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TECHNOLOGICAL ADAPTATIONS IN NEONATAL NURSING EDUCATION

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ABSTRACT

The aim of this study is to identify the main technologies used as mediators in Neonatal Nursing. A Narrative Literature Review methodology was adopted, using the Scientific Electronic Library Online and the Directory of Open Access Journal databases. The results showed that the most frequently used mediating technologies in care related to Neonatal Nursing are based on software. It is concluded that the national publication addressing the subject of this study is still in its early stages, and that further research is necessary in order to add value to the findings of this research.

**Keywords:** Care; Neonatal Nursing; Technologies.

1 Introduction

The systematization of nursing care in a Neonatal Intensive Care Unit is complex, dynamic, interactive, and interdependent on other health systems, driven by a process of care and good managerial practices that allow for pre-term infants and their families to receive care that addresses the fragility and uncertainties of living/surviving under unique life conditions.

It is estimated that currently 15 million premature births occur worldwide, and approximately 1 million children die due to complications from prematurity, making it the leading cause of death in children under five years old (MAIA et al., 2022). In 2018, Brazil was already ranked tenth in the world in the number of live premature births and 16th in deaths resulting from complications of prematurity. Thus, approximately 350,000 neonates are premature, representing about 12% of births in the country (ARAUJO, 2018, p. 2).

In addition to premature infants, very low birth weight newborns constitute a group that also includes babies with intrauterine growth retardation. This clinical picture can show different survival outcomes, ranging from normality to a range of complications such as cerebral palsy, deafness, mental retardation, blindness, and more broadly, learning and behavioral problems (DUTRA et al., 2019).

Dutra et al., (2019) showed that the actions of the multi-professional team are geared towards concern and commitment to not just ensuring the survival of the pre-term baby. There is an increasing incorporation of care aimed at avoiding iatrogenic issues and sequelae for these beings, seeking to integrate them into their family and society with quality of life.

Therefore, it becomes important to analyze the quality of life in which this child and their family will leave the hospital environment after the hospitalization process, as well as the traditional focus on morbidity and mortality and life extension. In this way, the training of professionals becomes indispensable to ensure not only survival (VIEIRA et al., 2019).

According to Klock et al., (2020), nurses play an essential role in coordinating relationships in both care routines and organizational routines. Considering their involvement with families, other health team professionals, and support services, their position is strategic in the

search for solutions and alternatives to challenges and limitations that emerge in the daily life of intensive therapy, using autonomy and creativity.

The objective of this study is to identify the main technologies used as mediators in Neonatal Nursing. The association of technological resources with the substantial experience of professionals who have experience in neonatology can collaborate with research and updating specialized care for preterm infants who display fragility and vulnerability from birth, providing a higher survival rate for neonates.

## Methodology

This is a Narrative Literature Review (NLR) using the databases Scientific Electronic Library Online (Scielo) and Directory of Open Access Journals (DOAJ). The inclusion criteria were: (i) articles published between 2011 and 2020; (ii) articles published in the Portuguese language, and (iii) articles that featured the search terms in the title. The exclusion criteria were: (i) articles that did not feature the search terms in the title and (ii) review articles.

## Results and Discussion

The search resulted in 15 articles, with 8 found in the Scielo database and 7 in the DOAJ database. After applying the inclusion and exclusion criteria, 4 duplicate articles were identified, and of the selected articles, only 1 was excluded for not meeting the established criteria for the study. Table 1 presents the articles obtained through the NLR.

Table 1: Articles resulting from the RNL

Title	Authors	Year	Mediating Technologies
Tecnologia educacional em saúde: contribuições para a enfermagem pediátrica e neonatal	Fonseca et al.	2011	Educational software Semiotics and semiology of the preterm newborn
Enfermagem neonatal em cuidados intensivos: o olhar das famílias	Soares et al.	2014	Light Technology: Human relations based on the assistance approach
Tecnologias aplicadas pela enfermagem no cuidado neonatal	Dias et al.	2015	Sound device for music therapy and light technologies
Avaliação da interação estudante- tecnologia educacional digital em enfermagem neonatal	Castro	2015	Ergolist, Moodle Platform, and Social Networks.
Tecnologias de informação e registro do processo de enfermagem: estudo de caso em UTI neonatal	Pereira; Coelho; Bachion	2016	Information and Communication Technologies in print and electronic media.
O uso de Tecnologia Leve na promoção da relação enfermeira e pais na UTI Neonatal	Rolim et al.	2017	Light Technology: Reception
Tecnologias de enfermagem no manejo da dor em recém-nascidos na unidade de terapia intensiva neonatal	Nóbrega et al.	2018	Software Statistical Package for Social Sciences (SPSS)
Tecnología educacional para mediar el acogimiento de “familiares canguro” en unidades neonatales	Nascimento; Teixeira	2018	Educational Booklet
Construção e validação de tecnologia educacional para vínculo mãe-filho na unidade de terapia intensiva neonatal	Santos et al.	2020	Educational Booklet
Tecnologia, humanização e bioética: percepções de enfermeiras que atuam no cuidado intensivo neonatal	Corrochel et al.	2021	Software Atlas TI-versão 8

Fonte: Os autores (2023).

Among the studies obtained, 2 adopt Light Technologies. According to Merhy (2002), Light Technologies are relationship technologies, such as reception, bonding, empowerment, accountability, and management as a way to govern work processes. Among these studies, one adopted the concept of reception to promote the relationship between nurses and parents in the Neonatal Intensive Care Unit (NICU), and another highlighted human relations based on the care approach.

It was noted that none of the studies highlighted the use of video as a mediating technology, considering that this has become essential in times of pandemic. It was also observed that 2 recent studies use booklets. Both video and booklets deserve special attention as Light-Hard technologies, for possessing a playful teaching-learning method (NETO, 2020).

Based on the results presented in Table 1, it can be seen that the most frequent use of technologies related to Neonatal Nursing is based on software. Among the studies presented, 3 of them adopted software as mediating technologies.

Given the time reference of "the last 10 years," a larger number of articles was expected, despite the study descriptors being based on the Portuguese language, considering that the objective was to identify technologies most frequently adopted in national articles that pointed to the use of technologies in Neonatal Nursing education. Thus, the results suggest the need for greater coverage and publication on the subject.

## Conclusion

The study allowed for the identification of the main technologies used as mediators in Neonatal Nursing. It is concluded that national publication addressing the subject of this study is still in its early stages. It is known that the present era offers a wide range of technological resources. Thus, the use of technologies in care has become an indispensable factor. Through this study, it becomes possible to understand the importance of adopting technologies in Neonatal Nursing. It suggests encouraging more researchers to publish on the subject. Future research can add value to the findings of this study.

## Referências

ARAÚJO, B. B. M. de et al. Prática social da enfermagem na promoção do cuidado materno ao prematuro na unidade neonatal. **Texto contexto - enferm.** Florianópolis, v. 27, n. 4, e2770017, 2018 Disponível em: <[http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0104-7072018000400306&lng=en&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-7072018000400306&lng=en&nrm=iso)>. Acesso em: 11 de out 2020. .

CASTRO, F. S. F. de et al. Avaliação da interação estudante-tecnologia educacional digital em enfermagem neonatal. **Revista da Escola de Enfermagem da USP**, v. 49,p. 114-121, 2015.

CORROCHEL, I. C. et al. Tecnologia, humanização e bioética: percepções de enfermeiras que atuam no cuidado intensivo neonatal. **Research, Society and Development**, v. 10, n. 12, p. e281101220500-e281101220500, 2021.

DIAS, I. M. A. V. et al. Tecnologias aplicadas pela enfermagem no cuidado neonatal. **Revista Baiana de Enfermagem**, v. 29, n. 1, 2015.

DUTRA, H. S. et al. Qualidade de vida de crianças que nasceram com muito baixo peso ou extremo baixo peso. **Revista APS**, Minas Gerais, v. 22, n. 2, p. 372-384, abr./jun. 2019.

FONSECA, L. M. M. et al. Tecnologia educacional em saúde: contribuições para a enfermagem pediátrica e neonatal. **Escola Anna Nery**, v. 15, p. 190-196, 2011.

KLOCK, P. et al. Melhores práticas na gerência do cuidado de enfermagem neonatal. **Texto contexto - enferm.** Florianópolis, v. 28, e20170157, 2019. Available from <[http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0104-07072019000100394&lng=en&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-07072019000100394&lng=en&nrm=iso)>. access on 12 Oct. 2020. Epub Dec 09, 2019. <https://doi.org/10.1590/1980-265x-tce-2017-0157>.

MAIA, A. A. A. et al. Fatores de risco da prematuridade: uma revisão narrativa. **Revista Eletrônica Acervo Saúde**, v. 15, n. 2, p. e9711-e9711, 2022.

MERHY, E. E. Saúde: a cartografia do trabalho vivo. São Paulo (SP):Hucitec; 2002.

NASCIMENTO, M. H. M.; TEIXEIRA, E. Educational technology to mediate care of the “kangaroo family” in the neonatal unit. **Revista brasileira de enfermagem**, v. 71, p. 1290-1297, 2018.

NÓBREGA, A. S. M. et al. Tecnologias de enfermagem e o manejo da dor em recém-nascidos na unidade de terapia intensiva neonatal. 2016.

NETO, J. B. S. B. et al. Construção de tecnologias educativas como formade educação em saúde para a prevenção da Covid-19: relato de experiência. **Revista Eletrônica Acervo Saúde**, v. 12, n. 9, p. e3737-e3737, 2020.

OLIVEIRA, W. A. et al. Saúde do escolar: uma revisão integrativa sobre família e bullying. **Ciência & saúde coletiva**, v. 22, p. 1553-1564, 2017.

PEREIRA, R. B.; COELHO, M. A.; BACHION, M. M. Tecnologias de informação e registro do processo de enfermagem: estudo de caso em UTI neonatal. 2016.

ROLIM, K. et al. O uso de tecnologia leve na promoção da relação enfermeira e pais na UTI Neonatal. **CIAIQ 2017**, v. 2, 2017.

SANTOS, A. S. et al. Construção e validação de tecnologia educacional para vínculo mãe-filho na unidade de terapia intensiva neonatal. **Revista Brasileira de Enfermagem**, v. 73, 2020.

SOARES, L. G. et al. Enfermagem neonatal em cuidados intensivos: o olhar das famílias. 2014.

SOUZA, M. T.; SILVA, M. D.; CARVALHO, R. Revisão integrativa: o que é e como fazer. **Einstein (São Paulo)**, v. 8, p. 102-106, 2010.

URSI, E. S.; GAVÃO, C. M. Prevenção de lesões de pele no perioperatório: revisão integrativa da literatura. **Revista Latino-Americana de Enfermagem**, v. 14, n. 1, p. 124-131, 2006.

VIEIRA, C. S. et al. Vivência discente e docente na continuidade do cuidado à criança de risco: Relato de experiência. **Revista de Enfermagem do Centro Oeste Mineiro**, Minas Gerais, v. 4, n. 3, p. 1393-1399, set./dez. 2014.