



DESCRIPTION OF PERCEPTIONS OF NEONATOLOGY NURSES IN THE IMPLEMENTATION OF ASSESSMENT AND MANAGEMENT OF PAIN IN NEONATES

Puput Nugraha*, Siti Yuyun Rahayu Fitri, Nenden Nur Asriyani Maryam

Faculty of Nursing, Universitas Padjadjaran, Jl. Raya Bandung Sumedang KM.21, Hegarmanah, Jatinangor, Sumedang, West Java 45363, Indonesia

*puput20001@mail.unpad.ac.id

ABSTRACT

Neonates with complications admitted to the Neonatal Intensive Care Unit (NICU) must receive various invasive actions that cause negative impacts, one of which is pain. The limited growth and development of neonates causes pain to be objective depending on the nurse's perception. As a result, pain is not managed properly and has a high risk of causing negative impacts for neonates. Objective: This study aims to identify the perception of neonatology nurses in the implementation of pain assessment and management in neonates. Method: This study used descriptive quantitative research with a cross-sectional time approach to neonatology nurses who were collected in pediatric nurse organizations in the West Java region using a convenience sampling technique. The instrument used was The Nurses' Attitudes and Perceptions of Pain Assessment in Neonatal Intensive Care Questionnaire (NAPPAQ). Results: The results of the study with a total of 72 respondents, 50% of respondents strongly agreed on the importance of pain assessment, and 48.6% strongly agreed on the importance of using pain assessment tools. The assessment tools that are often used in assessing pain are NIPS (72.2%), and non-pharmacological pain management that is often given is physical methods. Conclusions: Although most nurses agree on the importance of pain assessment, in practice there are still nurses who assess pain without using clear assessment tools.

Keywords: neonates; nurse perception; pain

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INTRODUCTION

Neonate is the beginning of human life which starts from the first 0-28 days after the baby is born (Berman et al., 2015). At this time neonates are very vulnerable to various complications of health problems (Mafticha et al., 2016). Based on data from the Indonesian Ministry of Health in 2021 in Indonesia, the incidence of neonates with complications is still widely found. Various complications that often occur in neonates include intrapartum complications (27.7%), respiratory and cardiovascular disorders (22.3%), congenital abnormalities (12.9%), infections (8.7%), and low birth weight (LBW) (34.5%) (Kemenkes, 2021). Neonates with complications will usually receive various intensive treatments in the Neonatal Intensive Care Unit (NICU) (Kusumaningsih, 2016). Life-supporting measures often result in negative impacts, such as pain and risk of infection due to prolonged use of invasive tools (Estiningsih et al., 2016). Neonates are also at risk of experiencing obstacles to adjusting to the environment and being separated from the mother due to long days of care. Excessive stimulus from the environment received by neonates can also result in disturbed sleep patterns

and stress in neonates. The most important negative impact is the pain experienced by neonates (Indah Lestari, 2016).

Pain in neonates is very important, this is because most of the treatments in the NICU are procedures that can cause pain (Kyololo et al., 2014). Recurrent pain in neonates results in various negative impacts in the future (Williams & Lascelles, 2020). Among them are providing adverse physiological effects on the nervous system (Mahmud et al., 2017) which can cause neurobehavioral developmental disorders, emotional, behavioral and thought process disorders that can threaten life and hinder neonate survival. So that pain in neonates is important to be identified accurately and managed appropriately (Cong et al., 2017). However, incomplete physical, cognitive, and behavioral development makes neonate pain difficult to identify and objective (Popowicz et al., 2021). The level of pain felt by neonates is highly dependent on the perception shown by nurses when assessing pain. So that nurses need to have good attitudes, perceptions and habits in assessing neonate pain (Lyngstad et al., 2022). Neonates generally show signs of pain through physiological, behavioral and metabolic changes (Fitri et al., 2019). Changes in these general signs are often difficult to distinguish from signs of discomfort due to other things. For this reason, nurses play an important role in assessing the condition of neonates during the care period including neonate comfort needs, observing neonate responses to clinical procedures and evaluating how pain affects comfort and rest (Herawati et al., 2017).

How many factors can influence nurses' perceptions in handling neonatal pain including age, work experience, knowledge, and special training (Latelay et al., 2020). The results of research by Popowicz, et al (2021) showed that the majority of respondents had a sufficient level of knowledge about pain. However, the respondents' skills in using the pain assessment scale were still lacking (Popowicz et al., 2021). Nurses only rely on confidence in their ability to assess pain by looking at changes in physiology and behavior without using available assessment tools (Pölkki et al., 2018). In fact, the use of appropriate pain scales is not only to measure pain, but can also provide an accurate picture in evaluating the use of effective pain management (Perry et al., 2018). Currently, the practice carried out by nurses in pain management is different from the knowledge that is understood. This is shown based on the results of research by Zubaidah & Naviati (2018) that nurses have a sufficient level of knowledge in pain management. However, the attitude shown by nurses in pain management is still not good (Zubaidah & Naviati, 2018). Nurses tend to rarely use non-pharmacological measures they know (Pölkki et al., 2018).

Based on the description of the conditions above, it illustrates that there are still problems with nurses' perceptions in assessing and managing neonatal pain. For this reason, the researcher will conduct a study to identify the description of nurses' perceptions in assessing and managing pain in neonates. The results of this study can be a description of the evaluation of neonatology nurses in the implementation of non-pharmacological pain assessment and management in neonates and can be a basic data update that supports the policies of pediatric nurse organizations to increase the awareness of nurses in the assessment and proper management of neonatal pain in daily clinical practice through training or written policies issued by the organization. Thus, it can reduce the impact of pain in neonates in the future.

METHOD

This study is a descriptive quantitative study with a convenience sampling technique of neonatology nurses in hospitals located in the West Java region and members of the Indonesian Pediatric Association. This study has obtained a research ethics permit from the

Riau University Health Research Ethics Commission with number 1598/UN19.5.1.8/KEPK.FKp/2023. Data collection was carried out for 14 days starting from December 18-31, 2023 using the Nurses' Attitudes and Perceptions of Pain Assessment in Neonatal Intensive Care Questionnaire (NAPPAQ) instrument, a questionnaire developed by Pölkki et al, 2018. This questionnaire has obtained permission to use from the owner of the questionnaire via email. This study used univariate descriptive analysis which was used to determine the frequency distribution and presentation of the variables studied. This analysis only produces frequencies and percentages of the data obtained. The data obtained from the questionnaire will describe how nurses' perceptions of conducting neonate pain assessment and the pain assessment tools that are often used. In addition, it also provides an overview of the use of non-pharmacological pain management that is often used.

RESULTS

This study was conducted with neonatology nurses who are gathered in pediatric nurse organizations in the West Java region. Data collection was carried out on December 18 - 31, 2023 through a Google form electronic questionnaire distributed via WhatsApp. In this study, there were 73 people, but 1 person refused to be a research respondent. So only 72 respondents fit the inclusion and exclusion criteria.

Table 1.
Respondent characteristics (n= 72)

Respondent characteristics	f	%
Age		
<30 year	18	25.0
30-40 year	33	45.8
>40 year	21	29.2
Gender		
Female	69	95.8
Male	3	4.2
Education		
D3/D4 vocation	23	31.9
Nursing profesional	48	66.7
Master/S2	1	1.4
Experience Working in NICU		
<1 year	11	15.3
<5 year	26	36.1
5-10 year	16	22.2
>10 year	19	26.4
Work Place		
Private Hospital	21	29.2
State Hospita;	51	70.8
Income		
<2.000.000	11	15.3
2.500.000-4.000.000	21	29.6
>4.000.000	40	55.6
Pain training experience		
Yes	15	20.8
No	57	79.2

Based on the data analyzed (Table 4.1), most of the respondents in this study were between 30-40 years old (45.8%), female (95.8%) with educational backgrounds mostly nursing professionals (66.7%). The average work experience in the NICU was <5 years (36.1%), working in general hospitals (70.8%) with the average income of most respondents >4,000,000/month. Almost all respondents who participated in this study did not have neonate pain training experience (79.2%).

Table 2.
Frequency and Percentage Distribution of Nurse Perceptions in the Implementation of Neonate Pain Assessment

Question	Totally agree f (%)	Agree to some extent f (%)	Don't know f (%)	Disagree to some extent f (%)	Disagree to some extent f (%)
Pain assessment in neonates affects the implementation of pain management.	36 (50%)	30 (41.7%)	1 (1.4%)	0 (0.0%)	5 (6.9%)
Pain assessment scales are important when assessing pain in neonates.	35 (48%)	32 (1.4%)	1 (1.4%)	0 (0%)	4 (5.6%)
I can assess the neonate's pain in a reliable way without using pain assessment scales.	4 (5.6%)	14 (19.4%)	8 (11.1%)	40 (55.6%)	6 (8.3%)
Nurses assess the pain in neonates consistently without pain assessment scales.	3 (4.2%)	11 (15.3%)	6 (8.3%)	42 (58.3%)	10 (13.9%)
Systematic documentation of pain assessment in neonates is not necessary in nursing.	1 (1.4%)	5 (6.9%)	7 (9.7%)	34 (47.2%)	25 (34%)

Table 4.2 shows that most respondents agreed (50%) about the effect of pain assessment in neonates on the pain management that will be provided. Respondents also strongly agreed (48%) that the use of neonate pain scale parameters should be used when conducting pain assessment. However, there were still respondents who agreed (19.4%) and strongly agreed (5.6%) that they could perform pain assessment without using assessment tools. In addition, 15.3% agreed and strongly agreed that 4.2% consistently performed pain assessment without using assessment aids. A total of 47.2% of respondents disagreed that documentation of pain assessment in neonates was not necessary in nursing.

Table 3.
Frequency and Percentage Distribution of Nurses' observations of the parameters when assessing pain in neonates

Question	Not at all/very seldom f (%)	Sometimes f (%)	Nearly always/al ways f (%)
Physiological parameters (Heart rate, Breathing, Blood pressure, Oxygen saturation)	60 (83.3%)	11 (15.3%)	1 (1.4%)
Behavioral changes (Crying/ moaning, State of arousal/alertness, Arm movements, Leg movements Facial expressions in general)	58 (80.6%)	14 (19.4%)	0 (0.0%)
Specific facial expression (Brow bulge, Eye squeeze, Naso-labial furrow, Mouth stretch, Lip pursing, Taut tongue Chin quiver)	21 (29.2%)	32 (44.4%)	19 (26.4%)
Use of NIPS (Neonatal Infant Pain Scale) Scale	52 (72.2%)	16 (22.2%)	4 (5.6%)
Use of PIPP (Premature Infant Pain Profile) Scale	11 (15.3%)	20 (27.8%)	41 (56.9%)
Use of CRIES (Crying, Requires increased oxygen administration, Increased vital signs, Expression, Sleeplessness) Scale	14 (19.4%)	22 (30.6%)	36 (50%)
Use of NFCS (Neonatal Facial Coding System) Scale	8 (11.1%)	19 (26.4%)	45 (62.5%)
Use of EDIN; Neonatal Pain and Discomfort Scale	4 (5.6%)	11 (15.3%)	57 (79%)
Use of NIAPAS (Neinatal Infant Acute Pain Assessment Scale) Scale	6 (8.3%)	13 (18.1%)	53 (73%)

Table 3, respondents most often assess neonate pain through physiological changes shown from pulse, respiration, blood pressure, and oxygen saturation (83.3%). While the pain assessment tool most often used by nurses is NIPS (72.2%). The scales that were rarely or never used by respondents were PIPP (56.9%), CRIES (50%), NFCS (62.5%), EDIN (79%) and, NIAPAS (73%).

Table 4.
Frequency and Percentage Distribution of Nurses' use of nonpharmacological methods in relieving pain in neonates

Question	Not at all/very seldom f (%)	Sometimes f (%)	Nearly always/al ways f (%)
Physical methods (Touching Positioning, Holding, Facilitated tucking)	63 (87,5%)	8 (11,1%)	1 (1,4%)
Parental counseling (Encourage mother to continue breastfeeding, Guide parents to use kangaroo care)	48 (66,7%)	24 (33,3%)	0 (0%)
Sucrose/non-nutritive sucking (Giving sucrose p.o, Non-nutritive sucking, together with sucrose p.o.)	47 (65,3%)	18 (25,0%)	7 (9,7%)
Music Recorded, music Live music (singing or humming)	10 (13,9%)	42 (58,3%)	20 (27,8%)

Based on Table 4 most respondents relieve neonate pain most often using non-pharmacological therapy and physical methods (87.5%). The least used non-pharmacological therapy is music therapy (13.9%).

DISCUSSION

Perception is a person's picture of a particular object, person, or event (Nursalam, 2015). Nurses' perception of pain is important because it will have an impact on the level of pain experienced by neonates and the pain management provided (Bosnjak et al., 2020). The results found that almost all nurses involved in this study already had a good perception of the importance of neonate pain. Nurses also agreed that the use of neonate pain assessment tools is important to be used in daily practice. According to Cong et al., 2014 states that nurses' perceptions of pain assessment practices are related to age, education level, and the hospital where they work (Cong et al., 2014). Based on the results of the study, almost all of the nurses involved did not have pain training experience with an average final education level in the nursing profession. Although not seen significantly, 14 out of 15 nurses who had attended pain training showed a good perception of the importance of neonate pain compared to nurses who did not have pain training experience. This is by the results of Collados- Gómez et al., 2018 which showed that nurses who have specialized training have better perceptions in considering the assessment and use of pain management in neonates (Collados-Gómez et al., 2018).

In addition, as seen from the income owned by nurses, most nurses have an income of >4,000,000/month. Nurses with income >4,000,000 tend to have a good perception of neonate pain. This is to the assumption of the Theory of Planned Behavior (TPB) by Icek 1967 in Bosnjak et al., (2020) which states that perception is a belief based on several factors. Social factors such as age, gender, ethnicity, education, income, and religion are among the factors that can influence a person's perception (Bosnjak et al., 2020).

Although most nurses have good awareness and perception of neonate pain assessment, the results of the study also show that in practice there are still around 18% of nurses who perform pain assessment without using clear assessment tools. This is to the research Costa et al., 2017 which revealed that nurses consider neonatal pain as an important event, but often nurses do not systematically assess pain (Costa et al., 2017). Although pain assessment tools are available for

neonate patients, there are still many nurses who do not use pain assessment tools when assessing neonates (Popowicz et al., 2021).

Based on the results of the study, nurses who rarely or consistently did not use pain assessment tools in assessing pain were nurses aged >40 28.6% of the total respondents aged >40 years with 5-10 years of work experience as many as 43.18% of the total respondents with 5-10 years of work experience. Nurses who often use pain assessment tools and document neonate pain are mostly nurses aged 30-40 years (72.7% of the total nurses aged 30-40 years with work experience <5 years 76.9% of the total nurses with work experience <5 years. In addition, most of the workplaces are in public hospitals. This is inversely proportional to the results of research by Popowicz, Medrzycka-Dabrowska, et al., 2021 that nurses in tertiary care with age > 40 years and work experience > 10 years have a higher awareness of understanding pain assessment and treatment protocols (Popowicz et al., 2021).

The researcher's assumption may be the results of the study by Treiman-Kiveste et al 2022 which states that nurses who are younger and have not long had work experience, use more pain assessment tools and neonate pain documentation compared to more senior nurses. This is because younger nurses feel more familiar with pain assessment tools. Meanwhile, more senior nurses may feel more confident with their work experience. So many senior nurses prefer to conduct pain assessments based on their abilities without using existing assessment tools (Treiman-Kiveste et al., 2022). Based on the results of the study, shows that nurses who do not use pain assessment tools more often conduct pain assessments through physiological parameters and behavioral changes shown by neonates. This is similar to the results of research by Treiman-Kiveste et al., 2022 which states that nurses more often perform pain assessments based on behavioral changes shown by neonates. Behavioral changes are considered easier to recognize when assessing neonate pain (Treiman-Kiveste et al., 2022). According to Megel, Houser & Gleaves (1998) in Winart, (2015) stated that signs of pain shown by neonates can be in the form of obvious behavioral changes, hidden behavior, and physiological responses (Winarti, 2015).

However, based on the research results of Polkki et al., 2018 although physiological parameters and behavioral changes in neonates are routinely observed, often certain facial expressions that indicate pain are rarely observed (Pölkki et al., 2018). This is to the results of the study which showed that almost all respondents rarely or never observed changes in certain facial expressions such as eyebrow protrusion, eye line, nasolabial indentation, mouth stretching, tongue tightening and chin trembling. According to O'Rourke 2004 in Widyastuti et al., 2018 in general, changes in facial expressions, especially in neonates, are sensitive indicators that indicate pain (Widyastuti et al., 2018). In conducting pain assessment and management, nurses often experience various obstacles. The results of the nurse's research stated that the developmental limitations of neonates caused pain to be difficult to identify because they could not express pain. This is by Popowicz, Mędrzycka-Dabrowska, et al., (2021) who stated that there are developmental limitations in neonates, so pain is objective, pain is a subjective experience (Popowicz et al., 2021). In addition, nurses often doubt the accuracy of the pain scale used. This is followed when assessing pain there is no "gold standard" instrument and is still based on age standards, and severity of illness. In addition, the lack of training experience that nurses have and the lack of staff working in the NICU are also obstacles felt by nurses. (Cong et al., 2013).

Despite these limitations, neonate pain must be accurately assessed using appropriate, validated, and objective pain assessment methods to provide effective management (Bucsea & Pillai Riddell, 2019). In the neonate pain management guidelines, it is recommended to use pain scales that have been validated and proven for reliability. In addition, the assessment method should be

adapted to the type of pain experienced by the neonate. Pain should also be evaluated and documented every 4-6 hours and after invasive actions that cause pain (Statement, 2016). One of the most frequently used assessment tools to assess neonate pain is the Neonatal Infant Pain Score (NIPS).

The results also showed that almost half of the nurses who used pain assessment tools more often used the NIPS pain scale. This is similar to the results of research by Mariyam et al., 2019 which states that in Indonesia the most widely used assessment tool is NIPS (Mariyam et al., 2019). NIPS is a pain assessment tool developed in the early 1990s to assess six behavioral reactions to painful procedures in premature and full-term newborns. This scale has been shown to have high reliability and consistency. The use of the NIPS is recommended for both acute and postoperative pain, although its psychometric study is preferred for acute pain. To provide a total NIPS score, the nurse must evaluate all items on the NIPS sheet (Sarkaria & Gruszfeld, 2022). If pain assessment is done systematically, the pain management provided will be more effective in reducing pain. Reducing pain is a basic need and human right regardless of age. The main goal of pain management in neonates is to minimize the experience of pain and its physiological effects. In addition, pain management also serves to maximize the ability of neonates to recover and maintain their comfort level (Mahmud et al., 2017).

Pain management given to neonates can be in the form of pharmacological and non-pharmacological management. Non-pharmacological management is one of the interventions used to reduce acute and mild neonatal pain. This intervention is simpler, easier, cost and time-saving. Non-pharmacological interventions can also reduce the negative side effects caused by pharmacological interventions (Bucsea & Pillai Riddell, 2019). Based on the results of the study, almost all respondents (87.5%) often provide non-pharmacological pain management in the form of physical touch, positioning, carrying, and facilitating flexion positions. Based on the research of Hidayah et al., 2023 the method of physical touch and positioning the neonate in a tilted/prone position is proven to reduce the pain level of the neonate. This is because this position can draw memories of neonates while in the womb and provide a sense of comfort. However, some neonate conditions are not effective using non-pharmacological management so nurses should still consider collaborating in providing pharmacological management (Hidayah et al., 2023).

CONCLUSION

Based on the results of the study, it can be concluded that nurses have a good perception of the importance of pain assessment in neonates. However, in daily, practice there are still nurses who do not use pain assessment tools and only rely on their abilities. Nurses who do not use pain assessment tools more often perform pain assessments using physiological parameters and behavioral changes shown by neonates. Nurses who use pain assessment tools most often use the NIPS scale. As for non-pharmacological pain management that is often given by nurses, namely physical method pain management through touch and change of position.

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