Araştırma Makalesi/Research Article

Determination of Knowledge and Attitudes of Nurses About Pain Management: A Cross-Sectional Study

Hemşirelerin Ağrı Yönetimine İlişkin Bilgi ve Tutumlarının Belirlenmesi: Kesitsel Bir Çalışma

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ABSTRACT
Objective: The aim of this study was to determine the knowledge and attitudes of nurses working in surgical and internal medicine clinics on pain management.
Methods: This study is descriptive and cross-sectional. A total of 140 nurses working in surgical and internal clinics in a hospital participated in the study. The data were obtained by questionnaire form and Nursing's Knowledge and Attitudes Survey Regarding Pain (NKASRP). Data were analyzed by using SPSS 22.0 software. In the evaluation of the data; ANOVA, Mann Whitney U, Kruskal Wallis significance test, and logistic regression analysis were used.
Results: The mean score of the NKASRP scale of the nurses was 17.72±3.72. It was found that working for more than ten years, receiving graduate education and frequent encounters with painful patients were associated with a high level of knowledge. The probability of having sufficient knowledge of nurses working in surgical clinics was found to be 1.12 times higher (95% CI: 1.02-1.24) than nurses working in internal medicine clinics.
Conclusions: Effective pain management requires the nurse's correct knowledge, attitude and assessment related to pain. The present study determined that nurses had a lack of knowledge and misconceptions about pain assessment and pain medication use, which are the main obstacles to effective pain management.
Keywords: Pain, nurse, pain management, knowledge and attitude, analgesia

ÖZ
Amaç: Bu çalışmanın amacı cerrahi ve dahiliye kliniklerinde çalışan hemşirelerin ağrı yönetimine ilişkin bilgi ve tutumlarının belirlenmesidir.
Yöntem: Tanımlayıcı kesitsel bir çalışmadır. Araştırmaya bir hastanenin cerrahi ve dahiliye kliniklerinde çalışan toplam 140 hemşire katılmıştır. Veriler anket formu ve Hemşirelerin Ağrıya İlişkin Bilgi ve Tutum Anketi (NKASRP) ile elde edildi. Veriler SPSS 22.0 yazılımı kullanılarak analiz edildi. Verilerin değerlendirilmesinde; ANOVA, Mann Whitney U, Kruskal Wallis anlamlılık testi ve lojistik regresyon analizi kullanılmıştır.
Bulgular: Hemşirelerin NKASRP ölçeği puan ortalaması 17.72±3.72'dir. On yıldan fazla çalışma, lisansüstü eğitim almanın, ağrılı hastalarla sık karşılaşmanın yüksek bilgi düzeyi ile ilişkili olduğu bulundu. Cerrahi kliniklerinde çalışan hemşirelerin yeterli bilgiye sahip olma olasılıkları dahiliye kliniklerinde çalışan hemşirelere göre 1.12 kat (%95 GA: 1.02-1.24) daha yüksek bulunmuştur.
Sonuç: Etkili ağrı yönetimi, hemşirenin ağrıya ilişkin doğru bilgi, tutum ve değerlendirmesini gerektirir. Bu çalışmada hemşirelerin etkili ağrı yönetiminin önündeki başlıca engellerden olan ağrı değerlendirmesi ve ağrı kesici ilaç kullanımı konusunda bilgi eksikliği ve kavram yanılgılarına sahip oldukları belirlenmiştir.
Anahtar Kelimeler: Ağrı, hemşire, ağrı yönetimi, bilgi ve tutum, analjezi

Introduction

Despite significant advances in medicine and technology, the negative physiological, psychological and emotional effects of pain, which are not managed effectively, remain largely unresolved (Smeland et al., 2018). Pain management constitutes a compelling and universal problem in health care (Glowacki, 2015). The lack of integration of knowledge and practices for effective pain management by health care professionals also adversely affects the life quality of patients.

Pain management is a multidisciplinary situation. However, it is one of the basic nursing functions, and nurses play an important role in determining the location, severity, and characteristics of pain, relieving and evaluating the results of interventions (Damico et al., 2018; Keen et al., 2017). McCaffery and Moss (1967) highlighted the role of nurses in pain management 52 years ago and the importance of adequate knowledge, skills, and a positive attitude in patient care. Pain is a nursing diagnosis and the fifth vital sign. Therefore, it should be managed effectively with nursing interventions.

Studies on this subject determined that a lack of knowledge and misconceptions about pain management are an important obstacle for effective pain management by nurses (Al Qadire and Al Khalaileh, 2014; Alqahtani and Jones, 2015; Moceri and Drevdahl, 2014). In one study, four types of barriers to pain management were identified, and these were barriers related to patients, nurses, physicians, and the system (Elcigil et al., 2011). The obstacles related to nurses were pain assessment, reluctance to administer narcotic analgesics, administration of pharmacological and non-pharmacological treatment, and monitoring of effects and side effects (Pretorius et al., 2015; Alzghoul and Abdullah, 2016). One of the most important obstacles related to the system not providing sufficient information during nursing education. A study states that the nurses' insufficient knowledge stems from insufficient time for pain management in the nursing curriculum (Yildirim et al., 2008). The main problem is that nursing educators also lack knowledge about pain management (Duke et al., 2013). Determining the stage of these deficiencies, providing the necessary training, improving public health, reducing the workload of health personnel, and the country's economy are highly important.

Therefore, we tried to answer the following question: "What is the level of pain knowledge of nurses working in surgery and internal medicine clinics and how competent are they in pain management"? The aim of this study was to determine the knowledge and attitudes of nurses working in surgical and internal medicine clinics on pain management.

Method
Study Design and Participants

This study is a descriptive cross-sectional study. The study population consisted of, between May 1, 2022 and July 01, 2022, health services application and research hospital of a university in Turkey, 235 nurses working in internal medicine and surgery. The inclusion criteria of this study were as follows: to have at least 3 months of working experience and to agree to participate in the study. It was planned to reach the whole universe, so no sample selection was made. A total of 95 nurses were excluded because 25 nurses were on maternity leave, 5 nurses were in the military, 10 nurses did not meet the criteria for at least 3 months and 55 nurses did not want to participate in the study. The study was completed with a total of 140 nurses.

Data Collection and Tools

Data were collected using a questionnaire form developed by the researchers and the Nursing's Knowledge and Attitudes Survey Regarding Pain (NKASRP). The questionnaires were given to the nurses by the researchers, and they were asked to answer them without accessing any sources (internet, books, opinions of other persons). Each nurse completed the survey in 25-30 minutes.

The Questionnaire Form: The form was created by the researchers in accordance with the literature (Duke et al., 2013; Al Qadire and Al Khalaileh, 2014). The form consisted of seven questions including sociodemographic characteristics of the nurses, such as clinical status, educational status, duration of study, mean age, information retrieval status during nursing education, frequency of encountering patients in pain, using scales to assess pain and the most applied intervention.

The Nurses'Knowledge and Attitudes Survey Regarding Pain (NKASRP): The NKASRP was developed by Ferrell et al. (1993) to assess nurses' knowledge and attitude to pain and pain management. It consists of 39 items, and the scale includes 22 items true/false, 13 items multiple-choice, and 2 cases (4 items). The content includes

aspects of pain assessment, pharmacologic and nonpharmacologic interventions, and attitudes toward pain management. In the last two items of the NKASRP scale, there are two case studies (four questions) involving the participant's assessment of the patient and determining the required drug dose. One point is given for each correctly answered question and zero points for questions that are answered incorrectly or not answered. The total score of the scale is evaluated as 0-39. The scale cut-off point was taken as 19. A scale total score of 19 points or more indicates that pain knowledge and attitude are sufficient, and a score below 19 indicates that pain knowledge and attitude are insufficient (Ferrell et al., 1993). Internal consistency for the English-language version was reported at 0.70, and the test-retest reliability was 0.80 (Ferrell et al., 1993). Yildirim et al. (2008) have evaluated the validity and reliability of the Turkish version (Cronbach-α 0.74). In this study, the Cronbach-α value was 0.74.

Statistical analysis

Statistical analyses were performed using the IBM Statistical Package for the Social Sciences (SPSS, version 22.0). For demographic data, descriptive tests, means, and some variables were used for the calculation of the scale score, number, and percentage; ANOVA, Mann Whitney U, Kruskal-Wallis significance test, and logistic regression analysis were used. The level of significance for all analyses was set at $p<0.05$. The completed questionnaires were evaluated, and there were no missing or incomplete datasheets.

Results

Table 1 provides the demographic information and the NKASRP scale mean scores of the nurses participating in the study. As seen in the table, 57.1% of the nurses were between 20 and 30 years old, 53.6% were working in the internal medicine clinic, 69.3% held a bachelors degree, 28.6% had been working in the nursing profession for 5-10 years, 35.7% had taken pain management during nursing education as a separate subject, 84.3% often encountered patients in pain, 97.9% used scales to assess pain, 95.7% applied analgesics to patients in pain. The mean score of the NKASRP of the nurses was 17.72±3.72 (min-max: 11-32). The score was higher than the mean score of the nurses who had worked more than 10 years (18.68±4.40), who had an average age of 41-50 years (19.31±3.97), who took pain as a separate subject during their education (18.02±3.79), who used the scale to assess pain (17.78±3.73), who applied massage to patients experiencing pain (19.50±3.51). There was no statistically significant difference among the mean scores ($p>0.05$). The difference between the mean knowledge score of the nurses who were working in the surgical clinic (18.56±4.05) and the nurses who encountered with a painful patient (18.06±3.56) was significant ($p=0.001$).

Table 1. Descriptive characteristics of nurses and mean scores of KASRP-N scale (n=140)

Descriptive Characteristics	n	%	KASRP-N Mean±SD	Test	p
Clinic					
Internal medicine	75	53.6	17.00±3.27	1.53[b]	**0.01**
Surgical	65	46.4	18.56±4.05		
Education					
Health high school	21	15.0	17.09±3.84		
Associates degree	10	7.1	17.10±2.42	6.35[a]	0.09
Bachelor degree	97	69.3	17.48±3.30		
Postgraduate education	12	8.6	21.33±5.69		
Working year					
3-12 month	26	18.6	17.07±4.52		
1-5 year	39	27.8	17.66±2.74	3.053[a]	0.38
5-10 year	40	28.6	17.37±3.29		
10 more than a year	35	25.0	18.68±4.40		
Age (years)					
20-30	80	57.1	17.56±3.65		
31-40	41	29.3	17.31±3.64	2.086[a]	0.13
41-50	19	13.6	19.31±3.97		

Table 1. (continue) Descriptive characteristics of nurses and mean scores of KASRP-N scale (n=140)

Descriptive Characteristics	n	%	KASRP-N Mean±SD	Test	p
Getting information during nursing education					
Separate subject	50	35.7	18.02±3.79		
Almost all courses	44	31.5	17.86±3.90	1.74[a]	0.62
I got it, but it's not enough.	36	25.7	17.52±3.60		
No, I never got it.	10	7.1	16.40±3.13		
Frequency of encounters with a painful patient					
Often	118	84.3	18.06±3.56	11.29[c]	**0.001**
Seldom	22	15.7	15.90±4.10		
Using a scale to assess pain					
I don't use	137	97.9	17.78±3.73	105.50[c]	0.14
I use	3	2.1	15.00±2.00		
The most applied intervention to the patient experiencing pain					
Analgesic application	134	95.7	17.69±3.71		
Massage	4	2.9	19.50±3.51	0.17[a]	0.27
Other*	2	1.4	16.50±6.36		
KASRP-N total score	140		17.72±3.72		

*cold application, hot application, distraction, music; a Kruskal-Wallis H, b ANOVA, c Mann-Whitney U; p<0.05 significant.

The correct response rate to all questions was grouped as below 50% and above 50%. Accordingly, there were 15 questions above 50% and 24 questions below 50%. Table 2 shows which of the nurses' answers were below the 50% limit. Nurses had less than 50% correct answers to questions including the effect of pain on vital signs, children's perception of pain, sleep and pain, place and time of application of non-pharmacological methods, duration and dose of drugs, opioid use in cancer pain, the possibility of respiratory depression and dependence in opioid patients, opioid use in substance abuse and the elderly, determining pain level and severity according to the first case study, choosing the appropriate drug dose for pain level, drug effects, equivalent dose of analgesia, pain expression of children, placebo use, incentive to endure pain in Table 2.

Table 3 shows the responses of nurses over the 50% limit. Of the nurses, 50% gave correct answers to questions including the following topics: step treatment of the World Health Organization (WHO) for pain, individual pain intensity difference, the impacts of culture and beliefs on pain, the use of nonpharmacological methods with drugs, drug administration in postoperative pain, to include patient statements in pain assessment and increasing drug dose, second case study to determine pain level.

According to the logistic regression analysis, nurses working in surgical clinics were 1.12 times (95% CI: 1.02-1.24) more likely to have a sufficient knowledge level than nurses working in internal medicine clinics. Nurses were 0.86 times (95% CI: 0.01-1.36) more likely to have adequate knowledge when they were between 41 and 50 years old compared to the other groups. It was found that nurses who frequently encountered painful patients had 0.82 times (95% CI: 0.70-0.96) and using a scale to assess pain the possibility of with adequate information was 0.75 times higher (95% CI: 0.49-1.15) in Table 4.

Table 2. NKASRP items receiving below 50% correct response rate (n=140)

No	Items (24 items)	%
37	**Case Studies 1B:** Your assessment, above, is made 2 h after he received morphine 2 mg IV. Half-hourly pain ratings after the injection ranged from 6 to 8, and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1–3 mg q 1 h PRN pain relief.". Check the action you will take at this time. **(Administer morphine 3 mg IV now)**	1.4
7	Nondrug interventions (e.g., heat, music, images) are very effective for mild to moderate pain control but are rarely helpful for more severe pain. **(False)**	8.6
23	The commended route of administration of opioid analgesics to patients with prolonged cancer-related pain is: **(Oral)**	8.6
35	Narcotic/opioid addiction is defined as psychologic dependence accompanied by an overwhelming concern with obtaining and using narcotics for psychic effect, not for medical reasons. It may occur with or without the physiologic changes of tolerance to analgesia and physical dependence (withdrawal). Using this definition, how likely is it that opioid addiction will occur as a result of treating pain with opioid analgesics? **(1%-5%)**	9.3
13	Patients with a history of substance abuse should not be given opioids for pain, because they are at high risk for repeated addiction. **(False)**	15.7
28	A patient with chronic cancer pain has been receiving daily opioid analgesics for 2 months. The dose increased during this time. Yesterday, the patient was receiving morphine 200 mg/h intravenously. Today, he has been receiving 250 mg/h intravenously for 3 hours. The likelihood of the patient developing clinically significant respiratory depression is: **(less than 1%)**	18.6
34	What do you think is the percentage of patients who over-report the amount of pain they have? **(0)**	19.3
9	**Case Studies 2B:** Your assessment, above, is made 2 h after he received morphine 2 mg IV. Half-hourly pain ratings after the injection ranged from 6 to 8, and he had no clinically significant respiratory depression, sedation, or other untoward side effects. He has identified 2 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1–3 mg q 1 h PRN pain relief.". Check the action you will take at this time: **(Administer morphine 3 mg IV now)**	20.0
22	To be effective, heat and cold should be applied only to the painful area**. (False)**	20.0
1	Observable changes in vital signs must be relied upon to verify a patient's statement that he has severe pain. **(False)**	22.1
6	Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for bone pain caused by metastases. **(False)**	27.9
21	Giving patients sterile water by injection (placebo) is often a useful test to determine if the pain is real. **(False)**	29.3
11	The usual duration of action of meperidine (Demerol) IM is 4-5 h. **(False)**	32.1
26	Which of the following IV doses of morphine administered over a 4-h period would be equivalent to 30 mg oral morphine given q 4 h? (morphine 10 mg IV)	34.3
4	Patients may sleep despite severe pain. **(True)**	34.3
9	Aspirin 650 mg PO is approximately equal in analgesic effect to meperidine (Demerol) 50 mg PO. **(True)**	35.0
12	Research shows that promethazine (Phenergan) is a reliable potentiator of opioid analgesics. **(False)**	37.1
36	**Case Studies 1A:** Andrew is 25 years old, and this is his first day after abdominal surgery. As you enter his room, he smiles at you and continues talking and joking with his visitor. Your assessment reveals the following information: BP=120/80; HR=80; R=18. On a scale of 0 to 10 (0 for no pain comfort and 10 for worst pain/discomfort), he rates his pain as 8. On the patient's record you must mark his pain on the scale below. Circle the number that represents your assessment of Andrew's pain. **(8)**	40.7
2	Because of an underdeveloped neurologic system, children under 2 years of age have decreased pain sensitivity and limited memory of painful experiences. **(False)**	41.4
15	Elderly patients cannot tolerate opioids for pain relief. **(False)**	44.3
17	Children less than 11 years old cannot report pain with reliability, and therefore the nurse should rely on the parents' assessment of the child's pain intensity. **(False)**	46.4
31	Which of the following drugs are useful for the treatment of cancer pain? **(All of the above)**	46.4
16	The patient with pain should be encouraged to endure as much pain as possible before resorting to a pain relief measure. **(False)**	47.1
25	Which of the following analgesic medications is considered to be the drug of choice for the treatment of prolonged moderate-to-severe pain for cancer patients? **(Morphine)**	49.3

Table 3. NKASRP items, receiving above 50% correct response rate (n=140)

No	Items (15 items)	%
8	Respiratory depression rarely occurs in patients who have been receiving opioids for months. **(True)**	51.4
24	The commended route of administration of opioid analgesics to patients with brief severe pain of sudden onset, e.g., trauma or post-operative pain is: **(intravenous)**	59.3
20	The patient should be advised to use nondrug techniques alone rather than concurrently with pain medications. (False)	62.1
30	The most likely explanation of why a patient with pain would request increased doses of pain medication is: **(the patient is experiencing increased pain)**	64.3
38	**Case Studies 2A:** Robert is 25 years old, and this is his first day after abdominal surgery. As you enter his room, he is lying quietly in bed and grimaces as he turns in bed. Your assessment reveals the following information: BP=120/80; HR=80; R=18. On a scale of 0 to 10 (0 for no pain/discomfort and 10 for worst pain/discomfort), he rates his pain as 8. On the patient's record, you must mark his pain on the scale below. Circle the number that represents your assessment of Robert'spain: **(8)**	65.7
14	Beyond a certain dosage of morphine, increases in dosage will not increase pain relief. **(False)**	70.7
33	Which of the following describes the best approach for cultural considerations in caring for patients in pain: **(Patients should be individually assessed to determine cultural influences on pain)**	72.9
18	Based on his or her religious beliefs, a patient may think that pain and suffering are necessary. **(True)**	75.0
3	If the patient can be distracted from his pain this usually means that he does NOT have high pain intensity. **(False)**	75.7
10	The World Health Organization (WHO) pain ladder suggests using single analgesic agents rather than combining classes of drugs (e.g., combining an opioid with a nonsteroidal agent). **(False)**	75.7
5	Comparable stimuli in different people produce the same intensity of pain. **(False)**	78.6
27	Analgesics for postoperative pain should initially be given: **(around the clock on a fixed schedule)**	78.6
29	Analgesia for chronic cancer pain should be given: **(around the clock on a fixed schedule)**	79.3
19	After the initial recommended dose of the opioid analgesic, subsequent doses are adjusted in accordance with the individual patient's response. **(True)**	88.6
32	The most accurate judge of the intensity of the patient's pain is: **(the patient)**	85.7

Table 4. Logistic regression analysis related to nurses' age, the clinic they work in, frequency of encountering patients with pain and use of scales in pain assessment

Independent variable	Exp (B) (95% CI) p	Exp (B) Odds	Wald	Lower	Upper
Clinic					
Internal medicine	1.00	-	-	-	-
Surgical	**0.01**	1.12	5.86	1.02	1.24
Age (years)					
20-30	1.00	-	-	-	-
31-40	0.76	0.14	3.13	0.17	1.23
41-50	0.86	0.10	2.95	0.01	1.36
Frequency of encounter with a painful patient					
Seldom	1.00	-	-	-	-
Often	**0.01**	0.82	6.07	0.70	0.96
Using a scale to assess pain					
I don't use	1.00	-	-	-	-
I use	0.19	0.75	1.67	0.49	1.15

Discussion

Effective pain management requires the nurse's correct knowledge, assessment, attitude, and documentation related to pain. The present study determined that nurses' knowledge and attitudes related to pain were low (17.72±3.72), according to the NKASRP scale. The NKASRP mean score of nurses in similar studies carried out in Turkey, 10.75 (Bölükbaş and Şahin, 2021), 13.81 (Yildirim et al., 2008), 15.86 (Yava et al., 2013) were also relatively low. In some studies conducted in other countries, the average NKASRP scores of nurses were 14.06,

14.88, 16.9, 17.4, 19.3, 26.1, and 27.67 (Kiekkas et al., 2015; Hua et al., 2019; Eid et al., 2014; Salameh, 2018; Al Qadire and Al Khalaileh, 2014; Gretarsdottir et al., 2017; Jarrett et al., 2013). Based on our results, in general, nurses have insufficient knowledge about pain management, most likely because of the inadequacy between the integration of the information obtained during nursing education and practice. Unfortunately, the students did not have adequate knowledge and a positive attitude toward pain management in a study conducted in Turkey (Karaman et al., 2019; Topal-Hancer and Yilmaz, 2020). During their training, nurses did not spend sufficient time on pain concepts, and there was a lack of educational content; (Voshall et al., 2013; Watt-Watson and Murinson, 2013). In addition, the educators themselves lack knowledge about pain management (Duke et al., 2013). In one study, well-designed clinical supervision, the mentoring system, and the training of nursing educators emphasized enabling students to gain knowledge and skills in effective pain management (Aziato and Adejumo, 2014). A review of the worldwide nursing curriculum can be proposed to create standardized training in line with the guidelines for pain management from organizations such as the WHO, the American Pain Association, and the International Association for the Study of Pain-IASP.

In this study, it was found that working in surgical clinics, frequent encounters with patients in pain, postgraduate education, and working for more than 10 years increased the level of knowledge. Similarly, in other studies, more work experience (Ou et al., 2021; Bölükbaş and Şahin, 2021), working in the surgical clinic (Yava et al., 2013; Eid et al., 2014) and receiving a postgraduate education significantly increased the level of knowledge (Yava et al., 2013; Gretarsdottir et al., 2017; Brant et al., 2017). Postgraduate education may provide an increase in the level of knowledge of nurses by keeping up with current guidelines and innovations. In this study, the majority of the nurses (85%) gave the correct answer to the question "who is the most accurate judge of the intensity of the patient's pain". This information may be due to the emphasis on persistence in all courses throughout nursing education. However, the nurses' answers to some of the questions indicate that they do not integrate the pain information they had received during their training.

For example, In the case of pain, rather than patient expression, encouraged to endure as much

pain (52.9%), placebo use (70.7%), expecting a change in vital signs 77.9%) and that the patient could not sleep in severe pain (65.7%) were incorrect attitudes. The same situation draws attention in case studies.

For example, in the case study 1A (he smiles at you and continues talking and joking with his visitor; pain level 8) question, most of the nurses (59.3%) did not respond correctly to the patient's pain level and did not administer the correct pain medication dose (98.6%) (item 37). In case Study 2A (grimaces and lying quietly in bed; pain level 8), it was found that the pain level (65.7%) and the dose of the drug to be administered (20%) were more accurately determined than in the first case question. This result can be interpreted as nurses' tendency to determine the pain level rather than the patient´s expression according to pain behavior, the ability to sleep, and changes in life signs. Similar results have been found in other studies (Yava et al., 2013; Salameh, 2018; Gretarsdottir et al., 2017; Brant et al., 2017). According to these results, the gap between information on pain assessment and management and the reflection of knowledge on nursing practices remains an international issue. In this study, pharmacological drugs (morphine duration of action, equivalent dose, NSAID mechanism of action), preferred drug delivery route, dependence, and fear of respiratory depression were the most important issues that prevented effective pain management. These results are similar to those of previous studies (Al Qadire and Al Khalaileh, 2014; Duke et al., 2013; Kiekkas et al., 2015; Brant et al., 2017). In the Turkey Nursing Regulation, the nurse has no authority to write prescriptions for pain medication (Regulation Amending the Nursing Regulation, 2011). However, nurses are responsible for administering pain medication and monitoring their effects and side effects. As a result, nurses' knowledge of basic drugs (pharmacology) for effective pain management depends on the ability to integrate this knowledge with the application skills appropriate to the patient´s needs.

Conclusion and Recommendations
We determined that nurses had a lack of knowledge and misconceptions about pain assessment and pain medication use, which are the main obstacles to effective pain management. To solve this problem, it can be suggested that the pain management course in nursing education should be structured at the international level, based on evidence. It is an ethical obligation to update the

education programs of nursing educators and working nurses in line with the evidence of a lack of information. Therefore, it is thought that other studies involving the education of undergraduate nursing students, working nurses and nursing educators are needed.

Limitations of the Study

The main limitation of this study is the low number of samples, based on the fact that nurses are unwilling to participate in the study due to various reasons and that such studies are conducted in a single training and research hospital. For this reason, our study does not represent all surgical and internal medicine clinical nurses in Turkey. However, the results obtained here may contribute to an increased awareness of pain in nursing education.

What did the study add to the literature?

- This study is important because it shows areas where surgical and internal medicine clinical nurses are inadequate in pain management.
- In particular, it is an international obligation to determine the issues that cause deficiencies in effective pain management and the stage at which these deficiencies arise.
- This study, in which the nurses' lack of knowledge in pain management is determined, is important in terms of being a source for future studies.

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