



Original Article

Pain management in neonatal intensive care units: A cross sectional study of neonatal nurses in Ilam City

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ABSTRACT

Introduction: Nurses are in close contact with patients and their knowledge of pain assessment and management plays a key role in enhancing patients health. The purpose of this study was to investigate the assessment and management of pain by nursing staff in neonatal intensive care units (NICU).

Materials and methods: A descriptive cross-sectional study was conducted in 2018. The study population consisted of nurses with at least six months experience of working in the NICU of Ilam hospitals. The data were collected using a demographic questionnaire and a pain management questionnaire. Then, using spss16 software, descriptive statistics and independent *t*-test were performed with a significant level of less than 0.05.

Results: The results showed that only a few nurses (7.1%) answered "always" to setting up measures for reducing pain or discomfort of neonatal. In the "Parents were allowed to relieve pain" item, many nurses 18 (31.0%) used this strategy only occasionally. Regarding non-pharmacological methods to reduce pain, only a small number of nurses 8 (13.8%) used this item "always".

Conclusion: Regarding the fact that pain assessment and management were not at the appropriate level for nurses, it is necessary to have appropriate educational interventions in this field.

Introduction

Pain has been with humans from the beginning of time (Izadpanah et al., 2014; Walker, 2014). It is an interesting characteristic of life rescuing human beings and informing them of harmfulness of external factors (Dehnoalian and Mohammadpour, 2014). It is one of the most important problems diagnosed with an unpleasant sensation and emotional experience (Ferrell et al., 1992; Taheri et al., 2015). Which is the most common cause of referral to the health care (Goldberg and McGee, 2011) It has a lot of negative effects on the neonate (Pölkki et al., 2014; Moultrie et al., 2017).

Neonates admitted to hospitals undergo painful procedures including blood transfusions, injections, catheterization, saline secretion, bone marrow aspiration, and many other interventions, which cause pain (Noghabi et al., 2012). For neonates, many painful procedures are taking place every day, and this situation is repeated in special units (Martins et al., 2013). Early and prolonged exposure to painful stimuli in early infants leads to permanent changes, suppresses the immune

system, increases intracranial pressure and cardiac arrhythmia (Gitto et al., 2012; Ayazi et al., 2017). Many care and treatment methods in neonatal intensive care units will have a negative effect on neonatal growth and development (Wielenga, 2004; Rahimi et al., 2017). Babies are more likely to have negative side effects from pain than older children and adults. Pain also causes long-term effects, such as delay in neurodegenerative pain and subsequent abnormal reactions to pain (Larsson, 2001; Anand, 2001).

Pain can be relieved in pharmaceutical and non-pharmaceutical ways (Hsieh et al., 2018). Non-pharmacological ways to reduce pain in infants and children include Kangaroo Care (Seo et al., 2016), Music Therapy (Karimi et al., 2012), Ear protection (Ayazi et al., 2017), Psycho-educational (Setoodeh et al., 2013), Hugo Point Massage (Khosravan et al., 2018). Non-pharmacological pain relief is not costly and does not cause complications for patients, which is why they are very useful (Lago et al., 2014). The health care personnel need to be familiar with these methods (Khoza and Tjale, 2014). For this reason, healthcare professionals need to be familiar with a variety of non-drug

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Table 1
Implementation of pain management and assessment items in nurses under study.

Items	Never N (%)	Rarely N (%)	Sometimes N (%)	Often N (%)	Always N (%)
Regulate care for reducing the pain or discomfort of infants (such as decreasing the frequency of endotracheal suctioning, reducing the frequency of blood sampling and venipuncture) (Rahimi et al., 2017).	16 (27.6)	10 (17.2)	13 (22.4)	12 (20.7)	7 (12.1)
Allow parents to relieve their infant's pain and discomfort (Rahimi et al., 2017).	14 (24.1)	12 (20.7)	18 (31.0)	11 (19.0)	3 (5.2)
In order to reduce the pain caused by any stressful or painful therapeutic and caring measure, use swaddling (as a non-pharmacological method) (Rahimi et al., 2017).	3 (5.2)	12 (20.7)	24 (41.4)	11 (19.0)	8 (13.8)
Assess the neonatal pain after each therapeutic and caring measure (Rahimi et al., 2017).	4 (6.9)	7 (12.1)	35 (60.3)	10 (17.2)	2 (3.4)
Use a sucrose solution (as a non-pharmacological method) to reduce the pain caused by any stressful or painful therapeutic and caring measure (Rahimi et al., 2017).	12 (20.7)	18 (31.0)	14 (24.1)	6 (10.3)	8 (13.8)
Teach parents how to pay attention to signs of pain or discomfort on the neonatal face (Rahimi et al., 2017).	5 (8.6)	4 (6.9)	13 (22.4)	21 (36.2)	15 (25.9)
Teach parents how to pay attention to signs of pain or discomfort in the infant's face (Rahimi et al., 2017).	2 (3.4)	3 (5.2)	12 (20.7)	19 (32.8)	22 (37.9)
Assess neonatal pain At least every 4 h (Rahimi et al., 2017).	4 (6.9)	2 (3.4)	6 (10.3)	11 (19)	35 (60.3)
Use a valid tools to assess neonatal pain (Rahimi et al., 2017).	21 (36.2)	10 (17.2)	19 (32.8)	5 (8.6)	3 (5.2)

*The questionnaire questions were taken from Rahimi et al.(14).

therapies for pain relief and use these techniques (Ismail et al., 2018; Pölkki et al., 2016).

Management of pain reduces the suffering and improves patients quality of life (Dehnoalian and Mohammadpour, 2014). Nurses have a close relationship to patients, and their knowledge about pain assessment and management plays a key role in improving the health status of patients (Rahimi et al., 2017; Mehrnouseh et al., 2018). Given that the nurse spends a lot of time communicating with the patient, his role in patient care is very important (Ghazanfari et al., 2011; Khatony et al., 2016). Therefore, the present study was conducted with the aim of evaluating and managing the pain assessment in nurses of neonatal intensive care units.

Materials and methods

This was a descriptive cross sectional study conducted in 2018. The research sample, due to the low number of nurses in the NICU population was nurses working in the neonatal intensive care units of Ilam hospitals who were currently employed in this unit (by census method) or having at least 6 months of employment (by random sampling method). The entry criteria included working experience of more than 6 months and informed consent to participate in the study. Incomplete questionnaires were excluded from the study.

Data were collected using a demographic questionnaire (age, working experience, degree, participation in pain management workshop) and the pain management questionnaire with a 5-point Likert scale from always (Ferrell et al., 1992) to never (zero). This questionnaire is a researcher made questionnaire, which was made by Rahimi et al. Validity and reliability of this questionnaire have been confirmed by Rahimi et al., in 2012 years (Rahimi et al., 2017).

In the present study, the sampling was conducted in all working shifts (morning, evening and night) and on holidays after obtaining consent from hospital officials. The ethical considerations in this research included obtaining informed consent from nurses to participate in the research, explaining the goals of the study to nurses, and emphasizing confidentiality of the information. The data were analyzed using SPSS16 software with descriptive statistics test and independent t-test on statistical level less than 0.05.

Findings

The findings showed that the mean (standard deviation) of age and working experience of nurses were 38.25 (12.20) and 8.55 (2.40), respectively. Also, 48 (82.8%) nurses participating in the study had a bachelor's degree and 10 (17.2%) of them had MA degree. 16 (27.6%) participants participated in the pain management workshop, and most

of them, 42 (72.4%), did not participate in any pain management workshops during the past 2 years.

According to Table 1, only a small number of nurses always have set up of care in reducing the pain or discomfort of infants 7 (12.1%). In the same way, regarding "allowing parents to relieve pain", most nurses (18%) (31.0%) used this item only occasionally. Regarding use of non-pharmacological methods to reduce pain, only a small number of nurses (8.8%) used this item always. Also, assessment of neonatal pain in the practice of care and treatment was done only occasionally (35% (60.3%). Most of the nurses (18 (31%)) often assessed neonatal pain more than once every four hours, and only 3 (5.2%) of them used a valid instrument for pain assessment always.

Discussion

The purpose of this study was to assess pain assessment and management in nurses on neonatal intensive care units. According to the findings, nurses who had not participated in pain management workshops during the last 2 years had less awareness of pain management. In the study by Hossein Zadehan et al. with the aim of determining the knowledge, attitude and practice of nurses working in surgical wards in the field of evaluation and management of pain, the findings showed that there was a correlation between knowledge and attitude of nurses and the history of training in pain management (hosseinzadegan et al., 2017).

Also, in the study by Zahedpasha et al., aimed to determining the barriers to use non-pharmacological pain control methods in the intensive care units, the findings showed that conducting continuous educational courses regarding pain is a practical approach to applying non-pharmacological methods of pain control (Zahed et al., 2017).

According to our findings, only a small number of nurses participating in the study consistently used non-pharmacological methods to reduce pain. In a review study, Aziznejad et al. showed that one of the main obstacles to managing neonatal pain by nurses is the lack of knowledge and skills and these limitations include lack of knowledge about pain medications, non-pharmacological pain control methods and pain assessment through physiological examination (Aziznejad et al., 2015). In a study by Zargarzadeh et al. aimed at identifying barriers to use of complementary medicine in pain relief by nurses, the findings indicated that nurses lack of knowledge was the most mentioned barrier (Zargarzadeh and Memarian, 2013).

Findings of the present study showed that pain assessment in neonates was very important, so, in the present study, most nurses evaluated the pain of infants every 4 h. In the study of AsadiNouqabi et al. with the aim of determining the knowledge, attitude and practice of nurses in the field of neonatal pain, the findings showed that 80% of

nurses believed that management and relief of pain in children was one of the important priorities of treatment (Noghabi et al., 2012) which was consistent with the results of this study regarding the importance of pain management in neonates. The findings of this study showed that most nurses did not use pain assessment tools for pain evaluation. According to the results of Rahimi et al. only 6.5 percent of nurses used a proper tool for pain assessment (Rahimi et al., 2017) and the results of Mehrnoush's study showed that most nurses did not use as a tool for measuring pain (Mehrnoush and Ashktorab, 2016).

Conclusion

Considering that pain assessment and management were not at the appropriate level, it is necessary to conduct appropriate educational interventions with nurses in this regard. It is suggested that nurses be formed in workshops to improve their knowledge of pain management. It is also necessary for nursing managers to pay more attention to the concept of pain in their assessments and to help nurses manage neonates with ongoing pain assessment.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jnn.2018.08.006>.

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