

# Kangaroo Method: potentialities, barriers and difficulties in humanized care for newborns in the Neonatal ICU

*Método Canguru: potencialidades, barreiras e dificuldades nos cuidados humanizados ao recém-nascido na UTI Neonatal*  
*Método Madre-Canguro: potencialidades, barreras y dificultades en atención humanizada al recién nacido en la UCI Neonatal*

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## ABSTRACT

**Objective:** To identify the potentialities, barriers and difficulties for the implementation of humanized care from the perspective of the Kangaroo Method. **Methods:** Integrative literature review with a time cut from 02/01/2015 to 06/01/2019, totaling ten articles in the final sample. **Results:** The findings were categorized into two categories: Potentialities for humanized care from the perspective of the Kangaroo Method; Barriers or difficulties to the implementation of the Kangaroo Method. Several potentialities for humanized care allied to technology and continuing education were identified, as well as several barriers to the implementation of the Kangaroo Method, such as lack of physical space, lack of professionals and team training, lack of knowledge, lack of adherence and professional demotivation. **Final considerations:** There are still few studies that address the potentialities, barriers and difficulties for the implementation of humanized care from the perspective of the Kangaroo Method, and most of those included in this review were conducted in Brazil and present a qualitative approach. **Descriptors:** Nursing Care; Kangaroo Method; Nursing; Neonatal Infant, Newborn; Intensive Care Units, Neonatal.

## RESUMO

**Objetivo:** Identificar as potencialidades, barreiras e dificuldades para a implantação do cuidado humanizado na perspectiva do Método Canguru. **Métodos:** Revisão integrativa de literatura com recorte temporal de 01/02/2015 a 01/06/2019, perfazendo dez artigos em sua amostra final. **Resultados:** Os achados foram categorizados em duas categorias: Potencialidades para o cuidado humanizado na perspectiva do Método Canguru; Barreiras ou dificuldades para a implementação do Método Canguru. Várias potencialidades para o cuidado humanizado aliadas à tecnologia e à educação permanente foram identificadas, assim como várias barreiras na implementação do Método Canguru, tais como falta de espaço físico, falta de profissionais e de treinamento da equipe, desconhecimento, falta de adesão e desmotivação profissional. **Considerações finais:** Ainda são poucos os estudos que abordam as potencialidades, barreiras e dificuldades para a implantação do cuidado humanizado na perspectiva do Método Canguru, e a maioria daqueles incluídos nesta revisão foram realizados no Brasil e apresentam abordagem qualitativa. **Descritores:** Cuidados de Enfermagem; Método Canguru; Enfermagem; Recém-Nascido; Unidades de Terapia Intensiva Neonatal.

## RESUMEN

**Objetivo:** Identificar las potencialidades, barreras y dificultades a la implantación del cuidado humanizado en la perspectiva del Método Madre-Canguro. **Métodos:** Revisión integrativa de literatura con recorte temporal de 01/02/2015 a 01/06/2019, sumando diez artículos en su muestra final. **Resultados:** Los hallados fueron categorizados en dos categorías: Potencialidades al cuidado humanizado en la perspectiva del Método Madre-Canguro; Barreras o dificultades a la implementación del Método Madre-Canguro. Varias potencialidades al cuidado humanizado aliadas a tecnología y educación permanente fueron identificadas, así como varias barreras en la implementación del Método Madre-Canguro, tales como falta de espacio físico, falta de profesionales y entrenamiento del equipo, desconocimiento, falta de adhesión y desmotivación profesional. **Consideraciones finales:** Aún son pocos los estudios que abordan las potencialidades, barreras y dificultades a implantación del cuidado humanizado en la perspectiva del Método Madre-Canguro, y la mayoría de aquellos incluidos en esta revisión fueron realizados en Brasil y presentan abordaje cualitativo. **Descritores:** Atención de Enfermería; Método Madre-Canguro; Enfermería; Recién Nacido; Unidades de Cuidado Intensivo Neonatal.

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## INTRODUCTION

The Neonatal Units have as their duty the integral and humanized care of the newborn (NB) severe or potentially severe and have the purpose of prioritizing actions aimed at reducing perinatal and neonatal morbidity and mortality. They seek to safeguard access to the different levels of neonatal care, as well as the inclusion of training and qualification of human resources for the care of the NB. The care must be integral to the severe or potentially severe NB and must be articulated to a line of progressive care<sup>(1)</sup>.

Every year in the world, of the 30 million preterm or low birth weight (LBW) newborns, about 2.5 million die before their 28th birthday from preventable causes, and 1 million survive with some type of sequelae, including cerebral palsy and cognitive problems<sup>(2)</sup>. In Brazil, every year, there are approximately 360,000 preterm newborns (PTNB) or LBW, and most of these types of births could be avoided with adequate prenatal care<sup>(3)</sup>.

In Brazil, when the newborn needs to be hospitalized, the Unified Health System (UHS) provides humanized care to him and his parents, so that they participate in the care of the child, creating bond and making the passage through the Neonatal Unit more peaceful. In 2000, the Brazilian Ministry of Health launched the Guideline Standard for Implementation of the Kangaroo Method (KM), through Ordinance 693/GM, June 5, which was repealed by Ordinance No. 1683 of 2007, to be considered as public policy and defined as a model of care, with the fundamental principle of humanized care<sup>(4)</sup>.

The KM recommends specialized care provided to newborns hospitalized in neonatal units so that their development can be adequate, encouraging care with the ambience (light, noise); use of non-pharmacological measures for pain relief (sucrose, therapeutic touch); encouragement of skin-to-skin contact (as early as possible) of the mother and father with the NB, in a gradual, pleasurable way for them, until reaching the kangaroo position; parental participation in care in order to ensure the creation of a bond and encourage breastfeeding; and encouragement of family visits. The method is carried out in three stages, the first still in the Neonatal Intensive Care Unit (NICU) and in the Neonatal Conventional Intermediate Care Unit (NICUCo); the second, in the Kangaroo Neonatal Intermediate Care Unit (KICUCa); and the third, after hospital discharge, at home<sup>(4)</sup>.

One of the aspects valued by the KM in Brazil is the consolidation of "evidence-based neonatology", which has been evidenced by the training and qualification of new professionals directly working in NB care and by the positive impact on neonatal outcomes, not only in terms of survival and discharge of newborns, but of quality of life that the NB and his family will have throughout their lives<sup>(5)</sup>.

Considering that the Ministry of Health has made the KM a public policy and model of neonatal care that has as its fundamental principle the humanized, comprehensive and safe care and is able to positively impact neonatal outcomes and quality of life of PTNBs and LBW throughout life, the interest in knowing why this method has not yet been implemented in all neonatal units in Brazil arose. Thus, this study presents as a research question: What are the potentialities, barriers and difficulties for the implementation of humanized care from the perspective of the Kangaroo Method?

## OBJECTIVE

To identify the potentialities, barriers and difficulties for the implementation of humanized care from the perspective of the Kangaroo Method.

## METHODS

### Type of study

This is an integrative review with the objective of presenting evidence, discussing possibilities, offering suggestions for new theoretical questions, and identifying needed research. To this end, it is important to have clear guidelines for methods and procedures, following strict standards and considering the theory, methods, results, and data covered in the reviewed studies<sup>(6)</sup>.

### Methodological procedures

The integrative review proposes several steps for its development: formulating the objective and the related questions to be answered, developing the review protocol; establishing criteria for inclusion and exclusion of studies; establishing the number of studies; developing a questionnaire for data collection; defining rules in the inferences of the results; reading, analyzing, discussing and interpreting the data in categories; and presenting the results<sup>(6)</sup>.

### Collecting and organizing data

Data collection was performed on June 1, 2019, in the platforms: Virtual Health Library (VHL), PUBMED Portal, Scientific Electronic Library On-line (SciELO), CAPES journals portal. Also, in the databases: U.S. National Library of Medicine® (MEDLINE), The Cumulative Index to Nursing and Allied Health Literature (CINAHL), Latin American and Caribbean Literature on Health Sciences (LILACS), Scopus, Web of Science, Cochrane Library, Nursing Database (BDENF). Studies published from 02/01/2015 to 06/01/2019 were included.

The following descriptors were defined as descriptors in Portuguese: *Método Canguru, UTI Neonatal, RecémNascido Pré-Termo*. Descriptors in English: Kangaroo Method, Intensive Care Units, Neonatal, Premature Infant. Descriptors in Spanish: *Metodo Canguro, Terapia Intensiva Neonatal, Recien Nacido Prematuro*. The data sources were defined considering that they are the ones with the largest number of published studies in the health area, besides being the databases with the largest number of indexed journals. After defining the descriptors and data sources, the following search strategies were established (Chart 1).

In the first stage (data collection), 1,626 studies were selected that met the inclusion and exclusion criteria already defined in the research protocol. The inclusion criteria adopted in the study were: original, complete articles, published in the last five years, indexed in the selected databases as shown in Chart 1, published in English, Spanish, and Portuguese, which had the descriptors and/or keywords listed in the previously validated protocol. In the second step, the articles that were duplicated in the databases were automatically excluded, leaving 1,130 studies. In the third step, these were subjected to title and abstract reading, and 45 studies met the inclusion criteria for the next step. In the fourth

step, the 45 studies were read in their entirety to identify those that adequately answered the research question or were relevant to the study objective, and a sample of ten studies was obtained. The flowchart detailing the research steps is shown in Figure 1.

**Chart 1** – Database search strategies

Database	Junctions
MEDLINE	((("Kangaroo-Mother Care Method"[Mesh] OR "Kangaroo Mother Care Method"[All Fields] OR ("kangaroo-mother care method"[MeSH Terms] OR ("kangaroo-mother"[All Fields] AND "care"[All Fields] AND "method"[All Fields]) OR "kangaroo-mother care method"[All Fields] OR ("kangaroo"[All Fields] AND "mother"[All Fields] AND "care"[All Fields] AND "methods"[All Fields])) OR "Kangaroo Mother Care"[All Fields] OR "Kangaroo-Mother Care"[All Fields] OR "Kangaroo method"[All Fields] OR ("macropodidae"[MeSH Terms] OR "macropodidae"[All Fields] OR "kangaroo"[All Fields])) AND ("Intensive Care Units, Neonatal"[Mesh] OR "Neonatal ICU"[All Fields] OR "Neonatal Intensive Care Units"[All Fields] OR "Newborn Intensive Care Units"[All Fields] OR "Newborn Intensive Care Units (NICU)"[All Fields] OR "NICU"[All Fields] OR "Neonatal ICUs" OR "Newborn ICUs" OR "Newborn ICU"[All Fields] OR "Newborn ICUs"[All Fields] OR "Infant, Premature"[Mesh] OR "Premature Infant"[All Fields] OR "Preterm Infants"[All Fields] OR "Preterm Infant"[All Fields] OR "Premature Infants"[All Fields] OR "Neonatal Prematurity"[All Fields])) AND ("2015/01/01"[PDAT] : "2019/06/01"[PDAT]) AND (English[lang] OR Portuguese[lang] OR Spanish[lang]))
Scopus	ALL ( ("Kangaroo Mother Care Method" OR "Kangaroo-Mother Care Methods" OR "Kangaroo Mother Care" OR "Kangaroo-Mother Care" OR "Kangaroo method" OR kangaroo) AND ( "Neonatal ICU" OR "Neonatal Intensive Care Units" OR "Newborn Intensive Care Units" OR "Newborn Intensive Care Units (NICU)" OR "NICU" OR "Neonatal ICUs" OR "Newborn ICUs" OR "Newborn ICUs" OR "Premature Infant" OR "Preterm Infants" OR "Preterm Infant" OR "Premature Infants" OR "Neonatal Prematurity" ) ) AND ( LIMIT-TO ( PUBYEAR, 2019 ) OR LIMIT-TO ( PUBYEAR, 2018 ) OR LIMIT-TO ( PUBYEAR, 2017 ) OR LIMIT-TO ( PUBYEAR, 2016 ) OR LIMIT-TO ( PUBYEAR, 2015 ) ) AND ( LIMIT-TO ( LANGUAGE, "English" ) OR LIMIT-TO ( LANGUAGE, "Spanish" ) OR LIMIT-TO ( LANGUAGE, "Portuguese" ) ) AND ( LIMIT-TO ( DOCTYPE, "ar" ) OR LIMIT-TO ( DOCTYPE, "re" ) )
Web of Science	TS=(("Kangaroo Mother Care Method" OR "Kangaroo-Mother Care Methods" OR "Kangaroo Mother Care" OR "Kangaroo-Mother Care" OR "Kangaroo method" OR kangaroo) AND ("Neonatal ICU" OR "Neonatal Intensive Care Units" OR "Newborn Intensive Care Units" OR "Newborn Intensive Care Units (NICU)" OR "NICU" OR "Neonatal ICUs" OR "Newborn ICU" OR "Newborn ICUs" OR "Premature Infant" OR "Preterm Infants" OR "Preterm Infant" OR "Premature Infants" OR "Neonatal Prematurity")) ( 2019 OR 2018 OR 2017 OR 2016 OR 2015 ) AND ( ENGLISH OR PORTUGUESE OR SPANISH ) AND ( ARTICLE OR REVIEW )
SciELO	((("Kangaroo Mother Care Method" OR "Kangaroo-Mother Care Methods" OR "Kangaroo Mother Care" OR "Kangaroo-Mother Care" OR "Kangaroo method" OR kangaroo OR "Método Canguru" OR "Método Mãe-Canguru" OR "Método Mãe Canguru" OR "Mãe Canguru" OR "Projeto Mãe-Canguru" OR Canguru OR "Método Madre-Canguro" OR "Metodo Canguro" OR Canguro) AND ("Neonatal ICU" OR "Neonatal Intensive Care Units" OR "Newborn Intensive Care Units" OR "Newborn Intensive Care Units (NICU)" OR "NICU" OR "Neonatal ICUs" OR "Newborn ICU" OR "Newborn ICUs" OR "Premature Infant" OR "Preterm Infants" OR "Preterm Infant" OR "Premature Infants" OR "Neonatal Prematurity" OR "Unidades de Terapia Intensiva Neonatal" OR "Centros de Terapia Intensiva para Recém-Nascidos" OR "CTI Neonatal" OR "Unidade Neonatal de Cuidados Intensivos" OR "Unidade Neonatal de Terapia Intensiva" OR "Unidade Neonatal de Tratamento Intensivo" OR "Unidade de Terapia Intensiva do Tipo III" OR "Unidade de Terapia Intensiva Neonatal" OR "Unidade de Tratamento Intensivo Neonatal" OR "Unidades de Cuidados Intensivos Neonatais" OR "Unidades Neonatais de Cuidados Intensivos" OR "Unidades Neonatais de Terapia Intensiva" OR "Unidades de Tratamento Intensivo Neonatal" OR "Unidades de Terapia Intensiva para Recém-Nascidos" OR "UCI Neonatal" OR "UTI Neonatal" OR "Unidades de Cuidado Intensivo Neonatal" OR "Recém-Nascido Prematuro" OR "Bebê Prematuro" OR "Bebês Prematuros" OR "Lactente Nascido Prematuramente" OR "Lactente Nascido Pré-Termo" OR "Lactente Prematuro" OR "Lactente Pré-Termo" OR "Lactentes Nascidos Prematuramente" OR "Lactentes Nascidos Prematuros" OR "Lactentes Nascidos Pré-Termo" OR "Lactentes Prematuros" OR "Lactentes Pré-Termo" OR "Neonato Prematuro" OR "Neonato Pré-Termo" OR "Neonatos Prematuros" OR "Neonatos Pré-Termo" OR "Prematuridade Neonatal" OR Prematuro OR "Pré-Termo" OR Prematuros OR "Recém-Nascido Pré-Termo" OR "Recém-Nascidos Prematuros" OR "Recém-Nascidos Pré-Termo" OR "Recien Nacido Prematuro" OR "Lactante Prematuro"))
CINAHL	((("Kangaroo Mother Care Method" OR "Kangaroo-Mother Care Methods" OR "Kangaroo Mother Care" OR "Kangaroo-Mother Care" OR "Kangaroo method" OR kangaroo) AND ("Neonatal ICU" OR "Neonatal Intensive Care Units" OR "Newborn Intensive Care Units" OR "Newborn Intensive Care Units (NICU)" OR "NICU" OR "Neonatal ICUs" OR "Newborn ICU" OR "Newborn ICUs" OR "Premature Infant" OR "Preterm Infants" OR "Preterm Infant" OR "Premature Infants" OR "Neonatal Prematurity"))
LILACS e BDENF	((("Kangaroo Mother Care Method" OR "Kangaroo-Mother Care Methods" OR "Kangaroo Mother Care" OR "Kangaroo-Mother Care" OR "Kangaroo Method" OR Kangaroo OR "Método Canguru" OR "Método Mãe-Canguru" OR "Método Mãe Canguru" OR "Mãe Canguru" OR "Projeto Mãe-Canguru" OR Canguru OR "Método Madre-Canguro" OR "Metodo Canguro" OR Canguro) AND ("Neonatal ICU" OR "Neonatal Intensive Care Units" OR "Newborn Intensive Care Units" OR "Newborn Intensive Care Units (NICU)" OR "NICU" OR "Neonatal ICUs" OR "Newborn ICU" OR "Newborn ICUs" OR "Premature Infant" OR "Preterm Infants" OR "Preterm Infant" OR "Premature Infants" OR "Neonatal Prematurity" OR "Unidades de Terapia Intensiva Neonatal" OR "Centros de Terapia Intensiva para Recém-Nascidos" OR "CTI Neonatal" OR "Unidade Neonatal de Cuidados Intensivos" OR "Unidade Neonatal de Terapia Intensiva" OR "Unidade Neonatal de Tratamento Intensivo" OR "Unidade de Terapia Intensiva do Tipo III" OR "Unidade de Terapia Intensiva Neonatal" OR "Unidade de Tratamento Intensivo Neonatal" OR "Unidades de Cuidados Intensivos Neonatais" OR "Unidades Neonatais de Cuidados Intensivos" OR "Unidades Neonatais de Terapia Intensiva" OR "Unidades de Tratamento Intensivo Neonatal" OR "Unidades de Terapia Intensiva para Recém-Nascidos" OR "UCI Neonatal" OR "UTI Neonatal" OR "Unidades de Cuidado Intensivo Neonatal" OR "Recém-Nascido Prematuro" OR "Bebê Prematuro" OR "Bebês Prematuros" OR "Lactente Nascido Prematuramente" OR "Lactente Nascido Pré-Termo" OR "Lactente Prematuro" OR "Lactente Pré-Termo" OR "Lactentes Nascidos Prematuramente" OR "Lactentes Nascidos Prematuros" OR "Lactentes Nascidos Pré-Termo" OR "Lactentes Prematuros" OR "Lactentes Pré-Termo" OR "Neonato Prematuro" OR "Neonato Pré-Termo" OR "Neonatos Prematuros" OR "Neonatos Pré-Termo" OR "Prematuridade Neonatal" OR Prematuro OR "Pré-Termo" OR Prematuros OR "Recém-Nascido Pré-Termo" OR "Recém-Nascidos Prematuros" OR "Recém-Nascidos Pré-Termo" OR "Recien Nacido Prematuro" OR "Lactante Prematuro"))
Cochrane Library	("Kangaroo Mother Care Method" OR "Kangaroo-Mother Care Methods" OR "Kangaroo Mother Care" OR "Kangaroo-Mother Care" OR "Kangaroo method" OR kangaroo) in Title, Abstract, Keywords and ("Neonatal ICU" OR "Neonatal Intensive Care Units" OR "Newborn Intensive Care Units" OR "Newborn Intensive Care Units (NICU)" OR "NICU" OR "Neonatal ICUs" OR "Newborn ICU" OR "Newborn ICUs" OR "Premature Infant" OR "Preterm Infants" OR "Preterm Infant" OR "Premature Infants" OR "Neonatal Prematurity") in Title, Abstract, Keywords, Publication Year from 2015 to 2019 in Cochrane Reviews

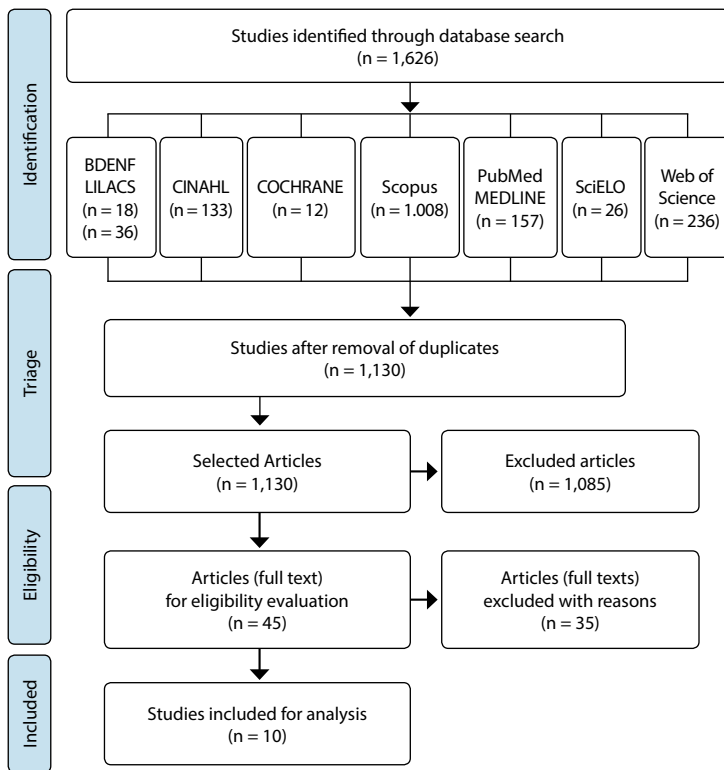


Figure 1 – PRISMA flowchart

### Data analysis

Data analysis and interpretation were organized by visualizing the data in a table with the following variables: article number, article reference, place where the article was published,

database, type of study, results, and level of evidence. For classification of the level of evidence, the hierarchy of evidence was used<sup>(7)</sup>.

After defining the sample, the data were collected considering the results in relation to the potentialities, barriers and difficulties for implementation of humanized care to the NB hospitalized in the neonatal unit from the perspective of the Kangaroo Method. The data analysis was done systematically.

### RESULTS

The integrative review was composed of ten studies, six (60%) selected from the Scopus data sources, representing the majority. The data sources BDENF, CINAHL, SciELO and PubMed had one article each, totaling (40%). As for the level of evidence, nine (90%) presented level VI and only one article (10%) had level II<sup>(7)</sup>. This is justified by the fact that these nine studies are qualitative in approach, and the other (10%), quantitative. Five studies (50%) were conducted in Brazil; and one (10% each) study, in Northern Ireland, England, Iran, Switzerland, and the United States, totaling (50%).

Table 2 shows the description of the characteristics of the ten articles included in this review<sup>(6-7)</sup>. Next, two categories are presented, based on the analysis of the results of the selected articles. The first category is called “Potentialities for the implementation of humanized care from the perspective of the Kangaroo Method”; and the second, “Barriers and/or difficulties for the implementation of humanized care from the perspective of the Kangaroo Method”.

Chart 2 – Summary of the studies included in the review according to title, journal, year of publication, study site, database, type of study, sample size, results, and level of evidence

Title, periodical and year	Study site and database	Type of study and sample size (n)	Results	Level of evidence
Management challenges for best practices of the Kangaroo Method in the Neonatal ICU <sup>(8)</sup> . Brazilian Journal of Nursing. 2018.	Brazil CINAHL	Qualitative study n = 8	The nurses demonstrated that they had difficulty in implementing the Kangaroo Method, for various reasons, including: lack of institutional management combined with lack of human resources, adherence of some professionals, and professional autonomy.	VI
The nursing social practice in the promotion of maternal care to the premature in the neonatal unit <sup>(9)</sup> . Text & Context Nursing. 2018.	Brazil SciELO	Critical discourse analysis n = 15	It is important that nurses also pay attention to maternal needs, favoring their potential to care for PTNB*.	VI
Nurses' adherence to the Kangaroo Care Method: support for nursing care management <sup>(10)</sup> . Latin American Journal of Nursing. 2015.	Brazil Scopus	Qualitative research n = 8	The importance of each team member as a multiplier of care was evidenced. Each one can be influential or not in the recognition of the Kangaroo Method as a care model, and the nurse is the great protagonist in this process.	VI
The value attributed by nursing professionals to the care proposed by the kanguru method <sup>(11)</sup> . UFPE Journal of Nursing on. 2017.	Brazil BDENF	Descriptive study with a qualitative approach n = 37	The Kangaroo Method is compared to “life insurance” by nurses for providing care that balances biological, environmental, and family needs in low-birth-weight preterm newborns. The method aims to protect and preserve the NB from the sequelae of prematurity, which provides adequate infant neuropsychomotor development.	VI
Conceptions of humanization of health professionals in neonatal intensive therapy unit <sup>(12)</sup> . Psychology Studies. 2015.	Brazil Scopus	Qualitative research n = 29	The professionals are able to understand and work humanization, distancing themselves from the biomedical model. They know the importance of an adequate environment, free of noise and unnecessary lights, and they also understand the relevance of parents' participation in the care of their children. There is demotivation of professionals due to lack of professional recognition.	VI

To be continued

Chart 2 (concluded)

Title, periodical and year	Study site and database	Type of study and sample size (n)	Results	Level of evidence
Kangaroo care in the high-technology neonatal unit: exploring evidence-based practice, policy recommendations and education priorities in Northern Ireland <sup>(13)</sup> . Journal of Neonatal Nursing. 2017.	Northern Ireland Scopus	Quantitative Research n = 78	Although nurses recognize the effects and benefits of the Kangaroo Method, there are still barriers to its implementation, such as inadequate environment and insecurity on the part of some professionals to start the method. However, professional experiences showed positive attitudes for the promotion of the method.	VI
Neonatal nurses' perceptions of supportive factors and barriers to the implementation of skin-to-skin care in extremely low birth weight (ELBW) infants - A qualitative study <sup>(14)</sup> . Journal of Neonatal Nursing. 2018.	England Scopus	Qualitative research n = 7	As a significant barrier to the implementation of the method, this study points to the unit, in addition to the lack of support from the medical team. On the other hand, nurses support the Kangaroo Method, skin-to-skin contact with restrictions for NB weighing less than 1,000 g.	VI
Knowledge and attitude of personnel, key factors in implementation of neonatal pain management in NICU <sup>(15)</sup> . Journal of Clinical and Diagnostic Research. 2017.	Iran Scopus	Qualitative study n = 35	There is a lack of knowledge by doctors and nurses of non-pharmacological methods for the relief of pain in newborns, such as skin-to-skin contact, which can be performed by parents during painful procedures, but is little used.	VI
The experiences of professionals regarding involvement of parents in neonatal pain management <sup>(16)</sup> . Journal of Obstetric, Gynecologic, and Neonatal Nursing. 2016.	Sweden PubMed	Qualitative study n = 23	For the parents' participation in pain management to be successful, the nurse's action in this process is important, stimulating skin-to-skin contact, non-nutritive sucking, and the use of sucrose. However, some factors hinder the parents' action: the conditions of the NB, lack of organization, space and staff.	VI
Kangaroo Care Education Effects on Nurses' Knowledge and Skills Confidence <sup>(17)</sup> . Journal of Continuing Education in Nursing. 2016.	USA Scopus	Quasi-experimental design pre-test and post-test n = 57	Although nurses already knew the benefits of the Kangaroo Method, their practice was limited due to lack of knowledge and skills. After taking a course, the nurses felt more prepared, understood the importance of parents staying with the NB, the kangaroo position for as long as possible, and the presence of parents during painful procedures.	II

\*Preterm newborns.

### Potentialities for the implementation of humanized care in the perspective of the Kangaroo Method

In a study conducted in a hospital where KM is encouraged with accredited tutors, this method is compared to "life insurance" for the NB<sup>(11)</sup>. The nurses believe that the KM is important for the care of low-birth-weight PTNBs, because it provides them with a better quality of life in the future. They also reinforce that KM is a strategy to preserve the NB from sequelae of prematurity, promoting an adequate infant neurological development, in addition to creating a bond with the mother, which facilitates breastfeeding and decreases the rates of hospital infections in the NB<sup>(11)</sup>.

The active participation of the NB's parents and family has been pointed out as an important factor for the humanization of care, through which professionals can provide care focused on respect for the other and also better communication with the family of the hospitalized NB<sup>(12)</sup>. Parents can help with non-pharmacological pain management by taking active roles such as skin-to-skin contact, non-nutritive sucking, restraint, and sucrose administration<sup>(16)</sup>.

In this direction, one of the studies evidences that nurses play an important role in the successful involvement of parents in pain management<sup>(16)</sup>. It was shown that having good communication with parents makes all the difference, as does giving them the freedom to choose to be present or not at the time of painful procedures. In addition, a partnership attitude with parents and organizational resources, such as time and personnel, promoted a humanized working environment in which it was possible to talk about neonatal pain with them<sup>(16)</sup>.

At the KM, the adaptation of the environment is also part of humanization: adjust the lighting, turning off the lights after the care is provided; cover the incubators when the newborns are sleeping; reduce noise levels; use towels to fix the glasses to cover the newborns' eyes when they are in phototherapy; protect the skin with tapes and stickers; group the care to avoid constant handling; and avoid handling during sleep<sup>(12)</sup>.

Some attitudes of adherence to the KM cited by nurses are: having a new look; believing; participating and interacting as a team; paying attention to affinities for the type of work that has been fundamental to the practice of humanized care<sup>(10)</sup>. Moreover, another study highlights that both continuing education and the adequacy of human resources, multi-professional work, and humanization of the environment are factors that facilitate the implementation of the KM<sup>(8)</sup>.

Regarding the orientations directed to the family, it is important that the nurse also pay attention to the mothers' needs, favoring their potentialities for the PTNB care, taking care with how to educate the mothers so that they stop being passive agents and become active in the care of their children<sup>(9)</sup>.

Knowledge brings confidence and skills, and the KM certification course can create enhanced knowledge. To this end, a course on KM was offered to nurses who believed in the physiological and psychological benefits of this method, but who, for lack of knowledge and skills about it, perceived the limitation of their practice. As a result, the nurses understood the importance of parents being present during painful procedures, of babies staying as long as possible in the kangaroo position, and that this

increased weight gain, although some insecurities still remained about the care right after birth<sup>(17)</sup>.

Last but not least, perceptions about care based on professional experience revealed a positive attitude to promote KM, and nurses agreed that learning about this method would make them better professionals<sup>(13)</sup>.

### **Barriers and/or difficulties to the implementation of humanized care from the perspective of the Kangaroo Method**

Some factors hinder the implementation of humanized care, such as the complexity of care delivery related to the health condition of PTNBs<sup>(16)</sup>. The nurses, while supporting skin-to-skin contact in PTNBs, believe there are barriers to implementing this procedure in those weighing less than 1,000 g<sup>(14)</sup>.

Other barriers mentioned to implementing KM are lack of organization, lack of staff, and limited space within the NICU<sup>(16)</sup>. Safety concerns were also cited, such as insufficient training, increased workload, lack of guidelines and management support, and lack of physician support<sup>(14)</sup>. Lack of time, scarcity of human resources, professional availability, technical insecurity, and a noisy and hectic environment are also limiting factors for adherence to KM<sup>(10)</sup>.

Study has pointed out that nurses recognize the effects and benefits of the KM. However, there are barriers to its implementation, including: safety concerns, nurses' reluctance to initiate the method, and the environment also played a significant role in hindering the initiation of the method<sup>(13)</sup>.

Another study has shown that the difficulties pointed out for nurses to implement the KM were: lack of adherence of professionals to the practices of the method; need for professional and institutional organization to avoid the lack of resources; problems in the structure and work process of professionals in the institution; and lack of professional autonomy<sup>(8)</sup>.

However, there is a need for paradigm shift on the vision and attitudes in care practices aimed at the KM, going beyond the importance of knowing this model of care that considers first the needs of the NB and his family, leaving aside the mechanized care. Management strategies aimed at strengthening the KM are needed, so that it is adopted by professionals to ensure continuity of good humanization practices<sup>(10)</sup>.

Kangaroo care is hardly performed to minimize pain<sup>(15)</sup>. In general, there is a lack of knowledge by doctors and nurses about non-pharmacological methods for pain relief<sup>(15)</sup>. However, the staff also suffers from painful procedures; they often want to spare the parents and end up assuming paternalistic attitudes, which makes it difficult to involve the parents<sup>(16)</sup>. A trained and skilled team to explain to them what pain is, how the PTNBs feel it, and the importance of trying to minimize it will make all the difference during the procedures. Thus, each staff member can be a multiplier of values and practices that may or may not influence adherence to KM<sup>(10)</sup>.

## **DISCUSSION**

The results obtained through this integrative review reflect the potential that KM has for the achievement of humanized and safe care, combining hard and soft technologies to sensitize the multiprofessional team.

KM is a proposal for humanized care that provides PTNB or low birth weight with numerous advantages and benefits: faster weight gain, improved exclusive breastfeeding, vital signs, psycho-affective and neurobehavioral response, motor and cognitive development, reduced levels of infection and readmissions, reduced morbidity and mortality and lower costs to public health compared to other methods, and bonding<sup>(18)</sup>.

Humanized care involves the affection of professionals, and an example of this is talking to the NB every time it is going to be handled. Similarly, the kangaroo position brings the family closer to the NB and stimulates the creation of an affective bond<sup>(12)</sup>. In this way, the KM potentialities are reinforced to build the bond between professionals and parents, as well as to insert the latter in the baby's care process, generating confidence and preparing them early and continuously for the skin-to-skin contact and for hospital discharge<sup>(19)</sup>.

In view of the potentialities presented, the present study also encountered many barriers and/or difficulties for the realization of humanized care, ranging from the issue of professional insecurity, lack of knowledge of the multi-professional team to lack of environmental structure.

Some professionals do not adhere to new practices due to some postures and knowledge already established at work, which make them more comfortable. The resistance of professionals to change causes nurses to face some barriers to the implementation of KM. The biggest difficulties are the lack of routines and the low adherence of some professionals for the implementation of humanized care to PTNBs or low birth weight and their families<sup>(20)</sup>.

Other difficulties in implementing the KM are: resistance of the team due to lack of training and periodic sensitization on the KM; insecurity caused by lack of knowledge, which impairs the professional's adherence; inadequate physical structure; lack of human resources and materials necessary for the implementation of this model of care<sup>(19)</sup>.

However, strategies used by nurses, such as training and sensitization, can ensure the strengthening of KM by their team, and continuing education has been pointed out as a facilitator in the continuation of humanized care for those who already practice it<sup>(17)</sup>. High technology and training of healthcare staff has resulted in lowering barriers and improving the process of care in the NICU. These trainings can include simulation, case study discussions, parent instructions and feedback with an easily accessible pocket guide, as well as the development of guidelines<sup>(13)</sup>.

It is important that the managers of the institutions become aware of the implementation of good practices for the health of the NB as well as for the parents and health professionals, aiming at a quality and humanized care for all<sup>(19)</sup>. One must be attentive so that humanization also includes health professionals and the conditions of the work environment in which they are inserted, in order to value the health team and prevent them from becoming ill<sup>(12)</sup>.

### **Study limitations**

The limitations of this study correspond to the exclusive analysis of the potentialities, barriers and difficulties of the KM implementation in the scope of maternity hospitals and hospitals, not extending to Primary Health Care, where the monitoring of the third stage of this method occurs.

## Contributions to the field of nursing, health or public policy

When one seeks to know the potentialities, barriers and difficulties for the implementation of the KM, there is the construction of knowledge about the subject investigated and, thus, a strengthening in the search for strategies to improve care practice. In turn, this will reflect in a more humanized care to the NB and their families, recommended by the KM - a public policy that should be implemented in all maternity hospitals in Brazil.

## FINAL CONSIDERATIONS

This integrative review study allowed us to understand the potentialities, barriers and/or difficulties encountered in the implementation of humanized care to the NB admitted to the neonatal unit from the perspective of the KM.

Ten studies were identified in the databases through which it was possible to observe that the potentialities, barriers and difficulties are present in different countries: in each one, they have their characteristics and peculiarities. However, in Brazil we have the Standard of Humanized Care to the Newborn - Kangaroo Method as a public policy that works the whole part of humanization of care, which is a facilitator for its adherence and for the transformation of the care provided to preterm infants and their families.

The barriers and difficulties found in the studies were lack of adherence by some professionals, lack of professional autonomy, lack of time, technical insecurity, insufficient human resources,

agitated and noisy environment, reluctance by some professionals to initiate skin-to-skin contact in very small newborns, lack of training, lack of support from the medical team to perform humanized care, lack of managerial support, lack of knowledge about the KM, and limited physical space.

The studies make it clear that the sensitization of the team, permanent education, adequacy of human resources, multi-professional work, valorization of professional knowledge, humanization of the environment, and managerial support are factors that would facilitate the implementation of the KM anywhere in the world.

One can see the importance of the role of nurses to perform the humanized care recommended by the KM to newborns. It is known that the essence of nursing is the art of caring, so the nurse becomes the great protagonist in raising the awareness of multi-professional teams so that together they can provide a humanized and quality care, with respect for the child and his family, valuing the life of newborns, without forgetting that the team also needs and must be cared for to also be able to care properly.

## SUPPLEMENTARY MATERIAL

The article is the result of the Master's Thesis entitled: Construction of a care guide for the first stage of the kangaroo method in a public maternity hospital in southern Brazil, not yet available in the Institutional Repository of the University Library of the *Universidade Federal de Santa Catarina*, available from: <https://tede.ufsc.br/teses/PGCF0133-D.pdf>.

## REFERENCES

1. Ministério da Saúde (BR). Portaria nº 930, de 10 de maio de 2012 [Internet]. [Brasília, DF]: MS; 2012 [cited 2020 Feb 07]. Available from: [http://bvsmms.saude.gov.br/bvs/saudelegis/gm/2012/prt0930\\_10\\_05\\_2012.html](http://bvsmms.saude.gov.br/bvs/saudelegis/gm/2012/prt0930_10_05_2012.html)
2. Organização Mundial da Saúde (OMS). Nacimientos prematuros [Internet]. [Geneva]: HOW; 2018 [cited 2020 Feb 07]. Available from: <http://www.who.int/es/news-room/fact-sheets/detail/preterm-birth>
3. Sociedade Brasileira de Pediatria (SBP). Faltam 3,3 mil leitos de UTI neonatal no País, denuncia a SBP ao cobrar medidas para o nascimento seguro de brasileiros [Internet]. Rio de Janeiro: SBP; 05 abril 2018 [cited 2020 Apr 07]. Available from: <http://www.sbp.com.br/imprensa/detalhe/nid/faltam-33-mil-leitos-de-uti-neonatal-no-pais-denuncia-a-sbp-ao-cobrar-medidas-para-o-nascimento-seguro-de-brasileiros/>
4. Ministério da Saúde (BR). Atenção humanizada ao recém-nascido: método canguru: manual técnico [Internet]. 3a ed. Brasília, DF: MS; 2017 [cited 2020 Feb 07]. Available from: [http://bvsmms.saude.gov.br/bvs/publicacoes/atencao\\_humanizada\\_metodo\\_canguru\\_manual\\_3ed.pdf](http://bvsmms.saude.gov.br/bvs/publicacoes/atencao_humanizada_metodo_canguru_manual_3ed.pdf)
5. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas. Atenção humanizada ao recém-nascido: método canguru: caderno do tutor [Internet]. Brasília, DF: MS; 2018 [cited 2020 Feb 07]. Available from: <http://editora.saude.gov.br/livros/atencao-humanizada-ao-recem-nascido-de-baixo-peso-metodo-canguru-caderno-do-tutor/>
6. Ganong LH. Integrative review of nursing research. *Res Nurs Health*. 1987;10(1):1-11. <https://doi.org/10.1002/nur.4770100103>
7. Polit DF, Beck CT. Fundamentos de pesquisa em enfermagem: avaliação de evidências para a prática da enfermagem. 7a ed. Porto Alegre: Artmed, 2011.
8. Silva LJ, Leite JL, Silva TP, Silva IR, Mourão PP, Gomes TM. Management challenges for best practices of the Kangaroo Method in the Neonatal ICU. *Rev Bras Enferm*. 2018;71(suppl 6):2783-91. <https://doi.org/10.1590/0034-7167-2018-0428>
9. Araújo BBM, Pacheco STA, Rodrigues BMRD, Silva LF, Rodrigues BRD, Arantes PCC. The nursing social practice in the promotion of maternal care to the premature in the neonatal unit. *Texto Contexto Enferm*. 2018;27(4):e2770017. <https://doi.org/10.1590/0104-07072018002770017>
10. Silva LJ, Leite JL, Scochi CGS, Silva LR, Silva TP. Nurses' adherence to the kangaroo care method: support for nursing care management. *Rev Latino-Am Enfermagem*. 2015;23(3):483-90. <http://dx.doi.org/10.1590/0104-1169.0339.2579>
11. Stelmak AP, Mazza VA, Freire MHS. The value attributed by nursing professionals to the care proposed by the canguru method. *Rev Enferm UFPE*. 2017;11(9):3376-85. <https://doi.org/10.5205/1981-8963-v11i9a110236p3376-3385-2017>

12. Roseiro CP, Paula KMP. Concepções de humanização de profissionais em Unidades de Terapia Intensiva Neonatal. *Estud Psicol.* 2016;32(1):109-19. <https://doi.org/10.1590/0103-166x2015000100010>
  13. Mcgowan JE, Naranian T, Johnston L. Kangaroo care in the high-technology neonatal unit: exploring evidence-based practice, policy recommendations and education priorities in Northern Ireland. *J Neonatal Nurs.* 2017;23(4):174-9. <http://doi.org/10.1016/j.jnn.2017.03.001>
  14. Lim S. Neonatal nurses' perceptions of supportive factors and barriers to the implementation of skin-to-skin care in extremely low birth weight (ELBW) infants: a qualitative study. *J Neonatal Nursing.* 2017;24(1):39-43. <https://doi.org/10.1016/j.jnn.2017.11.010>
  15. Mehrnoush N, Ashktorab T, Heidarzadeh M, Momenzadeh S. Knowledge and attitude of personnel, key factors in implementation of neonatal pain management in NICU: a qualitative study. *J Clin Diagn Res.* 2017;11(11):SC05-9. <https://doi.org/10.7860/JCDR/2017/26290.10851>
  16. Marfurt-Russenberger, K, Axelin A, Kesselring A, Franck LS, Cignacco E. The experiences of professionals regarding involvement of parents in neonatal pain management. *J Obstet Gynecol Neonatal Nurs.* 2016;45(5):671-83. <https://doi.org/10.1016/j.jogn.2016.04.011>
  17. Almutairi WM, Ludington-Hoe SM. Kangaroo care education effects on nurses' knowledge and skills confidence. *J Contin Educ Nurs.* 2016;47(11):518-24. <https://doi.org/10.3928/00220124-20161017-11>
  18. Santos MH, Azevedo Filho FM. Benefícios do método mãe canguru em recém-nascidos pré-termo ou baixo peso: uma revisão da literatura. *Universitas Cienc Saude.* 2016;14,(1):67-76. <https://doi.org/10.5102/UCS.V14I1.3477>
  19. Ferreira DO, Silva MPC, Galon T, Goulart BF, Amaral JB, Contim D. Kangaroo method: perceptions on knowledge, potentialities and barriers among nurses. *Esc Anna Nery.* 2019;4(23):e20190100. <https://doi.org/10.1590/2177-9465-ean-2019-0100>
  20. Carvalho ETS, Maia FS, Costa RSL. Método canguru: o papel do enfermeiro frente aos cuidados de enfermagem. *Deciencia Foco [Internet].* 2018 [cited 2020 Feb 07];2(2):99-113. Available from: <http://revistas.uninorteac.com.br/index.php/DeCienciaemFoco0/article/view/214/62>
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