NURSING CARE FOR THE NEWBORN INFANT WITH PAIN IN A NEONATAL INTENSIVE CARE UNIT

ASSISTÊNCIA DE ENFERMAGEM AO RECÉM-NASCIDO COM DOR EM UMA UNIDADE DE TERAPIA INTENSIVA NEONATAL

ATENCIÓN DE ENFERMERÍA AL RECIÉN NACIDO CON DOR EN UNA UNIDAD DE CUIDADOS INTENSIVOS NEONATAL

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ABSTRACT

Objective: to analyze nursing care for the newborn infant with pain at the neonatal intensive care unit. Method: this is a descriptive study, with a qualitative approach, carried out with 13 professionals from the nursing team of a reference maternity hospital in the town of Mossoró, Rio Grande do Norte, Brazil. Data collection took place through a semi-structured interview and the analysis used analytical categories. The study was approved by the Research Ethics Committee of Universidade Potiguar (UnP), under the CAAE 00890052000-11. Results: participants believed that the newborn infant feels pain. Thus, they use pharmacological and non-pharmacological measures to obtain relief from this pain. However, the professionals do not use scales for measuring pain in the newborn infant, resorting to individual beliefs. Conclusion: there is a need for greater reflection on the theoretical and practical knowledge regarding care for the newborn infant undergoing painful situations, as well as for the use of assessment scales and physiological repercussions of pain, since we observed a certain inconsistency between knowledge and practices.

Descriptors: Pain; Newborn Infant; Nursing Care.

RESUMO

Objetivo: analisar a assistência de enfermagem ao recém-nascido com dor na unidade de terapia intensiva neonatal. Método: este é um estudo descritivo, de abordagem qualitativa, realizado com 13 profissionais da equipe de enfermagem de uma maternidade de referência no município de Mossoró (RN). A coleta de dados deu-se por meio de entrevista semiestruturada e a análise utilizou categorias analíticas. O estudo foi aprovado pelo Comitê de Ética em Pesquisa da Universidade Potiguar (UnP), sob o CAAE n. 00890052000-11. Resultados: os participantes acreditavam que o recém-nascido sente dor. Assim, utilizam medidas farmacológicas e não farmacológicas para obter o alívio dessa dor. Porém, os profissionais não utilizam escalas para mensurar a dor do recém-nascido, valendo-se de crenças individuais. Conclusão: há necessidade de maior reflexão acerca do conhecimento teórico e prático relativo aos cuidados com o recém-nascido em situações dolorosas, assim como da utilização de escalas para avaliação e repercussões fisiológicas da dor, pois foi observada certa inconsistência entre os saberes e as práticas. Descritores: Dor; Recém-Nascido; Assistência de Enfermagem.

RESUMEN

Objetivo: analizar la atención de enfermería al recién nacido con dolor en la unidad de cuidados intensivos neonatales. Método: esto es un estudio descriptivo, con abordaje cualitativo, realizado con 13 profesionales del equipo de enfermería de una maternidad de referencia en el municipio de Mossoró, Rio Grande do Norte, Brasil. La recogida de datos se llevó a cabo por medio de entrevista semi-estructurada y el análisis utilizó categorías analíticas. El estudio fue aprobado por el Comité de Ética en Investigación de la Universidad Potiguar (UnP), bajo el CAAE 00890052000-11. Resultados: los participantes acreditaban que el recién nacido siente dolor. Así, utilizan medidas farmacológicas y no farmacológicas para obtener el alivio de este dolor. Sin embargo, los profesionales no utilizan escalas para medir el dolor en el recién nacido, ellos se valen de creencias individuales. Conclusion: hay necesidad de una mayor reflexión acerca del conocimiento teórico y práctico relativo a los cuidados al recién nacido en situaciones dolorosas, así como del uso de escalas para evaluación y repercusiones fisiológicas del dolor, ya que se observó cierta inconsistencia entre los conocimientos y las prácticas. Descriptores: Dolor; Recién Nacido; Atención de Enfermería.
INTRODUCTION

Pediatric patients had their analgesic needs undervalued for long. Discomfort and pain in children are often treated with less rigor than in adults.1

Pain is regarded by the NANDA International as a nursing diagnosis and it is defined as a status in which the individual experiences or reports the presence of severe discomfort or an uncomfortable feeling.2

The literature has emphatically addressed the issue of pain in the newborn infant (NBI). In order to able to provide the appropriate treatment for the symptom of these patients, pain assessment scales have been developed; some authors describe that, as communication is absent in the NBI, relieving pain becomes a challenge, and the use of instruments or indicators which take into account behavioral and physiological changes may help qualifying and quantifying pain within this period.3

Numerous factors can affect the NBI at the neonatal intensive care unit (NICU), generating pain and stress due to its environment, which has many technological devices and a large amount of invasive procedures. Given this context, the questions are: “How does the nursing team recognize/identify pain in a NBI at the NICU?”; “What are the strategies used by the nursing team for obtaining pain relief in the NBI?”4

The interest in conducting this study emerged by means of discussions in the academic environment on Neonatology and during practical classes of this discipline. We observed procedures which caused pain in the NBI and this made us reflect on the way how the nursing team identified pain and addressed this issue.

This study is justified by the fact that it allows identifying strategies for providing a qualified care, in order to control and manage pain in the NBI. Besides contributing to the identification of knowledge related to the recognition of pain in the NBI at the NICU; the study also allows describing interventions and strategies used by the nursing team to relieve pain in the NBI, sensitizing the nursing team to provide a more humanized care, and offering means to help the nursing team to recognize pain in the NBI.

The study aims to:

- Analyze nursing care for the NBI with pain at the NICU.
- Identify theoretical and practical knowledge of the nursing team related to the recognition of pain in the NBI at the NICU.

- Describe the interventions and strategies used by the nursing team to relieve pain in the NBI at the NICU.

METHOD

This is a descriptive study with a qualitative approach. A qualitative method is applied to the study of history, relationships, representations, beliefs, perceptions and opinions, products of the interpretations which human beings make about the way how they live, construct their artifacts and themselves, feel and think, having in mind their purpose of finding knowledge related to nursing care for the NBI with pain in a NICU.4

From this perspective, this research was conducted at Casa de Saúde Dix-Sept Rosado (CSDR), a reference maternity hospital in the town of Mossoró, Rio Grande do Norte, Brazil, which is available for the public and private health systems. The study subjects were nursing professionals from a NICU, the sample consisted of 13 professionals and all of them agreed to participate by signing the free and informed consent term (FICT).

Data collection took place by means of a semi-structured interview, with direct and non-participatory observation, recorded, transcribed, and submitted to thematic content analysis.

The interview had professional identification (job, age, length of time in the service) and 6 guiding questions in the survey, concerning the recognition of pain in the NBI, knowledge about pain assessment, use of analgesia in painful procedures, and use of assessment scales. The interview was conducted after approval by the Research Ethics Committee of Universidade Potiguar (UnP), under the Protocol 089/2011 and the CAAE 00890052000-11.

To ensure the anonymity of respondents, we used abbreviations, thus, the letter T was used to identify the nursing technicians and the letter N for nurses. The criterion adopted in the preparation of analytical categories was the relevance of themes addressed by the interviewees.

So, this study complied with the principles of Resolution 196/96, from the Brazilian National Health Council, which provides for standards for researches involving human beings. However, we asked for participants’ authorization to be interviewed (FICT), and a form was also sent to the professionals responsible for the ICUs to authorize this research.
The study analysis was performed using the analytical categories, which are those retaining the key social relationships and they may be regarded as milestones to know the object with regard to its general aspects. 4

RESULTS

Information enabled the description of respondents’ profile. Namely: a semi-structured interview was conducted with 5 nurses and 8 nursing technicians. We observed that all members of the nursing team who provide care in the NICU are women, something which confirms the issue that nursing still is an essentially female profession. Regarding the age group, we found out that the age between 30-36 years is predominant, while the age group between 25 and 26 years represents the category with lower age.

Concerning the length of professional experience, we noticed a predominance of respondents who have 4 to 6 years of experience, totaling 6. Among the respondents who have from 1 to 3 years of experience in the nursing field we have 4, out of which 2 have over 9 years of experience and only 1 has less than 1 year of experience. Out of this total, we observe that 61% have a professional experience over 4 years.

For exploring the material, the speeches were gathered and divided into 3 categories, namely: Professionals’ knowledge on neonatal pain; Strategies used to treat neonatal pain; Treatment during a painful procedure.

Professionals’ knowledge on neonatal pain

Regarding this criterion, we asked why the NBI feels pain and observed that respondents had various opinions, as we can see in the following testimonies:

Because they undergo painful procedures which cause discomfort. (N3)
On their expression, you know, they always show something. (T3)
The NBI expresses pain through reflection in the ends, we notice the facial expression, the cry, the temperature, we notice when a procedure is painful. (N1)

Regarding the way how pain was identified in the NBI, we indicate the following accounts:

By means of irritability, crying, and behavior change. (T2)
Every invasive or painful procedure is expressed, it is… by the child at the time the procedure is performed. (N1)
It is […] tachycardia, dyspnea, among others. (T8)

Verbal communication is absent, then, it becomes a challenge assessing pain. So, the use of instruments or indicators which take into account behavioral and physiological changes may help qualifying and quantifying pain within the neonatal period. (N5)

Regarding the characteristics of the NBI with pain, they reported that she/he had:

Irritability, persistent crying, and discomfort. (T2)
[…] Crying, at first, persistent crying, they get very angry […]. (T4)
[…] They get very angry and the skin, forehead… she/he wrinkle the forehead and kicks about […]. (T4)

When exhibiting facial expression, irritability and crying. (T6)

A very strong and angry crying. (T7)

That is it! The main characteristic of the NBI with pain is facial expression, then, we observe how the child looks, strong crying, body movements, so, the child’s restlessness is usually related to pain […]. (N5)

 […] Hyperextension of limbs, retracted body, withdrawn behavior and staring, tachycardia, etc. (N2)

[…] It is the bending of both lower and upper limbs, It is…: tachycardia, dyspnea, among others. (T8)

Strategies used to treat neonatal pain

When asking what strategies the nursing team uses to relieve pain in the NBI, we highlight the speeches:

We use… 50% glucose in some cases, sometimes it is… for instance, when we are going to treat […] a calcaneus, we use needle on the baby’s heel to assess glucose, this is just an example. (N1)
First, it is the… it is the 50% glucose that we use, we put the droplet into her/his little mouth because sugar helps calming down, that is so because it has been proven by research. (T4)

[…] We administer medication if there is some medicine to prevent pain. (T3)
Medication, positioning change, and warming. (T2)

In addition to the use of painkillers and muscle relaxants, under medical prescription, we use a positioning which brings more comfort to the NBI […]. (N4)

 […] We try to partially cover incubators with a small cloth to avoid excessive light on this NBI, and the positioning change itself […]. (N5)

Treatment during a painful procedure

When asked about the treatment used, they emphasized the pharmacological
Doctors usually resort to Fentanyl in case of intubation […] (T2)

[…] In a sedation, intubation is done, just for preventing the baby to feel pain and… in venous dissection an analgesic is also used […] (T4)

Generally, you know, during painful procedures, some types of analgesia are used, such as, for instance, Fentanyl. you know, which is a type of sedation, and Dormind, too […] (N5)

When asked about what procedures performed with the NBI require analgesia, they said:

[…] When making a venous dissection, for instance, the doctor will surely have to anesthetize this site. It is usually a local anesthesia and Lidocaine is used, right? (N1)

It is... In procedures such as intubation, dissection […] it is always used. (T3)

[…] In painful procedures, such as endotracheal intubation, umbilical catheterization, when the NBI is very agitated […] (N5)

[…] It is arterial puncture, umbilical catheterization, venous dissection, respiratory physical therapy, and aspiration, too, thoracic drainage. (T5)

[…] Thoracic drainage, the analgesic is administered intravenously or orally. (N2)

A... an umbilical catheterization, for instance, as the navel will be cut, they are not sedated, but, if it is an incision, such as a subclavian, the baby have to be sedated on site or even... intranasally. (T7)

DISCUSSION

Professionals’ knowledge on neonatal pain

In order to be able to analyze the professionals’ attitudes with regard to pain in the NBI, at first, there is a need to know what the professionals think about pain.

Regarding the experience and knowledge of the nursing professional about pain in the NBI, non-participatory observation was performed, where we observed that in daily care during the activities of the team at the NICU, all of them were able to identify pain in the NBI. However, whenever there was a need for performing an invasive and/or painful procedure, the team showed to be sensitized to alleviate discomfort, as they thought that they were causing pain. This result shows a paradigm shift, which prevailed until the 1980s, according to which the NBI was not able to feel pain.5

Regarding this criterion, we asked why the NBI feels pain and found out that respondents had opinions such as fact that they undergo invasive procedures, and the relationship between the expression and crying.

Since they are born, NBIs express their physical and emotional needs through behaviors such as, for instance, crying, facial expression, and body movement. It is up to the adult recognizing and interpreting these signs of pain and discomfort, establishing a mechanism to encode, decode, and subsequent decision-making.6

Regarding the way how pain in the NBI was identified, we can see that most professionals reported to have observed the experience with pain in behavioral changes of NBIs, while a minority observed physiological changes.

The parameters which more frequently cited among respondents were crying, a characteristic expression of pain, behavior change, and changes in vital signs (increased heart rate, respiratory rate, and temperature).

We can see that the major challenge in pain assessment in preverbal NBIs consists in understanding the difference between what is pain or discomfort, thus establishing a correct diagnosis of pain. Due to the subjectivity of pain, this is a major difficulty of the nursing team.1

The isolated use of changes in physiological parameters (respiratory rate, heart rate, body temperature, oxygen saturation) would not be enough to translate the actual painful status of the NBI.7

Physiological parameters seem to be useful to assess pain in clinical practice, but, generally, they cannot be used in isolation to decide whether the NBI feels pain and if there is a need for using analgesics. It would be important, also, to associate them to behavioral parameters (facial expression, crying, bending limbs, agitation, irritability).7

Regarding the characteristics of the NBI with pain, the professionals pointed out various manifestations. Among them, we found out that most respondents pointed out crying and irritability as the main characteristics of pain in the NBI.

About this situation, a study shows a great value attributed to cry when assessing the preverbal patient’s pain. However, in practice, its use is very dubious, since crying can be triggered by other stimuli, such as, for instance, discomfort, hunger, and cold, besides the NBIs pharmacologically compromised and intubated, who are unable
to vocalize crying.\textsuperscript{5} Among the respondents, another characteristic pointed out with less importance was change in facial expression. Actually, this manifestation is widely referred to as an index of pain in babies by nurses and its effectiveness and reliability as a tool for assessing neonatal pain.\textsuperscript{5}

We observed that, when the NBI was agitated, something noticed because of change in facial expression, even at moments when no invasive or painful procedure was performed, the nursing team did not provide immediate assistance for the NBI, since professionals prioritized the NBIs who were undergoing a status involving greater severity.

Among the physiological changes, we observed that the nursing team uses as a support to assess and monitor cardiac changes and vital signs, something which provides information not only on cardiac output but also on respiratory rate, SpO\textsubscript{2}, temperature, among others. These trigger alarms whenever there is any physiological change in the NBI, contributing and speeding up care, making it effective and satisfactory.

Researches document that the NBI has all functional and neurochemical components needed for reception and transmission of the painful stimulus. Exposure to painful and stressful stimuli favor behavioral and physiological disorganization.\textsuperscript{6}

Hyperextension of upper and lower limbs and respiratory discomfort were other behaviors observed among respondents. Regarding motor activity, studies show that the NBIs, in face of a painful stimulus, exhibit flexion and extension movements in the ends, chest stiffness, hyperextended neck, sudden and random movements of the head and body.\textsuperscript{5}

In the analysis of knowledge about some instrument/scale for pain assessment in NBIs, few respondents reported to know the existence of pain assessment scales aimed at these patients.

In the service, no type of scale is used and most professionals reported they did not know pain assessment tables for the NBIs. Nowadays, we know that there are several tools and therapeutic resources for assessing pain in the NBI, such as NIPS (Neonatal Infant Pain Scale), N-PASS (Neonatal Pain, Agitation, and Sedation), CRIES, the Neonatal Facial Coding Scale (NFCS), and the Objective Pain Scale HANNALLAH.

We realized that nursing professionals at the NICU do not use the scales as decoders of the pain language, despite knowing some parameters which identify pain within the neonatal period. We also observed that the pain assessment by some professionals is based on individual beliefs, little scientific knowledge, and there is no standardization in services.

Such results suggest that, for the health care professional, a greater theoretical and practical exposure to information about pain and the diagnostic and treatment methods to deal with it within the neonatal period, as these facilitate the recognition of nonverbal behaviors of pain expressed by patients. However, this greater accumulation of knowledge must have not only a practical nature, i.e., it must not be related only to the daily contact with neonatal care.\textsuperscript{6}

\textbullet Strategies used to treat neonatal pain

Regarding the question about the strategies used to treat pain in the NBI, we found out that non-pharmacological methods were emphasized and used, which are effective to treat pain and can be used in daily practice, especially by nurses.

In the research, the use of 50\% glucose solution was the conduct with greater emphasis in pain relief for professionals, because they believe it is one of the major measures to calm down the NBI and decrease her/his pain during painful procedures. Respondents show to know the beneficial effect of glucose for the NBI, calming her/him down before painful procedures.

Studies show that sucrose and glucose have been highlighted because they present a better analgesic effect. This result may be observed through the decreased length of crying, attenuation in the painful facial expression, minimization of the increased heart rate, in addition to decreased pain scores in the application of scales in term and premature NBIs.\textsuperscript{9}

The medicines prescribed by the doctor and positioning change were also cited as strategies to treat NBI’s pain. During the observation, we saw that with regard to positioning change, the nursing team at the unit provides this strategy as a non-pharmacological measure in its daily practice and we observed that it was always conducted at moments when the NBIs were restless, crying, and after painful procedures.

We observed that some professionals interviewed managed the NBIs with their hands, using the skin to skin contact and touch. Minimum possible handling of the NBI, heating, and decreased lighting were also

\textsuperscript{2}References

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pointed out as strategies and a minority commented they use the administration of breast milk, maternal lap, diaper change, bathing at the adequate time, and sound stimulus (low sound).

We also observed that the nursing team understands the importance of keeping the NBI warm, since intrauterine life favors thermoregulation. When the incubator temperature is not satisfactory for the NBI, this causes agitation and, as a consequence, brings discomfort. Before administering analgesic medication, the nursing team may and must use comfort measures to minimize the NBI pain, agitation, and anxiety. Such measures applied alone do not relieve pain, but they are able to reduce agitation and, indirectly, promote behavioral organization, comfort, and rest.10

Raising awareness of the professional who works in the neonatal unit with regard to the painful signs showed by the child seems to improve the diagnosis and, as a consequence, the treatment of dor.7 These measures are effective to promote stability and a good organization of the NBI, and they may be useful to save energy for her/his growth and development.5 Nursing professionals claim that non-pharmacological measures enable the nursing team to perform interventions aimed at prevention and control of pain, based on continuous observation of the NBI.11

♦ Treatment during a painful procedure

Regarding the treatment of pain in the NBI, we asked respondents if at the NICU the NBIs received some type of analgesia during painful procedures, and we found out that all professionals use analgesics in face of medical prescriptions. With this, we observed in their answers in the use of three types of medicines: Fentanyl, Dormonid, and Lidocaine. Only two respondents mentioned analgesic use, but they did not specify the type, as we can identify in the statements.

The pharmacological approach to pain has as its main objective relieving the pain caused by invasive procedures. The medicines must be administered even before the emergence of the signs of functional and behavioral changes.10

Nursing professionals can, before administering analgesic medicines, use comfort measures to minimize pain, agitation, and anxiety in the NBI. The lack of training in pain assessment and objective difficulties, due to lack of clear verbal communication, are other factors which contribute to the deficient treatment of pain in RNs.12

Although safe pharmacological and non-pharmacological measures are already well established, even for preterm NBIs and valid pain scales or behavioral and physiological indicators are available, these resources are not routinely used in most NICUs and they considerably vary, depending on the clinical situation.13 However, it must be stressed that there are no absolute indications for using analgesia within the neonatal period. The decision regarding pain relief must be individualized, but it should not be forgotten. In the same context, we asked the types of procedures which were performed in preterm NBIs who required analgesia; several were cited, however, among the respondents’ responses, that which stood out were venous dissection and intubation.

We realized that professionals recognize that the painful stimulus causes measurable changes in the NBI, with the possibility of long-term repercussions. Considering that pain is a continuous stress, especially in a preterm NBI, many manual procedures apparently non-invasive are perceived as painful. Therefore, the management of pain in the NBI, whether premature or not, must be regarded as a concern of the whole team working in NICUs.

Intubation is one of the most painful procedures in the NICU, almost getting to the top of the list. Although recognizing the adverse effects of pain, many professionals keep intubating on an elective basis with no prior medication.14 Other painful procedures were cited by respondents. Among them, we have umbilical catheterization, chest drainage, surgical procedures, aspiration, blood collection, arterial puncture, puncture of the subclavian pathway, and vesical catheterization.

Regarding the use of analgesia, we realize that there is a need for developing further studies to identify the best indicators of pain in the NBI and compare the effectiveness of various environmental and behavioral measures in our reality, as well as the association of these strategies to the use of medicines.

Regarding the recognition of painful situations in the NICU, the professionals’ reports corroborate studies considering interventions such as venipuncture, tracheal intubation, tracheal tube aspiration, gastric tube, among other situations which potentially promote pain.5 This results agrees with other authors who draw attention to the high number of painful stimuli suffered by the NBI during her/his stay at the NICU.13

We realize that, being a symptom often
The nursing team recognizes and identifies the NBI’s pain through physiological and behavioral changes during painful procedures. The strategies used by the nursing team play a key role with the use of pharmacological interventions, prescribed by the doctor, and non-pharmacological, such as the use of glucose solution, positioning change, skin to skin contact, for preventing and managing NBI’s pain.

We highlight the fact that respondents demonstrate confidence in the strategies offered to the NBI as an analgesic measure by nursing in pain relief. We also found out that the team does not use any scale to help assessing pain in the NBI, but the professional improves treatment in her/his own assessment of pain and with little scientific knowledge.

Assuming that data collection was held in the NICU, we faced a certain difficulty to get into the sector aimed, since, due to divergences between managerial standards, we had to face a substantial delay to complete the research.

Among the factors facilitating this study, we relied on the agreement of professionals, as well as collaboration at the time of observing the procedures undertaken by them. Given the reality found and the construction of this study, we may suggest some indications for a better care. We believe in health education as an instrument for the continued training of these professionals, as well as the construction of protocols which help in the support and production of services.

The use of nursing care systematization (NCS) also emerges as a strategy to put into effect strength in nursing work, qualifying it and contributing to a more purposeful care, concerning pain relief with the NBI. In addition, professionals must be prepared for using the pain assessment table and analgesia standardization. Therefore, there is a need for thinking through the theoretical and practical knowledge of care for the NBI in painful situations, including the identification of physiological repercussions of pain, because we identified a certain inconsistency between knowledge and practice.

REFERENCES


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