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Surgical Nurses' Pain Related Knowledge, Attitude and Clinical Decision Making Skills

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Abstract

Objective: To examine the knowledge, behavior, and clinical decision-making abilities of surgical nurses.

Methods: The research was conducted in 95 surgical nurses working in a state and a university hospital. Data were collected using A Personal Information Form, the Pain Questionnaire, and the Clinical Decision Making Questionnaire in February 2018-July 2020. Data analysis was performed with SPSS 25 and legal permissions were obtained.

Results: The statement "In cases where the necessary information about the surgery to be performed is not given, the severity of postoperative pain increases with increasing anxiety" received the highest number of correct answers (88.4%), while the statement "Opioids should not be given to patients with a substance abuse history because these patients are at high risk for recurrent addiction" received the least number of correct answers (7.4%). It was determined that 57.9% of the nurses observed the patient's behaviors to describe pain severity, and 76.8% of them used a pain scale in pain assessment. Of the nurses, 93.7% stated that the most commonly used pain relievers in their clinics were non-opioid drugs.

Conclusion: It is noteworthy that the surgical nurses in this study had inaccurate/incomplete information about the use of pain scales and placebo, drug/opioid side effects, and non-pharmacological interventions. Furthermore, it was found that nurses experienced ethical dilemmas due to the risk of respiratory depression. Therefore, it is recommended to review the knowledge/practices related to pain management during nursing education/in-service training in order to increase the quality of pain management in surgical nurses.

Key words: Behaviour, clinical decision making, knowledge, pain, surgical nurse.

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INTRODUCTION

Pain is a subjective condition that everyone often experiences in their lives (1). The International Association for the Study of Pain defines pain as "an unpleasant emotional state and behavioral pattern associated with the past experiences of people, originating from any part of the body with actual or potential tissue damage" (2). Surgical interventions are significant pain reasons. Pain is the most common problem that the patients experience in the postoperative period. It is reported that 73 million patients are operated in the USA every year, and 80% of them experience acute postoperative pain and approximately 20% experience severe pain. A study conducted in Turkey found that the incidence of postoperative pain was 77.3%. The same study determined that 39.7% of the patients experienced pain at a disturbing level (3).

Mediators released locally, humorally and neurally from the wound due to the surgical incision are known to be effective on the beginning and continuation of pain (4). Factors such as the severity, location, duration of the surgical intervention, anesthesia type, subjective nature of pain, and the importance the patient attributed to pain and treatment affect the incidence of pain. Pain is a threat for the organism regardless of its reason, and the organism provides a stress response against this situation (2). If pain which is addressed as a stressor in this situation prolongs, the organism develops a physiopathological response against pain. Atelectasis, hypoxemia, high blood pressure, tachycardia, increasing oxygen consumption, decreasing stomach and bowel motilities, urine retention, increased blood sugar, tendency to infection, retardation on wound healing, immobility, fear, anxiety and sleep deprivation are among the physiopathological responses developed against pain (2,5,6).

It is important to decide on and apply nonpharmacological interventions, and to evaluate the patient's responses and the applications' effectiveness in addition to analgesic application to reduce or eliminate the postoperative pain. Nurses have an important role in this process (5,6). The fact that the nurses are together with the patient longer than other health staff, that they guide the patient in terms of coping with pain and that they monitor the results of the applications and use their empathy skills requires them to have an active role on pain control (7,8). However, nurses have lack of knowledge on the pain signs and symptoms, diagnosing the pain intensity, and pharmacological and nonpharmacological pain treatment methods (5,8). It should be remembered that effective pain management requires accurate knowledge and positive attitudes as well as clinical decision making skills regarding pain (9).

There is a number of studies on determining the pain related knowledge level of surgical nurses in the literature (5,6,10). However, there are no studies on determining the clinical decision making skills of surgical nurses regarding pain. Accordingly, this study was carried out to determine the pain related knowledge, attitude and clinical decision making skills of nurses who work at surgery clinics.

METHODS

Aim and Design

This descriptive study was carried out to investigate the surgical nurses' pain related

knowledge, attitude and clinical decision making skills.

Setting

The study was conducted at the surgery clinics of a state hospital and a university hospital between February 2018 and July 2020. In the clinics where the study was conducted, only pain intensity is routinely evaluated. There are numbered pain scales in the observation forms of the nurses, and they were asked to record the pain intensity on this form.

Sample

The population of the study included 112 nurses who worked at the surgery clinics of the mentioned hospitals. No sampling method was used and the whole universe was tried to be reached in the study. The sample of the study included 95 nurses who agreed to participate in the study. The participation rate of the nurses was 85%.

Data collection tools

A Personal Information Form, the Pain Related Knowledge and Attitude Questionnaire and the Clinical Decision Making Survey were used as the data collection tools. Personal Information Form has seven questions about age, sex, education level, institution worked at, clinic worked at, years of working and total years of working at the surgery clinic. The Pain Related Knowledge and Attitude Questionnaire was formed after a literature review, and it has 20 statements (9 are true and 11 are false) (11,12). The Clinical Decision Making Survey has 14 questions and determines the pain related clinical decision making skills of the nurses. It was developed by Ferrell et al., and its Turkish validity and reliability study was conducted by Özer et al. (11,13). The survey does not have a scoring system.

Data collection

Data were collected with the face-to-face interview method in the clinics where the nurses worked between March 2019 and May 2019. The researcher introduced the data collection tools to the nurses, asked them to fill these forms when they are available, and collected the forms within 2-3 days. It takes 15-20 minutes to answer the questions.

Statistical analysis

The study data were analyzed by Statistical Package of Social Science (SPSS) 25.0 software. Descriptive statistical methods (frequency, percentage, mean, and standard deviation) were used to evaluate the date.

RESULTS

The descriptive characteristics of the nurses who participated in the study are shown in Table 1.

Of the nurses, 47.4% were aged between 28 and 37, 66.3% were female, 77.9% were high school graduates, and 54.7% worked at the university hospital. Almost half of the nurses served at the general surgery clinic, 69.5% were working for six or more years, and 43.2% were working at the surgery clinic for six or more years.

The true-false ratios of the nurses on the knowledge and attitude questions are presented in Table 2.

Table 1. Descriptive Characteristics of the Nurses (n=95)

Descriptive characteristics	n	%
Age		
18-27	20	21.1
28-37	45	47.4
38-47	24	25.3
48-57	6	6.3

Sex		
Female	63	66.3
Male	32	33.7
Education level		
High school	5	5.3
Associate degree	8	8.4
Undergraduate	74	77.9
Postgraduate and higher education	8	8.4
Institution worked at		
University hospital	52	54.7
State hospital	43	45.3
Clinic worked at		
General surgery	44	46.3
Orthopedics	15	15.8
Organ transplantation	11	11.6
Urology	8	8.4
Otolaryngology	6	6.3
Neurosurgery	5	5.3
Cardiovascular surgery	4	4.2
Thoracic surgery	2	2.1
Years of working		
5 years and less	29	30.5
6 years and more	66	69.5
Years of working in the surgical clinic	54	56.8
5 years and less	41	43.2
6 years and more		

The statement that "In cases when the necessary information regarding the operation to be performed is not provided, postoperative pain intensity increases with increasing anxiety" had the highest number of correct answers (88.4%) while the statement that "Opioids should be given to the patients with substance abuse history because these patients are at high risk for recurrent addiction" had the lowest number of correct answers (7.4%) (Table 2).

Considering the nurses' answers on the clinical decision making survey, 57.9% stated that they observe the patient's behaviors when defining the pain intensity, and 76.8% stated that they use pain scale in pain evaluation. Of them, 93.7% stated that nonopioid drugs are the most commonly used pain reliever drugs in the clinics. When they were asked what they pay attention while giving the drugs ordered as if needed, 78.9% stated that they give the drugs as ordered. Of them, 94.7% recorded their diagnoses regarding pain, and all of them recorded on the nurse observation form. The study found that the cold application was the most commonly used nonpharmacological intervention to relieve pain in clinics where the study is conducted at the rate of 58.9%. Of the nurses, 97.9% contacted the doctor regarding pain and 70.5% reported the changes on pain during this contact. The problem that the nurses encountered the most in pain relief was insufficient drug ordering at the rate of 20%, and of the nurses, 64.2% had to decide on describing the pain intensity, and the most common ethical dilemma faced in pain relief was concern about respiratory depression at the rate of 32.6%. Of the nurses, 71.6% stated that they need information about diagnosing pain (Table 3a and b).

Table 2. Nurses' Pain Related Knowledge and Attitudes (n=95)

	Pain related knowledge and attitudes	True		False		True answers %
		n	%	n	%	
1.	In cases when the necessary information regarding the operation to be performed is not provided, postoperative pain intensity increases with increasing anxiety (T)	84	88.4	11	11.6	88.4
2.	The most reliable indicator in pain evaluation is the patient's own pain expression (T)	78	82.1	17	17.9	82.1
3.	Early mobilization decreases due to pain and risk of thromboembolic complications increases (T)	78	82.1	17	17.9	82.1
4.	Respiratory depression rarely emerges on the patients who have been receiving opioid for a long time (months) (T)	66	69.5	29	30.5	69.5
5.	Pain intensity should be evaluated by the healthcare professionals instead of the patient (F)	34	35.8	61	64.2	64.2
6.	Pain that cannot be eliminated in surgical patients increases mortality and morbidity (T)	58	61.1	37	38.9	61.1
7.	Nurses should trust the parents regarding pain intensity in children younger than 11 (F)	43	45.3	52	54.7	54.7
8.	Only analgesic agent should be used on a patient in pain instead of combined drug groups (e.g. Opioid+ NSAİDs) (F)	53	55.8	42	44.2	44.2
9.	The patient should be encouraged to withstand pain as long as possible before applying a pain relief method (F)	54	56.8	41	43.2	43.2
10.	The patient should be advised to use nonpharmacological techniques alone and not in combination with pain medications (F)	56	58.9	39	41.1	41.1
11.	If the patient's attention can be directed to another way, this means that the patient does not have a high intensity of pain, as stated (F)	56	58.9	39	41.1	41.1
12.	The patient can sleep even with moderate or severe pain (T)	33	34.7	62	65.3	34.7
13.	Nonpharmacological interventions (e.g. hot application, music) are quite effective on moderate pain, but not as effective on severe pain (F)	69	72.6	26	27.4	27.4
14.	Using the pain scale increases the rate of analgesics protocols (T)	25	26.3	70	73.7	26.3
15.	Aspirin and other NSAİDs are not effective analgesics for chronic pain due to metastases (F)	75	78.9	20	21.1	21.1
16.	The addiction rate of opioids is very low (T)	18	18.9	77	81.1	18.9
17.	Hot and cold application should be made only to the painful area to be effective (F)	79	83.2	16	16.8	16.8
18.	If the patient is relieved with placebo, pain is not real (F)	79	83.2	16	16.8	16.8
19.	The rate of opioids causing respiratory depression is very low (T)	13	13.7	82	86.3	13.7
20.	Opioids should be given to the patients with substance abuse history because these patients are at high risk for recurrent addiction (F)	88	92.6	7	7.4	7.4

NSAİDs; Non-steroid anti-inflammatory drugs.

Table 3a. *Nurses' Pain Related Clinical Decision-Making Statuses (n=95)*

Nurses' pain related clinical decision-making statuses	n	%
Observation criteria for defining pain intensity*		
I observe the patient's behaviors	55	57.9
I ask the patient how much pain he/she has	46	48.4
I review the information on the doctor's notes	19	20.0
I evaluate the information that I receive from other nurses verbally	19	20.0
Using pain scale		
Yes	73	76.8
No	22	23.2
Most commonly used pain reliever drugs		
Nonopioids	89	93.7
Opioids	6	6.3
Conditions to be considered while giving drugs that are ordered if needed		
I give the drug as ordered	75	78.9
I give the drug less often than ordered	15	15.8
I give another drug than analgesics for pain (Antiemetic, sedative etc.)	5	5.3
Recording the diagnostics regarding pain		
Yes	90	94.7
No	5	5.3
Where pain diagnostics are recorded		
Nurse observation	95	100
Nonpharmacological interventions ordered in the clinic		
Cold application	56	58.9
Not ordered	31	32.6
Hot application	16	16.8
Physiotherapy	6	6.3
TENS	2	2.1
Other	9	9.5
Contacting the doctor regarding pain		
Yes	93	97.9
No	2	2.1
Matters that are discussed with the doctor*		
I report the changes regarding pain	67	70.5
I discuss the need for increasing drug dosage	32	33.7
I discuss the side effects of the drugs (e.g. nausea)	27	28.4
I discuss the need for changing the drug or the drug delivery method	24	25.3
Encountering an obstacle/issue in pain relief		
No	48	50.5
Yes	47	49.5

Table 3b. *Nurses' Pain Related Clinical Decision-Making Statuses (n=95)*

Obstacles/issues encountered in pain relief		
Insufficient drug ordering	19	20.0
Knowledge of the patient and family	18	18.9
Patient cooperation on taking drugs	11	11.6
Time	10	10.5
Cooperation with the doctor	7	7.4
Nurses' knowledge	5	5.3
Doctors' knowledge	4	4.2
Situations where the nurses need to decide regarding pain*		
Describing the pain intensity of the patient	61	64.2
Drugs to be given to the patient	37	38.9
Describing the patient's pain	31	32.6
Timing of the drugs to be given to the patient	30	31.6
Ethical dilemma that is placed first in pain relief		
Concern about respiratory depression	31	32.6
Concern/problem about drug overdose	27	28.4
Feeling that the patient's pain is not sufficiently relived	13	13.7
Concern/problem about giving a small amount of drug	10	10.5
Concern about addiction	6	6.3
Knowing and not accepting that the patient has pain	5	5.3
Suspecting that the pain is real	3	3.2
Information needed in pain management as first		
Pain diagnosis	68	71.6
Pharmacological management of pain	11	11.6
Technical matters such as analgesia pumps	8	8.4
Pain management in specific populations	4	4.2
Nonpharmacological (drug free) intervention	3	3.2
Psychosocial matters regarding pain	1	1.1

TENS; Transcutaneous Electrical Nerve Stimulation
** More than one answers were given.*

DISCUSSION

Although the improvements on surgical techniques, anesthesia, pharmacology and pain control, the pain prevalence among the surgical patients is high (2,14). An effective pain management may prevent postoperative complications, but applications regarding this matter is not sufficient (15). The quality of pain management is based on the knowledge, attitude and clinical decision making skills of the health staff. The nurses who ensure the coordination between the doctor and patient, and who closely monitor the patient's pain and comfort have a significant role in this process (11). Accordingly, this study was carried out to determine the pain related knowledge, attitude and clinical decision making skills of nurses who work at surgery clinics.

The statement that "In cases when the necessary information regarding the operation to be performed is not provided, postoperative pain intensity increases with increasing anxiety" was answered correctly by

88.4% of the nurses in this study. The literature states that preoperative anxiety is effective on the postoperative pain, and education provided in the preoperative period decreases anxiety. The fact that most nurses have accurate information on this matter will have positive effects on postoperative pain management (16).

According to the study results, 82.1% of the nurses stated that the most reliable indicator on pain evaluation is the patient's own pain statement. Two separate studies conducted with surgical nurses have similar results (5,17). It is pleasing that the nurses consider the patient's own statement as the most reliable indicator on pain evaluation.

The statement that "Early mobilization decreases due to pain and risk of thromboembolic complications increases" was answered correctly by 82.1% of the nurses. It is emphasized in the literature that movement restrictions occur in the postoperative period due to pain, and that the nurses should provide effective pain management to prevent complication that may develop due to immobility (9,18). The fact that most of the nurses in this study had high level of awareness about this matter will be beneficial for eliminating pain and pain-induced complications.

The statement that "Respiratory depression rarely emerges on the patients who have been receiving opioid for a long time (months)" was answered correctly by 69.5% of the nurses. In the study by Shogurat, majority of the surgical nurses also answered the same question correctly (5). In the study by Bouri, 61.8% of the orthopedic nurses answered this question incorrectly (19). Lack of knowledge and inaccurate beliefs on opioids are important problems in pain management (20).

In this study, 64.2% of the nurses reported that the statement that "Pain intensity should be evaluated by the healthcare professionals instead of the patient" is false. On the contrary, a similar question was answered incorrectly at the rate of 64.6% in another study (17). Undoubtedly, it is very important that nurses believe patients' pain statements and allow the patient to evaluate pain for effective pain management (21). The fact that a considerable part of the nurses reported that the pain intensity should be evaluated by healthcare professionals in this study is engrossing.

It is stated in the literature that using pharmacological methods along with nonpharmacological methods is more effective on the management of severe pain (12). Only 27.4% of the nurses correctly answered the statement that "Nonpharmacological methods are quite effective on moderate pain, but not as effective on severe pain." In another study, the same statement was answered correctly by 7% of the participants. This indicates that nonpharmacological approaches are not sufficiently involved in nursing education and in-service training.

The statement that "using the pain scale increases the rate of analgesics protocols" was answered correctly by 26.3% of the nurses. However, one of the possible reasons for insufficient pain management is not using the pain scale (22). This result shows that the nurses who participated in the study were not sufficiently aware of the importance of using the pain scale.

It is reported in the literature that the nurses are still unable decide on using opioids (23). Similarly, the statement that "the addiction rate of opioids is very low" was stated as true by only 18.9% of the

nurses in this study (21,24). This result indicates that a pain that can be eliminated with opioids cannot be eliminated due to the nurses' fear of addiction. The statement that "If the patient is relieved with placebo, pain is not real" was answered correctly by a very small number of participants. It can be observed that a significant part of the nurses has false information about this matter in similar study (5,25). However, it is stated in the literature that the majority of patients with a diagnosable physical pain cause may be relieved when given a placebo (26).

It is important observe pain-related behaviors such as contraction, clenching, pulling the aching organ or area away from the stimulus in the evaluation of pain which is a subjective symptom (25). This study determined that 57.9% of the nurses observed the patient's behaviors when diagnosing the pain intensity. Another study on this matter also found a similar result. Undoubtedly, observing the patient's behaviors will have a positive effect on the postoperative pain management.

Using pain measurement tools is an integral part the postoperative pain management (17). This study found that 76.8% of the nurses used the pain scale. While 64.8% of the nurses used the pain scale in another study, (27) this rate was 18.7% in the study by Özer et al. (11).

In the pharmacological management of pain, the nurses have a bigger role than just applying the drug. This responsibility is much higher especially in "analgesic if needed" requests that are still dominantly written in surgical fields (28) When the conditions to be considered while giving drugs that are ordered if needed are examined, the study found that 15.8% of the nurses gave the drugs less often than ordered. Similarly, another study found that 17.5% of the emergency nurses gave the drugs less often than ordered (12). In the management of pain, which is an expected problem in surgical patients, it is wrong to wait for the patient to experience pain before applying "analgesic if needed" (28). This result indicates that the nurses do not have sufficient knowledge about this matter.

The American Pain Association determined the importance of recording the pain to improve the pain treatment (12). This study found that 94.7% of the nurses recorded the pain and all of them recorded it on the nurse observation form. Similarly, Özer et al. determined that 71.5% of the nurses recorded the pain statement in their study (11). These results are pleasing for the improvement of the pain treatment. It indicates that the surgical nurses are aware about recording the pain.

Another important matter for pain management to be of desired quality is undoubtedly a good team approach. This study found that 97.9% of the nurses contacted the doctor regarding the pain. Additionally, 70.5% of the nurses reported the changes on the pain level to the doctor. There are similar results in the literature (11,12). This is a pleasing result for the postoperative pain management.

The study found that the nurses are in an ethical dilemma due to their concerns about respiratory depression induced by pain relief. Özer et al. revealed that the most common ethical dilemma faced by the nurses was "concerning about respiratory depression" (11). Another study revealed that the most common ethical dilemma faced by the nurses was "concern/problem about drug overdose" (12). These results indicate that the nurses have lacking/incorrect

information about opioids. This will negatively affect the clinical decisions of the surgical nurses about pain management.

CONCLUSIONS

It is remarkable that the surgical nurses who participated in this study have incorrect/lacking knowledge on using pain scale, placebo, side effects of drugs/opioids and nonpharmacological interventions. Additionally, it was found that the nurses face an ethical dilemma due to the risk of respiratory depression. The study found that most nurses used the pain scale for pain evaluation, almost all of them recorded diagnoses regarding the pain, and that insufficient drug ordering was the most commonly encountered problem in pain relief, and the most common ethical dilemma faced in pain relief was concern about respiratory depression. The results of this study indicate that hospital education programmes about pain assessment and management for surgical nurses need to be a high priority. It can be suggested that more emphasis should be given to the subject of "pain" during nursing education, and that the "pain management" course should be included in the curriculum. Advanced future studies conducted with larger sample groups will provide results that are more definitive.

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