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## KANGAROO MOTHERS' KNOWLEDGE OF CARE WITH THE POSTURE DURING THE APPLICATION OF THE METHOD

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**Abstract:** Premature newborns require technological support and prolonged hospitalization due to their immaturity. Methods such as kangaroo care, which involve skin-to-skin contact between mother and baby, have been adopted to reduce morbidity and mortality. However, there is concern about the mother's postural overload. The aim of this study was to analyze mothers' knowledge of postural care during the application of the kangaroo method. Conducted with five mothers in the Kangaroo Intermediate Care Unit at the Assis Chateaubriand Maternity School, the research revealed that although the mothers did not mention postural discomfort, they all highlighted the care taken by the team in this regard. They recognized the benefits of the kangaroo method and the importance of proper posture for the well-being of themselves and their babies. The conclusion is that the method is effective and well understood by the mothers in terms of its execution and posture.

**Keywords:** Prematurity; kangaroo method; mothers; posture; physiotherapy.

## INTRODUCTION

Prematurity is a worldwide problem that affects many children every year, but in Brazil more than 300,000 babies are born prematurely every year, which corresponds to 6 babies born every 10 minutes, making the Brazilian rate of prematurity double that of European countries (Brazil, 2020).

Premature newborns (PTNBs) are anatomically and physiologically immature, which leads to the need for long hospital stays, predisposing them to alterations in various systems. Hospitalization usually begins in the Neonatal Intensive Care Unit (NICU), where many goals are set and many multi-professional programs instituted (Panhoni *et al.*, 2019).

The Kangaroo Mother Method (KMM) or Humanized Care for Low Birth Weight Newborns is one of these programs, which

seeks to reduce premature mortality through measures such as skin-to-skin contact, which promotes thermal stability and stimulates breastfeeding, increases the mother-child bond and reduces the need to use support devices (Zirpoli *et al.*, 2019; Sangali *et al.*, 2020).

Brazil (2019) points out that MMC is aimed at PTNB and/or low birth weight infants and is recommended from admission to the NICU until hospital discharge. The first stage takes place in the NICU and/or the Conventional Neonatal Intermediate Care Unit (NICU), the second takes place in the Kangaroo Care Unit (KICU) and the third after hospital discharge, in which the infant will be accompanied by a multidisciplinary outpatient team.

During the application of the method, everything is geared towards the care of the premature baby, but it must not be forgotten that these mothers/women are in the puerperium and may have muscular discomforts that must be observed. Coelho (2021) points out that "maintaining a 90° sitting position with a neutral lumbar spine will, for many, be a hardship, because the posterior muscle chain does not have the necessary length", which raises the question of whether this posture should be attempted when caring for a premature newborn. Dias *et al.* (2023) point out that respect for individuality, welcoming both the newborn and the family, facilitates the mother-baby bond, and maternal persistence with the method is very important.

The choice of this topic is justified by the researchers' academic and professional proximity to the neonatal environment, because during their study and practice as physiotherapists and participants in the multidisciplinary team and the MMC, they observed that they are always well directed towards the positioning of the neonate, with the mother and her posture not being so much remembered and worked on by these professionals.

The aim of the study was to find out about kangaroo mothers' views on posture care during the application of the method, by describing the mothers' sociodemographic and clinical characteristics, maternal understanding of the prematurity process / kangaroo method and analysis of their own posture during the phases of the method.

## METHODOLOGY

This was a field, observational, descriptive and qualitative study carried out in the NICU of the Assis Chateaubriand Maternity School (MEAC), which is a teaching and research institution, a guideline for public health policies and a hospital unit that is an accredited institution, a regional reference in research in the area of women's and perinatal health (Brazil, 2022).

Data collection took place from January to June 2024 and investigated 5 mothers who were hospitalized with their children in the NICU and agreed to take part in the research, being informed about the study and giving their consent through the Free and Informed Consent Form (FICF). The study was approved by the Ethics and Research Committee (CEP) of the study hospital, located at Rua Cel. Nunes de Melo, s/n Fortaleza - CE, with Opinion: 6.800.582.

The research instruments used were a structured questionnaire that covered the mother's sociodemographic, gestational and birth characteristics, and a semi-structured interview script that highlighted the guiding question of the research and sought to understand the kangaroo mothers' views on posture care during the application of the method.

The interview was divided into 3 blocks investigating prematurity, the kangaroo method and posture care. The mothers' answers were recorded using the "iPhone call recording" feature, transcribed verbatim using "Google Docs" and described in this study in quota-

tion marks, so as to take the participants' exact words into account, including linguistic errors. The main points expressed were noted down and read out at the end of the interview so that the participants could agree with their content, complete it or correct it.

Rodrigues, Oliveira and Santos (2021) describe that qualitative research is "entangled in the subjectivity of the researcher" because it interprets the problem and "explains the phenomena meaningfully and appropriately", so in order to represent the research participants and also to safeguard their anonymity, the researchers chose to identify them according to the names of the children's story called Baby Kangaroo, available at <https://youtu.be/Muyt3cnGBUAbaby> and whose characters are: baby kangaroo, baby rabbit, baby armadillo, baby giraffe and baby thrush.

According to Paiva, Oliveira and Hillesheim (2021), in order to carry out a study, it is important to plan, and one of the most decisive stages is the exact definition of the data collection and analysis techniques. According to Minayo (2013), the "content analysis" approach is the one chosen by researchers, as it answers particular questions, is concerned with the social sciences and with a level of reality that cannot be quantified.

In order to carry out this research, all the ethical precepts of research with human beings that govern confidentiality, secrecy, anonymity, autonomy, beneficence, non-maleficence, justice and equity, regulated by Resolution 466/12 of the National Health Council / Ministry of Health / MS (Brazil, 2013), were obeyed.

## RESULTS AND DISCUSSION

Upon entering the NICU (the study's setting), the feeling the interviewer extracted was one of resilience and love, and despite not being part of that team, the essence of being a health professional made them want to take part in that care. Five mothers were interviewed, who spoke about their story in an empowered way, but also showed how hard it was to have their pregnancy/puerperal cycles interrupted by prematurity.

In order to get to know the population to be studied, we investigated the sociodemographic, gestational and childbirth characteristics of the five participants, who were aged between 19 and 34, mostly single, brown, with a high school education, from home and living in Fortaleza/Ce (figure 1).

With regard to pregnancy and childbirth data, the 5 women answered that their pregnancies had been planned (3) and desired (5), that they had attended between 3 and 7 prenatal consultations, that they were primiparous (first childbirth) and that they had had caesarean deliveries (Figure 2).

After analyzing, exploring and interpreting the content extracted from the interview blocks, three thematic axes emerged for the discussion of the study, as follows: "Experiencing prematurity", "The kangaroo method and its phases" and "Maternal posture during the kangaroo method".

### EXPERIENCING PREMATUREITY

In the first block, we tried to get to know each mother's story and how she experienced prematurity, in other words, how it all happened, what she thought at the time, who lived through it with her and what she felt when she had to leave her baby in hospital and return home.

The question that guided the discussions was about the reason for their premature birth, with the following answers: *Baby Tatu*: "Due to pre-eclampsia; *Baby Rabbit*: "The reason was because one of the babies "had" a deceleration.

It is clear that the mothers' answers to the above question were short and carried a mixture of knowledge/unawareness. Teixeira *et al.* (2022) describe that pre-eclampsia is a pathology that poses serious risks to the baby, negatively affecting the placenta, which begins to function improperly, causing the baby to be premature, which can be seen in the first statement. The reason for the prematurity described by the "baby armadillo" whose pregnancy had twins was a "deceleration" which is believed to be related to a reduction in heartbeat/fetal distress, as described by Da Rosa *et al* (2021) who state that multiple pregnancies are a risk factor for prematurity.

The mothers describe how it all happened, what they thought at the time and what it was like to leave their baby in hospital and go home:

**Baby Kangaroo:** "I started to feel pain on Sunday 12 o'clock, then I waited and 19:00 a bag burst, then I waited, then when it was midnight I couldn't stand it any longer and came, first I went to the maternity hospital in Caucaia, but there was no structure there for twin births, then they told me to come here, then I arrived here at 2 am, then I stayed from 2 am until 7:30 am feeling pain, then when it was 7:30 am the second bag burst and I had already dilated 10 centimeters, then they started labor";

"I just thought I wanted to get it out soon, I asked for a cesarean section, nobody gave it to me, so it came out normal, I just wanted to stop the pain that I couldn't take anymore."

**Baby Coelho:** "I... started to feel contractions training and with pain in the foot of my belly, so I came here, then on the 10th I was hospitalized, then I spent three or four days hospitalized, I went to the maternity home, then from the maternity home I came to the emergency room from time to time because I was feeling a lot of contractions, then when it was the 21st I came and had to deliver the baby";

"Aaa, I felt scared, I felt scared. It was difficult... it had already happened to me... I stayed here with my two-year-old girl, she was already familiar to me, right?"



Mothers	Age	Marital status	Race	Education	Occupation	Type of home	Municipality
Baby Kangaroo	32	single	Brown	High school	Home	Rented	Monsenhor Tabosa
Baby Coelho	19	single	Brown	High school	Home	Rented	Caucaia
Baby armadillo	30	Married	Brown	Superior	Seamstress	Own home	Fortaleza
Baby Giraffe	22	Stable union	Black	High School	Home	Own home	Fortaleza
Baby Sabiá	34	Single	Brown	Superior	Nutrition Technician	Relatives' houses	Fortaleza

Figure 1: Socio-demographic characteristics of the mothers

Source: author

Mothers	Prenatal care	Parity	Type of delivery
Baby Kangaroo	5 consultations	multiparous	Cesarean section
Baby Rabbit	7 consultations	primiparous	Vaginal
Baby Tatu	4 consultations	multipara	Cesarean section
Baby Giraffe	3 consultations	primiparous	Vaginal
Baby Sabiá	5 consultations	primiparous	Cesarean section

Figure 2: Gestational and delivery data

Source: author

**Baby Tatu:** “I thought... that something was wrong, but I had no idea what it really was, at that moment it was horrible! I wouldn’t wish this feeling of separation on anyone, really, you’re forced to go home and the baby stays”.

From the above, it is possible to see that these women had different experiences of the moment of premature birth, but all of them were accompanied by feelings of uncertainty and fear. The separation and breaking of the early bond required by the premature neonate’s hospitalization in the NICU is described as the “worst feeling in life”.

Campos and Cordeiro (2022) point out in their study that the moment of premature birth and the daily unforeseen events with the hospitalized baby have significant traumatic potential. Cardoso and Toni (2022) also describe that at this time there is an encounter with the unexpected, as the idealized child is replaced by the real one. The physical separation of mother and child, due to the need for care, leaves them with a feeling of emptiness, both in their arms and in the womb, as their child has been taken away from them and taken away from them.

### EXPERIENCING THE KANGAROO METHOD AND ITS PHASES

In the second block, the aim of the questions was to get to know the kangaroo method through the eyes of the mothers by asking about their first contact with the method, how the transition to the second stage was made and which professionals are most present in the application of the method.

The question that guided the speeches was the first time she had heard of the MMC, and she gave the following answers:

**Baby Kangaroo:** “It was the time they called me, asked me to meet them and then called me to stay and bring my things. That was the first time I heard about the kangaroo”.

**Baby Giraffe:** “The day they called me, the 5th, they called me and gave me information asking if I wanted to come here, that here I would be closer to her, I would be able to breastfeed, I would be able to change, do everything I would do at home, so I came, then they explained it to me more clearly... so I stayed here the day they called me, I stayed right away”.

When asked which was the first time she had done the kangaroo pose and which professional had explained the method, the answers were:

**Baby Tatu:** “It was the day I arrived here, on Saturday, June 15th, it was the first time I came here and we did the kangaroo pose”; “It was (name of professional), she’s a nurse”.

**Baby Sabiá:** “I think it was the same day I came here, but then I think it was the third day, as I was still in surgery, right?! I still have the stitches and then, as it weighs my surgery was bleeding, right?!, then I didn’t do it for two days, because it weighs a lot”;

“They explained it to me downstairs, the nurse explained it to me very well, that I was going to have to stay with my son and I accepted on the spot, just being close to him is enough for me.”

It can be seen from the participants’ answers that they only learned about the method when they needed it with their child. In the present study, it seems that only the MMC was applied in the second stage, which raises questions about its occurrence in the NICU and NICU (1st stage). It was also noted that the nursing team was present in the mothers’ speeches, which is explained by the fact that the second stage, because it takes place in the NICU, is applied more by the nursing team, despite the method having a multidisciplinary vision.

The next questions asked what explanations had been received, how the news of going to the second phase had come about and the mothers reported:

**Baby Kangaroo:** “The kangaroo method was great for her to have contact with me, right? skin to skin, and to feel as if she was still in the womb”.

“They called me on the phone to say that I was from here, if I wanted to take part in the kangaroo, and I certainly agreed, so I came.

**Baby Coelho:** “...how would it be here?!, she said that I wasn’t obliged to stay, that the person chose, that I wasn’t obliged to

stay and she explained, right?!, how things were, everything works properly, the health professionals are very good, they’re very attentive, they help”.

“The social worker called me, I was discharged, I went home, the social worker called me and I came, right?!, so I could talk to them, so I could explain too, because I have a two-year-old girl at home, right?!, so it was quite difficult to have to choose, right?!, but then because of their health, which they need more, so I had to choose, right?!, to stay here with them.”

**Baby Tatu:** “That it would improve a lot, right?! because as the baby was very premature, she got too scared and it would improve in that respect, also the skin-to-skin contact, right?!, the contact we have with the baby, the temperature too, because as she’s very premature, right?!, she has that little difficulty, not to mention that she’s closer to my heart, it’s as if she’s really going back into the womb, that’s the feeling she explained, but living is what happens.”

“I loved it. Here for the kangaroo, right? I loved it because it’s very painful, no matter how long you stay here from 8am to 8pm, which is the time that’s allowed, but when you go home there’s that anguish, you don’t know how it’s going to be at night, how it’s going to be the next day, so for me it was one of the best pieces of news we received during that period.”

In the comments above, it is possible to see how much the mothers understand and value the benefits that the kangaroo method brings to them and their babies. It is very clear how much they dedicate and give of themselves by agreeing to take part in this long-awaited and much-desired phase. From the moment they talk about the method and its advantages, you can see their enthusiasm for being able to enjoy more moments with their baby, who requires more care. It is also clear that despite the challenges they face, there is a much greater “reward” for the goals achieved and for the health and development of their babies.

Alves *et al.* (2020) describe that the first phase of MMC occurs when the premature newborn is still in the NICU, with the focus of the method being on welcoming the family, reducing stressful stimuli and establishing a bond through skin-to-skin contact. The mother and family members are informed about all the procedures carried out and have free entry to the Neonatal Unit, in order to monitor the newborn's care and breastfeed when possible.

In the second stage, which only occurs when the PTNB is clinically stable, the child is transferred to the NICU where they will be hospitalized together with the mother, who will be responsible for caring for the newborn under the supervision of a multidisciplinary team (Silva *et al.*, 2020).

During the experience of the method, the multidisciplinary team focuses on clinical stability, weight gain of the infant, as well as training mothers to recognize changes presented by the infant during hospitalization, and care for mothers is not the focus of treatment, although aspects related to their physical health are important for the method to work (Silva *et al.*, 2020).

## MATERNAL POSTURE DURING THE KANGAROO METHOD

The third and final section explored these mothers' perceptions of the care they took with their posture while practicing the method, whether they experienced any pain during this process, what posture they adopted to make the skin-to-skin moment more comfortable for them and their babies, and whether any health professionals had ever given them advice on proper posture. As physiotherapists, the aim was to indirectly find out if this professional was involved in the process of applying the method.

The question that guided the beginning of the block was whether the first time she had done the kangaroo pose she had thought of something related to her or only to her son,

and the answers were: (*Baby Kangaroo*) "Both of us, I thought of both of us, it's like a connection, right?" (*Baby Sabiá*) "I think a lot about my son, I think about his well-being, his safety, you know?"; (*Baby Girafa*) "Ah... her, only her, after they called me, they said I could be close to her, she could be on my lap, I just came in, without thinking about anything".

We can see that the mothers offer and dedicate the best of themselves to seeing their children evolve and develop healthily, since these premature babies depend on them to make satisfactory progress. It's clear from the above that these women are thinking more about the baby's well-being and want the method to work so much that they sometimes forget about themselves.

When we asked them how long they stay in the kangaroo position, if they feel any pain, if there is guidance from a professional on proper posture and which posture is adopted most of the time, they reported:

**Baby Kangaroo:** "I think it took me three hours, if I'm not mistaken, two and a half, three hours because I didn't want to let her go at all, so that was about it. I didn't feel any pain"  
"Sitting with her, sitting"

**Baby Tatu:** "Yes... yes, yes, especially in relation to the baby's head, right? In relation to that or my posture when I sit down, these things. When we get here, as we go along, as we spend a little time, we pick up more information and they show us more and more so that we can be more comfortable and everything, everyone here helps each other, they explain a lot about how we have to stand, posture and everything".

**Baby Coelho:** "I only spent 3 days here with her, because she had abdominal distension, then she had to go back to the ICU again, then I went home, she had to spend 7 days taking antibiotics, then I went home and never came back, because I got covid, I spent more than 1 month away from her. I spent a lot of time with her in the posture, more than an hour, three hours, I spent a lot of time with her. I didn't feel any pain";



*“Sometimes lying down, sitting down, when I’m breastfeeding it’s sitting down, but when they’re quiet I can rest... I lie down for a bit.”*

Guidance on proper posture for both mother and baby is the duty of any health professional trained to do so, and it is important to talk about the subject, which is indispensable for the success and benefits of the method. Alves *et al* (2023) carried out a literature review which, among its objectives, aimed to “ascertain the contribution of the physiotherapist and the multi-professional team in carrying out the method”. However, despite the scientific support that encourages the participation of this professional in the method, the practical reality shows that they need to be more present in the process.

The study by Silva *et al.* (2018) proves that the kangaroo posture does not cause and/or aggravate pain, which corroborates this study in which the mothers reported no discomfort or pain during the method, and the posture most used by them was sitting, however the authors believe that further studies are still needed, with a quantitative methodology and robust samples about maternal posture during the application of the kangaroo mother method.

## CONCLUSION

From the data extracted from the mothers’ speeches, we can see that they all went through difficult times in their journeys with prematurity, in which they often had to forget about themselves and other family members in order to take full care of their children. We can see how these women faced the difficulties along the way, the early separation from their children and the lack of early skin-to-skin contact.

The kangaroo method was highlighted as a positive and pleasurable experience, and it was possible to observe through the speeches the dedication to their children, the learning offered by the method and by professionals in the second phase that took place in the NICU. It is also possible to consider that these women understand the importance of proper posture during the numerous tasks they carry out during the day and that this should favor mother and child, so that no negative complaints were heard about maternal posture during the application of the method, and the participation of the physiotherapist was not described in the reports.

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