Surgery Nurses' Knowledge Attitudes and Beliefs Regarding Pain and Their Perceived Barriers for Optimal Pain Management in Children

Cerrahi Hemşirelerinin Çocuklardaki Ağrı ile İlgili Bilgi, Tutum ve İnançları, Optimal Ağrı Yönetimi İçin Algıladıkları Engeller

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ABSTRACT Objective: Inadequate pain control in children is an ongoing problem, and nurses need to examine pain control issue every aspect. Causes of inadequate pain management's awareness in children may contribute to optimal pediatric pain management. Especially, because painful procedures are more frequently performed in surgical clinics, nurses working in these clinics to be adequate about optimal pediatric pain management is quite important. Therefore, this study aimed to investigate the surgery nurses' knowledge attitudes and beliefs regarding pain, and their perceived barriers for optimal pain management in children. **Material and Methods:** This is a descriptive study. The sample consisted of 40 nurses working in 13 surgery clinics affiliated with three hospitals in Erzurum, Turkey. A questionnaire based on a review of the literature were used in data collection. The data were analyzed using percentages, means and Cronbach's alpha. **Results:** In this study, 78.3% of the nurses correctly answered the questions regarding their knowledge and attitudes about children's pain. 45.7% of nurses had fallacies as related to pain in children. In addition, the most important barriers to optimal pediatric pain management in surgery clinics were "competing demands on nurse's time" (90.0%) and "nurses' concerns about children becoming addicted" (90.0%). **Conclusion:** The results of this study demonstrate that nurses in clinical practice should become more knowledgeable about pain and pain management in children, examine their attitudes about children's pain, learn which of their beliefs about pain are fallacies, and work to decrease what they perceive as barriers to inadequate pain management in children.

Key Words: Surgery; child; pain measurement; knowledge; attitude

ÖZET Amaç: Çocuklarda yetersiz ağrı kontrolü devam eden bir problemdir ve hemşirelerin ağrı kontrolü konusunu her açıdan incelemeye gereksinimi vardır. Çocuklarda yetersiz ağrı yönetiminin nedenlerinin farkındalığı optimal pediatrik ağrı yönetimine katkı sağlayabilir. Özellikle, cerrahi kliniklerde daha sık ağrılı işlemler uygulandığı için bu kliniklerde çalışan hemşirelerin optimal pediatrik ağrı yönetimi konusunda yeterli olmaları oldukça önemlidir. Bu nedenle, bu araştırma, cerrahi hemşirelerinin çocuklardaki ağrı ile ilgili bilgi, tutum ve inançlarını ve optimal ağrı yönetimi için algıladıkları engelleri belirlemek amacıyla yapıldı. **Gereç ve Yöntemler:** Bu araştırma, tanımlayıcı olarak yapıldı. Araştırmanın örneklemi, Turkiye'de, Erzurum'da 3 hastanenin çocuklara cerrahi girişim uygulanan 13 kliniğinde çalışan 40 hemşireden oluştu. Verileri toplamada, literatür incelemesi sonucu oluşturulan bir anket kullanıldı. Veriler, yüzdelikler dağılımlar, ortalamalar ve Cronbach Alpha katsayı hesaplaması kullanılarak analiz edildi. **Bulgular:** Bu araştırmada, hemşirelerin %78.3'ü çocukların ağrısı konusundaki bilgi ve tutumları ile ilgili soruları doğru olarak cevapladılar. Hemşirelerin %45.7'sinin çocuklardaki ağrı ile ilgili olarak yanlış inançlara sahip oldukları belirlendi. Ayrıca, cerrahi kliniklerde optimal pediatrik ağrı yönetimi için en önemli engeller "hemşirelerin zamanlarının yetersiz olması" (%90.0) ve "hemşirelerin çocukların bağımlı hale gelmeleri konusundaki endişeleri" (%90.0) idi. **Sonuç:** Bu araştırmanın sonuçları, klinik uygulamada hemşirelerin çocuklardaki ağrı ve ağrı yönetimi konusunda daha bilgili olmaları gerektiğini, çocukların ağrısı konusundaki tutumlarını incelemeleri gerektiğini, ağrı konusunda hangi inanaçlarının yanlış olduğunu öğrenmeleri gerektiğini ve çocuklarda yetersiz ağrı yönetimi için algıladıkları engelleri azaltmaya çalışmaları gerektiğini göstermektedir.

Anahtar Kelimeler: Cerrahi; çocuk; ağrı yönetimi; bilgi; tutum

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Thousands of children are hospitalized and experience acute pain each year. The American Academy of Pediatrics (AAP) and American Pain Society (APS) (2001), in their policy statement on acute pain in infants, children, and adolescents, have stated that, "most acute pain experienced in medical settings can be prevented or substantially relieved". In addition, the AAP and APS issued a joint policy statement (2001) recommending that healthcare providers anticipate predictable painful experiences, intervene, and monitor accordingly.[1] Furthermore, untreated pain may delay recovery, exacerbate injury, prevent healing, prolong hospitalization, and even lead to death.[2]

Nurses are together with patients for longer periods than other health care team members are. They assess patient's coping mechanisms for pain and previous pain experiences, and make use of this knowledge when necessary. They teach their patients appropriate coping strategies for pain. In addition, they plan and administer analgesic treatment as well as evaluate it's efficacy. They also provide empathetic and sympathetic approaches to patient care, which are regarded as the most effective interventions for the control of the pain.[3]

In adult nurses, knowledge deficits about adequate pain relief have been identified as those in dosing, safety, and scheduling.[4-6] It has been reported that nurses do not possess adequate knowledge on the method and level of dosing to achieve therapeutic drug levels and they have inaccurate beliefs about the likelihood of addiction and respiratory depression resulting from pain medication administration.[6] In addition, studies have shown that while many nurses view patients' self-reports of pain to be reliable, others believe that patients often over report or under report pain.[5,6] Other obstacles to best practices in pain relief in addition to knowledge and attitudes have also been reported. Some barriers nurses have expressed that prevent them from administering optimal pain management are: (1) physician's reluctance to prescribe adequate analgesics; (2) nurses' lack of time; (3) patient's reluctance to report pain or take opioids; (4) inadequate pain assessment; and (5) fear of addiction.[5,7,8]

Myths and misconceptions sometimes influence nurses' decisions about pain management. Some reported beliefs of nurses regarding pain in children include the following: (1) infants and children are neurologically immature, so they cannot experience pain or do not feel pain at the same intensity as adults; (2) children have no memory of pain; (3) an active child cannot be in pain; (4) a quiet child is not in pain; (5) children always tell the truth about pain; (6) children cannot tell you where they hurt; (7) children become accustomed to pain or painful procedures; (8) opiates are more dangerous for children than they are for adults, and children are at greater risk for addiction; (9) there is a correct amount of pain for a given injury; (10) opiates frequently or always cause respiratory depression in children; (11) children recover more quickly and tolerate pain better than adults, and (12) pain is not life threatening and has no long-term consequences.[6] These fallacies about pain in children have prevailed throughout the years, continue to create controversy, and possibly result in ineffective assessment and management of pain.[9]

Inadequate pain control in children and adults is an ongoing problem,[10,11] and nurses need to examine every aspect of the issue of pain control.[10]Nurses whose knowledge, attitudes and perceived barriers contain inaccuracies add to the complexity of the pain management issue.[12,13] In addition, literature has limited information on the reasons of pain control problem in children. Although it is known that nurses' intervention is indispensable in pain management, the results of previous studies on pain management incessant complaints of patients about pain indicate that nurses in pediatric clinics, as well as other members of health care team, do not possess adequate knowledge and experience on pain.[14] Awareness of the reasons for inadequate pain management in children may contribute to optimal pediatric pain management. Especially, because painful procedures are more frequently performed in surgical wards, nurses working in these wards to be adequate about

optimal pediatric pain management is quite important.

This study aimed to determine the barriers to providing optimal pain management, and knowledge, attitudes and beliefs about pain assessment and treatment in children by surgery nurses. The questionnaire included the following research question: What are the nurses' knowledge, attitudes, beliefs and perceived barriers related to pain in children?

MATERIAL AND METHODS

SETTING AND SAMPLE

This descriptive study was performed among nurses (all of the nurses working at 13 surgery clinics: Pediatric Surgery-1, Neurosurgery-3, Ear-Nose-Throat-3, Orthopaedics-3, and Opthalmalogic Diseases-3) in The State Hospital, Palandöken Hospital, and Research Hospital of Atatürk University in Erzurum, Turkey.

Erzurum, the regional capital with a population of 400.000 and the leading mountain resort in Eastern Anatolia, is situated in a very high valley at an altitude of 2000 meters from the sea level. Today, Erzurum is an important city for all of Eastern Anatolia, with three hospitals providing health service.

The study population comprised 50 nurses, and a convenience sample of 40 nurses who responded to the questionnaire was included (80 % of the potential sample was included). Ten nurses did not complete the questionnaire because they were either busy or did not want to participate in the study. The whole study population was included in sampling. Providing care for children in surgery clinics was the inclusion criterion.

Because there are no specialized hospitals providing specific health care for children in Erzurum, the surgery clinics providing health care for children in this city have been listed. Additionally, there are no prerequisites for nurses to work in any of the clinics of the hospitals in the area except a nursing license.

MEASUREMENT AND INSTRUMENTS

The design of the questionnaire was based on the review of the literature and previously published measurements of knowledge, belief, and barrier concerning pain in adults and children. The questionnaire consisted of demographic data sheet (three questions concerned nurses' age, level of education, and nursing experience) and 22 statements related to knowledge, beliefs, and perceived barriers about pain in children. Six statements assessed nurses' knowledge and attitudes. These statements were composed of descriptions related to pain assessment and relief.[14-16] Seven statements concerned fallacies and misconceptions that the nurses held about children's pain as defined in relevant literature.[6,9,14-16] The alternatives of responses to statements about knowledge, attitudes, and beliefs were "true, false and no opinion". Lastly, nine statements assessed nurses' perceived barriers to optimal pain management corresponding to children's pain. The barrier section was prepared based on literature information[17] and a guide developed by Agency for Health Care Policy and Research (AHCPR) (1994).[18] The responses to statements about perceived barriers were "not a barrier, partial barrier, and barrier". First, all the statements were translated into Turkish and reviewed by two experts for sensitivity of clarity. Then, two different experts in both languages translated the Turkish statements into English. No modifications or changes in statements were made. The questionnaire was piloted on ten of the nurses to evaluate comprehension; as there were no comprehension difficulties with any of the questions, these nurses were included in the study. The questionnaire described here was then administered to all the participants of the study. Finally, the reliability of the questionnaire (0.73) was evaluated using Cronbach's alpha. The questionnaire was designed for this study and has not been tested on other populations. This is a limitation.The data were collected between the 1st and 30th of April 2006 by one of the researchers. The nurses read and self-completed the questionnaire in their clinics. This procedure took approximately 15-20 minutes for each nurse.

DATA ANALYSIS

The data were analyzed using SPSS, Version 13.0. The sociodemographic data were summarized in frequencies and percentages. Means and standard deviations were calculated to assess the nurses' age, length of nursing experience, and perceived barriers to optimal pain management. The nurses' knowledge, attitudes, and beliefs relating to pain in children were analyzed using frequencies and percentages. Cronbach's alpha was calculated to determine the questionnaire's internal consistency.

ETHICAL CONSIDERATIONS AND PROCEDURE

The researchers introduced the questionnaire to the nurses and explained the content of the material. In compliance with ethical procedures, permission to carry out the research was obtained from the hospital administration. All the nurses were informed of the nature and purpose of the study, and then their written consents were obtained. Forty nurses voluntarily participated in the study.

RESULTS

Table 1 denotes the descriptive characteristics of the participants of the study. Accordingly, 57.5% of the nurses were between the ages of 23-29 (Mean= 29.02 years; SD= 4.51), and half of the nurses were university graduates, while the other half were high school graduates. Additionally, 42.5 % of the nurses had 10 or more years of nursing experience. All the participants were female.

TABLE 1: Distribution of demographic characteristics of study participants.

Demographic characteristics	Number	%
Age*		
23-29	23	57.5
30 years and over	17	42.5
Education		
High School	20	50.0
University	20	50.0
Length of nursing experience**		
Four years or less	11	27.5
5-9 years	12	30.0
Ten years or more	17	42.5
Total	40	100.0

(*): Min= 23.00, Max= 46.00, Mean= 29.02, SD= 4.51
(**):Min= 1.00, Max= 24.00, Mean= 8.60, SD= 5.33

NURSES' KNOWLEDGE AND ATTITUDES ABOUT PAIN IN CHILDREN

In the evaluation of the responses to the six questions on nurses' knowledge and attitudes about assessment, relief, and expression of pain, it was determined that 78.3% of participants marked the statements as 'true'. When asked whether interviewing the child was important for pain evaluation and relief was 'true' or 'false', all the nurses marked the option of 'true', and 95% of the nurses felt that interview of the parent was important. For the item about evaluation of pain in children involving physiological and behavioral assessments as well as assessment of expression of pain, 92.5% of the nurses marked 'true'. Seventy per cent of the nurses believed that pain was subjective and therefore the most important criterion for pain assessment was the child's verbal expression of pain. Only 37.5% of the nurses agreed that children should be encouraged to endure as much pain as possible before taking any pain relief measures (Table 2). According to these findings, it can be said that the nurses' knowledge and attitudes about pain in children is a little higher than average.

NURSES' BELIEFS ABOUT PAIN IN CHILDREN

A mean rate of 45.7 % of the nurses participating in this study responded correctly to questions regarding their beliefs about pain in children. A majority (82.5%) of the nurses acknowledged that young infants do feel pain. Over half (60%) of the nurses refused the fallacy that children do not have any pain if they do not say that they have pain, or if they do not desire pain relief intervention. Unfortunately, nearly half of the nurses only answered correctly that children do not tolerate the pain better than adults (47.5%), that children may feel pain while they are playing or sleeping (42.5%), that pain is life threatening, it has permanent impact on infants and small children, and they will remember painful experiences (42.5%), that denial of pain in chil-

TABLE 2: Percentage distribution of the answers given to the following questions about knowledge and attitudes relating to pain in children (N=40).

Knowledge and attitude	% True	% False	% No opinion
It is important to interview children as part of evaluation and pain relief intervention. (true)	100.0	-	-
It is important to interview parents when evaluating pain and pain relief interventions in children. (true)	95.0	5.0	-
Evaluation of pain in children includes measurement and psychological and behavioural assessment of pain and pain expression. (true)	92.5	2.5	5.0
In children as well as in adults, pain relief is accomplished by means of pharmacologic and non-pharmacologic methods. (true)	75.0	10.0	15.0
As pain is subjective, the most important criterion in children is their own expression of pain. (true)	70.0	10.0	20.0
Children in pain should be encouraged to endure pain as much as possible before any pain relief measures are administered. (false)	55.0	37.5	7.5

Mean percentage of correct responses= 78.3 %

dren who can communicate verbally should not be accepted (32.5%). Strikingly, only 12.5% of the nurses believed that due to potential side effects, the use of narcotics in children's pain relief is not dangerous. In this respect, it may be said that almost half of the nurses participating in this study had erroneous beliefs about pain in children (Table 3).

NURSES' PERCEIVED BARRIERS TO OPTIMAL PEDIATRIC PAIN MANAGEMENT

Another finding of the study was that 74.7% of the nurses felt that there were barriers in achieving optimal pain management. Most of the nurses (90.0%) indicated that the most important barrier for effective pain management in children was competing demands on nurses' time (Mean=1.50, SD= 0.67); the second major barrier was reported as their concern about children becoming addicted (Mean =1.35, SD= 0.66). Other barriers to optimal pain management were noted as: i) the fact that children are reluctant to report pain (87.5%); ii) nurses have limited knowledge regarding assessment of pain (82.5%); iii) nurses are concerned about the side effects of pain medication (82.5%); iv) nurses believe that parents are reluctant to have their children receive pain medication (72.5%); v) nurses have knowledge about pharmacological interventions for pain relief (65%); vi) medical staff assign a low priority to the pain relief administration

TABLE 3: Percentage distribution of the answers given by the nurses to the questions about the beliefs relating to pain in children (N=40).

Beliefs	% True	% False	% No opinion
Young infants don't feel pain. (false)	10.0	82.5	7.5
If children don't say that they have pain, and don't want analgesics, then they have no pain. (false)	27.5	60.0	12.5
Children tolerate pain better than adults. (false)	37.5	47.5	15.0
Children don't feel much pain while they are sleeping or playing. (false)	42.5	42.5	15.0
Pain is not life threatening, it has no permanent impact on infants and small children, and they won't remember painful experiences. (false)	45.0	42.5	12.5
Denial of pain in children who can communicate verbally should be accepted as true. (false)	42.5	32.5	25.0
Due to potential side effects, the use of narcotics in children' pain relief is dangerous. (false)	75.0	12.5	12.5

Mean percentage of correct responses (false responds)= 45.7 %

TABLE 4: Perceived barriers to optimal pain management reported by nurses (N= 40).

Barriers	% Reporting	Mean	SD
Competing demands on nurse's time	90.0	1.50	.67
Nurses' concern about children becoming addicted	90.0	1.35	.66
Children's reluctance to report pain	87.5	1.30	.68
Limitations in nurse's ability to assess pain	82.5	1.17	.71
Nurse's concern about side effects of medications (other than addiction)	82.5	1.40	.77
Parents' reluctance to have children receive pain medication	72.5	1.27	.87
Limitations in nurse's knowledge of pain management techniques	65.0	.90	.77
Low priority given to pain management by medical staff	55.0	.77	.80
Low priority given to pain management by nursing staff	47.5	.65	.76

Percent of nurses believing that there are barriers to optimal pain management; 74.7 %

(50%), and vii) nurses believe that pain relief is not a high priority (47.5%) (Table 4).

DISCUSSION

The nurse is an important member of the health care team who interacts with the patient in pain and notices when pain relief is not achieved in a timely and efficient manner. This study evaluated surgery nurses' knowledge, attitudes, beliefs, and perceived barriers in achieving optimal pain management in children.

NURSES' KNOWLEDGE AND ATTITUDES ABOUT PAIN IN CHILDREN

The participating nurses provided correct responses to questions measuring the knowledge and attitudes regarding pain in children at a rate of 78.3%; thus, their attitudes and knowledge about the pain in children were accurate more than half of the time. This finding is similar to the findings of the study by Pederson et al.[19] Pederson et al. assessed the knowledge of 50 pediatric critical care nurses regarding pain management in pediatric ICU. They found out that the knowledge mean score of nurses was 63%.

In the current study, all the participating nurses also stated that interviewing the child was an integral component of pain assessment and treatment. At the same time, 70% of the nurses believed that the most important criterion in children was their own expression of pain. These findings are of concern as self-report is the gold standard for assessment of pain intensity.[20] On the contrary, the study's finding is in disagreement with the finding of the literature review by McCaffery and Ferrell.[4] McCaffery and Ferrell demonstrated indications of progress in the level of the nursing knowledge about basic aspects of pain management. They defined that less than one-half of the nurses indicated that the patient's self report of pain is the single most reliable indicator of pain intensity.

NURSES' BELIEFS ABOUT PAIN IN CHILDREN

In the current study, it was also found that questions aiming to determine the fallacies about the pain in children were answered correctly at a rate of 45.7%. Additionally, 82.5% of the nurses accurately answered that the belief that "small children, especially infants do not feel pain" was a fallacy. Similarly, in an earlier study, most pediatric nurses reported that infants felt pain.[21] Pain severity and coping mechanisms vary from individual to individual, but the belief that small children, especially infants do not feel pain is wrong.[22] It is well known that the central nervous system of a 26-week-old fetus has anatomical and neurochemical capabilities for experiencing nociception.[23,24] In the current study, the myth that "if children do not say that they have pain, they do not desire pain relief measures or do not have pain," was correctly rejected

by more than half of the nurses. Favaloro and Touzel demonstrated that children who have experienced chronic pain might not be aware that they are experiencing pain or that young children may not have adequate communication skills or may not think it is necessary to tell health professionals about pain.[25]

NURSES' PERCEIVED BARRIERS TO OPTIMAL PEDIATRIC PAIN MANAGEMENT

In the current study, perceived barriers to providing optimal pain management by nurses were evaluated, and it was found that a need for more available time for nursing care and fear of causing addiction in children were the two major barriers perceived by most of the nurses. In a study on the knowledge, attitudes, and behaviors of the nurses regarding pain management in children, Vincent found that concerns of addiction development and increasing demand for narcotics in time were not significant barriers.[20] Schmidt et al assessed the knowledge base of pediatric nurses regarding cancer pain. They found out that pediatric nurses had many misconceptions regarding the use of opiates, which are well- known to be the most effective treatment for severe pain, and nurses feared the risk of addiction.[6] In addition, it is known that nurses are tentative about the use of narcotic analgesics for pain relief and lack knowledge of pharmacologic care for pain.[23]

CONCLUSION

The results of this study demonstrate that nurses in clinical practice should become more knowledgeable about pain and pain management in children, examine their attitudes about children's pain, learn which of their beliefs about pain are fallacies, and work to decrease what they perceive as barriers to inadequate pain management in children. However, it may be to suggest that the number of nurses in surgery clinics is enhanced by hospital administration concerning competing demands on nurses' time, which is the most important barrier for effective pain management in children. Therefore, it is clear that surgery nurses need education regarding pain in children and should follow developments about this topic for optimal pediatric pain management.

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