

Mothers' knowledge of premature newborn care and application of Kangaroo Mother Care at home

Conhecimento de mães sobre cuidados de recém-nascidos prematuros e aplicação do Método Canguru no domicílio
Conocimiento de las madres sobre el cuidado del recién nacido prematuro y aplicación del Método Madre-Canguro en el hogar

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How to cite this article:

Gomes MP, Saráty SB, Pereira AA, Parente AT, Santana ME, Cruz MNS, et al. Mothers' knowledge of premature newborn care and application of Kangaroo Mother Care at home.

Rev Bras Enferm. 2021;74(6):e20200717.

<https://doi.org/10.1590/0034-7167-2020-0717>

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Submission: 06-27-2020 **Approval:** 11-24-2020

ABSTRACT

Objective: to identify mothers' knowledge about premature newborn care and application of Kangaroo Mother Care at home. **Methods:** a descriptive, qualitative study carried out with 15 mothers of premature newborns in a reference Maternal and Child Hospital in northern Brazil using two semi-structured interviews with open- and closed-ended questions. The testimonies were analyzed using thematic analysis technique, proposed by Bardin. **Results:** two thematic categories originated: "Caring for a premature newborn at home: strengths and weaknesses" and "Applying Kangaroo Mother Care at home: new knowledge acquired during hospitalization". **Final considerations:** the speeches of the interviewed mothers pointed out their knowledge about home care of premature NBs and understanding the importance of Kangaroo Mother Care, mainly acquired and improved with the guidance of professionals during hospitalization and application of the method, in addition to fears, possible difficulties in home care and the need to be better informed at hospital discharge. **Descriptors:** Knowledge; Premature Infant; Infant Care; Kangaroo-Mother Care Method; Humanization of Assistance.

RESUMO

Objetivo: identificar o conhecimento de mães sobre cuidados de recém-nascidos prematuros e aplicação do Método Canguru no domicílio. **Métodos:** estudo descritivo, qualitativo, realizado com 15 mães de recém-nascidos prematuros em um Hospital Materno-Infantil de referência da Região Norte do Brasil utilizando dois roteiros semiestruturados de entrevistas com questões abertas e fechadas. Os depoimentos foram analisados por meio da técnica de análise temática, proposta por Bardin. **Resultados:** originaram-se duas categorias temáticas: "Cuidando de um recém-nascido prematuro em casa: potencialidades e fragilidades" e "Aplicando o Método Canguru em casa: novos conhecimentos adquiridos com a internação". **Considerações finais:** os discursos das mães entrevistadas apontaram seus conhecimentos sobre os cuidados domiciliares de prematuros e entendimento da importância do Método Canguru, principalmente adquiridos e aprimorados com as orientações dos profissionais durante a internação e aplicação do método, além de medos, possíveis dificuldades do cuidado domiciliar e a necessidade de serem melhores esclarecidas na alta hospitalar. **Descritores:** Conhecimento; Recém-Nascido Prematuro; Cuidado do Lactente; Método Canguru; Humanização da Assistência.

RESUMEN

Objetivo: identificar los conocimientos de las madres sobre el cuidado del recién nacido prematuro y la aplicación del Método Madre-Canguro en el hogar. **Métodos:** estudio descriptivo cualitativo realizado con 15 madres de recién nacidos prematuros en un Hospital Materno Infantil de referencia en la Región Norte de Brasil mediante dos entrevistas semiestructuradas con preguntas abiertas y cerradas. Los testimonios fueron analizados mediante la técnica de análisis temático, propuesta por Bardin. **Resultados:** se originaron dos categorías temáticas: "Cuidar a un recién nacido prematuro en casa: potencialidades y debilidades" y "Aplicar el Método Madre-Canguro en casa: nuevos conocimientos adquiridos durante la hospitalización". **Consideraciones finales:** los discursos de las madres entrevistadas señalaron sus conocimientos sobre el cuidado domiciliario del prematuro y la comprensión de la importancia del Método Madre-Canguro, principalmente adquirido y mejorado con la orientación de los profesionales durante la hospitalización y aplicación del método, además de los miedos, las posibles dificultades en la atención domiciliar y la necesidad de aclararse mejor al alta hospitalaria. **Descriptor:** Conocimiento; Recien Nacido Prematuro; Cuidado del Lactante; Método Madre-Canguro; Humanización de la Atención.

INTRODUCTION

The high number of low-birth-weight neonates (weighing less than 2,500 g, regardless of gestational age) is an important health problem, representing a high percentage of neonatal morbidity and mortality. Moreover, it has serious medical and social consequences⁽¹⁾.

According to the World Health Organization (WHO), premature and/or preterm birth is the occurrence of birth before term, i.e., below 37 weeks of gestation, regardless of birth weight, and can be classified, according to the gestational age (GA) of newborns (NB), in extreme premature (GA less than 28 weeks), very premature (GA between 28 to 31 weeks and 6 days) and moderate to late premature (GA from 32 to 36 weeks) and 6 days⁽²⁾.

Prematurity represents, worldwide, the main cause of mortality in children under five years of age. Approximately 15 million NBs are born before 37 weeks, which represents about one in ten births⁽³⁾. In Brazil, about 12% of live births occur before pregnancy is 37 weeks old. This means that about 360 thousand children are born prematurely every year, almost 1,000 children a day, with a large part potentially avoidable through intersectoral and health actions. In this reality, Brazil occupies the ninth place in absolute number of premature births⁽³⁻⁴⁾.

Since preterm neonates have not remained in the womb long enough, all organ systems may be immature; this influences the neonatal transition from intrauterine to extrauterine life and makes it susceptible to complications, increasing the risk of falling ill and dying as a result of incomplete fetal development and infections, normally aggravated by manipulation and prolonged periods of stay in Neonatal Units⁽⁵⁾.

For this reason, planning care for preterm neonates is vital for their survival during and after their hospitalization. Attention to NBs should be characterized by the technical safety of professional performance and by appropriate hospital conditions, combined with gentle and extensive contact, providing firm and elastic restraint during the execution of all care provided. Thus, the Brazilian experience in Humanized Care for Low Weight NBs is highlighted: Kangaroo Mother Care (KMC)⁽¹⁾, which stands out as a new model of care that inserts the family in NB treatment, with the intention of to humanize assistance⁽⁶⁾.

KMC was created in 1979 by neonatologists Héctor Martínez Gómez and Edgar Rey Sanabria, in Bogotá, Colombia, in order to reduce overcrowding and mortality of premature NBs in the neonatal unit, improving care through skin-to-skin contact and greater affective bond. The method was introduced in some Brazilian health units in the 90s, easily spreading and being incorporated into health policies in the perinatal field, becoming a government policy regulated by the Ministry of Health (MoH) through Ordinance 693 of 05 July 2000, and updated by Ordinance 1,683 on July 12, 2007⁽⁷⁾.

This policy offers as benefits strengthening the mother-child bond, as well as breastfeeding, temperature control, reduction of neonatal sepsis and the period of hospitalization and hospital readmission. Such a policy contributes to cognitive and motor development, promotes sensory stimulation, generates greater stability during the transport of preterm NBs and promotes the maintenance of vital signs, even when performed on preterm

NBs under mechanical ventilation⁽⁸⁾. In addition to the benefit for NBs, this health policy promotes maternal empowerment and a feeling of security for the provision of care to children after hospital discharge⁽⁹⁾.

Thus, KMC gives nursing professionals a prominent role, which, due to their managerial and evaluative capacity, in addition to their autonomy in providing care and teaching, strengthens adherence to the method, providing an understanding of its importance and effectiveness. They are the main responsible for the measurements, weight, medication, bathing, encouragement of breastfeeding, breast care, assisting in the humanized positioning in an educational way⁽¹⁰⁾. Thus, when NBs are stable and parents have the possibility and express interest, the nursing team must guide them and encourage the kangaroo position, breastfeeding and care for the NB⁽¹¹⁾, essential components for the applicability of the method.

Neonatal care is strengthened as one of the areas of nursing in constant development, aiming to reconcile important technological advances for the NB's survival, with approaches that value daily interrelationships⁽¹²⁾. Thus, at the time of hospitalization, the health team has an essential role in minimizing parents' fears and anxieties, providing comfort and responding to concerns, and they must recognize that it is necessary to include the family in the care they develop. As parents and family come to the unit for other visits, information can be supplemented and care improved⁽¹³⁾.

In this context, daily experience with the preterm NB is fundamental for developing self-confidence and restructuring the maternal role. At the same time, mothers started to identify with the unit's environment and routines and to form positive opinions, concepts and bonds; these concepts, associated with adequate reception, strengthen the neonate-team-family bond and greater permanence of family members within the unit. These activities, still implemented within the scope of the neonatal unit, constitute a strategy to prepare mothers for the challenge of home care⁽¹⁴⁾.

The memories of the periods of suffering experienced during hospitalization mark the mothers, leading them to believe that something bad can happen to their child; this causes limitations of care, causing insecurity in daily life and may raise doubts about their ability to care for premature NBs⁽¹⁵⁾. Thus, it is understood that premature birth has implications not only during the period of hospitalization. It is important to emphasize that continuity of care for these NBs at home by the family requires attention, and mothers of premature NBs need support to overcome the challenges of caring for their children in the home environment⁽¹⁶⁾.

During hospitalization, the mother is assisted daily in the care provided, from breastfeeding, changing diapers, to bathing, skin-to-skin contact and restraint of NBs, care that should be continued at home and will be done exclusively by the family special by mothers. Therefore, KMC goes beyond the neonatal unit space, starting to be performed in the family environment itself, requiring planned hospital discharge, subsequent to a care plan, integrating a fundamental event that relates the entire health team⁽¹⁷⁾, responsible for offering clear and objective guidelines that respect the family's limitations and enable parents to be good caregivers at home, giving them security and a sense of competence to care for premature NBs⁽¹⁸⁾.

OBJECTIVE

To identify mothers' knowledge about premature newborn care and application of Kangaroo Mother Care at home.

METHODS

Ethical aspects

This study met national and international standards for research ethics. It followed the recommendations proposed by the Brazilian National Health Council (*Conselho Nacional de Saúde*) in Resolution 466/2012, obtaining institutional authorization and approval by the institution's Research Ethics Committee. For participants, an Informed Consent Form was presented so that they understood the objective and expressed interest in participating, with anonymity ensured through the use of the word "Mother", followed by the sequential number of the interviews (Mother 1, Mother 2... Mother 15).

Theoretical-methodological framework and type of study

This is a qualitative and descriptive study based on the Consolidated criteria for REporting Qualitative research (COREQ)⁽¹⁹⁾. The foci were the speeches and language interpretation for in-depth scientific investigation of a variety of themes related to the single reality or to multiple realities, identifying the meaning of subjective phenomena from study participants' perspectives⁽²⁰⁾.

Study setting

The study was carried out in a highly complex public maternity hospital located in the city of Belém, state of Pará. It is the largest maternal and child reference in northern Brazil, with 110 maternity beds, 60 beds of an Intensive Care Unit Neonatal (NICU), 67 beds of a Conventional Neonatal Intermediate Care Unit (CoNICU) and 16 beds of a Kangaroo Neonatal Intermediate Care Unit (KaNICU). As a health policy, KMC is implemented in the Institution, and all neonatal care performed follows its recommendations. Health professionals are trained annually to use the method in neonatal units and guide the family regarding care during hospitalization and after discharge of premature NBs.

It is noteworthy that KMC, in its entirety, comprises three consecutive stages: the first is held in NICU, a place where the family is welcomed and the first approach of parents and family with their NBs; the second stage begins when NBs are sent from NICU to CoNICU and/or KaNICU, where parents are invited to be fully involved, especially mothers, giving daily care under the health team's supervision and guidance, especially nursing; finally, the third stage is defined by NB discharge to home, but which still needs outpatient monitoring to assess their physical and psychomotor development by a multidisciplinary team^(1,21).

Data source

Fifteen mothers participated in the study, who had premature NBs admitted to CoNICU and KaNICU, the second stage of KMC, and who performed outpatient care after discharge of premature NBs in the third stage of KMC, selected for convenience.

Mothers of premature NBs admitted in the second and/or in follow-up to the third stage of the hospital's KMC, over 18 years of age and who had emotional conditions to respond to data collection instruments were included. Children under 18 were excluded for all legal and social issues involving teenage mothers, many of whom were victims of sexual violence, which could have a strong emotional impact.

Data collection and organization

Data collection took place from May to July 2017 through individual interviews of 30 to 45 minutes, applying two semi-structured scripts developed by the authors, which consisted of two axes: the first, related to participant characterization, and the second, with open-ended questions. A script contained questions related to the knowledge that was acquired during hospitalization, mainly with the use of KMC in the sectors, about adequate home care for premature NBs, being applied with mothers who experienced this process. The other contained questions regarding the care already provided and continuity of KMC at home, being applied to mothers who were in outpatient follow-up after discharge of NBs.

Initially, the study was presented to the teams of the selected units in order to explain what would be done and facilitate the approach of mothers. The invitation to participate took place within the selected units. Upon acceptance, each participant was taken to a reserved room, guaranteeing their privacy and greater confidentiality of information. For those who decided to grant the interviews at another time, prior appointment was made according to their availability. All interviews were conducted by the main researcher and recorded using digital media, with consent.

The interviews were closed when data saturation was reached, when no new elements were found and the addition of new information was no longer necessary, as it did not change the understanding of the studied phenomenon⁽²²⁾.

Data analysis

The recorded testimonies were transcribed in full to compose the corpus, later analyzed by careful reading using the thematic content analysis technique⁽²³⁾, proceeding to repetitive text skimming, exploring the material to identify the most recurrent themes in occurrence and co-occurrence, i.e., of significant and regular situations with which they appeared in the interviews, enabling analysis of meanings and elaboration of thematic categories. The identified themes were grouped based on the objective of the study, allowing the organization of two thematic categories: "Caring for a premature newborn at home: strengths and weaknesses" and "Applying Kangaroo Mother Care at home: new knowledge acquired with hospitalization".

RESULTS

Participant characterization

As for the characterization of the 15 study participants, their age ranged from 19 to 42 years, with the age range of 19 to 22 years prevailing in 6 (40%) mothers. As for education level, 12 mothers (80%) had completed high school and 3 (20%) mothers

had incomplete high school. The predominant income was up to one minimum wage, with 6 (40%). 10 mothers (66.7%) were interviewed at CoNICU and KaNICU, and 5 (33.3%), under outpatient follow-up after hospital discharge of premature NBs.

The following are the two thematic categories that originated after a thorough data analysis.

Caring for a premature newborn at home: strengths and weaknesses

In this category, interviewees' knowledge about premature NB care at home is presented. Mothers demonstrated knowledge about diaper change, skin care and the importance of breast-feeding premature NBs, stating that such knowledge was more easily acquired in the routines of the sectors and improved with the application of KMC.

Regarding diaper change, in their reports, mothers stated that it should be performed in the lateral position, to prevent cerebral hemorrhage, demonstrating that they understood the humanized care guidelines recommended by KMC. They also informed that they handled it with care and delicacy because of NBs' sensitive skin, susceptible to risks when it remained wet and with feces residues, as evidenced in the statements below:

You have to clean it from front to back, there cannot be any trace of pee and poop, if it cannot cause any disease ... I calm him down and clean it slowly, because he has very sensitive skin. (Mother 5)

It must be made of side; it is not lifting his leg because of the risk of bleeding in his head. (Mother 1)

Most mothers reported another understanding of the practice of changing diapers, and the correct technique was taught by professionals in sectors' routines. It then became evident that, for them, welcoming the team that assisted premature NBs daily was very important during hospitalization:

Before I thought I could lift my NB's legs to change the diaper, but then I learned from the nurse that this is very wrong. (Mother 11)

In the first days, the [nursing] technician asked to look at her changing the diaper, then I started doing it and she taught me everything right ... today I change it myself. (Mother 13)

As for skin hygiene, the mothers reported concern about proper care, since it was delicate and sensitive. The mothers understood that NBs' skin required specific care, so she should not suffer constant friction and trauma:

I already have some experience, I soak the cotton in the water and clean it very carefully, then I change the diaper, always very gently. (Mother 2)

His skin is very sensitive, he has to be always clean, and when doing anything, he has to be careful ... he cannot always be moving like our skin. (Mother 15)

In relation to the humanized bath, in the reports of some mothers, it was noticed that they were aware of some important

aspects, highlighted by KMC, for the bathing of premature NBs, such as water temperature, wrapping in blanket to start bathing and withdrawal parts, avoiding consequent weight loss, a technique that was guided by health professionals:

You have to give the bath wrapped up and the water needs to be warm, so that they do not lose weight, that's what they [professionals] gave me. (Mother 6)

They said it's rolled up, because the NB can't go straight to the water, until he gets his normal weight, it seems like 2,500 g [...]. (Mother 9)

It is noteworthy that some mothers undergoing outpatient follow-up, that is, those who brought premature NBs to regular consultations, mentioned that they were bathing their premature NBs every day and were not informed that this was incorrect, due to the risk of hypothermia and weight loss, a subject that was not oriented at discharge:

I was bathing him every day, and at the time of discharge, this information was not passed on to me. (Mother 7)

[...] I didn't know I couldn't bathe every day. (Mother 4)

Another issue addressed is related to the type of clothing suitable for premature NBs, in which most mothers were aware of the best material to be used and the need to keep it clean, as well as its importance for warming NBs, avoiding the risk of hypothermia:

It is 100% cotton so as not to have friction on the skin, which is very sensitive ... I put on pants, the sock, the top inside, the cardigan and the little hat so that it is always very warm. (Mother 1)

I wash his clothes with coconut soap and use them to clean them every day. (Mother 8)

For all mothers interviewed, breastfeeding was considered very important, as it prevented infections, diseases, immunized and provided healthy growth for premature NBs, in addition to enabling the exchange of affections and feelings, as shown in the statements below:

Breastfeeding is the best medicine for premature newborns, as it immunizes and prevents diseases ... it is a time of great peace and joy. (Mother 2)

He is more humanized and will provide for them not to lose weight and grow, especially the premature newborn that is born of low weight... when I breastfeed, I give her love and affection. (Mother 4)

Applying Kangaroo Mother Care at home: new knowledge acquired with hospitalization

This category deals with mothers' knowledge about the importance of KMC for premature NB care and how it was used in their daily lives, focusing mainly on the kangaroo position, its continuity in the home space and on the warning signs of health problems.

Regarding the kangaroo position, guided by the method, most mothers stated that they liked the technique, because it favored the exchange of heat and affection, passed on to the child during the period in which the position was maintained, in addition to the benefits generated for weight gain and tranquility that was offered to the NB:

The kangaroo position is perfect for them, because it is as if they feel in our womb, we talk to them, it is good for weight gain. (Mother 1)

It is the direct contact with our body, then it helps to gain weight, it smells the mother, the mother smells the son... it is as if he was still inside the belly. (Mother 9)

It was noticed that they had clarity of the correct position and its importance, highlighting that it prevented the NB from reflux after the diet and in the affective approach with the mother, showing that they knew how to apply it easily:

The kangaroo position is great [...] and they feel very comfortable, they have to be belly to belly, and the NB's head is in the breast to listen to the mother's heart, breathing. (Mother 5)

I know the kangaroo position and in her case, which has reflux, even that has improved [...]. (Mother 11)

In this context, the association of the kangaroo position with the reestablishment of the mother-NB bond, broken with premature birth and hospitalization process, was highlighted by them. All interviewed mothers had this understanding and reported that they learned about their position in the hospital:

It certainly made it easier, brought me closer to my daughter to have a more loving relationship, [...] he already smells the smell, already recognizes my voice and that is very good. (Mother 5)

Of course, for sure! They [professionals] taught us not to do things wrong at home [...], this is important until they are nine months old. (Mother 6)

The multidisciplinary team guidelines were considered of utmost importance to ensure the safety of parents and family members in NB care at home and to strengthen the bond generated between the health team and the parents, who went through the entire hospitalization process, pointed out as traumatic and difficult for all of them, although professionals' support had offered tranquility and security:

If it weren't for them [professionals] to guide me, I would have a lot of difficulties, so the help they gave me to take care of my son was very important... today I'm a friend of the whole team, I talk to everyone, hugs, even send photo. (Mother 12)

I didn't even know what to do, I just cried next to my NB, for me it was very difficult to see her that way ... that's why the team gave me all the support, they talked a lot with me and little by little I lost the fear of to touch it, to do things. (Mother 6)

As for the warning signs of health problems, most of the mothers surveyed said that they had little knowledge about the subject

or did not receive information about the main warning signs for the prevention of serious complications in premature NBs:

Look, in reality, they haven't told me anything so far! I will try to know this before I am discharged. (Mother 6)

I know I have to keep an eye on some things, if she sucks right, she's gaining weight, those things. (Mother 14)

In this context, only one mother responded clearly to the warning signs that the NB could present at her home, as well as she should proceed to the immediate care:

Especially, if he has cyanosis, which is my concern and I don't even sleep [...], difficulty breastfeeding, stop peeing, poop, and have a fever, then I already know that I should take him back to the hospital. (Mother 9)

Mothers, during the interviews, frequently voiced their concerns and fears of their NBs' illness, because they often feel insecure and have difficulties regarding home care. Many expressed the desire to be better prepared and oriented at hospital discharge, so that they could obtain more security:

[...] I'm afraid of doing something wrong, of hurting, I don't know. For this reason, I hope that they will tell me exactly how I should do with him at home, so that I know how to manage. (Mother 10)

Totally safe, no! I am afraid of her drowning, of having a fever, of an infection, every day is a different concern, I hope that at home I lose this fear... on the day of discharge, hopefully they will clear up all doubts, tell me how I can take care her at home alone. (Mother 3)

DISCUSSION

The speeches of the interviewed mothers pointed out that they had knowledge about premature NB care at home and understood the importance of KMC. Much of this knowledge was acquired and improved with the guidance of professionals during hospitalization and application of the method. In addition, they also highlighted fears, anxieties and possible difficulties in home care, needing to be better clarified at hospital discharge.

Studies have shown that hospital discharge enabled greater physical contact between parents and the NB, who started to take responsibility for child care at home; however, feelings such as fear and insecurity in caring at home were evidenced in the research⁽²⁴⁻²⁵⁾, results that corroborate the findings of this study.

After discharge, parents deal with the challenge of taking care of NBs at home; therefore, it is necessary to identify their abilities, especially that of the mother as the first caregiver. Mothers must be taught to communicate with their NB and must be prepared for her discharge⁽²⁶⁾. The mother's awareness of how to properly deal with problems and how to provide essential care during this period can have a major impact on increasing confidence in caring for her NB and eliminating false beliefs and traditions about the subject⁽²⁷⁾. Such evidence pointed to the need for adequate preparation during hospitalization and more effective discharge aimed at mothers in this study, in order to remedy the fears and difficulties to care at home.

Thus, the training of parents and family members is essential during hospitalization so that they become autonomous and responsible for NB care in the family context. Therefore, in order to promote the insertion of the family in NB care, it is opportune to carry out health education actions through the exchange of experiences, the clarification of doubts and the provision of guidelines⁽²⁸⁾.

In the case of changing diapers, the KMC manual⁽¹⁾ informs that the NB should be placed in high decubitus (anti-reflux position), be rolled sideways from side to side, removing the used diaper, performing hygiene, trying not to raise NBs' legs due to the risk of increased abdominal pressure. The mothers of the study were empowered as to the correct technique to perform the procedure, reporting that they were better prepared by professionals during hospitalization. A study⁽²⁹⁾ reinforces the importance of health professionals and the family being able to establish an empathic relationship, in which the professional is able to perceive parents' conditions, reach them in a way to welcome their emotions and, at the same time, provide technical guidance when necessary.

Regarding skin care and proper clothing, mothers were also knowledgeable about how they should perform such care, mentioning that the skin was sensitive, delicate, susceptible to diseases and, therefore, needed to be cleaned properly. The clothing should bring comfort to NBs and provide warmth, essential to avoid hypothermia and weight loss.

The premature NBs' skin has some peculiarities, with a more sensitive composition (40% to 60% compared to that of the adult) and is more prone to injuries or injuries. Skin lesions predispose preterm NBs to the risk of acquiring infections, which can cause irreversible damage, requiring constant evaluations and interventions with a view to prevention, in order to thus favor homeostasis⁽³⁰⁾, care that must also be maintained in residence.

NBs, especially premature NBs, are easily overheated and cooled, with an inability to maintain temperature, conserve heat with changes in posture and even adjust their own clothing in response to thermal stress. They are particularly dependent on caregivers, whether on the health team or on family members, to promote an ideal thermal environment and ensure not only their survival, but also optimal physical and neurological development^(1,31).

In the case of breastfeeding, mothers showed that they clearly understood its importance and the benefits generated. As highlighted by them, breastfeeding has beneficial immunological, nutritional and neurodevelopmental effects for premature NBs⁽³²⁾. Moreover, breast milk plays an important role in increasing body weight, reducing the incidence rates of food intolerance and necrotizing enterocolitis, shortening the length of hospital stay for premature NBs⁽³³⁾, providing cognitive and developmental benefits that persist into adolescence⁽³⁴⁾.

A randomized clinical trial conducted in Sweden also highlighted breastfeeding premature NBs as a relational activity, which the mother performs as part of motherhood. The mothers described many aspects of their breastfeeding experiences, revealing that it was not just nutrition and protection, but also combinations of many elements, such as emotions, love, care and relationships. This situation leads to an individual journey for each mother and a diversity of experiences that need to be understood by health professionals⁽³⁵⁾. These results were also found in this study.

Regarding the humanized bath, interviewees' statements revealed that they were aware of the important aspects for carrying out care; although some mothers in outpatient follow-up mentioned that they were bathing their premature NBs every day, stating that they were not properly oriented on the subject at hospital discharge.

In a study carried out in the city of Maringá, PR⁽³⁶⁾, it was highlighted that the bath usually generates many expectations, leaving the mother insecure. The authors suggest that the guidelines of care delegated to mothers should be repeated, so that they can be safely assimilated for their realization. Nurses must initially demonstrate, guide, then assist and, finally, supervise the performance of the procedure. Thus, this stimulus to parents' involvement in the rolling bath provides them with security for the continuity of care for premature NBs on the way home⁽¹⁴⁾.

Regarding the warning signs of illnesses of premature NBs, the KMC manual⁽¹⁾ points out some signs of serious health problems that can cause their death, such as breathing problems, difficulty or inability to eat, cold body, fever, red, swollen or secretive eyelids, reddish skin, swelling, pus or unpleasant odor around the umbilical cord or navel, convulsions/fainting and jaundice. Therefore, in order to avoid them, mothers and family need to know how to recognize them, and caregivers should seek a health service for immediate assessment.

In the case of this study, it was noticed that this understanding was verified only in the speech of one mother, while the others had little knowledge about the subject or were not adequately informed at discharge. This becomes an aggravating factor, since premature NBs' hospital discharge requires special care due to its greater organic and emotional fragility, also requiring knowledge and the establishment of assistance directed to their needs, covering specific care during their hospitalization and continuity of this home care⁽³⁷⁾.

A study carried out in four districts of Bangladesh⁽³⁸⁾ pointed out that it was necessary to keep parents constantly alert about danger signs and the need to seek early care for sick, especially premature NBs. Another study carried out in Nigeria⁽³⁹⁾ complements this premise by stating that once there is a delay in recognizing the danger signs of neonatal complications, delays automatically occur at all other levels, i.e., the start of appropriate treatment and/or referral to a hospital with resources. In this sense, it was evidenced that the mothers of this study and their premature NBs were exposed to several risks, which could lead to a consequent hospital readmission.

As for the knowledge about KMC and its importance for NBs, the mothers demonstrated to understand about the subject and reported the benefits observed in using the kangaroo position from hospitalization to their homes. This finding was also evidenced in a study⁽¹⁵⁾ carried out with 15 mothers of preterm NBs from a public maternity hospital in Teresina, PI, who observed that mothers' experiences and their perceptions before KMC showed positive results and an understanding of the importance of the method and kangaroo position for children.

Scientific evidence indicates that KMC becomes a means of teaching and learning, bringing greater involvement of premature NBs' mothers and whole family; increasing their self-esteem, confidence, effectiveness and comprehensive care; prolonging

periods of skin to skin contact; developing breastfeeding skills during hospitalization and in the post-discharge period⁽⁴⁰⁾.

A quasi-experimental study⁽⁴¹⁾ states that kangaroo care, including the kangaroo position, favors the stabilization of the physiological functions of premature NBs, and may be one of the most effective nursing interventions in neonatal units for premature NB care and their mothers. Such efficacy was proven in a cohort study⁽⁴²⁾, which evaluated the persistence of the short and medium term benefits of KMC, previously documented in a randomized clinical trial conducted in Colombia from 1993 to 1996, by showing that the method had protective effects significant and lasting social and behavioral problems 20 years after the intervention. Hence the importance of implementing the method from admission to hospital discharge.

From this perspective, advances in child health care and the application of KMC have prioritized aspects of prevention and health promotion, acting to keep children healthy to ensure their best development. Its actions focus on health instead of disease, and its basic objectives include health promotion, disease prevention and education of family members through advance guidance on the risks of health problems, offering preventive measures that are more effective than healing⁽⁴³⁾.

Discharge planning must be individualized, aiming to recognize the team to meet the specific needs of each family. The preparation of mothers for the discharge of their premature children is extremely important to reduce anxiety and increase self-confidence for home care, considered a critical period of adaptation for NBs and parents to the new environment; from that moment, they will be the ones who will provide all the necessary care⁽⁴⁴⁾.

Moreover, the recommendations provided by the nursing team must be concise, clear and simple to understand. It is interesting that there is room for questioning and repetition of what is said, if necessary, as adequate communication can reduce family anxiety, while enabling greater assimilation of the information conveyed⁽³⁶⁾.

Some mothers stated that they felt insecure and fearful, needing to be better prepared for hospital discharge and take care of NBs alone. A quasi-experimental study conducted in Canada⁽⁴⁵⁾ reports that discharge of NBs from NICUs is a stressful event for parents, who may not feel prepared to take responsibility for caring of their NBs, even though they experience weeks or months of hospitalization. Thus, an environment where mothers feel supported by the nursing team and have privacy to learn to care for their child becomes essential, making them realize that they are ready to take care of their child at home discharge. These results point to the increasingly essential need for the planned discharge of families and their premature NBs, which was evidenced as deficient from the statements of this study.

In general, parents' assessment of nurses' educational performance may represent the educational role of these professionals in the hospital. The necessary activities can be performed in order to better perform this role of professionals, which can reduce the negative consequences of neglecting it, such as repeated hospitalizations due to the lack of inadequate care at home⁽⁴⁶⁾. Based on the above, the nursing team must recognize that parents' assessment of their orientations becomes an important tool to qualify the care provided.

In this aspect, it is important that health workers seek a comprehensive practice, understanding that premature NBs' mothers have needs that go beyond the limits of the biological, social and psychological, gaining spiritual and sentimental contours. Furthermore, it is necessary to work with the health team to discuss the limits of the human being and the need to understand that, particularly, in these cases, a reflective and supportive attitude is essential. Therefore, these practices are designed as a valuable tool to minimize the suffering of mothers and family members in the hospital environment⁽⁴⁷⁾, thus guaranteeing their independence in home care.

Study limitations

It is understood as limitations of the study that part of the knowledge and inferences reported here may not be subject to generalization, since the research was developed in a specific region of the country, where participants' imagination and knowledge are directly influenced by sociocultural factors. Another limitation is the fact that the study only works with mothers' speeches. It is known that KMC also seeks the inclusion of the father and other family members in premature NB care, so that they are able to be caregivers at home, making it necessary to carry out further studies on the topic for possible expansion of discussions about care of premature NBs.

Contributions to nursing, health, and public policy

The present study contributes to foster debates and reflections on home care for premature NBs, as well as for nursing practice, especially neonatal, which deals with the reception and participates in the process of hospitalization of premature NBs and their families. When accessing these mothers' knowledge, it is understood how they understand the process of caring and the importance of KMC, potentially contributing to the development of educational instruments and means for comprehensive, qualified and humanized care, which empower other mothers and family members who should deal with home care for premature NBs after hospital discharge.

FINAL CONSIDERATIONS

Through the study, it was identified that the investigated mothers had knowledge about premature NB care at home, understanding the importance of KMC. Much of this knowledge was acquired and improved with the guidance of professionals during hospitalization and application of the method, although they also reveal fears, anxieties and possible difficulties of home care, showing the need to be better clarified at hospital discharge.

Therefore, it is expected that the findings of this research will give rise to reflections on premature NB care, assuming that mothers and families should be adequately prepared, from hospitalization to home care after discharge. Therefore, the nursing educating role in these scenarios is highlighted, which should explore the knowledge, beliefs and skills of these caregivers so that they can develop assistance in a qualified and humanized way.

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