

CERRAHİ HEMŞİRELERİNİN AĞRI VE AMELİYAT SONRASI AĞRI YÖNETİMİNE İLİŞKİN BİLGİ DÜZEYLERİNİN SAPTANMASI: PİLOT BİR ÇALIŞMA

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ÖZET

Bu tanımlayıcı çalışma, cerrahi hemşirelerinin ağrı ve ameliyat sonrası ağrı yönetimi hakkında bilgi düzeylerini belirlemek için yapıldı. Araştırma, Şubat-Mart 2010 tarihleri arasında, Gazi Üniversitesi Tıp Fakültesi Hastanesinde, çalışmaya katılmayı kabul eden 57 cerrahi hemşiresiyle gerçekleştirildi. Veriler, ağrı ve ağrı yönetimine ilişkin toplam 35 sorunun yer aldığı anket formu ile toplandı. Anket genel demografik veri ve ağrı yönetimi soruları (8 tane ağrı fizyolojisi, 6 tane ağrı değerlendirmesi, 17 tane ağrı tedavisi ve 4 tane ağrı yönetimi sorusu) olmak iki bölümden oluştu. Verilerin değerlendirilmesinde yüzdeler ve tek yönlü varyans analizi testleri kullanıldı.

Çalışma sonuçlarına göre, ortalama başarının %44.8 olduğu ve hemşirelerin çoğunun ağrı yönetimi konusunda yeterli bilgiye sahip olmadıkları saptandı. Konulara göre başarı oranları incelendiğinde en fazla doğru yanıtın ağrı ve fizyolojisi (%71.4), en az doğru yanıtın ise ağrı tedavisi (%32.1) sorularında olduğu saptandı. Araştırmanın sonuçları değerlendirildiğinde, hemşirelerin postoperative ağrı yönetimi bilgilerinin hemşirelik bakımının planlanması ve uygulanması açısından yetersiz olduğunu, bu nedenle hastanelerde düzenli eğitim programlarının yapılması gerektiğini gösterdi.

Anahtar Kelimeler: Cerrahi Hemşiresi, Postoperatif Ağrı, Ağrı Yönetimi, Bilgi

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**DETERMINING THE KNOWLEDGE OF THE PAIN AND POSTOPERATIVE
PAIN MANAGEMENT OF SURGICAL NURSES:
A PILOT STUDY**

ABSTRACT

This descriptive study conducted to determine the knowledge of surgical nurses related to pain and postoperative pain management. The study was performed between February–March 2010 with 57 surgical nurses who accepted to attend the study in Gazi University Faculty of Medicine Hospital. Data were collected by a questionnaire which included 35 questions related to pain and pain management. The questionnaire consisted of two parts: basic demographic data and pain management questions (8 pain physiology questions, 6 pain assessment questions, 17 pain treatment questions and 4 pain management questions). For analysis of the data percentage and ANOVA test were used.

According to study results, the mean success rate was found to be 44.8%, which indicates many nurses had insufficient knowledge regarding pain management. When subjects were examined according to the success' rate, the highest number of correct answers was determined in pain and pain physiology (71.4%) and the highest number of incorrect answers was determined in pain treatment (32.1%). The results of the study showed that nurses' knowledge regarding postoperative pain management is inadequate for efficient planning and performance of nursing care, so regular education programmes are needed in hospitals.

Key words: Surgical Nursing, Postoperative Pain, Pain Management, Knowledge

INTRODUCTION

Postoperative pain can have a expressive effect on patient healing (1). Nearly all of patients (%80) feel pain in the postoperative term (1,2). Of these patients, 86% had moderate, severe, or extreme pain (1). Postoperative pain is still insufficiently treated spite of improvements in the treatment of pain. Uncontrolled postoperative pain can cause postoperative morbidity and mortality (3).

Postoperative pain may leads to complications such as pneumonia, myocardial infarction, tromboembolic and urinary complications. On the contrary, adminstering higher doses of analgesics then required may cause complications such as deep sedation and hyperalgesia and also the duration of hospital stay (4,5). Therefore postoperative pain must be properly managed to avoid pain and treatment-related morbidity in the postoperative period (6).

Effective pain management entails health professionals' cooperative efforts in proper assessment, treatment, and documentation of pain (7). It is the nurse's duty to assess the patients pain, administer the medication, reassess the pain, and report the entire process to the health professionals throughout the day. However, most of the nurses were not efficient in dealing with pain. Lessons of pain management are not ample during school years or at the postgraduate level. Nursing programmes at the undergraduate level do not include a through approach to pain management and there are no programmes for postgraduate education. Therefore, inadequate education in pain management causes inadequete pain relief of patients (5,8).

Although assessment of pain is the 5th vital sign, the literature states that nurses do not assess pain properly for effective postoperative pain management. Most of the nurses do not believe in the patient's pain and do not use any scales while evaluating pain because of inadequate education (9,10,11). In addition, a significant proportion of the nurses estimate pain scores lower than the patients' scores (12,13). Administrating placebo to pain patients is another pain management deficit. Ozer et al. declared that 88.1% of the nurses believed that placebo (sterile saline) could be used to treat the patient's pain (10).

The other essential step of pain management is pain treatment. Opioids are the best analgesic drugs for postoperative severe pain. In a study, Edwards et al. declared that one third of the nurses use a maximum of three days of opioids, and nearly half of the nurses prefer non-opioid medication for postoperative pain (14). Also, Abdalrahim et al. reported

that most of the nurses have inadequate information about opioids.⁶ In the literature it is stated that wrong beliefs and lack education about analgesics leads to inadequate pain management (15-17).

Another barrier for effective pain treatment plans is lack of records. Because the nursing records about pain is a guide for pain treatment. Despite the nurses' responsibility on documentation for pain management, it is reported that nurses lack knowledge of postoperative pain documentation, which states the importance of pain management education programmes (6, 18).

Educating nurses about pain management increases the knowledge of the nurses, decreases postoperative pain scores and increases patient satisfaction (6,19,20,21). The educational programmes can ensure improvement of patients' outcomes (22). Therefore, nurses be equipped to guide nursing practice at all times for effective postoperative pain management.

Our hospital is one of the biggest University hospitals in Ankara, the capital city of Turkey where many patients are admitted from peripheral regions. This cross-sectional observational study is important to reflect a scene about nurses' knowledge of pain and postoperative pain management.

MATERIALS AND METHODS

Hospital, Ankara, Turkey to determine the surgical clinic nurses' knowledge about pain and pain management. This hospital had 1300 beds and nine surgical clinics. Six of the clinics (General Surgery, Thorax Surgery, Orthopedic Surgery, Reconstructive Surgery, Urology, Ear-Nose-Throat) agreed to participate in the study. The Neurosurgery, Gynecology and Cardiovascular surgery clinics did not accept to participate to the research, thus they were excluded. All of the 68 nurses working in six surgical clinics were informed about the study and 57 nurse accepted to participate. Permission was obtained from Hospital Nursing Director, Hospital Chief Physician. Verbal consent was obtained from all nurses indicating that they were accepting to participate in the study.

A questionnaire was developed by the researchers on the basis of literature data.^{8, 10, 16, 23} To ensure clarity the questionnaire was pre-tested on nurses, the nurses who took part in the pre test were not included in the study.

The questionnaire form consisted of two parts: (1) a set of basic demographic data and (2) pain management questions. Three questions in the questionnaire were about demographic properties of nurses (level of education, education on pain and place of pain education). The questionnaire included 35 pain questions and pain management questions consisting of 8 pain physiology questions, 6 assessment of pain questions, 17 pain treatment questions and 4 pain management (including 2 scenarios related=3 questions) questions. One of the case-related questions (question 33) was adapted from McCaffery et al. 's study (7). Most of the questions were in the form of right or wrong answer; three questions were multiple choice questions and one required drawing on the pain assessment scale. Each right answer was rated 1, each wrong answer or 'I do not know' answer was rated 0 points and a total of 35 points were available (Table 1).

The obtained data were analysed by using SPSS 17 software. Data was analysed by percentage and one way analysis of variance (ANOVA) test and were used for comparison of total points and independent variables. $p < 0.05$ was considered significant.

RESULTS

There was no correlation between nursing education and pain management knowledge. All of the nurses were female. Most of the nurses, 39 (68.5%), were undergraduate/post graduate. The majority of nurses, 40 (70.2%), were not educated about pain and the rest of them (29.8%) were educated only at school. They indicated that they were not educated about pain management in which hospital they were working.

Pain and pain management questions were evaluated and the percentages of correct responses according to subjects are shown on Table 1.

According to these results all nurses' success rates were between 25.71% and 68.57% points (by scoring over 100 percentages). Analysis of variance revealed a better score of nurses with undergraduate and postgraduate degrees ($F=0.256$; $p=0.04$). Nurses with pain education had better scores than others ($F=0.419$; $p=0.01 < 0.05$).

Table 1 - The Percentage of Correct Answers According to Subjects

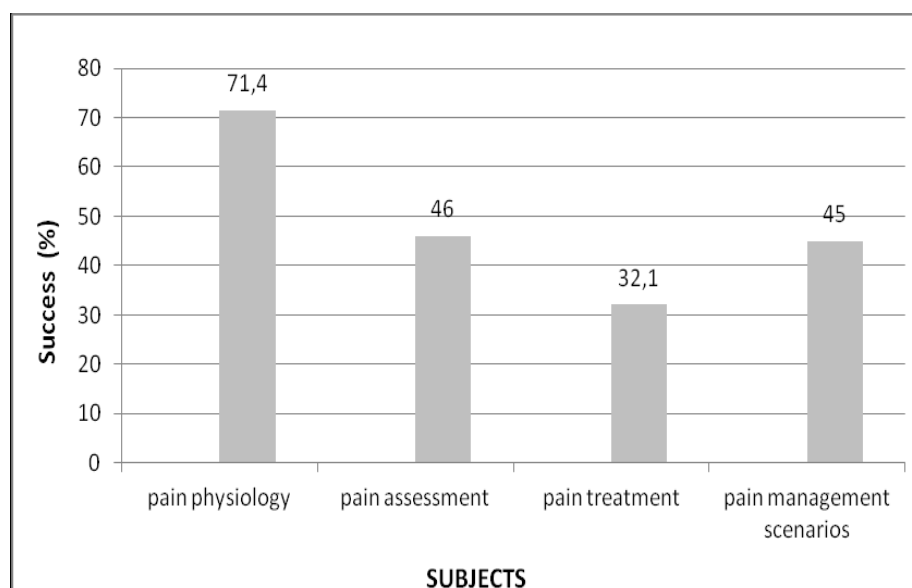
	Number	%
PAIN PHYSIOLOGY		
Pain is always caused by tissue injury	37	64.7
Pain signals after tissue injury are recognized by pain receptors and transmitted to cortex, so pain is perceived	49	86.0
Posttraumatic inflammatory exudation and haematoma induces pain by compressing nerve endings	49	86.0
Pain is a clue to diagnose and treat illnesses, so must be a vital sign	46	80.7
Pain in trauma, burn and medical diseases (such as; MI, acute pancreatitis) are considered as acute pain	56	98.2
Acute pain is biologically beneficial	30	52.6
Untreated acute pain may cause chronic pain	43	75.4
Untreated pain may increase bronchopneumonia and MI risk	16	28.1
ASSESSMENT OF PAIN		
To evaluate pain intensity, blood pressure, heart rate, respiration and fever is enough	53	93.0
Pain intensity must be assessed by the doctor, not by the patient	40	70.2
Visual Analogue Scale (VAS) is easy to use, so must be used for all patients	3	5.3
VAS is used to evaluate multiple aspects of pain: pain localisation, speciality of pain, factors affecting pain and intensity of pain	6	9.5
Posttraumatic unexpected increase in pain intensity means that the patient is addicted to drugs and craves for drugs by saying 'I have pain'	48	84.2
If pain does not subside with treatment, the accuracy of pain is tested by giving saline (placebo)	8	14.0
TREATMENT OF PAIN		
Pain medication is adjusted according to the patient and repeated doses are the same	28	49.1
Non steroidal anti-inflammatory agents and local anaesthetics are pharmacologic agents for pain treatment	48	84.2
Patient controlled analgesia (PCA) can be used for opioids and local anaesthetics	22	38.6
Antidepressants and anticonvulsants are adjuvant drugs for pain treatment	26	44.6
If the reason of pain is unknown postoperatively, opioids should not be administered as it could mask the diagnosis	5	8.8
Postoperative sudden and severe pain is treated with IM opioid	17	28.8
Sedative drugs are efficient pain killers	3	5.3
Morphine must be preferred for myalgias	32	56.1
An opioid drug, metamizol, is used for severe postoperative pain	16	28.1
The maximum effect time of intravenous morphine is 5 minutes	11	19.3
The maximum effect time of oral morphine is 1.5-2 hours	19	33.3
Naloxone decreases or ceases the drug effect if given together with non-steroid anti-inflammatory drugs	11	19.3
Non pharmacological heat/cold treatment must be performed only to the painful area to be successful	9	15.8
There is a risk of drug addiction (less than 1%) due to opioid consumption if patient has no history of drug abuse	33	57.9
Patients with a history of drug abuse must not be treated with opioids for postoperative pain	10	17.5
Opioids are the last resort because tolerance and addiction is very high postoperatively	7	12.3
Opioid tolerance is a condition where in a person cannot stop using these drugs in spite of harmful physical, psychological and social effects	14	24.6
PAIN MANAGEMENT		
Analgesic ladder	51	89.5
Case I-pain intensity	3	5.3
Case I-pain management	7	12.3
Case II-pain management	38	66.7

Table 2 presents standard deviation and range of right answers according to subjects. Pain physiology results were best (5.7%), pain treatment was worst (5.5%).

Table 2 – Correct Answers According To Subjects

SUBJECT	Total number of questions	Min.-Max.	Mean ± SD
Pain physiology	8	3-8	5.7±1.2
Pain assessment	6	1-5	2.8±1.0
Pain treatment	17	0-11	5.5±2.4
Pain management and scenarios	4	1-4	1.8±0.8

The total success rate of nurses was calculated as 44.8%. When success according to subjects was evaluated, the success rate was 71.4% in pain physiology, 46.0% in pain assessment, 32.1% in pain treatment and 45.0% in pain management (Figure 1).



DISCUSSION

Effective pain management is a vital role in nursing care. Nurses care for patients 24 hours a day. This makes the whole nursing care of the patient, pain assessment, pain treatment, evaluation of the results and sharing with the team possible.

The literature states that nurses' knowledge about pain is inadequate (10,17). We considered that pain management education is ignored in hospitals. We found that most of the nurses (70.2%) were not educated about pain. The results of our study are parallel to previous studies (10,17,24).

Pain may be caused without any physiologic alteration such as tissue injury. In this study, it is very satisfactory to find out that more than half of the nurses (65%) answered this question right. Most of the nurses (86%) know about pain physiology. Only a quarter of the nurses are aware of complications related to pain and only half of them think that pain is beneficial biologically, which means that the importance of pain is not very well emphasised. The results of our study are similarly to Ozer et al.'s study (10).

Pain assessment is the essential ladder of efficient pain management. While the patient is evaluated for vital signs, behaviour, face and facial impression must be examined. The pain response of each patient is unique and these may not be adequate. As McCaffery and Pasero (1999) concluded, sudden and severe pain causes short-term rare differences in vital signs.²⁵ Nearly all nurses (93%) agree that vital signs are inadequate to diagnose pain. This is parallel to similar studies about the knowledge of nurses (23,26).

Pain is a subjective experience, so scales are used to assess pain as an objective data. These scales offer a common language among patients and healthcare workers. The nurses do not use any scales while evaluating pain because of inadequate education (6,10). This is also confirmed in our study as success of pain scale questions was low.

According to our observations, when nurses do not use any pain scales it causes inadequate pain management. Although some studies indicated that patients' and nurses' pain scores are similar, most of the nurses do not believe in the patient's pain and nurses' pain scores are found to be lower than the patients' scores (9,12,13,24). In our study 70% of nurses stated that the patient is the most appropriate person to assess pain. However scenario questions showed that, nurses did not agree that they should believe the patient's report of pain.

Most of the nurses (86%) thought that placebo is a treatment choice in painful patients, so it is obvious that they do not believe in patients' reports. Placebo treatment is a barrier between the nurse-patient relationships, as stated in Ozer et al's study. However, Kuzeyli Yıldırım et al. and Mc Caffery et al. noted that most of the nurses did not believe that placebo is a useful test for identifying the truth of pain (23, 27).

Fear of opioid dependency is one of the inadequate pain management reasons (14-16). In our study very few nurses (12%) believed that opioid treatment is appropriate in the postoperative period because of tolerance and dependency risk. Half of the nurses are aware that opioid dependency due to opioid treatment is <1% in non-opioid dependent patients. This percentage is lower than Aslan and Badir's study (20%) (28). In Kuzeyli Yıldırım et al.'s study most of the oncology nurses (91%) believed that addiction would occur in patients who received opioids (27). These confirm that, in fact, nurses are afraid of opioid dependency. On the contrary, it is declared that only long term opioid treatment may be causes opioid dependency (29). For opioid-dependent patients very few nurses (17%) found opioid treatment appropriate. Studies in Turkey declared similar results (10, 27). Primary aim of opioid treatment is to achieve better life quality for the patient. It is declared that, best analgesics for opioid-dependent patients are opioids (30).

Another misbelief about pain management is about sedatives, which are supposed to treat pain. In our study only 5% of the nurses reported that sedatives are not analgesics, however, Ozer et al. noted that most of the nurses (75%) knew that sedatives are not analgesics (10,31). This is important as sedated patients might be considered as painless.

Nurses are not informed about non-pharmacologic treatments as well as pharmacologic treatments (10,27). In the literature it is stated that hot and cold treatment was effective for the painful area (32).

When answers to pain treatment questions were taken into account, total number of right answers was low, similar to other studies in our country (10,27,28). This indicates that in our country misbeliefs are still dominant and there is unreviewed information, so this may be important ground for undesirable complications.

In this study, two clinical scenarios were asked to evaluate decision-making skills of nurses about pain management. In the first scenario few nurses evaluated the pain level correctly and treated patient with correct opioid doses. These results agree with the findings of other studies (16,27). McCaffery et al. studied the attitude of nurses between 1990–2006. During these 16 years they reported better results in recent years, but nurses were still afraid of opioid treatments. Some studies stated that in a similar case scenario nurses did not believe the patients' pain and gave incorrect doses (13, 27). These nurses underestimated pain scores and inadequate treatment is due to insufficient knowledge of the nurses.

Pain management records were scored to determine the comprehensiveness of nursing documentation. In our study most of the nurses indicated that recording is a pain management step. Idvall and Ehrenberg³³ investigated postoperative pain records and concluded that analgesics were recorded in all patients but information about type of pain and drug treatment was missing (33). The findings were very match to a recent study by Abdalrahim et al (11).

CONCLUSION AND RECOMMENDATIONS

Our study was similar to studies in the literature when total success rate among nurses was evaluated (27,34). This confirms that nurses' knowledge regarding postoperative pain management is not sufficient for efficient planning and performance of nursing care. Knowledge regarding postoperative pain must include a whole approach to pain management and be integrated in the educational curriculum. Education programmes including basic and recent information and evaluation is needed to achieve proper pain management care.

Small sample size in the present study is a limitation for sufficient statistical power about different nursing groups.

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QUESTIONNAIRE FOR ASSESSMENT OF NURSES' KNOWLEDGE ABOUT PAIN MANAGEMENT
ASSESSMENT OF PAIN MANAGEMENT KNOWLEDGE QUESTIONNAIRE- <i>SAMPLE</i>
(Answers in Bold Are Correct)
-Education level
<input type="checkbox"/> Vocational Health High School <input type="checkbox"/> Undergraduate <input type="checkbox"/> Postgraduate <input type="checkbox"/> Doctorate
-Did you have any education about pain?
<input type="checkbox"/> Yes <input type="checkbox"/> No
-If the answer is yes, where did you get the education? (You can mark more than one answer)
a- Pain management course c- Postgraduate training
b- Conferences about pain management d- At school
Below you will see some sentences about pain management. Please mark T for true answer, F for false answer and D for do not know.
Pain is always caused by tissue injury.
<input type="checkbox"/> (T)
<input checked="" type="checkbox"/> (F)
Pain signals after tissue injury are recognised by pain receptors and transmitted to the cortex; so pain is perceived.
<input checked="" type="checkbox"/> (T)
<input type="checkbox"/> (F)
Posttraumatic inflammatory exudation and haematoma induces pain by compressing nerve endings.
<input checked="" type="checkbox"/> (T)
<input type="checkbox"/> (F)
To evaluate pain intensity, blood pressure, heart rate, respiration and fever is always enough.
<input type="checkbox"/> (T)
<input checked="" type="checkbox"/> (F)
Pain is a clue to diagnose and treat illnesses, so must be a vital sign.
<input checked="" type="checkbox"/> (T)
<input type="checkbox"/> (F)
Pain in trauma, burn and medical diseases (such as; MI, acute pancreatitis) are considered as acute pain.
<input checked="" type="checkbox"/> (T)
<input type="checkbox"/> (F)
Acute pain is biologically beneficial.
<input checked="" type="checkbox"/> (T)
<input type="checkbox"/> (F)
Untreated acute pain may cause chronic pain.
<input checked="" type="checkbox"/> (T)
<input type="checkbox"/> (F)
Untreated pain may increase bronchopneumonia and MI risk.
<input checked="" type="checkbox"/> (T)
<input type="checkbox"/> (F)
Pain intensity must be assessed by the doctor, not by the patient
<input type="checkbox"/> (T)
<input checked="" type="checkbox"/> (F)
Visual Analogue Scale (VAS) is easy to use, so must be used for all patients.
<input type="checkbox"/> (T)
<input checked="" type="checkbox"/> (F)
VAS is used to evaluate multiple aspects of pain: pain localisation, speciality of pain, factors affecting pain and intensity of pain.
<input type="checkbox"/> (T)
<input checked="" type="checkbox"/> (F)
Posttraumatic unexpected increase in pain intensity means that patient is addicted to drugs and craves for drug by saying 'I have pain'.
<input type="checkbox"/> (T)
<input checked="" type="checkbox"/> (F)

If pain does not subside with treatment, the accuracy of pain is tested by giving saline (placebo).
(T)
(F)
Pain medication is adjusted according to the patient and repeated doses are the same.
(T)
(F)
Non-steroidal anti-inflammatory agents and local anaesthetics are pharmacologic agents for pain treatment.
(T)
(F)
Patient controlled analgesia (PCA) can be used for opioids and local anaesthetics.
(T)
(F)
Antidepressants and anticonvulsants are adjuvant drugs for pain treatment.
(T)
(F)
If the reason of pain is unknown postoperatively, opioids should not be administered as it could mask the diagnosis.
(T)
(F)
Postoperative sudden and severe pain is treated with IM opioid.
(T)
(F)
Sedative drugs are efficient painkillers.
(T)
(F)
Morphine must be preferred for myalgias.
(T)
(F)
An opioid drug, metamizol, is used for severe postoperative pain.
(T)
(F)
The maximum effect time of intravenous morphine is 5 minutes.
(T)
(F)
The maximum effect time of oral morphine is 1.5-2 hours.
(T)
(F)
Naloxone decreases or ceases the drug effect if given together with non-steroid anti-inflammatory drugs.
(T)
(F)
Non-pharmacological heat/cold treatment must be performed only to the painful area to be successful.
(T)
(F)
There is a risk of drug addiction (less than 1%) due to opioid consumption if patient has no history of drug abuse.
(T)
(F)
Patients with a history of drug abuse must not be treated with opioids for postoperative pain.
(T)
(F)
Opioids are the last resort because tolerance and addiction is very high postoperatively.
(T)
(F)
Opioid tolerance is a condition where in a person cannot stop using these drugs in spite of harmful physical, psychological and social effects.
(T)
(F)
Mark the right answer for the questions below.
What is an obligatory component of pain management? (You can mark more than one answer)

I. Pain assessment																						
II. Pain treatment																						
III. Reassessment																						
IV. Patient and family education about pain management																						
V. Pain management evaluation and recording data																						
a- I ve II b- I,II,III c- II,III,IV d-I,II,III,IV,V																						
<p>Mrs Aydin is 48 years old and had total abdominal hysterectomy 1 day ago. The patient was observed talking to relatives joyfully. Her vital signs are blood pressure: 110/90mmHg, heart rate 76/dk, respiratory rate: 20/dk. She responded 7 to a 0-10 pain scale (0=no pain; 10=worst pain ever). In her analgesic order, morphine 1-3 mg IV when needed is present.</p> <p>A- Please mark the pain score of patient according to you on the scale.</p>																						
<table border="0" style="width: 100%; text-align: center;"> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td> </tr> <tr> <td colspan="7">No pain</td> <td colspan="4">Worst pain ever</td> </tr> </table>	0	1	2	3	4	5	6	7	8	9	10	No pain							Worst pain ever			
0	1	2	3	4	5	6	7	8	9	10												
No pain							Worst pain ever															
B-What is the next step?																						
Nothing is done, because the patient's pain score is not believed as 7; she is re-evaluated 1 hour later.																						
Patient is distracted for pain relief.																						
3 mg IV morphine is administered.																						
IV saline is administered to understand whether the patient's pain is real.																						
<p>Mrs Yilmaz who is 67 years of age had total hip replacement. She was administered IV morphine with Patient Control Analgesia device in the postoperative period. Infusion was 0.5 mg/hr, demand dose was 2 mg. She declared her pain score as 3/10 in the postoperative day 1. On the 2nd postoperative day she was started on an oral regimen and morphine infusion was stopped. She had pain during movement and her pain was relieved when she had the demand dose of 2 mg morphine. According to the case what is the preferred treatment?</p>																						
Patient is asked about her oral analgesic preference and drug was administered.																						
PCA history is checked and oral analgesic drug according to the patient's need is administered																						
50 mg petidin IM is administered when needed before moving after asking the doctor																						
No analgesics are administered since she had mild pain.																						