

## Analysis of Clinical Competencies among Staff Nurses Regarding Pressure Ulcer Management

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### Abstract

Pressure Ulcer (PU) development continues to be a significant issue for at-risk patients. These ulcers are classified as "never events" since they are preventable and should "never" occur. Managing pressure ulcers is considered a sign of quality nursing care, and nurses must possess comprehensive information about the latest evidence-based practices about pressure ulcers. To analyze the clinical competencies regarding pressure ulcer management among staff nurses. A self-administered questionnaire was used in a descriptive, cross-sectional study to analyze the clinical competencies of 74 nurses from Liaquat University Hospital about pressure. The data was analyzed by descriptive statistical methods (frequency and percentage). The total population consisted of 74 staff nurses. Female respondents were 66.2%, and males were 33.8%. Most participants were within the 26-35 age range (43.2%). Work areas encompassed diverse specialties, with significant representation in ICU (16.2%) and medicine (17.6%), among others. Experience levels were also varied, with substantial proportions having 1-5 years (39.2%) and 5-10 years (43.2%) of experience. The study revealed the nurses' capabilities in this area, revealing their strengths and areas needing improvement. By addressing these insights through focused educational programs and training, the quality of patient care and outcomes in pressure ulcer management could be improved. Moreover, initiatives aimed at fostering gender diversity and supporting professional growth, including pursuing advanced degrees, may strengthen the competency of nursing staff in this vital aspect of patient care.

**Keywords:** Managing Pressure, Health Management, Staff Training.

### Introduction

Pressure ulcers (PUs) remain a major complication of extended hospitalization, particularly in situations including inadequate diet, excessive skin wetness (such as incontinence), sustained pressure, and diminished sensory perception. People with medical issues that limit their ability to modify positions require the use of a wheelchair or limit them to a bed for an extended amount of time, particularly at risk of developing pressure ulcers. When the applied pressure is greater than the local capillary pressure, pressure ulcers develop. Even low pressure may be enough, depending

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on the extent to which a patient's health is to reduce blood flow through capillaries and restrict the amount of oxygen that reaches the tissues (1). It is frequently viewed that either having or lacking pressure ulcers indicates the standard of nursing care. Nurses need to be knowledgeable in pressure ulcer prevention strategies to manage the issues that might occur. Preventing pressure ulcers is a collective responsibility of healthcare professionals involved in the care of patients, who need adequate expertise, performance, and competencies to provide nursing care that will be effective. In acute care settings, pressure ulcer management is a key quality indicator, driving the development and implementation of protocols, staff education, formation of quality improvement teams, risk and nutritional status assessments, skin care provision, and thorough documentation (2). National healthcare strategic plans prioritize pressure ulcer management guidelines as core components, providing evidence-based instructions to ensure appropriate clinical practice consistency among nurses (3). Nurses must follow various preventive measures outlined in national guidelines, and their attitudes toward pressure ulcer management significantly impact their practices. Positive attitudes are associated with a higher likelihood of implementing preventive measures (4). The anticipation of ulcers due to pressure by nurses involves their attitudes towards assessing risks, keeping the skin well, controlling physical burdens, and teaching clients and their family members. Attitudes are learned and influenced by knowledge and behavioral intent, exhibiting favorable or unfavorable attitudes about a person, problem, or item. Adopting favorable approaches towards a problem is more likely when one has a good attitude (5). According to the European Pressure Ulcer Advisory Panel (EPUAP), a pressure ulcer is a localized damage to the skin and underlying tissue resulting from pressure, shear, friction, or a combination of these factors (6). The National Pressure Ulcer Advisory Panel (NPUAP) in 1989 categorized pressure ulcers into four stages (7). Risk factors linked to the development of pressure ulcers include being 70 years or older, currently smoking, dry skin, low body mass index, impaired mobility, altered mental status (such as confusion), urinary and faecal incontinence, malnutrition, use of physical restraints, history of pressure ulcers, presence of malignancy, and being of Caucasian descent (8). Repositioning is the most commonly recorded preventive action for pressure ulcer management (9). A cross-sectional survey conducted among 248 nurses in Gondar University Hospital using an instrument developed by authors reported that more than half (54.4%) had good knowledge of pressure ulcer prevention (10). However, to prevent a patient from pressure ulcers, it is the responsibility of all healthcare professionals (11). In many pieces of literature, nurses do not adhere to best practice guidelines, reflecting their lack of awareness and understanding (12). There is a need for regular skin inspection, with the frequency adjusted based on individual needs (13). Dry, flaky, or scaly skin should be treated with topical moisturizers to restore hydration (14). It's crucial to uphold a consistent skin and body temperature to mitigate the body's metabolic and oxygen demands (15). Specific vitamin deficiencies, such as vitamins A, C, and E, also contribute to pressure ulcer formation by impairing tissue healing and immune response (16). Repositioning is essential for reducing pressure duration; current recommendations suggest frequent turning and repositioning at least every two hours. Maintaining the head of the bed at a 30-degree lateral or supine position alternately is also advised (17, 18, 19). To alleviate heel pressure, placing pillows or foam under the lower leg or using standard heel protectors can help reduce shear and friction force (20). Research indicates that nurses with a university education and specialized training demonstrate a better understanding and implementation of pressure ulcer management practices (21). Studies have shown that wound care nurses achieve higher scores in understanding pressure ulcers than non-specialized nurses (22). Adequate resources, such as access to literature, specialized equipment, and evidence-based guidelines, are essential for nurses to

implement optimal pressure ulcer prevention and management practices (23).

### Objectives

- To analyze the clinical competencies regarding pressure ulcer management among Liaquat University Hospital Hyderabad staff nurses.

### Methodology

A pressure ulcer is the most common cause of infection, especially in public hospitals. Therefore, a cross-sectional study was carried out at Liaquat University Hospital Hyderabad. The target population was male and female staff nurses at Liaquat University Hospital Hyderabad. Ninety staff nurses were working at the hospital in total. Seventy-four staff nurses from the hospital were chosen to participate in the study through Non-Probability. A well-structured questionnaire, consisting of three sections, was adopted to gather the data. Section A collects sociodemographic data such as years of experience, education, work area, gender, and marital status. Section B contains ten questions assessing knowledge, while Section C comprises ten questions on practice-based aspects.

### Ethical Considerations

- Written informed consent was obtained from each participant.
- Permission granted from medical superintendent LUH.
- Each participant maintained confidentiality.

### Results

#### Demographic analysis

**Table 1: Classification of gender**

Categories	Frequency	Percentage
Male	25	33.8
Female	49	66.2
Total	74	100.0

Table demonstrates that female were 66.2% (n=49) while males account for 33.8% (n=25). It shows that majority of staff nurses working at Liaquat University Hospital were female.

**Table 2: Classification of age**

Categories	Frequency	Percentage
20-25 Years	6	8.1
26-30 Years	32	43.2
31-35 Years	20	27.0
36-40 Years	11	14.9
Above 40 Years	5	6.8
Total	74	100.0

Table shows that 43.2% (n=32) respondents were 26-30 years old, 27.0% (n=20) were 31-35 years of age, while those between 36-40 years were 14.9 % (n=11). Participants aged 20-25 years account for 8.1% (n=6), and those above 40 years represent 6.8% (n=5) of the total sample.

**Table 3: Classification of qualification**

Categories	Frequency	Percentage
Diploma	26	35.1
Post RN BSN	21	28.4
BSN	27	36.5
MSN	0	0.0
Total	74	100.0

Table 3 shows that 35.1% (n=26) of the participants hold a diploma, 28.4% (n=21) who have completed a Post RN BSN program. Those with a Bachelor of Science in Nursing (BSN) degree account for 36.5% (n=27) and no participant in was a Master of Science in Nursing (MSN) degree.

**Table 4: Participants' level of understanding**

Statement		Yes	No	Don't Know	Mean	St. Devi.
Risk factors of pressure ulcer are immobility, incontinence, impaired nutrition & altered level of consciousness?	Freq	49	6	19	1.59	.875
	%	66.2	8.1	25.7		
The first sign of pressure ulcer development is open sore?	Freq	26	34	14	1.84	.722
	%	35.1	45.9	18.9		
Patient's skin should be clean and dry to prevent risk of pressure ulcer development?	Freq	51	15	8	1.42	.683
	%	68.9	20.3	10.8		
It is important to massage over bony prominence?	Freq	39	26	9	1.59	.701
	%	52.7	35.1	12.2		
Heel ulcer is prevented by putting pillow under the patient's leg?	Freq	52	13	9	1.42	.702
	%	70.3	17.6	12.2		
Person confined to bed should be repositioned every three hours?	Freq	22	44	8	1.81	.612
	%	29.7	59.5	10.8		
Friction may occur when moving a person up in bed?	Freq	57	7	10	1.36	.713
	%	77.0	9.5	13.5		
A Braden scale is risk assessment tool used for assessing pressure ulcer?	Freq	57	8	9	1.35	.691
	%	77.0	10.8	12.2		
Adequate dietary intake of Proteins & calories are important to maintain skin integrity?	Freq	59	7	8	1.31	.661
	%	79.7	9.5	10.8		
Attending educational programs on pressure ulcer management is important for nurses?	Freq	46	16	12	1.54	.762
	%	62.2	21.6	16.2		

Table shows the participants' knowledge regarding pressure ulcer management, including their responses to ten statements. The data shows that, on average, 66.2% of participants correctly identified risk factors include inadequate dietary intake, altered perception, fecal and urinary incontinence, and immobilization. Participants displayed varying levels of awareness across statements, with mean percentages ranging from 35.1% to 79.7%. While 35.1% correctly recognized the appearance of an open wound as the earliest indication of a pressure ulcer, 79.7% acknowledged the importance of adequate dietary intake of proteins and calories to maintain skin integrity. The mean scores, ranging from 1.31 to 1.84, provide insight into the overall agreement level among participants, with lower scores indicating less consensus and higher scores indicating

stronger agreement. The standard deviations, ranging from 0.612 to 0.875, highlight the degree of variability in responses around the mean, indicating the level of dispersion or agreement within the participant group.

**Table 5: Participant's practice**

Statement		Always	Sometimes	Never	Mean	St. Devi.
I do skin assessment guided by a standard nursing care available in my hospital.	Freq	51	14	9	1.43	.704
	%	68.9	18.9	12.2		
I use an assessment scale to assess pressure ulcer.	Freq	44	13	17	1.64	.837
	%	59.5	17.6	23.0		
I place the pillow under patient's leg to prevent heel ulcer.	Freq	38	9	27	1.85	.932
	%	51.4	12.2	36.5		
I Monitor protein and calorie diet for patients who are bed ridden.	Freq	50	20	4	1.38	.590
	%	67.6	27.0	5.4		
I avoid dragging the patients during repositioning.	Freq	28	38	8	1.73	.647
	%	37.8	51.4	10.8		
I use special mattress to prevent pressure loadings, such as foam, air.	Freq	38	34	2	1.51	.555
	%	51.4	45.9	2.7		
I avoid massage over patient's bony prominence to prevent pressure ulcer formation.	Freq	32	37	5	1.64	.610
	%	43.2	50.0	6.8		
I turn the patient's position every two hourly.	Freq	39	16	19	1.73	.849
	%	52.7	21.6	25.7		
I document all data related to pressure ulcer assessment.	Freq	28	21	25	1.96	.851
	%	37.8	28.4	33.8		
I attend seminars for pressure ulcer management.	Freq	24	18	32	2.11	.869
	%	32.4	24.3	43.2		

The table shows that the majority of participants reported consistent adherence to specific preventive measures. For instance, a significant proportion (68.9%) indicated that they always conduct skin assessments based on the standard nursing care that the facility provides. Similarly, 67.6% reported monitoring bedridden patients' protein and calorie intake, and 59.5% used assessment scales to assess pressure ulcers. However, there were areas where practices were less consistent. Only 37.8% of participants always recorded any information regarding the pressure ulcer evaluation. And fewer (32.4%) always attend seminars for pressure ulcer management.

## Discussion

Most participants in the research were knowledgeable and had effective understanding and experience; however, some held certain misinterpretations. The demographic analysis revealed several key findings regarding the characteristics of the participants in the study. The gender distribution skewed towards females (66.2%) suggests a predominance of female nurses, possibly reflective of broader trends in the nursing profession (10). The age distribution showed that most responders were 26-35 years (43.2%), followed by 31-35 years (27.0%). The age distribution indicates a relatively young demographic, with a majority falling within the late twenties to mid-thirties range (43.2%). This trend may have implications for professional development initiatives



within the healthcare setting (1, 5). The varied educational qualifications of participants, with a significant proportion holding Bachelor of Science in Nursing (BSN) degrees (36.5%) and diplomas (35.1%), underscore the diverse academic backgrounds within the nursing workforce. The absence of participants with Master of Science in Nursing (MSN) degrees highlights a potential gap in representation at the master's level, which could be explored further in future research (24). In terms of the area of work, notable proportions of participants working in ICU (16.2%), Medicine (17.6%), Surgery (10.8%), Orthopedics (12.2%) and a significant percentage (35.1%) fell under the "Others" category, indicating a wide spectrum of areas beyond the specified categories. This diversity reflects the multidisciplinary nature of nursing practice and the varied career pathways available to healthcare professionals (21). The experience levels, having 1-5 years (39.2%) and 5-10 years (43.2%) of experience, suggests clinical decision-making and mentorship opportunities within healthcare settings (9). The assessment of participants' knowledge and practices regarding pressure ulcer management highlights both areas of strength and opportunities for improvement. The data suggests that 66.2% of respondents correctly identified pressure ulcer risk factors, including incontinence, inadequate dietary intake, inability to move, and altered perception. This level of awareness aligns with findings from previous studies that reported similar rates of correct identification among staff nurses. There were notable gaps in recognizing the first indication that a pressure ulcer has occurred as an open sore (35.1%) and understanding the necessity of repositioning bedridden patients every three hours were only (29.7%). However, research in Bangladesh revealed that nurses' awareness of pressure ulcer-related variables was inferior to a minimal level. Ugandan research found that nurses' awareness of how often to position patients to prevent pressure ulcers was 98.2%, along with risk factors that might contribute to pressure ulcer development in bedridden patients (1). 68.9% of respondents reported always ensuring cleanliness and dryness of the patient's skin. This finding aligns with established principles in pressure ulcer prevention, emphasizing the importance of maintaining skin integrity (25). However, it is notable that 20.3% of respondents reported sometimes ensuring this aspect, indicating potential variability in practice consistency. Moreover, 10.8% reported never adhering to this practice, which suggests a need for targeted interventions to reinforce the significance of skin hygiene in pressure ulcer prevention. Similar findings were found in Swedish healthcare research that evaluated staff nurses' attitudes, knowledge, and practices on preventing the development of pressure ulcers. Trained nurses illustrated more knowledge than those lacking it. This could result from training improving the possibility that trainees will learn the latest information on pressure ulcer-related preventative measures. 52.7% of respondents believe it is important to massage over bony prominences, while 35.1% disagreed, and 12.2% were uncertain. According to a recent Ethiopian research, nurses believe that massage is an essential part of care for pressure ulcer prevention (1,15). Despite the evidence's recommendation against massage, the participants described it as a prevention approach (26). 70.3% of respondents agreed that placing a pillow under the patient's leg prevents heel ulcers, suggesting a common misconception. This finding is consistent with a study that reported similar misunderstandings among healthcare professionals regarding pressure ulcer prevention techniques (1). Only 29.7% of respondents agreed with repositioning every three hours, indicating a lack of consensus. This contrasts with guidelines from the National Pressure Injury Advisory Panel (NPIAP), which recommends repositioning every two hours (5). 77.0% of respondents acknowledged the risk of friction during patient movement, demonstrating a general awareness of this pressure ulcer risk factor. This finding is consistent with a study emphasizing friction management's importance in pressure ulcer prevention protocols. 77.0% of respondents correctly recognized the Braden scale as a tool for

assessing the risk of pressure ulcers, reflecting a strong understanding of standardized assessment tools. 79.7% of respondents recognized the importance of adequate nutrition for skin integrity, reflecting a consensus among healthcare professionals. This aligns with guidelines from the European Pressure Ulcer Advisory Panel (EPUAP), emphasizing the role of nutrition in pressure ulcer prevention. Similar findings were reported, underscoring the significance of diet in the prevention of pressure ulcers. 62.2% of respondents acknowledged the importance of attending educational programs on pressure ulcer management, recognizing the value of continuous education. This finding is consistent with studies emphasizing the importance of ongoing training and professional development in pressure ulcer management (1, 5). Assessing pressure ulcer management practices among staff nurses reveals varying observance of recommended protocols. Firstly, 68.9% of respondents reported always conducting skin assessments based on the hospital's standard nursing careers. However, only 59.5% reported using assessment scales for pressure ulcer assessment. Furthermore, 67.6% of respondents reported that they always monitored protein and calorie diets for bedridden patients, consistent with guidelines from the European Pressure Ulcer Advisory Panel (1). Only 37.8% reported always avoiding dragging patients during repositioning, highlighting a potential area for improvement. (5,15). While 52.7% reported always turning the patient's position every two hours, there is room for improvement in adherence to repositioning protocols (4). Moreover, only 37.8% reported always recording all information relevant to assessing pressure ulcers, underscoring the importance of thorough documentation practices (6). These findings collectively highlight both areas of alignment and opportunities for improvement in pressure ulcer management practices among healthcare professionals. The analysis of participants' practices revealed varying levels of adherence to pressure ulcer management protocols. While certain practices, such as conducting skin assessments and monitoring dietary intake, demonstrated high levels of adherence, others, such as consistent use of assessment scales and attendance at educational seminars, showed a need for improvement.

## Conclusion

This study concluded that nurses have good knowledge and attitudes but poor practices. This is because hospitals have a massive shortage of nurses. Therefore, it is suggested that management improve nurses' practices by reducing the burden on nurses and providing continuous nursing education services for their professional development. Further, it is suggested that infection control services must be provided for bedside nurses to reduce the chance of pressure ulcers.

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