

Knowledge and Practices of Health Care Nurses in the Prevention and Management of Pressure Ulcers among Home-Based Care Patients in Pakistan: A Quantitative Cross-Sectional Study

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Abstract

Pressure Ulcers (PU), decubitus ulcers, are localized injuries to the skin, and underlying tissues, often over bony prominence, resulting from pressure or shear. It remains a significant global healthcare challenge, especially in home-based care settings. This cross-sectional study assessed the knowledge and practices of home health care nurses in Karachi, Pakistan, regarding PU prevention and management. Fifty registered nurses from a home health care agency participated, completing a self-administered questionnaire. The findings revealed that 78% of participants were knowledgeable about PU development and preventive measures, such as repositioning and early signs. Still, gaps existed in understanding staging and the role of nutrition. Barriers, including staff shortages (32%) and lack of resources (20%), hindered optimal care delivery. Despite their awareness, inconsistent application of knowledge in practice was evident. These results underscore the need for targeted training programs, adherence to evidence-based guidelines, and resource allocation to bridge the knowledge-practice gap. Enhancing nurses' competencies in PU prevention and management can significantly improve patient outcomes and reduce healthcare costs in home-based settings.

Keywords: Pressure Ulcers, Knowledge, Practice, Home Health Care, Pakistan.

Introduction

Pressure ulcers, also termed bedsores or decubitus ulcers, represent localized injuries to the skin and underlying tissue produced by prolonged pressure. They mostly occur in bedridden patients and those with minimal mobility. This problem of pressure ulcers affects hospitals worldwide, even in Pakistan. Healthcare workers in Pakistan and other countries often face challenges related to the prevention and management of these injuries in an effective way. In this case, the role of home health care nurses is very important because they are the frontline caregivers who implement preventive measures and appropriate treatment.

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Home health care nurses carry out specialized care of patients at home and include tailor-made interventions for pressure ulcer prevention and management. This unique role involves regular patient assessment, education of families on preventive strategies, and evidence-based care to ensure the safety of patients. Studies have been able to prove that the presence of skilled home healthcare nurses significantly reduces the incidence of pressure ulcers, especially among elderly and immobile patients. Home health care nurses are deemed the foundation of prevention and management in patients who will be cared for at home for pressure ulcers. Their roles would include risk assessment of the patient, creating an individualized care plan for the patient, and educating the patient and his family on how to prevent introduced preventive strategies (Sultana & Zecevic, 2017)

Currently, pressure ulcers are among the most prevalent complications and affect around 3 million patients annually across the globe. Studies globally reveal that although nurses are generally well-informed regarding pressure ulcer prevention, however, there are huge gaps between knowledge and practice. A Greek study revealed that nurses had robust knowledge about the staging of pressure ulcers and preventive measures, such as repositioning the patient and use of specialized mattresses, but lacked an understanding of nutrition and specific products for treatment (Eirinidou et al., 2022). In the same manner, a study conducted in Ethiopia found that close to half of the participating nurses reported good knowledge and practices about preventing pressure ulcers, though several barriers like workload and insufficient resources impeded their optimal care (Tesfa et al., 2022). Regionally, similar trends have been observed in a correlational study conducted in Jordan aimed at evaluating nurses' knowledge and practice regarding pressure ulcer prevention and treatment.

In Pakistan, the significance of home health care nurses is increasingly recognized. These nurses play an important role in providing continuous and quality care to prevent the risk of developing pressure ulcers in patients in the home setting. A recent cross-sectional study conducted in Karachi found that home health care nurses who received regular training had much better knowledge about pressure ulcer prevention than those without training (Khan & Ali, 2023). Additionally, limits in resource access as well as failure to adhere strictly to the evidence-based guidelines define the need for focused interventions that would help connect those gaps.

The study found that even though the nurses were conscious of the interventions, the implementation was inconsistent because of various factors such as type of hospital and patient load (Saleh et al., 2019). This requires targeted training programs to enhance knowledge and practical application among nursing staff. There is a great demand for targeted educational interventions. This can be attributed to a cross-sectional study conducted in a tertiary care hospital in Karachi that found 44% of the nurses had moderate knowledge regarding pressure ulcers and 18% had low knowledge (Khan & Ali, 2023). Another study pointed out that a failure of nursing staff to adhere to evidence-based guidelines may lead to an increase in pressure ulcer cases, and thus, continuous education and awareness campaigns are essential for the improvement of nursing practices (Wu et al., 2022).

To prevent pressure ulcers, the World Health Organization (WHO) emphasizes the value of quality nursing care, especially for vulnerable groups including the elderly and people with long-term illnesses (Kottner et al., 2019). Assessing the currently available level of knowledge and practice among the nursing staff of the country of Pakistan, while having limited health resources. However, systematic analyses show that still up to 95% of pressure ulcers may be avoided through prevention if proper evidence-based up-to-date practice guidelines were instead followed rather than antiquated ones by nurses in general (Saleh et al., 2019). This is a gap in knowledge and

practice that raises the risk of patient safety and healthcare costs as patients take longer hospital stays and receive further treatment in the hospitals to manage their pressure ulcers. There is a conclusion on enhancing the knowledge and practices of home health care nurses in Karachi regarding pressure ulcer prevention and management, which are fundamental for improving patient outcomes. The objective of this study is to find out what the current state of nursing practice for pressure ulcer care in one of the best home health care-providing companies in Karachi is, so areas of improvement and strategies for effective training programs can be identified. The ultimate conclusion is to enhance the knowledge and practices of home health care nurses who were taking care in Karachi's healthcare settings regarding pressure ulcer prevention and management, which are fundamental for improving patient outcomes. The study aims to explore the present state of nursing practices related to pressure ulcer care in one of the best home health care providing companies in Karachi to identify areas of improvement and strategies for effective training programs.

Research Questions

1. What are the levels of knowledge and practices of home health care nurses regarding the prevention and management of pressure ulcers of home-based care patients in Karachi, Pakistan?
2. What are the factors associated with the Knowledge and Practices of home health care nurses in the prevention and management of Pressure Ulcers among Home-Based Care Patients in Karachi, Pakistan?

Methodology

The study employed a cross-sectional, quantitative design utilizing a closed-ended questionnaire to assess staff nurses' knowledge and practices regarding pressure sores at Al Sehat Home Health Care Company. A non-probability convenience sampling method was implemented, involving 50 registered nurses who had completed a Bachelor of Science in Nursing (BScN) and possessed over one year of clinical experience worked as a staff nurse in any hospital setting and currently working at home health services. Nurses who declined to participate or did not meet the specified eligibility criteria were excluded from the study. Following the acquisition of informed consent, a self-administered questionnaire was administered to the participants. This instrument comprised 14 knowledge-based questions written in English, with responses measured using a Likert scale, including options such as "strongly agree," "strongly disagree," and "don't know." Before the main study, a pilot test was conducted with 10 % of the participants to assess the reliability and clarity of the questionnaire. Data analysis was performed using the Statistical Package for Social Sciences (SPSS), and all research processes adhered to ethical standards throughout the study.

Results

The study involved 50 home health care registered nurses, who provided insights into their knowledge and practices related to pressure ulcer care. The demographic analysis revealed that 66 % of participants were male while 34 % were female. The majority of respondents 92% were aged between 21 and 30 years old. In terms of area of experience in various areas before joining a home healthcare services company, 34% had worked in the medical ICU, 36% in the surgical ICU, and 30 % in the CCU. Regarding work experience, 20% had between one to three years, while 40% had four or more years of experience. The given shows the departments of the participants who had some experience in critical areas. Demographic data is illustrated in Table 1.

Table 1: Results of Demographic data (n=50)

| Gender | No of Participants | Percentage (%) |
|--------------------|--------------------|----------------|
| Male | 33 | 66.0% |
| Female | 17 | 34.0% |
| Age | | |
| 21 to 30 years | 46 | 92.0% |
| 31 to 40 years | 04 | 8.05 |
| Department | | |
| Medical ICU | 17 | 34% |
| Surgical ICU | 18 | 36% |
| CCU | 15 | 30% |
| Working Experience | | |
| 1 to 3 years | 10 | 20% |
| 2 to 4 years | 14 | 28% |
| 3 to 4 years | 06 | 12% |
| 4 above | 20 | 40% |

In this study, 50 respondents provided insights into their understanding and perceptions of pressure sores. The majority of participants, 39 (78%), strongly agreed that pressure sores predominantly develop on skin areas that cover bony prominences. This indicates a high level of awareness regarding the anatomical locations susceptible to such injuries. However, knowledge gaps are evident, particularly regarding the classification of pressure ulcers with 18 respondents (36%) strongly disagreeing with the existence of six stages of pressure sores, while 19 (38%) disagreed, indicating that a significant portion of participants do not recognize the classification of pressure sores. This indicates that the foundational knowledge exists, and a lack of knowledge of understanding of staging may hinder comprehensive patient assessment.

Regarding Stage IV pressure sores, the data reflected a strong understanding of the severity of this condition, with 35 participants (70%) strongly agreeing that these wounds expose muscles and bones. This understanding is critical, as it emphasizes the serious implications of advanced pressure sores. However, the responses also highlight a gap in knowledge regarding the overall staging of pressure sores, which could potentially impact patient care and management strategies. When evaluating perceptions of patient risk, a notable majority of 21 respondents (41%) disagreed with the notion that all patients are not at risk for developing pressure sores. This suggests an awareness of the vulnerability of various patient populations, which is essential for implementing preventative measures. Conversely, when asked about stage II pressure sores, which are characterized by blister-like appearances, a majority of 30 participants (60%) strongly agreed, reinforcing the importance of recognizing early signs of pressure injuries.

The understanding of skin discoloration as a sign of pressure sore development was also well-received; 39 respondents (78%) strongly agreed that this is a key indicator, while only a small fraction (2%) expressed uncertainty. This awareness could contribute to more timely interventions and improved patient outcomes. Additionally, the role of regular repositioning as a preventive measure was widely acknowledged, with 43 participants (86%) strongly agreeing that such practices are effective in preventing pressure sores. This underscores the importance of active patient management in clinical settings. Moreover, the necessity of conducting bed sore risk assessments for all hospitalized patients was supported by 29 respondents (58%) who strongly

agreed. This is crucial for identifying at-risk individuals and ensuring proactive care strategies. Conversely, the responses regarding the role of nutrition in pressure sore development revealed a concerning trend, as 17 participants (34%) strongly disagreed with the idea that nutrition status does not contribute to pressure sore formation. This suggests a gap in understanding the multifactorial nature of pressure sore development, where nutritional deficiencies can significantly impact skin integrity.

Regarding documentation practices, a substantial majority of 32 respondents (64%) strongly agreed that data on pressure ulcers should be documented once per shift after assessment. This highlights a commitment to systematic record-keeping, which is essential for the continuity of care and monitoring of patient progress. Furthermore, the recognition of age as a potential risk factor for pressure sore development received mixed responses, with 20 participants (40%) strongly agreeing, while an equal number (18%) strongly disagreed. This ambiguity may point to differing experiences or beliefs about the impact of age on vulnerability to pressure injuries.

Finally, the study explored barriers to providing care for patients with pressure sores, revealing that 16 respondents (32%) identified staff shortages as a significant challenge, followed by 11 (22%) citing patient uncooperativeness and 10 (20%) noting a lack of measuring resources. Meanwhile, 13 respondents (26%) reported not facing any barriers, indicating variability in care experiences. Overall, these results highlight critical insights into the knowledge, attitudes, and perceived challenges faced by healthcare professionals in the management of pressure sores. Addressing these gaps and enhancing education around pressure sore prevention and management will be essential for improving patient outcomes and quality of care.

Discussion

This study highlights the knowledge of home health care nurses and the practices used among home-based care patients within Karachi, towards preventing pressure ulcers and provides many important insights into present healthcare practice.

The findings indicate that despite the substantial level of anatomical locations that have been proven susceptible to pressure sores, the gap in nurses' knowledge concerns classifications and stages of these injuries. This is following the studies recently carried out in various regions, which established the common fact that healthcare professionals are conscious of some preventive methods but do not have adequate information on the principles underlying pressure ulcer care. Similarly, a study by Eirinidou et al. (2023) in Greece found that while nurses were informed about the common preventive measures of turning patients over and using specialty mattresses, there was a knowledge gap in knowing the nutritional care required for a proper treatment protocol (Eirinidou et al., 2022). This corresponds to the data obtained from Karachi, where almost one-third (34%) of respondents rejected the assertion that nutrition can contribute to pressure sore formation (Khan & Ali, 2023). Furthermore, another study also reported similar obstacles in Ethiopia, where nurses recognized the importance of preventive practices but were hindered by workload and inadequate resources, an issue reflected by respondents of this study in concerns about staff and resource shortages (Tesfa Mengist et al., 2022). Furthermore, Saleh et al. (2019) in Jordan conducted a correlational study that showed variations in the knowledge application of prevention of pressure ulcers among home healthcare nurses as influenced by other factors, for instance, hospital type and patient load. Similar findings were established where 32% of respondents found that staff shortage was a critical barrier to providing adequate care to patients with pressure sores. Such barriers present systemic issues in healthcare settings that hinder optimal nursing practices (Shrateh et al., 2023). Further, Khan and Ali (2023) have mentioned that targeted

educational interventions are required to enhance the knowledge and practices of nurses regarding pressure ulcer care. In a similar line, have opined that following evidence-based guidelines is crucial to minimize the occurrence of pressure ulcers (Wu et al., 2022). The results of the present study support this argument because it shows there is a good awareness of most preventive measures like repositioning, and yet there remains a strong need for continuing education to translate knowledge into practice. Another study by (Niyongabo et al., 2022) assessed nurses' knowledge and attitudes towards pressure ulcer prevention and treatment. It also highlighted that nurses' understanding is crucial in combating the prevalence, particularly among patients with mobility limitations. The findings indicated a significant need for ongoing education and training to enhance nurses' effectiveness in pressure ulcer management. The same verdict has been discussed and demonstrated by (Mäki-Turja-Rostedt et al., 2024) that structured training programs significantly improved nurses' knowledge about pressure ulcer prevention strategies. Regular training sessions led to better adherence to guidelines, resulting in lower incidence rates of pressure ulcers among patients.

Conclusion

The study on the knowledge and practices of home healthcare nurses regarding pressure ulcer prevention and management in Karachi, Pakistan, reveals critical insights into the current state of nursing practice. The findings indicate that while a significant majority of the participating nurses possess foundational knowledge about pressure ulcers, substantial gaps remain in their understanding and application of this knowledge in clinical practice. Specifically, 78% of the respondents demonstrated awareness of pressure ulcer development and preventive measures, there were notable deficiencies in their comprehension of the staging of ulcers and the impact of nutrition on skin integrity. The barriers identified such as staff shortages, lack of resources, and inconsistent application of knowledge, further hinder optimal care delivery. The findings highlight the need for targeted educational interventions to bridge these gaps. Continuous professional development programs and adherence to evidence-based guidelines are essential for enhancing nurses' competencies in pressure ulcer management. The insights gained from this study can inform policy changes and educational strategies aimed at optimizing nursing practices in Karachi's home healthcare sector, improving patient outcomes, and lowering healthcare costs in home-based care settings.

Recommendations

The study recommended more education programs to close the knowledge gap on pressure ulcer staging and prevention, with specific attention to nutrition. It requires a proper allocation of resources, in terms of manpower, as well as access to devices that relieve pressure. Standard risk assessment tools can be used as part of improving quality care, together with uniform documentation practice. It is also through collaboration between multidisciplinary teams and patient-family education that the holistic approach to the prevention of pressure ulcers should be encouraged. Policy advocacy is needed to ensure sustainable improvements in home healthcare systems.

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