

Evaluation of knowledge, perception, attitudes, and practices of pain management of children among pediatric nursing personnel of a tertiary care hospital

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ABSTRACT

Background: Pain is one of the most misunderstood, under diagnosed and under treated medical problems, particularly in children. If left unaddressed, pain can affect children in ways that will follow them throughout their lives. Nurses play an important role in assessing and managing pain among children during hospitalization. **Objective:** To evaluate the knowledge, attitude, and practices of pediatric pain management among nursing personnel working in pediatric tertiary care hospital. **Materials and Methods:** A cross-sectional, self-administered questionnaire-based survey was carried out involving 40 nurses. The questionnaire had 45 items in the domains of personal information, knowledge, and perception toward the pain of pediatric patients, and practices for pain relief. Voluntary participation was ensured and anonymity maintained at all level. **Results:** The mean age of nurses was 25.53 ± 4.05 years. 90% had a diploma in nursing and 10% were graduates. More than a half (57.5%) of the subjects had experience between 1 and 5 years. The mean score for knowledge was found to be 10.88 ± 2.81 (range 3-16.87%). Most of the participants (87%) thought that children have good pain sensitivity. Only 40% nurses knew about pain scoring system; however, none used pain scoring system in daily practice. None of the nurses were able to answer about the route of administration of morphine for chronic and prolonged pain. Only 44% had shown the correct attitude toward pain in children and 60% participants gave a satisfactory answer regarding practices. **Conclusion:** Study revealed a deficiency in the knowledge of nurses and their practices regarding pain in children.

Key words: Attitude and practices toward children's pain, Nurse's knowledge, Pain in children

Pain is defined by the International Association for the Study of Pain as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.” The important elements of this definition are (1) pain encompasses both peripheral physiologic and central cognitive/emotional components and (2) pain may or may not be associated with real tissue damage; pain may exist in the absence of demonstrable somatic pathology [1]. However, pain remains one of the most misunderstood, under diagnosed, and under treated medical problems in children primarily because children and adults react differently when it comes to pain [2]. In hospital settings, patients are at the hands of nursing staff for more time than that of the doctors as regards observation and administration of medications and providing best health care.

Nurses have an ethical obligation to relieve child's suffering not only because of consequences of unrelieved pain but also because appropriate pain management may have benefits such as earlier mobilization, shortened hospital stays, and reduced costs. To provide effective nursing management of children in pain, nursing staff should have adequate clinical acumen in recognizing the child in pain. Therefore, this study was conducted

to evaluate the knowledge, attitude, and practices of pediatric pain management among nursing personnel working in pediatric tertiary care hospital.

MATERIALS AND METHODS

A cross-sectional study was conducted among nursing personnel after obtaining prior clearance from Institutional Ethics Committee. All 65 nursing personnel working in pediatric department, i.e., pediatric ward, pediatric intensive care unit, neonatal intensive care unit, and emergency ward were invited but only 40 nurses participated in the study. Informed consent was obtained from all the participants and the prospects of the study were explained to them. A semi-structured questionnaire was prepared consisting of 45 items in following domains: Personal information including training and experience (6 items), knowledge (23 questions), attitude toward pain of pediatric patients (12 questions), and personal practice for pain relief of patients (4 questions). 40 questions were close-ended while 5 were open-ended.

The questionnaires were distributed among the study participants, and the responses were collected on the same day.

Voluntary participation was ensured and anonymity maintained at all level. All the questions were given 1 mark each for the correct answer and zero for a wrong answer or nonattempted question. Out of total 23 questions pertaining to knowledge domain, 1 was open-ended and rests 22 were close-ended. Data were analyzed using SPSS version 20.

RESULTS

Out of 65 nurses working in the department of pediatrics, 40 nurses participated in the study. All the participants were females and aged between 20 and 40 years. The mean age was 25.53 ± 4.05 years. Out of 40 study subjects, 90% had a diploma in nursing and 10% were graduates. More than a half (57.5%) of the subjects had experience between 1 and 5 years and 25% had experience of more than 5 years. The majority (87.5%) of subjects had regular posting, 5% were working on contract while rest 6.5% were nursing interns. One-tenth of nurses were married and half of the married nurses had children. Detail sociodemographic data have been provided in Table 1.

The mean score for knowledge was found to be 10.88 ± 2.81 (range 3-16 out of 22). The last question was open-ended (was regarding knowledge about other expressions the children in pain show besides crying) for which satisfactory answer was given by only 60% participants. 23 knowledge questions are provided in Table 2.

None of the nurses answered all the questions correctly. Out of 39 questions, not a single question was correctly answered by all (100%) nurses and only 5 were correctly answered by more than 80% of the nurses. Most of the participants (87%) thought that children have good pain sensitivity. Only 40% nurses knew about

pain scoring system; however, none used pain scoring system in daily practice. 37.5% participants believed that pain and suffering are necessary while 35% believed that nondrug technique alone should be used rather than the concurrent use of pain medication. Only 55% nurses knew that children can tolerate opioids. None of the nurses were able to answer about the route of administration of morphine for chronic and prolonged pain. Out of 12 questions asked regarding attitude toward pain in children, only 44% had shown a correct response. Among four questions asked regarding the practice of the nurses for pain relief, only 60% participants gave a satisfactory answer. These 16 questions relating to attitude (12 questions) and practice (4 questions) are given in Table 3.

DISCUSSION

Each child has different pain perception and the meaning of pain is also different from child to child. Behavior and physiologic signs are useful, but they can be misleading in toddlers and infants. A toddler may scream and grimace during an ear examination because of fear rather than pain; conversely, children with inadequately relieved persistent pain from malignancy, sickle cell disease, trauma or surgery may withdraw from their surroundings and appear very quiet, which may be construed wrongly by the observers that they are comfortable or sedated [1]. Every child experiences pain at one time or the other whether it is from everyday bumps and bruises, or occasional procedures, surgery or routine immunizations or due to chronic conditions such as headaches, gastrointestinal problems, juvenile idiopathic arthritis or malignancies.

In fact, as many as 40% of children and adolescents complain of pain at least once weekly and chronic pain affects at least 15-20% of the children [3]. Pain assists us in avoiding physical harm, but unrelieved pain may be inherently harmful both psychologically and physiologically. Failure to intervene early in children's pain may lead to impairment in functioning and disruption in families. Unaddressed pain heightens anxiety and fear, which in turn increases pain perception. If left unaddressed, chronic pain can affect children in ways that will follow them throughout their lives [4]. Knowledge score in our study was found to be 49% while pain knowledge scores were 64.58% in a study by Brunier et al. on 260 Canadian nurses [5], 63.9% in a study by Hamilton and Edgar on 318 Canadian nurses [6], and 68% in a study by Cason et al. on 217 American nurses [7].

None of the nurses use pain scoring system, the same picture was found by Mathew et al., in their study, on intensive care nurses [8]. In our study, 90% nurses believed that small babies feel less pain. In a study by Mathew et al., 50% participants believed that infants perceive pain less than the adults and the majority felt that infants also forget pain faster than adults. In our study, 67.5% nurses felt that children have a very short memory of pain. In a study in AIIMS, New Delhi by Subhashini et al., nearly two-thirds of the respondents felt that nonpharmacological measures were better to control pain and also their practices showed that the most were willing to allow the parental presence during minor invasive procedures [9]. Similar results were also found in our study.

Table 1: Sociodemographic profile of study participants

Sociodemographic characteristics	n (%)
Age (years) (mean±SD)	25.53±4.05
Gender	
Female	40 (100)
Qualification	
General nursing midwifery	36 (90)
BSc nursing	4 (10)
Work experience (year)	
Less than 1	7 (17.5)
1-5	23 (57.5)
More than 5	10 (25)
Working status	
Contractual	2 (5)
Regular	35 (87.5)
Interns	3 (7.5)
Marital status	
Married	10 (25)
Unmarried	30 (75)
Having children (n=10)	
No children	5 (50%)
1 or 2 children	5 (50%)

Table 2: Correct responses of questions asked to assess knowledge

Questions (correct answers)	Correct response, n (%)
Q1. If a child says that he has severe pain; to verify it, changes in vital signs must be relied on (F)	9 (22.5)
Q2. Child < 2 years has less pain sensitivity (F)	32 (80)
Q3. Children have limited memory of painful experiences (F)	13 (32.5)
Q4. Children have less pain due to the underdeveloped neurologic system (F)	21 (52.5)
Q5. Small babies feel the pain less (F)	36 (90)
Q6. Small babies do not require pain relieving measures (F)	36 (90)
Q7. If a child can be distracted, it means he has only mild pain (F)	12 (30)
Q8. Children may sleep despite severe pain (T)	8 (20)
Q9. Similar painful stimulus in different people produces same intensity of pain (F)	35 (87.5)
Q10. NSAIDs are not effective for fractures and bone pain (F)	28 (70)
Q11. Nondrug interventions are effective for mild/moderate pain only but not for severe pain (F)	6 (15)
Q12. Respiratory depression rarely occurs in chronic opioid use (T)	18 (45)
Q13. Aspirin and morphine may have similar efficacy (T)	30 (75)
Q14. WHO pain ladder suggest single analgesic use rather than combination (eg., Opioid with NSAIDs) (F)	8 (20)
Q15. Effect of morphine lasts for 4-5 h (T)	21 (52.5)
Q16. Promethazine potentiates the effect of opioid analgesics (F)	24 (60)
Q17. Based on one's religious belief, a child may think that pain and suffering are necessary (T)	15 (37.5)
Q18. Children cannot tolerate opioids for pain relief (F)	22 (55)
Q19. Cognitively impaired children are more sensitive to pain than normal children (F)	11 (27.5)
Q20. What is the recommended route of administration of morphine for chronic pain? (Oral)	0 (0)
Q21. What is the recommended route of administration of morphine for acute severe pain? (IV)	34 (85)
Q22. Which of the following is the drug of choice for prolonged and moderate to severe pain for children with cancer? (Morphine)	12 (30)
Q23. Besides crying what other expression children show if in pain, Do you know about pain scoring?	

The nurses were assessed for their knowledge about pain among children. 22 knowledge questions were given a score of 1 each for the correct response. The last question was open-ended

Table 3: Attitude (1-12) and practice (13-16) questions

1. Children are at high risk for opioid addiction so they should not be given opioids for pain.	
2. Children with pain should be encouraged to endure as much pain as possible before resorting to a pain relief measure.	
3. Children cannot report pain with reliability and therefore, the nurse should rely on the parents' assessment of the child's pain intensity.	
4. Based on one's religious beliefs, a child may think that pain and suffering is necessary.	
5. After the initial recommended dose of opioid analgesic, subsequent doses are adjusted in accordance with the individual child's response.	
6. The children should be advised to use nondrug techniques alone rather than concurrently with pain medications.	
7. To be effective, heat and cold should only be applied to the painful area.	
8. Do you think that there are many children who over report pain. (Yes/ No)	
9. Do you believe that children who complain severe pain are actually having severe pain? (Yes/ No)	
10. Do you rely on children's expressions when they suffer from pain? (Yes/ No)	
11. Do you think that there are many children who under report pain. (Yes/ No)	
12. Do you think there are some derangement in the perception of pain sensation as the etiological factor of severe pain in some cases	
13. What do you do for children suffering from pain before the doctor arrives?	Open ended
14. What do you do when an infant cries incessantly for half an hour?	Open ended
15. What do you do for children suffering from pain?	Open ended
16. How you handle/ counsel the parents of children having pain?	Open ended

This study is done for the first time in children in Odisha. It gives a clear picture regarding the deficiency in knowledge of nurses and their practice regarding pain in children. We used questionnaire method which helped us to avoid interview bias and

to maintain anonymity. We identified many knowledge gaps which can be taken care by proper training and conducting workshops to sensitize the nurses. We found that pain scoring system is not used by the nurses and they should be trained to use the pain scoring

system. As pediatric department caters to a heterogeneous group starting from neonates to adolescents, different scoring system and a different method of pain management are to be used for them.

Mathew et al. also found many lacunae in the knowledge and practice of nurses regarding pain management in children. They had recommended for the deficiencies to be improved by better training for the better practice of pain relief of sick children in the setting of a developing country. A Jamaican study conducted by Young et al., [10] on doctors and nurses found a similar deficiency in knowledge, attitude, and practice of pain management in newborns. Some educational programs for nursing staff on pediatric pain assessment and management have been successful [11]. A Taiwanese study conducted on student nurses by Chi et al. [12] found that knowledge, attitude, and self-efficacy in children's pain management improved after pediatric pain education program.

Our study has few limitations as it was conducted in a single center, which may not represent the knowledge, perception, and practice of nurses in other hospitals. A qualitative study would allow a better understanding of the issues. A study conducted by personal interviews and observations may give the actual and in-depth information regarding practice. However, in our limited recourses it is difficult to conduct such studies; thus, we used questionnaire method.

CONCLUSION

This study signifies that most of the nurses lack in understanding pain in children and regular training programs and workshops may be required to enhance the competency of nurses in pain management of children.

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