CLINICAL PRACTICE

Impact of pressure injury education on nurses' knowledge in an acute care setting

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ABSTRACT

This research study investigated the profound physical, social, and psychological effects of pressure injuries on individuals. Despite ongoing efforts, hospital-acquired pressure injuries remain prevalent, with up to seventy percent deemed preventable. The study, which involved 40 nurses, employed the Pressure Ulcer Knowledge Assessment Tool (PUKAT) 2.0 to assess the impact of an educational workshop on nurses' knowledge. Statistical analysis revealed a statistically significant improvement in PUKAT 2.0 scores post-education ($p < .001$, $r = .61$), aligning with existing literature emphasizing the positive effect of education on nurses' knowledge of pressure injuries.

Key Words: Pressure injuries, Knowledge to action framework, Prevention, Education

1. INTRODUCTION

The research study delves into the detrimental impact of pressure injuries on the quality of life and their significance as indicators of healthcare organization care quality. Up to seventy percent of hospital acquired pressure injuries are deemed preventable.[1] Despite prevention efforts, rates persist, affecting prognosis, hospital stays, functional recovery, and mortality.[2] The study, with IRB approval, aims to assess medicine nurses' knowledge of pressure injuries through an educational workshop, utilizing the PUKAT 2.0 tool.

2. METHOD

2.1 Design

The design methodology chosen for this study was a quantitative quasi-experimental before and after design. Data was gathered utilizing a survey, the PUKAT 2.0 tool,[3] with the intent to measure the knowledge of pressure injuries in the specific population. The survey was completed on a sample of convenience, nurses working in a specified large acute care hospital in Ontario Canada, before and post an educational workshop regarding pressure injuries. The workshop was designed utilizing best practices and focused on the identification and prevention of pressure injuries. Demographic categorical data was collected for the study regarding the program of employment, and nursing designation. Years of experience as a nurse were collected in groupings.

2.2 Instrumentation

The Pressure Ulcer Knowledge Assessment Tool 2.0 (PUKAT 2.0) was created by Manderlier et al., 2017. The PUKAT 2.0 survey was created to evaluate nurses' and nursing students' understanding of pressure injuries. It aids in identifying areas for learning improvement and enhancing the quality of pressure injury prevention efforts. The survey covers six key topics: the causes of pressure injuries, their classification and observation, risk assessment, nutrition, prevention strategies, and addressing specific patient

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populations.

To ensure its validity, the PUKAT 2.0 underwent a thorough assessment process. Face and content validity were established through a Delphi procedure involving 15 experts from the European Pressure Ulcer Advisory Panel (EPUAP) and the National Pressure Ulcer Advisory Panel (NPUAP). Construct validity was confirmed through a test-retest procedure involving 65 students who completed the survey twice within a 10-day interval. The tool demonstrated satisfactory stability with an Intraclass Correlation Coefficient (ICC) of 0.69 (95% CI 0.49-0.81, $p < .01$), with ICC values ranging from -0.03 ($p = .56$) to 0.57 ($p < .00$) across different themes. The significance level was set as $p < .05$.[2]

Additionally, the known-groups technique was used to assess the tool's ability to differentiate between groups with varying levels of expertise. Content validity was deemed satisfactory, and the difficulty level was moderate. The psychometric evaluation involved 228 nurses and 114 nursing students, resulting in favourable assessments of item difficulty, discriminating power, and the quality of response options.

2.3 Theoretical framework

The research study highlights the use of the Knowledge-to-Action framework to guide the study. The framework aims to identify knowledge gaps and enhance knowledge through education, facilitating knowledge creation and translation in three levels.[4] This aligns with the research study's goal of addressing gaps in pressure injury best practices knowledge.

2.4 Methodology

Participants, consisting of Registered Nurses (RNs) and Registered Practical Nurses (RPNs) in an acute care setting completed pre- and post-surveys at a pressure injury workshop. A G* Power 3.1.9.7 priori analysis was used to evaluate minimal sample size to determine generalizability.[5] Forty participants were in alignment with the minimum number of participants required based on the G*Power priori analysis, which indicated a minimum of 34 participants were required to ensure statistical significance. Data analysis employs Statistical Package for the Social Sciences (SPSS) software version 26, and a Wilcoxon Signed-Rank Test is utilized.

2.5 Sample and setting characteristics

The research study includes RNs and RPNs from an acute care hospital in Ontario, Canada, who work with patients at high risk of pressure injuries. Demographic information was collected on 100% of the study sample (n = 40). 42.5% of the sample were Registered Nurses (n = 17) and 57.5% percent were Registered Practical Nurses (n = 23). 62.5% of participants had 0-4 years nursing experience (n = 25), 20% had 5-9 years nursing experience (n = 8), 5% had 10-14 years nursing experience (n=2), 5% had 15-19 years nursing experience (n = 2), 2.5% had 20-24 years nursing experience (n = 1), and 5% had greater than 25 years nursing experience (n = 2). 92.5% of participants were from the medicine program (n = 37), and 7.5% were from the Clinical Resource Team who were currently employed in long-term leave coverage on the medicine unit (n = 3).

3. Results

Descriptive statistics and Wilcoxon Signed-Rank Test analysis, reveal a significant increase in median PUKAT 2.0 scores post-education. The median score for the pre-test surveys was 10.50 with a range of 0 minimum score to 17 maximum score reported. The median score for the post-test surveys was 18.00, with a range of 12 minimum to 23 maximum scores reported. Wilcoxon Signed-Rank analysis was conducted to assess the significance of the difference in the median scores (see Table 1). The Wilcoxon-Signed Rank Test (see Table 2) revealed a statistically significant increase in the knowledge score of nurses following an education session regarding pressure injuries. The effect size was calculated by dividing the z value by the square root of N. The effect size was determined using the Cohen (1988) criteria of .1 small effect, .3 medium effect, and .5 large effect. The effect size revealed z = 5.45, n = 80, $p < .001$, with a large effect size ($r = .61$). The research study rejects the null hypothesis, aligning with literature supporting education's positive impact on pressure injury knowledge.

Table 1. Statistics

		Total Pre	Total Post
N	Valid	40	40
	Missing	0	0
Percentiles	25	9.00	15.25
	50	10.50	18.00
	75	13.00	19.00

Table 2. Related Samples Wilcoxon Signed Rank Test Summary

Total N	40
Test Statistic	780.000
Standard Error	71.549
Standardized Test Statistic	5.451
Asymptotic Sig. (2-sided test)	.000

Implications for nursing practice

The findings of this research study underscore the critical importance of addressing knowledge gaps among nurses regarding pressure injuries, particularly given their high pre-

ventability rate, estimated at approximately seventy percent. The study's emphasis on enhancing nurses' understanding of pressure injuries reflects a proactive approach to mitigating the occurrence of these adverse events in healthcare settings. By recognizing the impact of preventable pressure injuries on patient outcomes, the study highlights the urgent need for ongoing education initiatives within nursing practice, Moreover, the implications extend beyond individual nurses to healthcare organizations and academic nursing programs. Healthcare institutions can leverage these findings to reinforce the significance of continuous education and training programs aimed at improving patient care standards. Incorporating pressure injury education into nurse onboarding processes can help instill foundational knowledge and promote a culture of proactive prevention strategies within healthcare settings.

Furthermore, academic nursing programs can utilize these results to inform curriculum development, ensuring that future nurses are equipped with the necessary knowledge and skills to address pressure injuries effectively. By integrating evidence-based practices into educational frameworks, nursing schools can contribute to the cultivation of a competent and informed nursing workforce capable of delivering high-quality care.

In essence, this research study serves as a catalyst for enhancing nursing practice by highlighting the pivotal role of ongoing education in preventing pressure injuries and improving patient outcomes. By embracing a commitment to lifelong learning and knowledge enhancement, nurses can significantly contribute to the promotion of patient safety and well-being in healthcare settings.

4. Conclusion

In conclusion, this research study offers valuable insights into the effectiveness of pressure injury education for nurses, emphasizing the critical role of ongoing training in enhancing patient care and preventing adverse events. By addressing knowledge gaps and promoting a culture of continuous learning, nurses can play a pivotal role in mitigating the incidence of preventable pressure injuries and improving overall healthcare outcomes. As healthcare organizations and academic institutions integrate these findings into their practices, they contribute to the advancement of nursing excellence and the delivery of patient-centred care.

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Conflicts of Interest Disclosure

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Informed consent

Obtained.

Ethics approval

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Provenance and peer review

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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