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Education Toolkit on Restraint Reduction in the Intensive Care Unit

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Walden University
2020

Abstract

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MSN, Walden University, 2012

BSN, University of Tennessee Chattanooga, 1992

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

The use of physical restraints in hospitals has been in practice for the better part of a century despite the many adverse effects it can have on patients. Socially, restraint use can strip the patient of their dignity in addition to their freedom. This evidence-based project was to build a toolkit to educate intensive care unit (ICU) nurses regarding the negative effects physical restraint use can have on their patients and to present alternatives to their use. Tools developed from prior research were included in the toolkit, and the Neuman systems model was applied to the overall education project. The toolkit was compiled and sent to content 5 experts for their review; 3 completed the evaluation of potential effectiveness for ICU nurse education. Mean scores regarding the potential effectiveness of implementing this toolkit ranged from 3.0-4.3 on a 5-point Likert scale, where a 1 indicated the reviewer strongly disagreed with the statement, and a 5 indicated strong agreement with the statement. The areas where the mean scores were the highest at 4.3 included agreement that the content was appropriate for nurses in the adult ICU setting, that as an expert in physical restraint use, the respondent would recommend this education to their colleagues, the education module was well-organized, and the education module was an appropriate teaching method for the topic. These responses suggest that this toolkit could be an effective means for adult ICU nurse education on the topic of physical restraint use. If implemented, the potential result would be a decrease in physical restraint use, thereby contributing to positive social change by maintaining patients' dignity and freedom and preventing potential injury from physical restraint use.

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Dedication

This project is dedicated to my children, Michael and Jamie. I undertook doctoral studies at a tumultuous time in all of our lives, and their steadfast love and support is what got me through every step of the process. I felt like giving up so many times, but saw them watching my progress, and regained new strength and focus. Without them, this project would never have reached completion. Thank you, Michael and Jamie, for giving me the strength and encouragement to persevere and succeed. I hope I can provide the same loving support to you in your endeavors.

Acknowledgments

This project is dedicated to Dr. Andrea Jennings, who without her advice, this project would not have received completion. I would also like to acknowledge the, Dr. Linda Janelli, Dr. Helen Lach, and Dr. Kristi Stinson, as well as Daisy Dorotheo and Diane Morrow. Each of these leaders has added to my level of understanding on the project topic, and my professional development as a nurse leader. Their guidance has helped me to see this project through, and I could not have completed it without each of them and their contributions. It is my hope that I am able to assist a colleague in their endeavors as these leaders have helped me in mine.

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Section 1: Nature of the Project

Introduction

Many nurses would state they went into the field of nursing to help others. In the 1940s, medical device marketers capitalized on this inclination, and advertised physical restraints as "protective devices" to keep patients safe (Martin & Mathisen, 2005). Some of the ways that patients were thought to be kept safe by the use of restraints involved the prevention of falls, accidental removal of invasive lines, and patient self-harm (Chang, Yu, Loh, & Chang, 2016; Cosper, Morelock & Provine, 2015; Lach, Leach, & Butcher, 2016; Rose et al., 2016; Staggs, Olds, Cramer, & Shorr, 2016), when the reality is that 68%-82% of patients who do remove their lines are physically restrained at the time (Fronczek, 2014). Physical restraint usage can result in patient harm, both physically and mentally, and has been found to be responsible for 1-3 deaths per week in the United States alone (Rakhmatullina, Taub, & Jacob, 2013; Rose et al., 2016). Even in light of these risks, recent studies have shown the incidence of restraint use to be anywhere from 5.8% to 17% in adult intensive care unit (ICU) patients (Barton-Gooden, Dawkins, & Bennett, 2015; Rakhmatullina et al., 2013; Rose et al., 2016).

Today, over 70 years later, nurses still routinely physically restrain patients, often unaware of the risks associated with restraint usage (Lach et al., 2016). Physical restraint use has been the causal agent for several negative outcomes for patients, including physical injury at the restraint site (including nerve injuries, swelling or bruising at the site, strangulation, asphyxiation, and trauma to the restrained extremity), deep vein thrombosis formation, immobilization and subsequent sequelae (pneumonia, pressure

ulcer formation, incontinence, and contractures), mental decline (increased confusion, delirium, stress), and increased risk for falls, self-extubations, and even death, all while exhibiting no benefit to the patient (Lach et al., 2016). As many as 82% of self-extubations of medical devices by patients occur while physically restrained (Rose et al., 2016). Even the amount of time a patient remains hospitalized is negatively affected by physical restraint use, incurring up to a 14% increase in length of stay (Bai et al., 2014). While the incidence of restraint use has been on the decline, a recent study found that restraint prevalence was still high, with ICUs averaging 46% of patients in restraints at some point during their hospital stay (Cosper et al., 2015).

The literature has shown that provision of an education program to hospital staff regarding physical restraint use can yield a decrease in restraint use posteducation (Chang et al., 2016). Some nurses stated that prior to receiving education on the topic of physical restraints, they had a fear that not restraining their patients would result in harm, and that restraining their patients helped alleviate the fears of the nursing staff (Barton-Gooden et al., 2015). With proper education regarding the use of physical restraints, a culture change can occur in nursing practice, resulting in a safer environment for patients (Chang et al., 2016).

Problem Statement

Even considering the research identifying the many hazards of physical restraint use on adult ICU patients, the practice is still pervasive (Cosper et al., 2015). Lach et al. (2016) noted that nurses are at the heart of the decision of whether or not to restrain their patients, often calling a physician to request the order they feel is necessary (Lach et al.,

2016). They found that while nurses often cite valid concerns for wishing to place their patients in physical restraints, many of those reasons are not supported in the research (Lach et al., 2016). Lach et al. (2016) went on to find that allowing the nursing staff to continue to use physical restraints at the current rate can result in negative patient outcomes, many of which are unknown to the caregivers. Adverse effects such as delirium, immobility, and posttraumatic stress symptoms can be hidden from the nursing staff, especially those in the ICU, because they only see the patient in the most acute phase of treatment (Rose et al., 2016). The nursing staff may not be aware that treatment programs post-ICU were delayed due to these issues attributed to the use of physical restraints in the ICU period, resulting in an increased length of stay for the patient (Rose et al., 2016). In the facility where I am employed, there is no consistent process for assessing the need for use of physical restraints, nor is there a protocol for determining effective alternatives to physical restraint use. With these concerns in mind, the problem question for this project was: Would an evidence-based education toolkit regarding physical restraint use be an effective means for adult ICU nurse education according to a panel of content experts?

Purpose Statement

The purpose of this capstone project was to develop an education toolkit evaluated for effectiveness by a panel of experts regarding the use of physical restraints. Currently, there is no widely accepted protocol to guide the use of physical restraints. Most institutions develop their own restraint programs, either with or without searching the literature for current best practice recommendations. Common reasons nurses state

they choose to place a patient in restraints include patient safety, prevention of injury, fall prevention, and to ensure medical devices are not removed by the patient (Chang Yet al.. 2016; Lach et al., 2016). In their research, Lach et al. (2016) noted that all of these concerns, as discussed previously, have been proven to be unsupported in the literature, with more adverse events occurring while patients are restrained versus unrestrained, and that nurses are frequently uninformed as to the potential risks that their practice poses to their patients. Many nurses, and more than half of physicians as well, were identified as practicing under the belief that falls and disruption of medical treatments could be avoided through the use of physical restraints (Lach et al., 2016; Sandhu et al, 2010). One study noted that nurses felt that physical restraints were necessary in the ICU 94.5% of the time and did not attribute much significance to the act of placing a patient in restraints (Yont, Karhon, Dizer, Gumus, & Koyuncu, 2014). The intent of this project was to address the gap in nursing practice regarding the knowledge gaps identified in my facility and give the adult ICU nurses the tools necessary to help them to bring about a change in their practice. A long-term goal of the project would be to decrease the use of physical restraints once the education toolkit was used to educate the nursing staff. Implementation of the education program was not a part of this project, but it could take place at a later date.

Nature of the Project

The main objective of this project was to develop an expert-reviewed education toolkit that can be used to provide adult ICU nursing staff alternatives to the use of physical restraints. The intent was that staff who have participated in the education

program will develop a more complete understanding of the negative effects of physical restraint use for their patients and will use the alternative methods presented in the toolkit to individualize their care, thereby keeping their patients safe. The program contains content from the literature that has been proven to be effective in this endeavor, including a hallmark study originally conducted by Janelli, Scherer, Kanski, and Nearly in 1991 and another study by Lach et al. in 2016. The toolkit also includes learning objectives, a lesson plan, a restraint reduction plan worksheet, case studies, and a PowerPoint presentation. The secondary objective of the project was to have the complete toolkit evaluated for effectiveness by a panel of content experts. While determining effectiveness of the education toolkit was not a part of this project, if implemented, the goal of the education would be to bring about a decrease in physical restraint use.

Significance to Nursing Practice

There are several stakeholders who will potentially be impacted by the outcome of this project. First are the ICU patients. For the patients who are admitted to the adult ICU, one possible outcome of the program is that the likelihood of them being placed in physical restraints will be lessened, and if they are restrained, their time of restraint will be decreased due to the education their nurses will receive. Decreased time spent in restraints will decrease the possibility of adverse events attributed to restraint use and will contribute to a decreased length of hospitalization for the patients (Lach et al., 2016; Bai et al., 2014). The second group to be impacted by this project is the ICU nurses. This group of practitioners will receive education regarding an area of practice that has become routine to them, but they will now introduce new information and alternatives to

their practice. The anticipated outcome of the education would be to enlighten these nurses regarding the possible risks of their current practice and to help them to provide safer care to their patients. It is well-noted that most nurses choose to restrain their patients out of concern for patient safety; therefore, providing them with this knowledge will aid them in their endeavors to practice safe patient care (Lach et al., 2016; Yont et al, 2014). Another group that will be impacted by this study are the physicians. This group should experience a decrease in the number of calls for initial and subsequent restraint orders and also a decrease the number of orders they need to electronically sign to remain current with medical records compliance. The quality department will also be impacted by this project, as they maintain and report the data regarding physical restraint use to regulatory bodies. A potential reduction in the use of restraints will result in a decrease in the number of cases they will need to report to governing bodies, freeing them up for other quality initiatives. Finally, the financial department of the hospital will benefit from a reduction in physical restraint use due to the decrease in a patient's length of stay (Bai et al., 2014). because the hospital's reimbursement from insurance and government plans is diagnosis-driven, being able to keep a patient's length of stay in the hospital down can result in a more equitable reimbursement for services rendered (Bai et al., 2014).

Implications for Social Change in Practice

The decision to place a patient in physical restraints rests primarily with the nurse (Lach et al., 2016). While the nurse is required to obtain an order from a physician to place a patient in restraints, the physician usually relies on the nurse's judgment

regarding the need (Lach et al., 2016). This places nurses in the position to bring about a positive social change for their patients with regard to the use of physical restraints. The educational toolkit developed in this project builds upon the nurses' knowledge of adverse outcomes associated with physical restraint use and provides them with alternatives to the use of physical restraints. Upon receiving the education, the nurses would be able to accurately assess their patients for the appropriateness of alternative measures and may even develop their own unique methods to avoid physical restraint use, thereby individualizing their care to their patients. Reviewed by content experts for its ability to affect the ICU nurses' decision to place a patient in physical restraints, implementation of this education toolkit could result in clinical practice and financial benefits for my unit and my hospital, as well as benefit the patient by not being restrained. While the focus of the project is the adult ICU environment, expansion of the education program to other adult acute care units and, potentially, outside of this facility to others across the country could result in a decrease in the amount of time patients spend physically restrained.

Attempts to sustainably realize physical restraint reduction in the ICU have not been successful (American Nurses Association [ANA], 2012). The ANA (2012) released a position statement regarding the use of physical restraints in which it noted restraint use to be "contrary to the fundamental goals and ethical traditions of the nursing profession, which upholds the autonomy and inherent dignity of each patient" (p.1). The ANA (2012) further states, "Changes in bedside nurses' critical thinking and decision-making related to restraint will occur only with education and continuous discussions supported

by administration" (p.7). It is my hope that this project will add to the research that has been done, help to fill in the gap between knowledge and practice in my facility, and hopefully be replicated to produce positive outcomes in other facilities.

Summary

The use of physical restraints has proven to not only be ineffective in preventing patients from experiencing negative outcomes during their ICU stays but also to be potentially dangerous to the patient, often resulting in physical and mental damages worse than the outcomes they are used to prevent (Lach et al., 2016). Nurses are typically the ones who note the need for physical restraint use for their patients, and they do so in an attempt to keep their patients safe, unaware of the dangers to which they are subjecting their patients (Lach et al., 2016). The purpose of this DNP project was to develop an educational toolkit regarding physical restraint use. The nature of the project is educational, with future implementation hopefully resulting in a change in practice. With the support of the ANA, nursing must make a change in order to preserve the dignity of the patients served and promote optimal patient outcomes (ANA, 2012). Such a change in practice would result in positive social change for patients by reducing or eliminating the time they spend physically restrained. The next section covers the conceptual framework, relevance to nursing practice, and context of the project.

Section 2: Background and Context

Introduction

The use of physical restraints has been a mainstay in nursing practice for many years. Recently, through research, the many dangers associated with physical restraint use have become known, urging a move to alternatives to restraint use (Cosper et al., 2015). Education programs delivered to nursing staff have proven to be a successful way to bring about this necessary practice change (Chang et al., 2016). For this project, the practice-focused question was: Would an evidence-based education toolkit regarding physical restraint use be an effective means for adult ICU nurse education according to a panel of content experts? The purpose of this project was to develop an educational toolkit regarding physical restraints. A long-term goal of the project was to decrease the use of restraints. In the attempt to educate on this topic, the conceptual framework behind the project, the project's relevance to nursing practice, local background and context, and my role as the DNP student are considered.

Conceptual Model/Theoretical Framework

The theoretical framework for this project was Neuman's systems model. The systems model was originally developed in 1970 by B. Neuman in an effort to provide focus in nursing students' learning (as cited in Parker & Smith, 2010) and continues to be used since its inception in an effort to produce change in nursing practice among professional nurses. In Neuman's systems model, the nurse is focused on identifying the most appropriate actions to take in caring for a patient (client) while they deal with

stressors (Parker & Smith, 2010). Parker and Smith (2010) listed Neuman's 10 perspectives that encompass the model:

1. Each client is unique;
2. the client experiences a continual energy exchange with their environment;
3. many stressors exist for the client, both known and unknown, and they effect the client at differing levels;
4. each client has developed a line of defense that they employ routinely, and becomes their norm;
5. when the established line of defense is not able to adapt to a stressor it breaks, allowing the stressor to pass through;
6. the client is composed of many variables, physiological, psychological, sociocultural, developmental, and spiritual, that, depending on the energy available in these components, place the individual on a continuum of wellness from completely well or ill;
7. each client, also contains lines of resistance that work to bring the individual back to their baseline wellness level, or better;
8. knowledge that is applied to prevent or reduce risk factors and stressor levels is primary prevention;
9. secondary prevention is the symptoms that result from exposure to a stressor, and the triage sequence to intervene and treat the client to decrease the negative effects of the stressor; and

10. tertiary prevention refers to the changes that take place once healing begins, and the patient moves back to their baseline.

In the context of physical restraint use, the nurse is seen as the intervener that is assisting the patient (client) to move from a state of stress to the patient's baseline (Smith et al., 2003). Whether the stressor is physiological, psychological, or due to another cause, the nurse is there to assess the situation and determine the most appropriate interventions that will result in homeostasis for the patient (Parker & Smith, 2010). This is the point at which the nurse will need to take the results from their assessment and individualize the plan of care for their patient, whether it includes physical restraint use, medication, or other alternatives to the use of restraints. The goal is to help the patient to normalize their environment, decrease their stressors, and return to a more normal state of well-being (Parker & Smith, 2010).

In the facility where I am employed, there is no current assessment regarding need for use of physical restraints. If a patient is noted to be anxious or difficult to calm down, physical restraints are applied. The only education nurses at this facility receive regarding physical restraints involves how to properly apply the restraint devices. Due to the lack of education on restraint use in this facility, I developed a physical restraint educational toolkit. The toolkit includes a PowerPoint presentation (Appendix I) that provides a history of physical restraint use, potential negative outcomes of the use of physical restraints, and alternatives to using physical restraints in adult patients, a Restraint Reduction Plan Worksheet (Appendix G), and case studies (Appendix H).

Applying Newman's systems model to this DNP project, I have identified 10 steps to follow when assessing and applying knowledge regarding patient restraint. First, the nurse will acknowledge that each patient is unique, and will evaluate their need for physical restraints with this thought in mind (Parker & Smith, 2010). Second, the nurse will also be aware that their patient is experiencing a continual exchange of energy with their environment, which can change the patient's perceptions of stress (Parker & Smith, 2010). This step reminds the nurse that they need to continually assess the patient for a change in their activity, just as the environment is continually changing around them (Parker & Smith, 2010). The patient may now require restraint use or may be able to be released from physical restraints. Third, the focus will be on the many stressors the patient is experiencing, both known and unknown to the patient and the nurse providing care for the patient (Parker & Smith, 2010). Identification of as many of these stressors as possible can assist the nurse by making it possible to decrease the number of those stressors, thereby decreasing the patient's agitation and, hopefully, being able to maintain the patient safely without the use of physical restraints (Parker & Smith, 2010). Fourth, the nurse must also be aware that each patient comes to the hospital environment with a line of defense for themselves that has become a routine for them (Parker & Smith, 2010). The use of physical restraints can interrupt the patient's normal defenses, increasing their agitation (Parker & Smith, 2010). Thus, fifth, when the patient's line of defense is interrupted, it can increase stressors in the patient (Parker & Smith, 2010). As shown in this project, the use of restraints could break the normal defense for the patient, allowing the stressor to further agitate the patient, further necessitating the use of physical

restraints (Parker & Smith, 2010). The savvy nurse could benefit by realizing this break has occurred, and the nurse may find that removing the restraints actually calms the patient. The sixth perspective addressed in Neuman's model acknowledges that each patient is made up of their own unique components that place them on a continuum of wellness (Parker & Smith, 2010). For this project, sixth, if the nurse caring for the patient is able to conduct a complete assessment of the patient's physiological, psychological, sociocultural, developmental and spiritual needs, a more defined picture of the patient becomes clear. This can help the nurse to more accurately determine the patient's ability to manage their stress and choose the most appropriate path for or against the use of physical restraints for that patient at that time (Parker & Smith, 2010). Seventh, the nurse must also be aware that each patient not only contains lines of defense, but also lines of resistance that are always at work, attempting to bring the individual back to their baseline level of wellness on the continuum (Parker & Smith, 2010). If nurses are able to identify these lines of resistance and determine what helps the patient achieve homeostasis, they may be able to assist the patient in this process (Parker & Smith, 2010). Thus, eighth, primary prevention against stressors is knowledge, and the more the nurse can learn about their patient and their coping mechanisms, the more the nurse will be able to provide support during a stressful hospitalization (Parker & Smith, 2010). Ninth, the secondary means of prevention is the symptoms that the stressor causes in the patient (Parker & Smith, 2010). If the nurse is able to correctly identify the stressors and the reactions they produce in the patient, the nurse is more aptly suited to address those issues and hopefully eliminate them, so that restraint use can be avoided

(Parker & Smith, 2010). Finally, and tenth, the tertiary prevention strategy notes the changes that occur in the patient as they return to their baseline of wellness (Parker & Smith, 2010). Again, the nurse will benefit from continual assessment of their patient to identify that the patient is moving through this continuum of wellness and note that they may now be able to be safe without the continued use of physical restraints (Parker & Smith, 2010). For this project, then, the Neuman model will provide nurses guidance when dealing with patients undergoing stress and can help the nurse to assess the patient more completely for the need for physical restraint use. While this project focused on patients in the adult ICU, the educational toolkit developed will be able to be used by any nurse caring for a patient in the acute care hospital environment, regardless of the department in which the patient is placed. The ICU environment is typically the department that sees the greatest use of physical restraints due to the many invasive lines and severity of the patient's illness. It is for this reason that the adult ICU environment was chosen for the purpose of this DNP project.

Relevance to Nursing Practice

In 2012, the ANA released a position statement regarding the need for a reduction in the use of patient restraints and seclusion in health care settings. This statement acknowledged that nurses have been using physical restraints in an attempt to provide safe patient care for over 100 years and that during this time, they have been struggling with reducing the frequency of use (ANA, 2012). The incidence and prevalence of physical restraint use increased to the point that in 1987, the Nursing Home Reform Act addressed the issue as a part of the Omnibus Reconciliation Act (ANA, 2012). This law

sought to achieve improved quality of care provided to patients through a reduction in restraint use (ANA, 2012). The Department of Health and Human Services released several guidelines for the appropriate use of physical restraints in 2006 to further monitor the practice of restraint use and promote safe patient care.

The ANA (2010) brought to light the need for nurses to advocate for and provide ethical treatment to their patients in its position statement of the nurse's role in ethics and human rights. This position statement provides the underlying expectations that all nurses should follow regarding the ethical treatment of patients and the necessity of promoting each patient's "worth, dignity, and human rights in practice settings" (ANA, 2010, p. 1). As a part of this nursing role, ensuring patients are not inappropriately restrained is paramount (ANA, 2012). The ANA's position on the nurse's role in restraint use is that they "strongly support(s) registered nurse participation in reducing patient restraint . . . in health care settings" (ANA, 2012, p. 1). They further state that the practice of restraining patients "is viewed as contrary to the fundamental goals and ethical traditions of the nursing profession, which upholds the autonomy and inherent dignity of each patient" (ANA, 2012, p. 1). The ANA (2015) continues to place emphasis on the importance of this matter, citing dignity as a fundamental principle in the first paragraph of its Code of Ethics for Nurses. As a discipline, it is vital that nursing remain true to its ideals, and freeing our patients from restraints is just one way of accomplishing that goal. Although it may be impossible to be totally restraint-free in the acute care setting due to the critical nature of the patients' illnesses, the attempt must be made.

Physical restraint use continues to be a problem in hospitals in the United States, with a higher incidence noted in the ICU departments (Hevener, Rickabaugh, & Marsh, 2016). One study noted that while ICU patients made up only 16% of in-patient hospital days, 56% of the total number of restraint days hospital-wide were used by the ICU (Hevener et al., 2016). These findings indicated that nurses in the ICU are more likely to apply physical restraints to their patient population compared to other nurses in acute care settings. With the number of invasive lines present in ICU patients being greater than other acute care units, a possible explanation is that ICU nurses are attempting to prevent these lines from being inadvertently removed by their patients (Suliman, Aloush, & Al-Awamreh, 2017).

A study was conducted that revealed 75% of ICU patients were placed in restraints during their ICU stay for a median duration of 3 days (Hamilton, Griesdale, & Mion, 2017). Even in the presence of opioid use, when ventilated, a patient's chances of ending up physically restrained were increased by eight times (Hamilton et al., 2017). While nurses continue to cite prevention of extubation as a reason to apply physical restraints, patients who are physically restrained experience an increased incidence of self-extubating of endotracheal tubes (Hall et al., 2018). Another study found that 82% of medical devices overall were removed by patients who were physically restrained (Rose, et al., 2016).

Many studies have been conducted to address the practice gap between physically restraining patients and the adverse events due to such restraint use. Some areas that have been explored include level of education of the nursing staff, years of experience the

nurses have, cultural beliefs and attitudes that nurses have regarding restraint use, and awareness of the potential dangers of restraint use (Stinson, 2016; Li & Fawcett, 2014; Yont, et al., 2014; Dierckx de Casterlé, Goethals, & Gastmans, 2015). Tactics from multidisciplinary team rounding, increased sedation, increased observation of patients, and education programs have been employed to address this gap, with varied results; however, the studies I reviewed that were successful in reducing the incidence in restraint use involved an education program to the nursing staff directly involved in the patient's care (Cosper et al., 2015; Enns, Rhemtulla, Ewa, Fruetel, & Holroyd-Leduc, 2014; Taha & Ali, 2013).

This DNP project sought to address the practice gap between a nurse's desire to provide safe care for their patient and the application of physical restraints. The method this project employed was the development of an expert-reviewed education toolkit to present to nurses in order to encourage them to find alternatives to physical restraint use. Special attention was given to the prevailing concern the literature has revealed regarding ICU nurses' use of restraints in an attempt to avoid self-extubating and loss of other invasive lines (Cosper et al., 2015; Hall et al, 2018; Luk et al., 2014; Lach et al., 2016; Rose et al., 2016). The eventual goal would be to fill this knowledge gap through the provision of education to the nursing staff of the adult ICU about physical restraint use, address their concerns regarding patient safety, and teach safe, alternative methods to using restraints.

Local Background and Context

The current practice in the adult ICU of my organization is to include a pair of soft wrist restraints with the intubation tray, which encourages the use of physical restraints, perpetuating the belief that their use will prevent patient from self-extubating. The hospital receives governance regarding physical restraint use from the Centers for Medicare and Medicaid Services through the Department of Health and Human Services. The Department of Health and Human Services Federal Register, published in 2006, supports the right of the patient to not be physically restrained, except in temporary circumstances in an effort to promote safety, and to be released as soon as safely possible. The hospital's compliance with Centers for Medicare and Medicaid Services guidelines is monitored every 3 years through certification from The Joint Commission. Ensuring our facility is using physical restraints in an appropriate manner is in line with the organization's guidelines for provision of patient care.

Role of the Doctor of Nursing Practice Student

In order to bring about change at the institutional level, the DNP nurse must be able to collaborate intraprofessionally, bringing in support from all levels of nursing, from the bedside to administration. Without the support of nursing executives, a change project is difficult to initiate. Additionally, without buy-in from direct patient care staff, the project will not be successful. Thus, for a project like this to succeed, I must be able to work with all potential stakeholders in order to develop and implement a change project. For this project, I was not only the student conducting the project, but I am also the Director of an ICU in which I hope to use the education toolkit developed. It is for

this reason that I have a vested interest in the success of this project. The success of this project could not only yield a reduction in the number of days the patient population spends in restraints, but such a reduction could also yield a decrease in patient injuries, length of stay in the ICU, and amount of financial of resources expended (Lach et al., 2016; Cosper et al., 2015; Bai et al., 2014). These results serve no financial or professional benefit to me, so the outcomes are without bias on the part of the student. All evaluation grades, comments, and suggestions are included in the toolkit, so bias on the part of myself as the leader was avoided. The intent of the project was to develop a toolkit that is effective, so all expert guidance was included to produce the highest-quality final product.

Summary

The Neuman systems model has been used successfully to bring about behavior change in nurses through focused education (Parker & Smith, 2010). With a goal of this project being to bring about a decrease in restraint use, a behavior change through education could produce this desired outcome. Attempts have been made to make such reductions in the use of physical restraints for over 100 years (ANA, 2012). The purpose of this project was to develop an educational toolkit regarding restraint use and have it evaluated for effectiveness for educating adult ICU nurses. The toolkit could be used to bring about a change in nursing practice, not only in the local facility of this DNP student, but also globally.

Section 3: Collection and Analysis of Evidence

Introduction

Currently, many nurses maintain the opinion that they provide safe care for their patients through the use of physical restraints (Lach et al., 2016). The nursing staff are often unaware of the potential negative effects that physical restraint use can have on their patients, which was the underlying premise for this project that resulted in an education toolkit evaluated as effective to educate ICU nurses about adverse outcomes of restraint use and facilitate the use of alternative methods to maintain patient safety without the use of restraints (see Lach et al., 2016). This section covers the review of the literature on the topic of restraint use and reduction, my role as the DNP student in this project, the role of the project team, protections, assumptions, limitations, analysis and synthesis, and evaluation of the project.

Practice Focused Question

Locally, in my hospital's adult ICU, the current practice is to automatically physically restrain all patients when they are mechanically ventilated without first attempting alternatives to restraint use. Subsequently, if there are no extra staff available to assist in the form of a patient sitter, restraints are used for confused or agitated patients. Such a history has produced a culture of dependence of the nursing staff on physical restraints in an attempt to keep ICU patients safe. This project addressed a gap between knowledge and practice for the nursing staff of the adult ICU in my hospital and answered the question: Would an evidence-based education toolkit providing education

regarding physical restraint use be an effective method to address this knowledge/practice gap according to a panel of content experts?

Definition of Terms

The following definitions are provided to augment understanding of the project presented:

Adverse event: An event that results in unintended harm to the patient by an act of commission or omission, rather than by the underlying disease or condition of the patient (Erickson, Wolcott, Corrigan, & Aspden, 2003).

Adult: Person of 18 years of age or older.

Intensive care unit (ICU): An organized system for the provision of care to critically ill patients that provides intensive and specialized medical and nursing care, enhanced capacity for monitoring, and multiple modalities of physiologic organ support to sustain life during a period of acute organ system insufficiency (Marshall et al., 2017).

Invasive lines: Any medical device that is introduced into the body, either through a break in the skin, or through an opening in the body (Sepsis Alliance, 2017).

Physical restraint: Any manual method or physical or mechanical device, material, or equipment that immobilizes or reduces the ability of a person to move arms, legs, body or head freely (ANA, 2012).

Self-extubation: Deliberate, premature removal of the endotracheal tube by a patient receiving mechanical ventilation support (da Silva & Fonseca, 2012).

Published Outcomes and Research

The sources that provided evidence for this project included scholarly, peer-reviewed articles from academic journals derived from CINAHL and Medline searches, reference lists from those articles, and websites for national regulatory agencies. These academic sources provided a historical background and theoretical basis for the project, as well as several examples of previous studies that have used different theories and tools to determine the reasons that healthcare providers have for choosing to place their patients in restraints. Finally, national websites, such as the Centers for Medicare & Medicaid Services, provide definition and guidance regarding physical restraints. By gathering and analyzing evidence from these sources, I was able to develop an education program for the nursing staff of my adult ICU, keeping in mind the history and culture of the unit and applying the newest evidence to bring about a reduction in the use of physical restraints.

For the literature review, my focus was on physical restraint use with adult patients in an effort to develop an education module for nurses to help them find alternatives to restraint use.

I conducted a literature search through the Walden University library using the Cumulative Index for Nursing and Allied Health Literature (CINAHL) and Medline search libraries. Key terms searched included *restraint-free hospital, restraint-free ICU, restraint free,* and *restraint reduction.* Phrases in the inclusion criteria were *nursing education, nursing attitudes,* and *acute care,* with exclusion criteria terms *pediatric, psychiatric,* and *nursing home.* Identified Boolean search strings were *restraint free ICU*

AND nursing attitudes, restraint free ICU AND nursing education, restraint free hospital AND nursing education, restraint free NOT pediatric AND acute care, and *restraint reduction NOT psychiatric NOT nursing home NOT pediatric.* The original search yielded 535 results, which were refined to studies written in English and further refined to exclude cases studying delirium. I originally conducted searches in February of 2016 and updated in June of 2018. I conducted additional searches from the references provided in the studies originally found through search criteria. Specific criteria considered included those studies conducted in acute care hospitals, that studied the decision-making process, or that included an educational program or behavioral theory to substantiate the process.

Fifty-five articles were selected for review and possible use in citation for this project. These articles spanned from 1991 to 2018, with 36 of those from 1991 to 2011, and 19 articles published during the last 5 years. Of the 55 articles, six of them were quasi-experimental educational programs, 11 were literature reviews, three studies were stepped-wedge trials, nine descriptive studies, nine observational studies, seven qualitative studies, and the rest included discussion of other theories, a case control study, a mixed methods study, and a randomized-controlled trial. This search included international studies, studies using conceptual theories for application to the DNP project problem, and studies that dated back to the inception of seminal studies and theory formation.

General Literature Review

Rakhmatullina et al. (2013) conducted a literature review that focused on morbidity and mortality attributed to physical restraint use. In this review, 35 studies covering a 10-year time span were assessed for negative outcomes due to the use of restraints. In their review, Rakhmatullina et al (2013) noted that restraints can have negative effects for the patient, both mentally and physically, with 35.1% suffering from upper limb injuries and 34% of patients reporting suffering significant mental stress due to physical restraint use. The researchers found that restrained patients experience a continuum of negative outcomes from feeling distressed, dehumanized, and humiliated to incurring limb injuries, deep vein thrombi, pressure ulcers, an increase in falls, and even death. Rakhmatullina et al (2013) suggested that the incidence rate of negative outcomes due to physical restraint use is difficult to ascertain due to underreporting of such injuries, and the need to develop an effective restraint reduction program for facilities to implement. The study also noted the negative impact that placing patients in physical restraints has on the nursing staff involved (Rakhmatullina et al, 2013).

Staggs, et al. (2016) conducted a longitudinal study to determine whether the nurse staffing levels had any impact on the use of physical restraints. The study took place over 17 quarters in 3,101 medical, surgical, and medical/surgical units across 869 hospitals across the United States that reported data to the National Database of Nursing Quality Indicators between the years of 2006-2010 (Staggs et al., 2016). The total number of nursing hours per patient days and the proportion of hours that nursing care was performed by registered nurses (Staggs et al., 2016). In their study, Staggs et al.

(2016) noted that prevention of falls was given as the reason for restraint use in 51% of the cases and that the odds of a patient being restrained were between 11%-18% in units with a very low nursing staff skill mix. Staggs et al (2016) found that the lower skill mix of the nursing staff resulted in an increase in physical restraint usage, indicating that staffing models should consistently contain registered nurses to prevent overuse of physical restraints.

Luk, Burry, Rezaie, Mehta, and Rose (2015) conducted an observational study to determine the decision-making processes of ICU nurses regarding the use of physical restraints. Data was collected from nurses with 141 patients, and the behavior most likely to result in the use of physical restraints was agitation (43%), which was described as pulling at invasive lines, placing extremities over side rails, thrashing in the bed, and striking out at staff members (Luk et al., 2015). The nurses in the study also identified that restraints were frequently used as a precautionary measure (17%), and that alternatives to restraint use were not used frequently, with only 33% of patients receiving consideration for alternatives (Luk et al., 2015). The study posits that new strategies must be developed to promote new evidence regarding physical restraint use to decrease the use of these devices (Luk et al, 2015).

In 2015, Barton-Gooden et al. conducted a mixed methods study focusing on the prevalence of physical restraint usage among 172 adult patients. This study used tools to gather and report data regarding the prevalence of restraint use during chart reviews and two focus group discussions involving physicians and nurses working on the units where the data were collected. Physical restraints were noted to be in use 75% of the time on

the units studied, with 70% consisting of bedrail restraints, and 5% being limb and trunk restraint devices (Barton-Gooden et al., 2015). The focus group discussions revealed that the participants felt guilt for the use of physical restraints, felt undertrained, perceived a lack of resources for restraint use, and, when asked, stated repeatedly that restraints were necessary to prevent harm to their patient population, revealing a need for education and support services to be provided to the nursing staff (Barton-Gooden et al., 2015).

Johnson et al (2016) conducted a study to determine if providing ICU nursing staff with education regarding restraint use was an effective means in reducing restraint use for ICU patients. Johnson et al (2016) collected data prior to the implementation of the education program to assess the incidence of delirium and restraint use. The mean use of restraints per 1,000 patient days prior to the onset of the education program was 314.1, and this prevalence dropped to 237.8 postimplementation. Johnson et al (2016) concluded that an education program could be an effective means of achieving restraint use reduction through increasing the nurses' knowledge in assessing a patient's need for physical restraint use. Effective assessment can lead to a decrease in restraint use and the financial costs associated with their use (Johnson et al., 2016).

Chang et al. (2016) studied the effect that an in-service education program on the topic of physical restraints would have on nurses and their use of restraints in their practice. The study was a quasi-experimental design using pre- and posttests to determine whether the adult ICU nurses exposed to the education program would experience a practice change in regard to physical restraint use. One hundred thirty-six nurses from four adult ICUs participated in the study, with the result that in-service

education that includes alternative measures and ethical issues is effective in increasing nurses' knowledge and techniques and can change their attitudes and behaviors regarding restraint use on their patients (Chang et al., 2016).

Specific Literature Review

Smith et al (2003) used Neuman's Systems Model as the theoretical framework for their study which focused on the effect an education model had on restraint use in an acute care medical facility. Smith and team (2003) noted that patients are affected by their environment, including those providing healthcare functions to the patient, which mirrors Neuman's Systems Model. The caregivers that choose to either restrain a patient, or find an alternative to restraint use, are a part of the patient's environment, and can either increase or decrease the patient's stressors (Smith et al., 2003). Neuman recognized the importance of the nurse in being able to identify stressors to their patient, and to intervene to prevent the patient's lines of defense from breaking down (Smith et al., 2003). The Smith team (2003) used this information to develop the restraint education program they presented to their staff. Three months after the implementation of the education program, restraint use decreased by 1-2 days facility wide, and the number of patients that spent time physically restrained was reduced by half (Smith et al., 2003). During the three months after the program was conducted, 46 patients with behaviors that would have previously resulted in these patients being restrained were able to avoid being restrained due to the use of alternatives presented in the education program (Smith et al.,2003).

Lach et al. (2016) conducted a literature review in an effort to update an evidence-based practice guideline. In their review, Lach et al. (2016) noted the vital role that nurses play in determining whether or not a patient will be restrained. One of the outcomes of Lach et al.'s (2016) review included an assessment tool for nurses to use to identify potentially unsafe conditions/behavior for their patients. They used this information to develop a list of interventions that nurses could employ to avoid the use of physical restraints for their patients in their subsequent review and update of the guidelines for restraint use (Lach et al., 2016). As these interventions were shown to still be applicable, they were included in the update of the evidence-based guidelines, and are used in this project as a part of the education toolkit (Lach et al., 2016).

The descriptive study that Janelli, Stamps, and Delles (2006) conducted focused on the knowledge, practice, and attitudes nurses have regarding restraint use, and has been cited in over 50 studies since that time. For their study, Janelli et al (2006) recruited 216 nurses from two acute care hospitals to complete a questionnaire comprised of 70 questions with topics ranging from personal demographics, professional information, knowledge of restraints, the nurses' practice, and their attitudes toward restraint use. When the data was analyzed, Janelli et al (2006) found knowledge gaps regarding restraint use. For example, 52% of those questioned stated that restraints should be applied snuggly, and should be released every two hours while the patient was awake (Janelli, Stamps, & Delles, 2006). The current standard is for restraints to be released every two hours, so for only half of the staff to state they follow the guidelines is concerning (Janelli, Stamps, & Delles, 2006). Also, of concern, only 56% of those

queried understood that patients have the right to refuse restraints (Janelli, Stamps, & Delles, 2006). Janelli et al (2006) identified a knowledge gap in nurses regarding restraint use, and proposed that education to the staff should include the ability to discern between the possible risks and benefits of restraint use, clarification of misconceptions regarding restraints, awareness of the staff of the patient's experience while restrained, consideration of personal and administrative attitudes with regard to restraint use, and possible alternatives to using physical restraints. The questionnaire that Janelli, Stamps, and Delles (2006) used in their study has been used in subsequent research, and helped to form the education material for this project.

Stinson (2016) conducted a descriptive correlational study using part of the tool Janelli, Stamps, and Delles (2006) developed to determine any relationships between nurses' experience, their practice, and their attitudes toward physical restraint use in ICUs. Overall, 413 surveys were collected from critical care nurses19-68 years of age, with a variety of educational and personal backgrounds (Stinson, 2016). Stinson (2016) noted a statistically significant relationship between the amount of time spent working as a nurse ($p=0.374$) , and time spent in critical care nursing ($p=0.356$), and the nurse being exposed to content related to restraint use in while in nursing school(p range of 0.310-0.396), meaning those that had been out of school for a longer period of time were most likely to have received education about restraints while in school, and newer nurses were less likely to have been exposed to such education. Stinson's (2016) study stated the need for nursing schools to continue to include information regarding restraints in their curriculum. The study suggests a correlation between a nurse's years of critical care

experience, overall nursing experience, and education should be considered in the development of restraint reduction education (Stinson, 2016).

Role of the Doctor of Nursing Practice Student

The intention for the development of this education toolkit was to provide one complete source for a nurse to gain knowledge about physical restraints, how to appropriately assess a patient for the need to use restraints and identify alternatives to physical restraint use. The ANA (2012) suggested that educational effort directed toward accurate assessment of patients that results in an individualized plan of care was essential to realize physical restraint reduction. This education toolkit addresses that need suggested by the ANA.

The content of the educational toolkit was compiled from data available from multiple sources, already available in the literature, but not put together as a comprehensive guide for the use of physical restraints (Janelli, Scherer, Kanski, & Neary, 1991; Lach et al., 2016). The toolkit includes a PowerPoint presentation (Appendix I), developed by the DNP student, that includes the history of physical restraint use, potential negative outcomes of the use of physical restraints, and alternatives to using physical restraints in adult patients. The program brings tools developed and tested through prior research together into one toolkit, in an effort to simplify the education process for the nursing audience. Dr. Linda Janelli's (1991) hallmark study produced "A Physical Restraint Knowledge Questionnaire" which was used to determine the topics to be covered in the education program, as it revealed knowledge deficits in nurses regarding the topic of physical restraint use. Dr. Janelli's (1991) questionnaire has been

used by several researchers over the years, in many different settings, from nursing homes to acute care settings, and has been proven to be an effective means for the derivation of nursing knowledge on the subject. The other product utilized in the development of the education program portion of the toolkit is H. Lach's (2016) guide for restraint reduction entitled "Nursing Interventions to Reduce Need for Restraints." This document provided the alternatives presented in the toolkit for nurses to consider prior to resorting to the use of physical restraints.

Included in the education toolkit is a Restraint Reduction Plan Worksheet (Appendix G) that I developed. This worksheet will guide the adult ICU nurses in their evaluation of their patients for potential stressors, and it will assist them in selecting potential alternatives to physical restraint use. Finally, the toolkit contains case studies, to help the students work through the phases of assessing their patients' needs (Appendix H). The completed education toolkit was reviewed by a panel of content experts to determine the effectiveness it will have on addressing the gap between nursing knowledge and practice, in the area of physical restraint use. Any additional information they suggest for inclusion will be added to the program prior to implementation and publication.

Role of the Project Team

Content Experts

The participants in this project were experts in the field of adult intensive care nursing, with a strong background in the use of physical restraints. Three of the participants were experts in conducting research on nursing practice and physical

restraints.. One expert is a professor at a university that provides nursing education at baccalaureate, master's, post-master's and doctoral levels and is a gerontological nurse expert in using nursing interventions to reduce restraint use. Another participant is a university nursing professor who is an expert on assessing nurses' knowledge about the safe use of physical restraints.. The third expert is a nursing professor in an undergraduate nursing program and has research in the area of critical care nursing. All three nursing professors have established themselves as content experts through their research on this topic. Two additional participants were employed at the field site, which was used for the implementation of the education program, once it was developed and evaluated. The first has over 43 years of nursing experience in the acute care arena, and served as the critical care resource nurse. She guides the nurses in the critical care units in their practice and competency, and her review of the product will be invaluable to the successful implementation of the program to this population. The final participant was a director of nursing services at the project field site facility. She has been in this role since the facility moved to its new location, almost 10 years ago, and has led the nursing department through many change projects. Her evaluation of the project was helpful in the successful implementation, since she has been able to move many other projects through this facility successfully in the past.

The DNP student emailed these content experts a packet containing a recruitment letter, a printed version of the PowerPoint module, an evaluation form, and a link to an electronic survey for them to document their evaluation of the toolkit. Evaluations were to be returned within two weeks of receipt of the toolkit.

Content Expert Role

The panel of experts received the education toolkit for review against the objectives of this project by way of an electronic packet sent to them through email by the DNP student. Initially, the content experts received a recruitment letter and consent form via email from the DNP student with information regarding the project. Each expert was asked to return the email to the DNP student, confirming their interest and consent for participating in the project. Once the content experts agreed to participate, the education program was sent to them for review and evaluation. They received a link to an electronic evaluation tool (Appendix D), which contains questions regarding the quality of the content contained in the education program. The evaluation tool consists of 9 statements to be rated using a 5-point Likert scale rating each area on a range of agreement from (1) being disagree to (5) agree. Following the 9 statements to be rated is a comment section, where the content experts were able to leave comments, questions, and suggestions for improvement with regards to the suspected success the module should have when presented to the target audience of ICU nurses. The expert panel was given a 30-day timeframe within which they were to review and evaluate the education program, then respond via the electronic evaluation. Each response was held until all were returned, so that they may all be interpreted in the same format. Numerical data from the 9 statements were gathered and analyzed for degree of agreement with each statement, in an effort to determine the strength of each section of the module. Qualitative data from the comments section was also gathered and analyzed for common themes to determine areas of strength and weakness with the module. The data were

reviewed, noting frequencies of each response given. Scores were entered into an Excel file on a computer that has password protected security in place.

Protections

The nature of this project was educational. The information provided by the participant content experts did not include any personal information, and their responses were kept confidential. The proposal was submitted to the Walden University Institutional Review Board (IRB) to ensure the rights of the content experts are upheld throughout the DNP project process. Once Walden University IRB approval was obtained (approval # 04-19-19-0278024), the DNP project was able to move forward using an approved participant consent form.

Assumptions

It is assumed that the content experts evaluated the education toolkit in an unbiased fashion. It is also assumed that the information contained in the toolkit is factual, and reflects current evidence-based practice. It is assumed that the content experts have similar experience on the focus topic, and are similarly educated on the subject. Finally, it is assumed that the nurses that will eventually receive education via this program are familiar with physical restraints, and will want to implement evidence-based practice to provide nursing care for their patients.

Limitations

The number of content experts that provided a review of the education toolkit were small in number, and represent only a small percentage of the available potential content experts on this topic. Five consents were sent out to potential participants, and

only four of those consented to participate. The toolkit evaluation packet was emailed to the four participants that consented, but only three completed the process, which further decreased the number of content experts participating. The toolkit was directed toward the ICU environment, so adaptation may be necessary for other healthcare milieus. The toolkit evaluation survey has not been validated, creating an additional limitation. A final limitation was that this project sought to develop the education program, not implement it. In order to determine true effectiveness, the project would need to be implemented with a group of ICU nurses, and the use of physical restraints before and after implementation compared to assess effectiveness of the program.

Analysis and Synthesis

Data gathered regarding the education program were collected once all of the content experts had completed their evaluations. Quantitative data were gathered from the Likert scores, and were presented using mean scores. Qualitative data from the experts' comments were analyzed for topic content, and presented in a table by survey item. These data were analyzed and reviewed by content experts to determine their evaluation of the effectiveness of the education toolkit, and will drive any necessary changes to the toolkit product.

Project Evaluation

This project was evaluated by a panel of content experts on the subject of physical restraint use. They have been identified as content experts due to their contributions to the topic of physical restraint use in the literature, and their value to the facility in which the education program will be implemented. Their evaluation was received using an

electronic survey asking them to rate the education toolkit regarding completeness and accuracy on a 5-point Likert scale, as well as leaving room for narrative comments. The information received from the evaluations was applied to the education program, and revisions will be made, as deemed necessary by the content experts.

Summary

The body of research on physical restraint use demonstrates that education programs can be effective in bringing about a change in nursing practice regarding restraint use. The role of the DNP student in this project was to conduct a literature review regarding physical restraints and nurse education programs to develop an educational toolkit regarding physical restraints, to identify content experts to evaluate the toolkit, and to compile and analyze the data from the content experts' evaluations. Content experts reviewed the toolkit for effectiveness if implemented in an education program for adult ICU nurses. The personal information of each content expert was protected, and the assumption was that each provided an unbiased evaluation of the toolkit. A limitation of the project was that only 3 of the 5 content experts invited to participate in the project completed the evaluation. Having such a low number of participants made trends in evaluation answers difficult to determine.

Section 4: Findings and Recommendations

Introduction

The profession of nursing has improved in many areas, aided by nursing research; however, regarding physical restraint use, the profession has failed to keep up with the research. Literature going back over two decades reveals that physical restraint use can be detrimental to a patient's hospital stay, but nursing continues to use the devices in an effort to provide patient safety (Dierckx de Casterlé et al., 2015; Hancock et al., 2001; Kiekkas et al., 2012; Li & Fawcett, 2014; Rose et al., 2016; Smith et al., 2003; Yont et al., 2014). In the facility where this project took place, neither a consistent process for assessing the need for use of physical restraints nor a protocol for determining effective alternatives to physical restraint use was in use. The purpose of this DNP project was to develop an educational toolkit evaluated for effectiveness by a panel of experts regarding the use of physical restraints.

Findings of the Project

I identified five content experts and invited them to review the educational toolkit to evaluate its potential effectiveness. Four of the identified experts consented to participate in the evaluation, and three completed the process. Each received an e-mail packet with the contents of the toolkit and a link to an anonymous SurveyMonkey evaluation form. The participants reviewed the toolkit contents on their own and completed the online survey regarding its contents upon completion of their review.

The online evaluation survey consisted of 10 questions (Appendix D). The first nine questions used a 5-point Likert scale for responses, and the final question was an

opportunity for the participants to leave open comments regarding any aspect of the toolkit. Table 1 reveals the results of the content experts on the Likert scale scored items on the evaluation survey. Table 2 reveals the comments left by the content experts as they reviewed the toolkit.

Table 1

Participant Results: Rated Items

Question	Rating					*M*
	1	2	3	4	5	
	n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	
1. Content is clear and concise	*1 (33.3%)*	*0*	*0*	*2 (66.6%)*	*0*	*3.0*
2. Content is capable of expanding knowledge of clinicians	*1 (33.3%)*	*0*	*0*	*2 (66.6%)*	*0*	*3.0*
3. Content is consistent with current practice standards and treatment guidelines	*1 (33.3%)*	*0*	*0*	*2 (66.6%)*	*0*	*3.0*
4. Content is appropriate for nurses in the Adult ICU setting.	*0*	*0*	*0*	*2 (66.6%)*	*1 (33.3%)*	*4.3*
5. As an expert in physical restraint use, I would recommend this education to my colleagues	*0*	*0*	*0*	*2 (66.6%)*	*1 (33.3%)*	*4.3*
6. Content demonstrates the importance of avoiding the use of physical restraints	*1 (33.3%)*	*0*	*1 (33.3%)*	*0*	*1 (33.3%)*	*3.0*
7. Content clearly outlines the medical and legal implications of physical restraints use.	*1 (33.3%)*	*0*	*0*	*2 (66.6%)*	*0*	*3.0*
8. Education module was well-organized.	*0*	*0*	*0*	*2 (66.6%)*	*1 (33.3%)*	*4.3*
9. The education module is an appropriate teaching method for the topic.	*0*	*0*	*0*	*2 (66.6%)*	*1 (33.3%)*	*4.3*

Note. ($N = 3$). 1 – Strongly disagree; 2 – disagree; (3 – Neither agree or disagree; 4 – Agree; 5 – Strongly Agree; *M*-Mean.

Table 1

Participant Comments and Narrative Feedback

Question		Comment
1.	Content is clear and concise	None
2.	Content is capable of expanding knowledge of clinicians	The reference listed in the PowerPoint educational slides are few (only 3) and some outdated. You may want to update the references.
3.	Content is consistent with current practice standards and treatment guidelines	None
4.	Content is appropriate for nurses in the Adult ICU setting.	None
5.	As an expert in physical restraint use, I would recommend this education to my colleagues	None
6.	Content demonstrates the importance of avoiding the use of physical restraints	I would include more adverse direct events such as muscle wasting, nerve damage, and boon destruction and more indirect events such as anxiety, anger, depression, and social isolation.
7.	Content clearly outlines the medical and legal implications of physical restraints use.	None
8.	Education module was well-organized.	None
9.	The education module is an appropriate teaching method for the topic.	Well done. 1. I would include a definition of physical restraint. 2. Would provide more of the history of restraints as they were first used for psychiatric patients. 3. Using one-on-one as an alternative to restraints is very expensive for facilities and the cost should be at least addressed. 4. Reminding nurses of the need for reassessment of whether the restraint is still necessary.

Note. ($N = 3$).

The evaluation survey was designed to project how effective the toolkit would be in educating nurses regarding physical restraint use. The feedback received from the content experts was positive, indicating they felt the toolkit could be a useful method for educating adult ICU nurses about physical restraint use. Some content revisions were recommended for the toolkit by the content experts to add a definition of physical restraint and provide more of the history of restraint use, focusing on the need for reassessment of restraint necessity and expense of alternatives, and updating PowerPoint slide references. The completion response rate for the evaluation was 75% of those who consented to review the toolkit (n = 3).

Responses to Rated Items

The questions in the evaluation survey were designed to receive feedback from the content experts regarding the potential effectiveness of the toolkit overall. On question number 1, all participants answered the question, with two respondents agreeing, and the other participant strongly disagreeing with the content being clear and concise, resulting in a mean score of 3. All three participants answered question 2 with two agreeing to the question of the content being capable of expanding the knowledge of clinicians, and one respondent strongly disagreeing with the statement, resulting in a mean score of 3. All three content experts responded to question number 3 regarding the content being consistent with current practice standards and treatment guidelines. Two responded that they agreed with the statement, and the other indicated strong disagreement, resulting in a mean score of 3 for this question. Question 4 received three answers that indicated that the content was appropriate for nurses in the adult ICU setting

with two participants rating the question as "Agree," and the other rating it as "Strongly Agree." The mean score for this question was 4.3. For question 5, all three participants answered the question that as an expert in physical restraint use, they would recommend this education to their colleagues. Two rated this question as "Agree," and the other rated it as "Strongly Agree," resulting in a mean score of 4.3 for this statement. Question number 6 stated that the content demonstrates the importance of avoiding the use of physical restraints, which was answered by all 3 content experts. One answered "Strongly Agree," one answered "Agree,", and the final one did not choose a Likert score, but selected "Other," and left a comment. The mean score for this question was 3. Question 7 asked if the content clearly outlined the medical and legal implications of physical restraint use, and 100% of respondents answered with two selecting "Agree," and one selecting "Strongly Disagree." This resulted in a mean score of 3 for this question. On question 8, all three participants answered the question regarding if the education module was well-organized. Two of the participants indicated that they agreed with the statement, and the other stated they strongly agreed. The mean score for this question was 4.3. Question 9 asked if the education module was an appropriate teaching method for the topic, and all three content experts responded. Two of the participants responded that they agreed with the statement, and one stated they strongly agreed, resulting in a mean score of 4.3 agreeing with this question.

Responses to Open Comment Section

Question 10 was an open area for comment regarding any portion of the toolkit contents. This area was provided to allow the content experts the opportunity to list any

noted strengths, weaknesses, and recommendations for improvement. Two of the three participants made a comment in this section. With only two participants providing comments, there was not enough data to perform a content analysis of the qualitative responses.

Strengths of the toolkit. One of the two comments provided by the content experts in the comments section of the evaluation survey indicated that this toolkit was well done. It provided no further direction as to what parts of the toolkit the participant felt were effective.

Weaknesses of the toolkit. The weaknesses noted in the comment section by one of the content experts included the need to define physical restraints, to provide a more extensive history regarding physical restraint use, to review the potential expenses in identified alternatives to restraint use, and to provide more reminders to the nurses to reassess for the continued need for physical restraint use. One respondent rated the toolkit significantly lower than the other two reviewers. This participant did provide narrative comments, which are included in Table 2.

Implications

The purpose of this project was to develop and evaluate the potential effectiveness of an education toolkit that could be used at the facility in which I am employed as ICU director. A long-term goal would be to provide the education to the staff of the ICU and evaluate the toolkit. Once the education has taken place in that unit, the plan is to learn from any mistakes in the first implementation and roll the program out to the remainder of the facility. Because I am employed at a facility that is a part of a corporate system,

the goal is to submit the toolkit educational program to the corporate critical care director for dissemination throughout the hospital system.

The decision to place a patient in restraints lies in the hands of the nurse (Lach et al., 2016). The nurse is the one to assess the patient for the need for physical restraint use and to notify the physician of the results of that assessment to obtain an order for their use (Lach et al., 2016). If this education program were to be implemented in my facility, the anticipated outcome would be that the nursing staff would learn more about the topic of physical restraints including potential complications, alternatives to use, and proper use of restraints when indicated. If nurses are able to avoid the use of physical restraints, their patients will be the beneficiaries of reduced time spent in restraints and fewer negative side effects of restraint use (Chang et al., 2016).

Decreasing the time patients spend physically restrained would result in a positive social change for the individual patient by helping protect their dignity (ANA, 2010). Because family members of patients learn how to provide home care for their loved ones from the nursing staff, demonstrating alternatives to restraint use could have the benefit of positively affecting society as a whole by helping to change the culture of the populace regarding acceptance of physical restraint use (ANA, 2010). One family at a time could be changed by the knowledge gained from the nursing staff, and they could share this information with others in the community, thereby resulting in positive social change.

Unanticipated Limitations/Outcomes

Originally, five participants had indicated interest in participating in the project during the literature review phase. All five were sent the consent form to participate in

the project, and four returned the request, indicating consent for participation. The content experts who consented to participate were e-mailed the toolkit packet, and two additional reminders were sent requesting completion of the survey over a 1 month time period. Only three who consented completed the survey. The decreased level of participation results in an unanticipated limitation of the project, affecting the outcomes. More responses could have yielded more validity to the review of the toolkit as it was presented or produced more suggestions for improvement, thereby increasing the quality of the final product.

Recommendations

The content experts provided several recommendations for improvement upon the education toolkit that this project produced. The recommendations included updating the references in the PowerPoint presentation portion of the toolkit, including more direct and indirect adverse events in the education to the nurses, adding the definition of physical restraint, providing more history of the use of restraints, detailing the potential costs associated with using one-on-one sitters to avoid restraint use, and reminding the nursing staff to reassess for continued restraint use so that restraints could be discontinued. These suggestions were taken into consideration and added to the education program. Future projects could include implementing the revised educational toolkit, using an evaluation strategy to assess learning outcomes, and monitoring effectiveness following the training to determine if the education resulted in a practice change (e.g., amount of time patients spent physically restrained) or prevented negative patient outcomes (e.g., fall or injuries).

Summary

This project resulted in the development of an educational toolkit that was evaluated for effectiveness by a panel of content experts regarding the use of physical restraints. Five content experts were contacted to participate in the project, four consented, and three completed the evaluation survey. The survey consisted of 10 questions, nine that rated the toolkit for efficacy on a 5-point Likert scale, and the 10th was an open-ended comment section for the content experts to leave any comments they had regarding any areas of the toolkit. Overall, the feedback received from the content experts was positive, which would be a strength of the toolkit, and recommendations were made for improvement after identifying weaknesses of the product. Implementation of this project was completed upon development of the toolkit. Long-term goals would be to conduct the education program with the staff of the ICU at my facility, expand the program to the remainder of the facility, and, eventually, introduce it to the other hospitals in the corporate hospital system. Realization of this goal could impact nursing practice in hospitals nationwide, bringing about a change in practice that could decrease complications and affect the financial status of these hospitals positively. The unanticipated limitation of the project was the low number of participants, negatively affecting the validity of the project. Recommendations of the project presenting the education program to the ICU nursing staff, and evaluating the effectiveness of the education program by tracking restraint use after implementation.

Section 5: Dissemination Plan

Introduction

Dissemination of the final DNP project is a process that this DNP student expects to embark upon once the project is implemented in her home facility. With the findings, difficulties, and outcomes realized from implementation in that facility, the project can be improved and presented for dissemination to the rest of the facility through the nursing directors quality committee and then made available to the corporate environment via the corporate critical care committee. Once the corporate implementation takes place, the final step will be to package the information for publication in critical care nursing journals to add to the knowledge base of physical restraint education for nursing.

Evaluation of Learning of the Education Program

For this project I developed an education program toolkit to present to adult ICU nurses regarding physical restraint use. Future implementation of the education program is necessary to bring about a change in practice. Prior to embarking on the education program, baseline knowledge of the nursing staff regarding physical restraint use would need to be assessed using a not yet developed questionnaire. Once the education has taken place, a posttest would need to be administered to determine the increase in knowledge regarding the topic. One final method to determine if learning took place as a result of the education program would be to track the number of hours patients spend physically restrained. If the education program was effective, the expectation would be that this value would be less than before the education took place.

Analysis of Self

Through this DNP project and practicum experience, I have developed into a leader and a role model in the field of nursing. This process has taught me how to collaborate with other health care leaders to develop successful change projects and how to implement the change needed for an organization. This project has the potential to allow me to effect positive social change by reducing the use of physical restraints, thereby allowing patients dignity and control of their care.

As a DNP student, conducting this project taught me much about participation of subjects and persevering through obstacles in project completion. Bringing this project to completion has taught me skills in collaboration with other disciplines, time management, and project management. Prior to this experience, I had no background in such projects, and was naïve regarding professional projects. This project has prepared me for the further development of this project and the initiation of future projects as I expand my career.

As a DNP student, I hope my endeavors in this project will contribute to the knowledge base of critical care nursing through publication and can bring about positive social change by decreasing the length of time patients spend physically restrained. If implemented in not only my institution but others across the country as well, time spent in physical restraints can decrease for patients in this country, contributing to a greater sense of dignity for those patients. The facilities that adopt the program can see a benefit through decreasing the length of stay for hospitalized patients, thereby resulting in decreased hospital-acquired conditions and overall financial gain.

Summary

The overarching goal in the development of this DNP project was to effect positive social change in regard to the amount of time patients spend physically restrained. Because nurses are the key decision makers regarding the placement of patients in restraints, my program was developed to educate them regarding the dangers of restraint use and alternatives to placing patients in restraints (Lach et al., 2016). If nurses can effectively apply these techniques to their practice, my goal of reducing restraint use overall will be realized, and patients can have a more positive hospital experience with fewer complications and adverse effects. Prior to educating the nursing staff, an evaluation of learning would need to be developed to conduct pre- and posteducation testing. These results would demonstrate the effectiveness of the learning program. As a DNP student, this project has taught me much regarding implementation of projects designed to bring about a practice change in nursing staff. As a leader, the knowledge gained from this project can be applied to future change projects to help bring evidence-based practice into daily use to improve the care my nurses provide.

References

American Nurses Association. (2010, June 14). Position statements: The nurse's role in ethics and human rights: Protecting and promoting individual worth, dignity, and human rights in practice settings. Retrieved from http://nursingworld.org/MainMenuCategories/EthicsStandards/Ethics-Position-Statements/-Nursess-Role-in-Ethics-and-Human-Rights.pdf

American Nurses Association. (2012, March 12). Position statements: Reduction of patient restraint and seclusion in health care settings. Retrieved from http:/www.nursingworld.org/MainMenuCategories/EthicsStandards/Ethics-Position-Statements/Reduction-of-Patient-Restraint-and-Seclusion-in-Health-Care-Settings.pdf

American Nurses Association (2015). *Code of ethics for nurses with interpretive statements.* Silver Spring, MD: Nursesbooks.org

Bai, X., Kwok, T. C. Y., Ip, I. N., Woo, J., Chui, M. Y. P., & Ho, F. K. Y. (2014). Physical restraint use and older patients' length of hospital stay. *Health Psychology & Behavioural Medicine, 2*(1), 160-170. https://doi.org/10.1080/21642850.2014.881258

Barton-Gooden, A., Dawkins, P. E., & Bennett, J. (2015). Physical restraint usage at a teaching hospital: A pilot study. *Clinical Nursing Research, 24*(1), 73-90. https://doi.org/10.1177/1054773813493112

Chang, Y. Y., Yu, H. H., Loh, E. W., & Chang, L. Y. The efficacy of an in-service education program designed to enhance the effectiveness of physical restraints.

Journal of Nursing Research, 24(1), 79-85. https://doi.org/10.1097/jnr.0000000000000092

Cosper, P., Morelock, V., & Provine, B. (2015). Please release me: Restraint reduction initiative in a health care system. *Journal of Nursing Care Quality, 30*(1), 16-23. https://doi.org/10.1097/ncq.0000000000000074

da Silva, P. S. L., & Fonseca, M. C. M. (2012). Unplanned endotracheal extubations in the intensive care unit: Systematic review, critical appraisal, and evidence-based recommendations. *Anesthesia & Analgesia, 114*(5), 1003-1014. https://doi.org/10.1097/01.sa.0000424054.86419.18

Department of Health and Human Services, Centers for Medicare & Medicaid Services. (2006, December 8). Federal register: Medicare and Medicaid programs; Hospital conditions of participation: Patients' rights; Final rule. Retrieved from https://www.cms.gov/Regulations-and-Guidance/Legislation/CFCsAndCoPs/downloads/finalpatientrightsrule.pdf

Dierckx de Casterlé, B., Goethals, S., & Gastmans, C. (2015). Contextual influences onnurses' decision-making in cases of physical restraint. *Nursing Ethics, 22*(6), 642-651. https://doi.org/10.1177/0969733014543215

Enns, E., Rhemtulla, R., Ewa, V., Fruetel, K., & Holroyd-Leduc, J. M. (2014). A controlled quality improvement trial to reduce the use of physical restraints in older hospitalized adults. *Journal of the American Geriatrics Society, 62*(3), 541-545. https://doi.org/10.1111/jgs.12710

Erickson, S. M., Wolcott, J., Corrigan, J. M., & Aspden, P. (Eds.). (2003). *Patient safety: Achieving a new standard for care.* Washington, DC: National Academies Press.

Fronczek, M. (2014). Physical restraints: To use or not to use? *Nursing Made Incredibly Easy, 12*(2), 54-55. https://doi.org/10.1097/01.nme.0000442909.19403.94

Hall, D. K., Zimbro, K. S., Maduro, R. S., Petrovitch, D., Ver Schneider, P., & Morgan, M. (2018). Impact of a restraint management bundle on restraint use in an intensive care unit. *Journal of Nursing Care Quality, 33*(2), 143-148. https://doi.org/10.1097/ncq.0000000000000273

Hamilton, D., Griesdale, D., & Mion, L. C. (2017). The prevalence and incidence of restraint use in a Canadian adult intensive care unit: A prospective cohort study. *Canadian Journal of Critical Care Nursing, 28*(3), 25-33.

Hevener, S., Rickabaugh, B., & Marsh, T. (2016). Using a decision wheel to reduce use of restraints in a medical-surgical intensive care unit. *American Journal of Critical Care, 25*(6), 479-486. https://doi.org/10.4037/ajcc2016929

Janelli, L. M., Scherer, Y. K., Kanski, G. W., & Neary, M. A. (1991). What nursing staff members really know about physical restraints. *Rehabilitation Nursing, 16*(6), 345-348. https://doi.org/10.1002/j.2048-7940.1991.tb01245.x

Janelli, L. M., Stamps, D., & Delles, L. (2006). Physical restraint use: A nursing perspective. *MEDSURG Nursing, 15*(3), 163-167.

Johnson, K., Curry, V., Steubing, A., Diana, S., McCray, A., McFarren, A., & Domb, A. (2016). A non-pharmacologic approach to decrease restraint use. *Intensive and Critical Care Nursing, 34,* 20-27. https://doi.org/10.1016/j.iccn.2015.08.004

Lach, H. W., Leach, K. M., & Butcher, H. K. (2016). Evidence-based practice guideline: Changing the practice of physical restraint use in acute care. *Journal of Gerontological Nursing, 42*(2), 17-26. https://doi.org/10.3928/00989134-20160113-04

Li, X., & Fawcett, T. N. (2014). Clinical decision making on the use of physical restraint in intensive care units. *International Journal of Nursing Sciences, 1*(4), 446-450. https://doi.org/10.1016/j.ijnss.2014.09.003

Luk, E., Sneyers, B., Rose, L., Perreault, M. M., Williamson, D. R., Mehta, S., . . . Burry, L. (2014). Predictors of physical restraint use in Canadian intensive care units. *Critical Care, 18*(2), 1-8. https://doi.org/10.1186/cc13789

Luk, E., Burry, L., Rezaie, S., Mehta, S., & Rose, L. (2015). Critical care nurses' decisions regarding physical restraints in two Canadian ICUs: A prospective observational study. *Canadian Journal of Critical Care Nursing, 26*(4), 16-22.

Marshall, J. C., Bosco, L., Adhikari, N. K., Connolly, B., Diaz, J. V., Dorman, T., . . . K., & Zimmerman, J. (2017). What is an intensive care unit? A report of the task force of the World Federation of Societies of intensive and critical care medicine. *Journal of Critical Care, 37,* 270-276. https://doi.org/10.1016/j.jcrc.2016.07.015

Martin, B., & Mathisen, L. (2005). Use of physical restraints in adult critical care: A Bicultural study. *American Journal of Critical Care, 14*(2), 133-142. https://doi.org/10.4037/ajcc2005.14.2.133

Neuman, B. M., & Fawcett, J. (2002). *The Neuman systems model* (5th ed.). Boston, MA: Pearson Education.

Omnibus Reconciliation Act of 1987, Pub. L. 100-103, 101 Stat. 1330-101 Stat. 1339 (1897).

Parker, M. E., & Smith, M. C. (2010). *Nursing theories & nursing practice* (3rd ed.). Philadelphia, PA: F. A. Davis Company.

Rakhmatullina, M., Taub, A., & Jacob, T. (2013). Morbidity and mortality associated with the utilization of restraints: A review of literature. *Psychiatric Quarterly, 84,* 499-512. https://doi.org/10.1007/s11126-013-9262-6

Rose, L., Burry, L., Mallick, R., Luk, E., Cook, D., Fergusson, D., . . . Mehta, S. (2016). Prevalence, risk factors, and outcomes associated with physical restraint use in mechanically ventilated adults. *Journal of Critical Care, 31*(1), 31-35. https://doi.org/10.1016/j.jcrc.2015.09.011

Sandhu, S. K., Mion, L. C., Khan, R. H., Ludwick, R., Claridge, J., Pile, J. C., . . . Dietrich, M. S. (2010). Likelihood of ordering physical restraints: Influence of physician characteristics. *Journal of the American Geriatrics Society, 58*(7), 1272-1278. https://doi.org/10.1111/j.1532-5415.2010.02950.x

Sepsis Alliance (2017). Sepsis and invasive devices. Retrieved from https://www.sepsis.org/sepsis-and/sepsis-invasive-devices/

Seton Hall University (n. d.). Profile Kristi Stinson. Retrieved from https://www.shu.edu/profiles/stinsokr.cfm

Smith, N. H., Timms, J., Parker, V. G., Reimels, E. M., & Hamlin, A. (2003). The impact of education on the use of physical restraints in the acute care setting. *Journal of*

Continuing Education in Nursing, 34(1), 26-33. https://doi.org/10.3928/0022-0124-20030101-06

Staggs, V. S., Olds, D. M., Cramer, E., & Shorr, R. I. (2016). Nursing skill mix, nurse staffing level, and physical restraint use in US hospitals: A longitudinal study. *Journal of General Internal Medicine, 32*(1), 35-41. https://doi.org/10.1007/s11606-016-3830-z

Stinson, K. J. (2016). Nurses' attitudes, clinical experience, and practice issues with use of physical restraints in critical care units. *American Journal of Critical Care, 25*(1), 21-25. https://doi.org/10.4037/ajcc2016428

Suliman, M., Aloush, S., & Al-Awamreh, K. (2017). Knowledge, attitude and practice of intensive care unit nurses about physical restraint. *Nursing in Critical Care, 22*(5), 264-269. https://doi.org/10.1111/nicc.12303

Taha, N. M., & Ali, Z. H. (2013). Physical restraints in critical care units: Impact of a training program on nurses' knowledge and practice and on patients' outcomes. *Journal of Nursing & Care, 2*(2). https://doi.org/10.4172/2167-1168.1000135

Yont, G. H., Korhan, E. A., Dizer, B., Gumus, F., & Koyuncu, R. (2014). Examination of ethical dilemmas experienced by adult intensive care unit nurses in physical restraint practices. *Holistic Nursing Practice, 28*(2), 85-90. https://doi.org/10.1097/hnp.0000000000000013

Appendix A: Permission to Use Nursing Interventions to Reduce Need for Restraints

Re: Evidence-based practice guidelines

People

- Helen Lach <lachh@slu.edu>
-
- Jun 22 at 6:27 AM

To

- Sharon Ormsby

Message body

HI Sharon,

You are welcome to use this -- you should use and reference the complete guideline version from the University of Iowa -- see this web site. They commissioned the guideline development and revision.

http://www.nursing.uiowa.edu/excellence/evidence-based-practice-guidelines

thanks!
Helen Lach

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On Wed, Jun 22, 2016 at 3:55 AM, Sharon Ormsby <smormsby@sbcglobal.net> wrote:
Dr. Lach,

My name is Sharon Ormsby, and I am currently pursuing my DNP through Walden University. I am working on my DNP project entitled, "Becoming a Restraint-Free ICU,"

in which I will study the ICU nurses' knowledge regarding restraints, their potential risks, and alternatives to restraint use. I will be conducting a survey of the staff to determine their thoughts and attitudes regarding restraint use, then present an educational program to the staff, and compare post-education restraint data to pre-education data to determine if the education was effective.

During my review of the current literature, I came across your article, "Evidence-Based Practice Guidelines: Changing the Practice of Physical Restraint Use in Acute Care." I would like to formally request your permission to use your "Nursing Interventions to Reduce Need for Restraints" as a part of my project's education implementation on the topic of physical restraints. It is my belief that solely educating the staff on the topic, without offering alternative to using physical restraints, will be ineffective in reducing restraint use.

Thank you for your time and consideration,

Sharon M. Ormsby, RN, BSN, MSN

Appendix B: Permission to Use Physical Restraint Knowledge Questionnaire

Re: Physical Restraint Knowledge Questionnaire

People

- Janelli, Linda <Linda.Janelli@stockton.edu>
-
- Jun 23 at 7:48 AM

To

- Sharon Ormsby

Message body

Sharon,

I provide you the full use of my instrument as long as credit is given regarding it and I would welcome the opportunity to read your results. Good luck with your study!

Linda M. Janelli, EdD, RN-BC, GNP
Adjunct Nursing Professor
Stockton University of New Jersey

From: Sharon Ormsby <smormsby@sbcglobal.net>
Sent: Wednesday, June 22, 2016 4:34 AM
To: Janelli, Linda
Subject: Physical Restraint Knowledge Questionnaire

Dr. Janelli,

My name is Sharon Ormsby, and I am currently pursuing my DNP through Walden University. I am working on my DNP project entitled, "Becoming a Restraint-Free ICU," in which I will study the ICU nurses' knowledge regarding restraints, their potential risks, and alternatives to restraint use. I will be conducting a survey of the staff to determine their thoughts and attitudes regarding restraint use, then present an educational program to the staff, and compare post-education restraint data to pre-education data to determine if the education was effective.

During my review of the current literature, I came across Dr. Kristi Stinson's article, "Nurses' Attitudes, Clinical Experience, and Practice Issues with Use of Physical Restraints in Critical Care Units." Dr. Stinson's research used several survey tools to gather the information she required. I reached out to Dr. Stinson to request permission to use these tools in my research, and she led me to you as the author of the Physical Restraint Knowledge Questionnaire.

I would like to formally request your permission to use your Physical Restraint Knowledge Questionnaire as a part of my research into the knowledge critical care nurses have on the topic of physical restraints. I would prefer to use your survey, rather than to create a new one, since yours has been used in multiple studies, and the reliability has been tested.

Thank you for your time and consideration,

Sharon M. Ormsby, RN, BSN, MSN

Appendix C: Walden University Institutional Review Board Approval Number

The Walden university IRB approval # was 04-19-19-0278024.

Appendix D: Physical Restraint Education Module Evaluation Form

Please review the education module by answering the following questions to the best of your ability. The intent of this survey is to provide data regarding the effectiveness of the education module in providing guidance to adult ICU nurses on the topic of physical restraint use.

1-SD: An answer of a 1 indicates you strongly disagree with the question in regard to the education module.
2-D: An answer of a 2 indicates you disagree with the question in regard to the education module.
3-N: An answer of a 3 indicates you neither disagree, nor agree, with the question in regard to the education module.
4-A: An answer of a 4 indicates you agree with the question in regard to the education module.
5-SA: An answer of a 5 indicates you strongly agree with the question in regard to the education module.

Question	SD 1	D 2	N 3	A 4	SA 5
1. Content is clear and concise					
2. Content is capable of expanding the knowledge of clinicians					
3. Content is consistent with current practice standards and treatment guidelines					
4. Content is appropriate for nurses in the Adult ICU setting					
5. As an expert in physical restraint use, I would recommend this education to my colleagues					
6. Content demonstrates the importance of avoiding the use of physical restraints					
7. Content clearly outlines the medical and legal implications of physical restraint use					
8. Education module was well-organized					
9. The education module is an appropriate teaching method for the topic					

Comments:

Thank you for your participation with this survey.

Appendix E: Objectives and Learning Outcomes for the Education Module

Objective for the Education Module:

This education module will help guide nurses in their assessment of their patients' need for the use of physical restraints, and help them to identify potential alternatives to their use.

Participants:

Nurses that provide direct patient care in the Adult Intensive Care Unit.

Learning Objectives:

Upon completion of this education module, the nurse will be able to:
Describe negative side effects of physical restraint use.
Discuss legal issues related to physical restraint use.
Assess patient behavior for necessity of the use of physical restraints.
Evaluate environment for potential stressors.
Discuss alternatives to use of physical restraints.
State types of physical restraints.
Demonstrate proper use of physical restraints.

Learning Content for Nurses:

History of physical restraint use.
Negative side effects from physical restraint use.
Laws related to restraint use.
Assessment of patients for stressors.
Alternatives to physical restraints.
Demonstration of use of physical restraints.

Handouts:

Power Point slides with room for notes
Learning Objectives
Restraint Reduction Plan Worksheet

Materials: (Provided by the instructor)

Towels
Squeeze balls
Soft wrist restraints
Chest/vest restraints

Mitten restraints
Sandbag weights

Recommendations for Successful Implementation:

The nurse will collaborate with the patient or family member to develop a restraint-avoidance plan.
The nurse will evaluate the patient's condition for the need for potentially bothersome medical devices, and will wean or discontinue these devices as soon as possible.
The nurse will explain the necessity of medical devices, and when they can expect those devices to be removed.
The nurse will address fears, concerns, pain, and confusion that the patient may be experiencing.
The nurse will assess the environment to remove physical hazards and stressors (such as noise, temperature, lighting, and objects/equipment).

Appendix F: Lesson Plan

Column 1 Nurse Learning Objectives	Column 2 Learning Content	Column 3 Activities
1. Describe negative side effects of physical restraints. 2. Discuss legal issues related to physical restraint use. 3. Assess patient behavior for necessity of physical restraint use. 4. Evaluate environment for potential stressors. 5. Discuss alternatives to the use of physical restraints. 6. State/describe types of physical restraints. 7. Demonstrate proper use of physical restraints.	1. History of restraint use. 2. Negative side effects of physical restraints. 3. Laws related to physical restraint use. 4. Assessment of patient for stressors. 5. Alternatives to the use of physical restraints. 6. Demonstration of the use of physical restraints.	1. Develop a restraint-reduction plan for an example patient. 2. Demonstrate appropriate use of physical restraints (soft wrist, chest/vest, mittens, weights).

Appendix G: Restraint Reduction Plan Worksheet

Physical/Physiological Factors	Psychological Factors	Environmental Factors
IV line(s) Feeding tube ETT/Trach O2 (NC, FM, BiPap) Foley Drain (CT or surgical) Wound/Dressing Pain Other _____	Fear Confusion Knowledge Deficit Other _____	Noise level in room Lighting Temperature of room Potential hazards (items that are either in the patient's way or could be knocked in their way or spilled). Other _____
Alternatives	**Alternatives**	**Alternatives**
Assess medical devices for ability to wean/DC Ensure devices are secured appropriately Keep lines out of patient's reach, if possible Overdress wounds with an extra layer Address pain level Offer toileting frequently (at least hourly)	Introduce self when entering the room Explain the purpose of medical devices Reorient to place and situation frequently Have family bring in familiar objects/pictures Ask family to sit with the patient Provide hospital employee as sitter Distract with TV or music Provide activities Place squeeze balls or towels in patient's hands	Decrease confusing sounds/noises in patient's room Adjust lighting to promote rest or provide optimal vision when appropriate Adjust room temperature for patient's comfort Remove items that are not necessary to prevent trips and falls Provide patient with hearing aides and/or glasses as appropriate

Appendix H: Case Studies

1. You receive report on a 24 year-old traumatic brain injury patient, and note that he has bilateral soft wrist restraints. When you ask the nurse going off shift why the patient is restrained, you are told that has moments where he suddenly becomes agitated, pulling at medical devices. He has lots of visitors, friends and family, as well as student peers and co-workers. Although he's been extubated, he still has a central line, NG tube, ECG pads and cables, pulse oximetry, Foley catheter, and oxygen via nasal cannula.

   Would you consider releasing this patient's restraints? Why/why not? What alternatives would you try in order to successfully maintain the patient without physical restraints?

   {Some suggestions might be to interview family and friends. The patient might be calmed through music, which one of his family or friends could bring for him. Also, keeping the large group of visitors to a minimum, but also maintaining one at bedside around the clock, might help to decrease stimulation during peak visiting times, and provide a familiar, calming voice when the patient becomes agitated. It might also be beneficial to have the patient evaluated by PT/OT/ST to determine if he is safe to progress mobility-wise, or at least identify activities/exercises he could do to keep him occupied.}

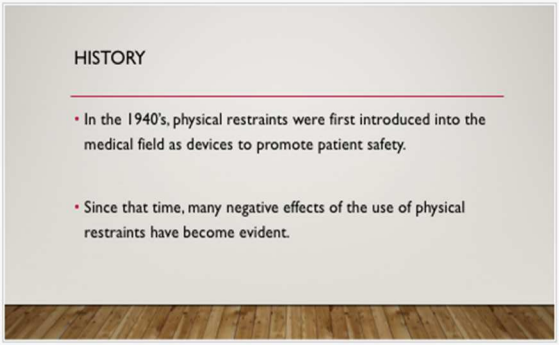
2. You receive a 76 year-old patient from the Emergency Department that has just suffered an embolic stroke. She is intubated, has a central line, 2 peripheral IVs, an OG tube, Foley catheter, and ECG and pulse oximetry monitors, and is receiving tPA. The patient has a GCS of 5, and is not sedated. Family is present at the bedside. She came from the ED with bilateral soft wrist restraints in place.

   Would you consider releasing this patient's restraints? Why/why not? What alternatives would you try in order to successfully maintain the patient without physical restraints?

   {Some suggestions might be to trial releasing the restraints during this initial ICU period, since the patient will be a 1:1 due to the tPA anyway. The nurse will be in the room assessing the patient every 15 minutes, and will need to be close at hand. Care should be taken to prevent dislodging any invasive lines, as the patient is at a high risk for bleeding, due to the tPA. If the patient does become more awake, sedation should be considered, since she is orally intubated. The family could also help to provide a calm, familiar voice to the patient, reminding her that she is in the hospital, but everything is going well, and she should rest.}

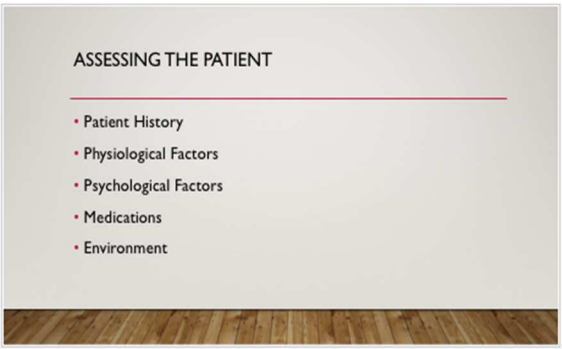
Appendix I: Education Presentation

1

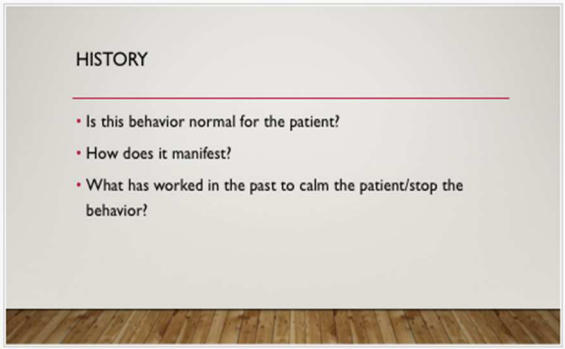


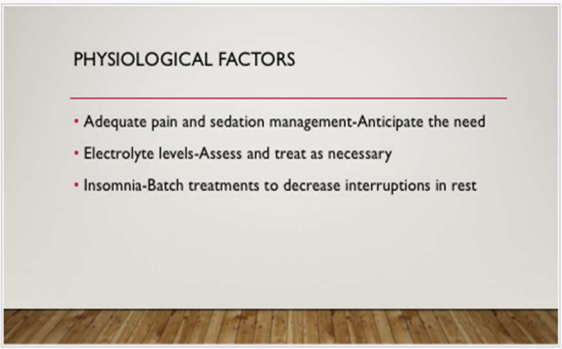
2

5



6





PHYSIOLOGICAL FACTORS (CONTINUED)

- Medical devices and tubes-Evaluate for need to continue
- Dressings and adhesives-Assess they are not pulling on the skin
- Incontinence-Offer toileting assistance frequently to avoid accidents

9

PSYCHOLOGICAL FACTORS

- Patient's ability to communicate needs-Address language needs and offer translation or communication boards
- Anxiety, fear, and depression-Round frequently and inform the patient of when you will be back in their room

10

PSYCHOLOGICAL FACTORS (CONTINUED)

- Confusion, delirium, and agitation-Reorient patient frequently; offer music and television; introduce yourself when you enter the room
- Addiction to chemical substances-Identify need to treat alcohol, cigarette, or drug dependence

MEDICATIONS

- Could any of the patient's medications be causing these behaviors?
  - If so, can they be discontinued?
  - Has the patient received a similar medication in the past that did not result in this behavior?

ENVIRONMENT

- Are there any tubes/devices/equipment that may be contributing to the behavior that can be discontinued?
- Is the lighting level contributing to the behavior?
  - Does the patient need glasses?
- Is there too much noise in the patient's vicinity?
  - Does the patient require hearing aides?
- Can any alarms be adjusted or silenced at the bedside?

13

ENVIRONMENT (CONTINUED)

- Move patient to a room more easily observed by the staff
- Remove unnecessary items from the room. Decrease the clutter.
- Provide a sitter to observe the patient continuously
  - Involve the family/friends
  - Is there anyone the patient responds to more favorably?

14

ALTERNATIVES

- Bed alarms
- Sitters
- Increased observation

LEAST-RESTRICTIVE MEASURES

While these are considered restraints, they are less-restrictive versions, and are preferred over traditional physical restraints:

- Soma bed
- Mittens
- Elbow immobilizers

SUGGESTIONS

Does anyone have any other methods that have worked for them in the past?

17

QUESTIONS

18

REFERENCES

- Hine, K. (2007). The use of physical restraint in critical care. *British Association of Critical Care Nurses, 12*(1), 6-11.
- Janelli, L. M., Stamps, D., & Delles, L. (2006). Physical restraint use: A nursing perspective. *MEDSURG Nursing, 15*(3), 163-167.
- Lach, H.W., & Leach, K. M. (2016). Evidence-based practice guideline: Changing the practice of physical restraint use in acute care. *Journal of Gerontological Nursing, 42*(2), 17-26.