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KNOWLEDGE OF PROFESSIONALS FROM A NEONATAL INTENSIVE THERAPY UNIT ABOUT THE PAIN IN NEWBORN

***[1]Helenice Freitas, [2]Caroline Gonçalves Pustiglione Campos, [1,2]Luciane Patrícia Andreoni Cabral, [2]Elaine Cristina Antunes Rinaldi, [1,3]Cristina Berger Fadel and [1,2]Danielle Bordin**

[1]Regional University Hospital of Campos Gerais, Ponta Grossa, Paraná, Brazil
[2]Nursing and Public Health Department, State University of Ponta Grossa (UEPG), Ponta Grossa, Paraná, Brazil
[3]Dentistry Department, State University of Ponta Grossa (UEPG), Ponta Grossa, Paraná, Brazil

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ABSTRACT

Objective: to describe the knowledge of health professionals related to the newborns care from a Brazilian Neonatal Intensive Care Unit (NICU). **Method:** A quantitative study carried out with a total number of health professionals (n=36) working in a NICU. A questionnaire was applied with sociodemographic and knowledge questions about the management of neonatal pain. A descriptive analysis was performed, and the chi-square test was applied. **Results:** It was verified that most of the professionals have a noted knowledge about: neonatal pain, the propulsive clinical interventions, assessment, recording and management of the pain, and their answers are very similar ($p>0.05$). The variables that expressed divergences of opinion were related to the interventions that can cause pain with higher knowledge coming from professionals with post-graduation in neonatology, for the last two variables ($p<0.05$). **Conclusion:** It is concluded that professionals have knowledge about pain and its management in neonates. It is necessary to implement a protocol and continuous professional training for good clinical practices of pain management.

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INTRODUCTION

The recognition of pain as a subjective phenomenon is a current and quite complex theme, mediated by the interpretation of broad variables such as biological, physiological and behavioral. In the field of health training, studies point to professionals' insecurity about the handling and management of persistent pain among patients (STEGLITZ, 2012; ALVES, 2013; CLENZOS, 2013), which can generate great costs in the use of human resources and to society. Particularly in the Neonatal Intensive Care Units (NICUs), this complexity of pain for health professionals is amplified, since this is a therapeutic environment for the newborns treatment, mainly the preterm and low weight, which requires a preparation compatible to the complexity of the activities developed for life support (LUI, 2018; DANTAS, 2018) and exposes the need for deep knowledge about the pain element.

****Corresponding author:*** Helenice Freitas,
Regional University Hospital of Campos Gerais, Ponta Grossa, Paraná, Brazil

However, even NICUs are essentially therapeutic ambiences, the routines of the hospital practice are multiple and promote stimuli capable of triggering pain, stress and discomfort. Currently, the epistemology of pain in newborns is well consolidated in the literature, which ensures that the neonate is able to feel pain, since it presents the functional and anatomical components necessary for the perception of a painful stimulus (ZANATTA, 2015; CRUZ, 2016). In this scenario, professionals involved in the newborns care of NICUs should be able to recognize and interpret the pain phenomenon, in order to minimize exposure to stressors and suffering agents, since researchers demonstrate that painful, untreated experiences, during this period of development, may lead to short, medium and long term clinical, physiological and / or psychological disorders, including anxiety and depression, cognitive difficulties, among others (FISHBACH and GREENBERG, 2011; ALVES, 2013; ANDREAZZA, 2017). In newborns, due to their inability to verbalize pain, it can be identified through systemic manifestations and behavioral changes, more or less discrete.

Table 1. Knowledge of NICU professionals about pain in neonates (n=36). Southern Brazil University Hospital, 2017

	Yes n(%)	No n(%)	Don't know n(%)
Knowledge about pain in the neonate			
Does preterm newborn feel pain?	36(100)	0(0)	0(0)
Does the term newborn feel pain?	36(100)	0(0)	0(0)
Does the newborn respond to pain individually and privately?	35(97)	1(3)	0(0)
Can pain change vital signs?	36(100)	0(0)	0(0)
Can pain cause harmful effects on the newborn development?	32(88)	2(6)	2(6)
Can pain change the Newborn movements of limbs, face and crying?	36(100)	0(0)	0(0)
The longer the hospital stay, the less pain does the newborn feel?	4(12)	32(88)	0(0)
Can pain be considered a vital sign?	30(82)	5(15)	1(3)
Interventions and pain			
Does the adhesive tape removing cause pain?	36(100)	0(0)	0(0)
Does calcaneous puncture cause pain?	36(100)	0(0)	0(0)
PICC Catheter Passage Causes Pain?	36(100)	0(0)	0(0)
Does Venous puncture cause pain?	36(100)	0(0)	0(0)
Does blood collection cause pain?	36(100)	0(0)	0(0)
Does nasogastric/ orogastric tube passage cause pain?	33(91)	3(9)	0(0)
Does nasotracheal aspiration cause pain?	34(94)	2(6)	0(0)
Do motor/ respiratory physiotherapy maneuvers cause pain?	30(82)	3(9)	3(9)
Does the installation of devices/ sensors causes pain?	26(72)	8(22)	2(6)
Does the change in dressing cause pain?	35(97)	1(3)	0(0)
Does the diaper change cause pain?	22(61)	12(33)	2(6)
Does the change of decubitus cause pain?	21(58)	13(36)	2(6)
Assessment and recording of pain in neonates			
Is newborn pain relevant within the NICU?	31(86)	5(14)	0(0)
Should pain assessment be part of the NICU routine?	36(100)	0(0)	0(0)
Is multidisciplinary team assessment necessary for pain management?	34(94)	2(6)	0(0)
Can pain be evaluated without the use of scales?	25(69)	10(28)	1(3)
Is it important to record pain in the chart?	36(100)	0(0)	0(0)
Is it important to identify and treat pain?	36(100)	0(0)	0(0)
Pain management			
Should pain management be performed before the painful procedure?	32(88)	0(0)	4(12)
Does pain management depend on assessment?	34(94)	2(6)	0(0)
Does the pain treatment improve the prognosis?	36(100)	0(0)	0(0)
Can parents help with pain management?	36(100)	0(0)	0(0)

In the context of the physiological parameters, the ones that stand out most are the increase of heart rate, respiratory and blood pressure, the oxygen saturation reduction, apnea, cyanosis, tremors and sweating (ALVES, 2013, CHRISTOFFEL, 2016). Regarding to the behavioral variations, there is evidence of crying, body activity, facial movement and restlessness, with changes in sleep and wakefulness (ALVES, 2013; CHRISTOFFEL, 2016; ANDREAZZA, 2017). World health organizations advocate the use of multidimensional instruments to aid in the assessment and qualification of pain in newborns; however, authors demonstrate that there is a gap between the theoretical knowledge and the practices of pain treatment in these subjects (CHRISTOFFEL, 2016), which highlights the relevance of the present study. In view of the vulnerability of newborn infants admitted to NICUs, knowledge and pain prevention should be a priority for the hospital health team and be essential for a qualified and humane care. Considering the above and its relevance to pain management practices, the objective of the present study is to describe the knowledge of health professionals related to the care of newborns from a Brazilian NICU.

MATERIALS AND METHODS

Inferential study, exploratory, with quantitative characteristic conducted in a Neonatal Intensive Care Unit (NICU) of a Southern Brazil University Hospital. At the time of the study, this NICU had six active beds. Data collection was carried out from August to December 2017. The sample consisted of the total number of health professionals working in the direct care of the newborn (n=40) in the neonatal units, namely: nursing technicians, nurses, physicians/ doctors, physiotherapists and multiprofessional residents. The health professionals were contacted individually by the researcher in the neonatal units and, when they accepted the participation in the study, they signed the Free and Informed Consent Form and received a questionnaire accompanied by a text with guidelines on the adequate completion. The instrument used was the questionnaire adapted from the study by Costa et al. (2016), which addresses sociodemographic issues and refer to the knowledge of health professionals about the management of neonatal pain in NICUs. Initially the data were treated, dicotimized and analyzed by means of descriptive statistics, with absolute and relative frequencies. Statistical analysis was then performed using the chi-square test in the variables that presented divergences in the Yes and No answers patterns (below 75%), second level and time of training, post graduation in the area and time of performance in the NICU. The tests were performed in the Epi info program and a significance of 5% was considered. The present study was approved by the Brazilian Ethics Committee for Research, in compliance with Resolution No. 466/2012 of the National Health Council of Brazil. According to the ethical precepts of research, the anonymity of the participants was preserved.

RESULTS

The final sample consisted of 36 professionals, including 21 nursing technicians, 5 nurses, 2 physicians/ doctors, 4 physiotherapists and 4 multiprofessional residents. The majority were female (n=34; 94%), with the average age of 33 years (22±53years). Regarding to training characteristics, 27 (75%) had more than 5 years of training and 9 (25%) less than 5 years (9 months ± 30 years); of the graduates (n=15), 53%

Table 2. Analysis of the variables that presented the greatest divergences of knowledge, according to training, time of formation, post-graduation in the area and time of operation in the NICU. Southern Brazil University Hospital, 2017

		Yes n (%)	No n (%)	p value
*Does the Installation of devices/sensors cause pain? (n=34)**				
Formation	University Graduate	11(32)	2(6)	p=0.37837
	Technical course	15(44)	6(18)	
Time of formation	Up to 5 years	6(18)	2(6)	p=0.90922
	More than 5 years	20(59)	6(18)	
Post-graduation in the area**	Yes	7(54)	0(0)	p=0.09677
	No	4(31)	2(15)	
Time of operation in the NICU	Up to 2 years	12(35)	2(6)	p=0.28778
	More than 2 years	14(41)	6(18)	
*Does diaper change cause pain? (n=34)**				
Formation	Graduação	10(29)	3(9)	p=0.24078
	Technical course	12(35)	9(26)	
Time of formation	Up to 5 years	3(9)	4(12)	p=0.1746
	More than 5 years	19(56)	8(24)	
Post-graduation in the area**	Yes	8(57)	0(0)	p=0.02405
	No	3(21)	3(21)	
Time of operation in the NICU	Up to 2 years	7(21)	6(18)	p=0.29714
	More than 2 years	15(44)	6(18)	
*Does change of decubitus cause pain? (n=34)**				
Formation	Graduação	10(29)	3(9)	p=0.15241
	Technical course	11(32)	10(29)	
Time of formation	Up to 5 years	3(9)	4(12)	p=0.24809
	More than 5 years	18(53)	9(26)	
Post-graduation in the area**	Yes	8(62)	0(0)	p=0.01249
	No	2(15)	3(23)	
Time of operation in the NICU	Up to 2 years	7(21)	5(15)	p=0.76165
	More than 2 years	14(41)	8(24)	
*Can pain be evaluated without the use of scales? (n=35)**				
Formation	Graduação	9(26)	5(14)	p=0.44514
	Technical course	16(46)	5(14)	
Time of formation	Up to 5 years	6(17)	3(9)	p=0.7133
	More than 5 years	19(54)	7(20)	
Post-graduation in the area**	Yes	6(43)	2(14)	p=0.33408
	No	3(21)	3(21)	
Time of operation in the NICU	Up to 2 years	9(26)	5(14)	p=0.44514
	More than 2 years	16(46)	5(14)	

* Only the Yes and No ansewers patterns were considered for analysis.
** Only the totality of individuals with graduation were weighted.

(n=8) had post graduation in the area of neonatology. Regarding to the NICU, 61% (n=22) operated for more than 2 years and 39% (n=14) for less than 2 years (1 month ± 30 years). The subjects' losses occurred due to their refusal to participate (n=04). The results in Table 01 show that most professionals have knowledge about the pain phenomenon in neonates and the clinical interventions that propel painful stimuli, on assessment, recording and pain management, and their answers are quite similar. The variables that expressed divergences of opinion were related to the interventions that can cause pain, such as installation of devices/ sensors, diaper change, change of decubitus and the possibility of evaluation of pain without the use of instruments or specific scales. Table 02 shows the results from the comparison of positive and negative answers by the professionals working in the NICU, according to university graduate and professional performance characteristics. It was verified that there was no significant difference in any of the aspects evaluated for the variables 'Does the installation of devices/ sensors cause pain?' And 'Can pain be evaluated without the use of scales?'. Only the specific post-graduation in the area of neonatology was able to express significant differences in the perception of the interviewees regarding to the variables: 'Dope the diaper change cause pain?' And 'Does the change of decubitus cause pain?'.

DISCUSSION

The present study, which discusses the knowledge of professionals from different areas and levels of health education, working in a NICU at a university hospital, found that most of the investigated individuals have similar knowledge about neonatal pain and clinical interventions that propel painful stimuli, on pain assessment, recording and management. Results that are consistent with a similar study (ANDREAZZA, 2017; ELIAS, SANTOS, GUINSBURG, 2014). This finding demonstrates that the neonatology multidisciplinary team is cohesive regarding to the knowledge of pain. This profile empowers the possibilities of guaranteeing health care in an integral way to the newborn in the NICU scope, more qualified, efficient, with greater patient and professional safety (ALVES, 2013; ANDREAZZA, 2017). In addition, knowledge generates a welcoming and pain-sensitive look, resulting in more humanized procedures and good clinical practice (ANDREAZZA, 2017). The team cohesion can be a reflection of the constant training carried out in the sector under evaluation. In addition, because the hospital is set up in a teaching institution with a residence in the neonatology area, all the health team involved in neonatal care is encouraged to participate in weekly case discussions in a multiprofessional way and seek knowledge through scientific evidence, by means of scientific articles and books. In addition, knowledge is also generated through informal sources, such as the exchange of knowledge of medical and nursing teams, especially those who have more time and greater training in the area, common practice in many hospital institutions (ALVES, 2013; CHRISTOFFEL, 2016; AKUMA, JORDAN, 2012).

Obtaining knowledge is to stimulate the development of critical and reflexive analysis capacities and to value the reflection that opposes technicality (ALVES, 2013). According to Christoffel (2016) the lack of training and specific qualification on neonatal pain may limit the implementation of effective interventions for pain relief in clinical practice and compromise the quality of care provided. In this context, it is important that all the professionals involved in the NICU are constantly adequately trained, since many doubts, stigmas and taboos still permeate this universe (ALVES, 2013; CODIPIETRO et al., 2014). Due to the fact that the neonates's non-verbalization and expression about their reactions to the most varied stimuli is similar (ALVES, 2013), to subjectivity by the influence of personal interpretation on pain signals emitted by the newborn (ANDREAZZA, 2017), and the multidimensionality imbricated in the evaluation, which involves changes in vital signs, facial mimics and behavior (ALVES, 2013; CHRISTOFFEL, 2016; ANDREAZZA, 2017), the qualification of health professionals from different areas of training becomes essential. The hospitalized newborn is constantly submitted to painful and stressful stimuli (ALVES, 2013, ANDREAZZA, 2017, MARCONDES, 2017). These stimuli are mainly accentuated in procedures such as: venous punctures, mechanical pulmonary ventilation with orotracheal cannula, orogastric catheter presence, nasal prongs presence used in some non-invasive ventilation modalities (AKUMA, JORDAN, 2012; ELIAS, SANTOS, GUINSBURG, 2014; ANDREAZZA, 2017) all procedures equally glimpsed by the interviewees of the present research as causing pain.

However, as seen in the findings of the present study, the possibility of diaper change and the change in decubitus imply pain in the neonate are situations that caused divergence of opinion among respondents with and without training in the area ($p < 0.05$), being correct the perception of the professionals with post graduation in the area. The literature shows that both procedures are considered to be effective non-pharmacological methods in the treatment and relief of pain in the neonate, as well as local massage, immersion bath, music therapy, reduction of environmental stimuli such as noise and rustle (FARIAS, 2012). This divergence is due to the increased knowledge of neonatology specialists with subjective questions such as crying or facial expressions, which, although being part of the signs framework to be evaluated in the the neonate pain, when isolated, do not always represent a sign of pain. In addition, increased time of training, training in the neonatology area and greater participation in courses and training in the pain area have been pointed as factors related to the higher level of knowledge about neonatal pain (CHRISTOFFEL, 2016). Reiterating the need for training on these contexts, as well as the implementation of the pain assessment scales use in the routine practices of NICUs. The use of multidimensional scales to evaluate the newborn pain propitiates structure the formal knowledge about the subject, with dynamic and standardized performance of several professionals involved in their care and comfort and to evaluate pain in a more adequate way; ensuring a more assertive clinical practice, capable of improving collaboration among professionals to minimize neonatal pain. However, despite its proven importance in the NICU care (CHRISTOFFEL et al., 2016; SILVA et al. 2016; ANDREAZZA et al., 2017; SCHULTZ, LOUGHRAN-FOWLDS, SPENCE, 2014, CODIPIETRO et al., 2014), when questioned the possibility of pain assessment without the use of scales, the interviewees divided opinions, being more prevalent the affirmation positive among the technical professionals, with more time of service and acting in NICU. These findings reiterate, therefore, that although the team has global knowledge about pain with the neonate, recognize that the assessment of pain should be part of the NICU routine and that is necessary for the management of pain; the use of scales is not yet part of the routine in the health team evaluated. A similar condition was observed in several hospital institutions (ALVES, 2013; CHRISTOFFEL, 2016; SILVA, 2016; ANDREAZZA, 2017; SCHULTZ, LOUGHRAN-FOWLDS, SPENCE, 2014, CODIPIETRO et al., 2014). This fact is worrying, since the assessment of neonatal pain ends up being at the mercy of individual subjective criteria, generating failures in identification, impacting incisively on the correct choice of appropriate procedures to minimize it (ALVES, 2013). This way, it is suggested to hospital institutions, even if they have NICUs teams with considerable knowledge about newborn pain (such as the investigated institution), that invest in protocols in NICUs that cover multidimensional evaluations, as well as correct management of pain with focus in care humanization. This will help to strengthen the newborns health and minimize the risks of injuries caused by the presence of constant and prolonged pain, as well as to identify facilitating factors and barriers, in order to implement evidence-based interventions to improve the quality of care for the newborn to painful procedures during hospitalization.

Limitations of the study: Although the data found are in agreement to the findings from other hospital institutions exposed in the literature, the data should be analyzed with caution, since its representativeness is from a single institution. In addition, the use of a self-administered questionnaire is considered a limitation of the study, without necessarily reflecting the practice in the NICU. However, these limitations do not minimize the importance of the present study, regarding its contribution to the health professionals knowledge about pain in the neonate, providing encouragement in planning actions in search of the qualification on care and pain management of the newborn.

Conclusion

It is concluded that the investigated professionals have cohesive knowledge about: neonatal pain, clinical interventions that propel painful stimuli, assessment, recording and managing the pain. This knowledge is increased for everyday conditions such as decubitus change and diaper change, in professionals with post graduation in neonatology.
These findings demonstrate that the continuing education provided by the institution itself is extremely important for updating the entire multiprofessional team knowledge, enabling them to attend increasingly to the needs of the newborn, as well as the future implantation of an assessment and management of pain protocol. With this knowledge, professionals can more accurately discern the peculiar need of neonates to receive adequate assistance in order to alleviate the consequences of pain, provide comfort and stability, with the implementation of non-pharmacological measures for their prevention and relief, as well as acting in the sense of reducing stressful stimuli in neonatal ambience.

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