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ORIGINAL ARTICLE

Evaluating the understanding of nurses regarding pain management in neonatal units and special neonatal units of Qamar Monir Bani Haeshem Hospital in Khoy, Iran, in 2016

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ABSTRACT

Introduction: Pain is a mental and multi-dimension phenomena, which its measurement and definition are difficult. Inability in expressing the pain clearly is the fundamental reason for the difficulty in pain measuring. Since newborns are unable to express their pains, to evaluate their pain quantitatively, valid, and standard tools should be used. The present study aimed to investigate the understanding of nurses about babies' pain in neonatal and special neonatal units of hospitals in Khoy. **Materials and Methods:** This is a descriptive and analytical cross-sectional study which was performed on 66 people by census method on nurses working in neonatal units and special neonatal units of Qamar Monir Bani Haeshem Hospital. Tool for collecting data includes 5 parts questionnaires containing demographic information, 7 questions related to understanding the pain of babies, 10 questions related to the effects of pain, 9 questions related to the tools of measuring the pain with criterion (true, false, I do not know), and the final part with 28 questions related to the attitude of measuring the pain in infants (I agree, I disagree). To determine the validity of the tool content validity was used and to determine the reliability Cronbach's alpha correlation test and preliminary study were performed ($\alpha = 0.82$, $\alpha = 0.86$). After coding, the data were described in frequency, mean, and standard deviation table using SPSS Version 16 software. To analyze the data statistical tests such as Pearson's correlation, *t*-test, and ANOVA were used ($P < 0.05$). **Results:** The majority of the participants were married (97%) with Bachelor education degree (95%) working in neonatal unit (45.5%) with a mean age of 33 years and servicing year of 8 years. The awareness rate of the physiology of pain, with the highest prevalence of 42.2%, complications and pain intensity by 45.5% were at good levels, and tools for measuring pain with 54.6% were poor. Nurses' attitude toward assessing and measuring the pain of babies with 54.5% was positive. Investigating the statistical relationships between the attitudes of nurses and awareness of severity and complications of pain ($P \leq 0.001$), between the age and awareness of severity and complications of pain ($P \leq 0.002$), and between the servicing year and awareness of pain physiology, severity, and complications of pain ($P \leq 0.003$), significant statistical difference was found. **Discussion and Conclusion:** Based the results, focusing on pain of the babies and the infants in nursing education programs, holding the continuing education courses regarding the pain and pain assessment, and attaching pain assessment checklist for monitoring vital signs checklist and reporting it in each shift are recommended.

Key words: Attitude, babies-understanding the pain, nurses-awareness

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Introduction

Pain is a defense mechanism for the body. When a tissue is damaged, the pain is created.[1] Moreover, it can be said that pain is a subjective and multi-dimensional phenomenon that is difficult to define and to measure.[2,3] Inability to offer a clear definition of the pain is the fundamental reason for the difficulty in measuring the pain. Based on the description of the International association for the study of pain, pain is an unpleasant sensory and emotional experience associated with active or potential tissue damage, and it exists when the person expresses it.[4] Today, America Pain Society knows pain as the fifth vital signs.[5] Wrong attitude toward the pain and common mistakes include: babies do not feel pain, since their nervous system is not sufficiently developed, the experience of pain for neonates is not destructive, since they have no pain memory, as well as anesthetic drugs during surgery and painkillers are dangerous for the babies due to their high complication rate.[6] While various studies indicate that the neonates and babies perceive the pain more than children and adults.[7] Adults express their pain feeling with related symptoms and signs, and thereby reacting and trying to find the cause, treatment, and relief. However, it is different in the case of infants.[8,9] Babies are not able to communicate with us and to express their pain, hence, for quantitative assessment of their pain the validated and standardized tools should be used in accordance with their age.[10] Pain control of the babies is quite important, since the sensory area of the brain of newborns and infants, is the most active region, moreover, the pain transmission path has fully evolved, whereas the inhibitors systems of newborns' brains have not appropriate growth. Almost 26th week of the pregnancy, the fetal physiological systems have reached a point where the pain is felt; hence, even a fetus feels pain.[11] Therefore, relieving the pain in infants only through individual observations is not possible, rather the behavioral and physiological responses to painful stimuli should be considered specifically. Medicinal measures include intravenous injection of fentanyl, morphine local mixing lidocaine and prilocaine, acetaminophen, or other drugs, and nonpharmacological palliative measures include providing a pleasant remedy or wrapping or swaddling the baby with the blanket, breastfeeding, skin contact with the mother, or feeding the baby while it is embraced.[12] Pain management aims to prevent, to reduce, or to relieve the pain, which is the main focus on improving the quality of care systems and the major challenges of the nurses.[13] The Intensive Care Unit (ICU) of newborns is a special place for treating the infants with congenital malformations or keeping the.[14] After hospitalizing the baby, the nurses are responsible for the primary responsibility of the assessing and managing the pain, and in care teams, the nurses spend the most time in caring the babies admitted to the neonatal ICU.[15] The role of nurses in neonatal pain control is quite crucial. Today, the number of babies requiring special care due to prematurity or health problems are raising, hence, in these circumstances, satisfying the basic needs of these infants is quite important.[5] Proper treatment is possible only if the nurse is able to estimate the patient's pain correctly, however, considering the mental concept of the pain, its assessment is difficult for nurses, and this difference is the most damaging issue that prevents helps for the patients to relieve the pain.[16,17] Since babies cannot express their pain as adults, assessing and recognizing the pain, including quality of pain, pain severity, the location of pain, pain causes, pain duration, and ways to relieve the pain duration will be difficult for the nurses.[18]

In neonates expressing the pain behaviorally and physiologically is the only way to express the pain. Therefore, determining the physiologic and behavioral signs of pain in newborns is completely important for a nurse. Puzansky as a psychiatrist, in his study in 1976 stated that infants react to the pain of circumcision by screaming and jerking the limbs, or they respond to the hemorrhage of the heels typically through dragging the legs, flexion of the upper and lower limbs, frowning, and crying.[3]

Considering that lack of proper investigation and thus inadequate pain relieving can have bad effects on physical growth and development of the infant, carelessness regarding infant's pain and wrong management of pain in the ordinary and special babies' unit are as result of lack of sufficient time for pain management or lack of training the pain management for nurses.[7,19] Hence, the present work aimed to evaluate the understanding of nurses regarding pain management in neonatal units of hospitals in Khoy.

Materials and Methods

This descriptive-analytical cross-sectional study was performed with the sample size of 66 people through available sampling method on nurses working in neonatal units and neonatal ICUs of Qamar Bani Hashem Hospital in Khoy, Iran, 2016. The tool for collecting data included 5 parts questionnaires containing the demographic and social information (age, marital status, education level, working experience, number of children, and type of unit), 7 questions regarding the understanding the babies' pain, 10 questions about the effects of pain, 9 questions about

pain measurement tools based on the criterion (true, I don't know, and false), and the last part containing 28 questions related to the attitudes toward assessing and measuring the pain of babies based on criteria (I agree-I disagree). To determine the validity of the tool the content validity was used with experts' judgments and to determine the reliability the Cronbach's alpha correlation test (α =0.82, α =0.86) was used with the preliminary study. Collecting the data was performed with the authorization of the competent authorities and by explaining the subjects, and by coding the questions into SPSS Version 16 software (SPSS Inc., 233 South Wacker Drive, 11th Floor, Chicago, IL 60606-6412), the results were analyzed using descriptive analysis in the form of frequency tables and analyzing the relationships using Pearson's test, *t*-test, and ANOVA at the significant level of 0.05.

Results

The majority of the samples was married (97%) with Bachelor education level (95%) with children (76%) one or two (36.4%) working in neonatal unit (45.5%) with the mean age of 33 years and working experience of 8 years. The awareness of the physiology of pain with a frequency of 42.4% was determined at good level, with the frequency of 57.6% was determined at poor and fair levels, and with the frequency of in low and medium level, the complications and pain intensity were determined with 45.5% at good level, and with 55.5% at poor and fair levels, and the pain measurement tools were determined with 54.6% at poor level. The attitude of nurses toward assessing and measuring the pain of infants was positive with 54.5%. Investigating the statistical relationships between the attitudes of nurses and intensity and effects of pain ($P \leq 0.001$) significant differences were found between the awareness levels of pain physiology and pain intensity ($P \leq 0.006$), between the intensity and effect of the pain and pain measurement tools ($P \leq 0.007$), between the total awareness of the pain and attitude toward pain ($P \leq 0.0013$), between the age and awareness of the intensity and effects of pain ($P \leq 0.002$), between servicing year and awareness of pain physiology and pain intensity ($P \leq 0.003$), between the intensity and effects of pain and attitude toward pain assessment and the location of working ($P \leq 0.001$), as well as between the awareness of pain physiology and pain intensity and having children or lack of children ($P \leq 0.05$). In other cases, no significant difference was found [Tables 1-3].

Table 1: The quantitative and qualitative characteristics of participants

Variable	*n* (%) or mean±SD
Marital status	
Married	64 (97)
Single	2 (3)
Education level	
Bachelor	62 (93.9)
Masters	4 (6.1)
Children	
With children	50 (75.8)
Without children	16 (24.4)
Number of children	
Without children	16 (24.4)
1	24 (36.3)
2	24 (36.4)
3	2 (3)
Unit	
Neonatal	30 (45.5)
Specialized neonatal	16 (24.4)
Children	20 (30.3)
Age	6.5±32.8
Working experience	5.2±8

SD=Standard deviation

Table 2: Awareness of participants

Variable	Scores domain	*n* (%)
Physiology of pain	Poor (<10)	18 (27.3)
	Fair (11-14)	20 (30.3)
	Good (>15)	42.4 (28)
	Poor (<15)	16 (24.2)
Intensity and effects of pain	Fair (16-20)	20 (30.3)
	Good (>21)	30 (45.5)
	Poor (<15)	36 (54.6)
Pain measurement tools	Fair (16-21)	19 (28.7)
	Good (>22)	11 (16.7)
	Poor (<40)	11 (16.6)
Awareness of pain	Fair (41-54)	26 (39.4)
	Good (>55)	29 (44)
	Negative (<56)	0
Attitude toward pain assessment	Neutral (57-84)	30 (45.5)
	Positive (>85)	36 (54.5)

Discussion

Nurses play an important role in accurate pain assessment, pediatric pain management, appropriate interventions and evaluation of pain relief. Researchers show that one of the main obstacles in evaluating and relieving the pain in different countries is the lack of knowledge or little knowledge of nurses and treatment team regarding the assessment and relief of pain in different ages.[11,20] The results of the present study showed that the overall awareness of participated nurses regarding the pain was at poor and fair levels, and less than half of the nurses had a good awareness of pain in newborns. These results are consistent with results of Drand and Urimary study. The mean percentage of correct answers on the knowledge acquired by nurses

Table 3: Statistical test and significance differences of nurses' perceptions of neonatal assessment

Variable Indicators	Test	Significance difference (*P*)	*R*
Awareness of the severity and effects of pain Attitude toward pain assessment	Pearson correlation	≤0.001	−0.411**
Awareness of the pain physiology Awareness of the severity and effects of pain	Pearson correlation	≤0.006	0.332*
Awareness of the severity and effects of pain Awareness of the pain assessment tools	Pearson correlation	≤0.007	0.327**
General awareness of pain and attitude toward pain	Spearman analysis	≤0.013	−0.303*
Awareness of the pain assessment tools and age	Pearson correlation	≤0.001	−0.412**
Awareness of the severity and effects of pain and age	Pearson correlation	≤0.002	−0.382**
Awareness of the pain physiology and servicing year	Pearson correlation	≤0.003	0.359**
Awareness of the pain and physiology servicing year	Pearson correlation	≤0.003	−0.360**
Pain assessment attitude and unit	ANOVA	≤0.001	*F*=7.376 df=2
Awareness of the severity and effects of pain and unit	ANOVA (Pearson correlation)	≤0.001	*F*=10.870 df=2

*Significant at the 0.05 level, **Significant at the 0.01 level

participating in the study of Drand was 69.1% in relation to pain assessment in Netherlands. Among the participants in this study in response to the question of how do you think the quality of pain control in your unit is? About 71% believed that the control was good, and 6% believed that the control was not desirable.[21] Reviewing the results of Noghabi study showed that the participants had the fair and the poor awareness of pain physiology and had poor awareness of pain assessment tools.[22] The results of Chermont study showed that only one-third of nurses knew the tool for assessing the infant's pain, however, 100% of participants in the study believed that newborns feel pain and their pain should be evaluated.[17] The results of Yildirim *et al*.'s study in Turkey showed that the average correct answers of nurses in investigating and control of infants' pain was 35.41%.[23] Comparing the knowledge of nurses working in pediatric hospitals in three countries of Britain, South Africa, and Sweden showed that there are significant differences between the knowledge of nurses in these three areas. The Swedish nurses had the highest knowledge; they also had a more positive attitude towards pain which could be a result of their greater knowledge associated with pain.[24] Through other study performed in India, the highest rate of nonuse of assessment tool of newborn's pain, lack of knowledge of the physiology of infant's pain, and pain assessment tool were reported.[25] In a study in Northern part of India, it was shown that nearly half of the nurses were not familiar with the pain assessment tools, and they did not use necessary and appropriate tools in infants' pain assessment.[26] Farahani *et al*.(2009) conducted a survey to evaluate the effects of establishing a pain nursing commission on empowering nurses within pain assessment process. This study showed that nurses' knowledge regarding pain assessment in children is quite low (7.7%).[27] Parvizi and Alhani conducted researches regarding the knowledge, skills, and attitude of nurses toward pain assessment tools in a children's specialized hospital in Tehran. The results showed that 72.4% of nurses did not know the pain assessment tools.[28]

In the study of Varvani, 20% of nurses participating in the research had the weak knowledge, and the nurses knew inadequate training in pain assessment as the main obstacles to using the pain assessment tools. The answers of participants to the question of "what tool do you use to assess the pain in children" included the following points: 96% believed that crying is the best indication of infants' pain, 72% agreed that the face changes cause pain, 21% knew the sleep disorders and child nutrition the as the cause of pain, and only 2% of the participants used tool to assess the pain appropriate with infants' developmental age.[27]

Regarding the attitude of nurses participating in the study performed to evaluate the infants' pain, the findings show that the majority of nurses (54.5%) had positive attitudes toward infant's pain. The majority of participants in the study believed that newborns feel the pain and measuring and controlling the pain are the legal rights of the babies and they affect the process of babies' recovery positively. Numerous studies consistent with our study in this regard.[29,30] Layman investigated the nurses' attitudes and beliefs about pain assessment. Layman's results showed that most nurses believed that the pain assessment tools improve the relationship between patient and nurse and using them will lead to better pain relief.[31] Elcigil stated in his study that oncology nurses had a better understanding of pain compared to nurses of other units.[32] The study of Enskar showed that Swedish nurses have more knowledge regarding pain

assessment and have positive attitudes toward pain which can lead to better relief.[24]

Conclusion

According to the results of this study and other studies, it can be said that awareness about infant pain assessment is relatively low. The less knowledge of nurses is known as the most effective barrier to pain care of the patient, and the nurses need adequate training to solve this problem.[33] Hence, inadequate knowledge of nurses regarding pain management and lack of pain management guidelines has impacts on clinical care.[34] According to the mentioned results, further consideration regarding the pain of newborns and infants in nursing education programs, particularly, adding nonpharmacological methods of pain control to the content of nursing courses, holding continuous education courses on the pain management, especially pain assessment, further involvement of patients' families in pediatric pain management, children's pain assessment chart in checklist of control vital signs, providing appropriate conditions and facilities such as providing equipment for distraction, are recommended.

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Conflicts of interest
There are no conflicts of interest.

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