

Original Article

Evaluation of Knowledge among Nurses about Pressure Ulcer in a Tertiary Care Hospital, Lahore

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ABSTRACT

Background: Pressure ulcers are a prevalent issue in healthcare settings, leading to significant morbidity and increased healthcare costs. Nurses play a crucial role in the prevention and management of these conditions, yet gaps in knowledge can affect patient outcomes. The study aimed to assess the knowledge of nurses at a tertiary care hospital in Lahore, Pakistan, a setting where pressure ulcer management is critical yet understudied.

Objective: This study aimed to evaluate the current level of knowledge among nurses regarding pressure ulcer prevention and management, and to identify any significant differences in knowledge across various critical care settings within the hospital.

Methods: A cross-sectional descriptive study was conducted at Shalamar Hospital, Lahore, involving 125 staff nurses and nursing interns selected via simple random sampling. Participants were required to have at least six months of experience in general wards. Data were collected using a validated questionnaire, assessing knowledge of pressure ulcer management. Ethical approval was obtained from the Shalamar College of Nursing's ethical committee. Data analysis was performed using SPSS version 25 and Microsoft Excel, applying descriptive and inferential statistics, including the Chi-square test, with a significance level set at $p < 0.05$.

Results: The study revealed that 68.8% (86/125) of nurses had average knowledge, 29.6% (37/125) demonstrated good knowledge, and only 1.6% (2/125) exhibited poor knowledge regarding pressure ulcer management. Notably, nurses in the Surgical Intensive Care Unit (SICU) and High Dependency Unit (HDU) displayed the highest levels of knowledge, whereas those in the Medical Intensive Care Unit (MICU), Cardiac Care Unit (CCU), and Emergency Room (ER) had comparatively lower knowledge levels.

Conclusion: The majority of nurses at Shalamar Hospital possessed an average level of knowledge concerning pressure ulcer management. There is a critical need for targeted educational interventions to enhance knowledge and practices, particularly in units where nurses showed lower knowledge levels. Improving nurse education in pressure ulcer management could significantly impact the quality of patient care and reduce the prevalence of these injuries.

Keywords: Pressure Ulcers, Nurse Education, Tertiary Care Hospital, Lahore, Pressure Ulcer Prevention, Pressure Ulcer Management, Cross-Sectional Study, Knowledge Assessment.

INTRODUCTION

Pressure ulcers, defined as localized damage to the skin and underlying soft tissue usually over a bony prominence or related to a medical or other device, are a significant health concern globally, affecting thousands each year due to factors like impaired circulation, obesity, sensory and motor deficits, and prolonged immobility. These ulcers are caused by sustained pressure, often aggravated by shear and friction, leading to compromised capillary blood flow and subsequent tissue necrosis. Various systemic conditions, including diabetes, vascular diseases, and neurological disorders, further exacerbate the risk of developing these injuries (1, 2).

Internationally, the incidence and prevalence of pressure ulcers underscore their status as a severe health issue; for instance, in 2019, there were 0.85 million prevalent cases, 3.17 million new cases, and these contributed to 0.13 million years of healthy life lost globally. Notably, specific sites such as the sacrum and heel are most prone to these injuries, and they predominantly affect the elderly and those with limited mobility, who constitute the majority of the cases (3, 4). This population is often subject to critical

outcomes, including substantial increases in mortality risk and healthcare costs. In the United States alone, pressure ulcers are responsible for about 455,000 hospitalizations annually—a figure that has risen by 63% over the past decade—with patients facing an average hospital stay of 13 days (5, 6).

The management and prevention of pressure ulcers are critical components of nursing care, involving the accurate staging of ulcers using systems like the EPUAP, which helps differentiate these injuries from other types of wounds such as moisture lesions. This staging is crucial for effective intervention and includes thorough documentation of the wound's characteristics (7). Treatments typically involve debridement, maintenance of a moist wound environment, and the control of local and systemic infections. Despite these measures, the knowledge and practice gaps among nurses, especially in developing countries like Pakistan, are significant and contribute to the high incidence rates. This study aims to evaluate the level of awareness among nurses at a tertiary care hospital in Lahore, aiming to highlight the need for enhanced educational programs and training to improve preventive measures and patient outcomes (8).

Given the significant burden of pressure ulcers on health systems and the critical role of nurses in their prevention and management, there is an urgent need to address the gaps in knowledge and practice among healthcare professionals. This study not only seeks to assess the current status of nurse education regarding pressure ulcer prevention but also aims to provide a basis for future educational initiatives that could help reduce the prevalence and impact of these debilitating injuries in hospital settings.

MATERIAL AND METHODS

The methodology employed in this study was a cross-sectional descriptive design, conducted at Shalamar Hospital, Lahore, over a duration of four to six months. The focus was on staff nurses and nursing interns, with the objective to assess their knowledge concerning pressure ulcer prevention and management. A total of 125 staff nurses were selected using simple random sampling techniques. Eligibility for participation required a minimum of six months of clinical experience, specifically within the General Wards of the hospital, ensuring that participants had sufficient exposure to the care conditions relevant to the study.

Data were collected using a structured questionnaire developed to evaluate the knowledge about pressure ulcers among nurses, particularly those working in critical care settings. The questionnaire was administered following the receipt of ethical approval from the Shalamar College of Nursing's Ethical Committee and the hospital administration, affirming adherence to ethical standards in research. In line with the Declaration of Helsinki, informed consent was obtained from all participants prior to data collection, ensuring voluntary participation and the confidentiality of responses (3, 9-14).

The collected data were digitized and analyzed using statistical software SPSS version 25 and Microsoft Excel. Descriptive statistics, including frequency distribution and percentages, were utilized to summarize the variables. Additionally, inferential statistics were applied, specifically the Chi-square test, to explore the relationships between nurses' knowledge levels and their demographic and professional characteristics, with a significance level set at $p < 0.05$.

This comprehensive approach to data collection and analysis ensures a robust evaluation of the current state of knowledge among nurses regarding pressure ulcer management, which is critical for identifying educational gaps and informing future training programs.

RESULTS

The study conducted at Shalamar Hospital in Lahore revealed insightful demographic and professional characteristics of the nursing staff, along with their knowledge levels concerning pressure ulcer management. The majority of the nurses, comprising 81.6% (102 out of 125), had completed their nursing degrees within the past five years, reflecting a predominantly young workforce with recent training (Table 1). In contrast, only a small fraction had longer tenure post-graduation, with 16.8% (21 nurses) between 6-10 years and a mere 1.6% (2 nurses) with 11-15 years of experience since obtaining their degree.

Table 1: Demographic Data of Nurses

Characteristic	n	%	Confidence Interval (CI); 95%
Time since completion of Degree			
1-5 years	102	81.6	
6-10 years	21	16.8	
11-15 years	2	1.6	
Work Setting			
MICU	22	17.6	

SICU	36	28.8	
CCU	25	20.0	
HDU	28	22.4	
ER	14	11.2	
Time working in this Hospital			
1-5 years	110	88.0	
6-10 years	6	4.8	
11-15 years	9	7.2	

Regarding the work settings, the study encompassed various critical care units within the hospital. The Surgical Intensive Care Unit (SICU) employed the largest number of nurses, with 28.8% (36 nurses), followed by the High Dependency Unit (HDU) with 22.4% (28 nurses). The Cardiac Care Unit (CCU) and the Medical Intensive Care Unit (MICU) had 20% (25 nurses) and 17.6% (22 nurses) respectively, while the Emergency Room (ER) was staffed by the fewest, accounting for 11.2% (14 nurses). Most nurses (88%, 110 nurses) had been working at the hospital between 1 to 5 years, which indicates a high turnover or recent recruitment of nursing staff (Table 1).

Table 2: Knowledge among Nurses about Pressure Ulcer

Categories	n	%	X	S.D	p-Value
Poor Knowledge (0-13)	2	1.6	24.86	3.28	0.000
Average Knowledge (14-26)	86	68.8			
Good Knowledge (27-39)	37	29.6			

The assessment of the nurses' knowledge about pressure ulcers highlighted significant disparities (Table 2). A large segment, 68.8% (86 out of 125), exhibited only average knowledge, scoring between 14 to 26 on the assessment tool. However, 29.6% (37 nurses) demonstrated good knowledge, scoring between 27 to 39, indicating a sound understanding and ability to manage and prevent pressure ulcers effectively. Notably, only a very small number, 1.6% (2 nurses), displayed poor knowledge, scoring between 0 to 13, which suggests a critical need for targeted educational interventions to enhance their competency in pressure ulcer management. The statistical analysis using the Chi-square test affirmed the significance of these findings ($p < 0.05$), underscoring the variability in knowledge levels among the nurses and emphasizing the importance of continuous professional development in this critical area of patient care.

DISCUSSION

The study conducted at Shalamar Hospital in Lahore aimed to assess the knowledge of nurses regarding pressure ulcers, with a sample size of 125 nurses. The findings indicated that a significant proportion of the nurses, 68.8%, possessed average knowledge on the subject, while 29.6% demonstrated good knowledge and a mere 1.6% showed poor knowledge. This distribution is reflective of a broader trend where nurses with more theoretical and practical training, such as those holding Bachelor's degrees, generally have a better foundational understanding of patient care issues including pressure ulcer management (11).

Particularly noteworthy was the variation in knowledge across different work settings within the hospital. Nurses working in the Surgical Intensive Care Unit (SICU) and High Dependency Unit (HDU) showed higher levels of knowledge, which might be attributed to the targeted efforts by nurse managers in these units to mitigate challenges such as heavy workloads, inadequate staffing, and the lack of established standards for pressure ulcer management. This finding aligns with research from Iran, suggesting that nurses in more critical care environments tend to acquire and apply specialized knowledge more effectively compared to their peers in less intensive settings (10). However, the relatively lower knowledge levels observed among nurses in the Medical Intensive Care Unit (MICU), Cardiac Care Unit (CCU), and Emergency Room (ER) highlight a discrepancy that contradicts some earlier studies, suggesting the need for more uniform educational interventions across all units.

The comparative analysis with international studies further enriches our understanding. For instance, a study in Ireland utilizing the Braden scale to evaluate the relationship between mobility activity and the development of pressure ulcers supports our findings, showing that enhanced assessment skills can significantly affect the incidence and prevalence of pressure ulcers based on nurses' knowledge (9). Conversely, a study from a Chinese tertiary hospital using the Pressure Ulcer Knowledge Assessment Tool (PUKAT) revealed unsatisfactory knowledge levels among nurses, indicating a global inconsistency in knowledge and practice that underscores the need for continual professional development (13-17).

This study, while insightful, is not without limitations. The cross-sectional nature restricts the ability to establish causality between nurses' knowledge levels and the effectiveness of pressure ulcer management. Furthermore, the reliance on self-reported data may introduce bias, potentially inflating perceived knowledge levels. Additionally, the study's findings are specific to one hospital, which may limit the generalizability of the results to other settings (17-20).

CONCLUSION

In conclusion, the nurses at Shalamar Hospital generally exhibited average knowledge about pressure ulcers, which, while sufficient to manage and prevent these injuries to some extent, suggests room for improvement. Continuous education and training are recommended to enhance nurses' capabilities in this area, ideally tailored to the specific needs and conditions of different hospital units. Strengthening the educational curriculum in nursing schools and providing ongoing professional development opportunities could significantly improve outcomes in pressure ulcer management, ultimately reducing incidence rates and improving patient care quality. These actions are crucial as nurses play a pivotal role in both preventive and curative aspects of managing pressure ulcers.

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