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Practices of Intensive Care Unit Nurses in Maintaining Patient Body Hygiene

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Abstract: **Background:**

Patient hygiene is a vital component of nursing care in Intensive Care Units (ICUs), where critically ill and immobilized patients are highly dependent on nurses for their basic needs. Effective hygiene practices prevent healthcare-associated infections (HAIs), maintain skin integrity, and enhance patient comfort. Despite its importance, hygiene care is often neglected in critical care settings due to workload, resource constraints, and the prioritization of life-saving interventions. In Iraq, limited research exists regarding ICU nurses' hygiene practices, making this study significant for improving patient safety and care quality.

Objectives:

To assess the practices of ICU nurses in maintaining patient body hygiene, identify areas of strength and weakness, and determine the influence of demographic and employment characteristics on these practices.

Methodology:

A **descriptive cross-sectional study** was conducted from **February 9, 2023, to June 26, 2024**, at **Hilla Teaching Hospital ICU**. A **convenience sample** of **125 nurses** participated. Data were collected using a **structured questionnaire** developed after literature review, consisting of two parts:

- **Part I:** Socio-demographic and employment data (age, gender, education, marital status, experience).
- **Part II:** Practices related to various aspects of hygiene care.

The instrument's reliability was confirmed with **Cronbach's Alpha = 0.84**. Data collection occurred between **March 17 and May 15, 2024**, and analysis was performed using **SPSS version 26**.

Results:

The majority of nurses were aged **20–30 years (83.6%)**, **female (69.1%)**, and **college graduates (66.4%)**. Most had **1–10 years of experience (64.6%)** and less than **5 years in ICU (52.7%)**. Overall, the nurses demonstrated a **fair level of practice** across all domains.

- **Best performance:** Hand hygiene before care (Mean = 2.48, good practice).
- **Lowest performance:** Use and disposal of PPE, drying the skin, and hair/nail care (Mean ≤ 1.6, poor practice). The **general mean** across all domains indicated **fair practice (1.6–2.39)**. Findings revealed gaps in environmental preparation, catheter care, and infection control measures, despite moderate adherence to assessment and oral hygiene practices.

Conclusion:

ICU nurses demonstrated **fair overall performance** in maintaining patient body hygiene, with deficiencies in PPE use, environmental readiness, and detailed hygiene procedures. Although most

participants held higher education levels, practical application of evidence-based hygiene care was inconsistent. Factors such as limited training, staff shortages, and lack of institutional support may contribute to these gaps.

Key points: Intensive Care Unit, Nurse Practices, Body Hygiene, Infection Control, Patient Safety, Iraq.

Introduction:

Patient hygiene is a critical aspect of nursing care, particularly in the Intensive Care Unit (ICU), where patients are often critically ill, immobile, or sedated and rely heavily on nursing staff for their hygiene needs. Ensuring proper hygiene in the ICU is essential not only for patient comfort but also for preventing infections, maintaining skin integrity, and improving overall patient outcomes. ICU patients, especially those who are mechanically ventilated or have compromised immune systems, are vulnerable to healthcare-associated infections (HAIs) such as ventilator-associated pneumonia (VAP), pressure ulcers, and catheter-associated urinary tract infections (CAUTIs) (Coyer et al., 2020).

Nurse working in the ICU faces unique challenges in maintaining patients 'hygiene, including the complexity of care, in which patients' treatment is usually unconscious or strongly enticed. These patients are usually based on life support devices, complicating regular hygiene functions such as baths, oral care and repairs (Cooper et al., 2021). In addition, the industry can be obtained due to time restrictions, lack of employee and priority of life intervention (McDonald, 2020). However, avoiding these aspects of patient care can have adverse consequences such as skin breakdown, infection rate, and reducing the patient's comfort (Fletcher, 2019).

Research has shown that relevant and evidence in ICU -adsed practices can greatly improve the patient's safety and results. For example, the study suggests that regular oral care for ventilated patients helps reduce the risk of VAP, thereby preventing bacterial colonization in the aeropharynx (Labu et al., 2021). Similarly, structured hygiene protocols such as chlorhexidine Daily Bath are associated with low transition rates in the ICU environment (Derde et al., 2020). These findings highlight the importance of integrating the best efforts in hygiene care as a basic component of nursing interventions.

Despite the helpful advantages of the patient's hygiene in reducing complications, there are constant obstacles in the frequent implementation of recommended guidelines, such as heavy -chargeable, lack of resources and inadequate training. In addition, hygiene care is often regarded as a low -affirmation function, especially in a high intensity environment like the ICU, which can make its execution difficult (Parker et al., 2021). It is important to eliminate these barriers to improve the patient's results, reduce infection rate and improve the quality of nursing care (Cooper et al., 2021).

Importance of Study in the Context of Iraq

The importance of the patient's body hygiene in the ICU is especially pronounced in areas like Iraq, where health systems face unique challenges. Proper care for hygiene for important patients is the foundation of nursing exercises and plays an important role in preventing IRA, maintaining skin integrity and ensuring patient comfort. In Iraq, where health facilities are generally dealt with resource restrictions and the health system is being re -recovered from the conflict of years, it is important to improve the patient's results and to reduce the burden of the Ianana such as VPS and Capeths (El Hilfi et al, 2021).

Significant concern in Iraqi hospitals is a high spread of Ira, which can be expanded by congestion, limited resources and employees' deficiency (Kadhim and al-Hyder, 2022). Nevertheless, research in other regions show that frequent and evidence -basic oral care can reduce the incidence of IV, such as daily chlorhexidine baths and ventilated patients, significantly reducing the events of IV, limited research on how these practices apply to ICU care and barriers. It is important to identify

gaps in this study, understand local challenges and improve the care of the Iraqi ICU (Labu et al., 2021)..

In addition, studies are required to meet the ICU nurses' J Knowledge and training requirements in Iraq. Effective hygiene care not only requires clinical skills in intensive care environment, but also a strong understanding of evidence -based infections and practices. In Iraq, many ICU nurses may not have constant business development or update training on the best methods of patients' hygiene and infection. This deficiency of training may vary in the quality of care and increases the risk of complications for important patients. The ICU is important for the current methods of nurses and the development of educational intervention and policies that are in compliance with hygiene protocols that support professional development and improve patient safety (Mohammad et al., 2021).

In addition, this research has effects for health and resource allocation in Iraq. ICU hygiene practices require not only the ability of individual nurses, but also the availability of adequate employees, including the required supply (eg anti -support equipment and hygiene) and the implementation of light guidelines. The findings of this study can help to understand the resources and systemic changes needed to support the ICU nurses to provide high quality care to the policy and health administrators. This is especially important because Iraq's health system works to rearrange and improve services after years of instability (El Hilfi et al., 2021).

In conclusion, this study addresses the critical issue of ICU hygiene practices in Iraq, a topic that received limited attention, despite its relevance to the safety and the results of the patient. By exploring the practices, challenges and current knowledge gaps of ICU nurses, this research aims to contribute to the development of directed interventions that can improve the quality of care in Iraq's health facilities and reduce the hais load in intensive care environments.

METHODOLOGY:

Design of the study: A descriptive (cross-sectional) design study was conducted form the period 9th February 2023 - 26 June 2024 in ICU at Hilla teaching hospital

Study Sample: The convenience (non-probability)sample (125) nurses was selected.

Study instrument: A constructed questionnaire was prepared and modified after a thorough review of the relevant literature. This questionnaire covers two parts:

Part I: the socio-demographic data included: age\years , gender, educational level, marital status, experience years.

Part II: This section deals with documentation of nursing hygienic care for unconscious patients is composed of ( ) item.

Reliability: the reliability of the items was based on the internal consistency of the checklist was assessed by calculating Cronbach Alpha which was=0,84

Data collection:- A structured questionnaire used to collect data was carried out 17th March 2024, to 15th May 2024. To determine whether the objectives of the study were met, the current study data were analyzed by using **SPSS**, version **26.**

Results :

Table:1: Distribution of the study sample related to their demographical characteristics.

Demographical characteristics	Rating	Number of participants	Percentage %
Age	20-30	92	83.6
	31-40	11	10.0
	41-50	7	6.4
Total		**110**	**100%**

Gender	Male	34	30.9
	Female	76	69.1
Total		**110**	**100%**
Level of Education	Secondary	25	22.7
	Diploma	12	10.9
	College and postgraduate	73	66.4
Total		**110**	**100%**
Marital Status	Single	59	53.6
	Married	43	39.1
	Separated	8	7.3
Total		**110**	**100%**
Residency	Urban	38	34.5
	Rural	72	65.5
Total		**110**	**100%**

Table:2: Distribution of the study sample related to their employment characteristics

variables	Rating	Number of participants	Percentage %
Years of Experience	1 to 10 years	71	64.6
	11-20	14	12.7
	21-30	25	22.7
Years of Experience in Critical care units	5 years or less	58	52.7
	6-10	33	30.0
	11-15	13	11.8
	16-20	6	5.5

Table. 3: Practices of the study sample related to Patient Assessment and Preparation

No.	Items	Always Do		Sometimes Do		Never Do		Mean	St .deviation	Level
		F	%	F	%	F	%			
1	Assesses the patient's level of consciousness before hygiene care.	22	20.0	39	35.5	49	44.5	1.75	.768	Fair Practice
2	Checks vital signs before starting body hygiene.	28	25.5	41	37.3	41	37.3	1.88	.787	Fair Practice
3	Evaluates skin condition for wounds, pressure ulcers, or infections.	54	49.1	42	38.2	14	12.7	2.36	.700	Fair Practice
4	Ensures the patient's head and neck are positioned to prevent aspiration.	17	15.5	56	50.9	37	33.6	1.82	.680	Fair Practice

5	Provides verbal communication to the patient before starting, even if unconscious.	49	44.5	39	35.5	22	20.0	2.25	.768	Fair Practice
General mean and standard deviation								2.01	0.741	Fair practice

Poor practices 1-1.59 fair practice 1.6-2.39 good practice 2.4-3

Table (.4.): Practices of the study sample related to Hand Hygiene and Personal Protective Equipment (PPE)

No.	Items	Always Do		Sometimes Do		Never Do		Mean	St .deviation	Level
		F	%	F	%	F	%			
1	Performs hand hygiene before initiating body hygiene care.	56	50.9	51	46.4	3	2.7	2.48	.554	Good Practice
2	Wears gloves before touching the patient.	7	6.4	32	29.1	71	64.5	1.42	.612	Poor Practice
3	Uses additional PPE (e.g., mask, gown) as needed.	14	12.7	43	39.1	53	48.2	1.65	.698	Fair Practice
4	Disposes of used gloves and PPE correctly after hygiene care.			46	41.8	64	58.2	1.42	.496	Poor Practice
General mean and standard deviation								1.74	0.591	Fair practice

Poor practices 1-1.59 fair practice 1.6-2.39 good practice 2.4-3

Table (.5.): Practices of the study sample related to Environmental Preparation

No.	Items	Always Do		Sometimes Do		Never Do		Mean	St .deviation	Level
		F	%	F	%	F	%			
1	Adjusts room temperature for patient comfort.	27	24.5	12	10.9	71	64.5	1.60	.859	Poor Practice
2	Closes curtains or doors to maintain patient privacy.	40	36.4	48	43.6	22	20.0	2.16	.736	Fair Practice
3	Gathers all necessary supplies before	6	5.5	48	43.6	56	50.9	1.55	.600	Good Practice

	starting hygiene care.									
4	Adjusts bed height to a safe and ergonomic position.	45	40.9	37	33.6	28	25.5	2.15	.804	Fair Practice
General mean and standard deviation								1.87	0.75	Fair practice

Poor practices 1-1.59 fair practice 1.6-2.39 good practice 2.4-3

Table (.6.): Practices of the study sample related to Skin and Body Hygiene Practices

No.	Items	Always Do		Sometimes Do		Never Do		Mean	St .deviation	Level
		F	%	F	%	F	%			
1	Cleans the patient's body using warm water and mild soap.	30	27.3	42	38.2	38	34.5	1.93	.786	Fair practice
2	Uses separate towels/sponges for different body areas to prevent cross-contamination.	49.1	49.1	23.6	23.6	27.3	27.3	2.22	.850	Fair practice
3	Dries the skin thoroughly to prevent moisture-related complications.	10	9.1	27	24.5	73	66.4	1.43	.656	Poor practice
4	Applies moisturizer to prevent skin dryness and irritation.	25	22.7	50	45.5	35	31.8	1.91	.736	Fair practice
5	Repositions the patient during hygiene care to reduce the risk of pressure ulcers.	60	54.5	24	21.8	26	23.6	2.31	.832	Fair practice
General mean and standard deviation								1.96	0.771	Fair practice

Poor practices 1-1.59 fair practice 1.6-2.39 good practice 2.4-3

Table (7.): Practices of the study sample related to Oral Hygiene Practices

No.	Items	Always Do		Sometimes Do		Never Do		Mean	St .deviation	Level
		F	%	F	%	F	%			

1	Performs oral care at regular intervals.	37	33.6	53	48.2	20	18.2	2.15	.706	Fair Practice
2	Uses a soft toothbrush or foam swabs for oral cleaning.	9	8.2	32	29.1	69	62.7	1.45	.644	Poor practice
3	Applies lip moisturizer to prevent dryness.	22	20.0	60	54.5	28	25.5	1.95	.675	Fair Practice
4	Positions the patient's head appropriately to prevent aspiration.	25	22.7	49	44.5	36	32.7	1.90	.741	Fair Practice
5	Suctions oral secretions when necessary.	45	40.9	46	41.8	19	17.3	2.24	.729	Fair Practice
General mean and standard deviation								1.94	0.711	Fair Practice

Poor practices 1-1.59 fair practice 1.6-2.39 good practice 2.4-3

Table (.8.): Practices of the study sample related to Catheter Care

No.	Items	Always Do		Sometimes Do		Never Do		Mean	St .deviation	Level
		F	%	F	%	F	%			
1	Provides catheter care using proper cleansing techniques.	11	10.0	62	56.4	37	33.6	1.76	.620	Fair Practice
2	Cleans the urinary catheter to prevent infection.	47	42.7	31	28.2	32	29.1	2.14	.840	Fair Practice
3	Proper hygiene technique during insertion	18	16.4	21	19.1	71	64.5	1.52	.763	Poor practice
4	Monitoring urine out put	30	27.3	47	42.7	33	30.0	1.97	.760	Fair Practice
General mean and standard deviation								1.85	0.751	Fair Practice

Poor practices 1-1.59 fair practice 1.6-2.39 good practice 2.4-3

Table (.9.): Practices of the study sample related to Hair and Nail Care

No.	Items	Always Do		Sometimes Do		Never Do		Mean	St .deviation	Level
		F	%	F	%	F	%			
1	Brushes and detangles the patient's hair regularly.	26	23.6	47	42.7	37	33.6	1.90	.754	Fair Practice
2	Washes the patient's hair when necessary, using dry or no-rinse shampoo if needed.	15	13.6	27	24.5	68	61.8	1.52	.726	Poor practice
3	Trims nails or reports overgrown nails for further management.	18	16.4	21	19.1	71	64.5	1.52	.763	Poor practice
	General mean and standard deviation							1.65	0.747	Fair Practice

Poor practices 1-1.59 fair practice 1.6-2.39 good practice 2.4-3

Table (.10.): Practices of the study sample related to Safety and Infection Control Measures

No.	Items	Always Do		Sometimes Do		Never Do		Mean	St .deviation	Level
		F	%	F	%	F	%			
1	Secures and maintains medical devices (e.g., IV lines, catheters, tubes) properly.	34	30.9	21	19.1	55	50.0	1.81	.883	Fair Practice
2	Monitors patient's vital signs and general response during hygiene care.	14	12.7	52	47.3	44	40.0	1.73	.676	Fair Practice
3	Prevents contamination by changing gloves when moving between different body areas.	23	20.9	22	20.0	65	59.1	1.62	.813	Fair Practice
	General mean and standard deviation							1.72	0.790	Fair Practice

Poor practices 1-1.59 fair practice 1.6-2.39 good practice 2.4-3

Table (.11.): Practices of the study sample related to Documentation and Reporting

No.	Items	Always Do		Sometimes Do		Never Do				Level
		F	%	F	%	F	%			
1	Documents the hygiene care procedure, including any abnormalities.	34	30.9	43	39.1	33	30.0	2.01	.784	Fair Practice
2	Reports significant findings (e.g., pressure sores, infections) to the medical team.	50	45.5	36	32.7	23	20.9	2.25	.784	Fair Practice
3	Ensures all hygiene equipment and supplies are properly disposed of or stored.	20	18.2	37	33.6	53	48.2	1.70	.761	Fair Practice
	General mean and standard deviation							1.98	0.776	Fair Practice

Poor practices 1-1.59 fair practice 1.6-2.39 good practice 2.4-3

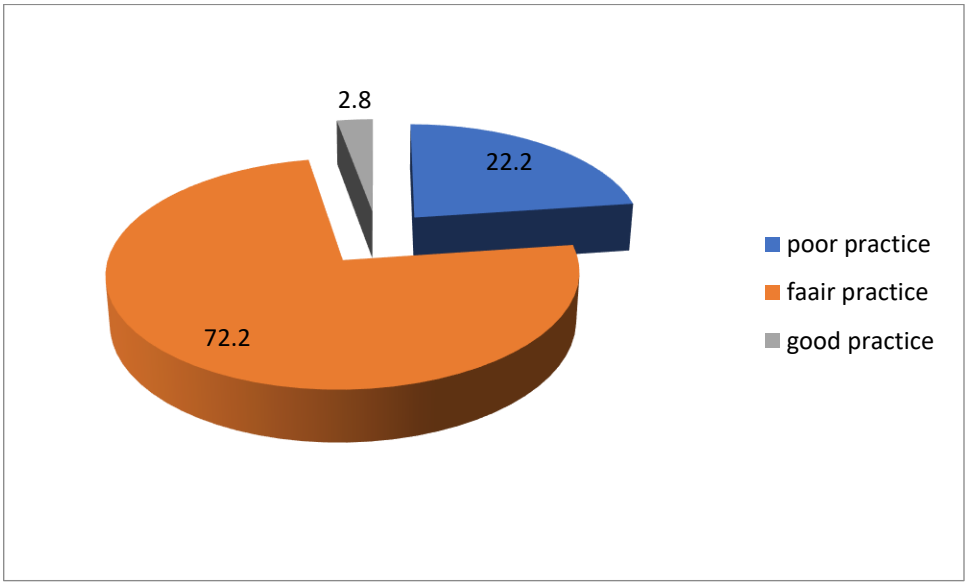

Figure 1: Overall Practices of Intensive Care Unit Nurses in Maintaining Patient Body Hygiene

Discussion

This study aimed to evaluate the hygiene-related nursing practices of a sample working in critical care settings, examining the influence of demographic and employment characteristics on these practices. The findings indicate that overall, the participants demonstrated a *fair* level of practice across most domains of hygiene care, including patient assessment, hand hygiene, environmental preparation, body hygiene, oral hygiene, catheter care, hair and nail care, safety and infection control, and documentation.

Demographic Characteristics

The majority of participants were between 20–30 years old (83.6%), predominantly female (69.1%), and held college or postgraduate degrees (66.4%). A significant proportion (65.5%) resided in rural areas, and 53.6% were single. These demographics are important, as studies suggest that younger and more educated nurses may possess better theoretical knowledge but could lack the clinical experience necessary to implement best practices consistently (Alshammari et al., 2022). The dominance of rural residency may reflect limited access to advanced training and resources, potentially influencing practice quality.

Employment Characteristics

Regarding professional experience, 64.6% had 1–10 years of general nursing experience, and 52.7% had less than 5 years in critical care units. Limited critical care experience may contribute to the fair level of practice observed, as longer exposure and more specialized training are often linked to higher competency in hygiene and infection control practices (Ahmed et al., 2021).

Hygiene Practices

The highest performance was seen in **Hand Hygiene and PPE**, specifically hand hygiene before care (Mean = 2.48), which was rated as a *good practice*. This suggests awareness of basic infection control principles. However, poor adherence was reported in the use and disposal of PPE, which is consistent with findings from recent studies emphasizing that while hand hygiene is commonly taught and reinforced, full PPE compliance remains suboptimal in many settings (WHO, 2020; Salem et al., 2022).

In **Patient Assessment and Preparation**, all items were within the fair range, with the best performance in skin condition assessment (Mean = 2.36) and verbal communication (Mean = 2.25). Despite the fair rating, nearly 45% of nurses never assessed consciousness before hygiene care, which is a critical safety measure, particularly in critical care units (Mohammed & El-Sayed, 2021).

For **Environmental Preparation**, the poorest performance was seen in adjusting room temperature and gathering supplies before care. These shortcomings can compromise patient comfort and safety. Evidence shows that preparation steps, although often overlooked, are essential for both patient-centered care and workflow efficiency (Khan et al., 2020).

Skin and Body Hygiene Practices and **Oral Hygiene** also showed fair results. However, critical practices such as drying the skin and using appropriate oral hygiene tools were performed poorly. Such gaps could increase the risk of skin breakdown and aspiration pneumonia—both of which are major concerns in critical care (Al-Harbi et al., 2021).

Catheter care practices varied, with only one item rated as poor (adequate hygiene during insertion). This is concerning given the high risk of catheter-associated urinary tract infections in ICUs. Similarly, hair and nail care practices were suboptimal, with hair washing and nail cutting rated as poor, indicating possible neglect of non-urgent tasks that nevertheless affect patient dignity and comfort.

Safety and infection control and documentation and reporting measures were constantly classified as justified, indicating regular but inconsistent compliance. Low scores were associated with the disposal of equipment and prevention of contamination, which reflects the need to adhere to infected control protocols.

Overall, the results indicate reasonable levels of hygiene care practice among study participants. Although basic hand hygiene is generally practiced well, there have been significant deficit in the fields that require more detailed processes or more clinical judgment, such as PPE use, catheter care and environmental preparation. These findings highlight the need for continuous education, job training and institutional assistance to improve the quality and relevance of nursing practices in the intense care environment.

Conclusion and Recommendations

- The results of this study show that hygienic care practices are usually at the right level in nurses working in intensive care units, without reaching the level of good methods in any domain. When the nurses showed the medium point of ISTEENCE in areas such as the patient's assessment, preparation and oral hygiene, there were significant drawbacks of hand hygiene, personal protective equipment (PPE) and critical transactions such as hair and nail care. Although most participants had high academic qualifications and many years of experience, these positive characteristics do not translate into the continuous high standards of hygiene care. These gaps are attributed to factors such as insufficient training, lack of institutional support or inadequate monitoring methods, which can negatively affect the patient's safety and intensive care environment..
- To resolve these issues, it is recommended that health institutions implement regular training programs focused on preventing infections, hygiene protocols and best nursing practices. There should also be stronger supervision, routine audits and reinforcement of hygiene standards through standardized documentation and verification lists. Proper supply of supplies, continuous professional development and promotion of a culture of accountability and patient care is essential. Future research should explore barriers to good hygiene practices and evaluate the effectiveness of intervention strategies in improving nurse performance in intensive care environments.

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