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Evaluation of Nurses' Practices and Perceived Barriers Related to Pain Assessment in Critically Ill Patients at Baghdad Teaching Hospitals

Haider Mohammed Majeed[1,*], **Ahmed F. Hassan**[1], **Aqeel Habeeb Jasim**[1] **and Ali Hussein Alek Al-Ganmi**[1]
[1]Department of Adult Nursing, College of Nursing, University of Baghdad, Baghdad, Iraq

Corresponding author: Haider Mohammed Majeed (e-mail: haidermm@conursing.uobaghdad.edu.iq).

Abstract: **Introduction:** Inadequate pain assessment and management is a problem in hospitalized patients that impairs their wellbeing. Intensive care unit nurses' pain practices are affected by several barriers and enablers. **Objectives:** The objectives of this study were to determine the level of nurses' practices and perceived barriers related to pain assessment in critically ill patients. **Methodology:** A cross-sectional design study was used. Purposive sampling technique was employed, including 100 nurses recruited from 8 intensive care units in Baghdad city, Iraq. The study was conducted from September 1st to October 20th, 2022. The pain assessment and management for critically ill patients survey was used to collect data. Descriptive statistics, Spearman correlation, and chi-square tests were used to analyze the data. **Results:** The findings of the current study indicate that nearly half (49%) of the respondents were in the age group of 28-37 years old, with a mean age of 33.73±7.045 years. Three-quarters of the respondents were males and the rest were female. The majority (63%) of the respondents held a bachelor's degree in nursing. More than three-quarters (76%) of the respondents were married. The majority (31%) of the respondents had 6-10 years of service experience in nursing, and most of them had 1-5 years of experience as a nurse in the intensive care unit. Finally, a high percentage of nurses had training courses about pain assessment and management. **Conclusions:** This study allowed us to recognize the nurse's practices and the barriers to effective pain assessment and management. The analysis showed that critical care nurses had an acceptable practice level related to pain assessment and management in critically ill patients. Insufficient numbers of nursing staff, workload, and poor communication were identified as common factors that negatively influenced effective pain management.

Key Words: evaluation; nurses practices; pain assessment; critically ill patients

I. INTRODUCTION

Pain is a significant global health issue that demands serious attention. It is estimated that 1 in 5 adults suffer from pain, with an additional 1 in 10 adults experiencing chronic pain annually [1]. Pain often becomes a primary reason for seeking medical assistance, especially in the intensive care unit (ICU) setting [2]. Critically ill patients commonly encounter pain, yet in the midst of life-threatening circumstances, pain and its management can be overlooked or underestimated by healthcare providers. Proper pain relief and effective patient care necessitate comprehensive pain assessment, which remains a prominent goal in healthcare [3].

A successful pain assessment requires a sound comprehension of pain by healthcare providers, as inadequate evaluation and documentation contribute to the prevalence of acute pain among patients [4]. This could lead to an ongoing challenge within healthcare systems. Notably, nurses play a pivotal role in enhancing pain management quality, catering to patients' needs [5]. Given their constant presence with patients, nurses are responsible for pain assessment and management, employing diverse approaches including pharmacological interventions like analgesics or sedatives, as well as non-pharmacological methods such as massage and cold compress application [6].

The practice of pain management in healthcare systems encounters obstacles encompassing organizational, healthcare provider, and patient-related barriers [7]. Many pain assessment tools rely on patients' ability to communicate, thus requiring ICU nurses to adeptly employ behavioral pain assessment methods, acknowledging communication limitations [8]. Inadequate pain assessment adversely affects patient outcomes, potentially extending hospital stays and impeding recovery. As patient advocates, nurses hold the crucial responsibility of accurately assessing and managing patients'

pain experiences. However, several factors, including knowledge gaps, inadequate skills, heavy workloads, suboptimal nurse-patient communication, and time constraints, hinder effective pain evaluation and management among nurses [9].

This study aims to assess intensive care unit nurses' practices and identify perceived barriers associated with pain assessment in critically ill patients.

II. METHODOLOGY AND MATERIALS

A descriptive cross-sectional design study was conducted from September 1st to October 20th, 2022, to investigate critical care nurses' practices and perceived barriers of pain assessment among critically ill patients. Non-probability purposive sampling technique was employed to select 100 ICU nurses from three teaching hospitals in Baghdad city, Iraq. Data were collected from Baghdad Teaching Hospital, Al Karama Teaching Hospital, and Ghazi Al-Hariri for Surgical Specialties. The study encompassed six intensive care units. Inclusion criteria included nurses with more than six months of experience in the selected ICUs, caring for critically ill patients experiencing pain, and availability during data collection. Those who were unavailable or declined participation were excluded.

Ethical approval and permissions were obtained from the selected hospitals before data collection. The study received institutional review board (IRB) approval (967-2022) from the College of Nursing at the University of Baghdad. Eligible nurses who agreed to participate signed written consent forms. The pain assessment and management for critically ill patients survey was employed, consisting of three parts. The first part comprised a demographic sheet with seven items. The second part collected information about nurses' practices related to pain assessment and perceived barriers in ICUs, following content validity and clarity testing [10].

The second part further evaluated nursing practices in delivering effective pain care through sixteen items. The third part involved 12 items assessing the frequency of barriers affecting nurses' pain assessment and management abilities. Responses were ranked as never (1), sometimes (2), and always (3). Participants were categorized based on their total scores. Those with scores =38 were classified as having good practices, scores of 28-37 indicated fair practices, and scores <28 indicated poor practices.

Data collection utilized self-administered semi-structured questionnaires. All collected data were coded numerically and entered into SPSS version 26.0 for analysis. Descriptive statistics, including frequencies and percentages, were calculated. A Pearson Chi-square test was performed, with a significance level of =0.05 considered statistically significant.

III. RESULTS

Our study encompassed 100 nurses as participants. Table 1 displays the demographic characteristics of the nurses. The majority of participants were male. The mean age of the participants was 33.73±7.045 years. Among the respondents, 49% were within the age range of 28-37 years, and 63% held a bachelor's degree. Additionally, 76% of participants were married. In terms of clinical experience in critical care settings, 44% reported having 1-5 years of experience. Concerning overall nursing employment, 31% of participants had accumulated 6-10 years of experience.

Variables	Groups	Frequency	Percent
Gender	Male	78	78.0
	Female	22	22.0
Age Groups(Years)	27-18	20	20.0
	37-28	49	49.0
	47-38	28	28.0
	48-57	3	3.0
	M+SD (33.73±7.045)		
Education level	Nursing school	1	1.0
	Institute	23	23.0
	College	63	63.0
	Master& doctorate	13	13.0
Marital Status	Single	20	20.0
	Married	76	76.0
	Divorced	3	3.0
	Widow	1	1.0
Nurses experience in ICU	= One year	26	26.0
	1-5 years	44	44.0
	6-10 years	23	23.0
	11-15 years	5	5.0
	16-20 years	2	2.0
Years of employment in nursing	= One year	14	14.0
	1-5 years	25	25.0
	6-10 years	31	31.0
	11-15 years	15	15.0
	16-20 years	12	12.0
	21-25 years	3	3.0
Training course	Yes	69	69.0
	No	31	31.0

TABLE 1: Distribution of the Studied Sample According to Socio-Demographical Characteristics Variables

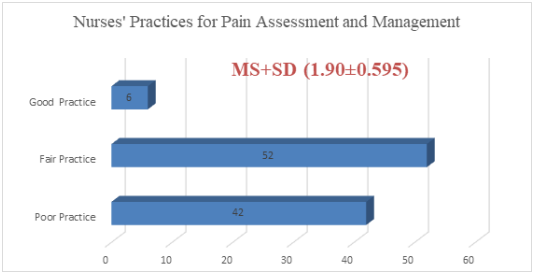

FIGURE 1: Nurses' Practices for Pain Assessment and Management: Distribution of the studied nurses' practices level, pain assessment among critical ill patients (N=100)

Furthermore, the majority of participating nurses indicated that they had received training in pain assessment and management.

Figure 1 shows that more than half of the critical care nurses have a fair practices level based on the total mean score of 1.90 in pain assessment and management of critically ill patients.

Figure 2 indicates that the majority of critical care nurses have perceived slightly more enablers and barriers affecting pain assessment and management, with a total mean score of 2.26. This suggests that several barriers were identified

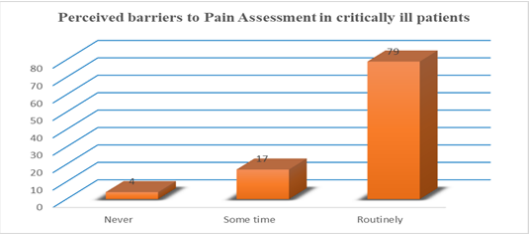

FIGURE 2: Perceived barriers to pain Assessment in critically ill patients

to affect the adequacy of pain assessment and management among critical care nurses in a resource-limited setting.

The Table 2 examines the correlation between sociodemographic factors and nurses' practices towards pain assessments. A statistically significant relationship was observed with marital status. However, no significant relationships were found between age, gender, level of education, experience in ICUs, years of employment in nursing, and training courses.

Table 3 displays the evident and significant relationship between barriers and enablers to pain assessment and management among nursing staff, and two demographic factors: gender and age groups. However, no significant relationships were observed between level of education, marital status, years of experience in nursing, place of work, and barriers and enablers to pain assessment and management.

Table 4 illustrates the assessment of correlation between elements, revealing a positive correlation between nurses' practices and perceived barriers to pain assessment in critically ill patients. A statistically significant, modest positive correlation was observed between the scores of nurses' practices and perceived barriers to pain assessment in critically ill patients about pain management (r=0.615).

IV. DISCUSSION

The objectives of this study were to assess the practices of critical care nurses in pain assessment and management and to explore the perceived barriers and enablers related to pain assessment in critically ill patients. According to our findings, around 52% of the nurses exhibited sufficient practices in pain assessment and management in critical care units (CCUs). This result is consistent with previous studies; over half of the participants demonstrated good pain management practices, similar to a study conducted in the Amhara region of northern Ethiopia (55.7%) and another study in Uganda (61.2%) [11]. However, these findings differ from research conducted in Palestine, which indicated poor practices in pain management [12]. Furthermore, our results suggest that nurses were more likely to document pain assessments, in line with reports showing that nursing staff often possess stronger pain assessment skills than doctors and pharmacists [13]. European studies also demonstrate meticulous pain documentation, established pain management protocols, and procedures [14]. Although ICU nurses in our study reported performing pain assessments using appropriate tools, their practices still fell below the optimal level, indicating a need for further training on when and how to assess pain in ICU patients [15], [16].

Turning to the perceived factors influencing nurses' pain assessment and management practices, our study highlighted significant barriers such as workload, poor documentation, communication gaps in pain assessment and management, lack of education, absence of assessment tools, protocols, and guidelines, patient instability, patient inability to communicate, and the impact of sedation on pain assessment. Consistent with our findings, other research also identified nursing workload, patient instability, communication difficulties, lack of assessment tools, and patient inability to communicate as primary barriers affecting pain assessment and management [17], [18]. Notably, patients' lack of awareness of pain management emerged as a common obstacle. In contrast, another study emphasized the healthcare system's strict opioid restrictions as a major barrier [13]. Similarly, a different study revealed that 61% of nurses identified the absence of standardized clinical guidelines for pain treatment as a barrier [19]. Insufficient communication between nurses and doctors was also identified as a key hindrance to optimal pain management [20]. These results contrast with studies in Turkey, where the lack of psychosocial support services was more commonly perceived as a barrier [21].

Table 2 showed the association between sociodemographic and nurses' practices. These findings are in line with many studies, as there was an association that was statistically significant with marital status. Furthermore, no relationship was found between the remaining variables. These results were consistent with previous studies that did not reveal any significant relationship between sociodemographic characteristics (sex, place of work, and area) and practice level [12], [22]–[24]. The result can be supported by [25], who found that various nurses' socio-demographic characteristics influenced their practice toward pain among critically ill patients. Conversely, recent studies showed there is no significant association between age of respondents, working area of respondents, sex, year of patient care, and in-service training [26]. This finding is consistent with the finding of the study conducted by [19], who stated that the results of this survey revealed that age, gender, level of professional education, and years of working experience were significantly associated with nurses' interventions for managing pain of patients with $p < 0.05$. These findings concurred with Sweity et al. (2022) - the findings of the study showed statistically significant differences in age and experience; as practice improved and progressed, age and experience increased. Although the result showed obvious significance in the level of education, practices improved as the level of education increased. Furthermore, another significant finding was associated with previous courses in line with the good practice of nurses in pain management with a p-value (< 0.001) [2]. Our study found that various nurses' socio-demographic characteristics influenced their

Variables	Groups	Poor (n=42) N	Fair (n=52) N	Good (n=6) N	p-value	Sig
Gender	Male	32	41	5	.201a	.904
	Female	10	11	1		
	Total	42	52	6		
Age (Groups) years	27-18	7	13	0	4.779a	.572
	37-28	19	26	4		
	47-38	15	11	2		
	48-57	1	2	0		
	Total	42	52	6		
Education level	Nursing school	0	1	0	1.011a	.007
	Institute	10	12	1		
	College	23	36	4		
	Master& doctorate	9	3	1		
	Total	42	52	6		
Marital Status	Single	12	8	0	20.609a	.002**
	Married	28	43	5		
	Divorced	2	1	0		
	Widow	0	0	1		
	Total	42	52	6		
Nurses experience in ICU	= One year	12	13	1	3.092a	.928
	1-5 years	19	22	3		
	6-10 years	8	14	1		
	11-15 years	2	2	1		
	16-20 years	1	1	0		
	Total	42	52	6		
Years of employment in nursing	= One year	6	7	1	12.369a	.261
	1-5 years	11	14	0		
	6-10 years	16	12	3		
	11-15 years	4	11	0		
	16-20 years	5	6	1		
	21-25 years	0	2	1		
	Total	42	52	6		
Training course	Yes	26	37	6	3.797a	.150
	No	16	15	0		
	Total	42	52	6		
Mean of scores + SD	MS+SD (1.90±0.595)					

* Sig. = Significance level ≤ 0.05

TABLE 2: Relation between Socio-demographic Characteristics of the Studied Nurses and their Practices (n=100)

practice toward pain among critically ill patients. Consistently, previous studies found significant differences in the proportion of nurses using pain assessment tools for patients who are able to self-report symptoms according to the type of hospital, hospital affiliation, academic qualifications, and years of experience as a critical care nurse [27], [28].

Table 3 shows a significant relationship between the barriers and enablers to pain assessment and management of nursing staff with gender and age groups. There was a significant association between age, gender, level of professional education, and years of working experience with system-related barriers and nurses' interventions for managing patient pain at $p = 0.001$ [19]. This finding is not in accordance with the study done by Hamdan et al. (2022), who found significant differences in barriers and enablers to pain assessment and management and pain education according to hospital type and ICU experience [17].

Table 4 shows the positive correlation between nurses' practice and barriers and enablers elements. A positive correlation was discovered between the nurse's practices and barriers scores in pain assessment and management in critically ill patients. The authors believe the positive correlation between nurses' practices and perceived barriers influences the quality of nurse's practices and pain treatment and management in critical care units for delivery to critically ill patients.

V. CONCLUSIONS

The study concluded that nurses have a fair practices level related to pain assessment and management in critically ill patients, along with identified barriers to effective pain management. Educating patients and caregivers about pain assessment and management is crucial, as insufficient pain control assessment and management emerged as the most prevalent patient-related barrier in our study. Improving coordination and communication between physicians and nurses is essential for effective pain assessment and management. We recommend incorporating nurses' education and training courses on pain assessment and management into hospitals' continuous educational programs. Furthermore, future replication studies with larger sample sizes are recommended. Additionally, intervention studies targeting poor pain assessment practices among nurses caring for cognitively impaired patients are needed. Qualitative examinations of barriers to effective pain assessment in cognitively impaired patients

Variables	Groups	Never (n=4) N	Sometime (n=17) N	Routinely (n=79) N	p.value	Sig
Gender	Male	4	13	61	66.216	.010**
	Female	0	4	18		
	Total	4	17	79		
Age (Groups) years	27-18	0	3	17	2.135	.004*
	37-28	2	8	39		
	47-38	2	6	20		
	48-57	0	0	3		
	Total	4	17	79		
Education level	Nursing school	0	0	1	4.748	.011
	Institute	0	10	13		
	College	4	6	53		
	Master& doctorate	0	1	12		
	Total	4	17	79		
Marital Status	Single	1	4	15	1.192a	.977
	Married	3	12	61		
	Divorced	0	1	2		
	Widow	0	0	1		
	Total	4	17	79		
Nurses experience in ICU	= One year	3	2	21	11.548a	.173
	1-5 years	1	12	31		
	6-10 years	0	2	21		
	11-15 years	0	1	4		
	16-20 years	0	0	2		
	Total	4	17	79		
Years of employment in nursing	= One year	2	1	11	7.438a	.684
	1-5 years	1	6	18		
	6-10 years	1	5	25		
	11-15 years	0	2	13		
	16-20 years	0	2	10		
	21-25 years	0	1	2		
	Total	4	17	79		
Training course	Yes	3	13	53	29.573	.009
	No	1	4	26		
	Total	4	17	79		
Mean of scores + SD	(2.26±0.520)					

* Sig. = Significance level ≤ 0.05

TABLE 3: Relation between socio-demographic characteristics of the studied nurses and Barriers and Enablers to Pain Assessment and Management (n=100)

Pearson Correlation	P value	Sig.
.051	0.615	Significant

Sig. = significance level

TABLE 4: Association between nurses' practices and Perceived barriers to pain Assessment in critically ill patients

should also be considered.

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CONFLICTS OF INTEREST

No conflicts of interest have been declared by the authors.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was obtained from the Ethical and Scientific Committee at the Faculty of Nursing, University of Baghdad, and the Institutional Review Board (IRB) of the selected settings. All participants provided verbal consent to participate in the survey, and their participation was voluntary.

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