

Nurses' Knowledge, Attitudes and Perceived Barriers towards Pain Management among Post-Operative Patients

Yassmin Reda Awad 1, Wafaa Gameel Mohamed Ali 2, Heba Mohammed Mahmoud El hapashy 3

1- Registered Nurse in Gastrointestinal Surgical Centre, Faculty of Nursing, Mansoura University, Egypt

2- Professor of Medical surgical Nursing, Faculty of Nursing, Mansoura University, Egypt

3- lecturer of Medical surgical Nursing, Faculty of Nursing, Mansoura University, Egypt



1.ABSTRACT

Nurses should have a strong understanding and a positive attitude toward post-operative pain to estimate patients' conditions and provide personalized care to each patient for minimizing distress and improve life satisfaction. So, *study aim* was to assess nurses' knowledge, attitudes and perceived barriers towards pain management among post operative patients. *Design*, A descriptive cross-sectional design was conducted in surgical wards in Mansoura University Hospitals and Gastrointestinal surgical center. *Sample*, consisted of all available nurses (150 Nurse) who were caring of patients post operatively in surgical words in previously mentioned setting. *Tool*, A structured self-administered questionnaire with four parts assessing knowledge, behavior, and perceived barriers to post-operative pain management was used to collect data. *Results*, found that the majority of nurses (94%) have a good attitude toward post-operative pain management and that (58.7%) of the nurses in the study have appropriate knowledge on this field. It also showed that system-related barriers were the most widely recognized obstacles to post-operative pain assessment and management (69.96%), whereas patient-related barriers were seen to be less of barriers (65.83%). This study illustrated that there was a significant correlation between nurses' knowledge and attitude regarding post operative pain management (p.000). *Conclusion*, concluded that study participants have significantly inadequate knowledge as well as positive attitudes concerning the assessment and management of post operative pain. It was also concluded that nurses encounter several barriers while attempting to give post-operative patients with the best pain assessment and management.

Key words: Knowledge, Attitude, Perceived Barriers, Post Operative Patients, Pain Management

2.Introduction:

Pain is frequently the most unpleasant and uncomfortable condition for post-operative patients' experience, and it is similarly the most frequent trigger for seeking medical and surgical management. The International Association for the Study of Pain (IASP) describes pain as "an unpleasant sensory and emotional sensation or experience caused by actual or potential tissue damage" (Ebrahimpour, Pashaeypoor, Salisu, Cheraghi, & Sadat Hosseini, 2019). Postoperative pain is a complicated reaction resulting from surgical tissue trauma which activates the central nervous system, influencing patients' physical, psychological, and social lives. It is linked to variations in sleeping patterns, activity level, and feelings. It is associated with a reduction in social and a rise in financial costs, which may result in ongoing pain conditions, changes in physiological function, and pain of recent onset and likely short duration (Salem, EL-Dakhakhny, & Mohamed, 2019).

Patients' pain responses are subjective and individualized, so they should be evaluated on an individual basis. As a result, successful pain assessment is considered the cornerstone for effective pain management, and it must be conducted on a constant schedule for all postoperative procedures (O'Brien et al., 2017). Uncontrolled postoperative pain can result in unneeded suffering and extended hospital stays, which is a severe ethical and financial problem. Postoperative pain is still a global issue despite the availability of potent analgesics and a growing body of published research supporting their usage (Rawal, 2016). As a result, nurses have a professional and ethical obligation to provide their patients with beneficial pain control. Pain knowledge and understanding are required for nurses to provide optimal pain relief, which includes systematic and consistent pain assessment in addition to regular pain observation and documentation (Smeland, Twycross, Lundeberg, & Rustoen, 2018).

Nurses' post-operative pain management (PM) awareness and behaviors were defined as their understanding and value of post-operative pain, as well as their assessment, evaluation, and control of post-operative pain, which included both pharmacological and non-pharmacological management (Salameh, 2018). The evaluation and planning of patients prior to surgery is critical for successful postoperative pain management. It is advised that the preoperative evaluation include a defined pain history, a directed physical exam, and a pain treatment strategy. Similarly, preoperative medication modifications to avoid long-term side effects, preoperative pain and anxiety treatment, and preoperative treatment initiation as a necessary part of a multimodal pain management plan should all be included in patient preparation (Garimella & Cellini, 2013).

A number of barriers to efficient post-operative pain managing have been identified (system-related, nurse-related, physician-related, and patient-related). It makes it challenging for medical professionals to provide efficient pain management. Misunderstandings and legends about pain and pharmacological pain remedies, mainly fear of opioid addiction, are blamed for pain undertreatment, in addition to serious adverse effects such as respiratory depression, play a crucial part in the successful performance of quality-of-care improvements (Al-Mahrezi, 2017). While insufficient knowledge and skills, as well as a lack of teamwork, are considered staff-related barriers. Physician barriers include a lack of knowledge as well as false fears about addiction and overdosing. Moreover, systemic obstacles remain, such as a lack of strongly outlined standards, pain management guidelines, and lack of accessibility to pain consultants and analgesics. Finally, patient-related barriers include analgesic use, afraid of adverse effects, and drug abuse fear (Benimana, 2017).

3.Subjects & Method

The aim of this study was to assess nurses' knowledge, attitudes and perceived barriers towards pain management among post-operative patients.

3.1Design of the study:

A descriptive cross-sectional research design was applied to accomplish the aim of this study.

3.2Setting of the study:

The study was implemented in surgical wards in Mansoura University Hospitals. It consisted of five wards (7,8,10,11,12). Each ward

contains 28 beds and have 19 nurses. The average of morning shift is (6-8) nurses, 3 nurses in afternoon shift and 3 nurses in night shift. Gastrointestinal Surgical Center, it contains 2 floors (5th and 6th Floor). Each floor consisted of 24 beds. There are 30 nurses worked in 5th floor and 28 nurses worked in 6th floor. The average of morning shift is (8-10) nurses & 4 nurses in afternoon shift and 5 nurses in night shift.

3.3Subject of the study:

All available nurses (150 Nurse) were included who were caring of patients post operatively in surgical wards in previously mentioned setting.

3.4Tool of the study:

One tool was utilized for data collection: It was involved in four sections: -

Part I: Demographic data Sheet:

The researcher developed this part after reviewing related literature Shoqirat, Mahasneh, Al-Khawaldeh, & Al Hadid (2019) and used to assess the personal data of all studied nurses. It includes 6 items: age, gender, marital status, years of experience, level of education and training courses regarding post-operative pain management.

Part II: Nurses' knowledge about post-operative pain management:

This part concerned with assessment of nurses' knowledge towards post-operative pain. It was adapted from Aziato and Adejumo (2014). It included 28 items using true & false questions, the correct answer was taken '1' and the incorrect answer was taken '0', the total was divided by the number of questions in form of present scores. Whereby a higher level of nurse's knowledge scored equal to and above 60%.

Part III: Nurses' attitude towards post-operative pain:

This part assessed nurses' attitude towards post-operative pain management. It was adapted from Aziato and Adejumo (2014). It included 9 items using true & false questions, the correct answer was taken '1' while the incorrect answer was taken '0' whereby a higher positive attitude towards post-operative pain management scored equal to and above 60%.

Part IV: Perceived barriers to Nurses 'Role in pain management:

This part assessed perceived barriers to Nurses 'role in management of pain and it was adapted from Elcigil, Maltepe, Esrefgil and Mutafoglu (2011). It consists of four items patients, nurses, physicians, and system perceived

barriers. (1) Patients-Related barriers includes 8 items, (2) Nurses-Related Barriers includes 7 items, (3) Physician-Related Barriers includes 7 items and (4) System -Related barriers includes 12 items. It is a five-item scale on a 5-point Likert scale. The Likert scale contained five response categories with scores ranging from (1) for strongly disagreeing to (5) for strongly agreeing.

3.5 Method

1. To carry out the study, an official permission from Mansoura University's faculty of nursing was taken.
2. Once explaining the objective of the study, the administrator of the surgical department at Mansoura University Hospital granted permission to conduct this study.
3. After clarifying the aim of the research, the study sample was provided with a verbal consent before being included in the study. The study, according to the researcher, was entirely voluntary and anonymous.

3.6 Validity of the study:

4. Five experts from Mansoura University, two professors and three assistant professors of medical-surgical nursing, reviewed the English and Arabic tools for clarity, relevance, understanding, and applicability for implementation. Minor changes were made based on their feedback.

3.7 Pilot study:

5. A pilot study was conducted on ten percent of the study subjects from Mansoura University hospital and Gastro intestinal surgical center to evaluate the clarity and pertinence of the tool, and any essential changes were made preceding the data collection process. The main study did not include those nurses.

3.8 Reliability of the study:

6. The reliability was assessed for determining, if all of the parts on the study instrument measured the exact variable and how well the utilized items adjust together conceptually. It has been established and analyzed by Cronbach's Alpha test (r . alpha) based on standardized items and found to be ($r = .75$).

3.9 Data collection:

7. Data was collected using self-administered questionnaires during a period of 2 months from beginning of October 2021 to end of December 2021, the questionnaires require about 20- 30 minutes to be completed.

The researcher started by introducing herself

to nurses and giving proper explanation regarding study aim. Assessment of nurse's demographic data were done using part I. Then assessment of nurse's level of knowledge were done using part II, after that assessment of nurses' attitude towards post-operative pain management were performed using part III. Finally, perceived barriers to nurses' Role in pain management were assessed using part IV.

3.10 Ethical consideration:

The ethical approval was obtained from faculty of Nursing, Mansoura University. Following an explanation of the study's aim, participants agreed to participate in the study. They were notified that they can withdraw from the study at any time. An explanation of the study, including its goal, the confidentiality of the data, and some instructions, was given to each participant. Every ethical concern was accounted for at every stage of the research.

3.11 Statistical analysis:

Data entry and analysis were performed utilizing the Statically Package for Social Sciences (SPSS) version (21). Qualitative data was given as number and percentage. Quantitative data was presented as mean \pm SD. The relationship between variables was tested using person correlation test. $P < 0.05$ was statistically significant. $P < 0.001$ was highly statistically significant.

4. Results

Part I: Nurses' Demographic Characteristics (Table 1)

This table shows that most nurses (84.7%) were female, more than half (57%) were between the ages of 20 and 30, and less than one-third (27.3%) were between the ages of 31 and 40. The remaining (15.3) were over 40 years old. Most nurses (63.3%) had one to ten years of professional experience. In terms of education, slightly less than half (47.3%) graduated from a technical institute. Greater than half (69.3%) of the nurses were married, and more than two thirds (70%) had no pain management training.

Part II: Nurses' percentage distribution according to their knowledge about post-operative pain (Table 2)

According to this table, the percentage of nurses who correctly answered knowledge-related questions ranged from 13.3% to 97.3%. Question 1&5 and 4 received the most correct answers (97.3% and 96.7%, respectively). Question 6 and 13 received the most incorrect answers (83.3% and 86.7%), while question 13 received the lesser correct answers (13.3%).

Table 3: Descriptive statistics for Nurses' total Knowledge about post-operative pain N = 150.

According to this table, approximately 58.7% of participants have adequate knowledge of post-operative pain management.

Part III: Nurses' percentage distribution according to their attitude toward post-operative pain (**Table 4**)

According to this table, the percentage of nurses who correctly answered attitude-related questions ranged from 6.7% to 82%. Question 9 received the most correct answers (82%) of all questions, while question 4 received the lowest percentage (6.7%). In addition to, (93.3 %) fail to recognize question 4, which states that it should be recommended for people to experience as much discomfort as they can before taking an analgesic.

Table 5: Descriptive statistics for Nurses' total attitude toward post-operative pain N=150.

According to this table, the majority of nurses (94%) have a positive attitude toward post-operative pain management.

Table 6: This table shows the descriptive statistics of caring behaviors of nurses' perceived barriers to post-operative pain management. It showed that the highest percentage was 69.96% for system related barriers, followed by nurse related barriers 69.14% and physician related barrier 66.17%. On the other hand, the least percentage was 65.83% for patient related barriers.

Table 7: The relationship between nurses' demographic characteristics and their knowledge and attitude related to post-operative pain

This table shows the relationship between nurses' knowledge, attitudes and study variables. It shows that there is no correlation between age, years of experience, training courses, nurses' knowledge and attitude while there was a significant correlation between nurses' knowledge and attitude regarding post operative pain management (p.000).

5. Discussion

This study was designed to assess nurses' knowledge, attitude and perceived barriers towards pain management among post operative patients. According to the average nurses' knowledge of postoperative pain management, their knowledge was inadequate including route of administration, time to the peak effect and usual duration of post operative analgesics in contrast with (Liyew, Dejen Tilahun, & Habtie Bayu, 2020) who assessed knowledge and attitude towards pain management

among nurses working in Northwest Ethiopia and proved that the majority of nurses had considerable knowledge in pain management.

The current findings are in line with **Jemebere's (2020)** who titled the study as assessment of nurses' attitudes and knowledge regarding postoperative pain management in Southern Ethiopia, which showed that nurses had lower levels of knowledge regarding such items as proper pain score assessment, fear of addiction, right dose, and right time of pharmacologic pain medications and **Al-Sayaghi et al, (2022, March)** who evaluated nurses' attitudes and knowledge of pain management and evaluation in Saudi Arabia and found that just 0.7% of participants had strong knowledge, with the rest (70.1%) having inadequate knowledge. Also, **Shdaifat, Al - Shdayfat, & Sudqi, (2020)** who assessed Saudi nursing students' pain management knowledge and attitudes and **Nguyen et al, (2021)** who conducted the study that evaluate knowledge and attitudes concerning pain management between nurses working in Vietnam revealed that nurses' knowledge of pain assessment was poor. In my point of view, that is related to the nursing curriculum does not provide in-depth teaching on pain management and limited a specific pain management protocol and guidelines, as well as a gap of non-pharmacological pain assessment methods and materials to provide non-pharmacological pain treatment.

Regarding nurses' attitude towards post operative pain management, the current finding of the present study revealed that majority of nurses had positive attitude towards postoperative pain management compared with the study of **Jemebere, (2020)** who assessed knowledge and attitudes of nurses towards postoperative pain management in Southern Ethiopia and **Dessie et al, (2019)** who assessed knowledge and attitudes of Ethiopian nursing staff regarding post-operative pain management revealed that nurses had negative attitude towards post operative pain management but it is in the same line with the study of **Alzghoul, & Abdullah, (2016)** who reported that nurses' attitude towards pain management in the Jordanian public hospitals were positive that is due nurses' cooperation with patients and collaboration with health care team that make communicating, understanding cultural factors more easily, possible variation in perception of pain and preferences of pain management modalities.

Postoperative pain management is a compound issue that nurses who provide direct patient care must deal with, according to their

perceptions of its barriers. To ensure the best pain assessment and management, nurses may encounter a variety of obstacles. The current study found that nurses face a variety of challenges when attempting to provide effective pain assessment and management in surgical words. When compared to other barriers, the most perceived barriers to post-operative pain management were system-related barriers, while patient-related barriers were perceived as less of an obstacle. The most perceived system-related barrier was a shortage of psychosocial support services. This is in harmony with the study of **Elcigil, Maltepe, Esrefgil, & Mutafoğlu, (2011)** who assess nurses' perceived barriers to assessment and management of pain in a university hospital and revealed that the maximum frequently perceived barriers towards pain management were system related barriers but nurse related barriers were less perceived as an obstacle

Similarly, the research of **Mędrzycka-Dąbrowska, Dąbrowski, Basiński, & Pilch, (2016)** who assessed perception of barriers to postoperative pain management in elderly patients in Polish hospitals and ranked system related barriers first as an obstacle for post operative pain and the most observed obstacle was the deficiency of possibility of consulting a clinical pharmacist. It is critical as pharmacists' collaboration with physicians or nurses is critical for the following issues: providing analgesics to wards, ordering medications in accordance with suggestions, and consulting on drug compatibility issues, administration methods, or the occurrence of potential complications.

Another research of **Shoqirat, Mahasneh, Al-Khawaldeh, & Al Hadid, (2019)** conducted in Jordan that assessed nurses' knowledge, attitudes, and barriers toward pain management among postoperative patients and stated that insufficient ability to assess pain was the greatest observed barrier to PM but, the lowest one was "Presence of drug addiction and/or abuse". The current outcome is justified by the fact that psychosocial support is not routinely provided to patients. Although psychosocial support can be offered to little number of cancer patients on the attending physicians' orders, there is no social work for patients. As a result, institutional and governmental efforts to provide psychosocial support services to all patients are required.

The finding of the present study also revealed that, there is no correlation between age, years of experience and training courses with nurses' knowledge and attitude towards post operative pain management. This is in harmony

with the study of **Abdallah, Majali, Stomberg, & Bergbom, (2011)** who assess the outcome of postoperative pain management program on improving nurses' knowledge and attitudes toward pain and indicated that there is no statistically significant relationship between the nurses' level of education and years of experience with their scores of knowledges and attitude toward pain. In addition to that, the study of **Francis, & Fitzpatrick, (2013)** who evaluate nurses' knowledge and patients' experiences concerning post operative pain demonstrated that there were no significant differences found between the mean scores of knowledges, attitude and the demographic characteristics of the participant nurses.

The result also illustrates that there was a significant correlation between nurses' knowledge and attitude regarding post operative pain management (p.000), this is consistent with the study of **Alzghoul, & Abdullah, (2016)** who conducted the study that investigate knowledge, attitude and practices regarding pain management and explore that both of attitude and knowledge were positively correlated with pain management practices.

6. Conclusion

The study concluded that nurses have significantly inadequate knowledge and positive attitudes regarding the assessment and management of post operative pain. It also concluded that nurses confront a variety of difficulties in providing adequate pain assessment and management in surgical words. When compared to other barriers, the most frequently perceived barriers to post-operative pain management were system-related barriers, while patient-related barriers were perceived as less of a barrier. The most perceived system-related barrier was a lack of psychosocial support services.

7. Recommendation

The following recommendations are provided considering the study's findings: -

Nurses should receive ongoing pain management training. Pain symptoms, pain assessment, analgesia mechanism, analgesia evaluation, effects and adverse effects, and non-pharmacological pain management should all be covered in a pain management training course. Regular updates should be made to the pain management training course. Intense and holistic pain management education must be a mandatory element of the nursing curriculum so that student nurses are adequately prepared before graduation. Addressing the previously mentioned barriers in

conjunction with approved education and job training

8. Limitations of the study:

- 1-The study's sample may not have been representative of all nurses working in surgical wards.
- 2- The use of a self-administered data collection method in this study may result in inaccurately positive reactions. As a result, it is critical to consider the differences between how nurses actually behave in real life (true attitudes) and what nurses mentioned in the questionnaire (stated attitudes).

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Table 1. Nurses' Demographic Characteristics

Sociodemographic Characteristics	N	%
Sex		
Male	23	15.3
Female	127	84.7
Age (y)		
20-30	86	57.3
31-40	41	27.3
>40	23	15.3
Years of professional experience		
1 - 10	95	63.3
11-20	33	22.0
>20	22	14.7
Educational level		
Nursing Diploma (Nursing School)	31	20.7
Technical Institute	71	47.3
Bachelor Degree	47	31.3
Master Degree	1	.7
Marital Status		
Single	45	30.0
Married	104	69.3
Widowed	1	.7
Training on pain management		
No	105	70.0
Yes	45	30.0

Table 2: Nurses' Percentage Distribution According to their Knowledge about Post-Operative Pain N = 150.

Variable	Correct %	Incorrect %
1. Definition of pain	97.3	2.7
2. Post-operative pain lasts for 20 to 30 days.	62	38
3. Untreated post-operative pain can delay mobilization and overall recovery of pt.	91.3	8.7
4. Pain should be evaluated both before and after the use of painkillers.	96.7	3.3
5. Pain evaluation includes determining the onset, site, length of time, variability, and pain intensity.	97.3	2.7
6. Vital signs are excellent predictors of a patient's pain perception.	16.7	83.3
7. The usage of a pain management assessment tool is not required for post-operative pain management.	58.7	41.3

Continue Table 2: Nurses' Percentage Distribution According to their Knowledge about Post-Operative Pain N = 150.

8. Sedation evaluation is advised during opioid pain management.	60	40
9. Nonsteroidal anti-inflammatory drugs (NSAIDs) are efficient analgesics for post-operative pain.	68	32
10. Children under the age of two have reduced pain responsiveness and memory capacity for painful experiences due to their underdeveloped nervous systems.	20.7	79.3
11. Analgesics for postoperative pain must be provided immediately and on a regular basis around the clock.	76.7	23.3
12. If the cause of the patient's pain is unidentified, opioids should be avoided during the pain assessment period.	29.3	70.7
13. For patients with persistent postoperative pain, oral opioids are the preferred route of opioid analgesic administration.	13.3	86.7
14. For patients with brief, extreme pain of sudden onset, intramuscular opioid analgesic administration is recommended.	64	36
15. The duration of the peak effect for morphine given intravenously is 6 minutes.	40.7	59.3
16. The typical duration of 1-2 mg morphine IV analgesia is 4-5 hours.	32	68
17. Pethidine 75 mg intramuscularly is nearly equal to morphine 10 mg intramuscularly	52	48
18. Opioid analgesic dosages should be changed after the first dose is given.	92.7	7.3
19. Cold and heat compression should be used to manage surgical pain.	68	32
20. Benzodiazepines are ineffective pain relievers that are rarely prescribed.	57.3	42.7
21. Combining analgesics with different mechanisms of action may lead to greater pain control and less side effects compared to using a single analgesic agent.	69.3	30.7
22. Anticonvulsant medications, such as gabapentin (Neurontin), offer efficient pain relief after a lethal dose.	34	66
23. Opioids should not be administered to patients who have a history of drug abuse.	38	62
24. 5-15% of post operatively patients have a history of alcohol and/or drug abuse.	72.7	27.3

Continue Table 2: Nurses' Percentage Distribution According to their Knowledge about Post-Operative Pain N = 150.

25. Definition of narcotic/opioid addiction	86	14
26. Narcotic side effects should be noticed at least 20 minutes after administration.	80	20
27. Respiratory depression is uncommon in patients with a history of receiving consistent opioid doses for months.	28.7	71.3
28. Analgesics can relieve pain for the majority of patients (80%).	86	14

Table 3: Descriptive statistics for Nurses' total Knowledge about post-operative pain N = 150.

	Frequency	Percent %
Adequate	88	58.7
Inadequate	62	41.3
Total Knowledge Score (total item = 28)	Max - Min	Mean ± SD
	23-10	16.89± 2.54

Table 4: Nurses' Percentage Distribution According to their Attitude toward Post-Operative Pain N = 150.

Variable	Correct %	Incorrect%
1. Patients who can express their frustration with their pain are less likely to be in severe pain.	16.7	83.3
2. Despite the pain, the patient might sleep.	50.7	49.3
3. Opioids are not tolerated by young adult patients for pain relief.	54.7	45.3
4. Patients should be encouraged to experience the most discomfort prior to using opioids.	6.7	93.3
5. Spiritual beliefs may assist patients in controlling their pain and suffering.	74	26
6. Offering patients distilled water by injection (placebo) is a beneficial method for assessing the severity of their pain.	16.7	83.3

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7. The most common reason a patient with pain would ask for higher pain medication dosage is psychological fear of pain.	16	84
8. Inability to express pain does not indicate that pain is not present.	52	48
9. Cultural background of the patient and the nurse influences nursing care for pain management.	82	18

Table 5: Descriptive Statistics for Nurses' Total Attitude toward Post-Operative Pain N=150.

	Frequency	Percent %
Positive	141	94
Negative	9	6
Total Attitude Score (total item= 9)	Max - Min	Mean ± SD
	1-7	3.69± 1.29

Table 6: Descriptive statistics for Nurses' perceived barriers to post-operative pain management N = 150.

Barriers	Items No	Min	Max	Mean± SD	Percentage *
1-Patient related	8	16	40	26.33±4.61	65.83
2-Nurse related	7	11	35	24.2±5.26	69.14
3-Physician related	7	14	35	23.16±3.8	66.17
4-System related	12	22	60	41.98±8.08	69.96
Total		73	168	115.68±16.91	

*Percentages are calculated relative to maximum score

Table 7: The Relationship between Nurses' Demographic Characteristics and their Knowledge and Attitude related to Post-operative Pain

Characteristics		Nurses' knowledge	Nurses' Attitude
Age	r	-.002-	-.147-
	P	.981	.073
Years of experience	r	-.011-	-.123-
	p	.897	.132
No of training course	r	.149	-.083-
	p	.069	.312
Nurses' knowledge	r		.299**
	p		.000

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).