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Research Article

Advantages of the Application of the Kangaroo Mother Method in the Survival of Premature Infants with Low Birth Weight

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Abstract

The objective of the paper review article was to show the existing research on the advantages of the application of the kangaroo mother method (KMC) in the survival of preterm infants with low birth weight. The KMC aims to reduce neonatal mortality and weight gain, feeding with breastfeeding. Methodologically, a systematic review study was carried out in the Google Scholar, PubMed, ScienceDirect, and Dialnet databases in which inclusion and exclusion criteria were established for the research found. As results, a total of 342 articles were obtained, of which 235 research articles that did not meet the inclusion criteria were excluded, 28 were discarded due to duplicity, 79 were reviewed, of which they were selected after reading document 5 in its entirety to be included in the analysis matrix. The review revealed that KMC has advantages in terms of survival of low birth weight premature infants by avoiding additional weight loss in the first days, reducing hospitalization time, improving their weight and height, KMC prevents infections, complications and respiratory conditions which implies a reduction in the mortality rate of premature infants. It was also evidenced that this method favors exclusive breastfeeding and increases its production in volume and quality, which allows the child to quickly improve his condition.

Keywords: *Low Weight; Kangaroo Mother Method; Births; Preterm; Survival*

Abbreviation

KMC: Kangaroo Mother Care; cm: Centimeters

Introduction

Global rates of preterm births have increased since 2024, the World Health Organization (WHO, 2024) estimated that more than 13 million children are born preterm each year in the world, that is, 10% of live births, of these [1]. Of preterm live births, the WHO in 2024 states that about 1 million dies during the first 24 hours, 2.3 million dies during the first 28 days and 47% die before reaching five years of age [2].

There are multiple causes that originate the deaths of premature babies, most of them correspond to complications at birth such as asphyxia, trauma, neonatal infections, congenital anomalies, low weight, among the most frequent. The death of premature infants has been considered an emergency in the area of health that must be addressed as a priority worldwide by all organizations, entities, health systems and their professionals with the creation of different strategies to reduce the mortality rate of preterm children [2].

It should be noted that one of the methods that is becoming more relevant every day in reducing the deaths of premature children is the Kangaroo Mother Method (KMC), which not only emphasizes skin-to-skin contact that allows creating a strong bond between mother and baby, but also prioritizes exclusive breastfeeding, which is essential especially when the premature baby is underweight. In Latin American countries, this method is increasingly used as a preventive measure to deal with the complications of preterm birth, with special attention to low birth weight, and comparative studies have shown the benefits in temperature regulation, oxygenation and emotional attachment [3].

From the above, the interest arises in conducting a documentary review about the advantages of KMC in the survival of preterm infants with low birth weight, considering the most relevant aspects of its implementation and the benefits that this method represents.

Materials and Methods

A search was carried out in the databases: Google Scholar, PubMed, ScienceDirect, Dialnet to review the different documents that were found in them as a result of scientific research on the subject of the Kangaroo Mom method and its implementation in the survival of low birth weight premature newborns. The descriptors or keywords used were: "method", "mother kangaroo", "premature", "births", "survival", "low weight".

The inclusion criteria of the documents were: scientific research articles of applied, descriptive, correlational, cross-sectional type, with quasi-experimental, experimental, non-experimental designs, with statistical data, preterm newborn population with low weight, with application of the kangaroo mother method, period of elaboration years 2024-2025.

Exclusion criteria: Systematic review documents, theoretical or documentary research, documents where the application of the Kangaroo Mother method has not been implemented for the survival of the low birth weight baby, but only in cases of creation of the bond between the parents, research without verifiable results. Preparation period before 2024.

They were found in:

- Google Scholar: 287 results.
- ScienceDirect: 25 research results, 8 review articles and 2 case reports.
- PubMed: 28 results.
- Dialnet: 2 items.
- Total documents found: 342.

The selection process of the articles was carried out with the application of the inclusion and exclusion criteria in a systematic review in the different databases, once the documentary search was carried out, 235 research articles that did not meet the inclusion criteria were excluded, 28 were discarded due to duplicity, 79 were reviewed, of which were selected after reading the complete document 5 to be included in the analysis matrix because they were consistent with the inclusion criteria and had statistically verifiable and updated data.

Results

Once the search and reading of the articles were carried out, five were selected that had outstanding information on the effectiveness and advantages of the implementation of the KMC in low birth weight premature infants, these studies are shown below.

Author(s), year, country.	Research Title	Objective	Results	Conclusions
Montejo., *et al*. (2024) Colombia [4]	Evaluation of the implementation of the programme Kangaroo mother at a university hospital.	Evaluate the implementation of the Program Kangaroo Mother of the Erasmus University Hospital Meoz in Norte de Santander, Colombia, during 2021-2022 in 287 low birth weight preterm infants.	The sensitivity of INFANIB (infant Neurological International Battery) at 3 months was 62.2% and the specificity was 76.1%; at 6 months, sensitivity was 77.5% and specificity was 74.4%; and at 9 months, the sensitivity was 77.2% and the specificity was 91.1%.	The Hospital's Kangaroo Mother Care Program Universitario Erasmo Meóz complies, to a large extent, with the parameters established in said guidelines technicians. It was found that, in the hospital's Kangaroo Mother Care Program, the length of stay was longer than 12 months in 59.6% of the cases, which shows a high level of adherence to the program. The nutritional evaluation was necessary in 51% of cases. Despite of this, a high percentage (49.1%) did not receive such an evaluation, since their nutritional assessment was inside of the normal ranges of the weight-height and height-to-age ratio,
Chamorro Arostegui (2024) Nicaragua [5]	Benefits of Kangaroo Mother Care Method implementation in neonates with low birth weight, admitted to the Hospital's Neonatal Intermediate Care Ward Oscar Danilo Rosales Arguello School.	To know the benefits of the implementation of the Kangaroo Mother Care Method in neonates with low birth weight, admitted to the Intermediate Care Room Neonatals of HEODRA.	49.5% had a stay hospital for 2 to 4 weeks, the 100% suction feeding and SCI was 95% and mixed feeding of 5%. Episodes of hypothermia of 2%, infections associates 32.7%, screening 63.4%, and weight at discharge was 92.1% between 1500-1999 grams, all participants were discharged alive.	The kangaroo mother care method provides benefits in SCI, height gain, weight, head circumference, reduction in hospital stay and mortality.
Briseño-Sahagun, Paulina., *et al*. (2025) Mexico [6]	Early application of the kangaroo mother method. Ideal growth in premature infants	To assess the impact of the Kangaroo Mother Method (KMC) early on the postnatal growth of preterm infants, using the tables of the INTERGROWTH-21st project.	Newborns in the 2018 group started KMC earlier ($p=0.002$) with longer application time during hospitalization ($p<0.001$), presenting less initial weight loss ($p=0.006$), shorter hospital stay ($p=0.021$), with constant weight gain ($p=0.040$), and less postnatal growth restriction ($p=0.021$).	Early KMC was able to reduce baseline weight loss by 29% and growth restriction by 43%, thereby reducing hospital stay.

Sinha, Bireshwar., *et al*. (2025) India [7]	Effect of kangaroo mother care on breast milk intake in low birth weight infants: a randomized controlled trial	To estimate the effect of KMC promotion and support in low birth weight infants compared to control during the neonatal period on breast milk intake and breast milk components.	The mean intake of breast milk in infants was 331 ± 144 g/d or 142 ± 57 g/kg/d in the control group and 368 ± 135 g/d or 154 ± 50 g/kg/d in the intervention group, resulting in a mean difference of 37 [95% confidence interval (CI): 12, 63] g/d or 12 (95% CI: 2.22) g/kg/d. The mean concentration of carbohydrates in breast milk in the intervention group was 51.2 ± 6.1 g/l versus 50 ± 6.8 g/l in the control group. The corresponding values for proteins were 15.0 ± 2.9 g/l and 16.3 ± 4.6 g/l, respectively. No substantial differences were found in the concentration of amino acids, fats, lactoferrin, or sIgA between the study arms.	The findings show that KMC is associated with substantially higher breast milk intake in low birth weight infants during the neonatal period. No evidence of any effect of KMC on the concentration of several components of breast milk was observed.
Bubshait, Hussah (2025) United States [8]	Association Between Skin-to-Skin Contact, Mood, and Breastfeeding in Mothers of Very Low Birth Weight Infants	To examine the association between duration of skin-to-skin contact, maternal mood, and breastfeeding outcomes, including volume of expressed breast milk (EBF) and duration of lactation, during the first 6 weeks postpartum in mothers of very low birth weight infants.	No independent association was observed between total minutes of skin-to-skin contact during the first and second 3-week postpartum periods and mood scores, whether positive or negative. The duration of skin-to-skin contact was positively associated with the volume of breast milk expressed (β = 0.001; 95% CI [0.0005, 0.002]; p = 0.0004). A significant positive association was also observed between time spent on skin-to-skin contact and duration of breastfeeding (β = 0.01; 95% CI [0.0004, 0.02]; p = 0.04). No significant associations were observed between mood and breastfeeding outcomes.	This study underscores the importance of encouraging skin-to-skin contact to improve maternal mental health and breastfeeding outcomes, particularly for mothers of very low birth weight babies.

Table 1: *Matrix of included results.*

Discussion of the Results

Regarding the studies that were found and that are relevant, Montejo., *et al*. (2024) [4] in Colombia reports the importance of KMC in the survival of low birth weight preterm infants, in the aforementioned research the authors evaluated the implementation of KMC in a public hospital, finding that this method provides benefits such as; monitoring of the health status of the newborn between 6 and 12 months by the hospital's paediatric staff, carrying out laboratory tests and nutritional examination of the child's developmental follow-up as well as accompanying the mother and guidance on exclusive breastfeeding. The results showed that KMC has a positive impact on the survival of low birth weight preterm infants, giving these newborns the possibility of overcoming the consequences of their nutritional status, gaining weight quickly and managing to overcome the first 24 hours of life and the first weeks that are considered vital. This was demonstrated with the evaluation of oral feeding capacity and neuromotor development, finding that the infants who were cared for by the KMC showed better scores in their evaluation with normal weight ranges than the others.

The study by Chamorro Arostegui (2024) [5] made it possible to know the advantages of KMC in premature infants with low birth weight, this researcher states that in 76.2% of the patients who participated in the research obtained a weight gain greater than 75 grams and 100% of the cases increased more than 4 cm in height and more than 3 cm in the head circumference. One of the most outstanding benefits of the method was the reduction of hospitalization that was reduced between 2 to 4 weeks, sucking feeding in exclusive breastfeeding in 100% of premature infants, decrease in infections and episodes of hypothermia, discharge weight was 92.1% between 1500 and 1999 grams, all patients who were part of the KMC program were discharged alive.

It should be noted that in the research by Briseño-Sahagun, Paulina., *et al*. (2025) [6] expose the effectiveness of the KMC by demonstrating that it is possible to reduce the initial weight loss of the premature infant by up to 29%, likewise, they show that the application of the KMC reduces the hospitalization of the baby and the mother because it promotes growth and constant weight gain. one of the key points of the research reviewed is the proposal for the early use of KMC from the moment of birth and in intensive care.

In the case of Sinha's research, Bireshwar., *et al*. (2025) [7] favorable results are presented regarding the amount of breast milk consumed by low birth weight preterm infants when KMC is implemented because the premature infant consumes an amount of breast milk that is progressively increased, which positively impacts the weight and survival of the baby. These researchers found no significant differences in the concentration of breast milk carbohydrates and proteins, where higher values were obtained in the intervention group than in the control group. As can be seen, there is an advantage in KMC that is also reflected in the quality of breast milk and that results in benefits for the premature infant.

Accordingly, the research of Bubshait, Hussah (2025) [8] also shows that KMC favors the volume of breast milk consumed by sucking the premature infant, which translates into benefits in terms of weight gain and nutrients for the baby, which in turn corresponds to the results found in the Sinha study. Bireshwar., *et al*. (2025) [7] who also add that benefits were not only found in the quantity but also in the quality of breast milk, which is improved in the implementation of the KMC. It is also highlighted that KMC favors exclusive breastfeeding and the mental health of the mother.

Final Thoughts

After reviewing the research found, it can be said that KMC has advantages in sucking feeding the preterm baby in exclusive breastfeeding. The KMC prevents the baby from losing weight, decompensating and preventing infections and respiratory complications, which translates into fewer deaths of preterm children in the first 24 hours, extending their life by providing progressive improvements as the days go by.

It was observed that there is a gap in knowledge about KMC from quasi-experimental or experimental research, which prevents a more extensive demonstration of the benefits of KMC, most of them are documentary review studies without statistical data or cases that facilitate the understanding of the importance of KMC in the survival of preterm children with low birth weight.

Another aspect to consider is in cases where an improvement in breast milk production is claimed in terms of the quantity, volume and concentration of proteins found in it and transmitted to the baby in exclusive breastfeeding, which merits more in-depth studies to determine to what extent it can benefit not only the premature child but all births.

The KMC is proven to be a method that reduces the mortality of preterm babies as demonstrated by the results of the research presented in this document, where 100% of the cases were discharged alive from the hospital, in addition to reducing the stay in intensive care and in the same hospital facility.

It is suggested to continue with the research of the advantages of KMC in the survival of preterm children with low birth weight, because the mortality rate of this population of neonates is increasing, which is why this method that has benefits for both mother and baby should continue to be implemented especially. because it does not involve an expense or investment for families or health centers in economic terms, it only requires the willingness of the mother, father, doctors and health personnel to understand the KMC as a strategy capable of ensuring that preterm children manage to continue living.

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