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Staff Education to ICU Staff Toward the Goal of Decreasing the Rate of Pressure Ulcers

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has been found to be complete and satisfactory in all respects,
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Executive Summary: Staff Education Project

Staff Education to ICU Staff Toward the Goal of Decreasing the Rate of Pressure Ulcers

by

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Summary

This project is a staff education intervention focused on decreasing ICU pressure injury rates. The main purpose of this project was to increase staff nurses' knowledge of preventing pressure injuries. Hospital Acquired Pressure Injury (HAPI) was noted to be a serious problem in this critical care unit. It was essential to address this problem within the context of nursing practice because it impacts the cost to this facility and reduces patient length of stay. This DNP project focused on the extent to which educating nurses about current evidence-based pressure injury prevention practices increased the knowledge of staff nurses on how to prevent pressure injuries to ICU patients. The guiding practice-focused question was as follows: For nurses in the intensive care unit, will an educational intervention focusing on pressure ulcer prevention increase knowledge toward the goal of decreasing the pressure ulcer rate in the unit? The evidence to support this project was retrieved from recently published, scholarly-reviewed articles. The educational program was developed by the Project Team, headed by me. A pre and post-assessment was used to evaluate change in knowledge. The mean pretest score was 85% (43/50 points), and the post-test was 95% (47/50 points). The finding revealed that the nurses' knowledge increased by 10% after participating in the educational program. These findings have the potential for positive social changes for patients by decreasing the length of hospital stays. Further, this educational project highlighted nurse education interventions as an ideal way of increasing nurse awareness of evidence-based strategies for reducing pressure injuries in the ICU and enhancing patient safety.

Background

Pressure injuries (PIs) continue to be a significant health risk for patients in the ICU. Among the most challenging clinical issues hospitals confront is treating pressure injuries. Implementing targeted preventative actions is the first step in preventing pressure injuries and guaranteeing the best possible hospital care. Therefore, this doctoral project aimed to increase nurses' knowledge of preventing pressure injuries to reduce the number of pressure injuries in the ICU.

An educational project was conducted in a hospital with a high-pressure ulcer prevalence of stage III and stage IV ulcers indicative of extensive skin injury, as reported in 2024 by government agencies (AHRQ, 2014). As a result, an evidence-based education program was developed to provide knowledge to nurses in the ICU unit on pressure injury that is localized to the skin and /or underlying tissue, which is usually over a bony prominence, as pressure or pressure combined with shear and/or friction can result in skin integrity complications (NPIAP, 2022; AHRQ, 2014). As evidence-based practice provides healthcare providers with knowledge that can often prevent pressure injuries, this DNP project evaluated the extent to which educating nurses about current evidence-based pressure injury practices increases the knowledge of staff nurses to prevent pressure injuries to ICU patients.

Appropriate articles were obtained by searching keywords and phrases such as *pressure injury, pressure ulcer pressure sores, bed sores,* and *critical care* or *intensive care* etc., from online databases: MEDLINE/PubMed, CINAHL, APA Psycinfo,

Socindex. The search resulted in a number of randomized controlled trials, the highest level of evidence to support the development of the project (Cai et al., 2021).

Teaching content, objectives, and test questions were developed using evidence-based strategies to decrease pressure injuries, which are also readily available in the literature. Seventeen nurses participated in a pretest before engaging in the educational program and a posttest afterward. The data collected from the pre- and post-tests were analyzed using simple descriptive statistics, and the scores showed an increase after the education program was presented. These findings hold the potential for positive social change by enhancing staff nurses' awareness of evidence-based strategies for mitigating pressure injuries in the ICU north. Evidence-based practice recommends the facility present this education to new nursing staff working in the north ICU.

A significant complication to which many individuals are predisposed is the development of pressure injuries. With incidence rates reaching as high as 72.5% depending on clinical contexts and geographic factors, hospital-acquired pressure injuries (HAPIs) represent a prevalent public health issue globally (Pott et al., 2023). The etiology of pressure injuries is complex and involves environmental and patient-specific factors. Therefore, clinical guidelines for the prevention and treatment of pressure injuries categorize these relevant risk factors into two main areas: mechanical conditions and individual tolerance (Pott et al., 2023). Mechanical conditions include the magnitude, duration, and mode of action of applied forces, such as compression and shearing (AHRQ, 2014). The second category comprises internal anatomical factors, including the predominance of bony structures, tissue shape, and tissue's mechanical and thermal

properties, along with healing and transport capacities, all of which influence an individual's sensitivity and tolerance (Pott et al., 2023). Once risk factors are identified, preventive interventions are implemented to minimize and address the risks associated with pressure injuries.

The three primary pillars of the latest recommendations for preventing pressure injuries (PIs) are preventive skin care, comprehensive skin and tissue assessments, and thorough risk factor evaluation (Kauhola et al., 2023). These elements form the foundation for effective PI prevention. Five key areas for injury prevention interventions include repositioning and early mobilization, injuries caused by medical equipment, support surfaces, heel pressure injury, and nutritional considerations (AHRQ, 2014). Implementing skin care bundles presents a comprehensive and practical prevention strategy for mitigating hospital-acquired pressure injuries (HAPIs). One standardized bundle encompasses four specific treatments: regular skin evaluation, repositioning every two hours, the application of friction pads, and the evaluation of support surfaces (Kauhola et al., 2023). Utilizing this bundle not only streamlines the prevention of pressure injuries but also fosters consistency in practice. Furthermore, ongoing repositioning of patients is widely recognized as the standard of care for preventing pressure injuries, as it facilitates tissue decompressions and minimizes patients' exposure to pressure. Notably, there is a clear correlation between the incidence of pressure injuries (PIs), the routine repositioning of patients in bed, and the increased use of lateral postures (Turmell et al., 2022).

Critically ill patients are more vulnerable to pressure injuries (PIs) due to variables related to their ICU admission and care, including inadequate vasopressor, analgesics, tissue perfusion, inotrope usage, and fluctuating hemodynamics (Lovegrove et al., 2022; Richardson et al., 2017). Additionally, ICU patients can have comorbidities such as obesity, age, osteoarthritis, and diabetes, which can increase the risk of pressure injuries (Jual et al., 2018). These elements may impair the person's ability to move and feel and react to pressure stimuli (Jual et al., 2018). Thus, hypotension and poor perfusion from any source are essential variables linked to developing pressure injuries in this patient population. A needs assessment at the project site found no established protocol for treating or preventing PIs. The literature supports the use of support surfaces, repositioning, and wound dressings as a local treatment to aid in wound debridement and decrease bacterial burden by increasing healing, as well as nutrition to be the most critical preventive treatment in patient care settings, implementing targeted preventative actions is the first step in preventing pressure injuries (PIs) as this can lead to positive patient outcomes (Cai et al., 2021).

Staff Education Project Development

The target audience for the staff education project consisted of 17 ICU staff nurses in a community hospital in the state of Mississippi. I presented the teaching materials to the ICU Unit Manager for assessment and discussion based on the findings of the literature analysis. After receiving feedback from the stakeholders, the education content was approved, and I developed learning objectives, teaching content using a PowerPoint presentation, and pre-and posttests that included 10 multiple-choice questions

(See Appendix). After obtaining Walden University Ethics and the project sites' approval, I spoke with one of the stakeholders (Unit manager) regarding a date to implement this quality improvement project. Before engaging in the education program, nurses completed a pretest to assess their knowledge of preventing pressure injuries (PIs). The educational sessions were structured to facilitate information dissemination and interactive learning, featuring a PowerPoint presentation complemented by dynamic group discussions.

The PowerPoint presentation spanned two days. On the first day, I delivered the material to nurses working both day and night shifts, ensuring that all staff had the opportunity to participate. The following day focused on the weekend staff, again addressing day and night shifts to maximize attendance and involvement. After each session, a post-assessment was conducted to evaluate the effectiveness of the training. Data for the pretest and posttest assessments were meticulously collected using Survey Monkey, allowing for an efficient and streamlined analysis of the nurses' knowledge gains regarding pressure injury prevention.

Results

The results obtained following the implementation of this project revealed that the mean of the pretest score was 85% (43/50 points), and the posttest mean was 95% (47/50 points). This indicates a 10% improvement in the scores, highlighting the effectiveness of the pressure injuries education program. The finding of this project suggests that the nurses who participated in this initiative gained valuable knowledge and insights regarding pressure injuries, demonstrating the program's positive impact on their

understanding and skills in this crucial area of patient care. However, the small sample size was one of the project's limitations.

Hospital-acquired pressure injuries (HAPIs) can develop at any stage during a patient's admission to the hospital, highlighting the need for continuous vigilance among healthcare providers (Alderden et al., 2021). The success of this educational presentation was designed to prevent these injuries largely hinges on the active involvement of nursing staff. To maximize the impact of these educational initiatives, they must be incorporated into the orientation program for ICU nurses. By doing so, new staff members will be equipped with vital knowledge and skills to effectively prevent pressure injuries from occurring in critically ill patients. Educating the nurses will enable them to pass information to families and the facilities associated with the patient, such as nursing homes and adult day care, to prevent pressure injuries.

Conclusions

The doctoral staff education project was established to enhance the knowledge of staff nurses regarding evidence-based practices aimed at preventing and reducing pressure injuries in the ICU North. The outcomes of this educational initiative indicated a significant improvement in the nurses' understanding of evidence-based information following their participation. The findings emphasize the necessity for ongoing and consistent education programs to address the prevention and reduction of pressure injuries effectively. As a result, I recommend that nurses and nurse managers discuss monthly statistics related to pressure injury prevention. Continuing education programs should also present the latest evidence-based strategies for managing pressure injuries

while holding staff accountable for maintaining their competencies. In addition, I recommend presenting this educational program to all new ICU nurses. This project demonstrates that educating nurses about pressure injury prevention contributes to their enhanced knowledge base.

Implementing evidence-based practices for pressure injury prevention has the potential to foster positive social change for both nurses and healthcare facilities. Educating staff nurses on strategies to prevent and reduce pressure injuries empowers them to deliver high-quality care to all patients, regardless of their existing pressure injuries. This information not only enhances the nurses' capacity to provide effective patient care but also improves the quality of life for patients while reducing healthcare costs for both facility and patients. Furthermore, educating nurses on pressure injury prevention will reduce the occurrences of these injuries and empower them to improve patient outcomes across all demographics, including age, race, gender, and socioeconomic status.

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Appendix: Teaching Materials

Pre and Posttest

Please answer the questions to the best of your ability

Questions

1. While performing a skin assessment on a patient who is immobile, you note a purplish black area on the patient's left heel. The skin is intact. On palpation the site feels heavy and spongy. You suspect this may be?

A. Stage 1 pressure injury
B. Deep-tissue injury
C. Stage 4 pressure injury
D. Stage 2 pressure injury

2. Damage to the skin and underlying soft tissue as a result of intense/prolonged pressure or pressure in combination with shear is the definition of

A. Pressure injury
B. Burn
C. Bruise

3. In the United States, it is estimated that _____ patients per year are affected with pressure injuries

A. 25 million
B. 2.5 million
C. 3.5 million

4. Erythema of the skin-and intact is what stage
A. Stage 2 pressure injury
B. Stage 3 pressure injury
C. Stage 1 pressure injury

5. Full thickness injury with muscle bone involvement is what stage

A. Stage 2 pressure injury
B. Stage 4 pressure injury
C. Stage 1 pressure injury

6. A score of 18 or less on the Braden Scale indicates?

A. Patient is at a low risk
B. Patient is at a high risk
C. Patient is at a medium risk

7. _____continues to be a problem in the hospital setting.

A. Cancer
B. Vascular flow
C. Diabetes
D. Pressure injuries

8. How often should patients be turned?
A. Every 3 hours
B. As needed
C. Every 2 hours

9. _____ rates patients in six subscales for the risk of developing a pressure injury:

A. The Braden Scale
B. Empirical knowledge.
C. A review-of-body-systems approach.

10. **What is the maximum total score on the Braden Scale?**

A. 18
B. 23
C. 30

PowerPoint


Pressure Injury Prevention
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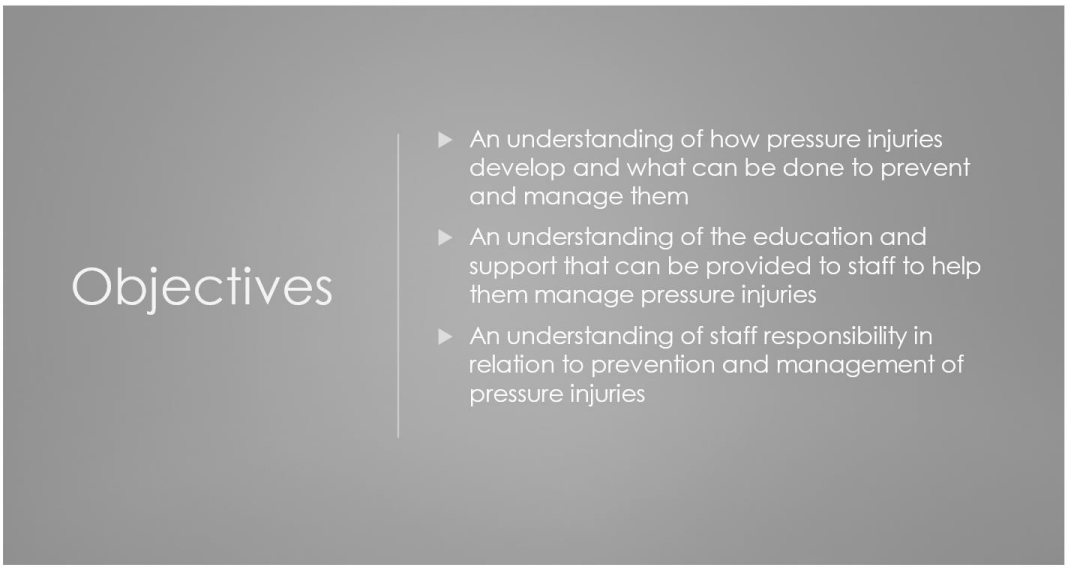

Objectives
An understanding of how pressure injuries develop and what can be done to prevent and manage them
An understanding of the education and support that can be provided to staff to help them manage pressure injuries
An understanding of staff responsibility in relation to prevention and management of pressure injuries

Background and Significance

- US HAPI costs could exceed $26.8 billion (Padula, 2019).
- An evidence-based education program was developed to provide instruction to nurses in an intensive care unit . The outcome was a significant reduction in HAPIs to a rate of 0.10 for stage III, stage IV and unstageable pressure injuries. (Padula, 2019).
- Pressure injury that patients developed while in intensive care, can be averted by early identification with assessment of the patient upon arrival to the intensive care unit and implementing prevention strategies (Padula, 2019).

Pressure injury definition

A pressure injury is localized injury to the skin and/or underlying tissue, usually over a bony prominence, because of pressure, or pressure in combination with shear and/or friction (NPIAP, 2022).

Pressure Injury Prevention

- Conduct PI Knowledge Pre-assessment
- To implement staff educational program on pressure injury prevention
- Conduct PI Knowledge Post-assessment
- Analyze data; make recommendations

Staff Education Process & Tools

- Work with expert panel (Wound care team, nurse manager, clinical manager)
- Pre-Post evaluation of knowledge test

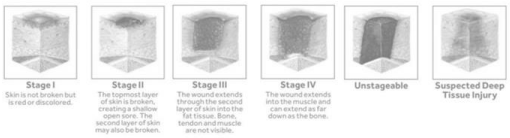
Pressure Injury Prevention

- Pressure injuries continues to be a problem in the hospital setting.
- Increase in the incidence of pressure injuries.

History

- In the United States, it is estimated that 2.5 million patients per year are affected with pressure injuries (Agency for Healthcare Research and Quality, [AHRQ], 2016.

Different Stages of a Pressure Injury



- **Stage 1**-erythema of the skin-and intact
- **Stage 2**-erythema with loss of partial thickness-and exposed
- **Stage 3**-full thickness involves subcutaneous fat
- **Stage 4**-full thickness injury with muscle bone involvement
- **Unstageable**
- **Deep tissue injury**-on palpation feels heavy and spongy

Braden Scale

Braden Scale – rates patients in six subscales for the risk of developing a pressure injury:

1. Sensory perception
2. Moisture
3. Activity
4. Mobility
5. Nutrition
6. Friction and shear

- Higher scores are better.
- The maximum total score is 23.
- Score of 18 or less indicates high-risk

Pressure Injury Prevention: Overview

- 10 questions test tool used on Nursing Knowledge
- Administration of an anonymous pre-test/post-test
- Assessment of pre-test/post test
- Present feedback to wound expert

Prevention: Post-test

Education Packet.

- Current evidence on PI prevention
- Identify the definition of terms; wound description/staging
- Risk factors
- Braden scale/sensory perceptions
  - Braden subscale interventions
- Pressure injury prevention bundle
- Wound screening

Pressure Injury Prevention: Post-test

PRESENTATION OF POST -TEST

- 10 QUESTION TEST TOOL ON NURSING KNOWLEDGE
- ADMINISTRATION OF AN ANONYMOUS POST -TEST
- USE OF ANSWER KEY TO EVALUATE RESPONSES

Pressure Injury Prevention:

Evidence-based Practice Guidelines for Hospital Acquired Pressure Injuries (HAPI) Prevention

- The knowledge of evidence -based risk factors for the development of pressure injuries is highly relevant to nursing practice with implications for prevention, and nursing interventions (Chung et al., 2022).
- Reposition all individuals with or at risk of pressure injuries on an individualized schedule, unless contraindicated (NPIAP, 2022).
- Conduct nutritional screening for individuals at risk of a pressure injury (NPIAP, 2022).

Pressure Injury Prevention: Evaluation/Follow-up

Evaluation

- Determine the gaps in nursing Knowledge
- Review feedback with expert panel
- Revise education program based on feedback
- Staff observation
- Debrief

Any Questions?

Thank You