

ORIGINAL ARTICLE

Opinions of Physicians and Nurses on the Postoperative Pain of Pediatric Patients Undergoing General Anesthesia: A Qualitative Study

Genel Anestezi Uygulanan Çocuk Hastaların Postoperatif Dönemde Ağrılarının Değerlendirilmesine Yönelik Hekim ve Hemşirelerin Görüşleri: Nitel Bir Çalışma

¹Sevinc Akkoyun , ²Fatma Tas Arslan , ³İnci Kara ¹Medical Services and Techniques Department, Selçuk University Vocational School of Health Services, Konya, Türkiye,²Child Health and Diseases Nursing Child Health and Diseases Nursing, Selçuk University Faculty of Nursing, Konya, Türkiye,³Anesthesia and Intensive Care Department, Selçuk University Faculty of Medicine, Konya, Türkiye

Correspondence

Sevinc Akkoyun, Vocational School of Health Services, Selçuk University Konya, Türkiye

E-Mail: sevincakkoyun87@gmail.com

How to cite ?

Akkoyun S. , Taş Arslan F. , Kara İ. Opinions of Physicians and Nurses on the Postoperative Pain of Pediatric Patients Undergoing General Anesthesia: A Qualitative Study. Genel Tıp Dergisi. 2023; 33(3):278-285.

ABSTRACT

Aim: It is aimed to determine the opinions of physicians and nurses on the evaluation of pain in the postoperative period of pediatric patients undergoing general anesthesia.**Materials and Methods:** Qualitative research method was used in the study. The study was carried out with a total of 13 physicians and nurses working voluntarily in the anesthesia and pediatric surgery clinic of Selçuk University Medical Faculty Hospital. Data were collected through individual in-depth interviews through a semi-structured questionnaire in October 2022. Individual interviews were held in a suitable meeting room within the hospital with the participation of two researchers. Note-taking technique was used in the interviews and a voice recorder was used. The qualitative data obtained were analyzed by the researchers with the content analysis method.**Results:** Qualitative findings were determined as four main themes: thoughts about pain, beliefs about pain management, the role of health professionals in pain management, and the role of family/parent in pain management.**Conclusion:** As a result of the study, it was determined that pain was followed, pharmacological methods were used, non-pharmacological methods were not in the clinical routine, teamwork was important in pain management, and the family/parent were with the child.**Key words:** child; nurse; pain; physician; postoperative; qualitative study

ÖZ

Amaç: Genel anestezi uygulanan çocuk hastaların postoperatif dönemde ağrılarının değerlendirilmesine yönelik hekim ve hemşirelerin görüşlerini belirlemek amaçlanmaktadır.**Gereç ve Yöntem:** Çalışmada nitel araştırma yöntemi kullanıldı. Çalışma Selçuk Üniversitesi Tıp Fakültesi Hastanesinde anestezi ve çocuk cerrahi kliniğinde çalışan gönüllü olarak katılan toplam 13 hekim ve hemşireler ile yapıldı. Veriler, Ekim 2022'de yapılandırılmış soru formu aracılığıyla bireysel derinlemesine görüşme yapılarak toplandı. Bireysel görüşmeler iki araştırmacının katılımıyla hastane içerisinde uygun olan bir toplantı odasında gerçekleştirildi. Görüşmelerde not tutma tekniğinden yararlanıldı ve ses kaydı cihazı kullanıldı. Elde edilen nitel veriler araştırmacılar tarafından içerik analizi yöntemi ile analiz edildi.**Bulgular:** Nitel bulgular ağrı ile ilgili düşünceler, ağrı yönetimi ile ilgili inançlar, ağrı yönetiminde sağlık personelinin yeri ve ağrı yönetiminde ailenin yeri olarak dört ana tema şeklinde belirlendi.**Sonuç:** Çalışmanın sonucunda, ağrı takibinin yapıldığı, farmakolojik yöntemlerin kullanıldığı, non-farmakolojik yöntemlerin klinik rutinde olmadığı, ağrı yönetiminin ekip çalışmasının önemli olduğu ve ebeveynlerin çocuğun yanında yer aldığı belirlenmiştir.**Anahtar Kelimeler:** çocuk; hemşire; ağrı; hekim; postoperatif; nitel çalışma

Introduction

Anesthesia aims to protect the child from the trauma caused by the surgical procedure and to ensure that the surgery is performed painlessly. The anesthesia method is determined according to the surgical procedure and the characteristics of the child (1). Since surgical procedures cause trauma to the tissues, pain is observed in the postoperative period (2). Pain in the postoperative period, which starts suddenly with the surgical procedure, is an acute pain that gradually decreases with the wound healing process and then disappears (3).

Pain is defined by the International Association for the Study of Pain (IASP) as "an unpleasant emotional sensation related to the past experiences of the

person, which may or may not be due to tissue damage originating from a certain part of the body" (4). In the postoperative period, the level of pain varies according to the surgical area and the duration of the surgical procedure. In addition, the level of pain varies according to the child's age, developmental stage, past experience of pain, and cultural differences (5, 6). Evaluation of pain and determination of pain level in the postoperative period in children is a difficult process. Children may have difficulties in diagnosing and distinguishing the pain they experience. Considering these conditions, pain should be controlled as soon as possible and effectively. If pain is not controlled, it may cause conditions such as

nausea and vomiting in children, delay in the healing process, and prolongation of hospitalization (2, 7, 8). In order to determine the level of pain, pain should be evaluated appropriately and accurately (2).

Individual reporting pain scales, behavioral-observational pain scales and physiological indicators are used in pain assessment (8, 9). The developmental characteristics of children are different according to their age groups, so it may be difficult to communicate, especially in the younger age group. This situation causes many difficulties in the evaluation of individual reporting pain and pain scales (10). Behavioral pain measurement is made in cases where individual reporting cannot be made, that is, it cannot be expressed verbally. There are changes in the experience of pain in infants and children, such as crying, frowning, squeezing their eyes, withdrawing in the affected extremity, and tension. The use of behavioral pain scales that measure these behaviors is preferred in determining pain (11). In the physiological measurement of pain, physiological parameters such as heart rate, respiratory rate, oxygen saturation, and blood pressure can be evaluated (8). Although changes in these parameters are not sufficient to determine the severity of pain, they can be used in the assessment of pain in young infants or children with difficulty in communicating verbally (12, 13). Health professionals use many scales appropriate for the age of the child in determining the level of pain in pediatric patients (2).

Healthcare professionals play an important role in the evaluation of pain in pediatric patients in the postoperative period after general anesthesia. In addition, healthcare professionals are in a critical position in the evaluation and interpretation of pain, especially in groups that cannot report pain, such as children in the younger age group, severely ill and disabled children. Evaluation and management of the child's pain are among the responsibilities of health professionals (11). The need for analgesia, changes in the dose of analgesia and the need for additional interventions should be determined by the evaluation of pain in the postoperative period (14). Long-term pain can cause physiological and psychological problems in children (15). For this reason, healthcare professionals should identify pain in the earliest period, determine and apply pharmacological or non-pharmacological methods that will help reduce or eliminate it. Evaluation of pharmacological and non-pharmacological approaches, efficacy and use of healthcare professionals in managing pain in the postoperative period is key in the pain management approach. However, it is thought that it will contribute to the improvement of the health outcomes of the child patient and the parents' anxiety and management of the process.

Aim

In this context, it was aimed to determine the opinions of physicians and nurses on the evaluation of pain in the postoperative period of pediatric patients undergoing general anesthesia in this study.

Methodology

Design

A qualitative research was conducted using the content analysis approach.

Setting

The study was carried out with the participation of physicians and nurses working in the anesthesia and pediatric surgery clinic of Selcuk University Medical Faculty Hospital.

Participants

Although there is no definite rule and clear numbers regarding the pre-determination of the sample size in qualitative studies, it is recommended to select individuals until the level of saturation and excess is reached in the statements of the participants interviewed within the scope of the study (16, 17, 18). This study was conducted with a total of 13 physicians and nurses who participated voluntarily.

Inclusion criteria for the study: (1) To have worked for at least one year, (2) to be an anesthesiologist/pediatric surgeon/ assistants physician/nurse. This study was conducted with a total of 13 participants, including two anesthesiologists, four pediatric surgeons, three assistants (two anesthesia assistants and one pediatric surgery assistant), physician, and four nurses (working in pediatric surgery). 5 of the participants are women, 8 are men and the age range is 25-51. All of the participants have university or higher education. The average working time in the profession is 12.57±8.19 years, and the average working time in the clinic they work at is 6.07±3.18 years. Demographic characteristics of study participants are outlined in Table I.

Data Collection

Data were collected using individual semi-structured interviews in October 2022. The semi-structured interview form was developed by examining the literature on developmental care (5,15). Expert opinion was obtained from the anesthesiologist and nurse academicians for the semi-structured form. In addition, questions including sociodemographic and occupational characteristics of the participants (age, gender, occupation, education level, tenure in the profession, time worked in the current unit) were also asked. Individual in-depth interviews were conducted to collect data. In-depth interviewing is an open-ended, discovery-oriented method. The purpose of the interview is to explore the feelings, point of view and perspective of the interviewer in depth (19). Individual interviews were held in a suitable meeting room within the hospital with the participation of two researchers. Note-taking technique was used in the interviews. A voice recorder (Sony ICD PX-470 4 GB) was used with the consent of the participants. Each interview lasted an average of 10-15 minutes. During the individual interviews, it was observed that 13 participants gave similar statements and the data collection process was terminated, considering that data saturation was achieved. In the interviews, one

of the research coordinators served as a guide and the other as a reporter. At the end of each interview, data confirmation was made from the participants.

In the semi-structured interview form, the participants were asked questions under 10 main headings.

1. How would you describe pain in children in the postoperative period?
2. How would you evaluate the pain in a pediatric patient in the postoperative period?
3. What are the types and characteristics of pain you encounter in a pediatric patient in the postoperative period?
4. What are the factors that cause pain in the pediatric patient in the postoperative period?
5. Which methods do you use in the management of postoperative pain in children?
6. What are your thoughts on the effectiveness of pharmacological and/or non-pharmacological methods in postoperative pain management?
7. Which pharmacological and/or non-pharmacological methods do you prefer in postoperative pain management and explain why?
8. What are the difficulties you encounter in pain management in children in the postoperative period?
9. How would you describe the role of the physician and nurse in the management of pain in pediatric patients in the postoperative period?
10. How would you describe the role of the family/parent in pain management in the postoperative period?

Research Ethics

Ethical consent of the study was obtained from the Local Ethics Committee of Selçuk University Faculty of Medical with the decision numbered 2022/15. Official permission was obtained from a center to conduct the study. The participants were informed about the study and their consent was obtained. The names of the participants were kept confidential; participant numbers are used in expressions instead of names.

Analysis

The demographic characteristics of the participants were evaluated in SPSS (Statistical Package for Social Sciences) 25.0 package program. The qualitative data obtained were analyzed by the researchers with the content analysis method. Content analysis enables the uncovering of unknown themes and dimensions that require in-depth data analysis (20). The purpose of content analysis is to reach the concepts that can explain the collected data and the relationships between the concepts (21). In content analysis, the content of the document is classified by placing it in appropriate themes (category). Themes are structures that cover units of analysis. In the analysis of documents, coding acts as a dictionary (22). In the study, a code list was created independently by both

researchers, the data were coded, and appropriate themes were created. In the data analysis, it was seen that both researchers created similar codes and themes. Similar codes were combined and data were reported as three main themes (Table II).

Inter-rater reliability and credibility

Within the scope of the study, participant checking was performed regarding the answers given to the questions in the semi-structured interview form at the end of each interview. In addition, after the study was completed, it was read by an independent researcher and feedback was received (expert review-peer debriefing).

Results

Based on the questions in the semi-structured interview form, the qualitative findings were determined as four main themes. These main themes are; **thoughts about pain, beliefs about pain management, the role of health professionals in pain management, and the role of family/parent in pain management.**

Main theme 1: Thoughts about pain

This main theme consists of three sub-dimensions. These; *definition of pain, characteristics of pain, and causes of pain.*

Sub-theme 1.1: Definition of pain

The majority of the participants expressed pain as a state of restlessness, crying, deterioration of comfort, and an unpleasant feeling for the age group who could not express it verbally. In addition, one of the participants expressed it as anything that causes unbearable pain and discomfort.

"We think that if the restless child does not feel relieved despite seeing his family, she/he has pain" (P5, Pediatric surgeon)

"It is a state of restlessness" (P11, Pediatric surgeon assistant)

"Crying and restlessness in babies" (P6, Pediatric surgeon)

"The child's restlessness and loss of comfort is pain" (P8, Nurse)

"It is an unpleasant sensory feeling in children" (P1, Anesthesia physician)

In the determination of pain, the majority of the participants stated that the evaluation was made according to the age group, and the decision was made by looking at the behavioral status and physiological findings of the children. In children with verbal expression, the pain status and location were expressed as questionable. Four of the participants stated that pain scales are used to determine pain.

"We can understand pain in younger children more easily by following the physiological findings and communicating with the family" (P3, Anesthesia assistant physician)

"The face scale is used, scoring is done, points between 1 and 10 are requested, the frequency of evaluation changes according to the score" (P12, Nurse)

"We use a facial pain scale and score" (P13, Nurse)

Sub-theme 1.2: Characteristics of pain

The majority of the participants stated that the pain was acute, severe, continuous, localized, which decreased or disappeared with analgesics, and decreased over time in the postoperative period. One of the participants stated that he had visceral pain.

"It is a decreasing pain" (P10, Pediatric surgeon)

"It is a clear and localized pain" (P2, Anesthesia assistant physician)

"Pain decreases as more time passes on the first day of surgery, disappears when medication is administered" (P6, Pediatric surgeon)

"It is severe on the first day and decreases over time" (P8, Nurse)

Sub-theme 1.3: Causes of pain

Most of the participants stated that the causes of pain depended on the surgical procedure, incision site, position, drain, and nasogastric tube. In addition, it was stated that colic increased the pain, and there was pain due to intubation and vascular access.

"The first cause of pain in the postoperative period is incision pain due to surgical incision" (P9, Pediatric surgeon)

"There is pain associated with the surgical procedure" (P8, Nurse)

"Also, if there is a drain and nasogastric tube, they also cause pain" (P11, Pediatric surgeon assistant)

Main theme 2: Beliefs about pain management

This main theme consists of three sub-dimensions. These; sub-themes are *methods used to reduce pain, thoughts about the effectiveness of the methods, and difficulties in pain management.*

Sub-theme 2.1: Methods used to reduce pain

All of the participants stated that pharmacological methods were used and non-pharmacological methods were not routinely used.

"We prefer pharmacological treatment methods more" (P3, Anesthesia assistant doctor)

"We start analgesic treatment" (P10, Pediatric surgeon)

"Our priority is pharmacological treatments" (P2, Anesthesia assistant doctor)

"We do not use non-pharmacological methods in our clinical routine" (P6, Pediatric surgeon)

Sub-theme 2.2: Thoughts about the effectiveness of the methods

All of the participants stated that pharmacological

methods were effective.

"Because pharmacological methods are effective in a shorter time and faster, it should definitely be in the postoperative period" (P1, Anesthesia physician)

"We know the mechanism of action of each drug, so we prefer pharmacological treatment" (P2, Anesthesia assistant doctor)

"We prefer pharmacological methods because their effectiveness is certain" (P6, Pediatric surgeon)

While the majority of the participants stated that non-pharmacological methods were effective, one participant stated that non-pharmacological methods were not effective in the older age group. As a non-pharmacological method, the majority of the participants stated that they provided parental participation. In addition, one participant stated that they tried to use distraction methods.

"Even if a non-pharmacological method is applied without a pharmacological method, the effect will not be achieved, there may be non-pharmacological support" (P4, Anesthesia physician)

"The pharmacological method is strictly applied, it would be very good to integrate it and support it with non-pharmacological methods" (P11, Pediatric surgeon assistant)

"After the administration of analgesics according to the physician's order, it is provided to watch cartoons and telephone calls in order to divert attention in the service" (P12, Nurse)

"It is effective in non-pharmacological methods, but it can be difficult to apply because it is difficult to apply" (P2, Anesthesia assistant physician)

"Non-pharmacological method should be applied together with pharmacological method, not alone" (P8, Nurse)

"The child's attention is diverted by turning on the cartoon channels, I think it is effective" (P7, Nurse)

Sub-theme 2.3: Difficulties in pain management

All of the participants stated that there may be difficulties in the follow-up of pain in children's age groups. Physician participants stated that they had difficulties in choosing opioid drugs and adjusting the drug dose. Two participants stated that there were difficulties in pain management in the adolescent group, difficulties in communicating, they wanted to refuse the drug administration, and their statements varied.

"Adolescent patients experience pain and difficulty in mobilization" (P11, Pediatric surgeon assistant)

"Children in the older age group object to every procedure such as making pain relievers, mobilization, opening vascular access, and they do not want to have them done. Their statements about pain vary, and when someone says they have it, they can say no to someone else" (P12, Nurse)

"Follow-up and follow-up of pain is difficult in the pediatric age group" (P3, Anesthesia assistant physician)

"It can be a problem in setting the appropriate dose and frequency" (P10, Pediatric surgeon)

Main theme 3: The role of health professionals in pain management

The majority of the participants stated that physicians and nurses play an important role in pain management and that teamwork and communication should be present.

"Nurses monitor pain and report it to the doctor, it is important for nurses to monitor pain" (P11, Pediatric surgeon assistant)

"It is important that the nurse who follows the child primary evaluate and monitor the effectiveness of the drug administered and inform the physician" (P9, Pediatric surgeon)

"There should be team cooperation" (P3, Anesthesia assistant physician)

"Pain management physician and nurse should be together" (P10, Pediatric surgeon)

"As the nurse sees the child more often, she should evaluate the pain situation and report it to the physician" (P7, Nurse)

Main theme 4: The role of the family/parent in pain management

The participants stated that the family is important in pain management in terms of being with the child constantly and knowing their child well. However, they also stated that family interest, education level, participation in the process affect pain management.

"Mother's compassion reduces pain" (P4, Anesthesia physician)

"Parents should be with the child" (P5, Pediatric surgeon)

"Families are told about the pain situation and the importance of mobilization, if they can go in harmony with the family, pain management becomes more comfortable for the child" (P12, Nurse)

"Family is important in pain follow-up because the family knows the difference in the child very well" (P3, Anesthesia assistant physician)

"Pain management is easier in consciously educated families" (P7, Nurse)

Table 1: Demographic characteristics of participants (N=13).

	Min-Max	X $\bar{}$ ±SD
Age	25-51	36,07±8,49
Working time in the profession (year)	1,5-28	12,57±8,19
Working time in clinic (year)	1,5-11	6,07±3,18
	n	%
Gender		
Male	8	61,5
Female	5	38,5
Educational status		
Postgraduate	9	69,2
Graduate	4	30,8
Profession		
Anesthesiologist	2	15,3
Pediatric surgeon	4	30,8
Assistant physician	3	23,1
Nurse	4	30,8

X $\bar{}$: Mean, SD:Standard-deviation, **Min-Max:** Minimum-Maximum

Table 2: Themes of the study

Main theme	Sub-theme
Thoughts about pain	Defination of pain
	Characteristics of pain
	Causes of pain
Beliefs about pain management	Methods used to reduce pain
	Thoughts about the effectiveness of the methods
	Difficulties in pain management
The role of health professionals in pain management	
The role of the family/parent in pain management	

Discussion

In the postoperative period, pain is inevitable in pediatric patients and is seen at different levels. In this process, it is very important to start and implement pain management quickly. Inadequate pain management in the postoperative period causes many adverse conditions such as the development of infection and delay in wound healing (23, 24). It also causes significant negative effects on the parent. Effective pain management also ensures early mobilization of children and shortens the hospital stay (25). Pain in the postoperative period requires a multidisciplinary approach for healthcare professionals, and it is an important problem that needs to be addressed multidimensionally (24).

In this study, the views of physicians and nurses on the evaluation of pain in the postoperative period of pediatric patients undergoing general anesthesia were examined in depth and the situation in pain management was revealed. In our study, in line with the opinions of physicians and nurses, the main themes were thoughts about pain, beliefs about pain management, the place of health personnel in pain management and the place of family in pain management.

When the participants' thoughts about pain were examined, it was seen that they were able to define pain in children, and reveal the characteristics and causes of pain. In addition, it was seen that they evaluated many factors in the definition of pain in pediatric patients. In the statements of the majority of the participants, it was stated that situations such as restlessness and crying were evaluated, evaluation was made according to age groups, and vital signs were checked. There are many scales used in pain assessment. The use of reliable pain scales is important in the evaluation of pain in the pain method in pediatric patients (26). Nurse participants stated that they mostly used and evaluated the facial expression pain scale in their clinical routine. Physicians in the study stated that these scales could be evaluated for follow-up purposes in pain management. In the postoperative period, pain is often an acute pain that subsides over time (3). The majority of the participants stated that there was a decrease in pain over time. Pain in the postoperative period is primarily related to the surgical procedure (3). In addition, different types of pain are seen due to the patient staying in the same position for a long time, back and neck pain, gas pain due to inability to mobilize, and equipment such as drains and nasogastric tube. In a study, it is seen that there are similar themes and the participants give similar answers (27). It is recommended that healthcare professionals evaluate and monitor pain as the fifth vital sign (28, 29).

In our study, when the beliefs of the participants in pain management were examined, sub-themes were formed about the methods used in reducing pain, their

thoughts about the effectiveness of the methods, and the difficulties in pain management. It was observed that the participants mostly preferred pharmacological methods to reduce pain. In a qualitative study, it was determined that nurses gave similar answers to our study because of easy and fast access to similar pharmacological agents (27). However, they stated that they preferred pharmacological methods because they react quickly, the mechanisms of action of drugs are known, and they have a definite effect. In addition, they stated that non-pharmacological methods were effective, but they were not preferred in their clinical routine. On the other hand, nurse participants also stated that they used distraction methods together with pharmacological treatment. However, all participants stated that they provided the parent and child togetherness in the postoperative period and this was included in their clinical routine. Pharmacological and non-pharmacological methods are used to reduce or eliminate pain in the postoperative period. When the literature on both methods is examined, it is seen that many studies have been conducted (24-26, 30). Pharmacological methods are most frequently preferred in the postoperative period (26). In the literature, it has been reported that non-pharmacological methods are effective in pain management in children in the postoperative period. As a non-pharmacological method, applications such as music, distraction, and massage are performed in the postoperative period (24, 31). Participants stated that these methods are not available in their clinical routine. It is thought that non-pharmacological methods are less applied due to the fact that it is more difficult to apply in intensive clinics with insufficient personnel, and pharmacological methods are effective in a short time.

Participants reported that they had difficulties in the postoperative period, in drug selection and dosage, and in pain management due to age groups. It is known that drug administration and management in pediatric patients show significant differences compared to adults (32). It has been reported in the literature that difficulties may be experienced in the evaluation and monitoring of pain in pediatric patients according to age groups (26). This problem is seen more frequently in infants and children, especially in the younger age group who do not have verbal communication. On the other hand, some of the participants in our study stated that they had difficulties in communication during adolescence and refused treatment. In the literature, it has been reported that surgical procedures cause stress for the adolescent age group (33), and that adolescents may experience difficulties in adapting to behaviors such as tension, anger, and the desire not to communicate (32). This result is known to be common in adolescents with chronic disease, and it is noteworthy that this developmental situation also occurs in the postoperative period. In this context, it is thought that healthcare professionals should provide pain management specific to this group.

In our study, although it was emphasized that physicians and nurses play an important role in pain management, teamwork and communication are important, and that the family should be involved in this process, it was seen that the family's interest, education level, participation in the process affected pain management. In the study, the participants stated that the child's pain could be controlled when a harmonious relationship was established between the family and health professionals. For pain management in children to be effective, there must be cooperation between health professionals. In a qualitative study conducted with nurses, they stated that effective communication between nurses and physicians in the postoperative period was effective in pain management (34). Healthcare professionals should evaluate children according to their age groups and provide effective pain management by using pharmacological and non-pharmacological methods together. In addition, it is recommended that healthcare professionals have the competence to know and apply evidence-based practices in pain management (25). The family, which is another pillar in pain management, is an inseparable whole with the child (32). In our study, the participants stated that the family was important and that they took the child with them immediately in the postoperative period. However, it was also emphasized that some characteristics of the family are effective in pain management. In this respect, it was thought that family involvement and its characteristics should be studied in more details in pain management. In the postoperative period, conditions such as pain, duration of the effect of drugs, mobilization should be explained to the family. The unknown environment for the family and the unknown about the child's illness and treatment increase their anxiety and anorexia (35). This may make it difficult for the family to participate in pain management.

Conclusion

In the postoperative period, follow-up and management of pain in pediatric patients is important. As a result of the study, it was determined that pain was followed up, pharmacological methods were used, non-pharmacological methods were not in the clinical routine, teamwork in pain management was important and parents were beside the child. In-service training can be given to health professionals about what non-pharmacological methods are and their effects. With trainings, procedures can be created for the use of non-pharmacological methods. Follow-up of pain, giving importance to teamwork in pain management and being with the parents of the child are important results in providing pain management. It is recommended to carry out descriptive and experimental studies on the subject in the future.

Limitations of the study

Study data cannot be generalized to larger groups.

Making it in a single center can be considered within the limits.

Conflict of Interest

None declared by the authors.

Declaration of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Financial Disclosure

None declared by the authors.

Author Contributions: Conception: S.A., F.T.A., Design: S.A., F.T.A., İ.K., Supervision: S.A., F.T.A., İ.K., Resource: S.A., F.T.A., İ.K., Materials: S.A., F.T.A., İ.K., Data Collection and/or Processing: S.A., F.T.A., Analysis and/or Interpretation: S.A., F.T.A., Literature Review: S.A., Writer: D.E.A., Critical Review: S.A., F.T.A., İ.K.

References

1. Başkan S, Kayar D, Gamlı M, Macit E, Örnek D, Kılıç O, et al. Pediatrik hastalarda uyguladığımız anestezi ve analjezi yöntemleri. *Kafkas J Med Sci* 2018; 8(1): 1-5.
2. Sezer TA, Esenay Fİ, Korkmaz G. Okul öncesi çocuklarda ameliyat sonrası ağrı ölçeği: Türkçe geçerlilik ve güvenilirliği. *J Curr Pediatr* 2021; 19(1): 84-91.
3. Miranda AFA, Silva LFS, Caetano JÁ, Sousa AC, Almeida PC. Evaluation of pain intensity and vital signs in the cardiac surgery. *Revista da Escola de Enfermagem da USP* 2011; 45(2): 327-333.
4. International Association for the Study of Pain-IASP. <https://www.iasp-pain.org/publications/iasp-news/iasp-announces-revised-definition-of-pain/>. 2020. Accessed 12 July 2022.
5. Makhlof MM, Garibay ER, Jenkins BN, Kain ZN, Fortier MA. Postoperative pain: factors and tools to improve pain management in children. *Pain Management* 2019; 9(4): 389-397.
6. Zieliński J, Morawska-Kochman M, Zatoński T. Pain Assessment and management in children in the postoperative period: A review of the most commonly used postoperative pain Assessment tools, new diagnostic methods and the latest guidelines for postoperative pain therapy in children. *Adv Clin Exp Med* 2020; 29(3): 365-74.
7. Sng OW, Taylor B, Liam JLW, Klainin-Yobas P, Wang W, HongGu H. Postoperative pain management experiences among school-aged children: a qualitative study. *J Clin Nurs* 2013; 22: 958-68.
8. Bakır E. Çocuklarda ağrı değerlendirme ve ölçekleri: kültür ve yaşın ağrı değerlendirmesine etkileri. *J Nurs Sci* 2017; 79(4): 299-314.
9. Brand K, Al-Rais A. Pain Assessment in children. *Anaesthesia and Intensive Care Medicine* 2019; 20(6): 314-17.
10. Young KD. Assessment of acute pain in children. *Clinical Pediatric Emergency Medicine* 2017; 18(4): 235-241.
11. Erdem E, Şener TA. Ağrının değerlendirilmesi. In: Wycross A, Dowden S, Stinson J, editors (Çeviri editörü: Polat S, Gürol A.). *Çocuklarda Ağrı Yönetimi*. Ankara: Nobel Akademik Yayıncılık; 2018. p.112-139.
12. Hummel P, van Dijk M. 2006. Pain Anesthesia: Current status and challenges. *Seminars in Fetal and Neonatal Medicine* 2006; 11(4): 237-245.
13. Büyükgönenç L, Törüner EK. *Çocuk sağlığı temel hemşirelik*

yaklaşımları. Ankara: Göktaş Yayıncılık; 2018.

14.Chou R, Gordon DB, De Leon-Casasola OA, Rosenberg JM, Bickler S, Brennan T, et al. Management of Postoperative Pain: A Clinical Practice Guideline From the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council. *Journal of Pain* 2016; 17(2): 131-57.

15.Abouzida S, Bourgault P, Lafrenaye S, 2020. Observation of emergency room nurses managing pediatric pain: care to be given ... care given. *Pain Management Nursing* 2020; 21: 488-94.

16.Lincoln Y, Guba E. *Naturalistic inquiry*. Newbury Park, CA: Sage Publications; 1985. p.1-354.

17.Liehr P, Marcus, M, Cameron C. Qualitative approaches to practice. Cameron C, Sing MD, editors. *Nursing Research in Canada, Methods, Critical Appraisal and Utilization*. Elsevier Canada: A Division of Harcourt Canada Ltd.; 2005. p.327-347.

18.Polit DF, Beck CT. *Essentials of Nursing Research. Appraising Evidence for Nursing Practice*, 8th Edition. Philadelphia: Lippincott Williams & Wilkins; 2013. p. 40-75.

19.Baş T, Usta Y, Uyar E. In-depth interview. In Baş T, Akturan U, editors. *Nitel araştırma yöntemleri nvivo ile nitel veri analizi*. 1st ed. Ankara: Seçkin Yayıncılık San ve Tic AŞ; 2008. p.1-184.

20.Yıldırım A, Şimşek H. *Sosyal Bilimlerde Nitel Araştırma Yöntemleri*. Ankara: Seçkin Yayıncılık San ve Tic AŞ; 2013.

21.Erdoğan S. Nitel araştırmalar. In Erdoğan S, Nahcıvan N, Esin MN, editors. *Hemşirelikte Araştırma*. 1st ed. İstanbul: İstanbul: Nobel Tıp Kitabevleri; 2014. p.133-64.

22.Akturan U. Nitel araştırma yöntemleri. In Baş T, Akturan U, editors. *Doküman incelemesi*. 2nd ed. Ankara: Seçkin yayıncılık; 2013.

23.Sayar S, Ergin D. Ortopedi servisinde yatan çocuk hastalarda ameliyat sonrası ağrı yönetiminde müziğin etkisinin incelenmesi. *DEUHFED* 2019; 12(1): 67-73.

24.Gümüş M, Yüksel D, Kara R, Yardımcı F, Senol S, Bal Yılmaz H. Çocuklarda post-operatif dönemde non-farmakolojik ağrı giderme yöntemi olarak müziğin kullanılması: sistematik derleme *DEUHFED* 2020; 13(4): 245-50.

25.Kudubeş AA, Bektaş İ, Bektaş M. Çocuklarda ağrı yönetiminde hemşirenin rolü. *JERN* 2021; 18(1): 107-114.

26.Şen E, Mızrak Arslan A. Ürolojik cerrahi geçiren çocuklarda postoperatif ağrı ve analjezik ihtiyacının flacc skoruna göre değerlendirilmesi: retrospektif gözlemsel çalışma. *Genel Tıp Dergisi* 2020; 30(3): 178-183.

27. Türkmen, B. Çocuk yoğun bakım hemşirelerinin ağrı yönetimine ilişkin bilgi ve deneyimlerinin elirlenmesi. İzmir Katip Çelebi KATİP Üniversitesi Sağlık Bilimleri Enstitüsü (Master Thesis). 2019.

28.Scher C, Meador L, Van Cleave JH, Reid MC. Moving beyond pain as the fifth vital sign and patient satisfaction scores to improve pain care in the 21st century. *Pain Management Nursing* 2018; 19(2): 125-29.

29.Valério AF, Fernandes KDS, Miranda G, Terra FDS. Difficulties faced by nurses to use pain as the fifth vital sign and the mechanisms/actions adopted: an integrative review. *BrJP* 2019; 2: 67-71.

30.Çağlar S, Yıldız S. Çocuklarda ağrı yönetiminde non-farmakolojik yöntemlerin kullanıldığı çalışmalar: Sistematik derleme. *Türkiye Klinikleri* 2019; 1(1): 104-110.

31.Akkoyun S, Taş Arslan F. 2022. Pediatrik anestezi sonrası çocukların ağrı düzeyleri ve hemşirelik girişimlerinin değerlendirilmesi: Retrospektif tanımlayıcı çalışma. *Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi* 2022; 11(3): 1114-20.

32.Çavuşoğlu H. *Çocuk Sağlığı Hemşireliği*. 13. Baskı, Ankara: Sistem Ofset Yayınevi; 2022.

33.Gökkoyun E, Altay N. Apendektomi öncesi uygulanan teknoloji tabanlı preoperatif eğitim programının değerlendirilmesi-olgu sunu-

mu. *Türk Hemşireler Derneği Dergisi* 2020; 1(2): 37-44.

34. Nallani R, Fox CC, Sykes KJ, Surprise JK, Fox CE, Reschke AD, et al. Pain management and education for ambulatory surgery: a qualitative study of perioperative nurses. *Journal of Surgical Research* 2021; 260: 419-427.

35.Kaya S, Karayağız G, Manav G. Türkiye'de pediatri kliniklerinde yapılan ve aile merkezli bakım anlayışını kapsayan çalışmaların gözden geçirilmesi. *BAUN Sağlık Bil Derg* 2020; 9(3): 205-214.