Assessment of Nurse's Knowledge Regarding Management of Pressure Ulcer in Al-Hillah Teaching Hospital

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ABSTRACT

Background: Pressure ulcers are a significant concern in healthcare, impacting patient well-being and increasing healthcare costs. Nurses play a crucial role in pressure ulcer management, requiring comprehensive knowledge for effective prevention and treatment. The study aimed to assess nurses' knowledge regarding the management of pressure ulcers in Al-Hillah Teaching Hospital.

Methods: A quantitative descriptive study was conducted with 219 nurses. Data was collected using a questionnaire comprising demographic characteristics and multiple-choice questions assessing knowledge of pressure ulcers. Statistical analysis was performed using SPSS version 26.

Results: The study revealed that the majority of nurses were in the 22-31 age group (37.9%), with a balanced gender distribution (52.1% female, 47.9% male). Most nurses had a nursing college education (45.2%), and 52.1% had participated in training courses. The overall knowledge of nurses regarding pressure ulcers was assessed as "fail" (mean score: 1.48). A significant relationship was found between nurses' knowledge and their years of experience (P-value 0.05).

Conclusion: Nurses in Al-Hillah Teaching Hospital demonstrated insufficient knowledge regarding pressure ulcer management. There is a need for continuous education and targeted training programs to enhance their knowledge and improve patient care.

Keywords: Pressure Ulcer; Nurses; Knowledge; Management; Hospital.

1. Introduction:

Pressure ulcers are localized injuries to the skin and/or underlying tissue brought on by pressure or pressure combined with shear, typically over a bony prominence. Individuals with medical conditions that make it difficult for them to shift positions, necessitate the use of a wheelchair, or keep them confined to a bed for an extended period of time are most at risk for developing pressure ulcers (1). According to the tissue layer affected, which can range from skin erythema to injury to muscles and underlying bone, pressure ulcers are divided into four stages that differ in size and degree of tissue damage (1). The emergence of pressure ulcers is influenced by numerous factors. They included extrinsic variables such pressure, shear, friction, dampness, inadequate moving and handling, therapeutic devices, past ulcers, peripheral vascular disorders, diabetes mellitus, smoking, prolonged immobility, poor nutritional status, incontinency, reduced sensibility, and age. Knowledge and attitude of nurses are also considered to be extrinsic factors for the development of pressure ulcers (2). Hospital-acquired pressure ulcers (PUs) were once thought to be inevitable in some cases, but they are now seen as preventable adverse events that have a significant impact on the quality of healthcare. Management of hospital-acquired pressure ulcers (PUs) is a crucial aspect of nursing practice that requires knowledge of risk assessment, prevention, identification, and treatment strategies (3). Pressure ulcers still happen often, and prevalence rates have virtually remained the same for many years despite the existence of worldwide recommendations and substantial evidence addressing their etiology and prevention. The reported prevalence of PU globally ranges from 3.6% to 38% (4). Pressure ulcers are linked to decreased health-related quality of life discomfort as well as higher rates of morbidity and mortality. However, therapy comes with additional charges for the healthcare provider, expenditures for an extended stay, and other expenses that might take up a sizable percentage of the healthcare budget (5). A detailed understanding of nurses' decision making can result in improvement in quality and safety of care that patients receive, as it enables healthcare commissioners and nurse educators to provide nurses with the cognitive strategies and conditions that they need to make the best decisions, a thorough understanding of nurses' decision-making can enhance the quality and safety of the care that patients get (6). Hence, a better understanding of how nurses make decisions regarding the management and prevention of pressure ulcers may enhance the pressure ulcer-related outcomes for patients. In this article, we present the findings of a systematic review that was conducted to investigate the available information regarding how nurses in clinical practice make judgements and decisions regarding the assessment, prevention, grading, and management of pressure ulcers. Hospitals need to invest more resources in the prevention and treatment of pressure ulcers because the systematic review of studies from all care settings, including hospitals and the community, recognized that there may be variations in how assessments and decisions are made in various care contexts. Professionals should also fulfill their obligation to educate staff members continuously about pressure ulcers in nursing and medicine (7). Appropriate incontinence management is used, and protective measures are done to avoid skin damage. They include preventative skincare practices based on concepts of washing, improving the skin's moisture barrier, and routine turning and repositioning (8). Timely and accurate

assessment of pressure ulcers depends on individual need, with education on skin and risk assessment forming a key component (9). The best practices for PU prevention can be promoted by nurses in a powerful way. They must be informed of the pressure ulcer warning signs and symptoms as well as the preventative steps that may be performed to decrease their occurrence as a result (10).

2. Methods:

2.1. Design of the study: A quantitative study descriptive design selected to assess Nurses' Knowledge Regarding management of patient with bed sores from the period from (September, 2024 to May, 2025).

2.2. The Administrative Arrangements: Achieving administrative agreements and ethical considerations are an important step before conducting the study. The researchers get an administrative agreement to obtain permission to conduct the study, these agreements including:
- An official request letter was send from the Faculty of the Nursing / University of Babylon to Hillah Health Directorate to approve the study proposal and agree on interviewing the study sample.
- An official agreement from Babylon Health Directorate; to interview the study sample at Al-Hillah hospital to apply the questionnaire

2.3. Ethical Considerations: Ethical consideration is also important before collecting data in nursing research to preserve the principles of ethics; the goal is to ensure the rights of the researchers and participants. The researcher in the present study used informed consent to protect participant rights.

2.4. Sample of the study: A non-probability purposive sampling approach recruited (219) nurses working at governmental hospitals (Hillah teaching hospital) at Hillah city. These nurses agree to participate in study.

2.5. Setting: AL-Hilla Teaching Hospital (CCU, medical wards) elected as arch field to collect the data to obtain the objectives of the study.

2.6. Data collection: In order to assess nurses' knowledge regarding management of patient with bed sores, the questionnaire is divided into two parts:

Part 1: Demographic Characteristics consist of (7 items) including age, gender, educational level, Participation in training courses, read articles about PU, Years of experience in nursing

Part 2: knowledge level consist of 26 Multiple choice items.

2.7. Statistical Data Analysis Approach: Data was analyzed electronically through the application of descriptive statistical approaches Statistical Package for the Social Sciences (SPSS) version 26.

3. Results:

Table 1: Socio-Demographic Characteristic of the studied Nurses:

Socio- Demographic Data	Rating and intervals	Frequency	Percent
Age	<= 21	2	0.9
	22 - 31	**83**	**37.9**
	32 - 41	67	30.6
	42 - 50	40	18.3
	51 - 60	19	8.7
	61+	8	3.7
Total		**219**	**100.0**
Gender	Male	105	47.9
	Female	**114**	**52.1**
Total		**219**	**100.0**
Level of Education	Nursing preparatory	32	14.6
	Nursing institute	60	27.4
	Nursing collage	**99**	**45.2**
	Master or PhD	28	12.8
Total		**219**	**100.0**
Participated in training courses	**Yes**	**114**	**52.1**
	No	105	47.9
Total		**219**	**100.0**
Years of experience in nursing	**<= 5**	**93**	**42.5**
	6 - 11	49	22.4
	12 - 17	40	18.3
	18 - 23	21	9.6
	24 - 29	11	5.0
	30+	5	2.3
Total		**219**	**100.0**
Source of Information	Study career	37	16.9
	Workplace	**88**	**40.2**
	Conference	21	9.6
	Articles	24	11.0
	Internet	33	15.1
	I Don't know	16	7.3
Total		**219**	**100.0**

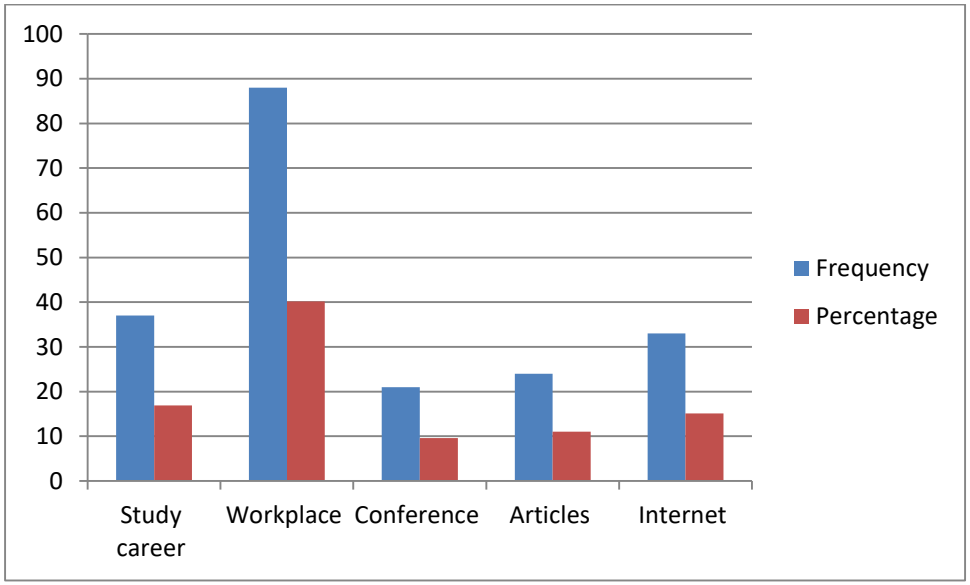

Figure 1: Sources of Nurses Information about Bed Sore

Table 2: Descriptive Statistics of Nurses responses about knowledge related to Bed Sore:

List	Questions	M.S.	Assessment
Part 1: Causes of Pressure sore			
1	A lack of oxygen causes pressure ulcers	1.42	Fail
2	Extremely thin patients are more at risk of developing a pressure ulcer than obese patients because the contact area involved is small and thus the amount of pressure is higher.	1.48	Fail
3	Shearing increases when the skin sticks to the surface when a patient, sitting in bed in a semi upright position (60)?	1.47	Fail
4	Shear is the force that occurs when the body slides and the skin sticks to the surface	1.51	Pass
5	Recent weight loss that has brought a patient below his/her ideal increases the risk of pressure ulcers	1.46	Fail
6	There is NO relationship between pressure ulcer risk and	1.54	Pass

Part 2: Classification and Observation			
7	A pressure ulcer extending down to the fascia is a grade 3 pressure ulcer	1.47	Fail
8	When necrosis occurs, it is a grade 3 or a grade 4 pressure ulcer.	1.51	Pass
9	Friction or shear may occur when moving a patient in bed	1.51	Pass
10	In sitting position, pressure ulcers are most likely to develop on the Pelvic area, elbow, and heel.	1.51	Pass
11	The heels of patients who lie on a pressure-redistributing surface should be observed minimum a day	1.52	Pass
Part 3: Risk assessment			
12	A risk assessment scale may not accurately predict the risk of developing a pressure ulcer and should be combined with clinical judgment	1.53	Pass
13	A patient with a history of pressure ulcers runs a higher risk of developing new pressure ulcers	1.54	Pass
Part 4: Nutrition			
14	Optimizing nutrition can improve the patients' general physical condition that may contribute to a reduction of the risk of pressure ulcers.	1.52	Pass
Part 5: Preventive measures to reduce amount of pressure			
15	The sitting position with the lowest contact pressure between the body and the seat is A backward sitting position, with both legs resting on a footrest.	1.45	Fail
16	Repositioning scheme reduces pressure ulcer risk by using Supine position---side 90 lateral position---supine position	1.45	Fail
17	Shearing forces affect a patient's sacrum maximally when the head of the bed is positioned at 30 degrees	1.45	Fail
18	If a patient is sliding down in a chair, the magnitude of pressure at the seat can be reduced the most by A thick air cushion	1.45	Fail

19	For a patient at risk of developing a pressure ulcer, a viscoelastic foam mattress Has to be combined with repositioning every 2 h	1.45	Fail
20	A disadvantage of a water mattress is Spontaneous small body movements are reduced	1.44	Fail
21	When a patient is lying on a pressure-reducing foam mattress Elevation of the heels is not necessary.	1.51	Pass
Part 6: Preventive measures to reduce duration of pressure			
22	Repositioning is an accurate preventive method because the duration of pressure and shear will be reduced	1.53	Pass
23	Fewer patients will develop a pressure ulcer if Patients are mobilized	1.44	Fail
24	Patients at risk lying on a non-pressure-reducing foam mattress should be repositioned every 2 h.	1.47	Fail
25	When a patient is lying on an alternating air mattress, the prevention of heel pressure ulcers includes A cushion under the lower legs elevating the heels.	1.47	Fail
26	If a bedridden patient cannot be repositioned, the most appropriate pressure ulcer prevention is an alternating-pressure air mattress.	1.44	Fail

M.S. (>=1.50=Pass/ >=1.49=Fail)

Table 3: Overall assessment for knowledge of Nurses about Bed Sore:

Questions	M.s.	Assessment
Total Score	**1.48**	**Fail**

M.S. (>=1.50=Pass/ >=1.49=Fail)

Table 4: Relationship between Nurses Knowledge about Bed Sore and their Socio-demographic Characteristic:

Items	Value	df	F	Sig.
Gender	2.287	9	1.052	.445 (NS)
Age	1388.962	9	1.548	.214 (NS)
Level of Education	6.037	9	1.246	.336 (NS)
Years of experience in nursing	781.787	9	2.463	.050 (S)
Have you read articles about bed sore?	2.479	9	1.140	.392 (NS)
Have you participated in training courses?	2.499	9	1.698	.170 (NS)

4. Discussion

4.1. Part I: Demographic characteristics

The demographic trends observed in Table 1, including the predominance of younger, predominantly female nurses with limited experience, align with findings from several studies on pressure ulcer management, where newer nurses may lack sufficient experience but show a greater need for training. For example, a study by (11) highlighted that younger nurses often have more theoretical knowledge but may lack practical experience in managing pressure ulcers. This finding supports the current study's observation that many nurses participated in training courses, suggesting a strong commitment to acquiring knowledge through formal education. However, despite this, studies by (12) emphasized the need for continuous education, particularly for nurses in the early stages of their careers, as they are often less equipped to apply their knowledge in clinical practice. Furthermore, the reliance on workplace sources of information, as seen in the current study (40.2%), is consistent with the findings of (13), who found that experiential learning plays a significant role in reinforcing nurses' skills in managing pressure ulcers. While nurses may be familiar with theoretical knowledge, the practical application of pressure ulcer prevention and treatment strategies often depends on hands-on experience, mentorship, and peer interactions in the workplace.

4.2. Part II:Nurses responses about knowledge related to Bed Sore:

The findings from Table 2 align with previous research highlighting knowledge gaps among nurses regarding pressure ulcer prevention and management. Several studies have reported similar deficiencies in understanding key risk factors, classification, and preventive measures. For instance, a study by (14) found that many nurses lacked adequate knowledge of pressure ulcer etiology, particularly regarding shear and friction forces, which is consistent with the low scores

observed in this study’s section on causes. Additionally, a study by (15) emphasized that while nurses may be aware of general risk assessment tools, they often struggle with applying clinical judgment effectively, supporting the moderate success seen in the risk assessment section of this study. Furthermore, research by (16) highlighted that despite recognizing the role of nutrition in pressure ulcer prevention, many nurses fail to integrate this knowledge into clinical practice, reflecting the partial success found in the nutrition section. The weak performance in preventive measures, particularly in repositioning strategies and mattress selection, is in line with findings from studies such as (17), which revealed that nurses often lack training on evidence-based positioning techniques and the use of pressure-relieving devices. These knowledge gaps suggest an urgent need for targeted educational interventions, as supported by the work of (18), which found that structured training programs significantly improved nurses' competencies in pressure ulcer prevention. Addressing these deficits through continuous education and hands-on training is essential to improving patient care and reducing the incidence of pressure ulcers. The findings from Table 3, which indicate that nurses' overall knowledge about pressure ulcers is close to the passing threshold but still falls within the failing range, are consistent with previous research highlighting moderate to insufficient knowledge levels among nursing professionals. Studies such as (19) and Samuriwo et al. (2020) have reported that while nurses often possess a basic understanding of pressure ulcer prevention, their knowledge is frequently inadequate for effective clinical decision-making. Similarly, a study by (19) found that many nurses demonstrate partial knowledge, particularly in areas like risk assessment and classification, but lack comprehensive expertise in evidence-based preventive strategies. Furthermore, research by (20) suggests that knowledge gaps may persist due to insufficient training, lack of continuous education programs, and limited hands-on experience in implementing best practices. (4) emphasized that structured educational interventions can significantly improve nurses’ competencies, indicating that with targeted training, nurses who are close to passing—like those in this study—could achieve higher knowledge levels and better patient outcomes. Overall, the findings suggest that while nurses have a foundational understanding of pressure ulcers, additional education and reinforcement of best practices are necessary to bridge the remaining knowledge gaps and enhance clinical effectiveness in preventing and managing pressure ulcers. The findings from Table 4, which indicate a significant relationship between nurses' knowledge about pressure ulcers and demographic factors such as gender, age, education level, exposure to articles, and training courses, are consistent with previous research highlighting the role of these factors in shaping nursing competencies. For example, Alenezi et al. (2020) found that nurses who had attended specialized training programs and engaged in academic reading demonstrated significantly better knowledge and adherence to pressure ulcer prevention guidelines. Similarly, (21) reported that higher educational levels were associated with improved awareness and understanding of risk factors, classification, and preventive measures related to pressure ulcers. Additionally, the relationship between age and knowledge aligns with findings from (22), who suggested that younger nurses, particularly recent graduates, tend to have stronger theoretical knowledge, whereas older nurses may rely more on clinical experience, which is not always aligned with updated evidence-based practices. The

observed gender differences in knowledge are supported by research from (23), which found that female nurses generally performed better in assessments of pressure ulcer management, potentially due to differences in professional roles and engagement in continuing education. However, the lack of a significant relationship between years of experience and knowledge is noteworthy. This finding contrasts with the results of (24), who argued that clinical experience enhances practical knowledge. The discrepancy may be attributed to differences in access to training or reliance on traditional practices rather than updated guidelines. These findings reinforce the importance of structured training and ongoing professional education to ensure that knowledge about pressure ulcers remains current and evidence-based across all experience levels.

5. Conclusion and Recommendations:

5.1. Conclusions: Concerning with the findings of the current study concluded that:

1. Most nurses had fair knowledge regarding management of patient with pressure ulcer.
2. A strong relation between the knowledge of nurses and years of experience in nursing
3. Majority of nursing staff are at age groups (22-31) years.
4. Majority of the sample for both groups were females.
5. Majority of study and control groups were graduated from university
6. Most of nurses in study and control groups are between less than 5 years of experience in nursing.

5.2. Recommendation: The current study suggested the following recommendations:

1. The study suggested conducting continuous education for nurses, in order to update their knowledge regardless of their working experience and level of education.
2. Suggesting a weekly schedule in which nurses provide information about caring for PU through periodic lectures or showing films and other educational media available.
3. The study recommended focusing heavily on the educational aspects of PU care units by providing educational posters, written guidelines, brochures, flyers to be known to all members of the health team, especially nurses.

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