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RESEARCH

Manejo clínico da dor no recém-nascido: percepção de enfermeiros da unidade de terapia intensiva neonatal

Clinical management of pain in the newborn: perception of nurses from the neonatal intensive care unit

Gestión clínica del dolor en el recién nacido: percepciones de enfermeras de la unidad de cuidados intensivos neonatal

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ABSTRACT

Objective: analyzing the perceptions of nurses about the clinical pain in neonates in neonatal intensive care unit. **Method:** a descriptive, exploratory study, of a qualitative approach conducted with ten nurses in the neonatal intensive care unit of the University Hospital Antônio Pedro applying a semi-structured interview for data collection, and analyzed according to thematic content analysis method. **Results:** understanding the mechanism of neonatal pain, which does not depend upon complete formation of myelination; lack of verbalization of the newborn and this fact complicates the assessment of pain; however we must be sensitive to other physiological and behavioral signs, such as: facial mimicry, heart and respiratory rate, systolic blood pressure, oxygen saturation, palmar sweating and vagal tone. **Conclusion:** it is a practice to be rethought the use of protocols and scales for the evaluation of indicators of neonatal pain. **Descriptors:** Pain, Infant newborn, Pain measurement, Nursing.

RESUMO

Objetivo: analisar a percepção dos enfermeiros acerca da clinica da dor no neonato na unidade de terapia intensiva neonatal **Método:** estudo descritivo, exploratório, de abordagem qualitativa, com dez enfermeiros da unidade de terapia intensiva neonatal do Hospital Universitário Antônio Pedro aplicando um roteiro de entrevista semiestruturada para a coleta dos dados, e analisados conforme a analise de conteúdo na modalidade temática. **Resultados:** o entendimento do mecanismo da dor neonatal, qual não depende da formação completa da mielinização; a falta de verbalização do recém-nascido e esse fato dificulta a avaliação da dor, contudo é preciso estar sensível a outros sinais fisiológicos e comportamentais como: a mimica facial, frequência cardíaca e respiratória, pressão arterial sistólica, a saturação de oxigênio, sudorese palmar e tônus vagal. **Conclusão:** constitui uma pratica a ser repensada a utilização de protocolos e escalas para a avaliação dos indicadores de dor neonatal. **Descritores:** Dor, Recém-nascido, Medição da dor, Enfermagem.

RESUMEN

Objetivo: analizar las percepciones de las enfermeras acerca de la clínica del dolor en recién nacidos en unidades intensivas neonatales. **Método:** un estudio descriptivo, exploratorio, con un enfoque cualitativo realizado con diez enfermeras en la unidad de cuidados intensivos neonatales del Hospital Universitario Antônio Pedro, con aplicación de una entrevista semi-estructurada para la recolección de datos y analizados de acuerdo con el método de análisis de contenido temático. **Resultados:** la comprensión del mecanismo del dolor neonatal, que no depende de la formación completa de la mielinización; la falta de verbalización del recién nacido y este hecho complica la evaluación del dolor, sin embargo tenemos que ser sensibles a otras señales fisiológicas y de comportamiento, tales como la mímica facial, la frecuencia cardiaca y respiratoria, la presión arterial sistólica, la saturación de oxígeno, la sudoración palmar y tono vagal. **Conclusión:** es una práctica a ser reconsiderada el uso de protocolos y de escalas para la evaluación de los predictores del dolor neonatal. **Descriptores:** Dolor, Recién nacido, Dimensión del dolor, Enfermería.

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INTRODUCTION

Clinical management of pain in newborns in the Neonatal Intensive Care Unit (NICU) is the focus of this study, this is because the pain is part of the life cycle: it is present from birth, it is part of an alarm system of the body, as well as being an alert to the fact that something is not working properly in the body.[1,2]

The Joint Commission on Accreditation of Health Care Organizations defines the painful sensation as an unpleasant emotional and sensory experience that can be associated with tissue damage, as well as being individual and subjective. Pain can induce physical abnormalities and even change the psychological balance, being standardized as the fifth vital sign.[3,4] Being individual, its interpretation includes emotional and sensory characteristics that contribute to its intensity, it is variable in every person and in various circumstances. In this sense, it is necessary to consider the perception of pain, especially that expressed by the newborn, whose hospitalization process in the NICU can be painful for result of various care procedures they undergo while they are hospitalized.

Until the 50s, many health professionals do not admit the need of pain management for newborn, claiming their neurological immaturity, which lessen sensitivity to pain. Thus, for many years, the newborn hospitalized underwent painful procedures without any analgesic coverage, due to the contraindication of the use of opioids in neonates extent justified by the high risk of respiratory depression.[5] From the 60s, begun a discussion about the possibility of the newborn pain since we observed that myelination was unnecessary for transmitting sensory impulses, i.e. for nerve function and sensory impulse conduction of painful.[2]

Clinical management of pain expressed by the newborn needs special attention because it can not express it verbally. In this sense, attention to neonatal health, it is necessary to evaluate the physiological and behavioral parameters observed before and after a painful stimulus. In clinical practice, physiological indicators can be used to evaluate and quantify the painful stimulus.[6]

Physiologically, there are evaluated: the heart and respiratory rate, systolic blood pressure, oxygen saturation, palmar sweating, vagal tone, crying, facial expression, the pattern of sleep and wakefulness, changes in catecholamine concentrations, growth hormone, glucagon, cortisol, aldosterone and other corticosteroids, and the suppression of insulin secretion.[1] They are important tools for assessment and clinical management of pain in newborns, the use of scales such as neonatal facial coding system; behavioral pain scale for newborns; Hannallah scale; preterm pain profile; Comfort scale and postoperative evaluation scale.

Based on these factors, there is the need for special attention to newborns hospitalized in NICU, as the nursing staff operates in direct care to these babies it is therefore responsible for identifying the presence of pain signals in any of them, to be able to intervene with measures that can ease the discomfort and thus contribute to clinical improvement. Thus, as much as possible, it is necessary to keep stable the newly born, the neurological and behavioral standpoint.[7]

The greatest demand admission to the NICU is related to premature newborns and high-risk that are submitted, within the first hours of life, various painful procedures, among which are: intubation, aspiration of tracheal tube, sample collection, venous access, and thoracic drainage, among others. The pain left untreated can lead to disastrous effects, including severe anxiety and delirium.[8,9]

So, despite all the scientific advances about the reasons that lead to the occurrence of pain and therapeutic resources available to combat it, in most neonatal services there has been a gap between the theoretical knowledge and daily practice with regard to assessment of pain, leading to infer that health professionals are not prepared to relieve pain and suffering and the customer, but to heal.[1]

Recently of caring babies in NICU requires nursing care experience, technical, scientific and relevant practical skills to the profession, as well as awareness of a human care, to promote the relief of discomfort and pain related to the therapeutic process in order to minimize the stress experienced by the newborn during the hospitalization period.[10]

Therefore, the clinical management in relieving pain in neonates should be a constant concern of these health professionals. The nursing staff must humanize to better care, avoiding unnecessary and excessive handling; touch the newborn with love and, above all, encourage the presence of parents in order to establish homeostasis. It is essential that the professional is committed to his work environment and thus can wake up to a holistic view of care offering a proposal for comprehensive care to the newborn and his family.[11]

From this perspective, the study aimed to analyzing the perception of nurses about the treatment of pain in newborns in the neonatal intensive care unit.

METHOD

This study is of a descriptive and exploratory nature, with qualitative approach, since no claim to quantify data, and yes, identify events that translate the clinical management of neonatal pain.[12] The investigation was carried out after approval by the Research Ethics Committee the Faculty of Medicine of the University Hospital Antônio Pedro (HUAP), of the Fluminense Federal University (UFF), under CAAE 17371613.3.0000.5243, taking into account the provisions of Resolution nº 466/12 of the National Health Council.

Study participants were ten (10) nurses from the neonatal intensive care unit of the University Hospital Antonio Pedro, located in Niterói, metropolitan area II of the State of Rio

de Janeiro, Brazil. As inclusion criteria, it was established to be a nurse acting in that unit and not be in license at the time of data collection. The exclusion criterion was proven inexperience relative to the sector's routines. All participants signed the Informed Consent, conditioned on their voluntary participation, and to be assured anonymity and the confidentiality of their information by using an alphanumeric code meaning Nurse, followed by an ordinal as the realization of interviews (Ex.: E1 ... E10).

For data collection it was conducted an individual semi-structured interview via script containing open and closed questions. Data collection occurred during the months from January to March 2014 in placeholder in the NICU and interviews were recorded on digital appliance with the prior authorization of respondents who subsequently validated the transcript of their testimony.

The content of the transcripts was subjected to content analysis in the thematic mode, which has the steps: pre-analysis, aimed at organizing and reading the material, seeking to record the impressions of the messages from the data; exploration of the material, with the completion of several readings to enable the organization of its content, having a methodological rigor to the applicability of formulated plans and objectives; and finally, the treatment of results comprising a data analysis according to the criteria of choice for the construction of thematic categories.[13] The categorization of the meanings units enabled the construction of two categories, namely: 1) *The perception of pain in neonatal: expressions of the newborn as a way of evaluation of nurses in the Neonatal Intensive Care Unit* and 2) *neonatal pain as a point of valuing nursing practice*.

RESULTS AND DISCUSSION

The perception of neonatal pain: the newborn expressions as a way of assessing the nurses of the Neonatal Intensive Care Unit I

The incomplete myelination of nerve fibers of newborns, especially preterm, has long been considered the main factor to justify the newborn was unable to feel pain. With scientific advances, through the research in neonatology, it was concluded that even with the fibers do not fully myelinated, the newborn has painful sensation. Thus, the testimony corroborates with this thought:

> *They have the nerve endings for pain like we have, and handling it features some manifestations that suggest to us that he's feeling. (E5)*

> *The change in facial expression and also by how they react by motor restlessness and change some vital signs (increased heart and*

> *respiratory rate). Previously I know that there was a current saying that newborns do not feel pain at the immaturity of the nervous system, but I always disagreed that from my experience with them.* (E10)

In this sense, during the mid-twentieth century there was a discussion about the possibility of the newborn feel pain impulses, and from that moment began research related to full myelination, and found that it was unnecessary for the transmission of sensory impulses. Thus confirmed the hypothesis, showed that only 80% of the fibers that transmit impulses caused by pain are myelinated in adults.[2,14]

Thus, as pointed out by the interviewees, by the way of a historic aware that the infant does not feel pain because of the immaturity of myelin, responsible discussion about since they have full consciousness, in their working practice, that the newborn feels pain when subjected to the practices of health professionals. This, in particular, brings out that knowledge of this process allows the practice awareness, which can help to intervene in the care process aiming neonatal improve it.

Incomplete myelination involves only slow conduction velocity in the path of the central nervous system. In the newborn, the nerve impulse travels a short path, which ends up making up for this slow transmission of the stimulus. They may feel pain more intensely than children at an older age because their inhibitory control mechanisms are immature; limiting their ability to modulate the painful experience.[15] The statements below link to this reflection on neonatal pain:

> *They feel pain because they have nerve endings from 24 weeks, which favor this transmission of pain in the nervous system, despite not having this complete myelination, therefore they end up feeling pain for longer than children and adults. (E4)*

> *Everyone feels pain, but they more so because the nervous system is not complete, then the pain is exacerbated.* (E6)

Latest scientific studies have shown that newborns with over 24 weeks' gestation, have the necessary elements of the central nervous system for the transmission of painful stimuli and memory for pain in response to stimulation by physiological and behavioral changes.[3,16] In this sense, although elapsed few weeks from birth, the newborn has the nerve endings needed to go through the sensory impulses and transmit pain and is therefore able to answer through their physiological or behavioral changes during this driving process until the arrival to the central nervous system and be recognized. And in practice of health professionals, especially those in nursing who spend 24 hours next to the neonate checking the changes in his body, it is important knowledge of driving mechanisms and especially the perception that he feels pain any external stimulus.

The neonate's ability to feel pain impulses has been scientifically proven [2,3,14,16]; however, the nursing staff, especially nurses, who bears the direct responsibility for neonatal

care in invasive procedures, finds it difficult to identify the pain in neonatal, and for both it takes a watchful eye and sensitive newborn to recognize the changes that he demonstrated, as mentioned in the following statements:

> *Older children speak, neonates only express sorrow for the stage, and crying and sometimes we could not notice these signs. (E1)*
>
> *Older children speak in the neonate you have to have awareness. (E2)*
>
> *In relation to newborns in as nurses we must be more attentive to their reactions (change of movement, change in expression, not always the presence of a cry to warn us, because the newborn can be intubated or sedated), and this will depend the perception of nurses, which takes into account their experience and professional experience over the years.* (E9)

The newborn has a "language" to express his own pain, and because of the verbalization of disability, the only way to express his torment is through behavioral changes. Therefore, the assessment are based on the behavioral and physiological responses of newborn pain during and after a potentially painful stimuli.[17] Thus, the nurse should be sensitive to neonatal care, especially in the perception of behavioral and physiological organic changes newborn.

The newborn developed other techniques to express their wants and needs, and the most common is the cry, which should be the primary method of communication baby, mobilizes the mother, family members and healthcare professionals. But one of the problems that most limit the cry as a parameter to diagnose the pain is the fact that 50% of babies do not cry over a painful[7] procedure, which was confirmed by respondents:

> *Older children shout and cry, the infant does not always express pain with weeping, sometimes it's an underactive, a decrease of saturation and not everyone knows how to interpret. (E6)*
>
> *Older children talk and cry, the newborn when it is very early, sometimes do not cry.* (E7)

This is why the awareness of professionals, especially those in nursing for the nonverbal language of newborns, it is essential to improve care offered to them in the NICU, considering who undergo invasive procedures and interventions that occasionally make it painful along the hospitalization,[2] making it necessary, then, to reflect on the practices carried out in the neonatal care as crying as a process of evaluation of pain, it is confirmed as an important limitation, especially in cases of intubated newborns and / or sedation.

By analyzing the nurses' perception about the signs of pain in newborns and their difficulties to identify them due to lack of speech, it was identified that the interviewed

nurses, in its entirety, consider that newborns feel pain, emphasizing facial expressions and behavioral as major features that show as following statements:

> *The newborn, he expresses himself through the face, speech is not required. They have facial expressions when undergoing painful procedures. (E3)*

> *On the day to day service, we see some changes in facial expressions of these babies, the presence and intensity of crying, which may suggest discomfort, changes in behavior and body movements may be related to the presence of pain.* (E9)

Behavioral assessment of pain is based on the change in behavioral expressions after a painful stimulus. The most studied are the motor response, facial expressions, crying and pattern of sleep and wakefulness. Among the specific signs of facial movements that may indicate pain, include: crying, facial frown, forehead bulging, narrowed palpebral fissure, deep nasolabial furrow, open and stretched mouth (horizontal or vertical), chin tremor, protrusion and tension language.[17] Thus, the facial expressions and body movements, are endpoints of pain observed by neonatal nurses, are important as indicators for quality of care.

Another way to identify the pain occurs through physiological changes that do not require greater sensitivity on the part of the nurse to recognize them, but on the other hand, require an in-depth knowledge to be able to identify what the parameters are changed by pain, as reported in the following statements:

> *The NB have expressions of pain, abnormal vital signs, skin color changes and the very stimulus that we know that are painful. It is now scientifically proved that they feel pain. (E2)*

> *Because of all the procedures that we performed during the service, I realize that they have face changes and vital signs when undergoing such procedures. (E8)*

The most commonly used parameter measured with the physiological changes are as follows: heart and respiratory rate, systolic blood pressure, oxygen saturation, palmar sweating and vagal tone.[18] Therefore physiological parameters can be used in the assessment, quantification and qualification of painful stimulus [6]; however, it requires the health professional awareness and training to quantify the changes and point out the suffering of the newborn.

The testimony below depicts all the parameters presented in this discussion, to reflect about the care of nurses in neonatal pain:

> *The perception of pain in newborns is more difficult than in older children because the older children evaluated by physical examination*

> *and has the child verbalize ease in the presence of pain. In the newborn are the perceptions of behavioral changes of face, irritability, motor restlessness and physiological changes such as tachypnea and tachycardia and bradycardia and bradypnoea; and in more severe children, fall saturation. These are points that we must observe and may suggest the presence of pain.* (E4)

To realizing the abovementioned, that nurses are up to date about the existence of neonatal pain. All mentioned that neonates feel pain, while some expressed how this happens. It is inferred, therefore, that the neonatal pain deserves greater attention from nurses, especially in relation to non-verbal language of newborns to express behavioral and physiological changes with a view furthering care in the NICU.

Neonatal pain as key point of valueing nursing practice

Regarding neonatal pain, respondents highlighted the appreciation of pain assessment by nursing staff, compared to other health professionals, but others referred to the team as a whole, even if not this enhancement correlated to the profession, but the sensitivity of the individual who takes care in their daily lives, according to the following statements:

> *The nurse appreciates more because he has more time to care and contact with the child, but when other professionals come in contact with NB, they also value. (E6)*

> *I do not only see the nurse, but the entire nursing staff, because it is more interested in this part of the evaluation of pain than others who also handle the baby. It is usually the nursing staff that points to the doctor that the child is in pain.* (E10)

The nursing team operates in direct care to the NB; therefore, it has a responsibility to be attentive to the presence of pain to intervene with measures that can ease pain and thus achieve clinical improvement.[7] This statement presupposes that the nurse is more involved in the evaluation of neonatal pain. However, this evaluation should not be related to a specific profession, but to the whole team, consisting of doctors, nurses, physiotherapists, speech therapists and nursing technicians, interacting together to the neonatal well-being.

The nursing staff is responsible for the care and especially the care and must run it in a humane way, and the nurse primarily responsible for detecting neonates any changes or pain manifestation, being able to intervene to relieve it as best as possible. Therefore, it is necessary to have technical and scientific knowledge, as well as an accurate perception, sensitively to these changes. By the way, here are some accounts:

> *I think the nurse evaluates better because he is longer in service. (E3)*

> *Nurses value the most, it is more welfare. The on duty nurse faces assistance, not only for the supervision and management part, which allows us greater control over severe children, and so it's up to us to have this perception in order to observe these behavioral and physiological changes, and depending the procedure which we know will lead to pain in the neonate, use the controls to minimizing pain during the procedure. (E4)*

> *I think most nurses value the most, I think it's the scientific knowledge we have.* (E7)

As stated, take care of the newborn hospitalized in the NICU requires nursing care experience, knowledge and relevant practical skills to the profession, as well as awareness of a human care that aims to promote the relief of discomfort and pain related to the therapeutic process, as a way to minimizing the stress experienced by the newborn during the hospitalization period.[10]

Clinical management on neonatal pain relief should be a constant concern of health professionals. The multidisciplinary team must humanize to care for newborns, avoiding unnecessary and excessive manipulation. The professional must be committed to his work environment and work with a holistic view, including proposals for comprehensive care to the newborn and his family.[2] Thus, it is necessary a change of professional practice, by implementing measures, such as the impairment parameters for the assessment of neonatal comfort and safety.

CONCLUSION

In order to achieve quality care and focused on the clinical management of pain it is necessary, that the nurse is aware of the responsibilities and values. Sensitivity to take care of newborn is essential, since the sensitivity is closely linked to the perception of physiological and behavioral changes of newborns.

Humanization and holistic view are also part of the responsibilities of the neonatal nurse, as well as constant training practical and theoretical / science, whereas science is always evolving, particularly in the health sector, with new, more effective discoveries and methods of treating pain, favoring comprehensive care for the newborn and his family.

The evaluation of pain in newborns is gaining importance and recognition in scientific studies and assistance humanization policies has also contributed to the improved management of pain in newborns, the occurrence of which was recognized by all respondents.

The impossibility of verbalization was the biggest difficulty encountered by nurses interviewed for recognizing and assessing pain in the neonate.

From this, it is important to implement the use of existing scales for pain control, or even create other tools to help professionals to identify it in the newborn, in order to avoid complications to this population so special for his fragility.

The identification of behavioral stimuli is intertwined to the sensitivity of the health care professional of any operating area and is not an exclusive matter of none, requiring only that the individual is qualified and sensitive to neonatal care to do it.

The use of stops, as well as there are those internationally accepted and used for different types of clinical assessment, such as Glasgow, Ramsey, among others, it is suggested to implement the existing scales, or even create other, which initially measure or assess pain of newborns admitted to the NICU of the University Hospital Antonio Pedro. It is important also to create specific protocols to minimize and alleviate the pain they expressed, given that the only parameter used today is the perception of each professional; it is subject to different interpretations.

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