Coping with Microaggression in the Operating Room: Education for Student Registered Nurse Anesthetists

Supreet Kaur

Marian University

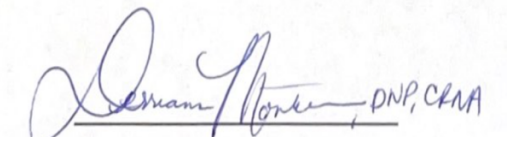
Leighton School of Nursing

Chair: Marie Goez, DNP, CRNA

Dr. Marie Goez, DNP, CRNA

(Signature)

Team Member: Derrianne Monteiro, DNP, CRNA



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Abstract

A common theme among Student Registered Nurse Anesthetists is an impact on their mental and physical wellbeing during didactic and clinical education. This DNP project is aimed for the current Marian University graduate nursing students in the Nurse Anesthesia Program. An evidence-based educational intervention was developed to enhance Student Registered Nurse Anesthetists' (SRNAs) confidence and knowledge on how to prevent microaggression in the operating room. Over four weeks, the survey was administered to the class of 2024, 2025 and 2026. To investigate this, an online survey was administered using the survey software program *Qualtrics*. Qualtrics was utilized to deliver the survey link to respondent emails and collect responses electronically. The participants for this project were required to complete a pretest assessing their baseline knowledge on microaggression. After viewing a 20-minute educational PowerPoint presentation, participants were required to complete a posttest. In addition, participant's confidence will be assessed by the Student Satisfaction and Self-Confidence in Learning. This is a 13-item instrument designed to measure student satisfaction with simulation activity and self-confidence in learning using a five-point scale (Pence, 2022). This questionnaire was distributed with the pre-and posttest. The results of this project indicated that the educational intervention improved SRNA's confidence and knowledge related to microaggression in the operating room.

KEYWORDS: microaggression, depression, graduate students and depression, awareness, nurse anesthesia students, microaggression prevention

Introduction

Microaggression occurs daily in a healthcare setting. It is defined as "everyday subtle put-downs directed towards a marginalized group which may be verbal or non-verbal and are typically automatic (Espaillat et al., 2019)." Microaggression is categorized into three groups: microassault, microinsults, and microinvalidations. Microassaults are conscious bias towards a person's heritage or identity (Ehie et al., 2021). Microinsults are unconscious messages, nonverbal, and environmental communications towards an individual that conveys rudeness and insensitivity towards marginalized groups (Ehie et al., 2021). Microinvalidations are behaviors and statements that are meant to exclude, negate, and dismiss one's personal feelings, thoughts, and experiences (Ehie et al., 2021). Microaggression has shown negative effects on healthcare providers in multiple ways. Research has shown that healthcare providers who work in the perioperative setting tend to experience distress due to microaggression during training. Furthermore, workplace ill-treatment leads to increased percentages in burnout and high suicidality rates (Ehie et al., 2021).

The prevalence of microaggression towards students in the medical field has increased significantly (Espaillat et al., 2019). Research has shown how the role of microaggression in the workplace setting can affect students' ability to learn, emotional and mental health, and how it can affect the victim's well-being. The purpose of this project is to identify, educate and teach students on how to combat workplace microaggression during their clinical training. These interventions are designed to encourage everyone to take action, motivate institutions to further equity, and to generate institutional accountability.

Background

A study conducted at the University of Florida College of Medicine gained insight on how students deal with microaggression. A survey was sent out to 351 students that consisted of

nine questions. The survey questions consisted of demographic information, understanding of the term microaggression, "standard" definition of microaggression, and lastly if students ever experienced microaggression (Espaillat et al., 2019). Of the respondents, 39% were males and 61% were females. The results indicated that 56% had heard of the term microaggressions while 44% had not heard the term (Espaillat et al., 2019). Furthermore, 54% of the students reported microaggression during school and 50% reported experiencing microaggression during clinical (Espaillat et al., 2019). Lastly, 73% of the students experienced microaggression during their medical education (Espaillat et al., 2019). In the survey, students mentioned how microaggression caused them to feel "powerless, devalued, and uncomfortable." Furthermore, minorities are only 4% of the population in medical schools, the results indicated that microaggression towards minorities was due to race, religion, ethnicity, and sexual orientation (Espaillat et al., 2019).

The first step for students to understand microaggression is to recognize and react in a professional manner. Women and underrepresented minorities in the medical field typically experience the greatest amount of discrimination (Torres et al., 2019). Although there are a rising number of women in the healthcare and residency programs, only 39% of women are currently faculty at medical schools (Torres et al., 2019). Due to years of research, researchers have implicated that microaggression proposes the risk of mental health, physical health, creates a toxic learning environment within education, healthcare, and workplace (Ehie et al., 2021). However, there are interventions that may be used in order to combat the adverse effects of microaggression.

The first step is for institutions to "establish a culture of openness and respect upfront (Ehie et al., 2021)." Healthcare departments and institutions' priority should be to advocate for

diversity and equity. Diversity can begin with a new cohort cycle, new clinical rotation, and during family or patient encounters (Ehie et al., 2021). It has been noted that diversity is considered the best defense against the effects of microaggression (Parikh & Leschied, 2022). The next step is the ability to develop skills in order to disrupt microaggressions. Institutions should provide education skills, tools and workshops for students to educate them on what to see and hear during microaggression (Ehie et al., 2021). This will give an opportunity to anyone who witnesses microaggression to take action. There are two different strategies: indirect and direct (Ehie et al., 2021). Direct strategies can be difficult to articulate if someone hasn't had experience or seen microaggression before. Indirect strategies will also prevent microaggression, however communication is indirect.

The Diversity, Equity, and Inclusion (DEI) Committee of the Department of Anesthesiology focuses and acknowledges the belief that diverse perspectives and experiences improves the strength of an organization (Estime et al., 2021). The drive to increase diversity and prevent microaggression in the anesthesia world needs to occur first at the institutional level. Work must be done to drive DEI principles through committees especially those that are responsible for workforce hiring, promotion, and retention (Estime et al., 2021). Organizations that favor the principles of DEI witnessed a 66% increase in the proportion of women expecting to remain in academic medicine and a 57% increase among men (Estime et al., 2021). Furthermore, there has been an increase from four to 26 in the number of female associate professors (Estime et al., 2021). Institution leaders can create accountability and adhere to processes to mitigate bias and reduce disparities in health care clinicians. Academic programs such as Yale University, Duke University, University of California San Francisco, Washington University School of Medicine in St. Louis, and University of North Caroline are initiating the

policies and practices of DEI to support students and create an environment which promotes equitable and inclusive success.

Problem Statement

A common theme among Student Registered Nurse Anesthetists is an impact on their mental and physical well-being during didactics and clinical education. Multiple factors are involved in students' well-being such as longer duration of education, more clinical hours, doctorate or masters level coursework, extended practicum hours, and higher financial debt (Mesisca, 2021). In a cross-sectional mixed-methods study, 76 SRNAs currently enrolled in a small urban university participated in this study (Mesisca, 2021). Report from the study indicated that 67% of the participates reported low well-being and presented a high risk for adverse outcomes such as poor mental quality of life, suicidal ideation, burnout, severe fatigue, and risk of dropping out (Mesisca, 2021). 50% of the SRNAs believed that their preceptors and clinical faculty did not acknowledge student's well-being (Mesisca, 2021).

Due to the nature of the job, anesthesia providers are in constant stress. Research has shown that women and minorities in the surgical field tend to experience microaggression more frequently (Sprow et al., 2021). Gender role disparities and discrimination play a huge role in individuals to prevent medical professions to advance their careers in the operating rooms. Data has shown that women in the operating room have experienced treatment such as second-class citizen, assumptions of traditional gender roles, sexual objectification, assumptions of inferiority, leaving gender at the door, and use of sexist language (Sprow et al., 2021). In fact, 68% of the women applying for residency programs tend not to apply for surgery residencies due to gender biases (Sprow et al., 2021). To prevent gender biases and microaggressions it is important to advance diversity and achieve equity in the operating room. In order to raise awareness and shed

light on this topic, the following PICOT question was developed: In Student Registered Nurse Anesthetists, what is the effect of providing education on coping and preventing microaggression in the OR compared with no education within a one-month time frame.

Needs Assessment/ Gap Analysis

This project will be dedicated to the current Marian University graduate nursing students in the Nurse Anesthesia Program. Learning to become a competent Certified Registered Nurse Anesthetist is a difficult and stressful journey. High levels of stress in nurse anesthesia education cause negative health consequences as well as impair patient safety (Megan, 2015). A study reported that 47% of nurse anesthesia students reported depression and 21% reported suicidal ideation (Megan, 2015). To provide support to students in their educational journey, guiding students through their clinical experience will help decrease student's stress levels. Confidence levels will be evaluated before and after the education session to measure stress. Due to the lack of understanding of the term "microaggression" an educational tutorial and resources will be gathered to provide students with useful tools. The goal for this project would be to educate these scholars the proper way to cope and prevent microaggression in the operating room. By shedding light on how microaggression can impact on an individual's mental and physical wellbeing, this project will teach Marian's student registered nurse anesthetists on how to apply their skills they learned during the educational training in clinicals and didactics.

Literature Search Methodology

This literature review was done to examine how microaggression can cause a negative learning environment for Student Registered Nurse Anesthetists. To successfully look up literature review articles, keywords such as *microaggression, perioperative department, workplace incivility, certified registered nurse anesthetist, perioperative nurses, surgeons, stress,*

mental health, professional performance, program leadership, gender-based microaggression, ethical inequality and *psychological disorders* were used. The literature review was done from September 2022 to December 2022. BOOLEAN phrases used for this literature review were microaggression AND mental health, microaggression AND Student Registered Nurse Anesthetist, and operating room violence AND mental health. 550 database search results came up when looking for literature review. From the 550 articles, 13 literature review articles were used in order to support the PICOT question. From these 550 articles, some were placed in the exclusion or inclusion criteria. Articles that were excluded were if they were older than five years, articles that were not in English, and participants who refused to give consent. The inclusion criteria consisted of articles that were published within five years, articles that were translated to English, participants who worked in the perioperative department, student registered nurse anesthetist education and clinical experience, and articles that had a randomized control trial. Articles needed to discuss how microaggression can have a negative impact on a student's education. (See APPENDIX A)

Literature Review Synthesis of Information

Gender-Based and Ethical Microaggression in Medicine

Medical providers experiencing workplace mistreatment from microaggression can cause chronic, severe distress. Microaggressions are subtle, insulting, discriminatory comments or actions that communicate a demeaning or hostile message to nondominant groups. Studies have shown that workplace microaggression has an impact on burnout. Medical provider burnout is considered a global crisis, with prevalence as high as 80% (Sudol et al., 2021). In medicine, gender-based microaggression has been considered the most common type. In a survey study on surgeons and anesthesiologists, 91% of reported sexist microaggressions and 84% reported

racial/ ethnic microaggressions (Sudol et al., 2021). This was a cross-sectional survey that evaluated microaggression and physician burnout. 259 females experienced sexist microaggression and 299 respondents experienced racial/ethnic microaggression (Sudol et al., 2021). A survey completed by 297 participants detailed that female provider experience a significantly higher frequency of gendered microaggressions compared with male providers (Sarah et al., 2022).

Microaggression can impact job satisfaction, burnout, perceived career impacts and behavioral modifications. Furthermore, a study reported that trainees experienced more microaggressions and burnout than faculty (Sarah et al., 2022). In a study done on 124 faculty members, 79 women and 45 men participated (Periyakooil et al., 2020). Women reported higher frequencies of microaggression than men in 33 of the 34 videos describing microaggressions (Periyakooil et al., 2020). This study showed that microaggressions fell into 6 themes: encountering sexism, encountering pregnancy and childcare related bias, having abilities underestimated, encountering sexually inappropriate comments, and feeling excluded or insignificant (Periyakooil et al., 2020).

Lack of diversity in anesthesiology has become a common theme. According to the American Nurses Association (AANA), there are currently 50,000 CRNAs practicing. Of the 50,000 CRNAs, 12 percent are considered minorities. This means that 7,080 current CRNAs working are minorities. One approach to help improve the field of anesthesiology is to engage underrepresented minoritized students to attract them to medicine, involve medical students to anesthesiology, offer mentorship and support to residents and students, and enhance knowledge on diversity and antiracism in the anesthesiology. It has been reported that females and minorities are underrepresented in the American Society of Anesthesiologists. Although, 13.4%

of the United States population identifies as being African American, about 3-5% of United States anesthesiologists are African Americans (Milam et al., 2021). The lack of diversity in cardiothoracic anesthesiology may have been due to multiple factors such as lack of mentorship, microaggression and discrimination during residency training, isolation, discouragement from attending physicians, and biases during interview process (Milam et al., 2021). There are many benefits increasing diversity in the medical field such as improvement in patient care, patient satisfaction and reduction in healthcare disparities.

Even though there has been an increased awareness of microaggression occurring during medical training, it is still prevalent in plastic surgery training. A survey was distributed by the American Society of Plastic Surgeons Resident Representatives from March and May 2021. One hundred twenty-five participants completed the survey. Those who responded, 68.8% experienced microaggression and female trainees experienced microaggression more frequently than male trainees ($p<0.05$) (Goulart et al., 2022). Furthermore, Asians had a higher odd to be a target of microaggression as compared to Caucasians ($p=0.013$) (Goulart et al., 2022). This study mentioned how approximately 7 in 10 trainees have mentioned that they have experienced microaggression in the past year (Goulart et al., 2022). Multiple studies need to be implemented to address the problem in order to resolve inequities.

The learning environment in medical training involves multiple participants: a learner, an educator, and a caregiver. Microaggression aggression in medical education may occur daily for many trainees. These difficult encounters may lead students with a sense of not fit for a certain specialty, setting or occupation. A study conducted in United Kingdom reported that 30% of the surgical residents experienced gender and racial discrimination at least a few times per week (Hastie et al., 2020). A study done on medical students across the United States was conducted

in 2019. A total of 217 students participated in the study. Of the 217 responses, 148 were under-represented minorities (URM). URM respondents reported experiencing race-related microaggressions during medical school (55%), feelings of burnout (62%), and compromised learning (64%) (Chisholm et al., 2021). Furthermore, these students were not provided with adequate resources to address microaggression (39%) (Chisholm et al., 2021). In addition, another study conducted on medical students had 759 respondents. Of the respondents, 61% experienced at least one microaggression weekly (Anderson et al., 2022). The most cited reasons for experiencing microaggression was gender (44%), race/ethnicity (60.5% and age (40.9%) (Anderson et al., 2022). These students who experienced microaggression were considering transferring schools, withdrawing from the program, and believed microaggression was a normal part of medical school culture (Anderson et al., 2022).

Underrepresented medical and nursing students from Yale University and University of California, Davis participated in interviews that were conducted from November 2017 to June 2018 (Ackerman-Barger et al., 2020). The sample size was thirty-seven participants: twenty-two medical students, fourteen nursing students, and one physician assistant. Based on the interview, the most common themes were students felt devalued by microaggression, students mentioned how microaggression affected their learning, academic performance, and personal wellness (Ackerman-Barger et al., 2020). The goal of this study was to understand what students experienced throughout their educational experience and their insight on racial microaggressions (Ackerman-Barger et al., 2020). It will help educators and academic leaders learn appropriate steps on how to support students and create a safe learning environment.

Operating Room Environment

Effective teamwork in the operating room decreases the risk of surgical errors and complications for patients by up to 14 percent. Marian University's SRNAs rotate through 55 possible different clinical sites and in many states. Because students are required to rotate to multiple clinical sites, they may be exposed to different personalities and different expression of microaggression depending on the site. This can lead to a stressful psychosocial and learning environment for the student. It has shown than ineffective teamwork in the operating room is the primary contributing factor to patient complications. It is appealing to understand how gender can affect interprofessional practice in the operating room. There are many reasons why effective teamwork can be threatened due to power and hierarchy. Recent research has drawn attention in surgery and anesthesia the importance of gender shaping and outcomes of healthcare professionals. Studies have shown that women providers experience bias and harassment in surgery and anesthesia. In a study conducted in Ontario, Canada, sixty-six interviews were conducted on operating room healthcare professionals (Etherington et al., 2021). Participants were anesthesia providers (n=17), nurses (n=19), perfusionists (n=2), and surgeons (n=26) (Etherington et al., 2021). Both men and women recognized the difficulties women face in the operating room (Etherington et al., 2021). In order to provide safe practice to patients, operating room team members should be aware how communication and effective teamwork can benefit patient's health.

Disruptive behavior in the operating rooms is an issue within healthcare teams. It has negatively impacted personal well-being, patient safety and organizational climate. Disruptive behaviors are verbal or physical alteration, which can interfere with healthcare team's ability to work with each other. Repeated disruptive behavior can lead to emotional exhaustion, depression, burnout, and potential suicidal ideation (Campos et al., 2022). Participants in this

study were surgeons (n=12), anesthetists (n=2), residents (n=2), nurses (n=2), and technicians (n=2) (Campos et al., 2022). The behaviors noted by these participants were verbal aggression, physical aggression, and lack of professionalism. This study confirmed the importance of hierarchy in disruptive interactions (Campos et al., 2022). It was noted that there were alterations between those with "less power" positions than those with superior positions (Campos et al., 2022).

Empowerment and Leadership Initiative

Students in the medical field often experience microaggression during their clinical and didactic education. A recent study was conducted on how impactful a two-hour workshop can be to help students recognize and respond to microaggression in clinical practice (Sandoval et al., 2020). The goal of the session was for students to recognize instances of microaggression and discrimination in the clinical setting, describe the impact of microaggression, and explain challenges to responding to microaggression. The workshop consisted of a PowerPoint presentation and a small-group session where students work through two cases by applying the presented frameworks and role-playing scenarios. Of the 163 students participated in the workshop, 77% had witnessed or experienced microaggressions in the clinical setting, and 69% reported very good or excellent familiarity with the concept of microaggressions (Sandoval et al., 2020). The workshop was beneficial in many ways such as students were able to identify microaggressions, brought awareness to the negative effects from microaggressions, and improvements in familiarity with institutional support systems (Sandoval et al., 2020).

A workshop dedicated to the residents of Internal Medicine utilized the Microaggression Response Toolkit (MRT). This was a fifty-minute workshop that was designed to help describe strategies for responding to microaggressions as a target or witness (Fisher et al., 2021). An

electronic pre- and post-surveys were distributed to assess the success of the workshop. The results from this workshop indicated that 89% of the residents felt more comfortable in identifying microaggression, 97% of the residents improved the understanding of the impact of microaggression and 70% increased confidence in responding to microaggression (Fisher et al., 2021). Residents from the workshop suggested to incorporate microaggression as part of the curriculum and mentioned that MRT and practice scenarios were the best part of the workshop (Fisher et al., 2021). The goal of this project is to make SRNAs more comfortable in identifying microaggression and gaining confidence in responding to microaggression after the educational tutorial.

Theoretical Framework

Using the best evidence to guide clinical practice plays an important role in advocating change. The Iowa model of evidence-based practice is to improve quality care and help guide healthcare professionals in decision-making (Melnyk & Fineout-Overholdt, 2019). (See APPENDIX B). The first step of the Iowa Model is to identify a problem-focused trigger. Problem-focused triggers are problems obtained from risk management data, process improvement data, internal/external benchmarking data, financial data and identification of clinical data (Melnyk & Fineout-Overholdt, 2019). This model was developed by nurses to help develop research projects. This guide helps with clinical decision-making and evidence-based practice process from both the clinician and systems perspectives (Buckwalter et al., 2017). The use of the Iowa model has increased dramatically and is being utilized by clinicians, educators, administrators and researchers from all 50 states and 130 countries (Buckwalter et al., 2017). This model fits the criteria of this project because it will help identify the problem-focused

trigger of microaggression. In addition, the model will help guide the student registered nurse anesthetist with steps to help cope and identify microaggression exposure in the operating room.

Project Aims and Objectives

The primary aim of this project is to improve recognition of microaggression and knowledge skillset on how to handle difficult situations in the operating room. This project is directly towards Marian University's student registered nurse anesthetists from the class of 2024 and 2025. The objective of this project was to develop a comprehensive 19-minute educational PowerPoint. Before the Marian graduate nursing students view the PowerPoint, a pretest will be distributed via email to understand their baseline knowledge of microaggression. After viewing the PowerPoint, a posttest will then be conducted to analyze the effectiveness of the educational PowerPoint. In addition, participants will be receiving a Student Satisfaction and Self-Confidence in Learning questionnaire with the pre-and posttest. This will help determine if students are more comfortable and confident in the topic of microaggression. The goal for this posttest survey is to see an improvement in the participant's ability to describe microaggression after viewing the educational PowerPoint. These results will evaluate the qualitative question on the pre- and posttest. The second goal is to see an increase in the participant's ability to recognize correct answers to the multiple-choice questions on the posttest. These results will evaluate the quantitative questions on the pre- and posttest.

GANTT Chart

APPENDIX C.

SWOT Analysis

This project will be conducted at Marian University located in Indianapolis, Indiana. The key stakeholders for this project are currently enrolled student registered nurse anesthetist

attending Marian University, instructors teaching at Marian University and preceptors. Students will be provided with a pre and post survey regarding their understanding on microaggression. Along with the pre-and posttest, a questionnaire assessing confidence will be distributed. Furthermore, students will be provided with a PowerPoint that will identify key points on how to recognize and cope with microaggression. Evidence-based practice and recent research will be gathered to help identify the problem.

The advantages are that all the key stakeholders are within in contact through email. Technology and Qualtrics are strengths to this project because the distribution of surveys, PowerPoint presentation, and contacting participants can be easily circulated. Another strong advantage is that SRNAs at Marian University gain their experiences from over 30-40 clinical sites. By representing multiple states of the US, there will be more diverse responses. The total participants for this project is less than one hundred students. Negative factors regarding this project are students not taking the time to complete surveys in a timely manner. Due to the stress of education and clinical, surveys tend to be the last priority for students. Another weakness regarding this project is providing surveys to students from only one institution. By involving more than one institution can help identify other problems and researchers can have a better opportunity to help guide students in a better direction.

By providing resources to students in an educational manner can offer better outcomes in the clinical workplace. This way students can use their skills they have developed during their education and utilize them in their practice. Marian University students will be asked on the presurvey if they have ever experienced microaggression. This will help publish percentage to present to others how often microaggression occurs in a SRNA's educational career. As previously mentioned, microaggression occurs frequently in the workplace setting that can cause

harm to an individual's wellbeing. Students one day can be leaders in their institution and provide a positive impact on their colleague's journey in the operating room. The threats regarding this project are lack of support or response from Marian University's students, technology issue, and participants are not interested in this topic. (See APPENDIX D)

Project Design/ Methods

The project design will consist of an educational intervention and process improvement. Students are expected to complete a pre and posttest assessment that will include demographic and qualitative questions. After completing the pretest, graduate nursing students are expected to view an educational PowerPoint presentation regarding microaggression and how to identify and manage microaggression in an educational environment such as in clinical. Once the participants have viewed the PowerPoint, they will complete the posttest questionnaire to assess whether the PowerPoint was a successful education intervention. Students are also expected to complete a Student Satisfaction and Self-Confidence in Learning questionnaire that will assess their confidence level before and after viewing the educational tutorial. This project's main goal is to educate students and how to improve the culture of the healthcare system in the longer run.

Population and Setting

This project will be conducted at a small, private, Catholic university in the Midwest. This setting offers graduate programs such as Nurse Anesthetist, Family Nurse Practitioner, Osteopathic Medicine, and Organizational Leadership. The individuals participating in the project will be those who are seeking an advanced nursing practice doctoral degree in nurse anesthesia. These individuals partaking in the project will be students from the class of 2024, 2025 and 2026. The participant's age will vary from their early 20s to greater than 50 and will include all gender preferences.

Measurement Instruments

The measurement tool for this is a DNP student created questionnaire that includes two demographic questions and fourteen qualitative questions (See APPENDIX E). Participants will be expected to complete a pretest to assess their baseline knowledge on microaggression. Participants will then be introduced to a 20-minute PowerPoint presentation that will discuss topics on identifying microaggression, how to cope with microaggression, and how to manage microaggression in educational setting. Once participants are exposed to the PowerPoint presentation, they will be required to complete the posttest right after. The first question will ask for the student's last four digits of their student identification card. Then the next two questions will be regarding their gender and ethnic or racial preference. The posttest questionnaire will have no demographic questions; however, students are expected to use their student identification number as well as the same qualitative questions for analysis. Participants will receive their presurvey and PowerPoint Presentation by the first week of January 2024. Students will receive a reminder to complete their surveys every two weeks. The purpose of the study was to determine if the PowerPoint presentation was beneficial to students regarding their understanding on the topic of microaggression. Survey is a strong tool to utilize during studies to compare results. It gives valuable feedback, and the conductor can measure and establish a benchmark to compare results over time. By analyzing results, researchers can recognize topics that are important to review, rather than wasting time and resources on areas with a minor concern. The goal for this study is for students to score higher on the posttest than they did on the pretest.

For this project, participant's confidence will be assessed by the Student Satisfaction and Self-Confidence in Learning. This is a 13-item instrument designed to measure student

satisfaction with simulation activity and self-confidence in learning using a five-point scale (Pence, 2022). This questionnaire will be distributed with the pre-and posttest. The questions asked on the on this tool are all student self-reports of their perception and reactions to the simulation (Pence, 2022). Based on the question, students will pick strongly disagree (SD), disagree (D), undecided (UN), agree (A), and strongly agree (SA). The reliability was tested using Cronbach's alpha: satisfaction= 0.94; self-confidence= 0.87 (Pence, 2022). The National League for Nursing is offering this tool and instrument for use in nursing education (Pence, 2022).

Data Collection Procedures

Measuring the efficacy of any project relies on data analysis. Data analysis provides a statistical measurement that ensures the effectiveness of a project (White et al., 2016). The participants from this project will complete the pre and posttest on Qualtrics website. Qualtrics is an online survey tool that allows survey building, distribute surveys and analyze responses in a convenient manner. The benefits of Qualtrics is that there is no need to install a software, over eighty-five different question types can be formed, many questions and survey template options, multiple surveys can be posted at the same time, capability for respondents to stop in mid-survey and resume later where they left off, and ability to export data directly to SPSS, CSV, PDF, Word, Excel, and PowerPoint.

For this project, the sample size is small therefore a non-parametric test will be utilized to collect nominal data. Based on the statistical testing, research conductors will be able to assess the most incorrectly answered question on the pretest as well as the most correctly answered question on the posttest. Because participants are required to enter their last four student identification digits for the pre and posttest, each participant's overall score can be

compared based on the results of pre and posttest. The goal is to determine if there is an increase in scores, which will then indicate if the educational PowerPoint was a successful tool for educating student registered nurse anesthetists from Marian University.

The Wilcoxon signed-rank test is a frequently used nonparametric test for paired data (Rosner et al., 2006). This test can be utilized because it can assess pre and posttest measurements based on independent units of analysis. The Wilcoxon signed-rank test is best to measure the differences between two related samples and determine statistically significant differences (White et al., 2016). Furthermore, it is favorable because it can be accustomed to "compare two sets of scores that come from the same participants" (White et al., 2016). Wilcoxon signed-rank tests offers project conductors a better visualization on evaluating the score from pre and posttest. This way, project conductors can determine improvements and positive outcomes based on the data provided. After obtaining data collection, the Wilcoxon signed-rank test will be used to measure the participant's knowledge gap regarding microaggression. This test can also estimate the population's median and compare it to a target value (Rosner et al., 2006). Furthermore, each pre and posttest will be compared closely, and the goal is to see an upward trend in answers. Goal is to see an increase in participants ability to recognize correct answers to the multiple-choice questions on the posttest. In addition, the objective is for the participants to gain confidence in this topic, so that they can make use of their skillset in the operating room.

Ethical Considerations

To maintain the participant's privacy, they are expected to provide the researchers with their student identification number. Marian University's Internal Review Board (IRB) approval was obtained before initiating the implementation phase of this DNP project. IRB Determination

Form Letter of Approval can be found in Appendix F. The data will be stored on the Qualtrics website and an excel spreadsheet that will only be accessed by the conductors of the study. Once the dissemination is complete, all data results will be deleted. The goal for this project is an educational intervention, which requires no physical or mental activity.

Project Evaluation Plan

The application of Lincoln and Guba's evaluative criteria will be used to appraise the quality of this project. Trustworthiness of a research study is important to evaluating its worth and it involves: credibility, dependability, transferability, and conformability of this project (Melnyk et al., 2019). These trustworthy criteria will help demonstrate accuracy and validity through research, opinion, biases, and peer debriefing (Melnyk et al., 2019). This is also known as “the Four-Dimensions Criteria” (FDC). Credibility means confidence in the “truth” of the findings (Forero et al., 2018). Transferability is showing that the findings have applicability in other contexts (Forero et al., 2018). Dependability is showing that the findings are consistent and could be repeated (Forero et al., 2018). Lastly, confirmability is a degree of neutrality to which the results of the project are shaped by respondents and not researcher bias, motivation or interest (Forero et al., 2018). After implementing this educational intervention, the goal is that Marian University graduate nursing students have a better understanding of how to combat the negative effects from microaggression.

Results

For this DNP project, surveys were sent to students from the DNP class of 2024, 2025, and 2026. Surveys were sent to 99 SRNAs from Marian University. There were a total of 20 responses. Of the 20 responses, three responses were excluded because the participants did not complete the post-survey. In addition, two responses were excluded as the participants

completed the post-survey but did not complete the pre-survey. Data analysis for this DNP project was conducted on 15 participants who completed both the pre and post survey for a 15% completion rate. Of the remaining 15 participants, there were five males and ten females.

Data analysis was conveniently and automatically performed using Qualtrics. The questionnaire consisted of 30 questions in both pre and post-test. Fourteen questions on the survey were regarding understanding and coping with microaggression. For question four, *what year was the term microaggression first used,* only 40% of the respondents answered the question correctly. With regards to survey question seven, *what is your understanding of the term microaggression,* only 53% of the respondents answered the question correctly. In addition, question number five, *what are the different types and forms of microaggression,* only 33% of the participants knew the different types of microaggression. Lastly, question 15 asked about, *how can students contact the Health Center at Marian University,* only 65% of the respondents knew how to contact the health center correctly. Based on the results, knowledge improvement from pre-test to post-test was statistically significant. The mean of the SRNA's pre-test was 62% and the mean of the post-test was 83.8%. After performing the paired t-test, the p-value was 0.004. Since the p-value was <0.05, this indicated that the post-test test results are significantly higher than that of the pre-test.

Furthermore, an NLN Student Satisfaction and Self-Confidence survey was administered to participants. The Student Satisfaction and Self-Confidence in Learning is a 13-item instrument designed to measure student satisfaction with the simulation activity and self-confidence in learning. Students responded to a Likert-type scale from 1= strongly disagree, 2=disagree, 3=undecided, 4=agree, and 5= strongly agree. Based on the results from the NLN survey, the participants were satisfied with the simulation and felt confident in identifying

microaggression in the clinical area. The post-test results are significantly higher than those of pre-tests with a p value of 0.026. (See APPENDIX G)

Survey Items	SD	D	UN	A	SA	Total
Satisfaction with current learning						
Teaching methods helpful and effective	0 (0%)	1 (6.6%)	0 (0%)	8 (53%)	6 (40%)	15
Variety learning materials and activites promote learning	0 (0%)	1 (6.6%)	0 (0%)	8 (53%)	6 (40%)	15
Enjoyed how instructor taught simulation	0 (0%)	2 (13.3%)	0 (0%)	7 (46%)	6 (40%)	15
Teaching materials motivating and helped learning	0 (0%)	1 (6.6%)	0 (0%)	8 (53%)	6 (40%)	15
Way taught suitable way to learn	0 (0%)	2 (13.3%)	0 (0%)	7 (46%)	6 (40%)	15
Self-confidence in learning						
Confident mastering content	0 (0%)	0 (0%)	1 (6.6%)	8 (53%)	6 (40%)	15
confident simulation covered critical content	0 (0%)	2 (13.3%)	0 (0%)	7 (46%)	6 (40%)	15
confident developing skills, knowledge to perform clinical tasks	0 (0%)	0 (0%)	0 (0%)	9 (60%)	6 (40%)	15
Intructor used helpful resources	0 (0%)	2 (1.33%)	1 (6.6%)	6 (40%)	6 (40%)	15
It is my responsibility to learn what I need to know from simulation	0 (0%)	0 (0%)	0 (0%)	8 (53%)	7 (46%)	15
I know how to get help when I do not understand concepts	0 (0%)	0 (0%)	0 (0%)	9 (60%)	6 (40%)	15
I know how to use simulation to learn critical aspects of skills	0 (0%)	1 (6.6%)	0 (0%)	9 (60%)	5 (33%)	15
Intructors responsibility to tell me what I need to learn of simulation content	0 (0%)	4 (26%)	4 (26%)	3 (20%)	4 (26%)	15

Discussion

The results of this DNP project indicate that educational interventions can positively impact SRNA's confidence and knowledge related to microaggression in the operating room. The results from the posttest indicate that students have a better understanding on how to cope and assess signs of microaggression. The success of the educational intervention in this project has important implications for practice. SRNA's curriculum should incorporate similar

educational modules to help better prepare students mentally and physically during their clinical rotations. It is important that students feel supported and safe during their education journey to help them become competent providers.

There are several limitations to this study. First, the project's sample size is small (n=15). Second, the data collection for this project comes from a single institution, which limits generalizability. Future research should include a larger sample size from multiple institutions to determine if these results are consistent amongst student registered nurse anesthetists. Time management is essential for project success, and there are various time constraints a project will face during each phase of the project. Having the survey extended for a longer period can help with increasing the sample size. Participants for this project were given one month to complete the pre and the posttest. Lastly, the project relied on self-reported assessments of confidence and knowledge, which may be subject to bias. Future project should incorporate objective measures of performance, such as direct observation or simulation-based evaluations.

Conclusion

In conclusion, the prevalence of microaggression towards students in the medical field has increased significantly (Espaillat et al., 2019). Research has shown how the role of microaggression in the workplace setting can affect students' ability to learn, emotional and mental health, and how it can affect the victim's well-being. Graduate students in anesthesia are prone to physical and emotional stressors. To create inclusive, welcoming, and healthy workplaces, we must actively combat microaggressions. This begins with understanding how microaggression is introduced and how to respond appropriately. A safe workplace contributes a positive outcome to student's well-being and mental and physical health. The results demonstrated that provided targeted education materials, such as the evidence-based PowerPoint

presentation, can enhance participant's ability in overcoming challenges associated with microaggression in the operating room. The project's positive outcome emphasizes the value of educational interventions and the need for continuous reinforcement on sensitive topics. Institutions should provide students with necessary tools to promote a healthy experience during their anesthesia training.

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Appendix A

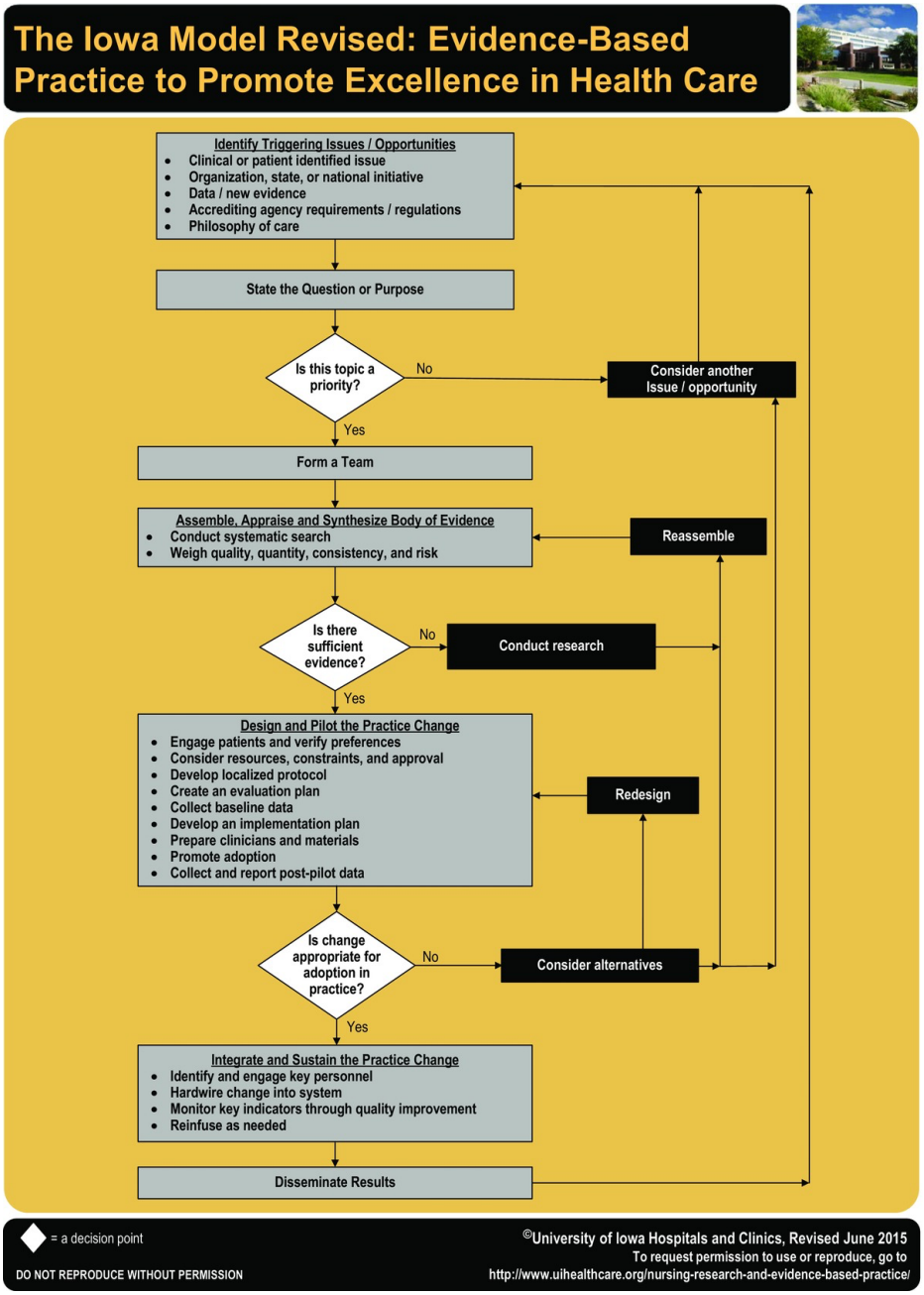
Citation	Research Design & Level of Evidence	Population / Sample size n=x	Major Variables	Instruments / Data collection	Results
(Ackerman-Barger et al., 2020)	Cross-sectional descriptive Study, Level VI	University of California, Davis and Yale University nursing students N=37	Independent: Questionnaire on microaggression and conductors interviewed students	Electronic questionnaire and interviewing students	According to the results from the study, the three major themes that were noted were students felt devalued by microaggression; students identified how microaggressions influenced their learning, academic performance, and well-being; and students had suggestions for promoting inclusion.
(Anderson et al., 2022)	Cross-sectional descriptive Study, Level VI	US medical students N=759	Independent: online survey	2-item Patient Health Questionnaire; chi-squared statistic to test associations between microaggression exposure and medical school satisfaction	Out of 759 respondents, 61% experienced at least one microaggression weekly. Medical students who experienced at least one microaggression weekly were considering medical school transfer (14.5%), withdrawal (18.2%), and more likely believed that microaggression was a norm in medical school (62.3%).
(Campos et al., 2022)	Qualitative Study, Level VI	Sample included nurses, surgeons, anesthesiologists, residents, anesthetists, technicians N=20	Independent: operating room issues, favorable operating room working conditions, typical disruptive behaviors,	In-depth interviews conducted by two interviewers	Problems of infrastructure, interpersonal relationships, and organizational failures had most density of citations and trigger the most disruptive behavior narrated events.

			characteristics of disruptive people.		
(Chisholm et al., 2021).	Randomized Cross-sectional study, Level II	Medical students across the United States, students identifying as underrepresented minority medical students N=217	Independent: microaggression, Education, racial discrimination, under-represented minorities	Survey	Of the 217 responses, 148 were under-represented minorities (URM). URM respondents reported experiencing race-related microaggressions during medical school (55%), feelings of burnout (62%), and compromised learning (64%). Furthermore, these students were not provided with adequate resources to address microaggression (39%).
(Espaillat et al., 2019)	Randomized Cross-sectional study, Level II	Medical students from the University of Florida College of medicine (n=351)	Independent: microaggression towards minorities, gender roles, sexual orientation	survey	The results indicated that 56% had heard of the term microaggressions while 44% had not heard the term. Furthermore, 54% of the students reported microaggression during school and 50% reported experiencing microaggression during clinical. Lastly, 73% of the students experienced microaggression during their medical education.
(Etherington et al., 2021)	Qualitative Study, Level VI	OR healthcare professionals N=66	Independent: gender roles, norms, stereotypes	Semi-structured interviews with OR team members conducted between November 2018 and July 2019.	Participants in the study agreed that women face more challenges in the OR, such as being perceived negatively for displaying leadership behaviors. Furthermore, staff members noted that interactions and behaviors varied depending on team gender composition, social identities, such as age and race.
(Fisher et al., 2021)	Qualitative Study, Level VI	Total internal medicine residents N=85	Independent: Microaggression, confidence,	An electronic pre- and post-surveys were distributed to assess the success of the workshop.	The results from this workshop indicated that 89% of the residents felt more comfortable in identifying microaggression, 97% of the residents

			microaggression response toolkit		improved the understanding of the impact of microaggression and 70% increased confidence in responding to microaggression.
(Goulart et al., 2022)	Randomized Cross-sectional study, Level II	Plastic surgeon residents N=125	Independent: stereotypes, bias, microaggression, mental health	A survey was distributed by the American Society of Plastic Surgeons Resident Representatives from March and May 2021.	Those who responded, 68.8% experienced microaggression and female trainees experienced microaggression more frequently than male trainees ($p<0.05$). Furthermore, Asians had a higher odd to be a target of microaggression as compared to Caucasians ($p=0.013$).
(Hastie et al., 2020)	Qualitative Study, Level VI	Perioperative healthcare workers N=7000	Independent: Racial discrimination, Gender discrimination	Survey	30% of all surgical residents reported experiencing gender discrimination and more than 16% reported racial discrimination.
(Megan, 2015)	Qualitative Study, Level VI	Student registered nurse anesthetists N=40	Independent: stress, clinical stress	Survey	A study reported that 47% of nurse anesthesia students reported depression and 21% reported suicidal ideation.
(Mesisca, 2021)	Randomized Cross-sectional study, Level II	Student Registered Nurse Anesthetists N=76	Independent: Suicidal ideation, low wellbeing, poor mental health	Survey	Report from the study indicated that 67% of the participates reported low well-being and presented a high risk for adverse outcomes such as poor mental quality of life, suicidal ideation, burnout, severe fatigue, and risk of dropping out. 50% of the SRNAs believed that their preceptors and clinical faculty did not acknowledge student's well-being.
(Periyakoil et al., 2020)	Randomized Cross-sectional study, Level II	Medical staff members N=124	Independent: Gender, occupation medicine	34 videos of real-life microaggression and 34 corresponding fictional control versions of the same situations	Women reported higher frequencies of microaggressions than men in 33 of the 34 videos. ($P<0.001$ to 0.042)

(Sandoval et al., 2020)	Randomized Cross-sectional study, Level II	Medical and dental students N=163	Independent: Microaggression, female genders, Male gender, Medical students, Dental students	2 hour workshop to prepare preclinical medical and dental students to recognize and respond to microaggressions in clinical practice. They were provided with a pre and post workshop survey	77% of the students witnessed or experienced microaggression. And 69% reported a very good or excellent familiarity with the concept of microaggressions.
(Sarah et al., 2022)	Randomized Cross-sectional study, Level II	Physicians at a academic health care institution N=297	Independent: Gender, Race, microaggression, Job satisfaction, burnout, behavioral modification	Mixed-methods survey, two-sample t-test	Female physicians experienced higher frequency of gendered microaggressions compared with male physicians. Trainees experienced more microaggressions ($p = 0.009$) and burnout ($p = 0.009$) than faculty.
(Sudol et al., 2021)	Randomized Cross-sectional study, Level II	Surgeons and Anesthesiologists N=588	Independent: Surgeons, Anesthesiologists, microaggression, Physician burnout	Sexist Microaggression Experience and Stress Scale and Racial Microaggression Scale	A total of 245 of 259 female respondents (94%) experienced sexist microaggressions, most commonly overhearing or seeing degrading female terms or images. Racial/ethnic microaggressions were experienced by 299 of 367 racial/ethnic–minority physicians (81%), most commonly reporting few leaders or coworkers of the same race/ethnicity.

Appendix B



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Appendix C

GANTT Chart for Project Proposal
Start Date: 8/29/2022
End Date: 04/29/2024

Position	Start Date	End Date	Milestone/ Activity
1	8/29/2022	8/30/2022	Start
2	8/30/2022	9/15/2022	Project Development
3	9/15/2022	10/01/2022	Team Development
4	10/01/2022	10/29/2022	Introduction/Background
5	10/01/2022	10/29/2022	Problem Statement
6	10/01/2022	10/29/2022	Needs Assessment/ Gap Analysis
7	10/30/2022	11/21/2022	Theoretical Framework
8	10/30/2022	11/21/2022	Aims and Objective
9	10/30/2022	11/21/2022	GANTT Chart
10	10/30/2022	11/21/2022	SWOT Analysis
11	11/21/2022	12/05/2022	Literature Review
12	11/21/2022	12/05/2022	Project Design/ Methods
13	11/21/2022	12/05/2022	Evaluation Plan
14	12/12/2022	1/11/2023	Revise Project proposal
15	1/11/2023	1/23/2023	IRB submission
16	1/8/2024	2/8/2024	Data Collection
17	2/12/2024	3/2/2024	Data Analysis
18	4/20/2024	4/29/2024	Poster Presentation
19	4/20/2024	04/29/2024	Final Project Report

Appendix D

Coping with Microaggression in the Operating Room: Education for Student Registered Nurse Anesthetists SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
Technology being utilized to distribute emails, PowerPoint presentation, and to contact participants	Using only one site to collect data	Bring awareness	Technology issues
Close to 100 participants	Students lack interest to participate	Education on microaggression	Lack of support from students
Easy access to contact students	Students not completing the surveys in a timely manner	Goal is to make students more comfortable in their working environment	
	Technology issues	Students becoming leaders in the future	

Appendix E

1. Enter the last 4 digits of your Student ID

2. What gender do you identify as?

    - Male
    - Female
    - Non-binary
    - Prefer not to say

3. What is your racial or ethnic identification? (Mark all that apply)

    - White
    - Black or African American
    - American Indian or Alaska Native
    - Asian
    - Native Hawaiian or Pacific Islander
    - Other

4. What year was the term “Microaggressions” first used?

    - 1970
    - 1989
    - 1880
    - 1945

5. What are the different types and forms of microaggression?

    - Microinsults, microinvalidation, microassaults
    - Microinvalidation, bias, unintentional
    - Stereotypes, microinsults, bias
    - Discrimination, abusive language, microassaults

6. Which psychiatrist first used the term “microaggression”?

    - Dr. Derald Wing Sue, PhD
    - Dr. Chester Peirce
    - Dr. James MacDonald
    - Dr. George W. Cook

7. What is your understanding of the term “microaggression”?

    - everyday subtle put-downs directed towards a marginalized group which may be verbal or non-verbal and are typically automatic
    - conscious bias towards a person's heritage or identity

- unconscious messages, nonverbal, and environmental communications towards an individual that conveys rudeness and insensitivity towards marginalized groups
- behaviors and statements that are meant to exclude, negate, and dismiss one's personal feelings, thoughts, and experiences

8. Microaggression can lead to__.

    - Depression
    - Substance use disorders
    - Post-traumatic stress disorder
    - All of the above

9. Females are more likely to experience microaggression than men.

    - True
    - False

10. Of the 50,000 CRNAs, what percent are considered minorities?

    - 30%
    - 24%
    - 10%
    - 12%

11. Medical provider burnout is considered a global crisis, with prevalence as high as 80%.

    - True
    - False

12. Which population has a higher rate of being affected by microaggression?

    - Underrepresented minorities
    - Instructors
    - Surgical technologist
    - Hospital director

13. How should you respond to Microaggressions as a witness?

    - Ignore it
    - Speak up
    - Report it to HR
    - Both B &C

14. What are the three aspects of The Microaggressions Triangle Model?

- Recipient, Bystander, Participant
- Recipient, Source, Bystander
- Institution, Participant, Recipient
- Recipient, Bystander, Institution

15. How can students contact the Health Center at Marian University? (Select two)

- 317-955-6154
- 317-955-6152
- healthservices@marian.edu
- Marianhealthservices@marian.edu

16. How can individuals educate themselves about microaggressions?

- Read books and articles
- Attend workshops
- Engage in open conversations
- All of the above

17. How confident are you in identifying microaggression?

- Not well at all
- Slightly well
- Moderately well
- Very well
- Extremely well

Student Satisfaction and Self-Confidence in Learning

Instructions: This questionnaire is a series of statements about your personal attitudes about the instruction you receive during your simulation activity. Each item represents a statement about your attitude toward your satisfaction with learning and self-confidence in obtaining the instruction you need. There are no right or wrong answers. You will probably agree with some of the statements and disagree with others. Please indicate your own personal feelings about each statement below by marking the numbers that best describe your attitude or beliefs. Please be truthful and describe your attitude as it really is, not what you would like for it to be. This is anonymous with the results being compiled as a group, not individually.

Mark:
1 = STRONGLY DISAGREE with the statement
2 = DISAGREE with the statement
3 = UNDECIDED - you neither agree or disagree with the statement
4 = AGREE with the statement
5 = STRONGLY AGREE with the statement

Satisfaction with Current Learning	**SD**	**D**	**UN**	**A**	**SA**
1. The teaching methods used in this simulation were helpful and effective.	○ 1	○ 2	○ 3	○ 4	○ 5
2. The simulation provided me with a variety of learning materials and activities to promote my learning the medical surgical curriculum.	○ 1	○ 2	○ 3	○ 4	○ 5
3. I enjoyed how my instructor taught the simulation.	○ 1	○ 2	○ 3	○ 4	○ 5
4. The teaching materials used in this simulation were motivating and helped me to learn.	○ 1	○ 2	○ 3	○ 4	○ 5
5. The way my instructor(s) taught the simulation was suitable to the way I learn.	○ 1	○ 2	○ 3	○ 4	○ 5
Self-confidence in Learning	**SD**	**D**	**UN**	**A**	**SA**
6. I am confident that I am mastering the content of the simulation activity that my instructors presented to me.	○ 1	○ 2	○ 3	○ 4	○ 5
7. I am confident that this simulation covered critical content necessary for the mastery of medical surgical curriculum.	○ 1	○ 2	○ 3	○ 4	○ 5
8. I am confident that I am developing the skills and obtaining the required knowledge from this simulation to perform necessary tasks in a clinical setting	○ 1	○ 2	○ 3	○ 4	○ 5
9. My instructors used helpful resources to teach the simulation.	○ 1	○ 2	○ 3	○ 4	○ 5
10. It is my responsibility as the student to learn what I need to know from this simulation activity.	○ 1	○ 2	○ 3	○ 4	○ 5
11. I know how to get help when I do not understand the concepts covered in the simulation.	○ 1	○ 2	○ 3	○ 4	○ 5
12. I know how to use simulation activities to learn critical aspects of these skills.	○ 1	○ 2	○ 3	○ 4	○ 5
13. It is the instructor's responsibility to tell me what I need to learn of the simulation activity content during class time..	○ 1	○ 2	○ 3	○ 4	○ 5

 Revised December 22, 2004

Appendix F

MARIAN UNIVERSITY
Indianapolis ®

Institutional Review Board

DATE:	04-24-2023
TO:	Supreet Kaur & Dr. Marie Goez
FROM:	Institutional Review Board
RE:	S23.162
TITLE:	Coping with Microaggressions in the Operating Room: Education for Student Registered Nurse Anesthetists
SUBMISSION TYPE:	New Project
ACTION:	Determination of EXEMPT Status
DECISION DATE:	04-24-2023

The Institutional Review Board at Marian University has reviewed your protocol and has determined the procedures proposed are appropriate for exemption under the federal regulation. As such, there will be no further review of your protocol and you are cleared to proceed with your project. The protocol will remain on file with the Marian University IRB as a matter of record.

Although researchers for exempt studies are not required to complete online CITI training for research involving human subjects, the IRB **recommends** that they do so, particularly as a learning exercise in the case of student researchers. Information on CITI training can be found on the IRB's website: http://www.marian.edu/academics/institutional-review-board.

It is the responsibility of the PI (and, if applicable, the faculty supervisor) to inform the IRB if the procedures presented in this protocol are to be modified of if problems related to human research participants arise in connection with this project. Any procedural modifications must be evaluated by the IRB before being implemented, as some modifications may change the review status of this project. Please contact me if you are unsure whether your proposed modification requires review. Proposed modifications should be addressed in writing to the IRB. **Please reference the above IRB protocol number in any communication to the IRB regarding this project.**

Amanda C. Egan, Ph.D.
Chair, Marian University Institutional Review Board

Appendix G

Survey Items	SD	D	UN	A	SA	Total
Satisfaction with current learning						
Teaching methods helpful and effective	0 (0%)	1 (6.6%)	0 (0%)	8 (53%)	6 (40%)	15
Variety learning materials and activites promote learning	0 (0%)	1 (6.6%)	0 (0%)	8 (53%)	6 (40%)	15
Enjoyed how instructor taught simulation	0 (0%)	2 (13.3%)	0 (0%)	7 (46%)	6 (40%)	15
Teaching materials motivating and helped learning	0 (0%)	1 (6.6%)	0 (0%)	8 (53%)	6 (40%)	15
Way taught suitable way to learn	0 (0%)	2 (13.3%)	0 (0%)	7 (46%)	6 (40%)	15
Self-confidence in learning						
Confident mastering content	0 (0%)	0 (0%)	1 (6.6%)	8 (53%)	6 (40%)	15
confident simulation covered critical content	0 (0%)	2 (13.3%)	0 (0%)	7 (46%)	6 (40%)	15
confident developing skills, knowledge to perform clinical tasks	0 (0%)	0 (0%)	0 (0%)	9 (60%)	6 (40%)	15
Intructor used helpful resources	0 (0%)	2 (1.33%)	1 (6.6%)	6 (40%)	6 (40%)	15
It is my responsibility to learn what I need to know from simulation	0 (0%)	0 (0%)	0 (0%)	8 (53%)	7 (46%)	15
I know how to get help when I do not understand concepts	0 (0%)	0 (0%)	0 (0%)	9 (60%)	6 (40%)	15
I know how to use simulation to learn critical aspects of skills	0 (0%)	1 (6.6%)	0 (0%)	9 (60%)	5 (33%)	15
Intructors responsibility to tell me what I need to learn of simulation content	0 (0%)	4 (26%)	4 (26%)	3 (20%)	4 (26%)	15

(SD=Strongly Disagree; D=Disagree, UN=Undecided, A=Agree, SA= Strongly Agree)