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Review Article

Pain relief measures in infants with family participation: an integrative review

Medidas de alívio da dor em neonatos com a participação da família: revisão integrativa

Medidas de alivio del dolor en neonatos con participación familiar: revisión integradora

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Abstract

Objective: to analyze the scientific evidence of non-pharmacological pain relief measures used in infants in the Neonatal Intensive Care Unit with family participation. **Method**: an integrative review in the Cumulative Index to Nursing and Allied Health Literature, A biomedical research database, National Center for Biotechnology Information databases, and Virtual Health Library portal, in August 2021, without time frame. **Results**: ten studies were selected and categorized as non-pharmacological measures with direct and indirect family participation and the effect of interventions with family participation compared to other non-pharmacological measures. **Conclusion**: direct family participation was mostly linked to the maternal figure, with skin-to-skin contact. With regard to indirect participation, expressed breast milk was the main measure. Non-pharmacological measures addressed in isolation or in combination are effective.
Descriptors: Infant, Newborn; Pain; Pain Management; Family; Intensive Care Units, Neonatal

Resumo

Objetivo: analisar as evidências científicas das medidas não farmacológicas de alívio da dor utilizadas nos neonatos na Unidade de Terapia Intensiva Neonatal com a participação da família. **Método**: revisão integrativa, nas bases de dados *Cumulative Index to Nursing and Allied Health Literature, A biomedical research database, National Center for Biotechnology Information*, e

portal Biblioteca Virtual de Saúde, no período de agosto de 2021, sem recorte temporal. **Resultados**: foram selecionados dez estudos, categorizados como medidas não farmacológicas, com a participação direta e indireta da família e o efeito das intervenções com a participação da família comparadas a outras medidas não farmacológicas. **Conclusão**: a participação da família de forma direta foi, em sua maioria, vinculada à figura materna, com o contato pele a pele. Com relação a participação indireta, o leite humano ordenhado foi a principal medida. As medidas não farmacológicas abordadas de forma isolada ou associadas são efetivas.
Descritores: Recém-Nascido; Dor; Manejo da Dor; Família; Unidades de Terapia Intensiva Neonatal

Resumen

Objetivo: analizar la evidencia científica de las medidas no farmacológicas de alivio del dolor utilizadas en neonatos en la Unidad de Cuidados Intensivos Neonatales con la participación de la familia. **Método:** revisión integradora, en el Cumulative Index to Nursing and Allied Health Literature, A biomedical research database, National Center for Biotechnology Information, y el portal Biblioteca Virtual de Saúde, en el período de agosto de 2021, sin marco de tiempo. **Resultados:** se seleccionaron diez estudios, categorizados como medidas no farmacológicas, con participación directa e indirecta de la familia y el efecto de las intervenciones con participación de la familia frente a otras medidas no farmacológicas. **Conclusión:** la participación directa de la familia estuvo, en su mayoría, ligada a la figura materna, con contacto piel a piel. En cuanto a la participación indirecta, la leche humana extraída fue la principal medida. Las medidas no farmacológicas abordadas solas o en combinación son efectivas.
Descriptores: Recién Nacido; Dolor; Manejo del Dolor; Familia; Unidades de Cuidado Intensivo Neonatal

Introduction

In Neonatal Intensive Care Units (NICU), newborns (NB) are commonly exposed to multiple stressful or painful events. Advances within the NICU have transformed it into a noisy and stressful sector, with the presence of noise, high luminosity, in addition to excessive handling for care interventions, which results in discomfort and pain for infants.[1]

Pain is one of the major causes of stress in NBs, expressed through painful procedures, which are defined as those that invade the body's integrity, causing skin or mucosal damage. Every painful procedure is stressful, as it mainly causes discomfort, physical discomfort and/or interrupts the existing balance between NBs and the environment around them.[2-3]

Pain management in the neonatal period should be based on prevention and accurate identification of the presence of pain, which is the first step towards its optimal management.[4] Among the possible measures for pain relief, those that can

be introduced with family participation, such as skin-to-skin contact, breastfeeding, non-nutritive sucking, facilitated containment, positioning as well as expressed breast milk stand out.[5]

A premise stipulated by the Kangaroo Method is that the attention and care of NBs in NICUs must aim at their harmonious and global development. In this context, the support network permanence within the hospital environment becomes an ally to infant development, bringing benefits. The permanence of parents/family in inpatient unit is treated as a therapeutic indication by the Kangaroo Method, as well as encouraging the active participation of parents in care, reducing NBs' exposure to discomfort and stress, protecting children's development.[6]

The differential of the Kangaroo Method is the recommendation that parents are not seen as mere visitors in the context of babies, but as team partners, assuming appropriate roles and functions in the care of their NBs, giving them the opportunity to interact with their child, participate in decisions, receive information, provide care and make use of the Kangaroo Position, which emphasizes the importance of good team communication; it implies to assume that NB treatment involves more than just the use of procedures and techniques.[6]

Studies that assessed the brain of NBs by means of electroencephalogram and magnetic resonance showed that preterm infants who had the help of their parents in reducing stress arising from a painful stimulus showed better brain white matter microstructure, maturation and connectivity when compared to those who received standard care, i.e., performing procedures in the incubator. Supportive experiences such as skin-to-skin contact and breastfeeding favored stronger brain responses.[7-8]

The comprehensive care perspective speaks of co-responsibility as one of the fundamental principles of child x caregiver/family x responsible professional relationship, encouraging the bond to minimize the barriers that keep the family away from pain management and reaffirming its essential role with NBs during hospitalization.[9]

Parents are guaranteed the permanence during the entire period of

hospitalization in the NICU, in addition to encouraging the participation and leading role of parents in NB care, having their participation, in this context, the potential to reduce the exposure of their babies to discomfort and stress, contributing to a safe assistance, which promotes NBs' comfort and better development.[6,10] In this context, this study aimed to analyze the scientific evidence of non-pharmacological pain relief measures used in infants in the NICU with family participation.

Method

This is an integrative literature review comprising 6 steps: (1) research question definition; (2) literature sampling; (3) categorization of studies; (4) assessment of included studies; (5) interpretation of results; and (6) integrative review presentation.[11]

In the first stage, the main question was defined: what is the scientific evidence on NB pain management in the NICU with family participation? The PICo strategy, acronym for the population (P), the phenomenon of interest (I) and the context (Co), was used.[12] Thus, they were defined as P - NB family, I - pain management and Co - NICU.

In the second stage, literature sampling was established in which the searches took place in the databases: National Library of Medicine (MEDLINE), Latin American and Caribbean Literature on Health Sciences (LILACS) and *Banco de Datos de Enfermería* (BDENF) of the Latin American and Caribbean Center on Health Sciences Information (Virtual Health Library/BIREME), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Biomedical Research Database (EMBASE) and National Center for Biotechnology Information (PubMed). Descriptors were used for each database in Health Sciences from the Virtual Health Library (VHL) and PubMed DeCS/MeSH, CINAHL headings, and EMBASE Emtree. These descriptors were combined with Boolean connectors, as well as filters were used, when allowed, by the base or portal.

In the VHL portal, the search strategy used was: "*recém-nascido*" AND "*unidade de terapia intensiva*" AND "*pais*" OR "*mães*" OR "*família*" AND "*manejo da dor*" OR "*dor*" OR "*dor aguda*" OR "*percepção da dor*" OR "*medição da dor*". The filters were applied: full text; language (Portuguese, English and Spanish); NICU; country; premature NB; family; mothers; NB; father; breastfeeding; very low birth weight NBs; Kangaroo Method; low birth weight NBs;

pain; pain management; perception; pain measurement; grandparents; extremely low birth weight NBs; acute pain; and breast milk.

In the CINAHL database, the strategy used was: "newborn" AND "neonatal intensive care unit" AND "pain management" NOT "pharmacologic". The available full text and abstract filters were applied. In EMBASE, the strategy used was: "newborn" AND "neonatal intensive care unit" AND "analgesia". The studies found were exported to the Zotero reference manager, in folders for each database. Data collection took place in August 2021, and no time frame was established.

Articles available in full for free and that addressed the use of any non-pharmacological method of pain management in the NB within the NICU with the participation of family/mother/father were included. Articles that only addressed knowledge and measurement of parents' knowledge on the subject or that discussed only perception and pain assessment were excluded.

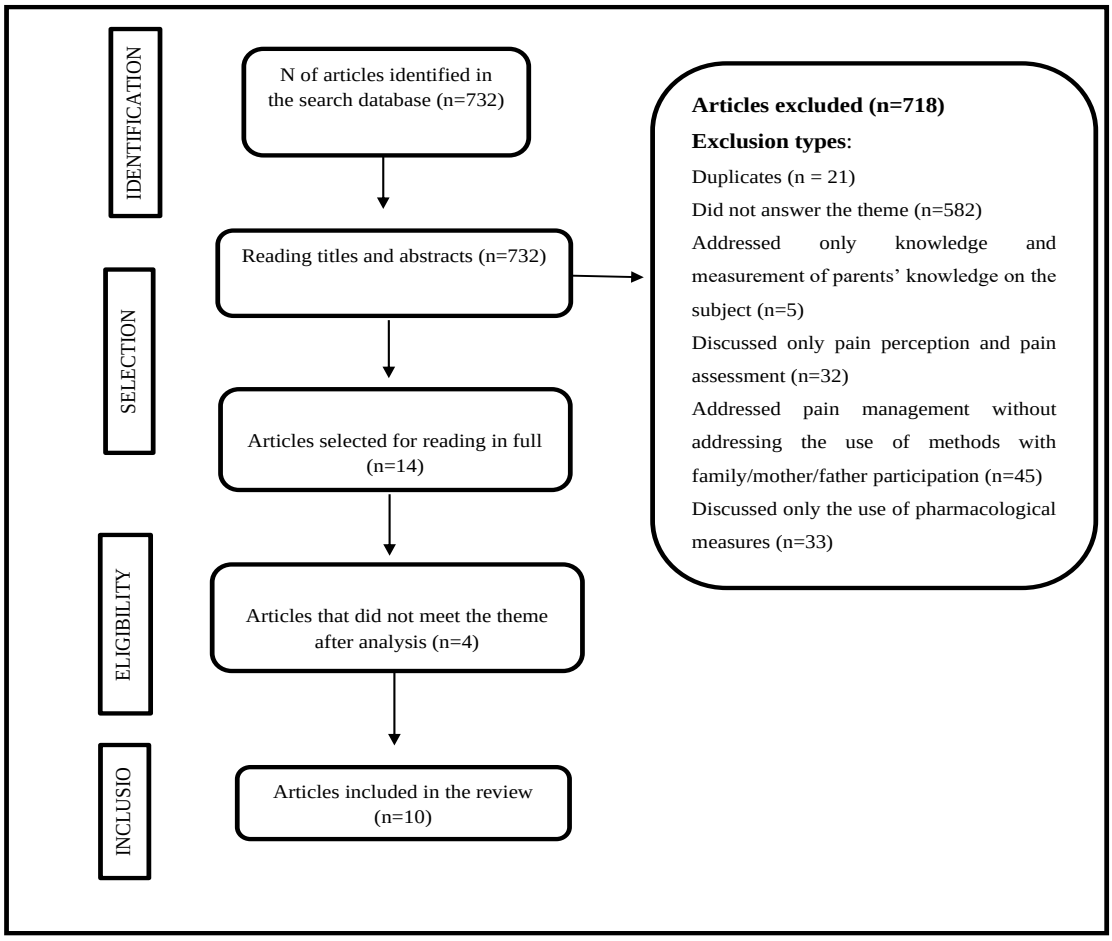

Figure 1 - Selection flowchart of primary studies. Rio de Janeiro, RJ, Brazil, 2021

In the third stage, categorization of studies, an instrument was used with the following elements present: identification; database; title; research authors; year; country; objectives; method; participants; pain management; and results.[11]

In the fourth stage, assessment of clinical studies, we used the classification by level of evidence according to the Registered Nurses' Association of Ontario, being considered Ia meta-analysis or systematic review of randomized controlled trials, Ib, the controlled randoms; IIa, well-designed controls without randomization; IIb, well-designed quasi-experimental; III, well-designed descriptive, non-experimental, such as comparative, correlational and case study; and IV, reports of expert committees or opinions and/or clinical experiences of respected authorities.[11]

In the fifth stage, interpretation of results, synthesis and categorization were performed according to the most addressed themes. Categorization was guided aiming at answering the guiding question and optimizing the stage of discussing the results, making it possible to identify possible gaps in knowledge that can guide future research.

In the sixth stage, integrative review presentation, the main points identified in data analysis were addressed in a descriptive way, unraveling key points of each study included in the review and identifying family participation in pain relief with non-pharmacological measures, as well as the effect of using these interventions compared to other non-pharmacological methods, alone or in combination.

Results

Ten studies were analyzed; of these, two had France as their country of origin, one, Finland, one, Canada, one, Taiwan, one, Turkey, one, the United States of America, one, China, one, Brazil and one, South Korea. The predominance of the English language was observed in the 10 articles. Regarding the year of publication, one article was found for each of the respective years 2008, 2015, 2016, 2017, 2019 and 2021, and two were found for the years 2018 and 2020, respectively. The levels of evidence were one article Ia, five articles Ib, two articles IIa and two articles III.

Chart 1- Synthesis of related studies. Rio de Janeiro, RJ, Brazil, 2021

Study/ level of evidence	Participants	Non-pharmacological measure used	Who applied the measure	Painful procedure and pain assessment
S1[13]/ Ib	68 NBs	(1) Cuddle-snuggle technique and 24% oral sucrose with NNS; (2) 24% oral sucrose with NNS.	(1) Mother group and team member group; (2) Researcher	Venipuncture/APN
S2[14]/ III	177 NBs	(1) Physical methods such as touching, holding and positioning; (2) NNS with 24% oral sucrose; (3) Breastfeeding; (4) Recorded music.	Parents	Heel puncture or any event considered painful by parents/Visual scale
S3[15] / Ib	33 NBs	(1) Olfactory sensory stimulation with EBM odor by diffuser; (2) NNS and odorless diffuser. Both groups received a kind of nipple, and its use was directed to NNS in the control group.	Researcher	Venipuncture/PIPP; DAN Scale
S4[16]/III	242 NBs	(1) SSC; (2) Breastfeeding.	Mothers	Procedures that cause or not break the skin/PIPP
S5[17]/IIa	140 NBs	(1) Routine care; (2) EBM odor or taste; (3) EBM odor or taste + heartbeat sounds; (4) EBM odor or taste + heartbeat +NNS.	Researcher	Venipuncture/PIPP-R
S6[18]/Ib	187 NBs	(1) Mother's EBM; (2) Winding; (3) Facilitated containment; (4) Routine care. EBM, winding and facilitated containment were also used in combination.	Researcher	Orogastric tube/PIPP insertion
S7[19]/Ib	75 NBs	(1) SSC; (2) Routine care.	(1) Mothers; (2) Researcher	Heel puncture/duration of crying and grimacing and change in HR
S8[20]/Ib	10 NBs	SSC.	Mothers	Heel puncture/crying time
S9[21]/Ia	403 NBs	(1) SSC; (2) Facilitated containment; (3) Prone or supine.	(1) Mothers; (2) Fathers; (3) Researcher	Heel puncture, ROP screening and diaper

				change/PIPP, NIPS, NFCS and SCA
S1[22]/IIa	56 NBs	(1) SSC; (2) Control group.	(1) Mothers; (2) Not specified	Heel puncture/PIPP

Caption: NNS - non-nutritive sucking; EBM – expressed breast milk; PIPP - Premature Infant Pain Profile; DAN - *Douleur Aiguë du Nouveau-né*; PIPP-R - Premature Infant Pain Profile – Revised; NIPS - Neonatal Infant Pain Scale; NFCS - Neonatal Facial Coding System; APN - Acute Pain in Neonates; SCA - Skin Conductance Algesimeter; NB - newborns; HR - heart rate; ROP - retinopathy of prematurity; SSC – skin-to-skin contact.

The most studied population were preterm NBs, with 1,220 NBs with gestational age less than 37 weeks participating in the studies,[15-22] and 177 full-term NBs, with a gestational age equal to or greater than 37 weeks.[13-14.22] The most observed painful procedure was heel puncture,[14,16,19-22] as well as the non-pharmacological measure most used directly by the family was skin-to-skin contact (SSC),[14,16,19-22] and indirectly expressed breast milk (EBM).[15,17-18]

The most common form of pain assessment was through scales, among which the Premature Infant Pain Profile (PIPP),[15-16,18,21-22] *Douleur Aiguë du Nouveau-né* (DAN),[15] Infant Pain Profile – Revised (Revised PIPP-R),[17] Neonatal Infant Pain Scale (NIPS),[21] Neonatal Facial Coding System (NFCS),[21] and Acute Pain in Neonates (APN) stand out.[13] With regard to pain assessment by subjective parameters, the Skin Conductance Algesimeter (SCA),[21] and parameters such as facial expression, crying, sleep pattern and quality, respiratory pattern, increased heartbeat, saturation of O_2, skin color, posture, body movement, quality of interaction with the team and duration of crying in four studies,[14,17,19-20] in a combined way between them or associated with some scale.

The direct family participation was the most observed,[13-14,16,19-22] followed by indirect participation.[15,17-18] Most of family's participation was linked to the maternal figure,[13.15-22] and only one study addresses maternal and paternal participation.[14]

The primary studies analyzed in this integrative review allowed the construction of three categories: "Non-pharmacological measures with direct family participation", "Non-pharmacological measures with indirect family participation" and "The effect of interventions with family participation compared to other non-pharmacological measures".

Discussion

Non-pharmacological measures with direct family participation

Direct family participation was considered to be those pain relief measures provided directly by fathers or mothers to hospitalized infants, having been observed in non-pharmacological methods related to positioning and contact, with SSC being the most used and encouraged among the findings.[16,19-22] Breastfeeding was observed outside the bond-affection axis and addressed as a measure of pain relief.[14.16] Other forms of direct mother participation mentioned were the use of "cuddle-snuggle", defined as keeping the baby in a safe, cozy and relaxing position,[13] and the facilitated restraint performed by parents.[14,21] A study used winding, non-nutritive sucking (NNS), and recorded music.[14]

A study that brings a record of all non-pharmacological interventions performed by the family during the period of hospitalization of NBs in the NICU described that pain relief methods were offered according to parents' assessment, made during painful or stressful procedures, which could cause disorganization in NBs. Most opted for physical methods, such as touching, holding and positioning, almost always or always. Breastfeeding, recorded music, NNS with oral sucrose, SSC and winding were rarely used. The underutilization of these measures may be directly linked to the lack of encouragement and information for the family by the health team.[14]

Another point observed was that gestational age and clinical condition were factors that influenced the performance of these methods by the family, because they chose to resort to physical methods and breastfeeding in NBs aged 34 to 36 weeks and comforting physical methods for NBs aged less than 28 weeks. Moreover, the choice was based on the judgment of what would be easier, not needing guidance/help from the health team.[14]

A randomized clinical trial, which aimed to compare the cuddle-snuggle technique, associated with 24% oral sucrose and NNS to the use of 24% oral sucrose and NNS, had the participation of 16 mothers, with mothers' involvement in care to reduce the levels of stress and pain being significantly beneficial for NBs.[13] Furthermore, it addresses the family's desire to be more active and involved in pain relief measures and limiting factors for better implementation of non-pharmacological measures before, during or after painful procedures in pain management, such as team overload and lack of the presence of parents during painful interventions, which ends up making implementation difficult.[23]

A study that surveyed 242 medical records used in a randomized controlled trial, to assess the number of painful procedures that NBs underwent during the entire hospitalization period and the measures used to relieve pain, found that there was direct participation of mothers with SSC supply. As it is a secondary analysis of a randomized controlled clinical trial that aimed to assess the effectiveness of SSC performed by mothers and breastfeeding during painful procedures, SSC was the most used measure to relieve pain from procedures such as punctures when compared to breastfeeding.[16]

Non-pharmacological strategies are very convenient, have low cost, can be used without prescription and are well tolerated by NBs. Breastfeeding and SSC, in addition to benefiting NBs in relieving pain, are measures that promote bonding and systematic reorganization, with SSC being an encouragement measure for the participation of other family figures in addition to mothers. SSC or Kangaroo Position encourages the tactile and proprioceptive systems, improving self-regulation, modulating the reduction of stress and pain responses, facilitating bonding, in addition to promoting breastfeeding.[6]

It should be noted that direct family participation (mother or father) was mediated, for the most part, by a health professional, helping and guiding, which reinforces the need to provide more information and support to parents, allowing them to play a more active role in NB pain management.[14]

Non-pharmacological measures with indirect family participation

Three studies brought the family's participation indirectly addressing EBM use,[15,17-18] and one of them also used mothers' heartbeats in one of the interventions.[17] Participations were considered indirect because the milk provided was expressed directly from the mothers, but the offer of milk for sensory stimulation was not made by them, as was the recording of heartbeats.

In this category, EBM, a measure addressed in indirect participation, was offered by the researcher through the odor around the NB's nose,[17] flavor orally[17-18] and through a diffuser.[15]

Breast milk offered orally has been considered a pain relief measure according to the Kangaroo Method Manual in which it points studies that have shown that breast milk is as effective as sucrose or glucose for pain relief in full-term NBs. This is due to the multiple

factors in breast milk that control the inflammatory response, promoting an additional protective effect, reinforcing that breast milk has more than just nutritional importance.[6]

The effect of family intervention compared to other non-pharmacological measures

In clinical trials in which SSC was compared with the control group (incubator) during heel puncture, it was evidenced that those submitted to the pain relief measure had lower heart rate changes, shorter duration of crying and grimacing.[19-20] Another study, which sought to identify the effect of SSC with mothers on pain relief during heel puncture without identifying what was used in the control group, pointed out that the duration of crying was shorter, as well as the PIPP score and changes of heart rate.[22]

It is worth noting that currently it is not considered that a painful procedure can be performed without the use of pain relief measures. Therefore, the use of control groups in which no measure is applied violates the rights of hospitalized NBs not to feel pain, especially when there are measures for its relief; however, despite the current legislation being of national scope, international consensus and guidelines are fully available about NBs' ability to feel pain, the need to assess it and treat it.[24]

A systematic review, which sought to identify the effectiveness of different positioning methods in relieving pain, showed that when SSC was performed by the mother and compared to the supine position with father support during retinopathy of prematurity (ROP) screening, there was no statistically significant difference between the two interventions during this procedure. On the other hand, SSC, performed by the mothers themselves, compared to SSC, performed by other women, and prone positioning with winding, the PIPP score was lower, as well as the heart rate, which showed less change in the groups in which SSC was used.[21]

As for SSC, it was compared to the prone positioning in heel puncture. It has been shown that SSC is a natural, easy-to-use, economical and more effective method for pain relief than prone positioning, benefiting mainly premature NBs. Even those in which glucose was used together with prone positioning for comparison, it was concluded that in SSC the heart rate variation was lower. Comparing the SSC performed by mothers with the application of restraint facilitated by the mother or father with NBs in lateral decubitus during diaper changes, SCA identified that stress was lower in those in SSC.[21]

An important aspect to note is that there was no pattern in the time of SSC supply before and after the procedures in the analyzed studies. Times of application of the strategy were described before the procedure of 15 minutes, being maintained during and 15 minutes after the procedure,[21] as well as other studies in which the application was 30 minutes before, during and 10 minutes after,[19-21] and others in which it was applied 10 minutes before, during and 3 minutes after.[21] The fact is that they were effective in reducing the pain responses of NBs who participated in the study.

SSC begins with touch and progresses to the Kangaroo Position, which consists of keeping NBs, in SSC, only in diapers, in an upright position next to parents' chest waiting the minimum time necessary to respect the stabilization of NBs and for the maximum time that both understand to be pleasant and sufficient. As it is a subjective and non-specific recommendation for pain relief, the minute in this measure ends up varying, but the guidelines for the care of the Kangaroo Method point to a minimum time of one hour, respecting the parents' wishes.[25]

SSC is an effective measure for acute pain, as evidenced, especially for relief of pain in punctures, being more beneficial than standard care, in addition to providing a sense of security, which contributes to NBs' well-being.[23] Additionally, it had a direct effect on brain activity of a cohort of 125 preterm infants (24-36 weeks), in which electroencephalogram examination was performed when they were at term (38-42 weeks), before hospital discharge. Stronger brain responses were evidenced in those who had parental support such as SSC and breastfeeding, whereas touch was associated with painful stimuli reflecting a reduced brain response.[7]

Family participation in relieving NBs' pain in the NICU environment is not only a policy in force in Brazil, but with the potential to minimize problems generated by the care of a body that is still immature and in full development outside the uterine and maternal protective environment. This fact stands out in the study with preterm infants, aged 24-32 weeks, submitted to magnetic resonance imaging of the brain at the beginning of hospitalization. At term equivalent age, it showed that those who underwent painful procedures in this period, without parental support, had worse brain development, being associated with reduced development of subcortical white and gray matter, compared to preterm infants, who had parental involvement in minimizing stress and pain in the NICU.[8]

Another substance in which its use was pointed out by studies was EBM for sensory stimulation compared to other interventions.[15,17-18] When EBM odor in the diffuser was compared to the use of NNS and odorless diffuser during venipuncture, a lower PIPP score and duration of crying were observed in those who smelled their mother's milk, whereas the DAN scale did not show difference between group.[15]

In a study that compared the effects of EBM integration on three different combinations of sensory stimuli, such as odor or taste, NNS, and recorded heartbeat sounds, it was pointed out that those NBs who received the odor or taste of milk associated with NNS and the sound of heartbeats had lower pain scores when submitted to venipuncture at all times of the procedure. Those who were subjected only to the odor or flavor of milk or its association with the heartbeat sound showed a reduction in pain in the preparation phase for puncture, i.e., at the time of disinfection of the site to be punctured and after puncture, suggesting that EBM has only mild analgesic effects on venipuncture pain.[17]

When EBM was compared to routine care, facilitated restraint and winding alone or combined with orogastric tube insertion, non-pharmacological methods provided alone or in combination were more effective in lowering PIPP scores than routine care. Those who received winding + EBM had lower PIPP scores during insertion.[18]

EBM has no recommendation for use and application time for pain relief in painful procedures. The Kangaroo Method claims that its benefits are similar to those of oral sucrose, but more studies are needed. As well as the two studies collected here that address this measure orally,[17-18] other studies administer the same dosage, 2 ml and application time of 2 minutes before the procedure, which expresses a consensus among literature. It can also be associated with other non-pharmacological measures aimed at potentiating the effect.[26-27]

Another strategy verified was the comparison of 24% oral sucrose with NNS alone and combined with the cuddle-snuggle technique provided by mothers or another team member, showing that the results against pain were better in those who had the combination with the cuddle-snuggle technique, due to the smaller number of infants with pain scores after the procedure. The cuddle-snuggle technique was performed 5 minutes before the venipuncture procedure and maintained during the procedure.[13]

Non-pharmacological measures are generally more effective when used in combination than in isolation. The use of analgesic drugs to relieve short-term painful

procedures is questionable due to the low effectiveness of these agents and potential side effects. They are convenient and inexpensive strategies that can be used without prescription and are well tolerated by NBs that prevent and reduce pain associated with acute procedures. In addition to this, they allow parents to participate in methods such as breastfeeding, SSC, winding, facilitated restraint and body and non-verbal communication, which are considered therapeutic actions provided by the family, in addition to providing bonding and contributing to development.[6]

Some limiting factors draw attention, such as low production related to the theme and the need for protocols that guide the use of these interventions regarding the indication and temp, and even about opportune moments of family insertion in care. Thus, it is recommended the elaboration of new studies related to this theme, bringing contributions to neonatal nursing and improving the quality of care provided to NBs and their families.

Regarding the contributions of this review, the importance of the family's participation as a protagonist in care can be highlighted, with the effectiveness of non-pharmacological measures brought to the relief of pain of infants who participated in the studies being evident. It is noteworthy that the presence of the family in the NICU proved to be beneficial for infants, and it can be even more effective if constantly guided and supported by the health team.

Conclusion

Direct family participation was more used than the indirect one, however, both deal in the majority of the maternal participation with SSC performance or expressed milk supply. Non-pharmacological measures addressed in isolation or in combination are effective in relieving pain in infants who are hospitalized in the NICU.

Family participation proved to be beneficial in these therapeutic care, despite being little explored, given the low production found and being a relatively recent theme. Bringing the family closer to care is beneficial for the baby, reduces the burden on the nursing team and also strengthens the maternal figure as the center of care capable of relieving NBs' pain. Inserting the family is to work on co-responsibility and autonomy in the participation of therapeutic care, strengthening its presence in the NICU environment.

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