



Practices of Nurses for the Care of Premature in Neonatal Intensive Care Unit: A Literature Review

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Authors' contributions

This work was carried out in collaboration among all authors. Authors RSS, AGCS and TOM designed the study and performed the analysis. Authors LGO, LCMF, CMP, LMM and CCAM wrote the first draft of the manuscript and administered the bibliographical research. Authors FSN, TGL, LMSR and SNG collaborated the analyses. Author CMVS guided the study. All authors read and approved the final manuscript.

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ABSTRACT

Objective: To analyze the nursing care provided to premature infants in the Neonatal Intensive Care Unit.

Methods: Descriptive study with a qualitative approach, such as literature review. The selection of articles took place from August to October 2018. The searches resulted in the visualization of 75 articles. Of which only 12 articles met the established criteria and descriptors.

Results: The main nursing care provided to premature infants in the NICU are: Observation of the premature infant, in the first 24 hours of life; hydration; food; skin; infection; umbilical stump, among others.

Conclusion: When the NB is hospitalized, due to the mother's absence associated with excessive manipulation by the health team, it can trigger stress, impairing her clinical condition. More than technical care is needed, especially by nurses, who are the professionals who most provide care to the newborn in the NICU.

Keywords: Nursing care; premature; neonatal intensive care unit.

1. INTRODUCTION

Prematurity is an early birth condition [1], consider a premature baby the one born before the 37th week of gestation, 11.8% of live births in Brazil are premature. This event is considered a public health problem, due to the high rate of infant morbidity and mortality [2].

These Newborns (NB) are submitted to greater manipulation when compared to those born in normal gestational time. Prematurity is a predisposing factor for the development of complications acquired in Newborns, increasing the length of hospitalization they will need to spend in the Neonatal Intensive Care Unit (NICU). The Ministry of Health states that neonatal mortality accounts for 70% of deaths in the first year of life [3].

The NICU is the place for severe patients who need comprehensive care and continues, to centralize patients of a high degree of complexity [4]. As well as attending patients in the recovery phase who need qualified medical and nursing care, without a minimum of interruption [5].

The unexpected event of premature delivery alters the natural event expected by the family. In the process of hospitalization of the newborn, parents go through feelings of pain and guilt for the health situation of the child. The Child and Adolescent Statute (ECA) guarantees the mother's right of residence alongside the child is guaranteed, as it favors the recovery of the newborn; in this context, nurses must be a source of support and humanization in this maternal/child contact [6].

It is up to the nursing professional specific assistance to premature infants in the ICU, such as: observation regarding the presence of cyanosis, pallor and jaundice; early detection of apnea; observation of dyspnea, vomiting, bleeding; observation regarding excessive heat loss; pay attention to hydration and water balance; check that the end of the probe is in the stomach before introducing the food; when finishing feeding, clean the probe, injecting 2ml 5% glycosylated serum and closing the free end with a connector, among other hygiene and asepsis care to avoid an infection [7].

The academic relevance of this work is due to the need for an approach and a greater clarification on the handling of premature infants in the NICU, emphasizing the importance of humanized maternal/child care by the nursing team, in addition to expanding the debate on the subject. The present study aims to analyze the nursing care provided to premature infants in the NICU.

2. METHODOLOGY

This is a review of qualitative and descriptive literature, available in the electronic database Scientific Eletrônica Library Online (Scielo). A Boolean search was performed in the combinations of the following descriptors: "Nursing care" AND "Premature", "Newborn" AND "Premature" AND "nursing", "Assistance" AND "Humanized" AND "premature", "ICU" AND "premature", "Humanization" AND "premature" AND "ICU". The articles were selected from August to October 2018.

The inclusion criterion of the present study was for articles with time frame from 2008 to 2018

and in Portuguese in full, and the exclusion criterion was for articles published in other languages, which did not include the time frame in their publication dates and those that were unavailable for access and full reading.

The pre-selection of the articles took place through the analysis of the title, then the abstracts were read. Those who presented an intimate relationship with the objective of this study were selected and accounted for. Soon after, the full reading of the recovered articles began. The analysis of the articles was read and organized in a theoretical framework containing identification number of the article, title, author/year, objective of the article and results obtained (as presented in Table 1).

3. RESULTS

The searches in the databases resulted in the visualization of 75 articles. Among these, 12 articles were chosen that met the criteria and

descriptors established. Thus were found: 1 publication from 2008; 1 publication, 2009; 1 publication, 2010; 1 publication, 2011; 3 publications of 2012; 1 publication, 2013; 1 publication, 2015; 2 publications of 2016 and 1 publication of 2018.

For a better analysis and discussion of the data and in order to facilitate the understanding of the results obtained, the table is shown below with the articles synthesized and identified by the letter R1 to R12 to be analyzed in the present study. As shown in Table 1.

The method used in the study approach were 10 quantitative articles and 02 qualitative articles; several authors addressed different issues and objectives within the context, however all had a collaborative significance, as they analyzed key points regarding nursing care provided to premature infants in the NICU. Thus, in order to meet the objective of the study, the results were discussed, as shown in the following topic.

Table 1. Characterisation of the analyzed studies

N.	Title	Year/ Author	Objetivo	Main results
R1	Leisure for mothers of hospitalized at-risk babies: analysis of the experience from the perspective of these women.	Scochi, et al. (2008) [8]	To analyze the experiences experienced by women who went through hospitalization with premature babies.	It is important that the nurse responsible for the accommodation where the puerperan women stay during the period in which the newborns are assisted in NICU and NICU perform recreational activities, qualified listening and guidance during the hospitalization period.
R2	Nursing care for premature children: a review of the literature on follow-up	Mello; Rocha (2009) [9]	To present a review of the literature on nursing care in the follow-up of premature children.	It is understood that premature and low birth weight children constitute a risk group, which present organic specificities and social determinations, requiring focused nursing care.
R3	Nursing diagnoses of preterm infants under intermediate care	Del'angelo et al. (2010) [10]	Identify nursing diagnoses of infants assisted in a neonatal intermediate care unit in São Paulo, Brazil.	From the data collection, it was concluded that 74.6% premature infants did not have a nursing diagnosis (ND) form completed on the day of admission and 54.1% did not have ED on the day of hospital discharge.
R4	Manipulation of the newborn hospitalized in intensive care:	Gomes; Hanh (2011) [11]	To verify how the nursing team perceives the stress	The team identifies the needs of child care and relates handling during nursing care

	alert to nursing		caused by the management of the child hospitalized in the ICU.	as a stressful source.
R5	Epidemiological characteristics and deaths of premature infants treated in a referral hospital for high-risk pregnant women.	Freitas et al.(2012) [12]	To analyze the nursing care process provided to premature infants treated in a neonatal intensive care unit.	It is necessary that the nursing team implant strategies to promote breastfeeding and control the forms of infection in the care provided to premature newborns.
R6	Strategies to effect the continuity of post-discharge care to preterm infants: integrative review	Braga; Sena, (2012) [3]	Identify the strategies used by nurses to effect continuity of care for children born prematurely discharged from the NICU	The choice of a nursing team in sufficient numbers and with specific preparation; the role of the staff of this team is of great importance, depending almost always on the success and failure in the clinical evolution of the premature infant.
R7	Professional competence of nurses to work in intensive care unit	Camelo (2012) [13]	To analyze the professional competencies of nurses in a neonatal intensive care unit.	Despite the limitations that the work as a nurse presents, it is necessary that this launch strategies aimed at the development and evaluation of competencies. For this to occur it is necessary to invest in professional training.
R8	The handling of premature infants in a Neonatal Intensive Care Unit	Pereira et al. (2013) [6]	Describe the manipulation to which ospremaure infants are submitted during the 24 hours in a neonatal intensive care unit (NICU).	Preterm infants were submitted to an average of 768 manipulations and 1,341 procedures. And in the last 24 hours evaluated, premature infants were subjected to an excess of manipulations in the NICU.
R9	The humanization of premature newborns in a neonatal intensive care unit: a proposal for a humanized protocol	Cintra; Oliveira, (2015) [14]	To identify the humanization process of the nursing team in the Neonatal ICU, highlighting the care of premature newborns.	The protocol of humanized care for premature infants in the Neonatal ICU is of paramount importance, considering that the nursing care provided is a way to alleviate the stressors during the nb's stay in the NICU.
R10	Comprehensive care for premature newborns: implications of practices and public policy	Klossowski et al., (2016) [2]	Understand how the care of the sick to the premature newborn occurs.	The nursing care provided to premature infants in the NICU are: Observation of premature infants in the first 24 hours of life; hydration; food; skin; infection; umbilical stump, among others.
R11	Neonatal pain management: influence of psychological and organizational	Martins et al. (2016) [1]	To analyze factors that influence pain management in preterm infants by 84 nursing	The nursing professionals participating in the study associate prematurity with birth weight, recognize the importance of pain treatment

	factors.		professionals from a neonatal unit.	(97%), but know little about its evaluation and measures (32%), performing most of 20 invasive procedures without analgesia (70%).
R12	Nursing care for premature newborns in a neonatal intensive care unit	Oliveira et al. (2018) [15]	To analyze the evidence related to nursing care to premature newborns in the NICU	Nurses must constantly seek training, because patients who are in the NICU need specific and holistic care.

Source: Author Data (2018)

4. DISCUSSION

Regarding the transition from the newborn to extrauterine life, R9 state that this process is a stressful event, because the NB goes from a safe, humid and warm environment with few stimuli where their vital needs are met, to the completely inverse environment of the usual (intrauterine). R2 complements that high-risk newborns are classified according to gestational age; birth weight; apgar; and pathophysiological problems.

Since the emergence of the neonatal therapy unit, high-risk Preterm Newborns (PTNb) have achieved a longer survival. R1 point out that technology in care practice often has in its biopsychosocial unit away from mother and NB in the process of recovery of premature infants, and this hinders and significantly affects the maternal/child bond [8].

According to R4, premature neonates are subject to stress, as they are continuously bombarded by technical procedures for improvement and monitoring of vital signs and pathology. R2 disagrees with R4 and emphasizes the importance of the tools that help nursing care such as: monitoring oxygenation, motor and respiratory physiotherapy and in addition to technical procedures the maternal/child bond; resulting in a reduction in prolonged oxygenation and hospitalization time.

According to R3, the nursing diagnosis process is the ideal methodological model for nurses to apply their technical-scientific knowledge to the care practice of premature infants, favouring the care and organization of the necessary conditions, promoting continuous nursing care.

The authors R2 state that nurses end up getting more involved with direct care, such as:

managerial, bureaucratic activities, with nursing diagnoses and end up leaving aside family support activities, when they are performed, these occur unsystematically. Such family care interventions favor the parents' adaptation to the preterm routine, considering that they are part of a risk group and strengthening the parent/NB bond [16].

The authors R6 emphasize that it is necessary that there are enough professionals to provide adequate care, because according to Pereira [6] and R4 the premature infant when hospitalized in the NICU is exposed to several factors that can stress, such as constant noises; short-term procedures, tests, alarms, temperature fluctuations of the incubator, among others. It is necessary that nurses be attentive to crying, agitation, constantly evaluating the NB according to the pain scale, changes in vital signs, because this way will identify the needs of the premature, for this it is necessary human resources as recommended by the World Health Organization.

According to R11, the practice of pain relief measures in the NICU requires a thorough investigation, since its implementation depends on several factors inherent to the environment, the patient and the team that provides care. The identification and use of the pain scale are fundamental to identify specific strategies.

In agreement with the aforementioned author, R8 emphasize that a critical evaluation of the nursing team is necessary about the care that is offered to premature newborns, especially with regard to decision-making to perform procedures and manipulations during therapy; so that it does not become a stressor, always paying attention to the tolerance of the premature.

According to R5, breastfeeding showed a significant improvement in the condition of premature neonates; another significant factor for

patient improvement is the prevention of infections during the icustay period, and it is up to the nursing team to take all care related to this risk factor.

About the humanization of care for premature R9, they state that it was instituted to transform the form of care, and thus make room for humanization in this task, as it helps to reduce the stress suffered by the NB. In concomitance R10, they show that it was fundamental to create public policies aimed at premature infants, because they are children who need comprehensive humanized monitoring of their development; it is necessary a method of comprehensive nursing care throughout the development period, until the child overcomes prematurity.

Nurses have technical and scientific support to outline model guidelines for nursing care in NICU to premature infants. The authors R7 reinforce that for this it is relevant that the professional development skills through training to work in this sector, managing the service and making appropriate decisions to provide qualified and safe care.

The authors R12 [15] in conjunction with R11 emphasize that it is necessary that nurses can act and support newborns and parents, and may clarify doubts and perform in-service education for staff and health education for the countries and families relevant to the treatment of the newborn. And according to Flores, [17], when the professional is able to work in a given sector he reconciles the technology available with the promotion of welcoming.

From these reflections, it is evident that the health professional needs a greater specificity in the care of premature infants, since they deal directly with the advances that require a NICU. It is essential that these professionals be aware of the risks and benefits of manipulation in these preterm neonates, for humanized care and ensure the survival of premature infants.

5. CONCLUSION

This study allowed a reflection on nursing care for premature infants in the NICU, focusing on humanized care for the maternal and child binomial as a means of a faster recovery of PTNB and psychological support for the puerperal woman. Therefore, it is necessary a real implication of the nurse with the care

process in order to recognize it as a strong and effective tool in the care of premature infants.

It is concluded that when the NB is hospitalized, due to the hostile environment, due to the absence of the mother associated with excessive manipulation by the health team, it can trigger a stress, which can harm the patient's clinical condition. It is necessary more than technical care, especially by nurses, who are the professionals who provide intensive care to the Newborn in the NICU; It is necessary sensitivity and perception, meeting the intensive needs that the premature infant needs and affection that often the NB does not have gives mother during the hospitalization period.

In view of the articles read, it is necessary to formulate more studies on nursing care for premature infants in nicu, considering that each day increases the incidence of deliveries that precede sit-in time.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Martins SW, et al. Neonatal pain management: Influence of psychological and organizational factors. *Estud. Psychol. (Campinas), Campinas.* 2016;33(4):633-644.
2. Klossowski DG, et al. Comprehensive care for premature newborns: Implications of public policy and practices. *Rev. CEFAC, São Paulo.* 2016;18(1):137-150.
3. Braga PP, Sena RR de. Strategies to effect the continuity of post-discharge care for premature babies: An integrative review. *Acta Paul. Inf., São Paulo.* 2012;25(6):975-980.
4. Giunta APN, Lacerda RA. Inspection of Health Services Hospital Infection Control Programs by Health Surveillance: Situation diagnosis. *Rev. Esc. Nursing. USP, São Paulo.* 2016;40(1):64-70.
5. Oliveira ICS. The advent of incubators and nursing care for premature infants in the first half of the 20th century. *Context Text - Enfer. Florianópolis.* 2012;13(3):459-466.
6. Pereira FL, et al. The handling of preterm infants in a Neonatal Intensive Care Unit. *Rev. Esc. Nursing. USP, São Paulo.* 2013;47(6):1272-1278.

7. Merighi MAB. Nursing care for premature babies: some basic procedures. Rev. Esc. Nursing. USP, São Paulo. 2017;19(3):231-237.
8. Scochi CGS, et al. Leisure for mothers of hospitalized high-risk babies: Analysis of the experience from the perspective of these women. Rev. Latino-Am. Nursing, Ribeirão Preto.. 2008;12(5):727-735.
9. Mello DF de, Rocha SMM. Nursing care for premature children: A review of the literature on follow-up. Rev. Bras. Inf., Brasília. 2009;52(1):14-21.
10. Del'angelo N, et al. Nursing diagnoses of premature infants under intermediate care. Rev. Bras. Inf., Brasília. 2010;63(5):755-761.
Available:http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-71672010000500010&lng=pt&nrm=iso (Accessed on Nov.18 2017)
11. Gomes CA, Hanh GV. Manipulation of newborns admitted to the ICU: Alert to nursing. Academic Highlights Magazine. CCBS / Univates. 2011;3(3).
12. Freitas BAC de, et al. Epidemiological characteristics and deaths of premature infants treated at a referral hospital for high-risk pregnant women. Rev. Bras. Tue. Intensive, São Paulo. 2012;24(4):386-392.
13. Camelo SHM. Professional competence of nurses to work in Intensive Care Units: An integrative review. Rev. Latino-Am. Nursing, Ribeirão Preto. 2012;20(1):192-200.
14. Cintra FAF, Oliveira LD. The humanization of the premature newborn in a neonatal intensive care unit: A proposal for a humanized protocol. R. Bras. E / Jferm. Brasília. 2015;4(5).
15. Oliveira HM de, Silva CPR, Lacerda RA. Infection control and prevention policies related to health care in Brazil: Conceptual analysis. Rev. Esc. Nursing. USP, São Paulo. 2018;50(3):505-511.
16. Brasil. Ministry of Health. Information System on Live Births-SINASC; 2017.
Available:<http://portalsaude.gov.br>
17. Flores MR, et al. Association between risk indicators for child development and maternal emotional state. Rev. CEFAC, São Paulo. 2012;15(2):348-360.

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