

## Nurses' Knowledge toward Management of Postoperative Pain

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DOI : <https://doi.org/10.61796/jmgcb.v2i5.1301>



### Sections Info

#### Article history:

Submitted: March 30, 2025  
Final Revised: April 14, 2025  
Accepted: April 28, 2025  
Published: May 12, 2025

#### Keywords:

Post-operative pain  
Management  
Nurses' knowledge

### ABSTRACT

**Objective:** Study aims to assess nurses' knowledge toward pain management post operatively and to find out the relationship between nurses' knowledge and their demographic data. **Method:** A descriptive cross-sectional study design was conducted at Al-Najaf city in the southern region of Iraq in Al-Zahra'a Teaching Hospital from January 28, 2025, to 6th April, 2025, in order to assess the nurses' knowledge regarding post-operative pain management. The methodological strategies for data collection used an assessment questionnaire survey methodology. **Results:** In the present study, an assessment of nurses' knowledge concerning post-operative pain management revealed a good level of understanding. Furthermore, there is a significant relationship between nurses' knowledge regarding management of post-operative pain and their level of education and training courses. **Novelty:** Despite advancements in pain management, many patients still suffer due to a lack of nurses' knowledge or negative attitudes toward handling.

## INTRODUCTION

According to the international association for the study of pain, "pain is defined as an unpleasant sensory and emotional experience associated with actual and potential tissue damage, 1,2 Approximately 79% of the hospitalized patients suffer from it. Adequate level of knowledge and positive attitude are essential components in the delivery of post-operative pain management [1].

Postoperative pain is a common issue that significantly affects patient recovery. Ineffective pain management can lead to harmful physiological and psychological effects, including the risk of chronic pain. Despite advancements in pain management, many patients still suffer due to a lack of nurses' knowledge or negative attitudes toward handling [2].

Undertreated postoperative pain is often associated with delayed mobility leading to delayed wound healing and deep vein thrombosis, pneumonia, chronic pain, coronary ischemia, myocardial infarction, depressed immune function. All of these affect economic and medical conditions, such as extended hospital stay, re-admissions, and patient dissatisfaction with medical care. However, optimal postoperative management facilitates early hospital discharge and reduces postoperative complications thereby increases patient satisfaction [3].

Work experience, education level, and training play a crucial role in shaping nurses' knowledge and attitudes toward effective postoperative pain management. However,

despite advancements in medications and techniques, inadequate pain management remains a persistent issue for post-surgical patients.

Nurses typically receive basic education on acute pain during their training, but it is often superficial, leaving them poorly equipped to manage pain effectively [4], [5]. The limited time allocated to pain management training contributes to this gap. Nurses' reluctance to prescribe opioids and fears around pain treatment further complicate pain management. Additionally, nurses' pain assessment and management skills are influenced by their personal experiences and attitudes [2].

Thus, nurses must have the knowledge and skills to assess, manage, and evaluate pain to ensure effective outcomes. Proper pain management not only alleviates suffering but also reduces complications and supports faster recovery for patients [6], [7].

### **Study Significance**

The study of nurses' knowledge regarding the management of postoperative pain is crucial for several reasons rooted in patient care, clinical outcomes, and healthcare practices. Numerous studies have shown that nurses in many areas lack the knowledge and carry negative attitudes over postoperative pain management and evaluation which can dramatically lead to the misjudgment of pain. Therefore, having affluent knowledge, positive attitudes and skills in evaluating and managing postoperative pain are vital criteria [8], [9], [10] given that, postoperative pain is a problem for patients and might result in their dissatisfaction, despite the high quality of care in the ward, it is necessary to improve the quality of care along with the increase and awareness of pain-management knowledge among the nursing staff, simultaneously [8], [11].

Unmanaged surgical pain can lead to severe complications, including weakened immunity, increased risk of embolism, pneumonia, delayed wound healing, and prolonged hospital stays. In low-resource settings, issues like

insufficient funding, inadequate training, limited knowledge of pain management options, and negative attitudes toward treatments—especially opioids—aggravate the situation [9], [12].

Nurses, in particular, are in a unique position to supervise and assist patients in pain and in its treatment, considering the extensive time nurses spend with the patients when compared with other health-team members, Nash. However, nurses seem to develop individual models of pain assessment and analgesic administration, largely based on the organisation on the ward, Willson. It has been reported that patients and also nurses actually may accept pain as a normal component of the postoperative experience [13].

## **RESEARCH METHOD**

### **Study Design**

A descriptive cross-sectional study design was conducted at Al-Najaf city in the southern region of Iraq in Al-Zahra'a Teaching Hospital from January 28, 2025, to 6th April, 2025, in order to assess the nurses' knowledge regarding post-operative pain

management. The methodological strategies for data collection used an assessment questionnaire survey methodology.

### Population and Study Sample

A Non-Probability (Purposive Sample) of (98) nurses who work in surgical wards, operation theatre, and emergency department at Al-Zahra'a Teaching Hospital were included in the study.

### Data collection tool

A questionnaire was constructed by the researcher to measure the variables of interest. The final study instrument consisting of two parts: the first part is the demographic data, the second part is the instrumental Assessment of Nurses' Knowledge toward Post-Operative Pain Management Scale.

Further, internal consistency was analyzed by calculation of Cronbach's alpha. Data was collected over a period of 20 days to allow participants the opportunity to respond at their convenience. The researcher used a survey created using Survey google form. Only subjects who consented to participate in the survey were given access to the survey in Google form.

### Statistical methods

The data analysis process entailed using Statistical Package for Social Sciences computer software to categorize information in graphs and charts that SPSS created. Statistical analysis was performed using Statistical Package for Social Sciences version 20 for Windows (SPSS Inc., Chicago, IL, USA). Descriptive statistics were used to present the demographic data and patterns of answers to the different questionnaire items; categorical variables were presented as frequency and percentage, whereas numerical ones were presented as mean  $\pm$  standard deviation (S.D). Chi-Square test ( $X^2$ ) to test independency distribution of observed frequencies, and for measuring the association between the studies variables according to its type, and P-value  $\leq 0.05$  was considered statistically significant.

## RESULTS AND DISCUSSION

### Results

**Table 1.** The demographic characteristic of the study sample for assessment of nurses' knowledge toward post-operative pain management (n=98).

Demographic data	Sub-groups	Frequency (N=98)	Percentage
Age / years	20-27	64	65.3
	28-35	29	29.6
	36-43	1	1.0
	44-51	4	4.1
Gender	Male	33	33.7
	Female	65	66.3
Educational Status	Nursing Institute	49	50.0
	Nursing College	47	48.0
	Postgraduate	2	2.0

Years of experience / Years	< 1	15	15.3
	1-5	57	58.2
	> 5	26	26.5
Training Courses	Yes	47	48.0
	No	51	52.0
	Inside Iraq	46	47
	Outside Iraq	1	1.0

The demographic data of the nurses are presented in table 1, this table shows that the majority of the nurses subgroups are: those with ages ranging between (20-27) years (65.3%); females nurses (66.3%), those that have institute in nursing (50%), those who have (1-5) years of experience (58.2%); those who have no training (52%); those who have training inside Iraq (47 %).

**Table 2.** Assessment and mean of scores of nurses' knowledge toward postoperative pain management.

No.	Items	MS	SD	Assessment
1	Vital signs are always reliable indicators of the intensity of a patient's	2.61	0.47	Good
2	Because their nervous system is underdeveloped, children under two years of age have decrease pain sensitivity and limited memory of painful experiences	2.63	0.31	Good
3	Aspirin and other non-steroidal anti-inflammatory agents are not effective analgesics for acute postoperative pain	2.42	0.41	Good
4	Respiratory depression rarely occurs in patients who have been receiving stable doses of opioid over a period of months	2.21	0.77	Moderate
5	Combining analgesics that work by different mechanisms may result in better pain control with fewer side effects than using a single analgesic agent	2.47	0.70	Good
6	Pethidine 75 mg IM is approximately equal to morphine 10 mg IM	1.96	0.53	Moderate
7	Opioid should not be used in patients with a history of substance abuse	2.37	0.51	Good
8	Observation is part of the method used in surgical pain assessment	2.87	0.85	Good
9	The side effects of narcotics should be observed at least 20 min after administration	2.03	0.43	Moderate
10	If the source of pain is not known a pain drug should not be used during the pain evaluation period because this could mask the ability to correctly diagnose the cause of pain.	2.76	0.45	Good
11	Based on their cultural and spiritual beliefs Patients may	2.54	0.52	Good
12	Patients should be encouraged to endure as much pain as possible before using an opioid.	2.50	0.53	Good
13	Pre-surgery injection such as anesthesia is given for pain management	2.67	0.70	Good

14	Respiratory depression rarely occurs in patients who have been receiving stable doses of Opioids over a period of months.	2.20	0.73	Moderate
15	Rating scale ranging from (0) "no pain at all to (10) the worst pain" is essential to adopt in pain assessment	2.70	0.56	Good
16	If a patient sleeps with no movement postoperatively, this indicates that patient is not in pain	2.28	0.38	Moderate
Overall Knowledge		2.45	2.45	Good

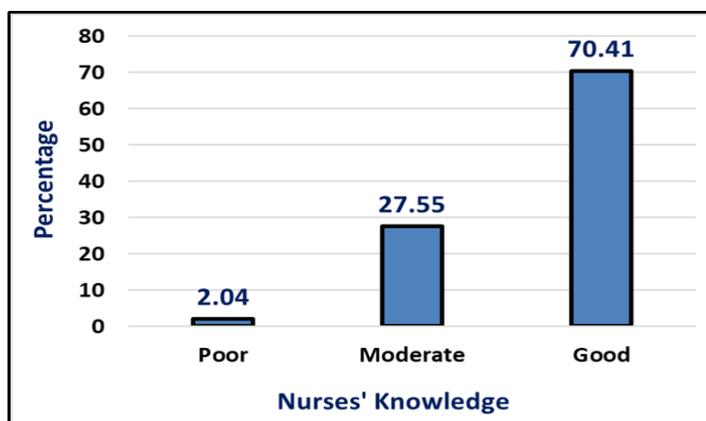
MS : Mean of Scores ; SD : Standard Deviation ; Poor : MS = 1-1.66 ; Moderate : MS =1.67-2.33 ; Good : MS≥2.34

Table 2 describes the nurses' knowledge regarding postoperative pain management. The overall mean score (MS) was 2.45, which falls under the category of "Good." The item that scored the highest was the observation in assessing surgical pain, with a mean score of 2.87. Misconceptions about opioid equivalency and postoperative pain indicators were rated as "Moderate," implying knowledge deficits. Even though nurses have good knowledge about the use of opioids, cultural beliefs, and pain assessment tools, further education is needed to address specific misconceptions to enhance general competency in pain management.

**Table 3.** Frequency and percentage of nurses' subgroups according to their knowledge assessment toward postoperative pain management.

	Knowledge Assessment		
	Poor	Moderate	Good
Frequency	2	27	69
Percentage	2.04	27.55	70.41

Table 3 is about percentage of nurses' subgroups according to their overall knowledge assessment toward postoperative pain management, it shows that about (2.04%) of the nurses have poor knowledge, (27.55 %) of them have moderate knowledge, while (70.42 %) have good knowledge, see Figure 1.



**Figure 1.** Percentage of nurses' subgroups according to their knowledge assessment toward postoperative pain management.

**Table 4.** Association between the overall assessment of nurses' knowledge toward postoperative pain management and their demographic data.

Demographic data	Sub-groups	Knowledge Assessment			Chi Square (P value)
		Poor	Moderate	Good	
Age / years	20-27	2 3.1%	18 28.1%	44 68.8%	2.7 (0.84) NS
	28-35	0 0.0%	7 24.1%	22 75.9%	
	36-43	0 0.0%	0 0.0%	1 100.0%	
	44-51	0 0.0%	2 50.0%	2 50.0%	
Gender	Male	0 0.0%	7 21.2%	26 78.8%	2.32 (0.32) NS
	Female	2 3.1%	20 30.8%	43 66.2%	
Educational Status	Nursing Institute	2 4.1%	20 40.8%	27 55.1%	11.73 (0.019) S
	Nursing College	0 0.0%	7 14.9%	40 85.1%	
	Postgraduate	0 0.0%	0 0.0%	2 100.0%	
Years of experience / Years	< 1	1 6.7%	4 26.7%	10 66.7%	2.99 (0.55) NS
	1-5	1 1.8%	14 24.6%	42 73.7%	
	> 5	0 0.0%	9 34.6%	17 65.4%	
Training Courses	Yes	0 0.0%	7 15.2%	39 84.8%	9.1 (0.011) S
	No	2 3.8%	20 38.5%	30 57.7%	
Monthly Income	No	1 1.9%	13 25.0%	38 73.1%	0.90 (0.92) NS
	Inside Iraq	1 2.2%	14 31.1%	30 66.7%	
	Outside Iraq	0 0.0%	0 0.0%	1 100.0%	

NS : Non-significant at P value >0.05 ; S : Significant at P value <0.05

Table 4 shows the relation between nurses' knowledge of postoperative pain management and demographic data. Age, gender, years of experience, and monthly income did not show any significant association with the levels of knowledge ( $P > 0.05$ ). However, educational status ( $P = 0.019$ ) and participation in training courses ( $P = 0.011$ ) were significantly associated with higher knowledge, implying that greater education and professional training positively influence nurses' knowledge. The postgraduate

nurses exhibited the highest level of knowledge (100%), whereas those from nursing institutes showed the least. These results point to the value of higher education and in-service training programs as means to upgrade the skills of nurses in pain management.

### *Discussion*

#### **Part-I: Discussion of the Demographic Characteristics**

The present study reveals that the dominant age group is between (20-27) years. This result is similar [11], who studied the " Knowledge, Attitudes, and Practices of Postoperative Pain Management by Nurses in Selected District Hospitals in Ghana " and found that nearly half of the sample are aged  $\leq 30$  years

Regarding the level of education, the study results also shows that almost half of the study subjects are nursing institution graduates, this result is confirmed by [10], they found that the majority of the study sample were graduates of nursing institution .

In addition, the results explain that the highest percentage of the study sample have years of experience in work that are equal to ( $\leq 5$ ) years, These results are similar to [14], [15], they conducted a study to assess "Knowledge and Attitudes of Nurses towards Postoperative Pain Management in Southern Ethiopia". They found that the highest percent of the participants in the study sample have years of experience of ( $\leq 5$ ) years.

#### **Part-II: Overall Assessment of Nurses' Knowledge toward Post-Operative pain Management**

The study results reveal that the majority of nurses' responses at the level of their knowledge toward management of post-operative pain were (Good) at percentage of (70.41). This finding comes on the way with [9] in their study about "Level of attitude, knowledge and practice of nurses toward postoperative pain management, crosssectional study". They found that the majority of nurses' staff knowledge is good at percentage of (54.2%).

#### **Part- III: Relationships between Nurses' Knowledge toward PostOperative management and their Sociodemographic data**

The study results reveal that there were significant relationships among nurses' knowledge toward post-operative management and their educational level and training courses variables: respectively. That agreement with a study conducted by [9], who found that there were a positive relationship between nurses' knowledge and their level of education and the number of training courses.

### **CONCLUSION**

**Fundamental Finding :** The study reveals that nurses demonstrate a good level of knowledge regarding post-operative pain management. It also identifies that nurses' educational background and participation in training courses significantly influence their knowledge in managing post-operative pain. These findings underscore the critical role of formal education and continuous professional development in enhancing clinical competencies among nursing staff. **Implication :** These results suggest that implementing structured and continuous education and training programs can strengthen nurses'

competencies in post-operative pain management. Healthcare institutions should prioritize cultivating a culture that emphasizes adherence to established pain management protocols and best practices. Reinforcing such standards through regular in-service education may lead to improved patient care outcomes and greater consistency in nursing practices. **Limitation** : A limitation of this study lies in its sample size, which may not adequately represent the broader population of nurses. The relatively limited participant group restricts the generalizability of the findings. Furthermore, the depth of assessment might be constrained by the design of the questionnaire, potentially omitting nuanced aspects of knowledge and practice related to post-operative pain management. **Future Research** : Future investigations should consider employing a larger and more diverse sample to enhance the generalizability of results. Expanding the scope of the questionnaire to include more detailed and scenario-based items could provide a deeper understanding of nurses' competencies. Additionally, longitudinal studies that evaluate the long-term impact of training interventions on clinical practice would be beneficial to further validate the effectiveness of educational programs.

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