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Increasing Nurses' Knowledge of Richmond-Agitation Sedation Score Assessment and Documentation Through Education

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This is to certify that the doctoral study by

Kara J. Beaulieu

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2022

Abstract

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Documentation Through Education

by

Kara J. Beaulieu

MSN, University of Phoenix, 2015

BSN, Saint Anselm College, 2012

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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February 2022

Abstract

Patients in the intensive care unit (ICU) are critically ill and faced with numerous physical and psychological stressors that often require a multidisciplinary approach to improve outcomes and relieve suffering. Patients are given sedation to tolerate invasive treatments and procedures. Using the Richmond-Agitation Sedation Score (RASS), nurses assess objective findings and the level of sedation a patient is experiencing, and titrate sedation according to an ordered RASS score. Ineffective and inaccurate use of the RASS score leads to patients being oversedated and demonstrates a lack of understanding of how to appropriately use the RASS score assessment tool. The purpose of this project study was to provide nurses with the education and understanding of how to accurately assess and document sedated patients using the RASS score. The practice-focused question addressed whether the comprehensive, evidence-based educational program would improve nurses' knowledge of RASS score assessment and the quality of RASS score documentation. Kotter's 8-Step model provided the framework for the project. Pre- and posttest data were collected from 42 nurses, and test results were compared for improvement in scores. Findings indicated that nurses' knowledge was increased with the educational program tailored to the knowledge gaps in the nursing unit. Findings may have a positive impact on the community of patients cared for by this hospital, including better health outcomes, shorter stays in the ICU and hospital, and fewer long-term effects of staying in the ICU.

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Section 1: Nature of the Project

The intensive care unit (ICU) is a health care specialty in medicine that cares for patients with critical and acute life-threatening conditions and diseases (Marshall et al., 2017). Patients in the ICU often experience a wide variety of stressors including physical discomforts and psychological distress due to frequent interventions, uncomfortable treatments, and being in a critical illness state. One of the primary roles of the ICU registered nurse is to accurately assess and document the level of sedation a patient is receiving, in addition to titrating the sedation medication according to the level ordered by the provider. Accurate assessment and documentation of this sedation score is critical to determine how much sedation a patient requires and to ensure patients are not experiencing discomfort or pain related to their condition. Accurate assessment and documentation will also prevent patients from receiving too much sedation, which can lead to complications including delayed liberation from the ventilator, hemodynamic instability, and increased length of stay in the ICU.

Role of the Richmond-Agitation Sedation Score

The Richmond-Agitation Sedation Score (RASS) is a comprehensive assessment tool that provides a standardized method of assessment of patients receiving sedation (Coursin & Skrobik, 2019). This tool includes a scoring system that provides the health care provider with the level of sedation of the patient, which allows the provider to adjust and administer sedative medications. At a Level 2 trauma center in a multidisciplinary ICU, the average level of sedation on most patients was -2 to -3 (light sedation to moderate sedation), which is more sedated than the national data recommendations of

recommended sedation level -1 to -2 (sustained awakening to voice to light sedation; Coursin & Skrobik, 2019). In addition, RASS scores are inconsistently documented at the project site, which provides the possibility that patients may be under- or oversedated. It was evident through chart auditing that nurses needed additional education regarding the importance of a lower RASS score, as well as consistent, accurate documentation, which has the potential to expedite a patient's time on the ventilator and decrease the length of time a patient remains in the ICU (Jablonski et al., 2017).

Problem Statement

Accurate assessment and documentation through the use of the RASS score is a critical component in caring for patients receiving sedation in the ICU. Insufficient and inaccurate assessment and documentation are failures in practice that occur due to nurses' lack of understanding and the need for further education regarding sedation, focusing on how and why to use the RASS score when caring for sedated patients. Patients should not be sedated deeply against provider orders and national guidelines because this can promote complications including aspiration pneumonia and encephalopathy related to increased doses of medications (Coursin & Skrobik, 2019).

Purpose Statement

The purpose of this project was to develop and deliver an educational program regarding the accuracy of the RASS score assessment and documentation for ICU nurses. This educational program was designed to address the gap in knowledge regarding the importance of administering lighter levels of sedation to optimize patient readiness for weaning sedation off, as well as to address the lack of knowledge regarding proper

documentation according to national guidelines. The project addressed whether nurses'

knowledge would improve when provided with a comprehensive, evidence-based

educational program regarding RASS score assessment and documentation.

Nature of the Doctoral Project

This doctoral project included education for the nursing team in an 18-bed

multidisciplinary ICU. I used literature on sedation in the ICU to develop a

comprehensive program that was delivered to ICU nurses. I applied evidence-based

practice to educate ICU nurses on how to assess and evaluate patient sedation through the

RASS score, as well as how to accurately document the RASS score to align with

evidence-based practice recommendations of a lower RASS score goal. Other sources of

evidence included input from a multidisciplinary team of leaders and experts, including

two ICU pharmacists, the ICU educator, and six members of the critical care medicine

provider team composed of three intensivists, one nurse practitioner, and two physician

assistants. Baseline knowledge via a pretest was assessed prior to the implementation of

this education using HealthStream, an online educational format that allows for real-time

training and feedback. After the education was implemented, a posttest was administered

to determine the degree of learning that took place.

Significance

Key stakeholders who were identified for this project included the ICU nursing

director, who would be affected by this project because it would improve the care given

to patients within his unit and nurses would be thoroughly educated on an important topic

that was not well understood. He was overseeing a unit in which a positive change in

practice would be implemented, and in which patient care would be improved by optimizing the delivery of sedation. The ICU educator would be positively affected by this project because nurses would be provided with a comprehensive educational program on the care of patients receiving sedation, which would optimize the knowledge base of the ICU. The medical director of the ICU and the lead intensivist were also key stakeholders affected by this project because, like with the director of the unit, the care of patients would potentially be improved through the education of the nursing staff. This would in turn potentially allow for more acute patients to be better cared for by nurses who were empowered through education on one of the most critical and commonly used medications.

The lead ICU pharmacist was another key stakeholder who would benefit from this project because he faced several challenges with sedation administration and documentation. Through provision of education to the nurses regarding this topic, the lead pharmacist would not have to provide real-time education daily to nursing staff and would have potential frustrations decreased. There are two charge nurses on the day shift and two on the night shift, all four of whom were critical to consider for stakeholder roles because these nurses would be affected by this education project on their shifts. Initially this project had the potential to cause these bedside personnel some challenges because they were expected to participate when they had several other important functions to perform during their shift. Lastly, patients were perhaps the most important stakeholders because they would be the population most directly affected by this modification in practice. Through this project, I anticipated that multiple positive changes would occur to

patients, the two most significant over time being decreased length of stay in the ICU and decreased time receiving mechanical ventilation.

The nursing staff were important members to include, and a generalized initiation was extended to the nursing team for participation, although it was unlikely that all 50 nurses would fully participate in the process. These members had been identified as key stakeholders due to the fact they were directly involved in the daily activities and generalized patient flow of the unit. These members were also in the position to identify, create, and implement new practices and procedures from a nursing and provider standpoint. A change in practice regarding sedation would have a direct impact on these members, and change efforts would rely on overall team support to ensure success and sustainability.

I sought to empower nurses through education and training to change the way patients are given sedation because it had been observed at the project site that one of the potential causative factors of oversedation was lack of adequate staffing; therefore, patients were sedated heavily at times as a matter of necessity and convenience. The finding that additional staff were needed may affect hiring practices because it could highlight the nursing shortage within the unit. Nurses are not equipped from a staffing perspective to spend one-on-one time with patients who are lightly sedated, and therefore sedation remains in place at high doses. This project would influence nurses to better understand that lighter levels of sedation are beneficial and in the best interests of the patient.

Throughout the process of developing this project, it was important to recognize potential opportunities for transferability to other areas of nursing or health care. Although patients are not typically sedated in other specialty areas in the way they are given sedation in the ICU, it is possible there may be some crossover to units such as the postanesthesia care unit, same day surgery, or the anesthesia department in general. These departments often provide care for patients who have received sedation medications. Patients in the postanesthesia care unit also require frequent assessments for pain, sedation, and delirium, and benefit from standardized methods of assessment and documentation (Pereira-Morales et al., 2018). It is possible to share the findings and outcomes from this educational project with these departments to collaborate on improving patient outcomes in these other areas.

This project was expected to make a significant impact on the care of patients in the ICU who are receiving sedation. Through this educational program, both the assessment of patients receiving sedation as well as documentation using the RASS score improved. Documentation requires consistency and accuracy to optimize the determination of patients who are ready to be liberated from sedation. This project may promote positive social change by optimizing the way patients are administered sedation, including reducing the necessary dose to achieve desired affects and reducing the occurrence of oversedation through improved accuracy of administration according to national guidelines. When patients no longer require sedation, there is an opportunity to move them out of the ICU and promote their overall improvement in health.

Summary

The nursing team within this ICU was in dire need of education and training regarding the use of the RASS score as evidenced by inaccurate assessments and documentation for sedated patients. The problem was assessments being inconsistently completed and documentation being done infrequently and inaccurately, leading to a higher level of sedation being administered compared to what is recommended in national guidelines found in the literature. The purpose of this project was to provide education and training to improve nurses' understanding of how RASS scores are determined and the most precise way to document these scores. Nurses in the ICU were provided education through an interactive computer training course, which assessed their current knowledge regarding sedation and provided information obtained from evidence regarding the recommended sedation levels according to the RASS score. After the education was implemented, nurses' knowledge was reevaluated for improved understanding of assessment and documentation. This education initiative was evidence-based and may lead to the optimization of patient outcomes in the ICU.

Section 2: Background and Context

Nurses in the ICU frequently care for patients undergoing sedation medications to provide comfort and cooperation with invasive procedures and treatments and to promote progress through various health conditions. The standardized tool for assessing the level of sedation a patient is experiencing is the RASS score. This score is determined objectively by the nurse using signs and symptoms the patient is exhibiting to determine the level of sedation being given to the patient. Accurate assessment and documentation through the use of the RASS score is a critical component in caring for patients receiving sedation in the ICU. Insufficient assessment and documentation are gaps in practice that occur due to lack of understanding and the need for further education for nurses regarding sedation, including how and why to use the RASS score when caring for sedated patients. The purpose of this project was to develop and deliver an educational curriculum addressing the accuracy of sedation administration and documentation for ICU nurses. A focus was also on the importance of following a provider's order for sedation level because many patients were found to be oversedated despite a lower level having been ordered. In addition, the levels of sedation were much deeper than what is recommended by national guidelines, thereby creating a call to action to lower the sedation scores per guidelines and optimize the sedation being provided (see Devlin & Pandharipande, 2018). Patients should not be sedated deeply against provider orders and national guidelines because this promotes complications including aspiration pneumonia and encephalopathy related to increased doses of medications (Coursin & Skrobik, 2019; Marra et al., 2017).

I sought to develop and deliver an educational program regarding the accuracy of sedation administration and documentation for ICU nurses. This educational program was intended to address the lack of knowledge regarding the importance of administering lower levels of sedation to optimize patient readiness for weaning from sedation, and to address the lack of knowledge regarding proper documentation according to national guidelines. The project addressed whether nurses' knowledge of RASS score assessment would improve when provided with a comprehensive, evidence-based educational program regarding RASS score assessment and documentation. Section 2 includes applicable theories, relevance to nursing practice, local background, role of the DNP student, and role of the team in this educational project.

Concepts, Models, and Theories

Implementing a practice change in a dynamic health organization can be challenging and rewarding. Using a comprehensive approach, I adopted a health care model to provide a blueprint on how to implement change effectively. One of the most widely accepted and inclusive change theories is Kotter's 8-Step model (Campbell, 2020). This model includes both emotional and situational factors that, if addressed, can lead to successful and sustainable changes to occur. The eight steps used are developing urgency, building a guiding team, creating a vision, communicating for buy-in, enabling action, creating short-term wins, do not let up, and making it stick (Campbell, 2020). These steps were applied to this project to support the change process. The need for nursing education in this ICU has existed for quite some time, and the issues involving sedation and inadequate documentation have been ongoing. A guiding team was created

within the unit, which included key stakeholders and nurses in the unit. Members of this team included two ICU pharmacists, the ICU nursing director, the ICU educator, and six members of the critical care medicine provider team (three intensivists, one nurse practitioner, and two physician assistants) who had direct involvement and would be impacted by this change. The lead intensivist and medical director were involved on both an administrative and clinical level.

Building this team was critical in developing further steps and ensuring changes would be implemented effectively (see Campbell, 2020). The vision of the project was shared with this team and a collaborative approach was taken to elaborate the vision further and promote buy-in to the educational program. Communication among all team members and other staff within the ICU was critical to deal with any potential barriers or concerns in real time, thereby avoiding future challenges. Expected barriers affecting project outcomes included lack of staff engagement due to disinterest, lack of time to participate, and staff turnover rates. Avoiding future challenges was critical in the development and implementation of this project because these would create further delays in providing the most optimal, evidence-based care to patients regarding the use of sedation. Early identification of these potential barriers aided in avoiding them, and if additional barriers emerged, I intended to discuss these challenges with stakeholders to determine a solution. Additional potential barriers included the number of new and inexperienced staff members; however, because this was identified, additional attention and education were provided as needed to this group to ensure buy-in and comprehension. Enabling action was done using just-in-time educational techniques with

the nurses and pharmacists according to guidelines from research findings on RASS goals

and sedation titration. Additional techniques that enabled action included meeting with

the key stakeholders and sharing research findings regarding the importance of RASS

score assessments aligning with national guidelines. Education delivery and evaluation

occurred in the final steps, and evaluation findings will be shared with the team to

promote sustainable change to continue in practice.

Through the use of Kotter's 8-step model for creating change, this project

provided comprehensive education to nurses to improve the care of patients receiving

sedation. This model included emotional and situational factors that, if addressed, can

lead to successful and sustainable changes. Over time, this project has the potential to

create the best opportunity to create lasting positive changes in practice.

Relevance to Nursing Practice

Considering the important role sedation has in the ICU, there is a vast amount of

existing scholarship on this topic and, through a literature review, I identified several key

points and themes. Over the last 3 decades in health care, sedation administration has

slowly moved away from being an extension of general anesthesia, having been largely

guided by a general goal of deep sedation (Shehabi et al., 2013). Researchers recognized

that patients required a level of sedation to tolerate procedures; however, the appropriate

level was not identified largely due to the varying effects sedation had on individual

patients. A concern noted throughout the history of sedation use was sedation

medications not having been fully evaluated for use in the ICU, as these were first

introduced as medications given for general anesthesia and not continuous infusions

(Shehabi et al., 2013).

The current state of nursing practice regarding sedation in the ICU has changed

significantly. It is now well recognized throughout the literature that deeper levels of

sedation are associated with poor outcomes and adverse events, with deeper sedation

levels in the first 48 hours being associated with increased risk of death (Marra et al.,

2017). The RASS assessment tool is a widely accepted tool to accurately assess sedation,

as Marra et al. (2017) described:

> A unique feature of RASS is that it relies on the duration of eye contact following
>
> verbal stimulation. The RASS takes less than 20 seconds to perform with minimal
>
> training, and has been shown highly reliability among multiple types of healthcare
>
> providers and an excellent interrater reliability in a broad range of adult medical
>
> and surgical ICU patients. (p. 5)

Several influential organizations have proposed changes to practice, including the Society

of Critical Care Medicine and American Society of Health-System Pharmacists who

developed clinical practice guidelines to guide practitioners at all levels on the selection,

administration, assessment, and liberation from sedation in the ICU (Devlin &

Pandharipande, 2018). Recommendations from these organizations indicated that lower

levels of sedation are preferred for critically ill patients. The previously recommended

level of sedation (-2 light sedation) has also been challenged:

> Although the prior guideline defined light sedation as a RASS scale score of greater
>
> than or equal to –2 and eye opening of at least 10 minutes, this level of sedation is

probably deeper than required for management of mechanically ventilated adults in an ICU. (Devlin & Pandharipande, 2018, p. 838)

Further recommendations include limiting or omitting the use of benzodiazepines for most patients because these create deeper levels of sedation due to their pharmacologic properties, and the use of routine sedation assessments every 6 hours as well as over the course of the patient's ICU stay (Devlin & Pandharipande, 2018). In the current doctoral project, nursing education was provided regarding these recommendations and standardized goals for sedation. Nurses were provided with a comprehensive educational program to further their knowledge regarding accurate assessments, frequent assessments and documentation, and a lower goal sedation score implemented in accordance with national guidelines. This project was intended to create positive social change for nurses and patients in this ICU by empowering nurses through evidence to optimize their patients' outcomes.

Local Background and Context

In the 18-bed ICU project site, there is a multidisciplinary patient population that includes cardiac surgery, medical, surgical, neurology, and trauma critically ill patients. Considering the vast patient population, nurses are often required to be familiar with many different conditions and disease processes. Among these patients, one thing that is shared is the use of sedation because any of these patient groups could require sedation at any time. Because of the high demands of a multidisciplinary ICU, the nursing staff turnover rate is approximately 20.1% higher than the national average, which was 18.2% in 2018 (Bloomer & Bench, 2020).

The combination of high acuity and diversity, as well as high nursing turnover, led to gaps in knowledge regarding important ICU practices, such as how to properly assess and document sedation scores. In this ICU, patients were often sedated more heavily than ordered by providers, in addition to being sedated heavier than what is recommended by national guidelines. Concurrently, assessments were not as frequently documented as recommended, leading to patients being sedated longer, thereby limiting their opportunity for sedation liberation. Institutionally, this hospital is part of a larger organization located across the United States. This hospital is accredited as a Level 2 trauma center through the American Trauma Society. Knowing that the current levels of sedation being provided have been connected to patient harm events within the literature, there was a call to action on the part of the nurses and the organization to resolve these issues and improve the safety and quality of sedation delivery to ICU patients.

Role of the DNP Student

Since becoming a registered nurse in 2012, I have had a growing passion for intensive care nursing and caring for those who are acutely and critically ill. While working in the ICU, I recognized the role of the acute care nurse practitioner and the impact this role had on patient care and the dynamics of the ICU team. After starting my DNP journey in 2016, I decided that to further my knowledge and position in the critical care specialty, I would become an acute care nurse practitioner. I was admitted to a well-respected post-master's program in Boston and graduated with my Adult-Gerontology Acute Care Nurse Practitioner certificate in May of 2019. Having started my DNP journey prior to this, I began finishing this degree in 2020. I am currently an acute care

nurse practitioner in New Hampshire. When I was working as a nurse, I worked in the ICU where my project took place. I was able to experience the challenges nurses face within the unit, as well as the barriers to providing the most optimal care. Since transitioning to a provider role, I have gained a new perspective on these challenges and how sedation is managed. Through reviewing research and evidence-based practice in pursuit of my DNP, I have gained a comprehensive understanding of the importance of ensuring care is evidence based. My biggest motivation for completing this project was that the issues surrounding sedation have been present in this unit for some time, and I was in a position to find a solution and make a real difference in the lives of my patients. I also believe in empowering nurses through education, and my project was intended to do this.

Potential biases that may have been present for me included working in this ICU as a nurse. I understood the challenges faced and recognized that although intentions are good, nurses in this unit are not always set up by leadership to succeed. Over a 6-month period, all ancillary staff had been removed from the unit (nursing assistants, unit secretaries), and this had placed an added strain on the staff. When I was a nurse, I experienced frustration with leadership because it seemed like, from a nursing perspective, we were not a priority. Some of these feelings may have influenced the current project. Knowing I was in a position to create positive change, I did not allow any bias get in the way of my goals for this project. I sought to include bedside nurses and nursing leadership in the project planning and implementation to create a holistic and

therapeutic relationship between these two groups. I thought including these stakeholders would facilitate the most functional project implementation.

Role of the Project Team

Considering the ICU is a dynamic team environment that requires a multidisciplinary approach to patient care, it was critical that a team model be used to plan, implement, and evaluate this education project. The doctoral project team was presented with background information, evidence, and other forms of information through structured team meetings and informational sessions planned by the project leader. These meetings were held in person, and a virtual call-in option was offered for those who could not attend. The first meeting was to discuss the background and purpose of the project with the group, as well as how the project leader thought an educational approach would solve this problem and be the most effective method for change. Subsequent meetings were conducted to evaluate the evidence, and a new best practice methodology was determined from the evidence. It took several meetings to discuss the project and its components, and virtual call-in options were available throughout the process to optimize attendance.

Throughout the project planning process there were several opportunities for team members to share their expertise. The ICU director and ICU educator provided insight into how the nursing turnover and current level of education and experience had impacted the unit over time. The ICU pharmacy team shared evidence on how sedation was ordered and how they had seen it administered, and also reported how frequently their team provided real-time education to nurses regarding these medications and how they

should be given. From a contextual perspective, the ICU medical director and lead intensivist shared experiences regarding the project implementation and evaluation phases of a doctoral project. The team collaborated to identify potential barriers to the process and discuss ways in which these could be avoided.

With a dynamic team, it is important to outline timelines to remain efficient and collaborative. The team meetings were held at standardized intervals, and the doctoral project team reviewed evidence and information between these meetings to prepare to provide feedback and suggestions at subsequent meetings. These meeting dates were planned ahead of time and were made available in both in-person and virtual call-in formats to promote attendance and inclusion of all team members.

Summary

The issues surrounding sedation in this ICU were essential to address because they impacted patient care and safety. Although some causative factors may have been present due to the complexity and diversity of the patient population, as well as the high nursing turnover rate, nurses were not consistently administering sedation according to provider orders and national guidelines. Furthermore, sedation assessments and documentation for sedation were not being done consistently and frequently, leading to patients being oversedated and increasing the time it took to liberate patients from sedation and the ICU. Using Kotter's 8-step model of implementing change, I developed a comprehensive educational program for nurses to improve understanding and knowledge regarding the use of sedation, national goals, and importance of frequent documentation. Successful implementation of this educational initiative was intended to

improve the care delivered to patients receiving sedation. The hospital in which this

project was completed had been the recipient of many different safety awards, thereby

creating the need to address these issues to remain in accordance with accrediting

agencies. Addressing the issues regarding sedation in the ICU was intended to improve

the level of safety and quality of care given to patients in the ICU, thereby creating

positive social change.

Section 3: Collection and Analysis of Evidence

Accurate assessment and documentation through the use of the RASS score is a critical component in caring for patients receiving sedation in the ICU. Insufficient and inaccurate assessment and documentation were opportunities for improvement in practice that occurred due to lack of understanding and the need for further education regarding sedation for nursing, focusing on how and why to use the RASS score when caring for sedated patients. In addition, the levels of sedation were much deeper than what is recommended by national guidelines, thereby creating a call to action to lower the sedation scores per guidelines and optimize the sedation being provided (see Devlin & Pandharipande, 2018).

The purpose of this project was to develop and deliver an educational program regarding the accuracy of sedation administration and documentation for ICU nurses. This educational program addressed the gap in knowledge regarding the importance of administering lower levels of sedation to optimize patient readiness for weaning from sedation, and addressed the lack of knowledge regarding proper documentation according to national guidelines. The project addressed whether nurses' knowledge of RASS score assessment and the quality of RASS score documentation would improve when provided with a comprehensive, evidence-based educational program regarding RASS score assessment and documentation. Section 3 includes the practice-focused question, sources of evidence, and analysis and synthesis of research findings to optimize patient care through education.

Practice-Focused Question

In an 18-bed ICU, there is a multidisciplinary patient population that requires a specialized skill set and knowledge base of nurses who work in it. One of the most common and critical interventions provided to these patients is the administration of sedation medications. The use of sedation in the ICU provides patient comfort for tolerance of invasive and otherwise uncomfortable procedures that are commonplace for critically ill patients. The administration of sedation requires a clear understanding of how sedation affects patients from psychical and psychological perspectives, and of the goal of a sedated patient to be liberated from this treatment as soon as clinically possible. Nurses at the bedside vary in age, experience, and educational preparation, and it is well documented within the organization that the staffing turnover rate remains significantly higher than the national average, creating a concern that there is a lack of experience. The practice-focused question that addressed this issue was the following: When nurses are provided with a comprehensive, evidence-based educational program regarding RASS score assessment and documentation, will nurses' knowledge of RASS score assessment and the quality of RASS score documentation improve? I sought to answer this question by creating and implementing an educational project to provide nurses with the understanding of how to accurately assess and document sedated patients using the RASS score.

The use of an educational project to optimize nurses' knowledge and improve the care delivered to patients is an effective and useful strategy in creating a change in practice (Abdul Rahman et al., 2015). Through this approach, nursing staff were provided

with a comprehensive educational program that included evidence-based practice to demonstrate effective RASS score assessments. This educational project was individualized to meet the needs of the project site, and members of the team provided input regarding potential barriers to implementation.

Sources of Evidence

Addressing the practice-focused question of optimizing nursing education regarding sedation through the use of evidence-based practice required consideration of sources of evidence. Plans to review peer-reviewed literature included a comprehensive approach and a focus on literature published within the last 5 years. Although there were numerous research articles regarding this topic spanning decades, it was important to focus on the most current studies identified through the literature published within the last 5 years. This ensured that the most current recommendations regarding the administration and documentation of sedation would be identified and put into practice. Primary sources of evidence were professional medical journals including *Society of Critical Care Medicine*, *New England Journal of Medicine*, *Association of Critical Care Nursing*, *Mayo Clinic Proceedings*, and *Critical Care Medicine*. These are leading journals that provide health care professionals with the most current evidence-based recommendations for practice. Through these journals, health care professional education is one of the leading outcomes from research.

Research-supported recommendations provide all medical staff, especially nurses, with guidelines to improve daily practice and patient outcomes. Patient care is continuously improved through new data and recommendations discovered through

research. Sources of evidence provided scientific insight to educate nurses regarding how to optimize sedation administration in patient care. Collection and analysis of this evidence provided comprehensive insight into how to address the practice-focused question, leading to an effective and proven educational program.

Evidence was collected in a stepwise approach to ensure completion. Members of the team contributed evidence to address the practice-focused question, including key stakeholders who, with their expertise, provided insight into how this current problem was affecting patient care. These participants contributed by identifying potential facilitators and barriers to implementation based on their knowledge and experience of the current problem. The team reviewed education drafts and provided feedback to accommodate the educational needs at the project site. Furthermore, the team aided in the development of pre- and posttests by developing a delivery plan. These team members were selected based on their level of experience, role within the ICU, and degree to which this project would affect their daily care and interaction with patients.

Evidence was collected in different ways. The pharmacy team members shared data showing the lack of compliance of documented RASS scores compared to national guidelines, as well as the levels ordered compared to the levels provided. The key stakeholders representing the pharmacy identified opportunities to align with recommended practice and noted numerous situations in which the provider order for sedation level was not followed. Nursing staff were administered a pretest using the online education platform HealthStream to identify their current levels of knowledge regarding sedation, indications for liberation, and the importance of accuracy and

frequency of assessments. The results of this pretest were reviewed to determine current levels of knowledge regarding sedation, as well as patterns among the responses. Following the implementation of the project, a posttest was administered via HealthStream to evaluate the effectiveness of the educational endeavor. A draft of this tool with a minimum of 15 questions was developed based on the literature and through feedback provided by the expert team.

Ethical protection of participants was a priority of the project team, and frequent assessments were performed to ensure compliance with this necessity. First, participants had their privacy protected because data collection was anonymous. No personal information was required to complete the pre- and posttests. Once the tests were completed, a confirmation number was given to each participant, which they showed to the ICU pharmacist, acting as the project site representative, to be put in a drawing for a prize. Summary numerical and objective data were shared, and any potentially identity-revealing data were withheld. There were no potentially harmful interventions implemented to participants. The project was education based and did not require any invasive or intrusive interventions to be implemented. Developing working relationships with participants occurred through the DNP student remaining approachable and demonstrating the ability to work alongside the team. The DNP student and the team also shared a common goal to take excellent care of patients and optimize patient outcomes. The project site was responsible for collection of the pre- and posttest results, which assisted in ensuring the responses were kept anonymous. Incentives for participation were offered including being entered to win a gift card for those who completed the process.

Consent was obtained at the start of the program and was included as part of the initial

HealthStream evaluation.

The role of the Walden Institutional Review Board (IRB) was essential to ensure

the well-being of the participants and compliance with federal regulations for research on

human subjects. It was important to gain the approval of the IRB to align with the ethical

and regulatory guidelines of the doctoral project process. This project was not possible

without this project site and IRB approval (08-05-21-0614558).

<div align="center">**Analysis and Synthesis**</div>

The organization and analysis of data were as essential as the data themselves. I

ensuring that the data were collected in an organized manner to ensure the project would

be successfully implemented. Microsoft Excel served as the primary tool where data were

tracked, facilitating analysis. The project site collected data from pre- and posttests and

provided them to the project leader.

During the data collection process, outliers and missing information had the

potential to occur and would have required effective management. Missing values vary in

type and can include either missing at random or missing not at random (Kwak & Kim,

2017). Values may have been missing due to incomplete participant involvement, such as

submitting an incomplete assessment on HealthStream. This was managed in a proactive

manner as participants were encouraged to complete the program in its entirety with the

support of leadership and the use of incentives. Due to staff turnover, there were some

staff who did not complete the entire program. Other missing data may have been due to

external factors that were not anticipated, such as the death of a participant, participants

leaving the unit and working elsewhere, or a participant removing themselves from the study (see Kwak & Kim, 2017). Pre- and posttest responses were recorded.

Summary

Collection and analysis of evidence was a step in the project that required specialized planning and attention. It was important to create a plan of action to protect the privacy of participants and to encourage participation. In addition, determining strategies to manage outliers and missing information ensured that data collected would be reliable, valid, and without biases or incomplete in any way. I ensuring that data were organized and recorded in a comprehensive software program where privacy could be maintained, and was accessible to only the program leader through a password-protected login. Microsoft Excel was used to store data and facilitate the review of trends, patterns, and outcomes from observations. Through these techniques, the educational program was implemented, yielding findings and recommendations that may positively impact nurses' knowledge and improve patient care.

Section 4: Findings and Recommendations

An essential role of a registered nurse in the ICU is to have a comprehensive understanding of how to accurately administer, titrate, and discontinue sedation medications. In a Level 2 community hospital, a gap in knowledge was identified among nursing staff regarding the proper use of the RASS assessment tool to determine the level of sedation a patient is experiencing, as well as the frequency and accuracy of RASS score documentation. Accurate assessment and documentation of this sedation score is critical in determining how much sedation a patient requires to ensure patients are not experiencing discomfort or pain related to their condition. Accurate assessment and documentation will prevent patients from receiving too much sedation, which can lead to complications including delayed liberation from the ventilator, hemodynamic instability, and increased length of stay in the ICU. In addition, data at the project site indicated levels of sedation are much deeper than what is recommended by national guidelines, thereby creating a call to action to lower sedation scores per guidelines and optimize the sedation being provided. The purpose of this project was to develop and deliver an educational curriculum regarding the accuracy of sedation administration and documentation for ICU nurses. I sought to address the gap in knowledge regarding the importance of administering lower levels of sedation to optimize patient readiness for weaning from sedation, as well as regarding proper documentation according to national guidelines.

I used literature on sedation in the ICU to develop a comprehensive program to deliver to ICU nurses. Evidence-based practice found in research was applied to educate

ICU nurses on how to assess and evaluate patient sedation through the RASS score, as well as how to accurately document the RASS score to align with evidence-based practice recommendations of a lower RASS score goal. Other sources of evidence included input from a multidisciplinary team of leaders and experts, including two ICU pharmacists, the ICU educator, and six members of the critical care medicine provider team composed of three intensivists, one nurse practitioner, and two physician assistants. Baseline knowledge via a pretest was obtained and evaluated prior to the implementation of this education via HealthStream, an online educational format that allows for real-time training and feedback. After the education was implemented, a posttest was administered to determine the degree of learning that had taken place indicating the level of knowledge learned among nurses.

Findings

The project began once approval from the Walden IRB was obtained. The first step was to meet with the project team comprising key stakeholders and determine a proposed timeline for completion. These members included the ICU pharmacist, the ICU director, the ICU nurse manager, four charge nurses, and the ICU educator. While this meeting was being arranged, the ICU director was replaced with an interim director. This required taking a step back and taking an additional step in meeting with the new interim director to inform them of the project and the project goals. A proposed timeline was created to develop and deliver the project over a 6-week period.

Functioning as the project leader, I created an evidence-based educational script to use for staff education (see Appendix A). The educational script format was chosen to

ensure consistency in education administration and implementation. This script was created based on evidence from the Society of Critical Care Medicine, which provided guidelines regarding the RASS score and targeted sedation levels for patients in ICU (see Devlin & Pandharipande, 2018). The educational script was given to the project team and to Walden doctoral mentors, and I used their feedback to revise the script. The project team discussed the revised educational script and determined that the most feasible and inclusive delivery method would be to meet with each nurse individually, provide the same education through the use of the script, and evaluate learning through a pre- and posttest.

I created a pre- and posttest (see Appendix B) comprising eight multiple choice questions based on the educational script. The pre- and posttest was reviewed by the project team who provided some grammatical revisions and subsequently supported the use of the tests in the project. Pretests were administered over a 7-day period to all nursing staff (50 nurses in total) via the online platform HealthStream. This platform is used to provide medical education in a computer-based format, and educators are able to create multiple choice tests to evaluate learning.

As the project leader, I provided the education to all 50 nurses using the educational script in each case. Nurses were assigned the posttest in HealthStream upon completion of the education, and results were collected by the organization and shared with me in an aggregated, anonymized form for examination and evaluation. Despite my implementation efforts, not all participants completed the program in its entirety.

The initial expected timeline for implementation was a 3-week period; however, these steps took longer than expected due to unforeseen challenges, resulting in a completion time of 4 weeks. These challenges included a new interim director being hired, as well as a sharp uptick in acuity in the unit making staff less available to participate in a timely fashion. This led to difficulty in streamlining the implementation process because nurses were frequently under stress and in difficult situations that required their attention leaving them unable to step away from the bedside to engage in the project. Other barriers included lack of staff engagement due to disinterest, lack of time to participate, and staff turnover rates. These barriers were navigated by frequent conversations with staff and reminders to participate.

The evaluation results are presented in Table 1. There were 50 nurses who took the pretest, and 42 nurses who completed the posttest. Among the eight nurses who did not complete the posttest, six left the unit to take other jobs, one left for a medical leave of absence and was not available, and one did not finish the test. The percentage of change in scores is also listed in Table 1. Figure 1 is a diagram of the project from beginning to final stages.

Table 1

*Pretest and Posttest Scores with Percentage of Change in Correct Responses*

Question	Percentage correct pretest	Percentage correct posttest	Percentage of change
Question 1	60%	100%	+40%
Question 2	60%	100%	+40%
Question 3	45%	80%	+35%
Question 4	60%	90%	+30%
Question 5	74%	100%	+26%
Question 6	56%	80%	+24%
Question 7	75%	95%	+20%
Question 8	66%	100%	+34%

Implications

While observing this group of nurses, I noticed there was a desire for more education regarding the use of the RASS score and documentation. Nurses appeared interested and engaged in the project and desired outcomes and verbalized appreciation for the project. The findings indicated that nurses' knowledge was increased with an educational program tailored to the specific knowledge gaps in a nursing unit. When a specific educational program was created for this purpose and key stakeholders of the unit were incorporated into the planning and implementation, nurses' knowledge increased and the topic became better understood by nurses. Findings included the biggest knowledge gap being the recommended RASS score (Question 3) as well as how to proceed when identifying a RASS score of -4 (Question 6). Some gaps still exist with these areas. Possible causes of these gaps are multifactorial and could include experience level in the ICU and organizational policy, which states the goal RASS should be -2 and should be assessed every 4 hours.

Figure 1

Process of Project Planning, Implementation, Evaluation, and Future Recommendations
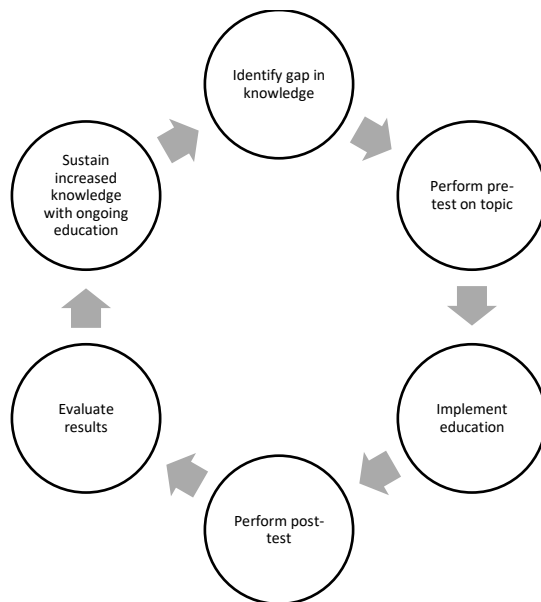
Implications of these findings were multifaceted. By conducting this project, all nursing staff were reoriented to the RASS score allowing future preceptors to prepare to participate in the education of the new staff coming to the unit. This project allows for a unit-wide education for nurses to learn how to properly use the RASS score and has the potential for nurses to provide safer sedation to patients and to more effectively document the score. Through increased knowledge, nurses may be better equipped to identify opportunities for care improvement when administering sedation for their patients. Other institutions have the potential to be positively impacted by this project when findings are shared. The practice changes may have a positive impact on the community of patients cared for by this hospital, including better health outcomes, shorter stays in the ICU and hospital, and fewer long-term effects of staying in the ICU, such as post-ICU myopathies and post-traumatic stress. Through this project, nurses in the hospital community may be

better prepared from an educational standpoint to care for critically ill patients

experiencing sedation. Key stakeholders may be positively impacted as leaders of a

dynamic ICU that has undergone optimization of the patient care provided. The unit is

now using the most current research and evidence to provide care to patients, which may

improve the care provided by the hospital as whole.

<p align="center">**Recommendations**</p>

To sustain improved knowledge regarding sedation and RASS scores, the

education program could be provided on a standardized basis, such as during yearly

competency evaluations. In addition to increasing knowledge of current staff, the

education should be required when new staff are hired. For ongoing reference and clinical

support, the educational script was laminated and a copy was included in each room in

the ICU to provide a reference on the RASS score for the bedside.

Facility data collection could be used for extended long-term outcome evaluation.

Recommendations for the facility include cyclical review of RASS assessment scores and

compliance with documentation guidelines. Data collection could include documented

RASS scores in comparison to the ordered level of RASS score, frequency of

documentation of RASS score, and comparison of ventilator days from before and after

the education was provided. During learning evaluation in the current education project,

an additional gap in practice was demonstrated regarding site policies not in agreement

with evidence-based guidelines. Continued data collection and examination of remaining

gaps in practice would support the need for further projects, all working toward improved

sedation management in this ICU.

Further recommendations include disseminating this project and its findings into other areas of the hospital including the post-anesthesia care unit and surgical day care unit, using a similar style project and incorporating other assessment tools specific to these patient care areas. This project would also benefit other health care organizations within the company, which include numerous hospitals across the east coast of the United States. It would be interesting to perform a similar evaluation of knowledge gaps within these ICUs to determine whether nurses' knowledge of the RASS score is an organization-wide care issue or whether the hospital in which this project was performed is unique in this regard.

Contribution of the Doctoral Project Team

The doctoral project team was an essential contributor to the successful planning, implementation, and dissemination of this project. This group of professionals and key stakeholders provided special insight into how the project would affect the multidisciplinary roles in the ICU. During the course of this project, the director was relinquished of his duties and a new interim director was brought in to the unit. This delayed my project because I had to coordinate with the interim director to review the project, goals, and outcomes to get her up to speed with what was going on with my project. Among the many different stakeholder roles, the lead ICU pharmacist was the most involved in the process and would like to carry the project further to monitor RASS documentation quarterly and determine whether it meets the recommended goal of RASS covered by this project (0 to -1), frequency of documentation covered by this project, and associated patient outcomes and/or ventilator days. This could expand the implications of

the project to include an impact on not only nursing staff, but also on how patients are affected by improved sedation care over time. This is something I plan to participate in going forward utilizing my DNP degree.

Strengths and Limitations of the Project

This project had many strengths, which included feasibility, ease of implementation in the clinical setting, and objective education and assessment tools that included the educational script and the pre- and posttests. The tests were formulated to be informative yet brief to ensure staff could complete them in a timely manner while on shift. I also developed a rapport with staff, which promoted participation in the project and interest in the results. The interprofessional team was essential in an inclusive, multidisciplinary approach that allowed the project to move forward with few obstacles as many different areas were represented. Because of collaboration on this project, the impact of the project on the nursing unit may be significant, allowing for improved rapport and communication among team members.

Limitations of this project included the staffing crisis, which is ongoing within the unit. Despite my attempts to create a seamless pre- and posttest experience for staff, consistent staffing challenges caused some staff to pause during test taking and answer phones, attend to patients, or perform other duties that may have been less disruptive had ancillary staff or other members of the team been available. It is possible that these interruptions contributed to some of the scores on the pre- and posttest. In addition, considering the unit's turnover rate, it is possible new staff will not be captured with this project if it is implemented on a yearly basis or part of yearly competencies. This

situation will have to be evaluated over time, and the project may need to be added to

new hire onboarding materials to capture this group.

Section 5: Dissemination Plan

The purpose of dissemination of this project throughout the institution is to ensure that positive change is shared with the entire organization, not only the ICU in which the project was performed. By distributing findings to a wider audience, I may share the impact of the project among nurses in different specialty areas. The target audience for this dissemination includes organizational leadership and nursing staff within the unit who participated in the project. The chief nursing officer is a member of organizational leadership who provided feedback intermittently throughout the project as part of the team. The first step of dissemination is to meet with the chief nursing officer and the chief medical officer. Sharing this project from this perspective will facilitate a discussion regarding which other units of the hospital would most benefit from this project. I will mention that there is a potential to perform this same project in other care areas including the post-anesthesia care unit in which sedation is also provided to patients, focusing on the Pasero Opioid-Induced Sedation Scale (see Davis et al., 2017). The project outcomes will then be shared with the nursing staff at four change-of-shift staff huddles, and will be shared at the coming staff meetings. Sharing findings with the nursing staff who were the focus of this project will allow the nursing team to receive feedback and be part of the ongoing efforts to use the newly learned knowledge to improve their practice and patient care.

Analysis of Self

As a nurse practitioner and nursing scholar working in this ICU, I am confident and proud to have created this project that has effected positive change in nursing

practice. I was in the perfect position to create and implement this project because I was familiar with the unit, daily activities, and potential facilitators of and barriers to success. This project allowed me to be a leader in this unit by directing the project from the beginning to the end and empowering the nursing staff to use their newly acquired knowledge to optimize their practice. The successful implementation and dissemination of this project will allow me to participate in the strengthening and advancement of the nursing profession. One of my long-term professional goals has been to participate in research that impacts the nursing profession in a positive way, and I believe I was able to accomplish this through this project.

The completion of this project was profoundly rewarding, and the journey to get to this point was both challenging and insightful. I was able to be the leader of a project by troubleshooting barriers that arose and collaborating with an expert team to plan each step of the project to optimize success. Through my doctoral education at Walden, I felt prepared and confident in my abilities to navigate the project. I felt as though I was an expert as well as a leader in guiding the project team and the unit through this experience.

Some of the challenges I experienced while completing this project were symptoms of organizational issues, which included the replacement of the ICU nursing director and turnover with nurses leaving the unit in the middle of my project. Although these incidents did not directly influence the success of my project, they showed the current condition of the unit and other challenges that are ongoing in addition to the practice problem identified in my project.

Summary

This doctoral project demonstrated that nurses' knowledge can be increased through the creation, implementation, and dissemination of an evidence-based nursing education project. Nurses were provided with the tools and information needed to improve their knowledge on an essential part of critical care practice. When provided with a comprehensive, evidence-based educational program regarding RASS score assessment and documentation, nurses improved their knowledge of RASS score assessment. This outcome highlights the potential for this type of project to be used in other areas of nursing to improve nurses' knowledge of other topics that shape nursing practice and patient care delivery. This project has advanced nursing practice through improving knowledge in this ICU.

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Appendix A: Educational Script

Increasing Nursing Knowledge of the Richmond Agitation Sedation Score Assessment
and Documentation through Education

Educational Script

The RASS is an assessment scale used to evaluate levels of sedation in patients in a
variety of health care settings, specifically the ICU. It uses observable and objective
criteria which equals a numerical score on a 10-point scale (+4 to -5). This score is then
compared to the desired score ordered by the provider which is selected based on specific
patient condition. The score is then utilized to initiate, titrate, or discontinue sedative
medications.

Step 1 – observe the patient. Do they have agitated behavior or sedated behavior?
Step 2 – For agitated behavior refer to +1 to +4 part of the scale. For sedated behavior,
refer to the -1 to -5 part of the scale.
Step 3 – if patient is awake and alert, the score is 0. If patient is not awake and alert, in a
loud speaking voice state the patient's name, and direct them to open eyes and look at
speaker. Repeat if needed and prompt patient to look at speaker

- Eye opening and eye contact for a sustained >10 seconds (score -1)
- Eye opening and eye contact for <10 seconds (score -2)
- Patient has any movement to voice, excluding eye contact (score -3)

Step 4 – if patient does not have any response to voice, physically stimulate patient by
shaking shoulder. If no response to shaking shoulder perform noxious stimuli with nail
bed pressure or squeezing of trapezius muscle.
- Any movement to physical stimulation (score -4)
- No response to verbal or physical/noxious stimuli (score -5)

RASS score documentation should occur at a minimum of every two hours, or with any
titration of sedation medications to evaluate patient response. The goal RASS score as
outlined in the PADIS Guidelines by the Society of Critical Care Medicine is 0 to -1
when patients are not receiving neuromuscular blockade or have other medical
contraindications.
Accurate assessment and documentation of the RASS score is critical in providing
optimal levels of sedation to patients in the ICU. Patients who are under or over sedated
can experience detrimental outcomes and ultimately have a longer stay in the ICU and
hospital overall.

Appendix B: Pre- and Posttest

Increasing Nursing Knowledge of the Richmond Agitation Sedation Score Assessment and Documentation through Education

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1. The Richmond Agitation Sedation Score (RASS) has the following number of objective criteria which are used to rate the level of sedation or agitation for a patient.
   a. 8
   b. 12
   c. 10
   d. 6

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2. The negative scores on the RASS are used to determine the level of sedation of a patient, whereas the positive scores are used to determine the agitation level.
   a. True
   b. False

---

3. The optimal level of sedation for most patients (who are not receiving a neuromuscular blockade) as outlined by the PADIS Guidelines by the Society of Critical Care Medicine Guidelines is:
   a. -1 to -3
   b. -2 to -3
   c. -3 to -4
   d. 0 to -1

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4. If the patient is awake and alert, you do not need to document the RASS assessment.
   a. True
   b. False

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5. The recommended frequency of RASS assessment and documentation is:
   a. Every two hours and with changes or titration in sedation
   b. Every shift and with changes or titration in sedation
   c. Every four hours and with changes or titration in sedation
   d. Daily with the spontaneous awakening trial (SAT) and with changes or titration in sedation

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6. The nurse performs a RASS assessment score on a patient who is intubated for a COPD exacerbation and determines the score to be -4. The nurse knows this score indicates:
   a. A moderate level of sedation, where the patient can sustain eye opening for less than 10 seconds. The patient is adequately sedated.
   b. The patient is severely agitated, and is a safety risk requiring the nurse to titrate up the sedation.

    c. The patient is deeply sedated with small movements to noxious stimulation. The nurse should consider lightening the patient's sedation unless medically contraindicated.

    d. The patient is adequately sedated and does not require any titration of sedation. The nurse will leave the sedation at the current rate and document findings.

7. The nurse enters a patient's room who is intubated and finds the patient is moving their arms up and down, and occasionally shrugging their shoulders. The nurse calls their name, the patient makes eye contact and the patient can sustain eye opening for less than 10 seconds. The nurse notes the patient is breathing over the ventilator rate by 5-6 breaths. The nurse documents the RASS score as _____ which indicates the nurse should _____.

    a. -1, keep the sedation at the current rate.

    b. -2, consider keeping the sedation at the current rate or titrating sedation down further.

    c. -3, turn the sedation down.

    d. +1, the nurse should consider titrating the sedation up to prevent the patient from self-extubating.

8. A nurse caring for an intubated patient performs a RASS assessment and notes the score is +2. The patient is currently receiving Propofol at a rate of 40 mcg/kg/min. The patient is not currently pulling at lines or tubes. The nurses next step is:

    a. Nothing, the patient is adequately sedated.

    b. Titrate up the sedation as the patient is agitated.

    c. Perform CPOT assessment and administer analgesia.

    d. Notify the provider the patient did not pass their SAT.