

Orthopedic Nurses' Experiences in Postoperative Pain Management

Ortopedi Hemşirelerinin Ameliyat Sonrası Ağrı Yönetimindeki Deneyimleri

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ABSTRACT Objective: This study was aim to examine orthopedic nurses' experiences in postoperative pain management. **Material and Methods:** The study was carried out adopting the qualitative descriptive research method. The study was conducted with nurses working in orthopedics and traumatology clinic (n=16) in June 2014. The sampling criterion for nurses is to be working in orthopedics and traumatology clinic for at least six months. Therefore, two focus groups were interviewed. The interviews were recorded and the average duration of voice recordings was 60 minutes. Content analysis was used as a data analysis instrument. This study was approved by the ethics board and the university hospital. **Results:** Nurses participating in the study are aged between 22 and 38 years (28.30±4.20), 93.75% of them are female and 93.75% are university graduates. As a result of the content analysis conducted on the interviews, two main themes have been identified: "Decision Makers in Pain Management" and "Barriers in Pain Management". Decision makers in pain management main theme includes the sub-themes of nurses' observations and experiences (tacit knowledge), use of various resources and patients' preference. The barriers in the management of pain are the beliefs and prejudices of nurses, lack of cooperation between team members, nurses' lack of knowledge and patients' experiences. **Conclusion:** Nurses stated that they were influenced by their experiences in pain management and from various resources such as internet. In addition, there is a lack of knowledge regarding pharmacological and non-pharmacological treatment methods among the factors that prevent pain management. Training plans for nurses on pain management, narcotic analgesics and non-pharmacological nursing interventions may be recommended. It is also recommended to develop team work on pain management and to establish institutional policies.

Keywords: Acute pain; pain management; orthopedic nursing; qualitative research; focus group interview

ÖZET Amaç: Bu çalışmanın amacı, ortopedi hemşirelerinin postoperatif ağrı yönetimindeki deneyimlerini incelemektir. **Gereç ve Yöntemler:** Araştırma, tanımlayıcı nitel araştırma yöntemiyle yapılmıştır. Haziran 2014 tarihinde ortopedi ve travmatoloji kliniğinde çalışan (n:16) hemşire ile görüşülmüştür. Örneklem alınma kriteri ortopedi ve travmatoloji kliniğinde altı aydır görev yapıyor olmaktır. Veriler, iki odak grup görüşmesi ile toplanmıştır. Görüşmelerin ses kaydı alınmış ve ortalama 60 dakika sürmüştür. Verilerin analizinde içerik analizi kullanılmıştır. Araştırma için üniversite hastanesinden, etik kuruldan izin alınmıştır. **Bulgular:** Çalışmaya katılan hemşirelerin yaşı 22-38 (28,30±4,20) yıl arasında değişmekte olup, %93.75'i kadın, %93.75 üniversite mezunudur. Görüşmelerin içerik analizi sonucunda iki ana tema belirlenmiştir: "Ağrı Yönetiminde Karar Verdiriciler" ve "Ağrı Yönetiminde Engeller". Ağrı yönetiminde karar verdiriciler ana temasının alt temaları; hemşirenin gözlem ve deneyimleri (örtük bilgi), çeşitli kaynak kullanımı, hasta tercihi olarak belirlenmiştir. Ağrı yönetiminde engeller temasının alt boyutları ise hemşirelerin inanç ve ön yargıları, ekip üyeleri arasındaki işbirliği eksikliği, hemşirelerin bilgi eksikliği, hastaların tercihleri olarak belirlenmiştir. **Sonuç:** Hemşireler ağrı yönetiminde deneyimlerinden ve internet gibi farklı kaynaklardan etkilenecek karar verdiklerini belirtmişlerdir. Ayrıca ağrı yönetimini engelleyen faktörler arasında farmakolojik ve nonfarmakolojik tedavi yöntemi hakkında bilgi eksikliğinin olduğu da çalışmada saptanmıştır. Hemşirelere ağrı kontrolü, narkotik analjezikler ve nonfarmakolojik hemşirelik girişimleri konusunda eğitim planlanması önerilebilir. Ayrıca ağrı yönetimi ile ilgili ekip çalışmasının geliştirilmesi ve kurum politikalarının oluşturulması önerilmektedir.

Anahtar Kelimeler: Akut ağrı; ağrı yönetimi; ortopedi hemşireliği; nitel araştırma; odak grup görüşmesi

Pain, which is an unpleasant sensory and emotional experience associated with potential or actual tissue damage or described in terms of such damage, is a natural outcome of a surgery.¹ Postoperative pain is one of postoperative complications. The study reported that 70% postoperative patient experienced postoperative pain severely.² In Netherlands, a study found that 30-50% of postoperative patients experienced pain.³ In Turkey, a study concluded that 40-95% of postoperative patients suffered from postoperative pain.⁴ The orthopedic patients also experience severe pain.^{5,6} If patients suffer from postoperative pain, there might be increased number of complications and worse hospital outcomes such as prolonged hospital stay and higher cost of care.⁷

Nurses play an important role in pain assessment and pain management in orthopedic patients.^{8,9} Nurses are the health professionals responsible for the management of patient's pain by diagnosing the pain, determining and implementing non-pharmacological interventions, planning analgesics treatment, teaching strategies for pain management and evaluating the effects of these strategies.⁸⁻¹⁰ However, there are a lot of barriers that can disrupt pain management. In this study, it is deduced that many of these barriers are directly related to the working conditions of nurses (e.g., high workloads, staff shortages).⁹ Some other barriers can be listed as lack of knowledge, no adherence to treatment guidelines, rejection of medications due to their side-effects, patients not reporting their pain and fear of addiction to medications.^{11,12}

Nurses tend to underestimate the postoperative pain intensity and interference reported by patients. They opt for relying on individual judgments such as operation type or patient appearance, rather than on patients' pain-related statements.^{8,13} Nurses often cannot manage analgesics sufficiently, since they exaggerate their risk of side effects or addiction and feel anxious.¹⁴ Narcotic analgesics are usually used in orthopedic patients in that they experience severe pain. Bandages, plasters, traction, drainage and immobility increase the pain level for patients having orthopedic interventions.⁴ It has been reported that if

pain is managed, patients' comfort and functional capacities increase and duration of rehabilitation decreases concerning orthopedic patients.⁵

Although there have been quantitative nursing studies on pain management in literature, a qualitative study that evaluates orthopedic nurses' experiences in pain management has yet to be conducted. The aim of this study is to investigate orthopedic nurses' experiences in pain management.

MATERIAL AND METHODS

A qualitative descriptive study was conducted to explore orthopedic nurses' experiences in pain management. Participants consisted of 16 nurses (15 nurses and one head nurse) in the Orthopedic and Traumatology Clinic of a University Hospital.

Data were collected carrying out semi-structured interviews with two focus groups in June 2014. Inclusion criteria for this purposeful sample were voluntary participation and being currently employed in the orthopedic clinic. Being a nurse working for at least six months in the clinic was considered as a measure of the sampling criterion for the research.^{15,16} The interviews were conducted in a quiet and comfortable room in the hospital. Two focus group interviews, each of which lasted about 60 minutes, were conducted.

Two researchers, one of whom was the focus group manager responsible for the interview process and the other was the observer responsible for taking notes, conducted the interviews. After the nurses were informed about the aim and the method of the study, Nurse Information Form was used to collect data on nurses' age, education level, general work experience, work experience in the orthopedic clinic and the training status on pain management.

The questions covered in the interview were as follows; "Could you please tell me about your experiences in pain management in orthopedic patients?" and "What do you think about effectiveness of pain management for the patients in the orthopedic clinic?". Interviews continued until it was apparent that there was a repetition of key concepts and no new information was obtained¹⁵.

The interviews were tape-recorded and transcribed verbatim. The participants were identified with the letter N followed by an ordinal number (for example N1, N2 and N16) in order to ensure their anonymity.

Data were analyzed the content analysis method.¹⁶ The voice recordings were transcribed by the researcher on the day of the interview without making any alterations. Concepts were determined, relationships between the concepts were revealed and a list of codes was generated. The codes were gathered under the same heading. Themes were determined. According to the themes, the codes were revised and themes were reviewed. Relationships between the themes were described and interpreted. Data analysis was carried out by another researcher for research validation. The researchers discussed interpretations of the data and ensured that themes were fully developed. In this study, findings are expressed and reported in quotations.^{15,16} The data are presented without making any interpretations for the reader so that they compare the data with their own descriptions.

Another researcher and a research assistant outside of the study listened to the voice recordings and compared what was coded. Researchers read patient statements separately in order to provide the content integrity throughout the analysis. By determining important expressions and statements that were relevant to the study objective, meanings were formed. Themes were arranged after the formation of meanings. Additionally, analyses, which were conducted by another researcher who was not actually included in the study, were also carried out to determine reliability of the coding of the original researchers. Results of both analyses were compared.

Approval was obtained from the Ethics Committee for Non-interventional Research at University (854-GOA/2013) and University Hospital. Nurses gave written informed consent.

RESULTS

Nurses aged between 22 and 38 years (mean: 28.30; SD: 4.20). Out of all the nurses, 93.75% (n=15) were

female, 93.75% (n=15) were university graduates or had a higher degree of education, 43.8% (n=7) had 3-6 years of work experience and 25% (n=4) had 7 or more years of work experience in the orthopedics clinic. 25% of the nurses (n=4) did not receive in-service training for pain management.

Two main themes and nine categories were specified.

DECISION MAKERS IN PAIN MANAGEMENT

Nurses' observations and experiences (Tacit knowledge): Nurses' observations and experiences played a role in their selection of analgesics, non-pharmacological methods and narcotic agents. All nurses were found to put these methods in order of implementation depending on their experiences and symptoms of patients and considered narcotic agents as the last alternative to use.

I monitor observe patients' behavior and if I think that they do not suffer from a severe pain, I give analgesics in the form of tablets. If the pain does not subside, I administer the injection form of the same analgesics (N13).

(...) There is an order of administration of medications. When a patient complains about pain for the first time, the last alternative to use is narcotic agents. I prefer to give non-steroidal anti-inflammatory drugs first (N2).

Some of the nurses reported that they performed non-pharmacological practices.

I think changing patients' position can have a relieving effect for a short time (N10).

We give massages, which can be effective in some patients (N4).

Use of various sources: The nurses reported that they received in-service training, searched for information on the Internet and read books to learn about pain management.

We benefit from the Internet and books. We are offered in-service trainings for subjects such as effects and side-effects of drugs, etc (N5).

The nurses were found to mostly depend on doctors' orders, they also consult doctors, senior nurses or the academic staff and benefit from

courses that they took during their nursing university education and in-service trainings and various other sources.

Our decisions about analgesia mostly depend on doctors' orders and we less frequently decide analgesia by asking senior nurses and academic staff and using sources, courses that we took at school and trainings on pain management (N11).

Patients' preferences: The nurses' decisions regarding pain management were found to be strongly affected by patients' experiences with pain and preferences.

Patients themselves choose their painkiller. They can also decide intervals of administrations of painkillers. They ask nurses to give them A (a narcotic agent). They are well aware of time and even doses of analgesics (N8).

(...) In fact, nurses must listen to patients' requests. For example, I might administer ten analgesics during a ten-day period, but none of them works. At last, the patient may feel relief after a medication that he or she asks for (a narcotic analgesic) (N10).

If a patient complains about pain, he or she is really suffering from pain and has to be given whatever analgesic he or she asks for (N7).

BARRIERS IN PAIN MANAGEMENT

Beliefs and prejudices of nurses: Despite the fact that some nurses perform practices directed towards pain management, it has turned out that nurses believe that pain cannot be relieved completely.

Patients think that their pain will be relieved completely and that the severity of pain will decrease from 10 to 0 once the analgesics are administered. Actually, it cannot be reduced to 0. We tell patients that it will be reduced to a minimum, but will certainly continue. Their pain will not disappear (N3).

While some of the nurses argued that non-pharmacological practices were not effective and that analgesics were mandatory, one nurse commented that non-pharmacological methods could be performed in case of mild pain.

I don't think that non-pharmacological alternatives are very effective, since patients experience severe pain (N12).

It is necessary to use analgesics for pain management. Non-pharmacological nursing practices are not very effective (N14).

The non-pharmacological methods can be preferable in much milder forms of pain (N1).

Some of the nurses thought that narcotic analgesics were addictive.

Suppose a patient has been given a narcotic analgesic for 2-3 days. After three-day patient controlled analgesia (PCA), the patient becomes addicted to the administered narcotic agent. However, administration of a non-steroidal anti-inflammatory drug does not relieve pain (N16).

One nurse commented that approaches to pain management vary according to surgical procedures and that the pain after some surgeries are not as severe as patients expect it to be.

Our approach to pain management depends on a given surgery. Sometimes we talk about our approach. To illustrate, we ask whether a patient undergoing repair for rupture of the anterior cruciate ligament suffer from pain as severe as the patient expresses it to be (N8).

Lack of cooperation between team members

The nurses admitted that deficiencies in cooperation between members of the health staff and the fact that physicians did not offering adequate information to patients before surgery had a negative effect on pain management. All participants underlined that a training on pain management had to be provided before surgery and some noted that this education should be provided by physicians.

A training on pain management should be offered before surgery, which allows patients to express their pain more easily (N7).

Physicians should also inform patients, because patients expect physicians to explain that surgery causes pain. To be frank, we, as health staff, don't adopt principles of team work. Physicians say that they have already recorded what is required in patient files and anesthetists see patients only in

the surgical room when patients are not fully recovered from anesthesia (N3).

Nurses' lack of knowledge: The participants commented that elderly and pediatric patients had difficulty in understanding the numeric rating scale for pain. In addition, it turned out that the nurses were not knowledgeable with the evaluation.

I ask elderly patients to rate their pain using a scale from zero to ten. They don't understand how to do it. I don't know what I can do. I have to rate their pain based on their comments and facial expressions. I have great difficulty in this issue. I can evaluate pain in children based on their cry. I don't know what other ways I can use (N10).

A nurse admitted that there was discrepancy between their evaluations and patients' ratings.

There is not a complete conformity between our evaluations and patients' scores. While a patient may assign 10 to his or her pain, we may assign 4. Our pain evaluations may differ from evaluations made by patients (N9).

Patients' experiences: Patients' preferences of medications for pain management were found to influence the nurses' approaches. It turned out that the patients found non-pharmacological interventions and peroral medications ineffective in pain management and were in favor of injections of some painkillers in particular.

All of the patients think that they feel relieved once administered medications. Independent nursing interventions are not even mentioned by patients (N2).

The patients don't believe that peroral medications are effective and can relieve their pain.

The patients want to know even the name of the medication. They may say that the medication X (Nonnarcotic analgesic) is not good for them and ask me to give them the medication Y (NSAID) (N11).

The nurses explained that although the patients had no pain during the day time, they asked the nurses to administer analgesics to them before going to bed assuming that they might have pain late at night.

The patients ask to receive painkillers at bedtime, so that they can sleep more comfortably. I think that these requests are related to their psychology. In fact, after they have had no pain and received no painkillers during the day time, they would like to receive analgesics to sleep well. The patients tolerate pain and say that they don't want painkillers during the day time, but that they need painkillers at night (N4).

The nurses said that some patients wanted to take painkillers at frequent intervals and felt relief after given placebo and therefore believed that pain was related to psychological status in some patients (N5).

We sometimes inject placebo, since some analgesics cannot be administered at short intervals. Some patients ask for analgesics at two-hour intervals. When these patients have an injection, they feel relieved. They fall asleep one hour after the administration of placebo. This is related to psychological status of the patients and they are conditioned to suffer from pain (N16).

DISCUSSION

In this study were found to place importance on nurses' observations and experiences to achieve accurate pain evaluations. Similarly, the study found that pain related experiences and attitudes of nurses played an important role in pain management.¹² Indeed, the most appropriate strategy is to ask patients to describe their pain since it changes from person to person.¹⁷ In this study, most of the nurses reported that they received in-service training, used sources in the internet and read books to learn about pain management. In-service training for pain management can help nurses to become aware of and develop effective coping strategies for the issue.¹² In addition, the nurses depended on physicians' orders and consulted physicians, senior nurses and academicians for pain management, which is consistent with the literature. It can be suggested that the nurses are not equipped with appropriate knowledge about pain and felt safe when they acted in accordance with physicians' orders.

In this study, the nurses reported such barriers as inability to achieve complete relief of pain, ineffectiveness of nonpharmacological interventions, obligation to administer analgesics and addictiveness of narcotic analgesics. The belief that complete relief of pain is not possible can be associated with the tendency to consider pain as a natural phenomenon.¹⁸ However, treatment of pain is the right of patients and it cannot be acceptable in terms of ethics to let a patient suffer from pain which can be relieved. Pain is multidimensional concept.¹⁹ Pharmacological agents are used to treat the somatic component of pain (physiological and sensorial) while nonpharmacological interventions are directed towards treating affective, cognitive, behavioral and socio-cultural components of pain.²⁰ In this study, the factors underlying avoidance of narcotic analgesic can be the motive for protecting patients against unwanted effects of these drugs in addition to lack of knowledge about the physiological component of pain. However narcotic agents are used in orthopaedic patients effectively.⁷ It has been shown that physicians and nurses exaggerate addiction potential of narcotic agents and tend to administer opioids in low doses at long intervals.¹⁴ This is considered as one of the causes of ineffective postoperative pain management.

In this study, the nurses explained that pain severity varies with types of surgery and did not expect some patients to have as severe pain as they complained about. They also noted that some patients had psychogenic pain and that they administered placebo to these patients. Every patient has a unique pain and has to be taken serious. The belief that patients responding to placebo do not have pain is not acceptable.²⁰ However, this response should be considered as the patients' request for elimination their pain. Administration of placebo by the participants in this study can be explained by their awareness of effects of placebo. It is important that physicians and nurses should learn about what patients expect about pain before surgery so that pain management can be enhanced.

In the study, the nurses noted that patients were not provided with appropriate information about pain management before surgery and that

there was no sufficient cooperation between members of the health care team, which had a negative influence on postoperative pain. Unlike the results of this study, nurses in other studies reported that time constraints, understaffing, work load, obligation to answer the phones, assistance to colleagues and participation in physicians' visits were barriers to pain management.^{8,9}

In this study, the nurses had difficulty in evaluating pain, especially in using the numeric rating scale for pain, in the elderly and children and were not equipped with appropriate knowledge about the issue. Similarly, it has been reported in the literature that it can be difficult to use the numerical rating scale for pain in the elderly and children and recommended that verbal scales should be used and pain behavior should be monitored.²¹⁻²⁴ Lack of a pain evaluation scale for the elderly and children in the clinic where this study was performed might have caused the nurses to experience difficulty in diagnosing pain. It is obvious that the nurses should be offered education about scales which can be used in different groups of patients and spend time on explaining these scales to patients.

Another finding of this study was discrepancy in pain evaluations between the nurses and the patients. It may be that the nurses lacked knowledge about diagnosis of pain and found their own evaluations more reliable. The study showed that only 1.7% of the nurses evaluated pain based on patients' descriptions.¹⁷ In another study, nurses were found to assign lower pain scores compared to patients.²⁵ However, The World Health Organization (WHO) recommends a patient centered approach in pain management.¹⁹

In this study, the nurses noted that pain behavior of patients created barriers to pain management. Among these behavior is the belief that nonpharmacological interventions and oral medications are ineffective, patients' requesting painkillers before sleeping and patients' selection of painkillers affected by other patients. It is known that some patients never complain just to be considered as "good patients" and that others do not demand painkillers since they are worried about side-effects and addiction.²⁶ The idea that patients

unable to describe their pain and not complaining about pain do not suffer from pain can be misleading for nurses. Detection of pain behavior and its reasons can be the key to effective pain management. It is important to take account of patients' descriptions of pain, to spend sufficient time to help patients feel safe and to offer care based on culture of individual patients.

A limitation of this study could be the small sample and findings may not be generalizable to other orthopaedic nurses. However, the intention of qualitative studies is not generalization of findings but rather the provision of useful insight into a context or phenomenon.

CONCLUSION

This study revealed that the nurses adopted using medications to relieve pain after orthopaedic surgery, which was influenced by not only their own observations and experiences but also patients' preferences. Also, the patients having orthopaedic surgery before believed effectiveness of narcotic agents and PCA and the nurses agreed with them. However, the nurses found it difficult to diagnose pain in the elderly and children and preferred easily accessible sources of information to acquire knowledge. In addition, deficiencies in hospital practices and cooperation between members of health staff may prevent effective pain management. In the light of these findings, it can be sug-

gested that education programs offered to nurses about diagnosis of pain, narcotic analgesics and nonpharmacological interventions, development of appropriate strategies to enhance team work, creation of common procedures for pain management, spread of PCA use and education offered to patients about pain management before surgery can help to achieve steps taken to relieve pain in patients.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Design: Özlem Bilik, Ayşegül Savcı, Hale Turhan Damar; **Inspection / Consultancy:** Özlem Bilik; **Data Collection and / or Processing:** Özlem Bilik, Ayşegül Savcı; **Analysis and /or Comment:** Ayşegül Savcı, Hale Turhan Damar; **Resource Screen:** Özlem Bilik, Ayşegül Savcı, Hale Turhan Damar; **Complete Writing:** Özlem Bilik, Ayşegül Savcı, Hale Turhan Damar; **Critical Investigation:** Özlem Bilik.

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