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Perceptions of professionals on neonatal pain: a descriptive study

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ABSTRACT

Aim: to know the perceptions of health professionals about pain in a neonatal intensive care unit. **Method:** this is an exploratory, descriptive, qualitative study, carried out from March to November 2013 with 10 nurses, 40 nursing technicians, two physiotherapists and six nursing residents of a School Maternity in Rio de Janeiro. The data collection technique was an educational intervention, where the speeches were transcribed and submitted to the analysis of thematic content. **Results**: three categories emerged: "Identifying and evaluating newborn pain in painful situations"; "Promoting non-pharmacological management of pain"; "Identifying the barriers to pain management in the Neonatal Unit". **Conclusion:** in the perception of the professionals, the pain exists, and the evaluation and the management are present in their daily life; however, the knowledge about the subject is still embryonic and needs to be deepened so that there is applicability in the clinical practice of care.

Descriptors: Nursing; Health Education; Pain; Infant, Newborn; Intensive Care Units, Neonatal.

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INTRODUCTION

Despite the numerous technological advances in the health area, rates of prematurity still remain high in some countries[1]. The organic survival of the preterm newborn (PTNB) has increased, causing neonates with extreme gestational ages and/or very low birth weight to survive[1].

In order to guarantee this survival, a large number of routine invasive therapeutic procedures are required by the health team at the Neonatal Intensive Care Unit (NICU) and, in this context, the presence of pain is a constant[2].

Therefore, the management of neonatal pain should always be considered and NICU professionals should be trained and capacitated continuously, so that theoretical knowledge reflects on professional practice, aiming for adequate, qualified and humanized care[3].

Since 1970, there has already been a concern in terms of the under-treatment of pain, especially in newborns and the difficulty to recognize and evaluate pain in the neonatal period contribute negatively so that this panorama is maintained until the present day[4].

There are several studies in the literature[3, 2, 5, 6, 7] that show gaps in the training of professionals in the management of neonatal pain. These same studies point out gaps between theory and practice, and recommend strategies within lifelong education to sensitize and empower professionals to change the reality of care.

In this sense, the Permanent Education Policy of the Ministry of Health recommends reflection on work and the construction of processes of collaborative and meaningful learning, based on the use of a problematizing methodology that allows the joint construction of the autonomy of the subjects and the teams, with subsequent effective transformations in the work processes[8].

Given this context, the present study aimed to know the perceptions of health professionals about pain in a neonatal intensive care unit.

METHOD

This is a descriptive study, using a qualitative approach that carried out an educational intervention as a technique for data collection with health professionals who worked in the Neonatal Intensive Care Unit (NICU) of a Maternity School in the city of Rio de Janeiro. All the meetings were filmed and recorded, allowing the obtainment of the information reported by professionals.

The study participants were 10 nurses, 40 nursing technicians, two physiotherapists and six nursing residents of the institution's Multiprofessional Residency Program in Perinatal Health.

The inclusion criteria were: being a health professional of the multiprofessional team that acts directly in the care of the newborn in the NICU. As the intervention was performed during the day the employee was on duty, those professionals who were unable to interrupt their activities due to the logistics of the shift were excluded. The medical professionals and residents of medicine did not attend, despite the invitation.

The selection of these professionals happened through a verbal invitation, in the morning so that they could organize themselves and participate in the study.

The data collection took place during the educational interventions from March to November 2013, based on group discussions related to the problematizing methodology.

The themes discussed were: "Reflection on the importance of the senses from the simulation of sensations of the baby hospitalized in the NICU"; "Perception of the professionals in relation to the identification and evaluation of pain from the reactions of the newborns" and; finally, the last work was carried out on the question of "Non-pharmacological management of neonatal pain".

For each theme, a dynamic was developed, starting from a problem situation related to the content previously determined and, from there, the professionals presented their perceptions regarding the subject discussed, reflecting the way in which these professionals observe the phenomenon in the universe of their values.

From there, it was possible to know the perceptions on neonatal pain presented by the group, and, although there was no evaluation of these perceptions, a collective knowledge of the professionals who participated in the study was constructed, since, at times, they demonstrated a mistaken or superficial understanding of the subject.

The audio-visual text obtained from videotaping was exhaustively watched and the discussions were transcribed in full. The content was organized and structured using the proposal of the thematic analysis of Minayo[9].

The transcribed material was aggregated and, thus, its floating reading was done, delimiting the thematic units by means of cut-out keywords of the text. These thematic units were grouped according to their significance within the problem addressed in the study, and were quantified with the objective of identifying the subjects most evidenced by the participants. The thematic units were aggregated from their representativeness in the context of the management of neonatal pain, constituting the categories of analysis[9].

As most of the participants in the research (nursing team) worked on a 24-hour work schedule by 120 hours of rest, it was necessary to replicate each theme in six different days, to allow the participation of all in the different themes. In this way, 18 meetings were held.

The study was submitted to the Institution's Ethics and Research Council, where the provisions of Resolution 466/2012 were followed and approved under No. 11257012.2.0000.5275. The participants contributed voluntarily to the research and signed the Informed Consent Form.

RESULTS

After the transcription and analysis of the material obtained from the video recordings, three categories were revealed: "Identifying and evaluating pain of the newborn in painful situations"; "Promoting non-pharmacological management of pain"; "Identifying barriers to the application of knowledge to practice".

Identifying and evaluating newborn pain in painful situations

In this category, we show the professionals' perception regarding the identification and evaluation of the pain of newborns in the face of numerous painful and stressful situations to which they are submitted during their hospitalization in the NICU, accurately punctuated by the professionals themselves.

With respect to the identification of neonatal pain, professionals do it from behavioral signs (changes in facial mime, crying, screams, irritability and body movements of the hands and arms) and physiological (tachycardia,

bradycardia, apnea, falling oxygen saturation, alteration of vital signs and tachypnea) presented by newborns.

> He's in pain, he's bothered, and he's tachycardic. [...] He frowns [...] (Nursing Technician 1).

> We watch the facial mimic and that little hand; sometimes a fall in saturation or apnea that we think may be secretion [...] but it is pain [...] (Nurse 2).

Regarding the evaluation of pain in the NICU, the participants of this research, in general, were unaware of the specific scales for this purpose that could be used in their practice.

Regarding the painful and stressful situations to which the newborns are submitted during their hospitalization in the NICU, the professionals reported: unpleasant sensations of cold, heat, fear, pain, insecurity and fright; besides the characteristics of the NICU's own environment, such as lighting, noise, numerous manipulations of the newborn and excessive conversations among professionals. According to these professionals, the following procedures were considered painful: lumbar puncture, arterial puncture, venipuncture, calcaneal puncture, aspiration, adhesive removal, diaper replacement, use of Continuous Positive Airway Pressure (CPAP), insertion of oro and nasogastric tube, orotracheal intubation, and administration of eye drops.

> [...] I've been aspirated [...] it's really bad [...] (Physiotherapist 2).

> [...] every time someone comes and pierces, opens the incubator, interrupts sleep (Nursing technician 2).

> Noise, light [...] (Nurse 1)

Promoting non-pharmacological management of pain

In this category, professionals were able to score a number of non-pharmacological measures: use of 25% glucose, non-nutritive suction, breastfeeding, comfort measures, wrapping, warmth, ease, easy containment and kangaroo position as strategies that could be used for pain relief in the NICU.

> [...] two minutes, 25% glucose [...] (Nurse 7)

> [...] Whenever you are to do a painful procedure, use a way to prevent that pain, such as non-nutritive sucking [...] (Nurse 1)

> [...] And, depending on the child, you can do it while the mother is breastfeeding; it decreases pain [...] (Nurse 1)

> [...] Tucking the child [...] Everybody wraps the baby the way they know; the child will be less stressed. (Nursing Technician 3)

> [...] sometimes he's in a position, so you change and he doesn't cry anymore (Nursing Technician 7).

> [...] it's the kangaroo method that we use even when the baby is in pain... (Nurse 9)

Identifying the barriers to pain management in the NICU

In this category, the testimonies demonstrated some difficulties encountered by professionals regarding the identification, evaluation and management of neonatal pain in daily clinical practice, such as: lack of appropriate knowledge, lack of communication and harmony within the multiprofessional team and the lack of institutionalized protocols for the management of neonatal pain.

> [...] nobody knew this [...] it was always 50% [...] [referring to the incorrect glucose concentration used] [...] (Nursing Technician 2).

> [...] you lose heart [...] we do everything and leave him [newborn] neat and then the doctor comes, examines the baby and leaves him messed up [...] [referring to the attitude of a physician who, after examining the newborn, did not correctly position him in the bed] (Nursing Technician 6).

> I think to ease the pain it had to be done [...] conducts, routines [...] (Nursing Technician 6).

> If there was a pain scale, people would care more about looking at it in order to understand it and be able to identify if there is anything. And if there was anything on the fluid balance [referring to the form where the vital signs and the water balance are recorded], right? Corresponding to this… [...] (Nurse 2)

> I think the scale would have to be used every day [...] as a routine (Nursing Technician 15).

DISCUSSION

The identification of the pain is paramount, since only after this recognition the professionals are able to lead conducts directed to their treatment. It is worth noting that a preventive approach to pain is also essential, but for this, professionals need to be aware of methods for their management in the NICU.

The pain is capable of affecting various systems of the body, especially the neuroendocrine and cardiovascular systems. As a consequence, hormonal changes involving the pituitary, adrenal and pancreas are observed, generating disturbances in the metabolism of proteins and carbohydrates. Increased concentrations of catecholamines, growth hormone, glucagon, cortisol, aldosterone and other corticosteroids, as well as suppression of insulin secretion have also been documented. In the cardiovascular system, however, arrhythmias, arterial hypertension and tachycardia are observed[1].

Regarding the identification and evaluation of pain in the newborn in painful situations, the health professionals of this study perceive some physiological and behavioral parameters that must be associated with pain, and serve as an instrument for the evaluation of pain. However, the use of scales as tools to assess pain was not mentioned.

In a study carried out with nurses from a University Hospital in Vitória, Espirito Santo, Brazil, neonatal pain was also recognized through behavioral indicators (crying, motor activity and facial mimicry, such as eyes squeezed, mouth stretched, mouth open, forehead protruding, deep nasolabial groove) and physiological indicators (heart rate and oxygen saturation)[2]. This same study also reported that only one nurse knew of a pain evaluation scale, in this case the Neonatal Infant Pain Scale (NIPS)[2].

Physiological and behavioral changes were also cited by nurses from six public hospitals in Curitiba and Metropolitan Region (PR) who participated in a survey between December 2014 and July 2015. In addition, these nurses agreed that the use of scales for pain assessment was important for professional practice, although only 20% of them reported using some scale for this purpose in their practice[10].

The implementation of routine use, however, does not guarantee that professionals will be able to adequately assess pain, since it is necessary to trust these professionals in the chosen scale, as well as their agreement that the instrument is an accurate tool for pain assessment[2].

Careful assessment of pain is one of the responsibilities of nursing professionals who provide care to newborns admitted to a NICU. Such pain control and prevention are necessary not only for the ethical issue, but mainly for the consequences that repeated painful exposures can have on child development in the medium and long term[2].

Before the testimonies, the perception presented by the professionals about the painful situations to which the newborns are exposed in the environment of the NICU demonstrates that they understand that it is a stressful and potentially generating place of suffering.

Other authors verified that the professionals working in the NICU do indeed perceive that the presence of pain is constant in this environment and mention umbilical catheterization, gastric probing, calcaneal puncture, intramuscular or subcutaneous injection, lumbar puncture, among others[11,12,7] as painful or potentially painful procedures. However, when one investigates the perceptions of health professionals, it can be said that not everyone perceives the phenomena in the same way.

In one study, tracheal aspiration and eye fundus examination were not cited by health professionals as procedures requiring the use of analgesics or non-pharmacological measures[12]. Another research[11] has shown that nurses' perception of pain in relation to some procedures, such as orotracheal intubation, venipuncture and bladder catheterization is superior when compared to physicians'.

Since professionals are able to perceive the painful potential of each procedure performed in the NICU daily, they are also able to anticipate pain by performing specific pharmacological or non-pharmacological methods according to each situation.

In this context, regarding the perception of the professionals of this study in relation to the non-pharmacological management of pain, we can conclude that they referred to non-pharmacological measures widely cited in the literature with strong scientific evidence.

The result found resembles that of some studies where the use of 25% glucose and non-nutritive suction were mentioned[3,10,12]. In addition, similar to other studies, positioning, facilitated restraint, and maternal lap also appeared as non-pharmacological measures for neonatal pain relief in this study[3,10,12].

In an investigation carried out in Ceará with nursing technicians of a Neonatal Unit, it was observed that the professionals perform some measures of pain relief, such as non-nutritive sucking, positioning, grouping of care, among others; however, protocols or standardization of these measures for the management of pain do not exist[13].

It is noted that the professionals of this study cited breastfeeding and the kangaroo position as measures of pain relief in accordance with the literature[14]. These measures are not mentioned in other studies[3, 12], which reinforces once again the premise that the understanding of the phenomenon that involves the management of pain is individual.

Breastfeeding presents as an intervention to reduce the pain of newborns submitted to puncture of the calcaneus and venous. This effect is enhanced by the combination of skin-to-skin contact, suction and multisensory stimuli present in this act[15]. Placing the baby in the kangaroo position, however, reduces physiological and behavioral signs of pain, and it is indicated that it should be started before, during and after the painful procedure[15].

Although these interventions appear to be very simple at times, they run counter to the need for behavioral changes in the whole team and may therefore be so difficult to implement in clinical practice.

Regarding the barriers identified for the management of pain in the NICU, at times, the lack of a knowledge consistent with that recommended in the literature was identified.

In fact, there seems to be no appreciation of the issue of neonatal pain management, which is reflected in the research[16, 3.5] that points to a lack of knowledge of the team in relation to some aspects.

Even in those that present a great deal of positive results on the professionals' knowledge regarding pain assessment and management, we still find some professionals who disagree about the ability of neonates to feel pain and the adverse effects of pain in the long term. Although they are a minority, being present is disturbing[6].

A research that aimed to know the actions of the nursing team regarding the evaluation of pain in neonates and children during the hospitalization process in intensive care units reinforced findings of this study, pointing out the knowledge deficit of nursing professionals as a barrier to treat pain in pediatrics[17].

In addition, pain is often devalued and deferred in the face of the numerous events of a NICU, and professionals tend to give greater importance to large technologies and pathologies in general, suppressing, consciously or not, the real value of pain.

One factor that also appeared in the professionals' perception as unfavorable for the management of neonatal pain was the lack of communication between nurses, physicians and patients.

In fact, inadequate communication among health team members is seen as a barrier in the work process, making it difficult to implement evidence in practice. The difficulty of information sharing between managers and care workers and even among the staff of the same shift is reflected in the lack of inter-professional collaboration, with consequent impairment of care[18].

Nurses at five hospitals in the state of Connecticut (United States of America) have identified as one of the three main perceived strategies for improving pain management, the fact that there is more open and continuous communication within the health team[6].

This interlocution impaired in the hospital environment has long been a problem

in the relationship between professionals, negatively influencing care. The professionals inserted in the multidisciplinary team often act separately, each one within its specificity, when they should complement each other, assisting the newborn in an integral way.

An increment to improve pain management would be the use of pain assessment and treatment protocols[10]. Thus, the lack of a systematic protocol in the unit studied in this research constitutes an important barrier to pain management.

However, this is still true for some institutions[19] and the existence of a protocol does not guarantee its effective implementation in practice, with changes in attitude.

Such a situation can be illustrated through the results of research that indicate that, despite the existence of institutional protocols, professionals often do not even have knowledge of this tool. In addition, even knowing the protocols, some professionals do not use them as guidelines in their care activities[6,7,10].

Educational interventions constitute strategies within the Permanent Education Policy to be employed in order to transcend the simple acquisition of intellectual and psychomotor skills and present themselves as an alternative for the development of individual and collective potentialities, with a positive impact on the improvement of work processes[8].

A study carried out in Recife, after the organization of an operative group with professionals of a NICU, focused on improvements in the evaluation and management of pain, showed that the professionals involved in this educational intervention perceived changes in pain management in the unit and related them to the strategies defined and implemented by the operating group[16].

An investigation carried out in a teaching hospital in India to evaluate an educational intervention aimed at the evaluation of pediatric pain by nurses was attended by nurses working in the neonatal intensive care unit, pediatric ward, pediatric intensive care unit and pediatric cardiology sector. The results showed significant improvements between the total pre and post-test results and suggest that these effects may improve even more in the long term when associated with curricular changes in the training of professionals and the awareness of the team[20].

CONCLUSION

In view of the above, the perceptions of health professionals suggest that there is a knowledge on the part of these professionals regarding the physiological and behavioral indicators that indicate neonatal pain and the identification of painful situations to which the newborns are exposed.

In addition, professionals were able to perceive innumerable non-pharmacological measures of pain management, such as non-nutritive sucking and the use of 25% glucose. They also infer measures that are poorly identified in other studies, such as the skin-to-skin contact of the kangaroo method and the use of breastfeeding in pain relief. Although this perception is evident, the knowledge is sometimes outdated and shallow, revealing a need to insert the neonatal pain issue in the institution's permanent education policy.

This lack of knowledge, coupled with the lack of communication between the team and the lack of protocols, was perceived as a barrier to the application of knowledge in practice in relation to pain management.

This study contributes to the health of the newborn and to scientific research in nursing, since the identification of the perceptions of health professionals in relation to neonatal pain works as a foundation for a plan of action of managers who, faced with this panorama, may propose some strategies for the increase of quality in the management of neonatal pain.

Although the present study aimed to know the perceptions of health professionals, the methodology used to collect data was an educational intervention and, in this way, it was possible to contribute to the construction of a collective knowledge of the team during the study, implying a more secure and humanized practice.

In view of this, the constant need for professional awareness and training regarding the identification, evaluation and management of pain, based on scientific evidence, is emphasized and it is highlighted that the training should happen in the daily life of the unit, based on a problematizing methodology and with the involvement of all the professionals of the multidisciplinary team.

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