

**PAIN MANAGEMENT  
IN THE PREMATURE  
NEWBORN IN THE  
NEONATAL INTENSIVE  
CARE UNIT**

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**Abstract: Goal:**To analyze studies on pain management in newborns admitted to a Neonatal ICU, bringing the view of some authors on the use of assessment scales and drugs for the relief, control and elimination of pain in newborns. **Method:**This is an integrative descriptive literature review with a qualitative approach, which uses data extracted from articles and specialized nursing journals in order to identify the methods used by the nursing team to manage pain in newborns..**Results:** Of the 38 articles selected, only 10 were selected for addressing the topic studied here and for containing the descriptors selected in the years 2015 to 2021. **Conclusion:**It is concluded that it is important to know studies on pain management in NBs as a way to improve knowledge about the assessment, control and minimization of newborn pain and family suffering. It is also concluded that technology and the continuing education of multiprofessionals, especially the nursing team, is of paramount importance so that pain in newborns is identified and treated properly..

**Keywords:** Nursing; Pain in Newborns; ICU; Newborns;

## INTRODUCTION

The continuous development of nursing care in the neonatal intensive care unit (NICU) has increasingly ensured a longer survival of newborns (NB). For this situation to continue to happen effectively, the entire team must always be based on knowledge and curiosity to adapt to new technologies that arise.<sup>1</sup>

Routine procedures in intensive care units are almost always full of stress-generating agents, such as routine procedures, immediacy and instability, therefore, the professional who works must assume commitments, in addition to being sensitive to perception, especially nurses, because they have dealing with the fragility of both newborns and mothers and

family members who experience the same uncertainties in the environment. In view of this experience, the mother's participation as a tutor of the NB has been increasingly implemented, not only as a visitor, but also as an assistant who can safely take care of the child.<sup>2</sup>

For a long time, people thought that NB pain could not be felt or manifested, but studies show that even very premature newborns have sufficient capacity to detect and transmit information about painful stimulation. Your nervous system develops gradually over time, meaning the longer the duration, the better the response to stimuli.<sup>3</sup>

Pain has enough potential to alter the child's psychomotor development, therefore, the health team must have good knowledge of clinical practice to understand how to deal with the assessment, prevention and control of this pain in the intensive care unit. This way, the assistance provided to the NB will have a vision focused on quality, excellence and humanity, thus ensuring more safety for the patient and their families.<sup>4</sup>

## GOAL

The present study aims to analyze the different studies on pain management in newborns admitted to the Neonatal ICU, bringing discussions by some authors about the use of assessment scales and drugs for pain relief, control and elimination. in RN.

## METHOD

This is an integrative literature review study of the descriptive type with a qualitative approach that uses data extracted from articles and specialized nursing journals in order to identify the methods used by the nursing team to manage pain in newborn children.

For the selection of articles, the analysis of publications dated from 2015 to 2021 was stipulated, in Portuguese, English and Spanish,

being selected only the publications that had in their scope the descriptors “Newborn”, “Neonatal Nursing”, “Pain management” and “UTINeo” in databases such as Scielo, Google Scholar and Lilacs. Ten articles were selected whose characteristics are described in the results of this research.

## RESULTS

Of the 38 articles found, only 10 were selected because they address the topic studied here and because they contain the selected descriptors. The collection focused on publications from the years 2015 to 2021. Thus, the integrative literature review presented here has the following characteristics.

Title	Author(s)/Year	Kind of study	objective	Conclusion
Assessment scale. Perception of nurses in neonatal intensive care unit	Monfrin, Xenia Martins; Saraiva, Larissa de aguiar; Moraes, Cristiane Lima de; Viegas. Mine da Costa (2015)	Descriptive study. qualitative, exploratory	To know the perception of nurses regarding the use of a n instrument to assess pain in neonates.	Nurses are unaware of the new technologies used for measure pain; _ however, they all showed up committed to a assistance humanized, a turn what reported interest for the insertion of this assessment instrument
Knowledge and practices of nurses about pain management in newborns	Costa. Tatue; Rossato, Lisabelle Marina°. Bueno. Marina; SeCCO, Isabela Linha; Sposito, Natália Pinheiro Braga; Harrison,Denise; Freitas, Jia Selma de (2017)	Transcript Study transversal	Check knowledge and nurses ' practices on pain management in newborns admitted to Neona tal I ntensi ve Ca re Uni ts '.	the nurses considered neonatal pain as a real event, however no performed evaluation or treatment gives pain in the newborn in a systematic way. It is necessary implements: strategies of knowledge translation to improve management gives newborn pain.
Pain management in the newborn in invasive procedures: a literature review	Lopes. Luciana Pada dos Santos Silva; Acioli, Vanessa de Oliveira Cansação; Alonso. Jessica Pedroso (2018)	literary review systematic	Identify the best ways to analgesia and its beneficial effects applied to neonates during i nva si ve proc edures in the UTIN.	The research work provided the assimilation of methodologies aimed at understanding and identifying gives pain in newborns, the main forms of analgesia used, as each procedure studied. and the related effects beneficial of these techniques for the management gives pain stunned arising from the numerous and constant procedures clinics what constitute the services of neonatology performed in UTINs
the assistance of nursing against pain in newborns Therapia Unit intensive	Durães, Iza Maria Rodrigues Soares; Oliveira, Rachel Cavalcante de. (2018)	Revision integrative of literanwa	identify the main methods used for pain management in newborns by the nursing team and the importance of faxmlia inside the UTINs.	The studies researched point that the nursing team assumes a role essential at minimization of that problem, for being a category what keeps larger contact and greater frequency with these patients, having in your hands the resolution of this impasse with the use. mainly from _ therapy no pharmacological. in addition to knowing how to use assessment instruments _ gives pain in this range age.

Pain assessment in the Neonatal Intensive Care Unit integrative review	Alencar, Rebecca Oliveira Chinchilla de; Ramos, Bruna Abreu, (2018)	Revision integrative of literature	To characterize the assessment of pain in neonates admitted to the UTIN, in order to demonstrate the importance of assessment and appropriate treatment.	Use of scales assessment is of paramount importance for newborns can go through hospitalization more armoniously and humanitarian, being ideal imperative that health professionals are properly prepared for its use
Pain management of the newborn admitted to a neonatal	Uema, Roberta Tognollo Borotta; Queiroz, Rosimara Oliveira; Rissi, Gabrieli Patricio; Shibukawa, Bianca Machado Cruz; Higarashi, Ieda Harumi, (2021)	Descriptive, exploratory research with a qualitative approach	To analyze the knowledge of nurses working in a neonatal intensive care unit about the management of newborn pain	Despite all the technological advances, pain assessment is still unsystematic and based on the professionals' individual interests and experiences, while pain records are not properly performed.
Assistance of nursing to the newborn with pain in the Neonatal Intensive Care Unit]	Sampaio, Simone Gomes; Mascarenhas, José Marcos Fernandes; Alves, Susana Pereira; Sousa, Juliana do Nascimento; Calaça, Maria Luiza da Silva (2019)	integrative review of Descriptive approach	To describe the interventions and strategies used by the nursing team in extension of pain relief for newborns admitted to the Neonatal Intensive Care Unit	The nursing actions contemplate a human and holistic look at the pain of the RN, effectively in the context of improvement and effectiveness of prescribed treatments, making use of knowledge of care practice.
assistance from nursing to newborns with pain in a neonatal intensive care unit an integrative review	Santos, Regilane Cordão dos; Alves, Amanda Paiva Seroardes; Milhomem, Antoninho Barros; Silva, Fabiana Larissa Barbosa da; Amaral, Mérica Santos (2020)	type study exploratory bibliographic with integrative literature analysis	Analyzes - scientific studies of the last 05 years on nursing care for newborns with pain in a Neonatal Intensive Care Unit	It was concluded that there is a need for pain assessment tools, as well as the implementation of care systematization.
technologies of nursing in pain management in newborns in the neonatal intensive care unit.	Nóbrega, Amanda Santana de Medeiros; Cantalice, Anajás da Silva Cardoso; Cerqueira, Ana Carolina Dantas Rocha; Santos, Nathanielly Cristina Carvalho de Brito; Bezerra, Nycarla de Araújo; Chaves, Thayane Ramires Santos (2018)	quantitative, descriptive, exploratory,	Check nursing technologies used in pain management in newborns from my Neonatal Intensive Care Unit.	It concludes that it is necessary to broaden the discussions on this theme from the systematization and permanent education in neonatal intensive care services
Knowledge of the nursing team about newborn pain premature.	Marcondes, Camela; Costa, Antonidle Moreira Dutra da; Chagas, Elen & mala; Rabbit, Joeci Baldia Amorim (2017)	descriptive, exploratory study, with a qualitative approach	identify the knowledge of the Nursing team about pain in premature newborns.	It is necessary to train the multidisciplinary team to identify pain in the neonate and systematize Nursing care to provide effective interventions for pain.

The researches chosen are descriptive, exploratory, literature review or integrative literature review, all with a qualitative approach. The review of the articles made it possible to identify the view of nursing in relation to the pain of newborns (NBs) in a neonatal intensive care unit; the need to train multidisciplinary teams in relation to pain identification in newborns; the need for pain assessment tools in newborns; Need for a humanized look on the part of nursing in relation to NB pain; identification of methodologies for pain identification in NB; and the need to discuss the assessment and nursing techniques for pain identification in Newborns in a Neonatal Intensive Care Unit.

## DISCUSSION

In the study by Monfrim, the authors state that pain can be characterized through its complexity, subjectivity and multidimensionality. Patient relief and comfort are necessary and urgent measures, using scientific technical knowledge and technical skills relevant to nursing practice, without forgetting the issue of humanization, as important as relieving pain that causes stress and discomfort..<sup>5</sup>

Monfrim<sup>5</sup> also states that newborn stress and pain are also related to impaired brain development. Therefore, it is very important to identify pain accurately and correctly. To determine and quantify pain, instruments with behavioral and physiological parameters are generally used. Currently, a variety of tools have been developed to decode the language of pain felt by newborns, one of the instruments used in the study was the Neonatal Pain, Agitation and Sedation Scale (N-PASS). There are a large number of pain assessment instruments, however, in the study by these authors, the scale used was the one mentioned above.

Costa et al. state that in addition to being

necessary to control neonatal pain, it is also necessary that all actions are recorded, according to COFEN Resolution nº 429, of February 15, 2012, which determines as a responsibility and duty of nurses and their team, the registration recorded in the patient's medical record, all activities performed on the neonate, both related to the care process and the management of the work performed, in order to maintain the quality of the information so that the assistance also has a satisfactory level of quality for both the team nursing as well as the other multidisciplinary teams that work in patient care.<sup>6,7</sup>

The study by Costa et al. obtained, as a result, the evidence of the importance of knowledge translation strategies, aiming at an improvement in the recognition and treatment of pain in newborns, thus suggesting studies that involve not only the nursing team, but multidisciplinary teams that also work to reduce pain discomfort in hospitalized newborns.<sup>6</sup>

In the study by Lopes et al. The Pain Scale for Neonatal Newborns was used. *Neonatal Infant Pain Scale* (NIPS), which, according to studies, is the most practical scale to assess pain in newborns, as it does not use calculations in relation to the vital signs presented by the patient. The scale is described in Table 01 for the purpose of illustration for this study.<sup>8</sup>

The authors state that using this scale, it is possible to assess possible signs of pain in newborns and that it can be used by any member of a multidisciplinary team and applies to all newborns, regardless of gestational age. Painful procedures and conditions in newborns have been the subject of research in numerous countries. Such research was undertaken to find and determine the cause and effect of neonatal pain and its consequences. By having a greater bond with the patient in the execution of activities, the nursing team maintains greater relevance

Indicator	The point	1 point	2 point
Facial Expression	Relaxed	Against Going	
Crying	Absent	Mumbling	Vigorous
Breathing	Regular	Different from Basal	
arms	Relaxed	Flexed/Extended	
Legs	Relaxed	Flexed/Extended	
Alert State	Sleeping and/or Calm	Agitated and/or Angry	
Presence of pain: 3 points			

Table 1 - Pain Scale for Neonatal Newborns

Facial movement	The point	1 point
Protruding front	Absent	Absent
Narrowed eyelid slit	Absent	Absent
Deepened nasolabial sulcus	Absent	Absent
Open mouth	Absent	Absent
Stretched mouth (horizontal or vertical)	Absent	Absent
Tense tongue	Absent	Absent
Tongue protrusion	Absent	Absent
Chin tremor	Absent	Absent

Table 2 - Neonatal Facial Activity Coding System (NFCS)

in the practice of measures of protection, control, pause, management and evaluation of pain and neonatal discomfort.<sup>8</sup>

Lopes et al. cites Fanaroff and Klaus where they state that the use of pharmacological interventions help to significantly reduce the pain and discomfort caused by invasive surgery, so that the infant has almost no memory of the operation performed. Among the most commonly used medications for the treatment of neonatal pain, non-opioid analgesics can be used for traditional mild and moderate pain, and acetaminophen (acetaminophen) is the most commonly used.<sup>8,9</sup>

In the study by Durães and Oliveira, the objective was to identify the main methods used by the nursing team to manage pain in newborns and the importance of the family within the Neonatal Intensive Care Unit. Assessment methods use neonatal pain assessment scales that contribute to the control and minimization of pain in NBs, since pain is measurable through interpretations performed through the scales and the nursing team's own experience.<sup>10</sup>

The authors state that there are several pain assessment scales that may vary with age. The most used to identify the pain of a newborn is NFCS (Facial Pain Analog Scale for Newborns). NFCS (*Newborn Facial Coding System*) is a newborn facial movement decoding system, including assessment of the following facial movements: forehead protrusion, palpebral fissure, deep nasolabial fold, open mouth (horizontal or vertical), tense tongue, jaw tremor, highest score is 8 points, if it is less than or equal to 3 points, it is considered pain, according to Table 02.<sup>10</sup>

Another important point presented by the authors Durães and Oliveira was the presence of the family as an aid for the relief of stress in the NB. During hospitalization in the neonatal intensive care unit (NICU), the family is

fundamental. Parental warmth provides a sense of security, love and affection, especially to relieve pain during invasive surgery.<sup>10</sup> When guiding and encouraging mothers, letting them know that certain behaviors (such as touching, warming, talking, singing) help calm the baby, and involving the mother can be a good way to relieve the newborn's pain. During this period, the environment for mothers and children must be as comfortable as possible.<sup>11</sup> As stated by Correa and Neves, the prevention, assessment and treatment of neonatal pain are top priorities. It is important to find a solution that allows everyone to work, do a good job, produce better working solutions and define what is needed.<sup>12</sup>

In the studies by Alencar and Ramos, the authors aimed to characterize the assessment of pain in NBs who were hospitalized in the NICU, proposing to demonstrate the importance of properly assessing pain and treating it efficiently. Therefore, the authors determined that scientific evidence demonstrated that in addition to some discomfort caused by a large amount of sensory stimulation in the intensive care unit environment, the NB admitted to the intensive care unit received a procedure that would cause pain, so the use of the pain assessment scale is crucial, so that the newborn can be hospitalized in a more harmonious and humane way. Therefore, it is necessary to adequately prepare the professionals who work in these sectors, and to be attentive to all signs that may indicate that the patient is in a certain state of pain, so that the mechanism mentioned in this study can be used for pain relief, and thus, provide for those who already suffer, newborns bring greater comfort.<sup>13</sup>

For Uema et al., the study pointed out that professionals know how to assess pain and recognize the signs that the baby has pain, however, they did not follow any type of evaluation protocol, so this diagnosis is not

made in a systematic way, but rather, based on the personal interests and experience of professionals.<sup>14</sup>

Professionals know that the signs of pain are very positive, as it means that they pay attention to the unique characteristics of the baby to remain vigilant in this situation. People who are unfamiliar with neonatology will pass without paying due attention. On the other hand, some reports pointed out that pain assessment must not rely only on nursing, other team professionals must also be responsible for the assessment.<sup>14</sup>

The authors also concluded that the multidisciplinary team lacked standardization and did not participate in comprehensive care for newborns, which resulted in fragmented care. Perhaps because care is closer to the baby in most procedures, it is implied that the responsibility for pain management is still only the nursing team, but in fact this must be in line with the interests and daily tasks of the nursing team. all professionals who deal with this care.<sup>14</sup>

In the study by Sampaio et al. the authors highlighted that the nursing team must be responsible for systematically evaluating the newborn's pain and taking preventive measures to reduce or eliminate the discomfort caused by undesirable irritations or invasive and painful procedures during nursing activities. Nurses are responsible for being able or rarely using non-pharmacological measures to control pain, as these strategies do not require the intervention of other professionals. As measures for pain relief, it is recommended to take measures such as non-nutritive sucking, breastfeeding, skin-to-skin contact, reduction of tactile irritation and use of 25% glucose during the painful process. Literature studies have found that oral sucrose in newborns can reduce crying time and behaviors such as grimacing.<sup>15</sup>

Sampaio et al. also concluded that nursing

actions include a humanized and holistic view of NB pain and the use of skills in nursing practice to effectively promote the improvement and effectiveness of prescribed treatments.<sup>15</sup>

Studies have shown that, despite the technical knowledge of pain management methods for newborns in intensive care, not all units can implement this type of care. In addition to identifying and promoting treatment measures, the nursing team also needs to use scientific evidence as a basis for a reliable assessment of the newborn's pain status. The establishment of pain assessment and treatment methods related to the systematization of care can positively contribute to a more concise and humanized care.<sup>16</sup>

It is noticed that most studies show that professionals can recognize pain and use pharmacological and non-pharmacological relief measures. However, the nursing team usually recognizes the use of non-pharmacological methods and puts them into practice, but this is not done systematically.<sup>16</sup>

Nóbrega et al. describe that in the neonatal intensive care unit, the nursing team is the main characteristic of direct care for the newborn, which clearly shows that their role is to continuously reduce or avoid the painful events caused by the various invasive procedures received by the newborn.<sup>17</sup>

In his research, he observed that among the procedures for pain management most used by the nursing team, the following techniques stand out: the kangaroo mother method, the facilitated containment and the non-nutritive sucking method. In addition, it can be proven that professionals do not adhere to the use of the NB pain and crying scale as one of the most important parameters for the assessment of NB pain. They concluded, therefore, that it is necessary to implement these technologies in a systematic and continuous way and,



therefore, it is necessary to expand these discussions and permanent education in the intensive care services provided to NBs.<sup>17</sup>

Marcondes et al. confirmed that, due to the complexity of an ICU, it is very difficult to train professionals, which makes it difficult to interpret and measure pain signals. As nursing is a science, these professionals need a theoretical basis for its implementation and joint action. Therefore, it is necessary for professionals to be adequately trained in the assessment and treatment of pain to become multipliers of knowledge so that they can develop comprehensive and quality care, strengthening the promotion of care for neonatal development in the intention of a neonatal intensive care unit.<sup>18</sup>

## **CONCLUSION**

It is concluded that, in view of the analyzed studies, there is a need for further improvement of the nursing team for the evaluation, control and relief of pain in newborns, since in the face of the ICU routine, numerous factors must be considered to evaluate pain in the neonatal intensive care unit.

The studies present some scales used to assess pain. It is also discussed the use or not of drugs as an option in the treatment of pain in newborns hospitalized in the neonatal ICU, and also the non-use of drugs, but the physical management of family members such as mother and father, relieving the stress of these NBs. and decreasing the side effects of the treatment in which they are inserted.

Post-invasive procedure pain is also studied and the scale used helps to reduce discomforts due to the practice of its use for the administration of methods to control or eliminate pain and stress in the newborn.

The nursing team, as well as the multiprofessionals and the family must be integrated so that the pain that newborns go through during their stay in a neonatal ICU

can be relieved and the post-hospitalization effects do not compromise the development of this NB, since the objective is their minimum stay in the intensive care unit and their prompt recovery.

## **CONTRIBUTIONS**

This article contributes to the much-needed discussion about the perspective of studies on pain management in newborns, since there needs to be more and more studies dealing with this topic and providing more and more parameters for health professionals who they work with NBs in the neonatal ICU to act and minimize the suffering of these patients and their families, thus contributing to their stay (hospitalization) having the least possible impact.

## **INTEREST CONFLICT**

There is no conflict of interest applied to this article.

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