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Improving Nurse Confidence in Pressure Injury Prevention: A Simulation and Escape Room Educational Intervention

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Abstract: Hospital-acquired pressure injuries (HAPIs) continue to affect millions of patients in the United States and are associated with significant physical, emotional, and financial consequences (Are we ready for this change?, 2022; Rubin, 2018). Nurses are central to prevention efforts, yet gaps in confidence and knowledge remain (Ebi, Hirko, & Mijena, 2019; Fletcher, 2019).

This quality improvement project describes a two-hour educational session combining a brief lecture, hands-on simulation, and an escape room activity to reinforce learning. Eight registered nurses participated. Pre- and post-intervention surveys showed an increase in confidence scores from 32 to 44 out of 50. Participants reported that interactive components, particularly the escape room, were most helpful.

These findings suggest that incorporating active learning strategies into nursing education improves confidence in pressure injury prevention and care (Cant & Cooper, 2017; Gutiérrez-Puertas et al., 2020; Sarage, O'Neill, & Eaton, 2021).

Keywords: pressure injury, hospital-acquired pressure injury, nursing education, simulation, escape room

INTRODUCTION

Hospital-acquired pressure injuries affect millions of patients annually and are associated with serious physical, emotional, and financial consequences (Are we ready for this change?, 2022; Rubin, 2018). Advanced-stage pressure injuries are classified as “never events” by the Centers for Medicare & Medicaid Services (CMS), and hospitals are not reimbursed for their treatment, creating additional financial pressure (Meddings et al., 2015; Scafide, Narayan, & Arundel, 2020).

Despite the importance of prevention, nurses often lack confidence in staging and treating pressure injuries (Ebi, Hirko, & Mijena, 2019; Fletcher, 2019). A needs assessment at Onslow Memorial Hospital confirmed knowledge gaps among nursing staff, validating the need for a targeted educational intervention (Schunk, 2020; Faldet, Skrefsrud, & Somby, 2021).

METHODS

This project used a pre- and post-intervention design at Onslow Memorial Hospital. Participants: Eight registered nurses from medical-surgical, telemetry, intermediate care, and intensive care units participated.

Educational Intervention: The session lasted two hours and included three components:

1. Lecture: Brief PowerPoint session covering causes, staging, prevention, and treatment of pressure injuries. Lecture combined with short videos helps convey complex content efficiently (Bradshaw, 2021).
2. Hands-on Simulation: Participants practiced dressing selection and repositioning techniques. Simulation enables learners to integrate theory and practice safely (Cant & Cooper, 2017; Bradshaw et al., 2021).

3. Escape Room Activity: The escape room consisted of four clinical stations: staging identification, dressing selection, repositioning protocol, and interdisciplinary consultation. Participants worked collaboratively through case-based scenarios requiring application of evidence-based guidelines and hospital-specific protocols. Groups worked through clinical scenarios, applying knowledge collaboratively. Escape rooms enhance active learning, teamwork, and critical thinking (Gutiérrez-Puertas et al., 2020; Sarage et al., 2021; Smith & Paul, 2021).

EVALUATION

Participants completed a 10-item confidence survey before and after the session. Items assessed staging confidence, treatment knowledge, resource awareness, prevention techniques, interdisciplinary consultation, and differentiation of pressure injuries from similar skin conditions. A 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) was used. Total scores ranged from 10 to 50, with higher scores indicating greater confidence. There was also instructor observation providing informal assessment throughout the session (O'Connor, 2015).

RESULTS

Overall confidence scores increased from a pre-session average of 32 to a post-session average of 44, representing a 37.5% increase indicating improved confidence. Participants reported that the escape room was the most engaging and helpful component. The lecture, while informative, was perceived as brief; participants recommended pre-class eLearning to optimize in-class time for interactive activities.

Table 1. Pre- and Post-Session Survey Scores

Survey Component	Pre-Session Avg	Post-Session Avg	% Increase
Overall Score	32	44	37.5%

DISCUSSION

This intervention aligns with social constructivist learning theory, emphasizing learning through collaboration and problem-solving. The combination of simulation and gamification reinforced clinical reasoning more effectively than lecture alone. The greatest improvement was seen in nurses' awareness and use of hospital resources, indicating the value of experiential learning tied to local practice

Combining lecture, simulation, and interactive gaming increased nurses' confidence in pressure injury prevention. Hands-on learning and collaborative problem-solving reinforced understanding more effectively than lecture alone (Cant & Cooper, 2017; Smith & Paul, 2021).

Escape room activities promoted active application of knowledge, teamwork, and critical thinking, aligning with best practices in nursing education (Sarage et al., 2021). These findings support the use of interactive methods to enhance clinical competency in hospital staff education.

IMPLICATIONS FOR NURSING EDUCATION

Simulation and interactive activities are adaptable and cost-effective educational strategies (Cant & Cooper, 2017). Improved nurse confidence may translate to reduced HAPI incidence and better patient outcomes (Rostamvand et al., 2022). Nurse educators are encouraged to integrate such strategies into professional development programs.

LIMITATIONS

The project involved a small sample size and relied on self-reported confidence measures. Long-term retention and clinical outcomes were not assessed. Future research should include larger cohorts and evaluate changes in clinical practice and patient outcomes.

CONCLUSION

Pressure injury prevention is critical for patient safety and healthcare efficiency. Combining lecture, simulation, and escape room activities improved nurses' confidence in prevention and care. Interactive teaching strategies enhance learning and better prepare nurses for clinical practice (Cant & Cooper, 2017; Gutiérrez-Puertas et al., 2020; Sarage et al., 2021).

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