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Management of pain in children by paediatric nurses in Eastern Turkey

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ABSTRACT

The most pressing issue in the assessment of children is that they are unable to explain their pain. Effective pain management requires that nurses have accurate knowledge and skills. This aim of this study was to explain the assessment and management of pain in children by paediatric nurses in eastern Turkey. This descriptive cross-sectional study included 180 paediatric nurses. It intended to reach paediatric nurses between April 22, 2013, and June 1, 2013. The data were analysed using SPSS 22.0 and evaluated by descriptive statistics, and the chi-squared test was used to determine the statistical differences between categorical variables. The mean ages of the nurses were 26.6 ± 6.46. The nurses reported the methods they used to assess pain in children as evaluating the behavioural and physiological changes (78.8%). They reported their primary intervention for pain management in children as consulting the doctor (50%). Commonly used non-pharmacological interventions were massage (40%), giving the child a toy (23.4%), storytelling (14.4%), and playing a game (4.4%). In this study, paediatric nurses frequently did not use the pain assessment scale and used non-pharmacological interventions for pain management. Optimal pain management is the right of all patients and the responsibility of all health professionals. Nurses especially should use evidence-based assessments for children's pain. Moreover, it is also necessary to conduct further studies on non-pharmacological interventions.

Introduction

Pain is defined as a physically and psychologically unpleasant experience related to a patient's past experiences associated with actual or potential damage [1]. Pain is a complicated situation with physiological, behavioural, psychological, and emotional components. Untreated pain can cause biological, emotional, social, and even developmental and behavioural problems [2]. A child's inability to define pain during the diagnosis and treatment process is a significant problem. Despite the known impact of inadequate pain management and its ramifications for patients, their families, and society, evidence indicates that a gap remains in the understanding of pain pathophysiology by healthcare professionals [3]. The latest developments in the studies of

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pain in children have made a significant contribution to the understanding of pain perception in children. Evidence-based practise promotes safe, effective, and appropriate patient care. Over the past 15 years, significant research has been devoted to developing instruments for evidence-based paediatric pain management. Different instruments have been used worldwide for the assessment of pain in children [4, 5]. The primary instruments are pain scales, behaviour scales, and pain questioning. In addition, during pain assessment, the fact that it is subjective and affected by race, gender, age, culture, emotional status, expectations, and previous experiences should be considered [4, 5, 6]. Doctors and nurses play pivotal roles in patient pain management. In Turkey, while doctors are responsible for the diagnosis of pain, nurses primarily deal with the control and management of pain [7]. Currently, the pain scales are not used by nurses in some hospitals and paediatric clinics in Turkey.

What methods do nurses use for the management of pain? It has been reported in the literature that nurses use non-pharmacological interventions as well as pharmacological methods to relieve pain. Non-pharmacological interventions, which are frequently used by nurses for the treatment of pain, can be classified as peripheral techniques (hot application, cold application, skin stimulation, and therapeutic touch) and cognitive-behavioural techniques (relaxation, distraction, imagination, and storytelling) [8, 9].

Background

Nurses make a great contribution to the process of perceiving and relieving pain in children. Effective pain management requires nurses to have accurate knowledge and skills. In Turkey, there are many studies related to the assessment and management of pain but few studies related to the assessment of pain in children by paediatric nurses [7]. Ekim and Ocakçı [10] reported that paediatric nurses have insufficient knowledge regarding pain management. Studies in the literature indicate that nurses require knowledge and appropriate interventions related to pain assessment and management, regardless of patient age and clinical practise [11, 12, 13, 14]. This study was conducted to determine the approaches for assessing pain management used by paediatric nurses.

Materials and methods

This descriptive cross-sectional study was conducted in three cities in eastern Turkey. It intended to reach paediatric nurses working in state hospitals in the cities of Bitlis, Bingöl, and Muş, between April 22, 2013 and June 1, 2013. These cities had one state hospital (approximately 400 beds) and two private hospitals (approximately 50 beds each). A total of 180 paediatric nurses worked in these hospitals. The data were collected from these nurses during face-to-face interviews by researchers over five weekdays at each hospital.

All registered nurses in Turkey obtain four years of general nursing education (high school for health sciences, health science faculty, or bachelor's degree), while there is no specialisation period after nursing education. Nurses in children's wards normally work on one, two, or three shifts.

Survey

The questionnaire was designed on the basis of a review of the literature concerning pain in children. The questionnaire consisted of the nurses' demographic data (7 questions), their perceptions about pain (15 questions), and their pain relief practises with their patients (15 questions). Thirty of the questions were closed-ended, and 7 were open-ended.

An initial pain screening is not performed when children are admitted to Turkish hospitals. However, pain scale forms have been included in present patient files in Turkey since 2015.

Data analysis

The data were analysed using the Statistical Package for the Social Sciences 22.0 (SPSS 22.0). Descriptive statistics were used to analyse the demographic data and independent variables. Chi-square hypothesis test was used. The standard level of statistical significance was $p < 0.05$.

Ethical approval

Approval for this study was obtained from the Health Directorates of Bingöl, Bitlis, and Muş provinces and the Ethics Committee of Fırat University (Ref. No. 2013/04). The nurses were informed about the research, their personal data was protected, and they were allowed to withdraw their consent at any time.

Results

The mean ages of the nurses were 26.6 ± 6.43, 43.3% were between the ages of 24 and 30. In total, 53.3% had obtained a university-level education. 50% of nurses were married, most with children. The weekly working hours of 57.8% of the nurses was 30–48 h, and nearly half worked the day shift (Table 1).

When the nurses were asked how they recognised pain in children, behavioural perception (crying, arm and leg movements, facial expressions, and a lying position) was ranked first by 78.8%, expression of pain was ranked second, and identification of pain by the family and the diagnosis of pain via physician orders was ranked third. They reported that they less often perceived the pain through symptoms (Table 2). However, a scale used consistently in paediatric clinics was not reported. Only the Glasgow Coma Scale and Comfort Scale were used in the intensive care units (27.8%).

When the nurses were asked about the first pain intervention (Table 3), half reported consulting their physicians, while 10% (n = 18) said that they preferred

Table 1 – Comparison of the use of non-pharmacological interventions with nurses' socio-demographic variables (*n* = 180)

			Use of non-pharmacological interventions			
			Yes		No	
Variables	*n*	%[b]	*n*	%[b]	*n*	%[b]
Age in years	68	37.8	28	38.9	40	37.0
17–23	78	43.3	34	47.2	44	40.7
24–30	34	18.9	10	13.9	24	22.3
31 and older	*2.046/0.359*					
χ^2/p						
Marital status	90	50.0	28	38.9	62	57.4
Married	72	40.0	39	54.2	33	30.6
Single	18	10.0	5	6.9	13	12.0
Divorced	*10.104/0.006*[a]					
χ^2/p						
Educational status	84	46.7	36	50.0	48	44.4
Bachelor's degree	96	53.3	36	50.0	60	55.6
High school and over	*0.536/0.542*					
χ^2/p						
Have a child status	86	47.8	28	38.9	58	53.7
Yes	94	52.2	44	61.1	50	46.3
No	*3.800/0.036*[a]					
χ^2/p						
Nurses' work places	76	42.2	40	55.5	36	33.3
Children's wards	34	18.9	12	16.6	22	20.4
Neonatal intensive care	16	8.9	4	5.6	12	11.1
Children's intensive care	24	13.3	8	11.1	16	14.8
Children's emergency	24	13.3	4	5.6	20	18.5
Surgical	6	3.3	4	5.6	2	1.9
Operating theatre	*14.533/0.013*[a]					
χ^2/p						
Total work time in a week	104	57.8	50	69.4	54	50.0
30–48 h	56	31.1	12	16.7	44	40.7
50–68 h	20	11.1	10	13.9	10	9.3
70 hours and over	*11.708/0.003*[a]					
χ^2/p						
Work shifts	84	46.7	38	52.8	46	42.6
Day shift	34	18.8	20	27.8	14	13.0
Night shift	62	34.5	14	19.4	48	44.4
Day and night shifts	*13.819/0.001*[a]					
χ^2/p						
Total	180	100.0	72	40.0	108	60.0

[a] Chi-square test $p < 0.05$; [b] This is column percentage.

Table 2 – How do nurses recognise pain in children?

Status perception	*n*	%[a]
Behaviour (crying, anxiety, etc.)	142	78.8
Verbal by children	128	71.1
Verbal by parents	102	56.6
Physicians' orders	48	26.6
To observe symptoms	36	20.0

[a] The percentages were calculated based on the total number of nurses (180) because multiple responses were given.

Table 3 – First intervention by nurses for paediatric pain management

Interventions	*n*	%
Consulting physician	90	50.0
Non-pharmacological interventions	72	40.0
Administering analgesics (according to orders)	18	10.0
Total	180	100.0

to administer analgesics. 40% of nurses used non-pharmacological interventions (giving a massage, listening to music, distraction, playing games, reading books, etc.) as first interventions (Table 3).

When the most preferred non-pharmacological interventions were examined, they were reported as massage, giving the children toys and storytelling. It was reported that interventions such as hot or cold application, chatting, and removing stimulation were preferred by very few nurses (Table 4).

Table 4 – Non-pharmacological interventions used by nurses

Interventions	*n*	%[a]
Massage	72	40.0
Giving toys	42	23.4
Story telling	26	14.4
Playing games	8	4.4
Hot or cold application	6	3.4
Chatting	4	2.2
Drawing pictures	4	2.2
Sleeping	4	2.2
Watching TV	4	2.2
Listening	2	1.2
Removing stimulating effects (light, voices, etc.)	8	4.4
Total	180	100.0

There were significant differences between the use of non-pharmacological interventions and nurses who were single, had no children, worked in children's wards and on day shifts ($p < 0.05$). No relationship was found between the use of non-pharmacological interventions and the level of education. Nurses in the 24–30 age group were mostly paediatric nurses and did not frequently use the pain assessment scale and non-pharmacological interventions for pain management in this study (Table 1).

Discussion

Every child has experienced pain at least once in his/her life. The reaction to pain varies from child to child, and children may have different reactions while describing their pain. This makes it difficult to identify pain in children. Children are unable to sense pain neurologically; they do not interpret noxious stimulus as pain; and they do not experience the deleterious consequences of severe pain in the same way as adults [15]. It is very important that pain is managed effectively in order to minimise its long-term consequences. Healthcare professionals are important for the diagnosis and management of pain. The studies in the literature have shown that pain management applied by doctors and nurses in neonatal and paediatric patients is inadequate [2, 16, 17].There is no standard pain scale used in paediatric clinics in Turkey and the physician is the primary person responsible for the diagnosis and treatment of pain. Nurses have functioned passively concerning pain management in Turkey, although they should be much more effective. The facts that distinguish nurses from other team members and make them important for pain control are that the nurses spend more time with the patients as caregivers. Nurses have the knowledge of the chronic patients' previous experiences of pain and the strategies to cope with pain worldwide [18, 19]. Nurses as caregivers are able to evaluate the reactions of paediatric patients and their families.

Most of the nurses in this study reported using behavioural perception when assessing pain in children. In addition, Turkish families have a tendency to raise their children to be pain resistant culturally. In Turkey, the sayings, "children grow with great difficulty" or "boys don't cry" have been stoic child-rearing beliefs for generations. This perception could change pain responses and can also be regarded as the reason the pain scales are not used by nurses in Turkey. From this perspective, evidence-based practises can provide more objective results for the management of pain in children.

Unlike the current study, a study conducted in Turkey found that nurses' knowledge and behaviour scores of patients with pain and pain management is at a medium level and most do not have sufficient knowledge about the diagnosis and management of pain. It has been determined that only 48.7% of nurses observe the behaviours of their patients in diagnosing pain intensity and that 66.7% do not use the pain scale to measure their patients' pain levels [20]. In a study conducted by Hamilton and Edgar on Canadian nurses, a 63.9% knowledge level about pain control was reported to be adequate; this ratio was 68% in U.S. nurses in another study [21].

Nurses provide care for diverse patient populations with both acute and chronic conditions. Focused education on pain management is a requirement for twenty-first century nursing practises [22]. System-based strategies utilise pain resource nurses (PRNs) as catalysts to optimise and improve nursing practises related to pain management [23]. Effective and accurate assessments of pain must be obtained to implement targeted and effective pain relief interventions as the inaccurate assessment of pain may hinder relief efforts [20]. However, numerous studies have consistently demonstrated that patients continue to suffer unnecessary pain and that pain is poorly assessed and managed and is a low nursing priority [24, 25, 26].

Contrary to expectations, there was no significant difference between the use of non-pharmacological practises and level of education in this study. The nurses who were single, had no children, worked in children's wards and on day shifts more frequently used non-pharmacological practises. Nurses generally use non-pharmacological methods in cases of pain that are not managed by the physician or that continue after the intervention [27, 28]. A study conducted in Turkey found that there was no significant between physicians and nurses concerning pain perception and management. However, while a significant number of paediatric nurses (62.3%) used non-pharmacological methods, 72.1% of paediatricians did not use them [29].

The current study's results suggest that nursing interventions must combine their experiences and evidence-based practises. Nurses should not underestimate any pain symptoms in children and should always use evidence-based pain-management practises. Standardised evidence-based pain-management practises define objective pain and remove different opinions between patients, nurses, and physicians. Optimal pain management is the right of all patients and the responsibility of all health professionals.

All healthcare providers should understand the importance of effectively managing a child's pain in order

to decrease the potential long-term outcomes. Nurses play a key role in pain perception and management as they spend more time with their patients. Ultimately, with evidence-based education, nurses can become better at pain assessment, which may lead to effective pain management in paediatric specialty hospitals. Nurses' competency in pain assessment could potentially improve patient outcomes [29, 30]. Nurses should use the pain scale in addition to their experiences, and pain scales should be standardised in general hospitals, not only in paediatric specialty hospitals. Additionally, evidence-based future studies examining nurses' pain assessment and management skills could benefit patients. The elimination of authority disorder in clinical interventions will ensure that nurses become more active in pain management. Moreover, it is also necessary to conduct further studies on non-pharmacological interventions.

Conclusion

Paediatric nurses frequently did not use the pain assessment scale and used non-pharmacological interventions for pain management in this study. Optimal pain management is the right of all patients and the responsibility of all health professionals. Nurses especially should use evidence-based assessments for children's pain. Moreover, it is also necessary to conduct further studies on non-pharmacological interventions.

Conflict of interests

The author is not aware of any conflict of interests concerning this article.

REFERENCES

[1] Wong C, Lau E, Palozzi L, Campbell F. Pain management in children: Part 1 – Pain assessment tools and a brief review of non-pharmacological and pharmacological treatment options. Can Pharm J 2012;145:222–5.

[2] Manocha S, Teneja N. Assessment of pediatric pain: a critical review. J Basic Clin Physiol Pharmacol 2016;27(4):323–31.

[3] Brennan F, Carr DB, Cousins M. Pain management: a fundamental human right. Anesth Analg 2007;105:205–22.

[4] Cohen LL, Lemanek K, Blount RL, Dahlquist LM, Lim CS, Palermo TM, et al. Evidence-based assessment of pediatric pain. J Pediatr Psychol 2008;33(9):939–55.

[5] Törüner KE, Büyükgönenç L. Children health and main nursing practice, Amasya: Göktuğ Publishing; 2012, pp. 146–70.

[6] Stevens B, Johnston C, Taddio A, Gibbins S, Yamada J. The premature infant pain profile: evaluation 13 years after development. Clin J Pain 2010;26:813–30.

[7] Özer S, Akyürek B, Başbakkal Z. Investigation of nurses' pain related knowledge, attitude and clinical decision making skills. Pain 2006;18(4):36-43.

[8] Cunnigham S. Pain assessment and management (Part 5). In: Moore T, Cunnigham S (Eds). Clinical skills for nursing practices. New York: Routledge; 2017, pp. 104–25.

[9] Adams ML, Arminio GJ. Non-pharmacologic pain management intervention. Clin Pediatr Med Surg 2008;25:409–29.

[10] Ekim A, Ocakçı AF. Knowledge and attitudes regarding pain management of pediatric nurses in Turkey. Pain Manag Nurs 2013;14(4):e262–e7.

[11] Lui LY, So WK, Fong DY. Knowledge and attitudes regarding pain management among nurses in Hong Kong medical units. J Clin Nurs 2008;17(15): 2014–21.

[12] Matthews E, Malcolm C. Nurses' knowledge and attitudes in pain management practice. Br J Nurs 2007;21;16(3):174–9.

[13] Nimbalkar SA, Dongara AR, Phatak AG, Somashekhar M. Knowledge and attitudes regarding neonatal pain among nursing staff of pediatric department: an Indian experience. Pain Manag Nurs 2014;15(1):69–75.

[14] Yıldırım YK, Çicek F, Uyar M. Knowledge and attitudes of Turkish oncology nurses about cancer pain management. Pain Manag Nurs 2008;9(1):17–25.

[15] Zeltzer LK, Krane EJ. Pediatric pain management. In: Klegman RM, Behrman RE, Stanton BE, Schor N, Gene JSt (Eds). Nelson's textbook of pediatrics (19th ed.). Philadelphia: PA: Saunders; 2011;71:360–75.

[16] Linhares MBM, Oliveira N CAC, Doca FNP, Martinez FE, Carlotti APP, Finley GA. Assessment and management of pediatric pain based on the opinions of health professionals. Psychol Neurosci 2014;7(1):43–53.

[17] Young J, Barton M, Richards-Dawson MA, Trotman H. Knowledge, perception and practices of healthcare professionals at tertiary level hospitals in Kingston, Jamaica, regarding neonatal pain management. West Indian Med J 2008;57(1):28–32.

[18] Eti AF. Role of nurse incontrol acute pain. Acute pain, Ankara: Gunes Publishing; 2005, pp. 303–29.

[19] Çöçelli PL, Bacaksız BD, Ovayolu N. The nurse factor in pain therapy. Gaziantep Med J 2008;14:53–8.

[20] Demir Y, Yldirim Usta Y, Ince Y, Turken Gel K, Kaya Aki M. Determining of nurses' knowledge, behavior and clinical decision making regarding pain management. J Contemp Med 2012;2:162–72.

[21] Patnaik S, Swain N, Behera CK, Jain MK, Nayak MK. Evaluation of knowledge, perception, attitudes and practices of pain management of children among pediatric nursing personnel of a tertiary care hospital. Indian J Child Health 2017;4(1):75–8.

[22] Crawford LC, Boller J, Jadalla A, Cuenca E. An integrative review of pain resource nurse programs. Crit Care Nurs Q 2016;39(1):64–82.

[23] Grant M, Ferrell B, Hanson J, Sun V, Uman G. The enduring need for the pain resource nurse (PRN) training program. J Cancer Educ 2011;26:598–603.

[24] Quinn BL, Seibold E, Hayman L. Pain assessment in children with special needs: A review of the literature. Exceptional Children 2015;82(1):44–57.

[25] Mackintosh FC. The impact of experience on undergraduate preregistration student nurses' responses to patients in pain: A 2 year qualitative longitudinal study. Pain Manag Nurs 2014;15(1):199–207.

[26] Jabusch KM, Lewthwaite BJ, Mandzuk LL, Schnell-Hoehn K N, Wheeler B J. The pain experience of inpatients in a teaching hospital: revisiting a strategic priority. Pain Manag Nurs 2015;16(1):69–76.

[27] Clabo LML. An ethnography of pain assessment and the role of social context on two postoperative units. J Adv Nurs 2008;61(5):521–39.

[28] Harper P, Ersser S, Gobbi M. How military nurses rationalize their postoperative pain assessment decisions. J Adv Nurs 2007;59(6):601–11.

[29] Efe E, Altun E, Çetin H, Işler A. Pediatricians' and pediatric nurses' knowledge about pain in newborn infants and their practices in some provinces in Turkey. Pain 2007;19(3):16–25.

[30] Margorani H, Hannan MS, Schlenk EA. Quality improvement initiative on pain knowledge, assessment, and documentation skills of pediatric nurses. Pediatr Nurs 2017;43(2):65–71.