Vol. 5 No. 2 (2026)

Pakistan Journal of Medical & Cardiological Review

https://pakjmcr.com/index.php/1/about

Online ISSN 3007-2387

Print ISSN 3007-2379

EVALUATION OF PRESSURE ULCER PREVENTION PRACTICES AND ASSOCIATED FACTORS AMONG NURSING STAFF CARING FOR BEDRIDDEN PATIENTS

Asma abid
Nursing Superintendent children's hospital Lahore
Email: abidasma497@gmail.com

Niamat Ullah
Registered Nurse (RN), University of Rio Grande, Ohio, United States
Email: khanzniamatullah@gmail.com

Author Details

Keywords: Pressure ulcer; pressure injury; nursing staff; bedridden patients; prevention practices; Braden Scale; patient safety

Received on 15 May 2026
Accepted on 15 Jun 2026
Published on 22 Jun 2026

Corresponding E-mail & Author*:
Asma abid
Email:Abidasma497@gmail.com

Abstract

Background: Pressure ulcers are preventable healthcare-associated injuries commonly seen among bedridden patients and are closely linked with quality of nursing care. **Objective:** To evaluate pressure ulcer prevention practices and associated factors among nursing staff caring for bedridden patients. **Methods:** This cross-sectional analytical study included 190 nursing staff members directly involved in the care of bedridden patients. Data were collected using a structured questionnaire assessing demographic characteristics, professional experience, previous training, workplace factors, resource availability, and pressure ulcer prevention practices. Practice scores were categorized as good or poor. **Results:** The mean age of participants was 31.8 ± 6.7 years, and mean clinical experience was 7.4 ± 4.8 years. Overall, 134 (70.5%) nurses demonstrated good pressure ulcer prevention practices, while 56 (29.5%) had poor practice scores. Routine skin assessment was reported by 156 (82.1%) nurses, regular repositioning by 149 (78.4%), and Braden Scale use by 104 (54.7%). Good practices were significantly associated with greater clinical experience (8.6 ± 4.7 vs. 4.8 ± 3.6 years; $p<0.001$), previous training (73.9% vs. 32.1%; $p<0.001$), and favorable nurse-to-patient ratio ≤1:5 (53.0% vs. 19.6%; $p<0.001$). Previous training, experience >5 years, higher qualification, ICU/HDU employment, adequate staffing, and availability of pressure-relieving devices were independent predictors of good practice. **Conclusion:** Most nursing staff demonstrated good pressure ulcer prevention practices, but gaps remained in formal risk assessment and nutritional evaluation. Regular training, adequate staffing, and resource availability are essential to strengthen pressure ulcer prevention among bedridden patients.

Introduction

Pressure ulcers, or also referred to as pressure injuries or bedsores, are areas of skin and underlying tissue damage caused by the pressure, friction or shear forces exerted on the skin and underlying tissues [1]. They are still a great problem in healthcare systems especially for immobile patients, critically ill patients or those who are bedridden and elderly people who need long-term care [3]. The morbidity of pressure ulcers, the length of time spent in the hospital, increased healthcare costs, decreased quality of life, and death are associated with

pressure ulcers [2]. The occurrence of pressure ulcers is considered a significant factor in assessing the quality of nursing care and patient safety as many pressure ulcers are preventable. Although there are improvements in healthcare practices, the burden of pressure ulcers remains significant. The incidence reported in studies has ranged from 5% to 30% depending on the hospital setting, with higher rates being reported in patients in intensive care unit, those that are neurologically impaired and are those that are immobilized for extended periods [4]. Pressure ulcers are affected by many risk factors such as advanced age, poor nutrition, limited mobility, urinary incontinence, weakness or loss of sensation, vascular disorders, and chronic illnesses [6]. Identification of these risk factors in early stages is crucial for effective prevention and management. Nurses are one of the most important members of the nursing team in the prevention of pressure ulcers, as they are in constant contact with bedridden patients to constantly observe and care for them [5]. The important preventive measures are frequent repositioning, use of pressure-relieving devices, skin assessment, nutritional support, moisture management and patient education [7]. Systematic risk assessment for high-risk patients to prevent pressure ulcers is emphasized by evidence-based guidelines with validated pressure ulcer risk assessment tools like Braden Scale [8].

It is important to have sufficient knowledge, but also to follow the recommended clinical practices consistently to achieve successful pressure ulcer prevention [10]. But, there are some studies that have pointed to some areas of weakness in nurses' knowledge, attitudes, and preventative practices, even though there are clinical guidelines in place [9]. The high workload, low staffing, low training, limited resources, and lack of institutional support can have a negative impact on achieving compliance with pressure ulcer prevention protocols [11]. These can affect patient safety and lead to the development of unnecessary pressure ulcers. Earlier research has shown that educational programs, on-going professional development and standardized prevention practices are highly effective in enhancing nursing practices concerning pressure ulcer prevention [12]. Additionally, higher pressure ulcer prevention programs in hospitals have achieved lower rates and better outcomes for patients [14]. However, there are still different practices in nursing which exist in various health care settings and thus need continuous assessment and quality improvement programs [13]. An understanding of the factors that affect nursing staff members' pressure ulcer prevention practices is key to designing interventions that will enhance patient care [15]. Analyzing existing prevention initiatives can help to understand gaps in knowledge, resource availability, and organizational capacity and support, which can inform the development of policies and staff training programs [16]. This type of information is especially valuable when resources are limited, and with the growing volume of patients attending the clinic, adherence to preventive measures might be compromised.

Objective

To evaluate pressure ulcer prevention practices and associated factors among nursing staff caring for bedridden patients.

METHODOLOGY

This is a cross-sectional analytical study that included 190 nursing staff who take care of bedridden patients to assess the pressure ulcer prevention practices and associated factors. Nurses with at least six months of clinical experience and who were directly involved in the care of bedridden patients were included, such as registered nurses, nursing officers, charge nurses, and staff nurses working in medical, surgical, intensive care, high dependency, and long-term care units. Eligible participants were those who were willing to sign an informed consent. The data from the nursing interns and student nurses, administration nursing personnel who were not directly involved in patient care, the participants who took a prolonged leave during the period of this study and those who did not complete the questionnaires were excluded.

Data Collection

Ethical approval was obtained and data collected through a structured and validated self-administered questionnaire. Demographic and professional data included age, gender, educational qualification, years of clinical experience, department of work, previous pressure ulcer prevention training, nurse to patient ratio and working hours per week. A review of the

pressure ulcer prevention practices was done using questions about routine skin assessment, patient repositioning, pressure-relieving devices, moisture management, nutritional assessment, use of a risk assessment tool, documenting practices, and compliance with institutional pressure ulcer prevention guidelines. Additionally, knowledge and attitude towards pressure ulcer prevention was assessed. Practice scores were scored as good or poor based on pre-established criteria. Other organizational characteristics (resources, staffing, institutional support) were also examined.

Statistical Analysis

Data were analysed with SPSS (version 26.0). Data were presented as mean ± standard deviation for continuous variables and frequencies and percentages for categorical variables. Nursing practice levels were compared between demographic and practice variables using independent t-tests and chi-square tests. Multivariable logistic regression was used to determine factors that were independently related to good pressure ulcer prevention practices. A p-value ≤0.05 was considered statistically significant.

RESULTS

The mean age of the nursing staff was 31.8 ± 6.7 years, with females comprising most participants (122, 64.2%) compared with males (68, 35.8%). The mean clinical experience was 7.4 ± 4.8 years. Most nurses held a BS Nursing degree (109, 57.4%), while 52 (27.4%) had a diploma and 29 (15.2%) had Post-RN BSN or Master's qualifications. ICU/HDU nurses accounted for 61 (32.1%) participants, and 117 (61.6%) had received previous pressure ulcer prevention training. More than half of the participants (108, 56.8%) worked with a nurse-to-patient ratio greater than 1:5.

Table 1: Demographic and Professional Characteristics of Nursing Staff (N = 190)

Variable	n (%) / Mean ± SD
Age (years)	31.8 ± 6.7
Gender	
Male	68 (35.8)
Female	122 (64.2)
Clinical Experience (years)	7.4 ± 4.8
Diploma in Nursing	52 (27.4)
BS Nursing	109 (57.4)
Post-RN BSN/Master's	29 (15.2)
Medical Ward	48 (25.3)
Surgical Ward	56 (29.5)
ICU/HDU	61 (32.1)
Long-Term Care Unit	25 (13.2)
Previous Pressure Ulcer Prevention Training	117 (61.6)
Nurse-to-Patient Ratio ≤1:5	82 (43.2)
Nurse-to-Patient Ratio >1:5	108 (56.8)

Moisture management practices were performed by 141 (74.2%) participants, and proper documentation was maintained by 132 (69.5%). Use of pressure-relieving devices was reported by 128 (67.4%) nurses, whereas nutritional risk assessment and Braden Scale utilization were lower at 119 (62.6%) and 104 (54.7%), respectively. Overall, 134 (70.5%) nurses demonstrated good pressure ulcer prevention practices, while 56 (29.5%) had poor practice scores.

Table 2: Pressure Ulcer Prevention Practices Among Nursing Staff (N = 190)

Practice Variable	n (%)
Routine Skin Assessment	156 (82.1)
Regular Patient Repositioning	149 (78.4)

Use of Pressure-Relieving Devices	128 (67.4)
Moisture Management Practices	141 (74.2)
Nutritional Risk Assessment	119 (62.6)
Braden Scale Risk Assessment Use	104 (54.7)
Proper Documentation of Preventive Measures	132 (69.5)
Adherence to Institutional Guidelines	125 (65.8)
Good Prevention Practice Score	134 (70.5)
Poor Prevention Practice Score	56 (29.5)

Nurses with good prevention practices were slightly older than those with poor practices (32.4 ± 6.5 vs. 30.3 ± 7.0 years; p=0.05) and had substantially greater clinical experience (8.6 ± 4.7 vs. 4.8 ± 3.6 years; p<0.001). Previous pressure ulcer prevention training was more common among nurses with good practices (99, 73.9% vs. 18, 32.1%; p<0.001).

Table 3: Comparison of Characteristics According to Pressure Ulcer Prevention Practice Level

Variable	Good Practice (n=134)	Poor Practice (n=56)	p-value
Age (years), Mean ± SD	32.4 ± 6.5	30.3 ± 7.0	0.05
Clinical Experience (years), Mean ± SD	8.6 ± 4.7	4.8 ± 3.6	<0.001
Previous Training, n (%)	99 (73.9)	18 (32.1)	<0.001
BSN/Master's Qualification, n (%)	102 (76.1)	36 (64.3)	0.04
ICU/HDU Employment, n (%)	50 (37.3)	11 (19.6)	0.02
Nurse-to-Patient Ratio ≤1:5, n (%)	71 (53.0)	11 (19.6)	<0.001

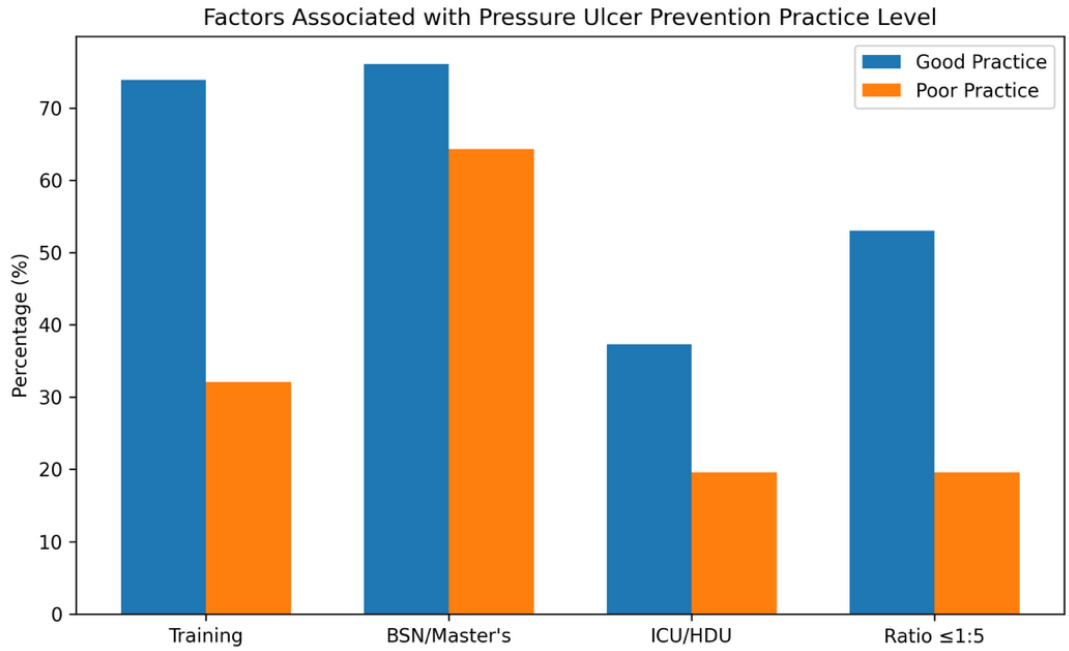

Figure 1. Factors Associated with Pressure Ulcer Prevention Practice Level Among Nursing Staff

Multivariable logistic regression identified previous pressure ulcer prevention training as a strong predictor of good practice (AOR=3.48, 95% CI: 1.82–6.67; p<0.001). Nurses with more than five years of experience were 2.76 times more likely to demonstrate good prevention practices (95% CI: 1.41–5.38; p=0.003). Higher educational qualification (AOR=2.12, p=0.029), ICU/HDU employment (AOR=1.95, p=0.047), availability of pressure-relieving devices (AOR=2.67, p=0.006), and a nurse-to-patient ratio of ≤1:5 (AOR=3.21, p<0.001).

Table 4: Multivariable Logistic Regression Analysis of Factors Associated with Good Pressure Ulcer Prevention Practices

Variable	Adjusted OR	95% CI	p-value
Previous Pressure Ulcer Training	3.48	1.82–6.67	<0.001
Clinical Experience >5 Years	2.76	1.41–5.38	0.003
BSN/Master's Qualification	2.12	1.08–4.16	0.029
ICU/HDU Employment	1.95	1.01–3.79	0.047
Nurse-to-Patient Ratio ≤1:5	3.21	1.65–6.23	<0.001
Availability of Pressure-Relieving Devices	2.67	1.33–5.37	0.006

DISCUSSION

This study was designed to examine pressure ulcer prevention practices with 190 nurses who care for bed-ridden residents and to determine some of the demographic, professional and organizational factors that relate to positive pressure ulcer prevention practices. Overall, 70.5% of nurses had good pressure ulcer prevention practices, which suggests a fairly good level of uptake of pressure ulcer prevention practice. But there were some clear areas of non-use in terms of utilising formal risk assessment and nutrition assessment. The results indicate ongoing importance of targeted educational and organisational interventions to enhance pressure ulcer prevention in clinical settings. The age of the participants was 31.8 ± 6.7 years, and the majority of them were female (64.2%). The mean number of years in clinical practice was 7.4 ± 4.8 years. This distribution of demographics is similar to that of previous studies, which found that nurses in direct care roles tended to be younger, relatively inexperienced with moderate years of clinical experience, and female. This demographic profile is typical for many hospitals and could affect the competency of the nursing profession and preventive health care practices [17]. The most frequently reported preventive measure carried out was routine skin assessment (82.1% of nurses). 78.4% of patients were repositioned regularly and 74.2% of the patients were treated with moisture management. A similar study also identified skin assessment and repositioning as the most common pressure ulcer prevention practices, which are thought to be essential tools needed for evidence-based nursing practices. These practices are of crucial importance for the early detection of tissue damage and minimization of long duration of pressure exposure of bedridden patients [18]. 67.4% of the nurses reported using pressure relieving devices and 62.6% reported carrying out a nutritional risk assessment. The use of the Braden Scale was one of the lowest adherence rates of the preventive practices observed, with only 54.7% of participants using it. Past studies have also shown that, while most preventive activities are carried out, many risk assessment instruments and nutritional evaluations are under-used. The lack of training, workload stress and inadequate institutional support have been proposed as some of the factors contributing to these shortcomings [19].

The major finding of this study was that nurses who had good prevention practices had significantly more years of clinical experience (8.6 ± 4.7 years) than those who had poor practices (4.8 ± 3.6 years). Practicing for a longer time is associated with better clinical judgment, identification of patients' risk, and familiarity with preventive interventions. Prior studies also indicated that more experienced nurses have better practices for preventing pressure ulcers and a higher level of evidence-based practice adherence than less experienced nurses. One of the most significant pressure ulcer prevention practices that was identified was training in pressure ulcer prevention. The majority of nurses who scored well on the good practice had been trained in the past (73.9%) compared with 32.1% of the nurses who scored poorly. Also, in the multivariable analysis, trained nurses were 3.48 times more likely to exhibit good preventive practices. Educational activities and ongoing professional development have been shown to have a significant effect on the knowledge, attitudes and preventive practices of nurses regarding the prevention of pressure ulcers in previous studies [20]. The better the educational qualification, the better the practice outcomes were. The overall experience indicated that nurses with lower education levels were less likely to exhibit good prevention practices while those with BSN or Master's education were more likely to do so. Logistic regression analysis showed higher education was an independent predictor of good practice (AOR=2.12). Previous studies have shown similar results, with higher levels of educational preparation related to better critical thinking, higher evidence-based practice and

better quality of patient care. Prevention practices were higher amongst nurses in ICU/HDU locations than in General wards. The odds of good practice increased by almost two times (AOR=1.95) for those working in an ICU/HDU setting. Previous studies have also demonstrated critical care nurses' increased knowledge of pressure ulcer prevention measures as critically ill patients are at a higher risk for developing pressure ulcers and need for intensive monitoring [21]. Other factors related to workload were also significant.

LIMITATIONS

This study has several limitations. As a cross-sectional analytical study, it could identify associations between variables but was unable to establish causal relationships. The study relied on self-reported questionnaires, which may have introduced recall bias and social desirability bias, potentially leading participants to overestimate their adherence to recommended pressure ulcer prevention practices. Future multicenter studies incorporating observational assessments and longitudinal follow-up are recommended to provide a more comprehensive evaluation of pressure ulcer prevention practices.

CONCLUSION

Most nursing staff demonstrated good pressure ulcer prevention practices; however, important gaps remained in areas such as risk assessment tool utilization and nutritional assessment. Clinical experience, previous pressure ulcer prevention training, higher educational qualification, ICU/HDU employment, favorable nurse-to-patient ratios, and availability of pressure-relieving devices were independently associated with better preventive practices. These findings highlight the critical role of continuous professional education, adequate staffing, and sufficient resource availability in promoting evidence-based pressure ulcer prevention.

REFERENCES

- Serafin A, Graziadio S, Velickovic V, et al. A systematic review of clinical practice guidelines and other best practice recommendations for pressure injury risk assessment in the United States. Wound Repair Regen. 2025;33(2):e70016.
- EPUAP/NPIAP/PPPIA. Prevention and Treatment of Pressure Ulcers/Injuries: Quick Reference Guide. 4th ed. National Pressure Injury Advisory Panel; 2025.
- Asiri MY, Baker OG, Alanazi HI, et al. Nurses' knowledge, attitudes, and practices in pressure injury prevention: a systematic review and meta-analysis. Healthcare. 2025;13(11):1220.
- Mukantwari S, Bikorimana E, Rumagihwa L, et al. Assessment of nurses' knowledge and practice of pressure injuries prevention for critically ill patients in Rwanda: a cross-sectional study. BMC Nurs. 2025;24(1):104.
- Alalawneh E, Abdelkader R, Iblasi A, et al. Factors associated with adherence to prevention guidelines of pressure injuries among Jordanian nurses in critical care units. J Tissue Viability. 2025;34(1):100853.
- Alfadhalah T, Lari M, Al Salem G, et al. A national cross-sectional study on the knowledge and attitude of nurses towards prevention of pressure injury and their relationship with its prevalence. BMC Nurs. 2025;24(1):516.
- Sengul T, Senol Celik S, Kirkland-Kyhn H. The role of simulation in pressure injury education: a systematic review. Nurs Adm Q. 2025;49(1):35-43.
- Fu T, Wu X, Yu B. Efficacy of silicone foam dressings in preventing pressure injuries in the sacral and heel areas of patients: a meta-analysis. Front Med. 2025;12:1644290.
- Jaradat Y, Qtait M. Occupational stress and associated risk factors among nurses in Hebron hospitals: a cross-sectional study from the West Bank, Palestine. SAGE Open Nurs. 2025;11:23779608251374155.
- Zabin LM, Qaddumi J, Ghawadra SF, Battat MM. Job stress and patient safety culture: a qualitative study among hospital nurses in Palestine. BMC Nurs. 2025;24(1):308.

- Aromataris E, Lockwood C, Porritt K, Pilla B, Jordan Z. JBI Manual for Evidence Synthesis. JBI; 2024.
- Hafez SH, Abualruz H, Mohamed NA, et al. The burden and coping mechanisms among the caregivers of immobilized elderly patients: a multinational comparative study. Iran J Nurs Midwifery Res. 2024;29(5):577-582.
- Daraqel S, Qattousah R, Khalaileh M, et al. Assessment of knowledge and practice on prevention of pressure ulcer among nurses in Palestine: cross-sectional study. Mod J Health Appl Sci. 2024;1(1):59-71.
- Shouli M, Bsharat R, Khalid HA, Shoul K. Knowledge and attitude among nurses towards pressure ulcer prevention at Palestinian hospital. Open J Nurs. 2024;14(12):637-656.
- Al Gharash H, Alharbi A, Alshahrani Y, Mousa O. Knowledge and attitude of nursing interns toward pressure injury prevention in Saudi Arabia: a multiregional cross-sectional study. SAGE Open Nurs. 2024;10:23779608241251631.
- Hammad BM, Eqtait FA, Ayed AJ, et al. Insights into pressure injury prevention: assessing the knowledge, attitudes, and practices of Palestinian nursing students. J Tissue Viability. 2024;33(2):254-261.
- Omar W, Asrawi I, Awad M, et al. Nurses' knowledge of medical device-related pressure injuries and risk factors: a descriptive study at a large medical centre from Palestine. J Eval Clin Pract. 2024;30(8):1508-1515.
- Ayyad A, Baker NA, Oweidat I, et al. Knowledge, attitudes, and practices toward patient safety among nurses in health centers. BMC Nurs. 2024;23(1):171.
- Babaei N, Zamanzadeh V, Valizadeh L, et al. Barriers to the implementation of virtual care programmes for patients with chronic wounds: qualitative empirical research. Nurs Open. 2023;10(11):7301-7313.
- Mäki-Turja-Rostedt S, Leino-Kilpi H, Koivunen M, Vahlberg T, Haavisto E. Consistent pressure ulcer prevention practice: the effect on pressure ulcer prevalence and stages. Int Wound J. 2023;20(6):2037-2052.
- Wan CS, Cheng H, Musgrave-Takeda M, et al. Barriers and facilitators to implementing pressure injury prevention and management guidelines in acute care: a mixed-methods systematic review. Int J Nurs Stud. 2023;145:104557.