

Pressure Ulcer Risk Assessment and Prevention Practices Compliances Among Nurses Working in Critical Care Units: A Clinical Audit

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ABSTRACT

Background

Pressure injuries are among the most common preventable complications affecting hospitalized patients, particularly those admitted to intensive care units (ICUs). Critically ill patients are highly susceptible due to prolonged immobility, mechanical ventilation, hemodynamic instability, impaired nutrition, and prolonged hospitalization. Despite the availability of evidence-based guidelines, compliance with pressure ulcer prevention practices remains variable. Clinical audit is an effective quality-improvement strategy that evaluates adherence to established standards and identifies areas requiring improvement.

Objectives

1. To assess compliance with pressure ulcer risk assessment practices among nurses working in critical care units.
2. To assess compliance with pressure ulcer prevention practices among nurses working in critical care units.
3. To assess pressure injury outcomes among patients admitted to critical care units.

Methodology

A quantitative descriptive cross-sectional clinical audit design was adopted. The study was conducted among 90 nurses and 53 patients in selected critical care units of a tertiary care teaching hospital. Total enumeration sampling was used. Data were collected using a structured observation checklist for pressure ulcer risk assessment, a structured observation checklist for pressure ulcer prevention practices, and a structured rating scale for pressure injury outcomes. Reliability of the tools was established through inter-rater reliability ($r=0.80$). Data were analyzed using descriptive and inferential statistics.

Results

Overall compliance with pressure ulcer risk assessment practices was observed among 74.4% of nurses, whereas 25.6% were non-compliant. Good compliance was demonstrated by 53.3% of nurses, average compliance by

36.7%, and poor compliance by 10.0%. Highest compliance was observed in risk scoring and intervention implementation (81.1%), whereas lower compliance was noted in documentation and reassessment activities. Compliance with preventive practices was highest in skin care and moisture management (82.4%) and lowest in the use of protective devices and positioning aids (68.8%).

Conclusion

Although overall compliance was satisfactory, deficiencies were identified in documentation, reassessment, nutritional evaluation, and preventive equipment utilization. Continuous education, regular audits, adequate staffing, and reinforcement of evidence-based protocols are recommended to improve patient outcomes and reduce pressure injury incidence.

Keywords: Pressure Injury, Pressure Ulcer, Clinical Audit, Critical Care Nursing, Compliance, Risk Assessment, Prevention.

1. INTRODUCTION

Pressure injuries are localized damage to the skin and underlying soft tissues that occur as a result of prolonged pressure or pressure combined with shear forces. They frequently develop over bony prominences and are recognized as major indicators of healthcare quality and patient safety.¹

Pressure injuries continue to represent a significant burden on healthcare systems worldwide. Their occurrence is associated with increased morbidity, mortality, prolonged hospitalization, reduced quality of life, and substantial healthcare expenditure². Critically ill patients are particularly vulnerable because of immobility, sedation, mechanical ventilation, vasopressor therapy, impaired tissue perfusion, and nutritional deficiencies³.

The prevalence of pressure injuries in intensive care units remains significantly higher than in general wards. International studies have reported pressure injury prevalence rates ranging from 16% to 27% among critically ill patients⁴. These injuries are often preventable through timely risk assessment and implementation of evidence-based preventive interventions.

Nurses play a crucial role in pressure injury prevention through regular risk assessment, skin inspection, repositioning, moisture management, nutritional support, and use of pressure relieving devices⁵. International guidelines developed by the National Pressure Injury Advisory Panel (NPIAP), European Pressure Ulcer Advisory Panel (EPUAP), and Registered Nurses' Association of Ontario (RNAO) emphasize the importance of comprehensive preventive strategies^{1,5}.

Despite the availability of evidence-based recommendations, compliance with preventive measures remains inconsistent due to inadequate staffing, lack of resources, insufficient training, and organizational barriers^{6,7}. Clinical audit is a systematic process used to evaluate clinical practice against established standards and identify opportunities for quality improvement⁸.

Therefore, the present study was undertaken to assess compliance with pressure ulcer risk assessment and prevention practices among nurses working in critical care units.

2. NEED FOR THE STUDY

Pressure injuries remain among the most common hospital-acquired complications and are largely preventable through effective nursing care. The occurrence of pressure injuries is often considered a quality indicator reflecting nursing performance and patient safety standards².

Evidence indicates that compliance with pressure injury prevention protocols significantly reduces the incidence of pressure injuries and improves patient outcomes⁹. However, studies continue to report variability in adherence to recommended prevention strategies among healthcare professionals¹⁰.

A clinical audit was considered necessary to evaluate current practices, identify deficiencies, and provide evidence for quality improvement initiatives in the selected setting.

3. OBJECTIVES

1. To assess compliance with pressure ulcer risk assessment practices among nurses working in critical care units.
2. To assess compliance with pressure ulcer prevention practices among nurses working in critical care units.
3. To assess pressure injury outcomes among patients admitted to critical care units.

4. MATERIALS AND METHODS

Research Approach

Quantitative research approach is done to assess nurses' compliance to pressure injury risk assessment and prevention practices on patients admitted in critical care units

Research Design

Descriptive cross-sectional clinical audit design is done to assess nurses pressure injury risk assessment and prevention practices and a structured rating scale for assessing pressure injury outcome Among patients.

Research Setting

The study was conducted in selected critical care units of a tertiary care teaching hospital, including Medical ICU, Surgical ICU, Cardiac Care Unit, and Emergency ICU.

Population

The population comprised of nurses working in critical care units and patients admitted to these units.

Sample

- Nurses (n = 90)
- Patients (n = 53)

Sampling Technique

Total enumeration sampling technique.

Inclusion Criteria

- Registered nurses working in critical care units.
- Minimum six months of ICU experience.
- Willingness to participate.

Data Collection Tools

Tool I

Structured Observation Checklist for assessing Pressure Ulcer Risk Assessment Among nurses Working in the Selected Critical Care Units.

Tool II

Structured Observation Checklist for assessing Pressure Ulcer Prevention Practices Among Nurses Working in the Selected Critical Care Units.

Tool III

Structured Rating Scale for assessing Pressure Injury Outcomes Among Patients Admitted to the Selected Critical Care Units.

Validity and Reliability

The instruments were validated by a panel of experts from nursing and medical specialties. Reliability was established using inter-rater reliability and yielded a coefficient of 0.80, indicating acceptable reliability.

Ethical Considerations

Ethical approval was obtained from the Institutional Ethics Committee. Written informed consent was obtained from all participants. Confidentiality and anonymity were maintained throughout the study.

Statistical Analysis

Data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics. Statistical significance was considered at $p < 0.05$.

5. RESULTS

Table 1. Demographic Characteristics of Nurses (n= 90)

Variable	Frequency (%)
Age 21–25 years	52.2
Female	90.0
B.Sc. Nursing	44.4
Experience 1–5 years	70.0
Previous Training	100.0

Table 2. Overall Compliance with Pressure Ulcer Risk Assessment (n = 90)

Compliance Status	Frequency	Percentage
Compliant	67	74.4
Non-Compliant	23	25.6

Table 3. Level of Compliance (n = 90)

Level	Frequency	Percentage
Good	48	53.3
Average	33	36.7
Poor	9	10.0

Table 4. Compliance with Risk Assessment Activities (n = 90)

Activity	Compliance (%)
Correct Subscale Scoring	81.1
Correct Total Score Calculation	80.0
Appropriate Intervention Implementation	80.0
Documentation	71.1
Nutritional Assessment	70.0
Assessment Within 6 Hours	66.7

Table 5. Compliance with Prevention Practices (n = 90)

Prevention Domain	Compliance (%)
Skin Care & Moisture Management	82.4
Patient Education	76.0
Repositioning & Mobilization	72.2
Pressure Relieving Surfaces	72.0
Nutrition & Hydration	70.3
Protective Devices & Positioning Aids	68.8

6. DISCUSSION

The present study demonstrated that 74.4% of nurses complied with pressure ulcer risk assessment standards. This finding indicates satisfactory adherence to evidence-based recommendations and is consistent with previous studies conducted in intensive care settings ^{10,11}.

The highest compliance was observed in risk assessment scoring and intervention implementation. Similar findings have been reported by Beeckman et al. ¹², who found that nurses demonstrated adequate knowledge regarding pressure injury assessment tools.

Documentation and reassessment activities showed comparatively lower compliance. Similar barriers have been identified in previous studies, including heavy workload, inadequate staffing, and competing clinical priorities ^{6,13}.

Among prevention practices, skin care and moisture management achieved the highest compliance rates. This finding is consistent with the literature demonstrating that routine nursing interventions are more consistently implemented than resource-dependent interventions such as specialized support surfaces and positioning devices ¹⁴.

The findings emphasize the need for continuous professional education, adequate staffing, regular audits, and organizational support to strengthen pressure injury prevention practices and improve patient outcomes.

7. LIMITATIONS

1. The study was conducted in a single tertiary care hospital.
2. The sample size was limited to one institution.
3. Observation-based assessment may have influenced participant behavior.

8. CONCLUSION

The present clinical audit demonstrated satisfactory compliance with pressure ulcer risk assessment and prevention practices among nurses working in critical care units. However, deficiencies remain in documentation, reassessment, nutritional evaluation, and utilization of preventive equipment. Continuous professional development, regular clinical audits, adequate staffing, and reinforcement of evidence-based guidelines are necessary to improve compliance and reduce pressure injury incidence.

The investigator expresses sincere gratitude to the management of selected tertiary care hospital, research guide, faculty members, nursing staff, and study participants for their cooperation and support throughout the study.

ETHICAL CLEARANCE

Ethical clearance was obtained from the Institutional Ethics Committee before commencement of the study.

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