on session
  - Determined buy-in for the proposed stepwise guide
  - Elucidated feedback concerning adoption of preprocedural neuraxial US into practice

Impact on Practice

Short-term impact

- Availability of the step-wise guide reference tool
- Increased participant comfort level with practice change

Long-term impact

- Increased provider competence with continued use of the techniqe

Conclusions

- Preprocedural neuraxial US may be beneficial for parturients at risk for difficult neuraxial access: obesity, spinal instrumentation, spinal abnormalities, and increased edema (Hutcheon et al., 2018; Kalagara et al., 2021; Park et al., 2020).
- This technique can lead to increased patient safety, increased first-pass rate, decreased needle trauma, and decreased complications.
- When a parturient has known or suspected difficult neuraxial access, the stepwise guide can be used as a reference tool.

Stepwise Guide

References

Optimal Anesthesia and Analgesia for Surgical Cancer Patients

Karima Laadimi, MSN, SRNA & Marissa Hogg, BSN, SRNA
Southern Illinois University Edwardsville

PROBLEM INTRODUCTION

- According to the World Health Organization (2022), cancer is the leading cause of mortality worldwide, contributing to nearly 10 million deaths in 2020.
- Anesthesia & analgesia may influence cancer (CA) recurrence & long-term survival in surgical oncology patients (Liu & Wang, 2022).
- Surgery is often necessary for CA diagnosis & treatment (Selby et al., 2021).
- Is there an optimal anesthetic regimen for surgical oncology patients to improve patient outcomes?

LITERATURE REVIEW

Volatile Anesthetics → May suppress the immune system & promote CA growth/recurrence (Brogi et al., 2022; Selby et al., 2021; Stollings et al., 2016; Xu et al., 2020a)

Total Intravenous Anesthesia → Reduces inflammation & may inhibit tumor growth & spread (Song et al., 2014; Xu et al., 2020b; Zhou et al., 2022)

Opioids → Morphine associated with promoting tumor growth (Das et al., 2014) → Fentanyl not linked to increased CA recurrence post-colorectal surgery (Alam et al., 2021)

Dexmedetomidine → ↓ inflammation in colon CA surgery (Wang & Li, 2018); may promote breast CA growth & ↓ survival in lung CA (Cata et al., 2017; Xia et al., 2016;)

Ketamine → May promote breast tumor growth & metastasis (Chen et al., 2022b; He et al., 2013)

PROJECT METHODS

Site: Tertiary care academic center

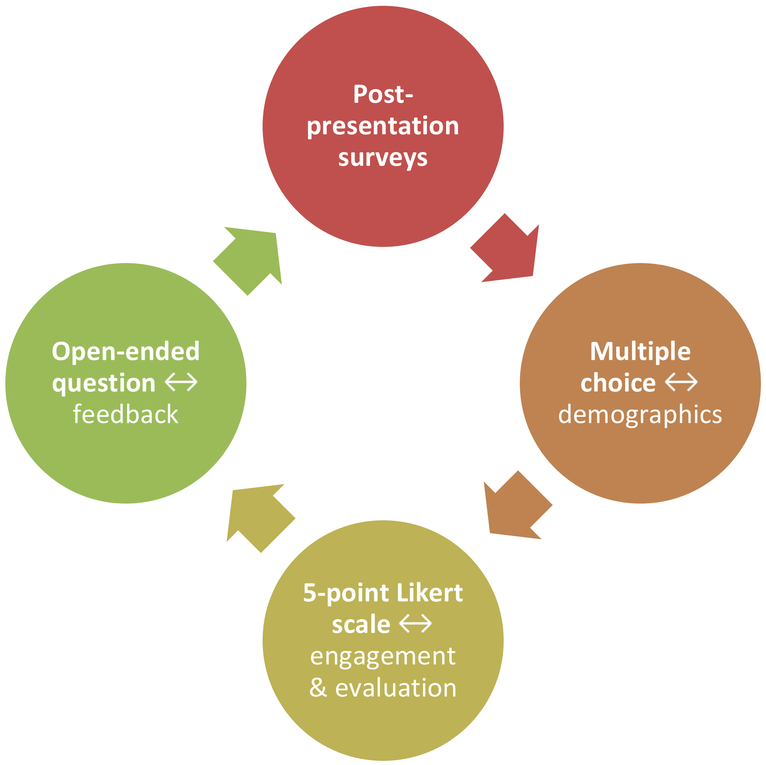
Participants: Convenience sample of anesthesia providers

Goals: Introduce findings from the literature review

IRB: Deemed QI; Exempt from further review

Expected Outcome: Improve awareness of plausible link between anesthesia & cancer recurrence & long-term survival

EVALUATION



IMPACT ON PRACTICE

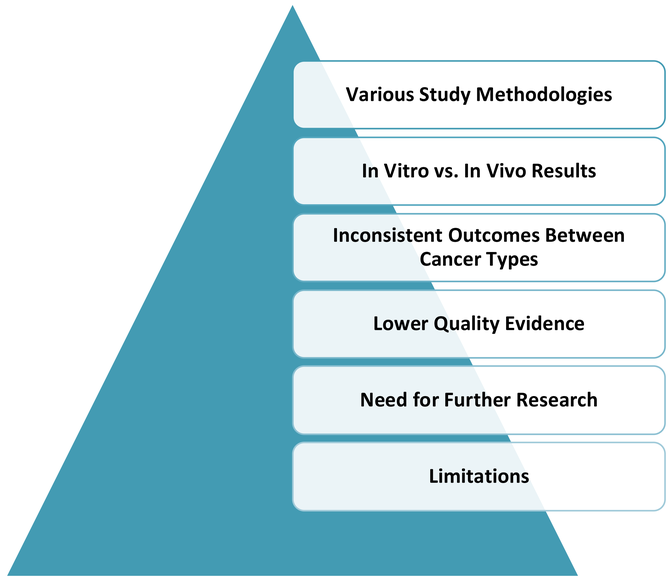
Short-term impact:

- Improved participant awareness:
  - A relationship between anesthetic agents, immunology, and tumor microenvironment exists.
  - Surgical oncology patient outcomes are multifactorial.

Long-term impact:

- Lack of consensus in the literature prohibited development of a best practice protocol, but this project did contribute to the body of knowledge on this topic.

CONCLUSIONS



REFERENCES

Revision of an Enhanced Recovery After Surgery Protocol for Bariatric Surgery

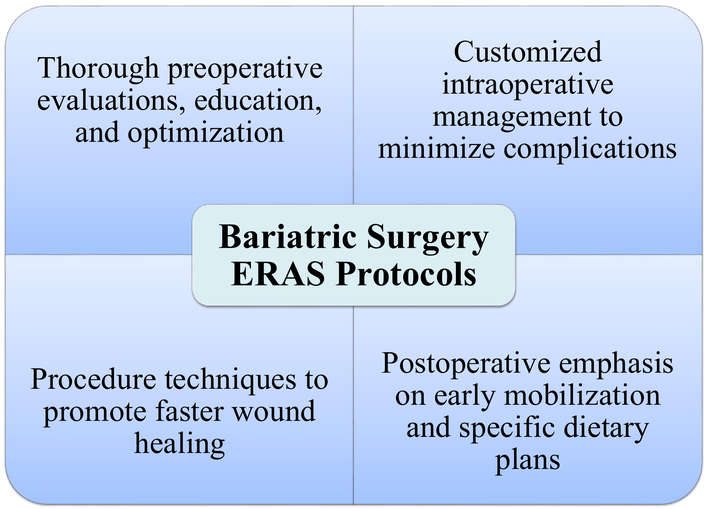
Heidi Ortyn, BSN, SRNA & Carly Schlupp, BSN, SRNA
Southern Illinois University Edwardsville

PROBLEM INTRODUCTION

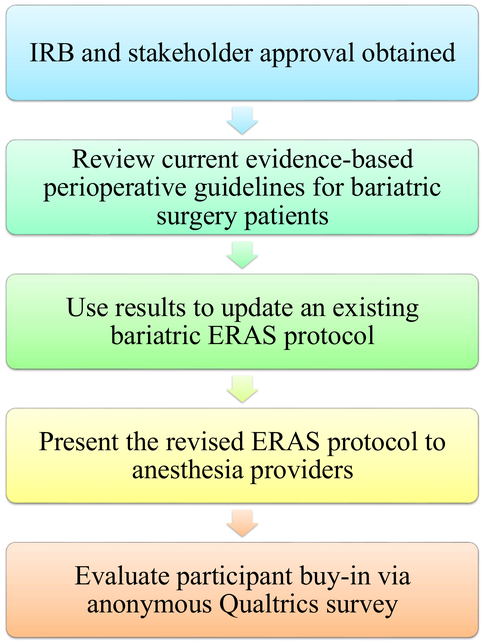
- Over 73% of U.S. adults are overweight and 42% are obese (Stierman et al., 2021).
- Bariatric surgery is the most effective treatment for severe obesity due to sustained weight loss and resolution of comorbidities (Zhou et al., 2021).
- The number of bariatric surgeries performed worldwide has substantially increased over the last two decades.
- The development of evidence-based protocols specific to bariatrics is needed.

LITERATURE REVIEW

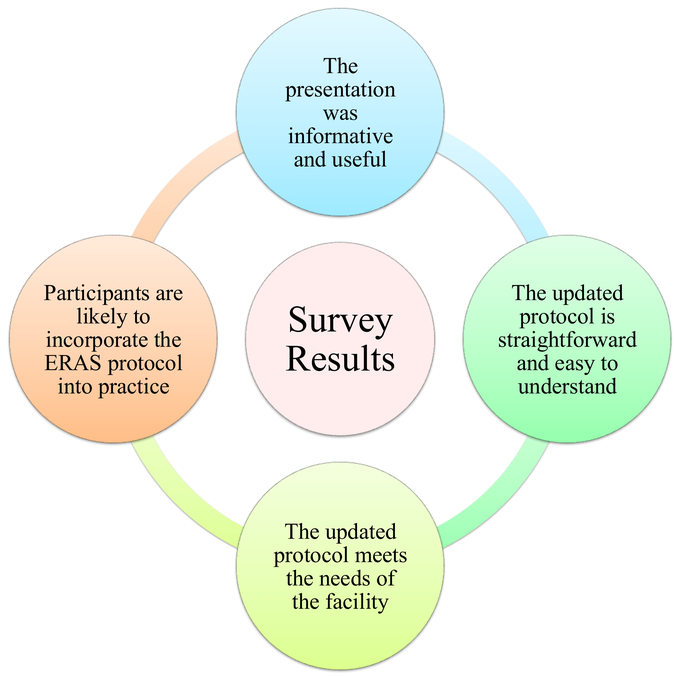
- ERAS protocols are evidence-based pathways that minimize the surgical stress response and optimize physiological function to promote recovery (AANA, 2024).
- Bariatric ERAS protocols are cost-effective, safe, and improve patient outcomes (Ahmed et al., 2018; Singh et al., 2017).



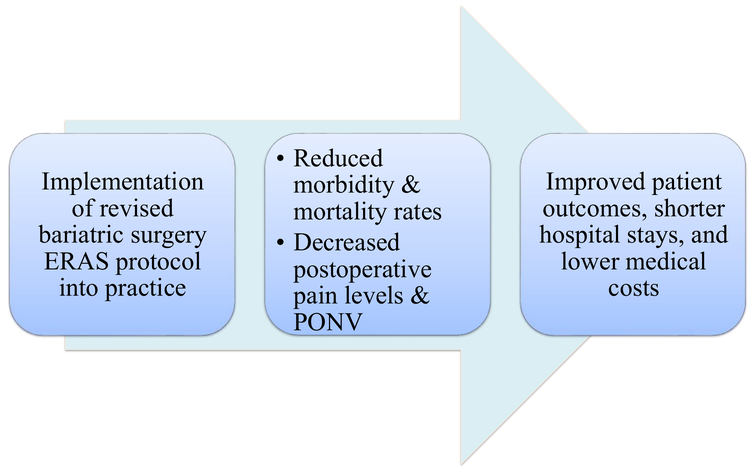
PROJECT METHODS



EVALUATION



IMPACT ON PRACTICE



CONCLUSIONS

- Adhering to a comprehensive bariatric ERAS protocol may promote quicker recovery with fewer perioperative complications and shorter hospital stays (Stenberg et al., 2022).
- Survey results indicated CRNA acceptance of the revised protocol with minimal adjustments.
- The ERAS protocol will need to be introduced to and evaluated by anesthesiologists at the tertiary care center.
- The protocol will also need to be reviewed periodically to stay current with ERAS Society recommendations.

References