

Perception and relief of pain in the neonate in the neonatal intensive care unit: integrative review*Percepción y alivio del dolor en el neonato en la unidad de cuidados intensivos neonatales: revisión integradora**Percepção e alívio da dor no neonato na unidade de terapia intensiva neonatal: revisão integrativa***Maíza Claudia Vilela Hipolito¹**

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The aim was to identify techniques for pain perception and promotion of comfort in newborns in a Neonatal Intensive Care Unit. This is an integrative review and for the selection of studies, the Database Platform of the Virtual Health Library was used. The sample included 10 articles that addressed the knowledge and lack of knowledge of nursing professionals about the identification of pain and comfort in newborns. The nursing team must have scientific knowledge to assess pain in newborns to provide quality and humanized care. From this research, it was possible to list several non-pharmacological measures to promote comfort and pain relief in the neonate and although several scales for pain assessment have been mentioned, there are institutions where they are not registered and many nursing professionals are unaware of them or they don't use it.

Descriptors: Pain; Infant; Newborn; Patient Comfort; Nursing, Team; Pain Management.**Resumen**

El objetivo fue identificar t cnicas para la percepci n del dolor y promoci n del confort en reci n nacidos en una Unidad de Cuidados Intensivos Neonatales. Esta es una revisi n integradora y para la selecci n de estudios se utiliz  la Plataforma de Base de Datos de la Biblioteca Virtual en Salud. La muestra incluy  10 art culos que abordaron el conocimiento y el desconocimiento de los profesionales de enfermer a sobre la identificaci n del dolor y el confort en los reci n nacidos. El equipo de enfermer a debe tener conocimiento cient fico para evaluar el dolor en los reci n nacidos para brindar un cuidado de calidad y humanizado. A partir de esta investigaci n fue posible enumerar varias medidas no farmacol gicas para promover el confort y el alivio del dolor en el neonato y aunque se han mencionado varias escalas para la valoraci n del dolor, existen instituciones donde no est n registradas y muchos profesionales de enfermer a las desconocen o no lo usan.

Descriptores: Dolor; Reci n Nacido; Comodidad del Paciente; Grupo de Enfermer a; Manejo del Dolor.**Resumo**

Objetivou-se identificar t cnicas para a percep o da dor e promo o do conforto em reci m-nascidos em Unidade de Terapia Intensiva Neonatal. Trata-se de Revis o integrativa e para sele o dos estudos, utilizaram-se a Plataforma de Bases de Dados da Biblioteca Virtual em Sa de. A amostra incluiu 10 artigos que contemplavam o conhecimento e desconhecimento dos profissionais de enfermagem acerca da identifica o da dor e conforto em reci m-nascido. A equipe de enfermagem deve deter de conhecimento cient fico para avalia o da dor no reci m-nascido para propiciar uma assist ncia com qualidade e humaniza o. A partir desta pesquisa, foi poss vel elencar v rias medidas n o farmacol gicas para promo o do conforto e al vio da dor no neonato e embora tenham sido mencionadas diversas escalas para avalia o da dor, h  institui es onde as mesmas n o s o protocoladas e muitos profissionais de enfermagem as desconhecem ou n o a utilizam.

Descritores: Dor; Reci m-Nascido; Conforto do Paciente; Equipe de Enfermagem; Manejo da Dor.

Introduction

A neonate is defined as the individual who has 27 days, 23 hours and 59 minutes of life from birth. In Brazil, between 2016 and 2020, the average birth rate was 4,788,730.2 births, with the state of São Paulo (SP) leading the ranking, followed by Minas Gerais (MG) and Rio de Janeiro (RJ)^{1,2}.

Until the 1980s, it was assumed that neonates did not feel pain because of the idea that they had a nervous system, which was still developing. However, current studies report that the newborn (NB) has anatomical structures and neurochemical and functional conditions responsible for the transmission of the painful stimulus, immaturely developed from the 7th week of gestation and covering the entire body around the 20th week of gestation, proving that the NB can feel pain³.

The term pain has been updated by the International Association for the Study of Pain (IASP) as an unpleasant sensory and emotional experience associated with, or similar to, actual or potential tissue damage. To have the painful sensation it is necessary to have the neurotransmitters, the dendritic and thalamic ramifications developed and mature. This information reinforces what was mentioned in the paragraph above, and an example of this are the physiological and behavioral changes found after the nociceptive stimulus, such as tachycardia, tachypnea, altered sweating, crying and facial pain mimicry^{4,5}.

The sensation of pain and stress when untreated tend to increase morbidity and mortality in this group, as it induces persistent catabolism, activates the sympathetic nervous system, alters the cardiovascular system and can trigger intense anxiety and delirium, as well as brain development impaired and changes in the central nervous system (CNS)^{5,6}.

Based on the information mentioned above, the idea that it is necessary to prevent, treat pain and promote the comfort of the NB is clear. Carrying out these actions is the duty of health professionals, especially the nursing team, as they are directly responsible for handling and frequent invasive procedures in the Neonatal Intensive Care Unit (NICU)⁷.

Nursing professionals, in order to perform their role efficiently, use techniques such as the use of 25% glucose, non-nutritive sucking, breastfeeding, curling up, snuggling,

maternal care and kangaroo position, aiming at pain relief and promotion of comfort in the neonate⁸.

In view of the facts, the following guiding question was elaborated: “What are the interventions known and used by the nursing team to identify pain and promote comfort in newborns in the NICU?”. In this way, it is proposed as an objective to identify techniques for the perception of pain and promotion of comfort in newborns in the NICU.

Methodology

An integrative literature review study, carried out from September to December 2021, on the Database Platform of the Virtual Health Library (VHL), with the aim of identifying research related to the perception and relief of pain in the neonate in the Health Unit. Neonatal Intensive Care.

The integrative review is a broad methodological approach to article reviews that allow the inclusion of both theoretical and empirical studies. This form of study addresses several definitions of concepts, review of theories and evidence, and analysis of methodological problems of a particular topic on the topic to be investigated⁹.

A search for articles indexed in the Latin American and Caribbean Health Literature databases (LILACS), Revolving Fund for Strategic Public Health Provisions (PAHO IRIS), System Biology Research Group (BIGG), Regional Database of Health Reports was carried out. Evaluación de Tecnologías em Salud de las Américas (BRISA), Regional Observatory of Human Resources de Salud and PIE, through the Health Sciences Descriptors (DeCS) pain, newborn, health strategies, patient comfort, nursing staff and pain management, which were integrated using the Boolean logical operator “AND”. Afterwards, the search for articles was carried out using the DeCS in two stages: 1st nursing team, pain and comfort in the newborn and 2nd pain management, nursing and newborn⁹.

The elaboration of the guiding question was based on the PICo strategy, which represents an abbreviation for Patient, Intervention, Context. Thus, following this model, the question remains well-prepared and allows the search for more objective and orderly information and evidence, avoiding redundant research. Chart 1 elucidates the PICo strategy used to prepare the guiding question: “What are the interventions known and used by the nursing team to identify pain and promote comfort in newborns in NICUs”¹⁰?

Chart 1. Description of the PICo strategy. Campinas, SP, Brazil, 2021

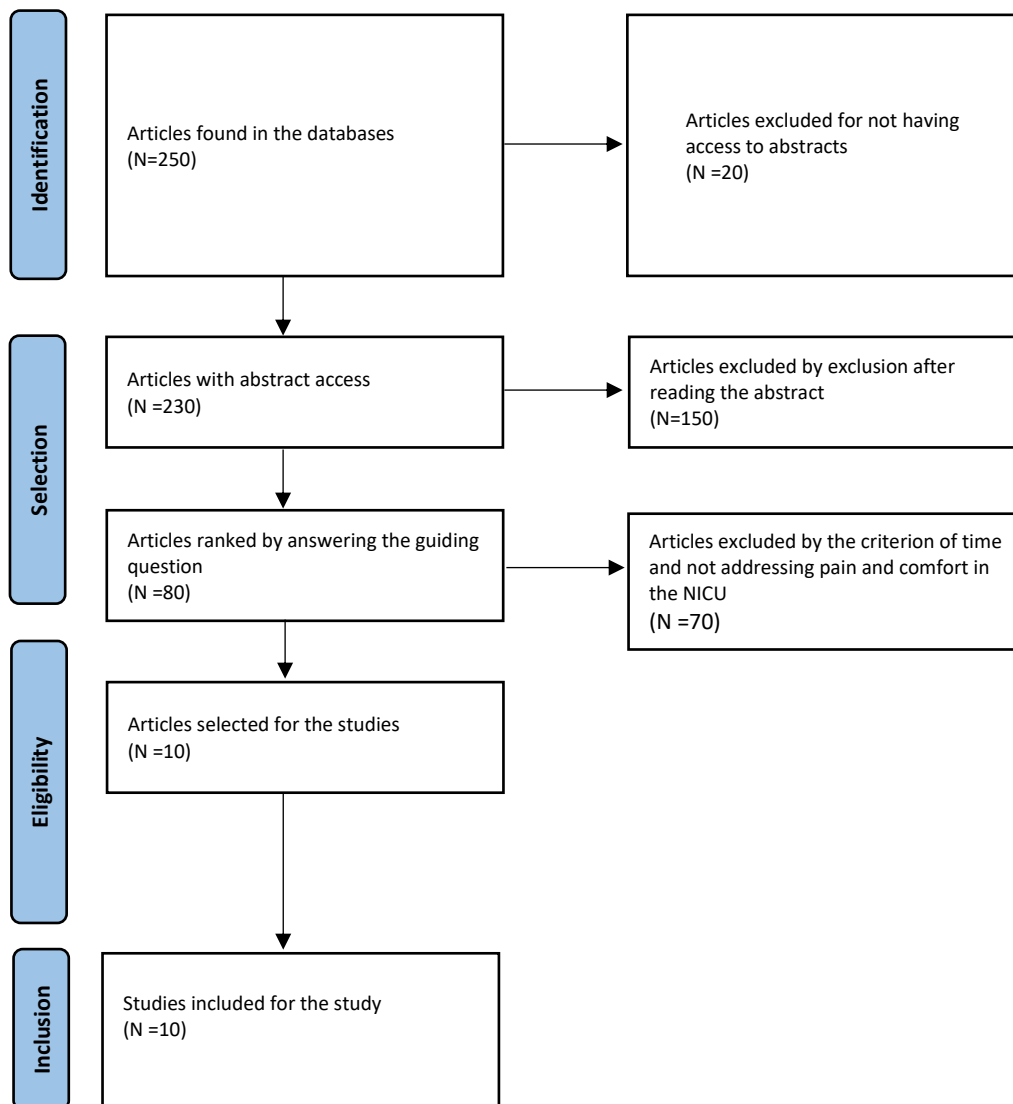
Abbreviation	Definition	Description
P	Patient or problem	Newborn in the Intensive Care Unit
I	Intervention	Different ways to identify pain and provide comfort
Co	Control or comparison	Check the strategies used by the nursing team to recognize pain to provide well-being

The research sought articles that included studies carried out with newborns on the central theme “Pain and Comfort” in NICUs, since the need to study techniques for

the perception of pain and promotion of comfort in this public was detected. Flowchart 1 describes the representation of the first step in the search for articles.



Flowchart 1. Representation of the method of the first stage of the search for articles. Campinas, SP, Brazil, 2021



Content analysis was used according to Bardin, which can be defined as a set of methodological instruments in constant improvement, which apply to different discourses (content and continents). This method allows the categorization of the meanings of messages¹¹.

Results

In the first survey “nursing staff, pain and comfort in the newborn”, five articles were found without filtering. Subsequently, the following filters were added: Neonatal Intensive Care Units, pain, pain measurement, newborn, patient comfort and pain management (main topic); Portuguese (language) and last five years (publication year interval), resulting in three articles, of which only 1 was included in the study, as the other 2 were excluded according to the following exclusion criteria: articles that contained participation of physicians and physiotherapists in the study.

In the second survey “Pain management, nursing and newborns” 245 articles were found without filtering.

Subsequently, the filters were added: Pain management, pain, pain measurement, Neonatal Intensive Care Unit, newborn, neonatal nursing and Neonatal Intensive Care (main subject); Portuguese (language) and last five years (publication year interval), resulting in 29 articles, of which nine were included and 20 were excluded according to the following exclusion criteria: articles that had only pharmacological measures for pain relief, content that addressed issues of a specific pathology or procedure, topics focused on the pain of pregnant women during labor and delivery, analyzes of painful procedures in newborns, studies that used videos to present the topic, use of social networks as a field of research for data collection, titles of articles that contained analysis of psychological factors, studies that contained the participation of health professionals in general, documents that did not contain the article in full and any other article that did not contemplate the objective of this research.

Chart 2. Description of articles on knowledge of methods by the nursing team to identify pain and provide comfort, 2021. Campinas, SP, Brazil, 2021

Authors	Title	Objective	Main Results
Araújo BS, Araújo BBM, Araújo MC, Pacheco STA, Reis AT, Marta CB ¹² .	Práticas de avaliação e manejo da dor na unidade neonatal	To identify the frequency of difficulty of professionals in observing the parameters of the Neonatal Infant Pain Scale in the Newborn. To describe the types and frequency of non-pharmacological pain relief and prevention measures that are used by nursing professionals.	Pain identification and management are performed empirically.
Dantas JM, Machado MED, Silva LF, Paiva ED ¹³ .	Manejo da dor neonatal pela equipe de enfermagem: uma prática assistencial sedimentada?	To analyze the practice of the nursing team regarding pain management of the NB admitted to a neonatal unit.	It was found that the nursing team recognizes that the neonate feels pain, uses physiological and behavioral parameters and employs non-pharmacological measures for its control, but does not use pain assessment scales.
Nóbrega MAS, Cantalice ASC, Cerqueira ACDR, Santos NCCB, Bezerra, NA, Chaves TRS ⁷ .	Tecnologias de enfermagem no manejo da dor em recém-nascidos na unidade de terapia intensiva neonatal	To verify nursing technologies used in the management of pain in newborns in a Neonatal Intensive Care Unit.	It was observed that the use of a pain scale is not part of the routine and crying was the most used parameter to recognize pain in the neonate.
Costa T, Rossato LMB, Secco IL, Sposito NPB, Harrison D, Freitas J ¹⁴ .	Nurses' knowledge and practices regarding pain management in newborns	To verify the knowledge and practices of nurses on pain management in newborns admitted to Neonatal Intensive Care Units.	Most nurses use pain assessment scales and the non-pharmacological measures adopted, for the most part, were the use of sweetened solution, non-nutritive sucking and positioning.
Costa KF, Alves VH, Dames LJP, Rodrigues DP, Barbosa MTSR, Souza RRB ¹⁵ .	Manejo clínico da dor no recém-nascido: percepção de enfermeiros da unidade de terapia intensiva neonatal	To analyze the perception of nurses about the clinic of pain in the neonate in the neonatal intensive care unit.	Nurses recognize that the neonate feels pain, but it is necessary for the professional to evaluate the physiological and behavioral signs, for example, heart and respiratory rate, systolic blood pressure (SBP), oxygen saturation (Sat. O ₂), palm sweating, tonus vagal and facial mimicry.
Elias LSDT, Cajigas C, Thimóteo BS, Barbisan GG, Cavaleri JB, Alvez TM ⁵ .	Avaliação da dor na unidade neonatal sob a perspectiva da equipe de enfermagem em um hospital no noroeste paulista	To assess how pain is being identified, interpreted and treated in the neonatal period in a high-risk Neonatal Intensive Care Unit of a teaching hospital in the interior of the state of São Paulo.	The facial pain scale method was used to identify pain in neonates and crying was associated with maximum pain in 60% of nursing assessments.
Dames LJP, Alves VH, Rodrigues DP, Souza RRB, Medeiros FVA, Paiva ED ¹⁶ .	Conhecimento do enfermeiro acerca do manejo clínico da dor neonatal: estudo descritivo	To analyze the knowledge of nurses in their care practice in the clinical management of neonatal pain.	It was observed that nurses are unaware of the practice of clinical pain management, which is not a routine in neonatal care, as well as the use of scales for evaluation.
Oliveira IM, Castral TC, Cavalcante MMFP, Carvalho JC, Daré MF, Salge AKM ¹⁷ .	Conhecimento e atitude dos profissionais de enfermagem sobre avaliação e tratamento da dor neonatal	To verify the knowledge and attitude of nursing professionals in a neonatal unit regarding the assessment and treatment of acute pain in newborns.	Most professionals are knowledgeable about pain management, but the application of the pain scale and relief measures is inadequate.
Soares ACO, Caminha MFC, Coutinho ACFP, Ventura CMU ¹⁸ .	Dor em unidade neonatal: conhecimento, atitude e prática da equipe de enfermagem	To assess knowledge, attitude and practice of the nursing team in the management of pain in newborns, according to professional training.	When evaluating the training of each professional, it is concluded that not all were qualified and trained for this function.
Querido DL, Christoffel MM, Machado MED, Almeida VS, Esteves APVS, Matos PBC ⁸ .	Percepções dos profissionais sobre a dor neonatal: estudo descritivo	To know the perceptions of health professionals about pain in a neonatal intensive care unit.	In the perception of professionals, pain exists and assessment and management are present in their daily lives, however, knowledge on the subject needs to be deepened so that there is applicability in the sector.

Discussion

In the perception of professionals, pain exists and assessment and management are present in their daily lives, however, knowledge on the subject needs to be deepened so that there is applicability in the sector.

Knowledge of methods by the nursing team to identify pain and provide comfort

In this theme, they identified six articles that pointed to the knowledge of pain recognition methods. Research carried out with the aim of describing strategies of nursing teams for the identification, assessment and interventions of pain in newborns hospitalized in NICUs



found that the management of pain in newborns, in a scientific and standardized way, must be a constant in the practice of the health team in intensive care, so that the assistance is of quality, safe and humanized¹⁹.

Certain hospital institutions develop and use protocols for standardizing, directing, ensuring and raising the quality of interventions provided during nursing care. Professionals in the field have a responsibility to know them and execute them correctly.

During nursing care for the NB in the NICU, the first step is to use tools to identify the problem, the pain. Based on the content of the studies selected in the search for articles, the Pain Scales (BIIP-Behavioral Indicators of Infant Pain Scale; EDIN-Échelle Douleur Inconfort Nouveau-Né Scale; NFCS-Neonatal Facial Coding System Scale - System of Neonatal Facial Coding and PIPP-R-Premature Infant Pain Profile) as tools for pain identification.

Chart 3. Scales used to assess the presence of pain and its level in newborns in the NICU. Campinas, SP, Brazil, 2021

Scale name	Evaluated items
Escala BIIP – Behavioral Indicators of Infant Pain	Assesses sleep/wake state in five different facial paths and two different hand movements.
Escala EDIN – Échelle Douleur Inconfort Nouveau-Né	Assesses facial expression, body movements, quality of sleep, quality of interaction and comfort/consolability.
Escala NFCS - Neonatal Facial Coding System – Sistema de Codificação Facial Neonatal	It only assesses aspects of facial expressions: frowning forehead and eyes, deepening of the nasolabial fold and horizontal stretching of the mouth.
PIPP-R-Premature Infant Pain Profile	Assesses gestational age, alertness, heart rate, oxygen saturation (O2) and facial expressions (frowned forehead, closed eyes and sulcus deepening).

To minimize pain, there are pharmacological or non-pharmacological interventions. Among the pharmacological measures best known and used by nursing professionals are the use of medication as prescribed by a physician²⁰.

And the most well-known and used non-pharmacological measures are the management of glucose 25%, non-nutritive sucking, wrapping or "packing", skin-to-skin contact or kangaroo method, facilitated containment, breastfeeding, environmental measures such as reducing noise and luminosity, bedtime, change of decubitus en bloc, use of sucrose 25% and others (reduction in handling the neonate, Shantala, balneotherapy and music therapy)⁸. Such measures help to improve the treatment and care process, constituting, therefore, a strategy to improve the health and quality of life of neonates^{8,21}.

Therefore, the scientific knowledge of the nursing team about pain relief methods and, consequently, offering comfort to the NB, are fundamental for safe, quality and humanized care.

Lack of knowledge of methods by the nursing team to identify pain and provide comfort

Four articles revealed the lack of knowledge of pain recognition methods. A study carried out at the Maternity School in Rio de Janeiro (RJ) found that the professionals who were interviewed admitted difficulties in the identification, assessment and management of neonatal pain in their daily lives related to the lack of appropriate knowledge and the absence of institutional protocols to standardize the management of neonatal pain. However, these barriers did not prevent them from applying non-pharmacological strategies for pain relief, such as non-nutritive sucking, positioning and 25% glucose⁸.

Research in the Neonatal Unit of a referral hospital in Recife (PE) aimed to assess knowledge, attitude and practice of the nursing team in pain management in NB, according to professional training. It was found that, when

comparing knowledge, attitude and practice of the nursing team, there was a better performance for attitude, although it was not statistically significant. In knowledge and practice, at the tertiary level, the value was significant for those who received training in pain management. Therefore, professionals who work with the NB must be trained and continuously trained, so that theoretical knowledge reflects on professional practice¹⁸.

In addition, the professional's career time influences and adds to their knowledge, since in their daily lives there are several situations that lead them to develop skills and competences to effectively solve these complications¹⁸.

Research carried out with nursing professionals from a neonatal unit in the Midwest aimed to verify the knowledge and attitude of nursing professionals from a NICU regarding the assessment and treatment of pain in NBs, noting that the professionals used only one scale during the shift, being that the protocol recommended by the Brazilian Society of Pediatrics is more than one scale to assess neonatal pain. On the other hand, these same professionals demonstrated extensive knowledge about non-pharmacological strategies for pain relief, such as noise and light reduction, kangaroo position, breastfeeding and music therapy¹⁷.

The in-depth lack of knowledge on the subject leads professionals to use only pharmacological measures for pain management, however they perceive the need and importance of mastery during nursing care for the quality of care. One of the reasons for the lack of knowledge would be the scarce approach to the topic during the period of technical and higher education in nursing, which leads to a deficiency in the management of this public^{16,18}.

In view of this, the lack of implementation of protocols, in addition to the team's lack of knowledge regarding pain assessment tools and inadequate use of the pain scale due to lack of qualification, are factors that impair care for the NB. Even though many professionals claim to



have extensive knowledge of relief measures, validated scientific knowledge guarantees better quality care.

Final Considerations

Therefore, there is a remarkable amount of non-pharmacological measures that are used to reduce pain and promote the comfort of the NB who is hospitalized in a NICU, a place that generates great stress due to intense exposure to noise, light and painful processes such as puncture of peripheral and central venous accesses, passage of probes and catheters.

Although the review only contemplated a national database, it was possible to achieve the objective proposed in this work with studies of great excellence.

It is also worth remembering the benefits generated for the NB when these measures are used correctly: improvement in vital signs, the possibility of reducing the length of stay in the NICU and helping to develop the immune system. Therefore, it is extremely important that these are addressed during the study period, so that in the future nursing professionals are able to face these situations so common in the hospital environment.

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