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Nursing Education on Pressure Ulcer Prevention in Acute Care

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This is to certify that the doctoral study by

Leasa Jones

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

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Walden University
2023

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by

Leasa E. Jones

MS, Regis College 2019

BS, Grand Canyon University, 2013

Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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January 2024

Abstract

Each year, it is estimated that more than 2.5 million patients in the United States (US) in acute-care facilities suffer from pressure ulcers (PU). Moreover, of those that suffer from PU, more than 60,000 patients die from PU complications. The clinical site of interest had a 15.3% prevalence of non-healing, recurrent, and new pressure ulcers among patients in comparison to the Centers for Disease Control and Prevention (CDC) national standards of 5% or less. As a result, the purpose of this scholarly project was to determine if an educational intervention focused on PU prevention, treatment, and management increased knowledge among nurses working in an acute care setting. The Knowles theory of adult education was used to ground the doctoral project. Forty nurses participated in the educational intervention and 30 nurses completed both the pretest and the posttest, creating a final sample size of 30 ($N = 30$). Twenty-eight of the nurses (93%) were female and 2 (7%) were male. The mean pretest score was 14.40 ($SD = 2.72$) with a range of 9 to 20. The mean posttest score was 26.23 ($SD = 2.55$) with a range of 19 to 30. Using a Wilcoxon Signed Rank test to estimate the data, there was a statistically significant difference in pretest scores as compared to posttest scores indicating an increase in knowledge ($z = -4.78$, $p < 0.001$). This project contributes to positive social change by increasing the knowledge of nurses on pressure ulcer prevention treatment, and management techniques in an acute care setting.

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Dedication

This endeavor is dedicated to the almighty God whom we serve, who has given me the strength, motivation, self-discipline, and inspiration to continue toiling over books for years on end.

May the soul of my father, Cleveland Jones, rest in peace, who saw the potential in me and gave me his last twenty dollars, telling me, “I didn’t make it, but you can. This is the last twenty dollars I have, take it and pay for your high school entrance fee.” To my mother Davlyn Dixon, my sons Leroy, Leayon, Leaonardo, and Leavon, my brother Kayon and Emmanuel, my sister Jackie, my cousin Glemmett, my friends Denise and Evelyn, and my Cadet chat group. I want to express my gratitude for their unwavering support and encouragement throughout this program. You believed in me and my potential and were perpetually optimistic about my success.

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~The only time we fail is when we don't try~ success comes with failure and failure comes with dedication and hard work~

To everyone, from whom I have benefited and will never forget:

Sabrina Badloe, MD, MPH my mentor who guided me through the DNP program and helped me develop into the clinician I am today. I appreciate your willingness to offer me your sound advice and assist in resolving issues. Your skills, motivation, and confidence have uplifted me tremendously.

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Katherine Thompson, MSN, NP, OB/GYN, as a preceptor, you taught me so much. You believed in me, and I believe in the values you instilled in me. Despite the fact that you knew I was uninterested in women's health, you made it your priority for me to succeed.

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Dr. Catherine Garner and Dr. Susan J. Hayden of my committee for their encouragement, feedback, and perseverance in advancing my project from proposal to completion, thank you.

Finally, I want to express my heartfelt appreciation to Dr. Catherine Garner for never abandoning my project and for molding it into what it is today and what it will represent to clinicians worldwide; I will be eternally grateful.

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Section 1: Nature of the Project

Introduction

Under the federal Affordable Care Act (2011), health care facilities are being held financially accountable for quality indicators, safety events, and patient satisfaction. Quality of patient care indicators includes hospital-associated conditions such as hospital-acquired pressure injuries (PU). Pressure injuries and ulcers that develop during hospitalization, long-term care, and rehabilitation are reportable to the Centers for Medicare and Medicaid (CMS) as nursing quality measures and carry financial penalties.

Hospital-acquired pressure ulcers (PU) result in significant patient harm, including pain, expensive treatments, increased length of institutional stay, and in some patients, premature mortality. It is estimated each year more than 2.5 million patients in U.S. acute-care facilities suffer from pressure ulcers and 60,000 die from their complications (Padula & Delarmente, 2019). The cost of treating a single full-thickness pressure ulcer can be high as $70,000, and the total cost for treatment of a pressure ulcer/injury in the United States is estimated at $11 billion annually (Padula & Delarmente, 2019). According to Kayser et al. (2018), the overall prevalence of PUs was 9.3% in 2015 in all healthcare settings in the United States. The prevalence of PUs in acute care settings was also estimated at 9.3% in 2015. The prevalence of facility-acquired PUs in the U.S. ranged from 3.1% to 3.4% between 2013 and 2015 while the rates were 2.9% in acute care in 2015 (Kayser et al., 2018).

The local organization has a 15.3% rate of non-healing, recurrent, and new pressure ulcers among patients in comparison to the national standards of 5% or less (CDC, 2020) . Nursing is primarily responsible for skin assessment, implementation of preventive measures, and rapid response to an early indication of pressure injuries. There is a known correlation between nursing knowledge and the incidence of pressure ulcers (Ebi, 2019). I provided education to nurses and other care providers on PU prevention and management. Reducing PU occurrence and prolongation will provide a positive social change by reducing morbidity and subsequently the financial burden on patients, families, and the healthcare system.

I developed the first draft of an interactive presentation using recommended materials from the National Database of Nursing Quality Indicators (NDNQI), the Agency for Healthcare Research and Quality (AHRQ), and The Centers for Disease Control and Prevention (CDC). I modified the staff education program to include visual voting on the assessment of skin injuries and pressure ulcers. This program was reviewed with three other nurse educators, one an expert in skin care, for comments before completing the program. Dellafiore et al (2019) also recommend a scale to evaluate nurses' self-efficacy in managing pressure ulcers. The project targeted bedside RN and LPN nurses who deliver daily skin care. High-quality reliable nursing care is critical to addressing this practice issue and to improving the health outcomes of patients.

Problem Statement

The problem is the presence of non-healing, recurrent, and new pressure ulcers among patients in an acute care hospital in the northeastern United States. Internal quality reviews theorize that the increasing PU rates are due to the healthcare providers' poor judgment, skin shearing (which causes skin tears), lack of patient repositioning, and lack of basic nursing education. Some PUs have persisted for several years while others healed and recurred after a few days. The National Pressure Advisory Panel (NPUAP, 2015) noted that with appropriate nursing attention and management, all pressure ulcers can heal completely. Directing attention to nursing education as well as implementing evidence-based practice protocols are important to intervening early and ultimately preventing PUs.

Statistically, the healthcare organization has a PU prevalence of 15.3%. With the increasing number of geriatric patients, the rates are projected to increase since this demographic is susceptible to developing PUs. PUs can develop at different sites and present in different stages. The inadequate use of evidence-based interventions for the prevention and management of PUs makes patients prime candidates for sepsis and at risk of death. Nationwide, according to the Centers for Disease Control and Prevention, more than 2.5 million Americans are affected by PUs annually, resulting in 60,000 deaths and a financial impact of 11 billion dollars (Henry, 2019). Additionally, more than 17,000 lawsuits related to PUs are filed annually in the United States. Boyko et al.

(2018) also noted that according to the National Institute of Health, the aging population in the United States has resulted in an increased prevalence of PUs. Thus, it was feasible to accomplish this project in the hospital in the inpatient units using training and highly interactive classes. Educating nurses about PU prevention and management using evidence-based strategies appropriately is suitable for nurses.

The facility has some opportunities for nursing professionals to learn about PUs including a routine in-service on the prevention of pressure injury (PI) and pressure ulcers. However, the PU issue has persisted. The facility also has new staff members with an unknown knowledge base regarding PU prevention. This project provided interactive education to help nurses enhance their understanding of PU prevention and treatment. Improved knowledge is intended to improve nursing practice and patient outcomes. This is significant to nursing practice as the population is aging and at higher risk for PUs (Jault et al., 2018).

Purpose Statement

The purpose of this DNP scholarly project was to develop and deliver an interactive educational intervention for bedside nurses about PUs with the intention of improving knowledge and self-efficiency and ultimately improving nursing practice and decreasing the incidence rate in acute care settings.

Addressing the Gap-in-Practice

There is a gap between nursing care and best practice in PU prevention and management (Toe et al, 2019). I developed an interactive educational intervention to address the gap in practice regarding evidence-based practice (EBP) for PU prevention and management by improving nurses' knowledge of PUs. This project has the potential to address the gap between nursing education and implementation of PU prevention and management as educated nurses and improve their knowledge and evidence-based actions required to prevent and ultimately eliminate PUs. According to Delmore et al. (2018), many nursing professionals have insufficient knowledge of PUs and the staging of wounds.

Practice-Focused Question

The practice-focused question is: will an interdisciplinary interactive education program improve the knowledge and self-efficacy of nurses in assessing and preventing pressure ulcers? The key objective of the staff education program was to provide nurses with the knowledge and evidence-based actions required to prevent and ultimately eliminate PUs. The education focused on factors that influence susceptibility to pressure ulcers, mechanisms leading to tissue damage, mechanical loads, tissue response, staging of pressure ulcers, risk factors, skin assessment, management of pressure ulcers, preventive skin care, and pain associated with ulceration. Bedside nurses were the target

population for this program as bed-ridden patients are the most at risk of the development of PUs.

I used a pretest/posttest design to evaluate the impact of the nursing education program and knowledge improvement and a tool to measure self-efficacy will serve as an indicator of intent to change practice. The ultimate objective was to improve nursing practice and to significantly reduce and eliminate PU incidence in the facility.

Nature of the Doctoral Project

Sources of Evidence

The evidence used in meeting the purpose of this doctoral project was obtained from different pieces of literature from various databases including the CINAHL Plus with Full Text and the Cochrane Database of Systemic Reviews. The key search terms used in the databases included: *nursing education, pressure ulcers, wound care,* and *acute care.* The scope of the literature review included full-text, peer-reviewed literature written in English, and published between 2015 and 2022. Other sources of evidence included the Nurses Association of Ontario, the Agency for Healthcare Research and Quality, and the national Association for Would Care Nurses. Guidelines from the National Pressure Injury Advisory Council were used in developing the educational program. I also collected data from the pretest and the posttest questionnaires.

I organized, reviewed, and revised the data collected from the pretest and posttest questionnaires and transferred it into Microsoft Excel (MSE). I graded the

scores and organized the data in MSE. I organized the literature from the literature review into a literature review matrix excel which enabled me to quickly compare and contrast articles to establish the scope of research cross time.

The nursing educational intervention involved pretest-posttest administration of a questionnaire to establish how the educational project affects the participants' knowledge of PI prevention and management. It is the responsibility of every organization to deliver continuing education to ensure quality and patient-centered care. PU is undoubtedly a key issue at the institution; hence, it was important to provide the education required to ensure a PU-free environment and measure the outcomes of the educational intervention.

Approach or Procedural Steps

I followed the Walden DNP Manual for Staff Education. The goals of the nurse education program were discussed with the organizational leadership. I asked the organizational leadership to commit to the project and this was granted as a quality improvement project. The specific educational objectives were discussed and formulated. A thorough literature review was conducted for pertinent educational content or materials focused on PU prevention and management. I developed a nurse education program with a focus on delivering a mechanism and content using Knowles's theory of adult education (Tainsh, 2016). I developed an educational PowerPoint Presentation creatively to accommodate interactive responses during learning, including assessing and staging

pressure injuries. I used the pre/posttest scores to assess the nurses'' knowledge development and prevention of pressure ulcers with permission from the institution.

A formative review) was used to certify the nurse education program plan with the end-users (nurses) and organizational leadership. The nurse education program was presented to three nurse educators for further discussion, and validation of content, and to ensure that it is user-friendly and effective. The pretest and posttest required for the Nurse Education Program were secured and stored in Microsoft Excel.

Implementation

The leaders encouraged buy-in for the project by promoting the project in staff meetings, nursing communications, and emails. I communicated to bedside nurses that I intended to enhance the delivery of healthcare services across the hospital. Participation in the pretest/posttest was voluntary. I used a team approach with the certified wound care nurse to teach the content.

Evaluation

The Kirkpatrick model was used to guide the measurement of the effectiveness of the Nurse Education Program (Paull et al., 2016). Three of four levels identified by the model (reaction, learning, behavior) were evaluated. Participants selected an identifier to allow for comparison of pre/post-test results on reaction and learning. I used the scores from the pretest and posttest to organize the data using Microsoft Excel software. Evaluation of self-efficacy from the participants was done after the implementation of

the educational program as an indicator of intent to change actual practice behavior. The monitoring of practice change was beyond the scope of this study. Maintaining the project's integrity entailed having one member in conducting both the pretests and posttests while I conducted teaching the information on PU. Different methods were used to manage missing data (trimming, replacement, and estimating the values) depending on their nature (Kwak & Kim, 2017). I communicated the findings and recommendations to the organization through presentations to the key stakeholders and the leaders of the organization.

Significance

Several organizations have focused on reducing PU incidence and prevalence through prevention programs. Healthy People 2030 identified the prevention of PUs as one of its key objectives. The National Pressure Ulcer Advisory Panel (NPUA,2015) created evidence-based documentation and criteria to be used in handling PUs. The Center for Disease Control and Prevention (CDC) has the elimination and prevention of PUs as one of its key objectives. While professional organizations and the public have continued to illuminate the urgency of dealing with PUs, this public health issue continues to affect at-risk populations, including hospitalized patients.

In 2008, the CMS reported that it would stop reimbursing for institutional/hospital-acquired PUs. This move was intended to encourage healthcare workers to take the required steps to eradicate the issue. Better nursing care can lead to

the early recognition, management, and prevention of pressure ulcers in the vulnerable elderly population in acute care facilities. Evidence-based nursing care can lead to a better quality of life and health outcomes. Progression can be made through education as well as understanding effective wound treatments. Such treatments range from keeping the wound moist, and appropriate repositioning, as well as appropriate support surfaces and adequate nutrition to adjunct therapies (Lindholm Searle, 2016). Ultimately, the absolute elimination of the problem would reduce the financial burden on the patient and family, as well as the state and federal healthcare systems. Accessing appropriate nursing care can be very costly for patients, especially those who require regular debriding of their wounds (Al-Gharibi et al., 2018). These costs may include transportation and copay, as well as missing work to go for the wound clinic appointments.

The gap in clinical practice is that the facility has a higher than benchmark rate of hospital-acquired pressure ulcers. Furthermore, there is a gap in nursing education and knowledge application regarding the prevention of PUs. There is a need for healthcare providers to translate EBP regarding PU prevention and treatment in clinical settings.

This project was designed to provide nurses with the education, skills, and knowledge needed to prevent pressure ulcers. Nurses need adequate education information on how to identify, prevent, and treat PUs before they start caring for patients (Mitchell, 2018). Furthermore, refresher courses on PU prevention and management are recommended to provide evidence-based content and continuing education on PUs.

Nurses should know how to identify pressure ulcer-associated risk factors and implement suitable early intervention techniques and approaches to deliver care. The projected implications for the study were that adequate training of nursing and care staff may translate into positive actions in clinical practice. Subsequently, the positive social change was improved nursing care to prevent and provide early intervention for pressure ulcers, which are painful and lead to additional health complications.

Stakeholder Analysis

In this project, the stakeholders were the bedside care specialists, the nurse managers for the units, and hospital administrators. These key stakeholders were informed of the project and requested to provide some guidance. Improved knowledge and practice of bedside nurses can reduce the incidence of PUs, which will impact the financial status of the hospital by decreasing penalties.

The education may enhance nursing practice and lead to greater pride in using evidence-based care. Patient care and patient satisfaction should also improve. The project primarily impacts patients who will not have to suffer extensively and incur higher costs and stress of care. It is important to enhance the quality of care that is provided to patients by expanding the knowledge that caregivers have regarding the prevention and treatment of PUs.

Contributions to Nursing Practice

PUs result in significant patient harm, including pain, expensive treatments, an increase in the length of institutional stay, and for some patients, premature mortality. It is estimated each year more than 2.5 million patients in U.S. acute-care facilities suffer from pressure ulcers/injuries and 60,000 die from their complications (Padula & Delarmente, 2019). The nurse educational program aims to provide nurses with the education, skills, and knowledge needed to prevent PUs. Nurses need adequate education information on how to identify, prevent, and treat PUs before they start caring for patients (Mitchell, 2018). Nursing knowledge of PUs prevention and management is needed to reduce the PU rates in the facility. This educational program should be shared with other colleagues who face similar issues.

Transferability of Project

The purpose of the project was to equip bedside nurses with knowledge and experience in the management and prevention of PUs in nursing practice. The project also sought to support positive change by sharing the study findings with other people working in similar areas of practice and dealing with PUs. Managing PUs is essential for healthcare facilities since, in 2008, the CMS reported that it would stop reimbursing for institutional/hospital-acquired PUs. This move was intended to encourage healthcare workers to take the required steps to eradicate the issue. Better nursing care can lead to

the early recognition, management, and prevention of pressure ulcers in the vulnerable elderly population in acute care facilities.

Implications for Positive Social Change

Various approaches have been used to improve nurses' knowledge including acknowledging ongoing educational accomplishment through honors and certifications, providing summaries of information at workshops and conferences, and having operating protocols in the practice settings (Mlambo et al, 2021). Using a nursing educational intervention to assess the knowledge and practice of bedside nurses on the management and prevention of PUs may bring positive change to the healthcare facility. I educated nurses and motivated them to get continuing education and minimize the strain of nurses' workload. The ultimate positive social change for this project was improved nursing care to prevent and provide early intervention for pressure ulcers, which are painful and lead to additional health complications.

Summary

In acute care settings, bedridden patients are at an increased risk of developing PUs. The hospital where the project will be implemented has a 15.3% of new and recurring pressure ulcers. This project aimed to increase the nurses' level of PU prevention knowledge and practice by implementing a staff education program. The ultimate goal was to reduce PU prevalence in hospitals as well as healthcare costs. In Section Two I present the background and context of the project which is supported by a

comprehensive literature review about PU prevention, development, and treatment and the role of staff education in reducing PUs.

Section 2: Background and Context

Introduction

There is an increasing number of hospitalized patients with advanced age and multiple co-morbid conditions. Cao et al. (2020) noted that immobility is common and associated with adverse outcomes in hospitalized patients, especially older adults. The immobility-related complications include pressure ulcers/injuries. The increasing number of pressure ulcers in acute settings is a public health concern, and prevention remains a key step in PU management (Boyco et al., 2018). This acute care facility has a higher than benchmark rate of pressure ulcers. This DNP scholarly project delivered an interactive educational intervention for bedside nurses about PUs to improve their knowledge and self-efficiency and ultimately improve nursing practice and decrease the incidence rate in acute care settings.

Addressing the Gap-in-Practice

There is a gap between nursing care and best practice in PU prevention and management. The practice-focused question for this project was: Will an interactive nurse education program increase the knowledge and self-efficacy of nurses in the recognition, management, and prevention of pressure ulcers? The nursing educational project implemented an interactive educational program to educate nurses with evidence-based actions and knowledge required to prevent and ultimately eliminate PUs.

In this section, I present the project's theoretical model, the relevance of the project to nursing practice, the local background and context, and the role of the DNP student and project team.

Concepts, Models, and Theories

A theoretical framework gives a structure for what to explore in data and a foundation for data analysis. The theoretical model reinforces the validity of EBP and recommends its use in transforming current practices to ensure positive outcomes (Nilsen, 2014). According to Duff et al. (2020), EBP is the gold standard of care; hence, it is an expectation of healthcare funders, regulatory agencies, and patients. Failing to incorporate EBP to inform nursing care increases the risk of adverse outcomes. Different EBP models have been developed to increase the nurses' understanding of evidence. According to Collaborative et al. (2017), the Iowa model of EBP is among the widely used frameworks for EBP implementation; hence, it was adopted for this project.

The Iowa model was used to help focus on the process of the implementation of EBP (White & Spruce, 2015). This model was used in this project because it has been effectively used in numerous healthcare organizations and academic settings and nurses find it intuitively understandable (White & Spruce, 2015). The model provided an organized conceptual framework to guide the project implementation and ensure that the nurse education program is sustainable to attain quality outcomes in the organization.

Nursing education is guided by a variety of theories to explain how people acquire, organize, and use their abilities and knowledge (Aliakbarie et al., 2015). Learning theories are largely utilized to inform the construction of educational systems for nurses and other clinicians in clinical training facilities and will be used to guide this project. Teachers who use the general concepts of these theories can more successfully impart the necessary education (Aliakbari et al, 2015).

The Knowles adult learning theory is a collection of assumptions and principles, hypotheses, and explanations that provide the knowledge foundation for adult learning (LINCS, n.d.). Adult learning theory is predicated on six assumptions: a need to know (relevance), a self-concept, experience, willingness to learn, an orientation toward learning, and a desire to study. Adult learners are guided by concrete information and aided in their learning by their acquired reservoir of life experience (LINCS, n.d.). Adult learners, according to the theory's first principle, must comprehend why they need to know the subject being taught; having a cause for learning increases the desire to learn (Houde, 2006). This effort underlined the importance of the cause for education. I discussed how increasing knowledge about PUs may enable them to better manage PUs in their patients by equipping them with the skills necessary to self-manage PUs effectively.

Knowles's second learning principle is self-concept, which states "Adults have a self-concept of being responsible for their own decisions and lives" (Knowles, et al,

1998, p. 65). Adults feel they are personally accountable for their actions. As a result, they must be treated as capable of self-direction (Ota et al., 2006). By encouraging nursing professionals to conduct internet searches in preparation for the follow-up training session, I created an environment conducive to self-direction in learning. Additionally, I created a friendly environment conducive to conversations between the teacher and students in the classroom.

The third principle of adult learning focuses on the learner's experience (LINCS, n.d.). Ota et al. (2006) noted adults bring a variety of learning experiences to the learning environment due to their diverse backgrounds, learning styles, motivations, learning interests, needs, and goals. I provided necessary pressure injury education and will have a one-on-one conversation with nursing staff on an individual basis. The students used experiential techniques such as class discussion, simulations, class activities, and case studies to draw on prior experiences.

The fourth principle of adult education is readiness to learn (Ota et al., 2006). Adults are willing to learn new skills that will help them cope more effectively with everyday life situations (Ota et al., 2006). As a result, I delivered PU education in a way that piques and sustains their interest. I connected the teaching to the community's current PU problem and identified education as a potential solution.

The fifth principle of adult education is an orientation to learning (Ota et al., 2006). Adults' learning orientation is known to be task-centered and problem-centered

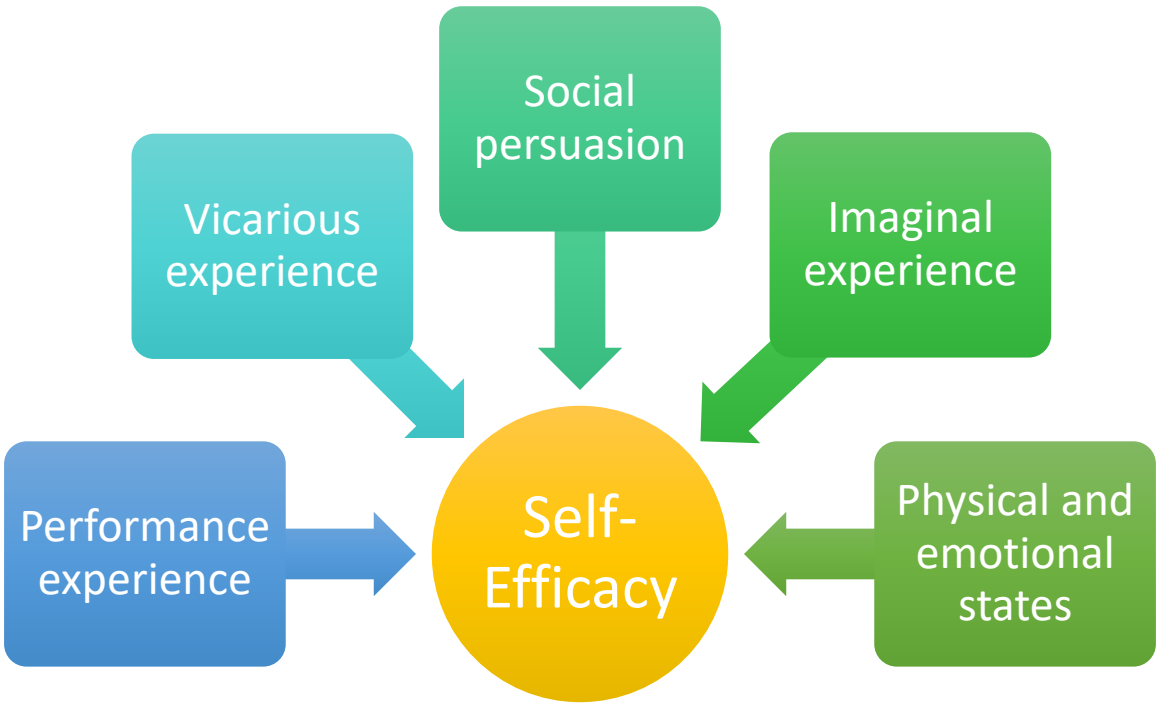
(Ota et al., 2006). Their primary objective is to acquire skills that will assist them in performing daily tasks or resolving problems. The purpose of this pressure injury educational intervention was to assist nurses in recognizing and effectively treating signs and symptoms of PUs. This was accomplished using interactive assessment slides.

The final principle of adult education is motivation (Ota et al., 2006). External motivators, such as better jobs, higher salaries, and bonuses, pique the interest of the adult learner but the most effective motivators come from within, such as a desire for a more favorable work environment, increased job satisfaction, and increased self-esteem. Without addressing adult learning principles, a lack of motivation may result, in impeding training and education (Ota et al., 2006). With this knowledge, I applied adult learning principles to the PU education program to promote effective learning and a positive learning environment.

Evaluation of the impact and efficacy of courses is important to identify and address course strengths and deficiencies (Stewart, 2018). In this project, I utilized Kirkpatrick's assessment framework to develop a model for improving upon the typical course evaluation form (Rouse, 2011). Kirkpatrick's model places a premium on evaluation at the reaction, learning, behavior, and result levels. The Kirkpatrick model addresses the first three of these levels by emphasizing the conditions required for the transfer of acquired information and skills to the working environment (Rouse, 2011).

Self-efficacy is confidence in one's ability to succeed in accomplishing a desired end or objective. Self-efficacy, which is particular to a task, a body of knowledge, or a level of performance, shapes the behaviors and methods that assist an individual in pursuing their objective. Five influences that shape self-efficacy as shown below (Transforming Education, 2020).

Figure 1: Visual representation of the ways in which self-efficacy can be influenced



(Transforming Education, 2020).

Self-esteem, self-efficacy, and a growth mindset are different but interacting concepts. According to Rhew et al. (2018), self-efficacy (about personal capability is different from self-esteem (focuses on self-worth or self-liking). On the other hand, a growth mindset is

a theory of intelligence that acknowledges that intelligence is a malleable quality that is not a fixed trait and can be cultivated.

Table 1: Differentiating between Self-Esteem, Self-Efficacy, and Growth Mindset

Differentiating Between Self-Esteem, Self-Efficacy, and Growth Mindset			
	Self-Esteem	**Self-Efficacy**	**Growth Mindset**
Definition	Refers to a person's more general sense of self-worth.	Refers to a person's belief that she can do what's necessary to successfully achieve a specific goal or task.	Refers to the belief that one's abilities can change over time as a result of effort, perseverance, and practice.
What does this answer?	Who am I? What is my worth?	Can I do this?	Can I grow in this area?
Example	"I am a competent person and a good learner..."	"...and I have confidence that I can master linear equations;"	"Although I haven't mastered it yet, I know that I can get better at it if I study hard, try new

			strategies, and seek out help.”
Relationship to Self-Efficacy	High self-efficacy and a growth mindset across various goals can contribute to overall positive self-worth (i.e., self-esteem).	Having high self-efficacy with a growth mindset can help a student navigate setbacks successfully because they continue to have the confidence that they can *ultimately* achieve their goal (self-efficacy) by increasing their effort and abilities (growth mindset).	

(Transforming Education, 2020).

The first level of evaluation enables an organization to ascertain a participant’s reaction to the instructor, setting, materials, and learning activities in a course. This degree of examination is critical. This entails soliciting direct feedback (Rouse, 2011). Numerous businesses rely entirely on this metric for evaluation. The strength of this level of evaluation is the simplicity with which information may be obtained (Rouse, 2011). This project used the hospital’s standard CE evaluation form for this. Positive satisfaction scores do not guarantee that the program content is learned and will be used (Rouse, 2011).

The second level of evaluation is concerned with identifying the degree to which - learning has taken place. The pre and post-test knowledge scores may be statistically

significant using a statistical test known as the t-test (Rouse, 2011). While an individual may have gained the requisite skills and information, there is no guarantee that they will be able to execute the job (Rouse, 2011).

The third level of evaluation focuses on the extent to which newly acquired skills and information have been applied in the workplace. It should not be undertaken before the first and second levels of evaluations are complete (Rouse, 2011). The study of the perception of self-efficacy served as a bridge between knowledge and action, as those who have a higher sense of ability are more likely to put knowledge into practice (Artino, (2012).

The fourth level of evaluation is concerned with determining the influence of training on the system or organizational level of an organization (Rouse, 2011). This is beyond the scope of this project.

Relevance to Nursing Practice

The clinical practice issue is the high PU incidence and prevalence among hospitalized patients in acute care. High PU prevalence and incidence is a medical, social, and financial issues with serious implications for the healthcare system and the patient's quality of life (Ebi et al., 2019). Despite the numerous educational materials, guidelines, and protocols provided by the NPUAP to guide organizations about PU prevention, PU has remained a significant issue in the clinical setting. NPUAP et al. (2015) attributed this problem to the lack of knowledge dissemination required for the recommended PU

prevention. Some of the factors that encumber knowledge translation include inadequate resources and staff and equipment shortages.

Therefore, the adoption of evidence-based prevention measures and nursing care focused on reducing PU incidence and prevalence are recommended (Ayello et al., 2017). Poor practice, education, and knowledge regarding PU prevention among nurses are considered key contributors to the high PU prevalence. Ebi et al (2019) noted that the incidence of PUs in adults varies from 0-12% in acute care settings to 24.3 to 53.4% in critical care settings. According to Nuru et al. (2015), while PU prevention is a multidisciplinary responsibility, it is largely the responsibility of nurse professionals. Bedside nurses are particularly at the forefront of preventing PUs. Mwabeza et al. (2014) noted that while PUs can be prevented by adopting simple evidence-based guidelines, nurses have limited knowledge regarding critical parameters of pressure ulcers, therefore, making it difficult for prevention practices to be reliable and coordinated. This is frustratingly intensified by significant nursing shortages, as well as limited access to nursing resources on PUs prevention.

Some of the strategies and standard practices to improve PU prevention and management include evidence-based nursing care. Better nursing care helps with the early recognition, management, and prevention of pressure ulcers in vulnerable elderly populations in acute care facilities. Evidence-based practice nursing care leads to a better quality of life and health outcomes. Progression has also been made through education as

well as an understanding of effective wound treatments. Such treatments range from keeping the wound moist and appropriately repositioning, to appropriate support surfaces and adequate nutrition as adjunct therapies. However, despite having best practice guidelines in place, care remains inadequate.

The lack of education/knowledge regarding the etiology, risk factors, treatment of PU, and misuse of medical devices can lead to preventable pressure ulcer development (Nuru et al., 2015). Pressure ulcers cause a significant burden to patients as well as the global healthcare system. Therefore, it is key to direct required attention to educate and promote appropriate information and protocols for evidence-based practice that can be used by nurses in the interventions and preventions for PUs. I presented a nurse education program focused on PU prevention and management. The objective was for the nurses to learn the appropriate ways to provide care for patients with preventable PUs. The goal of the standardized nursing education program was standardized practice according to best practice guidelines to eliminate all PUs in the facility. Subsequently, the patient's quality of life will be enhanced and they will also be spared additional economic and health burdens.

Local Background and Context

The intended setting for the doctoral project was an acute care hospital in the northeastern United States. It has 283 total hospital beds, 36 total ICU beds, an adult population (18 years and above) of 180,568, and an older adult population (65 years and

above) of 62,183 which is 34.44 % of the adult population. The major services provided by the hospital include cardiovascular, cancer, women's health, neurosurgical and orthopedic, and imaging services, and inpatient and outpatient surgery in its 14 operating rooms. I completed the project in the inpatient units of the hospital using the small intense education training and highly interactive classes. This project was supported by the hospital administration as part of their quality improvement efforts.

Patients hospitalized in this hospital are mostly immunocompromised and immobile; hence, spend most of their time in bed or a wheelchair. The prolonged bed rest or sitting down puts these patients at risk of developing the disease. Furthermore, they may be taking medications that predispose them to develop PUs. According to Ignatavicius and Workman (2016), other risk factors of PUs include poor nutrition and dehydration, decreased mental status, incontinence, and medical conditions that impede blood flow such as vascular disease and diabetes. Cao et al. (2020) further noted that low mobility, bed rest, and other factors like diarrhea are associated with an increased risk of developing PUs.

As a quality improvement project, implementing a nursing education program to educate the health care providers in acute care settings would help prevent and reduce the development of PUs as well as their complications. There is a need to adopt all strategies that would prevent PU development, especially with the increasing number of geriatric patients. However, the overarching concern is whether the available knowledge

on PU prevention is well-translated into clinical practice. Therefore, exploring the issue of knowledge translation was important to the organization and was addressed using the concept of self-efficacy.

Role of the DNP Student

My role as a DNP student in this project was to assess the nurse's knowledge and self-efficacy in the practice of PU prevention in the acute care setting and develop and deliver the education program.

Professional Role in the Project

I serve as a nurse practitioner in an interprofessional practice team in the clinical setting. While working in the acute care setting and observing the existing protocols for skin assessment, documentation, and PU prevention, I have noted that PU development continues to happen. I have also gathered from my practicum experiences that knowledge translation regarding PU prevention is limited. Therefore, it is my role as a DNP-prepared nurse to educate the nursing staff on the essence of proper skin assessment for bedridden patients and evaluate the nurses' knowledge in the prevention of PU development before and after delivering a nurse education program.

Motivation for Completing the Project

My major motivation for this DNP project was to explore the extent of knowledge translation and the adoption of EBP in the clinical setting and its impact on improving

outcomes. Implementing a nursing education program and assessing nurses' knowledge regarding the prevention of PUs helped me attain this goal.

Potential Biases

As a nurse who has worked in acute care, I acknowledge my unconscious bias in the design and implementation of this project since I have a passion for patients with PUs and personal experience of dealing with wounds in a family member. However, working with a team helped to minimize the biases. Furthermore, I remained professional and objective all through the process. The project was also premised on quality improvement models that can be applied in the healthcare setting.

Role of the Project Team

The project team included various individuals: the project lead (myself), a nurse educator, one nurse manager, my clinical practicum preceptor, a wound care certified nurse, and the health institution's nurse executive. I functioned as the project manager while the nurse manager oversaw the overall program. The nurse executive was the project advisor while my preceptor and nurse educator helped in collecting and gathering pretests and posttests. They also assumed other requisite administrative roles. I also served as the nurse instructor, whereby I delivered the educational material and ensured that the participants have adequately understood the information. The project team was actively involved in the generation and dissemination of nursing knowledge to the rest of the team in clinical practice.

I requested to meet the identified doctoral project team members once per week for the first month and then twice per week for the duration of the project to present them with background information on the topic and deliberate on the overall research process. The project lasted two months. We clarified our roles and responsibilities, activities, how to give and/or receive feedback, and the timeline for the research process.

I presented the educational material that was reviewed by the project team including nurse managers, clinical managers, and RNs on the unit to ensure that it is conclusive and rich in relevant details about PU development, prevention, and management. Some of the details included in the education packet include the current evidence of the prevention of PUs as provided by the NPAUP such as PU staging information, wound description, and risk factors. I also included a Best Practice checklist with details on the prevention of pressure injuries and what should be applied for each patient. A Braden Scale will be included with details about PU risk assessment and the level of intervention to adopt (Kumari et al., 2015). I explained to the project team the process of conducting a pretest, developing the intervention with continuous feedback from the team, revising the education packet, offering the education, and finally conducting a posttest. The project team then evaluated the project and made recommendations.

The initial first days were used for the formation and meeting of the team members. The project started with giving paper pretests to every consenting participant.

The paper pretests were administered by me, my preceptor, and the nurse educator. I then delivered the nursing education program. After the educational intervention, I administered the posttest and the results were collected. The pretest, nurse educational intervention, and posttest process took a week. Seven days after administering the posttests were provided for any unexpected happenings. The remaining five weeks of the project were used for assessing all the data collected, data analysis, report-writing, and presentation of the study findings.

As a DNP-prepared nurse, and project leader, I assumed a leadership position in the entire process. I am also obligated to advocate for changes that serve the patient better. The project team was actively involved in the generation and dissemination of nursing knowledge to the rest of the team in clinical practice.

Summary

The DNP project has the potential to address the gap between nursing education and implementation of PU prevention and management since it educated nurses and improved their knowledge and evidence-based actions required to prevent and ultimately eliminate PUs. I used a pre-and post-test questionnaire as the primary study design whereby the nurses' PU prevention knowledge was assessed before and after the implementation of the nursing educational program.

I used the Iowa model to help focus on the process of the implementation of evidence-based practice. This project is relevant to nursing practice because while PU

prevention is a multidisciplinary responsibility it is largely the responsibility of nurse professionals. The setting for the doctoral project was an acute care hospital in the northeastern, United States. As a DNP student, my role in this project was to assume the leadership position and guide the entire project team toward the attainment of the project objectives. The other people in the project team helped in the development, delivery, and evaluation of the intervention. In Section 3, I present details on the evidence collection and analysis regarding nurses' knowledge of PU prevention and practice.

Section 3: Collection and Analysis of Evidence

Introduction

In the acute care setting, there is an increasing number of hospitalized patients. Hospitalized patients are mostly immunocompromised and immobile; hence, spend most of their time in bed or a wheelchair. Cao et al. (2020) noted that immobility is common and associated with adverse outcomes such as PUs in hospitalized patients, especially in older adults. The prolonged bed rest or sitting down puts these patients at risk of developing the disease. Furthermore, they may be taking medications that predispose them to develop PUs. Other risk factors include poor nutrition and dehydration, decreased mental status, incontinence, and medical conditions that impede blood flow such as vascular disease and diabetes. With the increasing number of geriatric patients, PU rates are projected to increase since this demographic is susceptible to developing PUs (Sari et al., 2019). This DNP project delivered an educational intervention to educate bedside nurses about PUs to decrease the incidence rate in acute care settings. In this section, I describe the data collection and analysis approaches. I also address the following topics: practice-focused questions, the sources of evidence, analysis, and synthesis of data, and conclude with a summary of the content.

Practice-Focused Question(s)

There is a gap between nursing care and best practice in PU prevention and management resulting in higher than benchmark numbers of PUs in the hospital facility.

The question that was answered by this project is: Will an interactive nurse education program increase the knowledge and self-efficacy of nurses in the recognition, management, and prevention of pressure ulcers?

The purpose of this DNP project was to deliver an educational intervention to educate bedside nurses about PUs to decrease the incidence rate in acute care settings. The education focused on specific PU topics such as factors that influence susceptibility to pressure ulcers, staging of pressure ulcers, risk factors, skin assessment, management of pressure ulcers, preventative skin care, and pain associated with ulceration. Bedside nurses were the target population for this program as bedridden patients are the most at risk of developing PUs. The key objective of the staff educational program was to educate nurses with evidence-based action and knowledge required to prevent and ultimately eliminate PUs. The ultimate objective was to significantly reduce and eliminate PU prevalence and incidence in the facility.

Sources of Evidence

The search strategy entailed searching through various databases including the CINAHL Plus with Full Text, and the Cochrane Database of Systemic Reviews. The key search terms used in the databases included: *nursing education, pressure ulcers, wound care,* and *acute care.* The literature review scope entailed peer-reviewed literature written in English, published between 2015 and 2021, and available in full text.

Evidence considered suitable for this project included those which focus on preventing and managing pressure ulcers through nurse education.

The project team members administered pretest and posttest questionnaires before and after the nursing educational session. Questionnaires had questions testing the nursing professionals' knowledge of best practices in PI prevention, development, and management. The comparison of the pretest and the posttest scores was another source of evidence that I used to answer the practice-focus question.

I maintained the integrity of this project by involving various team members in administering pretests and posttests. The educational program included EBP to prevent and manage PIs. The question that was answered by this project is: Will an interactive nurse education program increase the knowledge and self-efficacy of nurses in the recognition, management, and prevention of pressure ulcers? The collection of resources and evidence on PU prevention and treatment offered a suitable way of addressing the practice-focus question.

Setting and Sample Population

The intended setting for the doctoral project was an acute care hospital in the northeastern, United States. This project was supported by the hospital administration as part of their quality improvement effort.

Participants

The project enrolled 30 bedside nurses in the nursing educational intervention. All participants were nurses who work in acute care in the hospital and have direct patient care. The inclusion criteria for this DNP project included bedside nurses while the exclusion criteria included other registered nurses who do not work in acute care. Bedside nurses are relevant to the practice-focused question that sought to establish how an education project would influence EBP in PU prevention and management.

Procedures

The staff education intervention took two weeks. I explained the pretest-posttest (a questionnaire that was administered to the participants before the nurse education intervention was implemented to establish their current understanding and knowledge of PU prevention and management (Appendix A) and again after the education to assess knowledge gain. Each participant was asked to select a unique identifier to allow the matching of pre/post-test data for analysis while keeping the participant anonymous. This assured anonymity of the participants. The participants were given 20-30 minutes to complete the pretest. I presented the education that included the updated evidence on PU prevention as provided by NPAUP. The education focused on specific PU topics such as wound description, staging details, and risk factors. The Braden Scale focused on risk assessment for PUs and levels of intervention was also included (Appendix B). The presentation took approximately 50 minutes. The participants were given 10-15 minutes

to complete the posttest. The class schedule for the presentation was a morning class (8.00 a.m. to 9.30 a.m.), an afternoon class (2:00 p.m. to 3:30 p.m.), and a late evening class (10:00 p.m. to 11:30 p.m.). The participants joined the class that is most convenient to them. After the posttest, I compared the scores in both tests using Microsoft Excel.

Instrumentation and Materials

A questionnaire on Pressure ulcers adopted from Primaris (2018) was used. Primaris is a Healthcare Business Solutions Company, hired by the Medicare Quality Improvement Organization to create educational material for PU management.

Protection of Participants

The recruitment strategies included the nurse executive sending several emails to inform nursing staff about the upcoming education. Posters and flyers were posted around hallways, restrooms, conference rooms, and units highlighting the date and time of each education class. It was communicated that PU reduction or complete elimination within the facility would reduce the number of activities associated with PU development such as dressing changes. This information was intended to enhance positive staff participation.

The integrity of the project was maintained by ensuring that each participant selected a unique identifier for the pretests and posttests. The tests have demographic information linked to age, job description, and gender which would have useful during

statistical analysis if there the sample size was large. Participants were not coerced to partake in the project and no participants below 17 years were included. All data and questionnaires were kept confidential in a locked cabinet in my office that only I have access to for five years and then shredded.

Project Ethics and Institutional Review Board (IRB)

As required by the protocol regarding federal and ethical regulations, the approval to collect data was sought from Walden University Institutional Review Board (IRB) and the hospital's Nursing Research Council.

Analysis and Synthesis

The scores from the pretest and post-test questionnaires were organized on paper, reviewed, revised then transferred into Microsoft Excel. Scores were organized in a Microsoft Excel sheet. I used MS Excel features to identify missing data or potential outlier values. When found, I reviewed and updated these records. I evaluated and compared the responses from the pretests and posttests. I used descriptive statistics to analyze the outcome of the staff educational intervention by looking into the means and percentages.

The self-efficacy results were evaluated by how strongly the nurses and the rest of the healthcare team believed they were able to carry out the behaviors required to create the desired levels of performance attainment. One of the key objectives of DNP projects is to evaluate practice settings and guidelines to ascertain improved quality of care

(Wright et al, 2022). With this nurse educational program, I aimed to ensure that the knowledge available to nursing professionals efficiently reaches its target audience and subsequently helps to meet the needs of hospitalized patients.

Summary

The purpose of this DNP project was to deliver an educational intervention to educate bedside nurses about PUs to decrease the incidence rate in acute care settings. A pretest-posttest was conducted to attain this objective. Questionnaires administered before and after the implementation of a staff education program was used to collect quantitative data. The scores on the questionnaires were evaluated to see if there has been a gain in knowledge as a result of the education program. In Section 4 l present the findings and implications, offer recommendations regarding how educating nursing professionals affects PU elimination and management, discuss the contributions of the project team as well as the strengths and limitations of the DNP project.

Section 4: Findings and Recommendations

Introduction

The problem was the presence of non-healing, recurrent, and new pressure ulcers among patients in an acute care hospital in the northeastern United States. Overall, the healthcare organization has a PU prevalence of 15.3%. With the increasing number of geriatric patients, the rates were projected to increase given this population is more likely to develop PUs as compared to other populations (Sari et al., 2019). There was a gap between nursing care and best practice in PU prevention and management (Toe et al, 2019). The interactive educational intervention used tools designed using a variety of sources to address the gap in practice regarding evidence-based practice (EBP) for PU prevention and management by improving nurses' knowledge of PUs.

This project was based on several sources of evidence that were used to support the project topic. Various databases including the CINAHL Plus with Full Text and the Cochrane Database of Systemic Reviews were used to create the educational intervention, pretest, and posttest. The pretest and posttest consisted of 10 true/false questions and 20 multiple choice questions for a total of 30 questions. Using a unique identifier to match the pretest to the posttest, scores from the pretest and the posttest were entered into an Excel spreadsheet and uploaded into SPSS for analysis. Inferential statistics were used to determine if there was a difference between pretest and posttest.

Findings

A total of 40 bedside nurses participated in the educational intervention with 30 nurses completing both the pretest and the posttest, thus the final sample size was 30 (N = 30). Twenty-eight of the nurses (93%) were female and 12 (7%) were male. Using a unique identifier, the nurses completed the pretest which consisted of 30 questions: 20 multiple-choice questions and 10 true/false questions to test their knowledge. Following the completion of the pretest, the educational session began. Each nurse received an education packet and the presentation lasted about 30 minutes. Participants were allowed to ask questions during the presentation. Following the presentation, the participants were given the posttest to complete within two weeks after the presentation. After returning the posttests, the pretest and posttest for each participant were matched using their unique identifier.

Knowledge was measured by comparing the means of the pretest and posttest scores. For each pretest and posttest, a correctly answered question was given a score of 1 while the incorrect answer was given zero. The total knowledge score ranged from 0 to 40. The mean pretest score was 14.40 (SD = 2.72) with a range of 9 to 20. The mean posttest score was 26.23 (SD = 2.55) with a range of 19 to 30. Using a Wilcoxon Signed Rank test to estimate the data, there was a statistically significant difference in pretest scores as compared to posttest scores ($z = -4.78$, $p < 0.001$) indicating an increase in knowledge.

Implication for Practice

The results of this project demonstrate that there was a difference in pretest and posttest scores among the participants, indicating an increase in knowledge regarding PU prevention and management. The hope is that the increased knowledge will be translated into practice and ultimately result in improved patient and organizational outcomes. This increase is consistent with the current literature that education among nurses can increase knowledge as demonstrated by Benner's Theory of Novice to Expert (Ozdemir, 2019). With a good understanding of PUs among nurses, it is hoped that the nurses can properly identify wound descriptions, comprehend the Braden Scale's metric, and implement interventions that will treat and hopefully minimize PU development.

Recommendations

This doctoral project aimed to determine if an educational intervention increased nurses' knowledge of the treatment, prevention, and management of PUs. According to Hu et al. (2021), nurses who receive training on PI prevention have a higher PI prevention attitude and use the best practices when caring for patients with PUs. Therefore, the recommendations for this project include:

1. **Regular in-service training or continuing education on PI prevention and management**. When nurses and healthcare providers receive education, it is hoped that the knowledge is adopted and translated into practice. Based on the findings of this project, it is recommended nursing staff receive refresher courses

regularly to present evidence-based materials and update their knowledge on PU identification, prevention, and treatment.

2. **Develop routine work processes and guidelines for PU prevention and management**. Henry and Foronda (2018) demonstrated that for safe practice, nurses must have specific knowledge of the actions, benefits, and risks associated with PUs. Therefore, a second recommendation is that the organization consider providing guidelines and processes for nurses to reference and care for patients with PUs. For example, the Agency for Healthcare Research and Quality (AHRQ) Best Practices Checklist may be a resource for the organization to consider (Leape, 2021). These guidelines and processes should be placed in high-visibility or high-traffic areas to function as reminders between nurse education programs. This will also help create a culture of working towards delivering high-quality and safe outcomes for patients.
3. **Create an environment that guarantees nurses' participation.** According to Hu et al. (2021), nursing administrators ought to explore strategies to encourage nurses' participation and to enhance training quality to increase the effectiveness of the training.
4. **Clinical observation of practice to encourage practice change and compliance with policies.** According to Wiegleb, et al. (2020), clinical practice observation provided an overall understanding of everyday clinical practices, allowing nurses

to work independently with the patients in the clinics. It is also determined what important aspect the nurses might be missing and highlight the challenges that nurses may face in clinical patient care and the organization (Wiegleb et al., 2020).

Contribution of the Doctoral Project Team

The project team included the project leader (myself), a nurse educator, a nurse manager, the clinical practicum preceptor, and the health institution's nurse executive. The nurse executive helped encourage nurses to participate in the program, the nurse educator helped in grading the tests. The preceptor helped me in administering both the pretest and posttests questionnaire to the bedside nurses. She also helped in collecting the questionnaires back for grading and analysis. At the end of the process, the team had a short meeting and we agreed that it was successful. I appreciated the team members and credited their cooperation, commitment, and team spirit. The stakeholders also acknowledge that educating nurses on best practices regarding PU prevention and management can reduce the PU problem in the facility significantly. Considering the significance of the project, the team opined that the findings should be presented during the next executive meeting and shared the recommendations with the rest of the team. The team agreed that extensive dissemination of the findings should be done. This would help similar facilities to reference the evidence while developing PU prevention and management guidelines and processes.

Strengths and Limitations

The first strength of this project is the use of evidence to create and develop the interactive educational materials using the Knowles Adult Theory, pretest, and posttest. A second strength included the commitment and support of the leadership team, the executives, and the nurses of the facility who actively participated in this project. Despite these strengths of the project, there were some limitations. First, the nurses who were targeted for this project were recruited from a convenience sample of nurses working at one facility, thus, the results may not be generalizable to other groups of RNs. Second, while the project had a sample size of 30, this may not adequately represent the general population of the organization. Third, the time frame of the project may have been challenging for potential participants and as a result, they may have decided not to participate in the project. Last, while the educational intervention, pretest, and posttest were created using the evidence, they were not reviewed and scored for validity.

Future Directions

In order to prevent PU among patients, organizations should consider routine educational programs on PU prevention and assess nurses' knowledge of PUs using Knowles Adult Learning Theory as the best practices for working adults, which focuses on the real-time application of knowledge that is relevant to daily practice. The importance of nurses having current information about PU prevention and management and acquisition of quality improvement skills should be underscored to help in achieving

better outcomes for their patients grappling with PUs. Providing an educational intervention helps close the gap between knowledge and practice and the development of appropriate guidelines and processes, effectively changing the culture in acute care. It is also critical that best practice at the bedside is supported and validated by direct observation of the use of this educational knowledge in daily nursing care. This is necessary to assure that the knowledge obtained from an education intervention is translated into practice.

Section 5: Dissemination Plan

This doctoral project aimed to establish whether a nurse educational intervention on PI prevention and management would increase knowledge among the participants. The findings are relevant to nursing practice and quality improvement of patient care in acute care. The results demonstrate that educating nurses enhances their knowledge regarding PU prevention and management with the hope that the newly acquired knowledge is translated into practice. The nurse educator and the nurse executive in the institution were committed to scheduling educational in-service training every quarter for nurses at the facility using current, evidence-based materials on PIs and the doctoral project's material.

The findings of this doctoral project have demonstrated that an educational intervention can increase the knowledge of nurses working in an acute care facility. Therefore, based on the nature of the doctoral project as well as the findings, the primary audiences for this study will be nurses and other stakeholders in healthcare facilities. My dissemination plan will target all healthcare providers within the organization but with keen attention being placed on nurses (who are the primary audience). This section presents the plan for dissemination as well as the analysis of self.

Plan for Dissemination

I intend to disseminate the finding in three folds including as a publication (externally), within the organization (internally), and in a continuing fashion at selected

national and local conferences. With internal dissemination, I intend to continue sharing the findings in the facility through continuing education in acute care. The project has demonstrated positive outcomes when an educational intervention is implemented in a facility. Therefore, the facility should implement mandatory in-service training programs every quarter to educate bedside nurses about EBP for PU prevention and management. During these training meetings, posters can be used to present the outcomes of the project. Nurses should be provided with some of This organizational culture change will enable the translation of evidence into practice.

For external dissemination, I will publish my project's findings in a reputable journal. This publication will function as a resource guide for multiple stakeholders seeking current and credible evidence on nursing knowledge on PI management and prevention. Finally, I intend to present these findings at relevant conferences and seminars organized by reputable organizations to ensure that the materials reach key audiences in different parts of the state and country.

Analysis of Self

Completing this doctoral project has been a rollercoaster that presented a myriad of opportunities to grow both professionally and personally. I have grappled with various issues including delays throughout the process that have taught me the art of patience, advocating for myself, communication, and determination. The process has revealed my ability, especially in project development and implementation to produce accurate, valid,

and interpretable findings. I have also acquired the quality improvement skills that would help me when advocating and developing new processes and processes in clinical practice. This project has elevated me as a project manager, scholar, and practitioner in multiple ways.

As a practitioner, some of my fundamental roles are promoting positive patient outcomes and advocating for patients. Furthermore, to establish a new dimension and vision to create change in my practice, I need to integrate my clinical background and use EBP. Adopting the best practices to prevent and treat PUs supports my wish to minimize PU incidence and prevalence at the institution. The DNP project has demonstrated my ability to collect data, analyze it, draw conclusions, and make recommendations regarding best practices based on the findings.

As a scholar, this project has provided me with an opportunity to hone my research, writing, nursing, and presentation skills. I intend to explore translational research further and continue translating the evidence into practice. My nursing knowledge has increased tremendously during the process and I intend to continue using it to attain higher safety levels and better outcomes for patients. I am also keen on publishing my findings to contribute to the current literature on the topic and to inform future studies on PU prevention and management. Furthermore, the findings will inform and influence guidelines and processes as well as training materials. Future studies will also reference the findings since they are transferable in many settings.

As a project manager, this project honed my leadership and critical thinking skills. It also enhanced my interpersonal skills since I was working with a team and also participants of different demographics. I learned how to communicate with different people, treat them with respect and dignity, and understand diverse perspectives. I have also acquired skills for project coordination and leading a team toward the successful completion of a meaningful project. My confidence in the translation of theory into EBP has increased significantly after completing the project.

The project experiences have reaffirmed my long-term professional goals in research, nursing practice, and nursing education. As a future nurse educator, the project has demonstrated the significant role that scholarly activity plays in nursing. I am more motivated to pivot my career toward nursing education as I have gained the skills and confidence to realize this dream. As a nurse practitioner, the project has reinforced the importance of EBP and best practices. I intend to continue advocating for the adoption of the best practices in the clinical setting including preventative approaches in nursing care. The challenges experienced such as delays have inculcated in me patience and the ability to trust the process.

Summary

Through the years, PUs have remained a concern in the acute-care setting. Nursing knowledge and practice on PU prevention and management have been acknowledged as one of the ways to implement best practices regarding PUs. However,

nurses lack sufficient knowledge regarding EBP for PU prevention and management in acute care. Therefore, I conducted this DNP project to develop and deliver a nurse educational intervention to bedside nurses in acute care on evidence-based approaches to increase their knowledge of PU prevention and management. The project's findings have demonstrated that an educational intervention increases nurses' knowledge of PU prevention and management in acute care. Furthermore, with increased knowledge, nurses' performance increases. Therefore, the project encourages mandatory periodic in-service training to refresh nurses' knowledge of the best practices when caring for patients with PUs or to prevent them. This would help minimize PUs in acute care effectively.

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Appendix A: Pressure Ulcers Questionnaire Pretest

Section 1: Measuring Nurses' Knowledge

Select the BEST answer:

1. What is the contributing factor for pressure ulcer formation?
    a. Intracranial pressure
    b. Chronic wound
    c. High loading pressure
2. Which of the following factor is the most important factor for pressure ulcer formation in an 80-year-old man with hip fracture and bedridden?
    a. Malnutrition
    b. Urinary incontinence
    c. Immobility
3. What is the favorable environment for bacterial growth in the form of maceration for a young man having head injury with unconsciousness?
    a. Dehydration
    b. Anemia
    c. Feces
4. Which factor is the critical determinant for pressure ulcer formation?
    a. Low albumin
    b. High hematocrit

   c. High sodium level

5. What assessment procedure do you select for a patient with spinal cord injury who is at high risk for pressure ulcer development?
   a. Abdominal assessment
   b. Respiratory assessment
   c. Head to toe assessment
6. Which one is the risk assessment scale for pressure ulcer development?
   a. Richter scale
   b. Braden scale
   c. Glasgow coma scale
7. Which answer is an appropriate method for assessing an individual who is at risk for pressure ulcer development?
   a. Assess with risk assessment scale
   b. Assess with clinical judgment
   c. Assess by physician's order
8. Which of the following is the correct answer for the sign of stage II pressure ulcer?
   a. Intact skin without break in skin integrity
   b. Partial skin loss with blister and abrasion
   c. Full thickness skin loss with tissue necrosis

9. Which one is the first sign for pressure ulcer development?
    a. Open sores
    b. Non-blanchable redness, or blue-grey discoloration on the skin
    c. Blister and bluish in the skin
10. Which is the most appropriate for skin care?
    a. Massage at the bony prominence
    b. Apply topical cream
    c. Apply talcum powder
11. Which nursing care is significant activity for protecting skin damage?
    a. Sit up 2 hours
    b. Reposition every 2 hours
    c. Elevate head of bed greater than 30 degrees
12. What nursing care activity is appropriate for preventing maceration for a 78-year-old man having a stroke with hemiplegia?
    a. Continence pad
    b. Cleansing soil and using skin barrier cream or location
    c. Wound dressing
13. Which nursing care is a correct practice for maintaining skin integrity?
    a. Lift up the patient without dragging
    b. Use sheep skin pad

c. Use donut cushion

14. What do you do to prevent heel ulcer?

    a. Raise the foot-end of a bed

    b. Use cotton pad

    c. Use pillow under the patient's leg

15. What kind of vitamin is important to maintain healthy skin?

    a. Vitamin B & D

    b. Vitamin C & E

    c. Vitamin K

16. Which nutrient needs to be offered to an 85-year-old bedridden patient who has BMI<18.5

    a. High fat

    b. High protein and high calorie

    c. Fruits and vegetables with fibers

17. Which answer is an appropriate lab test for nutritional assessment of pressure ulcer patient?

    a. Platelet count

    b. Serum electrolyte

    c. Serum albumin

18. What is an appropriate nursing care for managing mechanical load?

a. Turn position

b. Cleanse soil

c. Place the air cushion under bony prominence

19. What is an appropriate activity to reduce friction for an 80-year-old man having hip fraction with skeletal traction?

a. Elevate head of bed greater than 30 degrees

b. Lift patient without dragging

c. Massage at bony prominence

20. Which is the best educational activity that enhances competency of staff nurses in preventing pressure ulcer?

a. Set up pressure ulcer prevention protocol

b. In-service training on pressure ulcer prevention

Conducting seminar

Section 2: True/False Statements

Please select ‘True” if you think the statement is true and ‘False” if you think the statement is false

No.	Question	True	False
1	Over 2.5 million people in the United States develop pressure ulcers annually		
2	A pressure ulcer can result in death		
3	Ring cushions or donut devices help to prevent pressure ulcers		
4	Obese residents/patients are rarely malnourished; hence, they are at a lower rate of developing pressure ulcers		
5	A daily bath or sponge bath will prevent pressure ulcers		
6	Shear and friction may happen when sliding a person up in bed.		
7	A blister on a patient’s/resident’s heel is not a concern		
8	Erythema or redness on any patient/resident that is non-blanchable should be reported or documented		
9	Massaging a bony prominence (area) promoted circulation and prevents pressure ulcers		
10	Bony prominences (areas) should not have direct contact with one another		

Appendix B: Braden Scale- For Predicting Pressure Sore Risk

Patient's Name_____ Evaluator's Name_____				Date of Assessment				
SENSORY PERCEPTION ability to respond meaning-fully to pressure-related discomfort	**1. Completely Limited** Unresponsive (does not moan, flinch, or grasp) to painful stimuli, due to diminished level of consciousness or sedation OR limited ability to feel pain over most of body.	**2. Very Limited** Responds only to painful stimuli. Cannot communicate discomfort except by moaning or restlessness OR has a sensory impairment which limits the ability to feel pain or discomfort over ½ of body.	**3. Slightly Limited** Responds to verbal commands, but cannot always communicate discomfort or the need to be turned OR has some sensory impairment which limits ability to feel pain or discomfort in 1 or 2 extremities.	**4. No Impairment** Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort				
MOISTURE degree to which skin is exposed to moisture	**1. Constantly Moist** Skin is kept moist almost constantly by perspiration, urine, etc. Dampness is detected every time patient is moved or turned.	**2 .Very Moist** Skin is often, but not always moist. Linen must be changed at least once a shift.	**3. Occasionally Moist:** Skin is occasionally moist, requiring an extra linen change approximately once a day.	**4. Rarely Moist** Skin is usually dry, linen only requires changing at routine intervals.				
ACTIVITY degree of physical activity	**1. Bedfast** Confined to bed.	**2 . Chairfast** Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	**3. Walks Occasionally** Walks occasionally during day, but for very short distances, with or without assistance. Spends majority of each shift in bed or chair.	**4. Walks Frequently** Walks outside room at least twice a day and inside room at least once every two hours during waking hours.				
MOBILITY ability to change and control body position	**1. Completely Immobile** Does not make even slight changes in body or extremity position without assistance.	**2 .Very Limited** Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently.	**3. Slightly Limited** Makes frequent though slight changes in body or extremity position independently.	**4. No Limitation** Makes major and frequent changes in position without assistance.				
NUTRITION usual food intake pattern	**1. Very Poor** Never eats a complete meal. Rarely eats more than ⅓ of any food offered. Eats 2 servings or less of protein (meat or dairy products) per day. Takes fluids poorly. Does not take a liquid dietary supplement OR is NPO and/or maintained on clear liquids or IV's for more than 5 days	**2. Probably Inadequate** Rarely eats a complete meal and generally eats only about ½ of any food offered. Protein intake incudes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement OR receives less than optimum amount of liquid diet or tube feeding.	**3. Adequate** Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products) per day. Occasionally will refuse a meal, but will usually take a supplement when offered OR is on a tube feeding or TPN regimen which probably meets most of nutritional needs.	**4. Excellent** Eats most of every meal. Never refuses a meal. Usually eats a total of 4 or more servings of meat and dairy products. Occasionally eats between meals. Does not require supplementation.				
FRICTION & SHEAR	**1. Problem** Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures or agitation leads to almost constant friction.	**2. Potential Problem** Moves feebly or requires minimum assistance. During a move skin probably slides to some extent against sheets, chair, restraints or other devices. Maintains relatively good position in chair or bed most of the time but occasionally slides down.	**3. No Apparent Problem** Moves in bed and in chair independently and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair.					
				Total Score				