

KNOWLEDGE AND ATTITUDES OF NURSES TOWARD PRESSURE ULCER PREVENTION IN A TERTIARY CARE HOSPITAL IN ISLAMABAD: A DESCRIPTIVE CROSS-SECTIONAL STUDY

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Abstract

Background: Pressure ulcers are a preventable source of pain, infection risk, prolonged admission and additional cost. Nurses are central to risk assessment and delivery of preventive care, but positive attitudes do not necessarily indicate accurate knowledge or consistent practice.

Objective: To describe registered nurses' knowledge-related responses, attitudes and self-reported practices concerning pressure ulcer prevention in a tertiary care hospital in Islamabad.

Methodology: A descriptive cross-sectional survey was conducted over four months among 20 registered nurses recruited by census sampling. A structured questionnaire collected demographic information and item-level responses about risk assessment, risk factors, staging, repositioning, perceived importance, confidence and preventive practice. Data were analyzed in SPSS using frequencies and percentages. Ethical exemption was granted by the Islamabad Medical and Dental College Institutional Research and Ethical Board, and written informed consent was obtained.

Results: Fourteen participants (70%) were women, 14 (70%) were aged 20-30 years, 13 (65%) had 1-5 years of experience and 13 (65%) worked in intensive care. Twelve nurses (60%) selected daily risk assessment and seven (35%) selected assessment every shift. Fifteen (75%) selected four numbered pressure ulcer stages, and all 20 selected frequent repositioning as the most effective preventive measure. However, 19 (95%) selected immobility when asked which option was not a primary risk factor; none selected high blood pressure, the intended answer. All nurses rated prevention as important or very important and described themselves as confident or very confident. Nineteen (95%) reported implementing preventive measures always or often.

Conclusion: The sample expressed strong perceived importance and confidence, but item-level responses exposed important inconsistencies in risk knowledge. Because the questionnaire did not produce validated composite scores, the study cannot support a precise overall knowledge or attitude classification. Larger multicentre studies should use validated instruments and direct practice audits.

1. INTRODUCTION

Pressure ulcers, known alternatively as pressure injury, refer to tissue damage that occurs due to persistent pressure or pressure and shear. It most commonly occurs over a bony area but may also occur in the areas affected by medical devices. The current international guidance on pressure injury prevention considers it as a process-based clinical activity consisting of risk assessment, skin and tissue assessment, repositioning and mobilization, support surfaces, moisture management, nutrition, and pressure management for medical devices [1]. This strategy is crucial since there is no singular activity that would prevent all possible routes of occurrence of tissue damage.

The burden of pressure injury is high. Systematic review and meta-analysis of hospitalized adults identified the pooled prevalence of pressure injuries at 12.8%, and the rate of acquisition of pressure injuries at 8.4% [2]. Pressure ulcers can lead to pain, infections, reduced mobility, and extended hospital stays. Moreover, their treatment uses health care professionals' efforts, dressing material, support surfaces, and other materials. Systematic review of economic literature identified significant costs associated with prevention and treatment of pressure injuries, where treatment costs were increasing with injury severity [3]. Prevention is therefore both a patient-safety responsibility and a resource-management priority.

The risk of pressure changes rather than being constant from admission. Mobility limitations, sensory impairments, perfusion problems, moisture, malnutrition, use of devices, and changes in clinical status are factors which can increase the patient's risk of pressure injuries during the same admission [1]. The completed risk assessment tool is just the first step in proper assessment. Nurses should integrate the results of assessment with clinical reasoning, observe the skin and tissues, detect any changes in early stage, and revise the prevention strategy if needed. It means that accurate conceptual knowledge is very important: the nurse can complete all the paperwork and does not know why the patient is still at risk.

Nurses have good opportunities for preventing pressure injuries due to their repeated

assessments, planning positions, providing skin care, monitoring nutritional and hydration status of the patient, and communicating changes in the clinical status. However, access to the guideline does not ensure its proper implementation. The results of the updated meta-analysis, using Pressure Ulcer Knowledge Assessment Tool, showed that the knowledge score was 51.5% among nurses. In other words, nurses still lack a lot of knowledge [4]. In contrast, most attitude studies show that nurses view prevention of pressure injuries as an important activity despite poor scores or care quality.

The data available from Pakistan are sparse and dependent on context and methodology used. For instance, a study conducted in 2025 involving 200 nurses working in a tertiary care hospital located in Faisalabad described generally favorable scores of knowledges, attitude and practice, though it highlighted areas of deficiency and suggested further education [5]. Local and smaller-scale studies may be helpful for service planning if their findings are not generalized outside the institution where samples have been collected. Data pertaining to Islamabad is sparse. This study has been planned to understand the views of registered nurses regarding pressure ulcers in a tertiary care hospital in Islamabad.

2. LITERATURE REVIEW

Accurate measurement is one of the basic prerequisites for treating knowledge and attitudes as variables of interest in any research. Beeckman et al. designed a questionnaire measuring knowledge on pressure ulcers and including their causation, classification, risk assessment, nutritional considerations, and preventive interventions [6]. The subsequent PUKAT 2.0 also had a multidimensional structure and was demonstrated to be content valid and discriminative with respect to expertise levels [7]. It is also important to measure attitudes through structured questions. An instrument called the Attitude towards Pressure Ulcer Prevention was designed to assess one's sense of competence, priority, impact, responsibility, and confidence in

prevention [8]. Such instruments allow obtaining comparable scores.

International studies show that there is a persistent discrepancy between the favourable beliefs people may have about pressure ulcers and knowledge of the issue. For example, in a survey of 11,347 nurses in 93 Chinese hospitals, the median level of knowledge was 51%, while the attitudes were relatively positive, and professional and training factors affected both variables [9]. At the same time, in a national survey in Kuwait, the median level of knowledge was 73.2%, and the median attitude score was positive, however, positive attitudes did not consistently affect prevention compliance and pressure injury rates [10]. Australian multisite data are also available on this topic [11]. Workplace conditions also affect whether knowledge is translated into care. Nurses in public hospitals in Wollega demonstrated uneven knowledge across prevention domains, leading the authors to recommend regular and adequate training [12]. In Addis Ababa, heavy workload, inadequate staffing, shortages of equipment and inadequate training were frequently reported barriers [13]. Such findings explain why self-reported commitment can coexist with inconsistent delivery. They also show why an educational response alone may be insufficient if staffing, support surfaces, documentation systems and managerial follow-up are weak.

Evaluation of training should go beyond attendance. A training programme might enhance nurses' test results in the short term but leave their bedside performance unchanged if they do not have appropriate tools, cues and feedback. Effective evaluation requires the use of a tested knowledge assessment tool, an attitude scale, chart review or direct observation, and a patient outcome indicator. Follow-up testing after training is also essential since knowledge diminishes in the absence of continued education reinforcement. This multilevel process distinguishes between the information nurses have, their attitudes, self-reported behaviour, and actual performance.

Prevention should be evidence-based as well. Repositioning is a key element of care, but there is no universal ideal frequency for repositioning. According to a Cochrane review,

the evidence on comparison of different repositioning frequencies and positions is of low or very low certainty [14]. It means that the schedule should be individually tailored depending on risks, skin reaction, mobility, comfort level, patient's condition and type of support surface, and followed up after any changes in the patient's state [1]. A synthesis of all Cochrane reviews identified repositioning, nutrition and support surfaces as key preventive elements; however, limitations in the quality of trials have been revealed [15]. These facts are important for survey development: questions that provide only one option for repositioning or other preventive interventions can distort reality.

Literature indicates that three issues should be taken into account in this study: knowledge of prevention is multi-faceted and cannot be inferred from confidence level; positive attitudes are good, but they do not guarantee competent practice; local surveys are helpful in detecting topics for improvement, but valid tools, representative samples and practice-based outcome measures are essential before any conclusions.

3. METHODOLOGY

A descriptive cross-sectional survey was conducted in one tertiary care hospital in Islamabad over four months. The design was selected to provide a snapshot of nurses' responses at the time of data collection. It was not designed to estimate pressure ulcer prevalence, observe clinical care or determine causal relationships.

The study population comprised registered nurses working in the hospital participating. Twenty nurses were included through census sampling of the accessible group. Participation was voluntary. The source report did not document a separate sample-size calculation, a response rate, detailed eligibility criteria or the total number of nurses employed in the institution. These omissions limit assessment of selection bias and coverage.

The self-administered questionnaire contained four demographic questions, four knowledge-related multiple-choice questions, three attitude or self-reported practice questions and three open-ended questions. Demographic items

covered age, sex, nursing experience and department. Knowledge-related items addressed risk-assessment frequency, risk factors, the number of numbered stages and the most effective preventive measure. Attitude and practice items addressed perceived importance, confidence and frequency of implementing prevention. Although the source report described the questionnaire as based on validated tools, it did not identify a validation study, scoring rule, reliability statistic or cut-off for the final instrument. Accordingly, this manuscript reports individual items and does not assign overall knowledge or attitude levels. Questionnaires were distributed during nurses' shifts after written informed consent. Responses were entered into SPSS and summarised with frequencies and percentages. No inferential tests were performed because the sample was small and the study objective was descriptive. Open-ended responses and their coding were not available in the source results; they were therefore not presented as qualitative findings.

The Islamabad Medical and Dental College Institutional Research and Ethical Board issued a Category II exemption certificate on 21 November 2024 (No. 175/IMDC/IREB-2024). The certificate required written informed consent and maintenance of anonymity and confidentiality. No participant identifiers are reported in this manuscript.

4. ANALYSIS AND DISCUSSION

4.1 RESULTS

A total of 20 registered nurses participated in the study. The majority (n = 14, 70%) were aged 20–30 years, 25% (n = 5) were aged 31–40 years and 5% (n = 1) were aged 41–50 years. Females constituted 70% (n = 14) of the sample and males 30% (n = 6). With respect to professional experience, 65% (n = 13) had 1–5 years of experience, 20% (n = 4) had 6–10 years, 10% (n = 2) had less than one year and 5% (n = 1) had more than 10 years. Most participants worked in the intensive care unit (n = 13, 65%), followed by surgical units (n = 5, 25%) and medical units (n = 2, 10%).

Table 1. Demographic and professional characteristics of participants (N = 20)

Characteristic	Category	n	%
Age (years)	20-30	14	70.0
	31-40	5	25.0
	41-50	1	5.0
Sex	Male	6	30.0
	Female	14	70.0
Nursing experience	Less than 1 year	2	10.0
	1-5 years	13	65.0
	6-10 years	4	20.0
	More than 10 years	1	5.0
Department	Medical	2	10.0
	Surgical	5	25.0
	Intensive care	13	65.0

When asked how often pressure-ulcer risk assessments should be conducted, 60% (n = 12) answered “daily,” 35% (n = 7) answered “every shift,” and 5% (n = 1) answered “weekly” (Table

5). Regarding primary risk factors, 95% (n = 19) incorrectly identified immobility as not being a primary risk factor, while only 5% (n = 1) selected poor nutrition (Table 6). Knowledge of

staging was better: 75% (n = 15) correctly stated that there are four stages according to the NPUAP/EPUAP classification, whereas 25% (n = 5) answered three stages (Table 7). All 20

participants (100%) correctly identified frequent repositioning of patients as the most effective preventive measure.

Table 2. Knowledge-related questionnaire responses (N = 20)

Item	Response	n	%
Risk assessment frequency	Every shift	7	35.0
	Daily	12	60.0
	Weekly	1	5.0
Option selected as NOT a primary risk factor	Immobility	19	95.0
	Poor nutrition	1	5.0
Number of stages selected	3	5	25.0
	4	15	75.0
Most effective preventive measure	Frequent repositioning	20	100.0

All respondents regarded pressure-ulcer prevention as important: 40% (n = 8) rated it “very important” and 60% (n = 12) “important” (Table 9). Self-reported confidence was high—75% (n = 15) described themselves as

“confident” and 25% (n = 5) as “very confident” (Table 10). In daily practice, 50% (n = 10) reported always implementing preventive measures, 45% (n = 9) often, and 5% (n = 1) sometimes.

Table 3. Attitude and self-reported practice responses (N = 20)

Item	Response	n	%
Importance of prevention	Very important	8	40.0
	Important	12	60.0
Confidence in ability to prevent	Very confident	5	25.0
	Confident	15	75.0
Implementation of preventive measures	Always	10	50.0
	Often	9	45.0
	Sometimes	1	5.0

4.2 DISCUSSION

The participants tended to be young nurses with little experience. Fourteen (70%) respondents were 20-30 years old, while 13 (65%) respondents had experience of one to five years in nursing. There were women accounting for 70% of all respondents. In terms of departments, most respondents were

intensive care nurses (65%), then – surgical nurses (25%) and medical nurses (10%). Such proportion of respondents is clinically significant since patients of the intensive care unit usually suffer from immobility, hemodynamic instability, sedation, and the presence of various devices, which increase the risk of pressure injuries. But it is impossible to

compare the results of research by any criteria due to the small size of the sample.

Twelve (60%) nurses chose daily assessment, seven (35%) nurses chose every shift assessment, and one (5%) nurse chose weekly assessment. But such answers cannot be prioritized according to a uniform universal schedule. It is necessary to conduct assessment upon admission, on a regular basis and after the change in the patient's clinical state, which depends on the setting and the patient [1]. The risk-factor item revealed the most serious concern. The questionnaire asked which option was not a primary risk factor and offered immobility, poor nutrition, high blood pressure and incontinence. Nineteen nurses (95%) selected immobility and one (5%) selected poor nutrition; none selected high blood pressure, the intended answer. Immobility, poor nutritional status and moisture or incontinence are all established considerations in risk assessment [1]. If the labels and coding are correct, the responses indicate a major misconception. Because the source dataset and coding log were not available for audit, a coding or labelling error cannot be excluded. This item should be checked against the original questionnaires before publication.

Fourteen nurses (70%) picked four as the number of pressure ulcer stages, whereas six (30%) nurses chose three. Four numbered stages have been included in the widely used classification, as well as the category of unstageable pressure injury and deep tissue pressure injury [16]. In future surveys, wording must be adjusted, because now respondents will answer the question about total number of categories, including unstageable and deep tissue pressure injuries. All 20 nurses picked frequent repositioning as the best choice among those offered. It illustrates awareness of an essential preventive action; however, it does not mean the understanding of individualized schedules, safe positions, offloading, support surfaces, nutrition, and skin care.

Every participant evaluated the importance of pressure ulcers' prevention as important or very important. All participants assessed their skills in pressure ulcers' prevention as good and very good. Ten nurses (50%) reported to perform preventive actions always, nine (45%) -

frequently, and only one (5%) nurse - sometimes. These results illustrate high level of priority and self-efficacy. They are like the results of large international research where attitudes were more positive than knowledge [9,10]. Nevertheless, these indicators can be influenced by social-desirability bias. Therefore, they cannot be considered as evidence of compliance with guidelines and low-pressure injury rate. Comparison with previous evidence. The item-level inconsistencies found in Islamabad sit within a broader literature showing that pressure injury prevention knowledge remains incomplete. The pooled PUKAT knowledge estimate of 51.5% [4] and the 51% median score among Chinese nurses [9] indicate that gaps are not confined to one country. Pakistani evidence is mixed. The Faisalabad study reported strong agreement with several knowledge and practice statements but still called for continuing education [5]. Differences between studies may reflect genuine variation, but they also arise from different instruments, scoring thresholds, sampling methods and response formats. Direct comparison with the current survey is therefore limited.

The immediate priority is not a generic lecture. The hospital should first audit the disputed risk-factor item against original questionnaires and then conduct a short assessment with a validated tool such as PUKAT 2.0 [7]. Training should target demonstrated weak domains, particularly risk assessment, classification, reassessment after clinical change, device-related injury, moisture management, nutrition, repositioning and heel offloading. Education should be paired with practical supports: an agreed risk-assessment pathway, bedside prevention plans, access to appropriate support surfaces, clear documentation and periodic audit with feedback. Barriers such as staffing and equipment shortages should be measured rather than assumed, because other settings have shown that these factors can obstruct implementation even when attitudes are positive [13].

A real-world change process might include the use of PUKAT 2.0 and attitude tests as the starting point, followed by ward teaching through case studies and demonstrations.

Nurses can check whether there are admission tests, skin checks, repositioning schedules, heel offloading and monitoring of devices noted down in the files of patients at high risk. Feedback needs to be provided at ward level, without singling out individuals. Knowledge assessment and audit of practice need to be repeated after implementation of the changes. Incidence of pressure injuries can be assessed as a service outcome, yet case-mix, pressure injuries on admission and reliability of staging need to be considered in comparison of wards. Limitations of the study. The sample of 20 nurses from one hospital is too small for generalization to Islamabad or even Pakistan. Census sampling of an accessible population sample cannot eliminate selection bias without sampling frame and response rate reporting. Psychometric properties and scoring method for the questionnaire used were not reported; only four knowledge questions were included in the survey. Some questions simplified the application of guidelines, while the question about staging was poorly formulated. The study is based on self-report and lacked record inspection and direct observation of nursing practice. Patient outcomes and prevalence of pressure injuries were not measured. There were no open-ended answers for analysis. Finally, cross-sectional study cannot demonstrate causality between knowledge and better practice.

5. CONCLUSION

This single-centre survey found that nurses play importance role in pressure ulcer prevention, expressed confidence and usually reported implementing preventive measures. Knowledge-related responses were less consistent. Most nurses recognised the four numbered stages and all selected repositioning as the strongest option provided, but the risk-factor item produced a potentially serious misconception or coding concern. Because no validated composite score was available, the study cannot legitimately classify overall knowledge as poor, moderate or good.

The findings justify a focused local response: verify the raw data, repeat assessment with validated knowledge and attitude instruments,

provide training based on identified deficits and audit actual preventive care. Future research should recruit a larger multicentre sample, report eligibility and response rates, measure barriers systematically and link nurse-level findings with observed practice and patient outcomes.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

ETHICAL APPROVAL

Category II ethical exemption was granted by the Islamabad Medical and Dental College Institutional Research and Ethical Board (No. 175/IMDC/IREB-2024; 21 November 2024). Written informed consent was obtained from all participants.

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