












SYSTEMATIC REVIEW

Effectiveness of the kangaroo method in premature infants

Efectividad del método canguro en neonatos prematuros

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ABSTRACT

Introduction: prematurity is one of the main causes of neonatal mortality, the Mother Kangaroo Method (MMC), developed in 1978 in Colombia, emerges as an effective and humanized alternative for premature neonates, based on skin-to-skin contact, strengthening the maternal bond, regulating temperature and promoting breastfeeding. It reduces neonatal mortality by 40 % and optimizes hospital resources. Although it faces cultural and structural challenges worldwide, its implementation can improve the quality of life of newborns and their families.

Objective: to determine the effectiveness of the Kangaroo Method in preterm infants.

Method: this article uses a systematic review supported by the PRISMA 2020 Declaration, with a qualitative-descriptive approach. The PICO model was used to define the research question, scientific articles from the last 5 years were reviewed in ten databases, using MeSH terms, DeCs and using Boolean operators, related to the Kangaroo method and its effectiveness.

Results: a compilation of studies demonstrate the effectiveness of the kangaroo method in improving the quality of life, basing this on different categories supported by authors who defend this method as an effective and recommended alternative to problems such as breastfeeding, socioeconomic level or medical problems that arise in premature newborns.

Conclusions: CMM is an effective strategy to care for preterm newborns, however, despite its multiple benefits, there is a lack in terms of its application, for this reason the dissemination of this effective method is sought.

Keywords: Mother Kangaroo Method; Neonate; Premature Birth; Maternal Health; Perinatal Care; Effectiveness.

RESUMEN

Introducción: la prematuridad es una de las principales causas de mortalidad neonatal, el Método Madre Canguro (MMC), desarrollado en 1978 en Colombia, surge como una alternativa eficaz y humanizada para neonatos prematuros, basada en el contacto piel con piel, fortaleciendo el vínculo materno, regulando la temperatura y promoviendo la lactancia materna. Reduce la mortalidad neonatal en un 40 % y optimiza recursos hospitalarios. Aunque enfrenta desafíos culturales y estructurales a nivel Mundial, su implementación puede mejorar la calidad de vida de los recién nacidos y sus familias.

Objetivo: determinar la efectividad del Método Canguro en neonatos prematuros.

Método: este artículo utiliza una revisión sistemática respaldada por la Declaración PRISMA2020, con un enfoque cualitativo-descriptivo. Se utilizó el modelo PICO, para definir la pregunta de investigación, se revisaron

artículos científicos de los últimos 5 años, en diez bases de datos, empleando los términos MeSH, DeCs y usando operadores booleanos, relacionados con el Método canguro y su efectividad.

Resultados: una recopilación de estudios demuestra la efectividad del método canguro, en mejorar la calidad de vida, fundamentando esto en diferentes categorías respaldadas por autores, que defienden este método como una alternativa eficaz y recomendada ante problemas como la lactancia materna, el nivel socioeconómico o los problemas médicos que surgen en los recién nacidos prematuros.

Conclusiones: el MMC es una estrategia efectiva para cuidar a recién nacidos prematuros, sin embargo, a pesar de sus múltiples beneficios, existe una carencia en cuanto a su aplicación, por esta razón se busca la difusión de este eficaz método.

Palabras clave: Método Madre-Canguro; Neonato; Nacimiento Prematuro; Salud Materna; Atención Perinatal; Efectividad.

INTRODUCTION

The mother kangaroo method (MMC) emerged in 1978 in Bogotá, Colombia, thanks to pediatrician Edgar Rey Sanabria, as a solution to the shortage of incubators and resources in the Neonatal Care Unit, seeking to solve this shortage, which many premature neonates faced high mortality rates, not only due to insufficient equipment but also due to the negative impact of separating babies from their mothers. This innovative approach is based on skin-to-skin contact, where the baby is placed in an upright position on the mother's chest, with its head close to the heart. It is held in place with a special cloth or girdle to ensure safety and comfort, allowing natural thermal regulation and fostering emotional bonding.^(1,2)

According to the World Health Organization, approximately 15 million babies are born prematurely each year, equivalent to more than 10 % of all births worldwide. Of these, one million neonates die from complications related to prematurity. However, in Latin America, the prematurity rate is close to 9 %, posing a significant challenge to the health sector. In Ecuador, premature birth is one of the leading causes of neonatal mortality, although effective interventions are implemented. It has been shown that the kangaroo method can reduce neonatal mortality by 40 % in preterm, low-birth-weight infants, especially in resource-limited settings. Additionally, approximately 70 % of the studies reviewed conclude that this method is effective in promoting the recovery and physiological stability of newborns. However, there are still gaps in its implementation, especially in the rural sector.⁽³⁾

This method is based on attachment theories, child development, and humanized care. According to John Bowlby, "Early attachment is crucial for the child's emotional and cognitive development, and skin-to-skin contact strengthens this bond." In addition, recent studies have shown that physical contact improves the physiological stability of newborns, regulating temperature, heart rate, and respiratory pattern. This approach not only seeks an alternative to traditional methods, but its origin lies in the emotional bonding and physical care that can be improved with its implementation. Its benefits are evident in breastfeeding, which is strongly linked to this method, as the mother unconsciously makes skin-to-skin contact; for this reason, crying often stops during breastfeeding.^(4,5)

Neonatology specialists have widely studied KMC due to its benefits for the health of preterm and low-birth-weight infants. A document published by La Asociación Española de Pediatría highlights its impact on reducing morbidity and mortality, promoting physiological stability, neurological development, and the promotion of breastfeeding. Additionally, a protocol established by the Hospital General Docente de Calderón provides medical guidelines for its implementation, highlighting that skin-to-skin contact promotes weight gain, hemodynamic stability, and mother-infant bonding. Both studies agree on the importance of training healthcare personnel and conducting adequate follow-up to optimize the effects of this strategy in neonatal units.⁽⁶⁾

Its importance lies in the numerous benefits it offers for health and development, particularly in contexts of limited resources. It has been shown to reduce the mortality rate in premature babies by stabilizing vital functions, and it also promotes exclusive breastfeeding, which helps the baby's immune system and prevents infections. At an emotional level, it strengthens the family bond, reducing the stress levels of both the baby and caregivers and creating an environment conducive to their recovery. At the nursing level, its application is essential because staff are responsible for educating parents about the benefits of skin-to-skin contact and ensuring the correct and safe performance of the technique. Additionally, the staff is responsible for monitoring the health status of the newborn, aiming to maintain stable physiological parameters. In addition, nursing is characterized by promoting a more humanized approach.^(7,8)

Despite being an effective method, its implementation faces several challenges, including the lack of training for health personnel, who are often unaware of the process and are limited to traditional techniques. Cultural barriers in specific communities persist in conventional beliefs that hinder the acceptance of this method due

to lack of knowledge. Although the technique is generally quite economical, its implementation depends on basic and logistical resources provided by hospitals and health centers. The overload of the neonatology units has a significant impact on the time that can be dedicated to this method. The lack of diffusion and promotion, there are no educational campaigns directed to these families with premature babies, and the health personnel limits their knowledge.⁽⁹⁾

Our objective is to evaluate the effectiveness of the kangaroo method in preterm infants, with a focus on key aspects such as survival, neurological development, and strengthening of bonding. Through a comprehensive analysis of existing and new data, we aim to highlight the tangible benefits of this practice and identify barriers that limit its implementation. By better understanding its impact and associated challenges, strategies can be developed to encourage its use as a standard practice in neonatal care.⁽¹⁰⁾

METHOD

This systematic review, which collects, evaluates, and synthesizes studies to provide a comprehensive view of KMC, was developed according to the guidelines established by the PRISMA 2020 Statement, a guideline designed to improve article quality, to identify the effectiveness of the kangaroo method in preterm infants in different cases. A qualitative-descriptive approach was adopted, which allowed the synthesizing of relevant scientific information on the social, emotional, affective, and economic determinants of the family members of each preterm newborn.^(11,12)

The research question was structured using the PICO model, a tool for formulating questions focused on evidence, considering preterm or low-birth-weight newborns as the population; the interest is focused on proving the effectiveness of the kangaroo method.⁽¹³⁾ Based on this, the following question was posed: What is the effectiveness of the Kangaroo Method compared to other neonatal care approaches in the survival and development of preterm newborns?

For the search for evidence, ten scientific databases were consulted: PubMed, Scopus, Web of Science, Latindex, Scielo, CINAHL, Dialnet, Redalyc, LILACS, and BVS. Controlled DeCS terms were used: Mother Kangaroo Method, Neonate, Premature Birth, Maternal Health, Perinatal Care, Effectiveness, and MeSH: Kangaroo-Mother Care Method, Newborn, Premature Birth, Maternal Health, Perinatal Care, Effectiveness, combined using Boolean operators AND and OR. The primary descriptors used were: “Kangaroo Method AND nursing care,” “Kangaroo Method AND newborn AND effectiveness,” “Kangaroo Method OR skin-to-skin,” and “Kangaroo Method AND preterm infants AND nursing interventions”. Filters were set to include studies published between 2021 and 2025 in unrestricted language with full-text access. The search was run between March and June 2025.

The inclusion criteria encompassed original studies that addressed how the kangaroo method has become an alternative to traditional methods, as well as its effectiveness in improving the biological well-being of neonates, utilizing previous qualitative methodological designs. Research covering other pathologies not related to prematurity, as well as editorials, letters to the editor, protocols, duplicates, or articles without sufficient methodological information, were excluded.

The study selection process was performed in three stages. First, duplicates were eliminated using Mendeley software. Then, two independent reviewers read titles and abstracts, followed by a full-text review. Discrepancies between reviewers were resolved by consensus or with the participation of a third reviewer. The entire selection process was documented using the PRISMA 2020 flowchart.

Validated tools were used to assess the methodological quality of the included studies, which were categorized according to the study design type. The studies were divided into categories, including analysis, theory, risk, and social level of the family.

Finally, the data were extracted using a designed matrix that included information on the search engine, URL, search algorithm, author, original topic, year, type of study, objective, methodology, and results. The synthesis of results was organized narratively and thematically, grouping the factors into four broad categories: social, economic, biological, and risk. Given that the included studies presented methodological and results heterogeneity, meta-analysis was not performed, opting for a qualitative and descriptive presentation of the findings.

Table 1. Bibliographic search strategies and results of the bibliographic search

Database Search engine Library	Search Algorithms	Search Results	Limits Inclusion and exclusion criteria	Retrieved Articles	Title Selection	Duplicate	Abstract Selection	Complete Reading	Scientific Rigor	Included Articles
PubMed	Kangaroo Method AND nursing care	500	Years 5	122	16	2	14	6	6	6
	Kangaroo Method AND newborn AND effectiveness	585	Original scientific articles (clinical trials). Free access.	33	20	1	18	5	5	5
	Kangaroo OR skin-to-skin method	3576	Unlimited language.	327	73	0	12	4	4	4
	Kangaroo method AND preterm newborns AND nursing interventions	224		47	11	0	10	4	4	4
Scopus	Kangaroo Method AND nursing care	304	Years 5	66	15	6	8	4	4	4
	Kangaroo Method AND newborn AND effectiveness	186	Original scientific articles (clinical trials). Open access.	48	16	2	9	2	2	2
	Kangaroo OR skin-to-skin method	2979	Unlimited language.	312	22	5	11	1	1	1
	Kangaroo method AND preterm newborns AND nursing interventions	58		18	9	3	9	0	0	0
Web of Scieencie	Kangaroo Method AND nursing care	1369	Years 5	512	40	2	15	1	1	1
	Kangaroo Method AND newborn AND effectiveness	508	Original scientific articles (Clinical trials). Free access.	67	16	2	5	0	0	0
	Kangaroo OR skin-to-skin method	107	Unlimited language.	20	9	6	4	0	0	0
	Kangaroo method AND preterm AND nursing interventions	1288		225	37	0	3	0	0	0
ProQuest	Kangaroo Method AND nursing care	25 620	Years 5	888	402	2	122	1	1	1
	Kangaroo Method AND newborn AND effectiveness	12 061	Original scientific articles (Clinical trials). Free access.	640	322	0	5	0	0	0
	Kangaroo OR skin-on-skin method	598 268	Unlimited language.	4594	120	14	51	8	8	8
	Kangaroo method AND preterm newborns AND nursing interventions	99		14	9	6	4	3	3	3
Scielo	Kangaroo Method AND nursing care	50	Years 5	17	9	0	6	3	3	3
	Kangaroo Method AND newborn AND effectiveness	62	Original scientific articles (Clinical trials). Free access.	32	15	4	10	6	6	6
	Kangaroo method OR skin-to-skin	396	Unlimited language.	156	37	6	15	3	3	3
	Kangaroo method AND preterm newborns AND nursing interventions	152		51	22	5	10	4	4	4
Cinahl	Kangaroo Method AND nursing care	730	Years 5	43	30	32	8	3	3	3
	Kangaroo Method AND newborn AND effectiveness	666	Original scientific articles (clinical trials).	30	10	60	7	0	0	0

	Kangaroo OR skin-on-skin method	21 200	Free access.	1100	810	100	60	0	0	0
	Kangaroo method AND preterm infants AND nursing interventions	1	Unlimited language.	1	1	1	1	0	0	0
Dianlent	Kangaroo Method AND nursing care	17	Years 5	17	8	0	6	2	2	2
	Kangaroo Method AND newborn AND effectiveness	3	Original scientific articles (clinical trials).	3	2	0	2	1	1	1
	Kangaroo mother	118	Free access.	98	11	0	9	0	0	0
	Kangaroo method AND preterm newborns AND nursing interventions	1	Unlimited language.	1	1	0	1	5	5	5
Redalycs	Kangaroo Method AND nursing care	9 646	Years 5	807	6	0	4	0	0	0
	Kangaroo Method AND newborn AND effectiveness	271	Original scientific articles (clinical trials).	27	3	0	1	1	1	1
	Mother kangaroo OR skin to skin	246 624	Free access.	2407	62	48	2	0	0	0
	Kangaroo method AND preterm newborns AND nursing interventions	9	Unlimited language.	4	1	0	1	0	0	0
LILACS	Kangaroo Method AND nursing care	140	Years 5	41	20	1	10	2	2	2
	Kangaroo Method AND newborn AND effectiveness	24	Original scientific articles (Clinical trials).	7	7	0	5	4	4	4
	Kangaroo care OR skin-to-skin	375	Free access.	120	40	3	10	1	1	1
	Kangaroo method AND preterm newborns AND nursing interventions	4	Unlimited language.	2	1	0	1	1	1	1
BVS	Kangaroo Method AND nursing care	637	Years 5	205	141	3	9	4	4	4
	Kangaroo Method AND newborn AND effectiveness	142	Original scientific articles (Clinical trials).	46	39	5	6	4	4	4
	Kangaroo care OR skin-to-skin	1599	Free access.	1540	462	15	9	1	1	1
	Kangaroo method AND preterm newborns AND nursing interventions	19	Unlimited language.	5	4	0	4	3	3	3
Total		930 618		14 693	2879	334	497	87	87	87

Note: summarizes the search results and highlights the number of items identified, selected and discarded at each stage of the process. Using inclusion and exclusion criteria

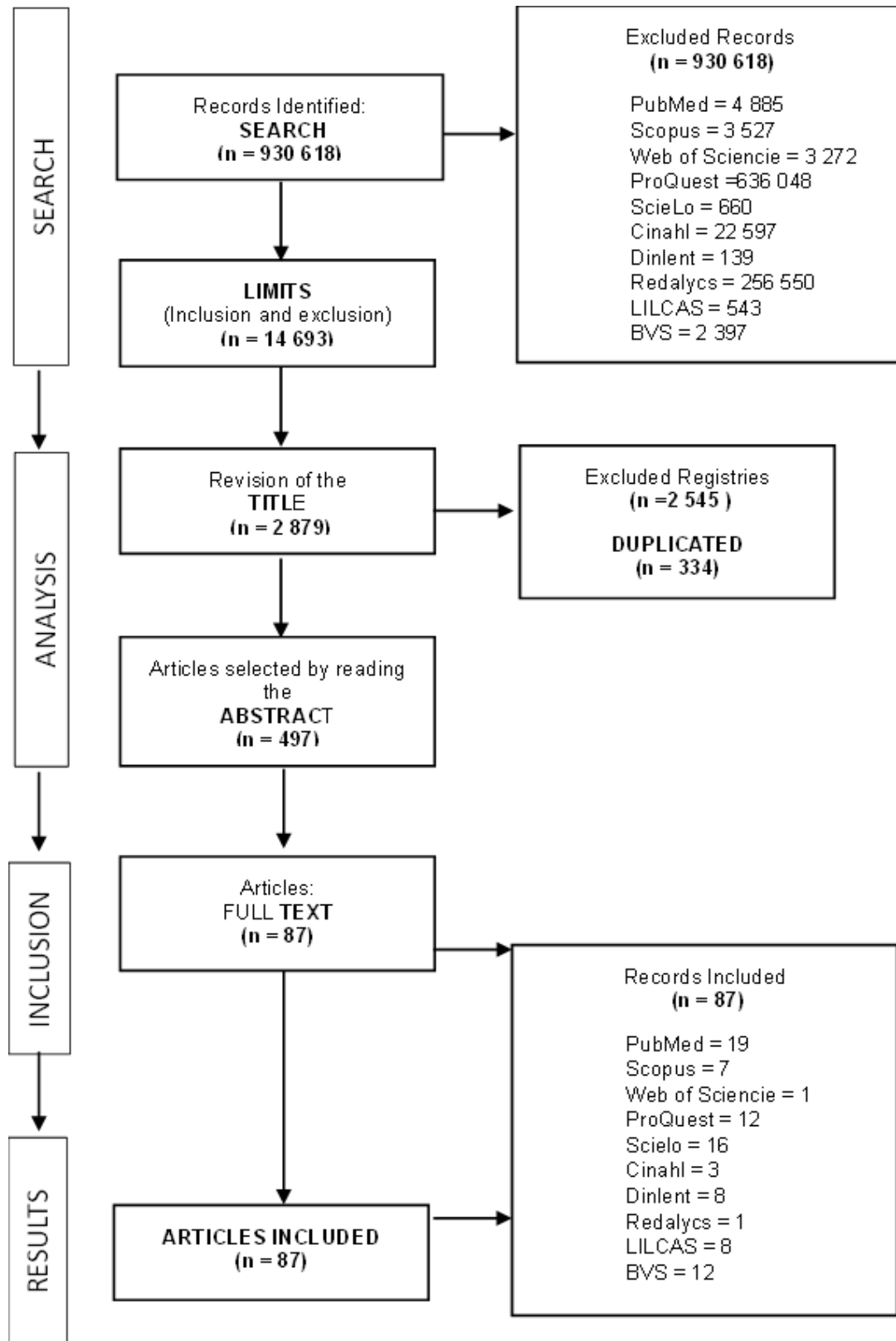


Figure 1. Flow chart of search strategy and results of the bibliographic search

Table 2. Search result

Search	URL	Search	Author	Original subject	Year	Type of study	Objective	Methodology	Results
PubMed	https://pubmed.ncbi.nlm.nih.gov/39243091/	Kangaroo Method and Nursing Care	KirbaşZila Özlem Odabaşı Aktaş Elif Bayraktar Bülent Özkan Hava	Effect of kangaroo mother care and white noise on physiological-stress parameters in heel lancing: randomized controlled study. ⁽¹⁴⁾	2024	Randomized	To reduce the stress index in newborns, as they are exposed to various stressors (heel lancing) leading to take different methods such as white noise supplemented with kangaroo method.	A randomized controlled study was conducted in the gynecology department of a hospital between January and September 2023. Ninety babies were divided into three groups: 30 babies in the Kangaroo Method Group (KMG), 30 babies in the White Music Group (WGM) and 30 babies in the Control Group (CG). All babies were randomly divided into groups. Stress parameters were measured using the saliva collection method and physiological parameters were measured using a saturation device.	A statistically significant difference was determined between total crying time, pulse rate and saturation values according to groups ($p < 0,001$; $p = 0,001$). A statistically significant difference was determined between mean cortisol and GRP-78 values according to the interaction between group and time ($p < 0,001$). KCG was more effective in reducing total crying time and stabilizing pulse, saturation, salivary cortisol and GRP-78 values than WNG and CG.
	https://pubmed.ncbi.nlm.nih.gov/36048848/	Kangaroo Method and Nursing Care	Muttau Nobutu Mwendafilumba Martha Lewis Branishka Kasprzyk Keilya Travers Colm Menon J. Anitha Mutesu- Herbert Albert	Strengthening KangarooMotherCare at a tertiary level hospital in Zambia: A prospective descriptive study ⁽¹⁵⁾	2022	Descriptive	Providing support through the kangaroo mother method is of major help in reducing the percentage of deaths in preterm infants.	We conducted a prospective descriptive study with data collected in the CMC ward of the Teaching University Hospital between January 2016 and September 2017. Mothers and public nurses were trained in CMC. Skin-to-skin contact and breastfeeding practices, weight at admission, discharge, and duration of admission were monitored.	A total of 573 neonates were included in the study. Thirteen extremely low birth weight infants admitted to the KMC ward transitioned to Group A (1000-1499 g) at discharge, with a median weight gain of 500 g. Of the 419 very low weight neonates on admission, 290 remained in Group A, while 129 upgraded to Group B (1500-2499 g),

<https://pubmed.ncbi.nlm.nih.gov/31622569/> Kangaroo Method AND newborn AND effectiveness
 Diniz, Kaísa Trovão Cabral Filho, José Eulálio Miranda, Rafael Moura Lima, Geisy Maria Souza Figueredo, Natália Priscila dos Santos Araújo
 Short-time effect of the kangaroo position on electromyographic activity of premature infants: a randomized clinical trial.⁽¹⁶⁾ 2020 Randomized

To observe and verify the influence that the kangaroo method has on muscular and nervous function in premature infants.

A clinical study was conducted in a kangaroo unit sector (secondary and tertiary care) in the city of Recife, Brazil, with 44 preterm infants randomized to intervention (n = 21) and control (n = 23) groups. The CP was performed through a band holding the newborn against the adult's thorax, in prone and upright position, and the infants were dressed with few items of clothing, thus maintaining skin-to-skin contact with the mother. Surface electromyography was used to investigate muscle activity of the biceps brachii and hamstrings. Group randomization

with a median weight gain of 280 g. Among the 89 underweight infants, one regressed to Group A, 77 remained in Group B and 11 improved to Group C (≥ 2500 g), with a median individual weight gain of 100 g. Of the seven normal-weight infants, 6 remained in Group C and individually gained a median of 100 g, and 1 regressed to Group B. Among all enrolled infants, 2 (0,35 %) died in the KMC ward.

In the intervention group (n=21), variation in electromyographic activity values between the three recording times was observed for both biceps brachii and hamstrings. In the control group (n=23), no statistical difference was observed between the recording moments for both.

<p>https://pubmed.ncbi.nlm.nih.gov/39988313/</p>	<p>Kangaroo Method AND newborn AND effectiveness</p>	<p>Küçükaya, Burcu Cihangir Öztürk, Tülay Erginler, Gonca Temiz, Mehtap Erçel, Özge</p>	<p>The Effect of Early-Initiated Half-Swaddling and Kangaroo Care Practices on Maternal Sleep Quality and Postpartum Depression in Term Infants: A Randomized Controlled Trial.⁽¹⁷⁾</p>	<p>2025 Randomized Controlled Trial</p>	<p>To investigate the veracity of swaddling techniques in newborns and how they influence infant sleep.</p>	<p>was performed using the R® program (v. 3.3.1). Electromyographic recordings were made at three different times: before CP and after one and two hours after CP. In the control group, the recordings were made at the times corresponding to those of the intervention group. The mean values of electromyographic activity between time points were analyzed using ANOVA for repeated measures and the Kruskal-Wallis test.</p>	<p>This study was a four-arm prospective randomized controlled trial. This study was conducted in 136 mothers and term infants hospitalized at Trakya University Hospital between April 2023 and August 2024. Participants were randomly divided into four groups using a computer program with 34 mothers in each group: control (A), half swaddle baby (B), kangaroo method (C), half swaddle baby and kangaroo method (D). From the 1st, 2nd, 3rd, and 6th month, data were collected from the four groups using the Questionnaire Form, the Edinburgh Postpartum Depression Scale (EPDS), and the Pittsburgh Sleep Quality Index (PSQI).</p>	<p>The combination of swaddling and kangaroo care, initiated early in term infants, has a significant effect on reducing the risk of postpartum depression, and swaddling has a significant effect on improving maternal sleep quality.</p>
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<p>https://pubmed.ncbi.nlm.nih.gov/37059994/</p>	<p>Kangaroo OR skin-to-skin method</p>	<p>Dargahiyan, Zahra Ghasemi, Fatemeh Karami, Kimia Valizadeh, Fatemeh Mohammadi, Rasool</p>	<p>2023</p>	<p>Randomized controlled trial</p>	<p>To compare different kangaroo care techniques between mothers and maternal grandmothers, taking as a reference the vital signs and how the different techniques could affect the newborns.</p>	<p>Bonferroni and multiple linear regression (MLR) were used for advanced statistics. Groups C and D had more positive effects on depression, while groups B and D had more positive effects on maternal sleep quality ($p < 0,001$).</p>	<p>This parallel randomized controlled trial was conducted in the neonatology and NICU departments of Kuhdasht hospital, Iran. Eighty preterm infants were selected by convenience sampling according to eligibility criteria, and subsequently, by stratified block randomization, were assigned to two groups. The control group received KC from the mother, and the intervention group received KC from maternal grandmothers on vital signs of preterm infants. Vital signs were assessed 15 minutes before, during, and after KC as the primary outcome. Data collection tools included a demographic questionnaire and a form to record vital signs. Vital signs were measured with a pulse oximeter, electronic thermometer, and observation. Data were analyzed using the chi-</p> <p>he vital signs of newborns in each group showed a significant difference before, during, and after receiving keratoconus ($P < 0,05$). However, the vital signs of The newborns did not differ significantly between the maternal keratoconus and maternal grandmother groups ($P > 0,05$).</p>
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<p>https://pubmed.ncbi.nlm.nih.gov/34236131/</p>	<p>Kangaroo OR skin-to-skin method</p>	<p>Cooijmans, Kelly H.M. Beijers, Roseriet Brett, Bonnie E. de Weerth, Carolina</p>	<p>Daily skin-to-skin contact in full-term infants and breastfeeding: Secondary outcomes from a randomized controlled trial.⁽¹⁹⁾</p>	<p>2022 Randomized controlled trial</p>	<p>To evaluate the effect of a daily skin-to-skin contact intervention for 5 weeks between mothers and full-term infants compared with usual care.</p>	<p>square test, independent t-test, and repeated measures ANOVA. A total of 116 healthy pregnant women from a community sample were enrolled and randomly assigned to IPC or usual care status. The IPC mothers were asked to provide one hour of IPC daily for the first five postnatal weeks. Twelve months postpartum, mothers indicated the number of months of exclusive and continuous breastfeeding. Multiple regression analyses were performed using intention-to-treat, per-protocol, and exploratory dose-response frameworks. In intention-to-treat analyses, duration of exclusive and continuous breastfeeding did not differ between groups (exclusive: 3,61 ± 1,99 vs. 3,16 ± 1,77 months; adjusted mean difference 0,28; 95 % confidence interval [CI]: -0,33 to 0,89; p = 0,36; continuous: 7,98 ± 4,20 vs. 6,75 ± 4,06 months; adjusted mean difference 0,81; 95 % CI: -0,46 to 2,08; p = 0,21). In per-protocol analyses, duration of exclusive and continuous breastfeeding was longer for skin-to-skin contact</p>	<p>This study demonstrates that, for the total group, the 5-week daily skin-to-skin contact intervention did not prolong the duration of exclusive and continuous breastfeeding. However, for mothers who perform a regular daily hour of skin-to-skin contact, this simple and accessible intervention may prolong the duration of exclusive and continuous breastfeeding by months. Future studies are needed to confirm these promising findings.</p>
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<p>https://pubmed.ncbi.nlm.nih.gov/40108542/</p>	<p>Kangaroo method AND preterm infants AND nursing interventions Shirazi, Shima Keshavarz, Maryam Pezaro, Sally Amzajerdi, Azam Jahanfar, Shayesteh</p>	<p>The effect of post discharge Kangaroo mother care with and without telephone advice on anthropometric indexes of preterm newborns: a randomized clinical trial.⁽²⁰⁾</p>	<p>2025 Randomized controlled trial</p>	<p>To train parents to correctly perform the kangaroo method at home, applying at least 3 sessions per day.</p>	<p>than in usual care dyads (exclusive: $4,89 \pm 1,26$ vs. $3,25 \pm 1,80$ months; adjusted mean difference 1,28; 95 % CI: 0,31-2,24; $p = 0,01$; continuous: $10,81 \pm 1,97$ vs. $6,98 \pm 4,08$ months; adjusted mean difference 2,33; 95 % CI: 0,13-4,54; $p = 0,04$). Exploratory dose-response effects indicated that more hours of skin-to-skin contact predicted longer duration of exclusive and continuous breastfeeding.</p>	<p>At a tertiary center, in a single-blind randomized controlled trial (RCT), one hundred and five premature infants discharged from the neonatal intensive care unit (NICU) were randomly assigned to two experimental groups: KMC, KMC with telephone counseling (KMC-TA) and conventional care (CC) (35 parent-infant pairs in each group). In two experimental groups, a research assistant trained participants on how to do KMC at home a maximum of three times, at least 3-4 h daily, over a period of one month. In the KMC-TA group, participants received KMC counseling by telephone, twice a week. In the CC group,</p>	<p>At one month, the mean weight of the neonates was significantly higher in the two experimental groups than in the CC group ($p = 0,006$). No significant differences were observed in other anthropometric indices.</p>
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<p>https://pubmed.ncbi.nlm.nih.gov/39465388/</p>	<p>Kangaroo method AND preterm infants AND nursing interventions</p>	<p>Ghaemmaghami, Parvin Nasri, N a r j e s Razavinejad, Seyyed Mostajab Edraki, Mitra Shirazi, Zahra Hadian</p>	<p>Comparing the effects of oral sucrose and kangaroo mother care on selected physiological variables and pain resulting from venipuncture in premature newborns admitted to neonatal intensive care units.</p>	<p>2024 Randomized controlled trial</p>	<p>To compare the effects of oral sucrose and oral method on physiological variables and pain resulting from venipuncture in premature newborns admitted to neonatal intensive care unit.</p>	<p>routine care was provided. Before and at the end of the intervention, anthropometric indices including weight, height, head circumference and chest circumference were measured for the infants in all three groups. ANOVA, Kruskal-Wallis, Chi-square, Fisher's exact test and Bonferroni were used to analyze the data.</p>	<p>This clinical trial included preterm infants admitted to two NICUs. The sample size consisted of 66 infants, with 22 infants in each group. Randomization was performed using the block allocation method. Data collection included a demographic questionnaire, the infant neonatal pain scale, and a pulse oximeter. Friedman, Kruskal-Wallis, and Dunn's post hoc tests were used for data analysis, with a significance level of $p < 0,05$.</p> <p>The use of oral sucrose and the kangaroo method showed significant differences in respiratory rate, heart rate, and mean arterial oxygen saturation during and after venipuncture ($P < 0,05$). Oral sucrose was significantly more effective than the kangaroo method. Neonates subjected to the kangaroo method had more regular heart rates compared with the other group ($P < 0,05$). The use of oral sucrose and the kangaroo method had variable effects on the mean pain score resulting from venipuncture in preterm infants ($P < 0,05$).</p>
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http://pubmed.ncbi.nlm.nih.gov/38244486/	Kangaroo Method AND nursing care	Belsey, James Gregory, Ryan Paine, Eloise Faulkner, James	Skin temperature of the knee was effectively reduced when using a new continuous cold-flow cryocompression device: a randomised controlled crossover trial. ⁽²²⁾	2024	Randomized controlled trial	To determine which temperature settings on a new continuous cold-flow cryocompression device effectively reduce knee skin temperature to 10-15 °C, where pain and swelling are expected to be attenuated.	A K-type thermocouple was used to record skin temperature at baseline and every five minutes during a 30-minute cryocompression treatment in a control condition and when using four different temperature settings (6 °C, 8 °C, 10 °C, and 12 °C) in a continuous cold flow cryocompression device. The conditions were labeled Control, Con-6, Con-8, Con-10 and Con-12, respectively.	The median (RIC) skin temperature after cryocompression was 32,1 °C (29,3-33,4), 12,8 °C (12,1-14,6), 14,3 °C (13,8-15,7), 16,1 °C (15,2-17,3) and 17,7 °C (16,9-18,9) for the control condition and using four different temperature settings (6 °C, 8 °C, 10 °C, and 12 °C) in a continuous cold flow cryocompression device. The conditions were labeled Control, Con-6, Con-8, Con-10 and Con-12, respectively. Skin temperature took 20 min (Con-6) and 25 min (Con-8) to reach <15 °C. A median difference (RIC) of 6,8 °C (6,1-8,6), 6,3 °C (5,8-7,7), 6,1 °C (5,2-7,3) and 5,7 °C (4,9-6,9) was observed for Con-6, Con-8, Con-10 and Con-12, respectively, between the device temperature setting and the final skin temperature.
https://pubmed.ncbi.nlm.nih.gov/39732693/	Kangaroo Method and Nursing Care	Fair, Frankie Konadu, Hilda Danquah Darteh, Eugene K M Soltani, Hora	Feasibility of the use of Kangaroo mother care in the transfer of preterm and low-birth-weight infants: a two-arm nonrandomized controlled cluster feasibility study of neonatal transport in Cape Town. ⁽²³⁾	2024	Controlled clinical trial	To assess the feasibility and effects of transporting preterm and low-birth-weight infants using the kangaroo method.	A two-arm, nonrandomized, controlled, controlled group study was conducted on preterm and low birth weight infants transferred from eight peripheral sites to a tertiary neonatal unit via conventional methods or the KMC (August 2022-April 2023).	Seventy-seven mother-infant pairs were recruited, 34 in the KMC group and 43 in the conventional group. Most (60 %) were transported in cabs or private vehicles. Overall mortality was 20,8 %. No adverse events were recorded in neonates transported by KMC, with slightly better temperatures on arrival. Although the differences observed were not statistically significant,

<https://pubmed.ncbi.nlm.nih.gov/33430816/> Kangaroo method AND preterm infants AND nursing interventions. He, Felix B. Axelin, Anna Ahlqvist - Björkroth, Sari Raiskila, Simo LöyttyniemiLiisa Effectiveness of the Close Collaboration with Parents intervention on parent-infant closeness in NICU.⁽²⁴⁾ 2021 Clinical Trial

To evaluate the effectiveness of the Close Collaboration with Parents intervention on increasing parent-infant closeness during hospitalization.

Parents of infants hospitalized in hospitals were recruited for three months before and after the Close Collaboration with Parents intervention. Data were collected using closeness diaries. Mothers and fathers separately recorded time spent in the hospital and skin-to-skin contact time with their baby during each hospital day until discharge. Statistical analyses were performed using a linear model with covariates.

as this was not the primary objective, the findings strengthen the evidence that KMC transport may not be more life-threatening than the current practice of transporting neonates in the arms of the caregiver. KMC transport has the additional advantage of ensuring no separation of the small, sick infant from its mother from birth and improving temperature on arrival.

A total of 170 and 129 mothers and 126 and 84 fathers, respectively, kept diaries before and after the intervention. The presence of both parents in the neonatal unit averaged 453 minutes per day before and 620 minutes after the intervention. In the adjusted model, the increase was 99 minutes per day ($p = 0,0007$). Infants maintained skin-to-skin contact an average of 76 minutes per day before and 114 minutes after the intervention. In the adjusted model, skin-to-skin contact increased by 24 minutes per day ($p = 0,0405$).

https://pubmed.ncbi.nlm.nih.gov/36897067/	Kangaroo method AND preterm infants AND nursing interventions	Çaka, Sinem Yalnlzolu Topal, Sümeyra Yurttutan, Sadk Aytemiz, Selin Çlkar, Yasemin Sarl, Murat	Effects of kangaroo mother care on feeding intolerance in preterm infants. ⁽²⁵⁾	2023	Randomized controlled trial	To assess the impact of kangaroo mother care (KMC) on feeding intolerance in preterm infants.	The study population, designed as a randomized trial, consisted of 168 preterm infants [KMC: 84, Standard Care (SC): 84] hospitalized in the neonatal intensive care unit of a university hospital between June and November 2020. The infants were randomly selected and divided into two groups. Once the vital signs of the infants in both groups were stabilized, the infants were fed in the same position. KMC was applied to the infants in the intervention group for 1 h, preparing a suitable environment after feeding. Infants in the SC group were placed in prone position after feeding. The GRV values of infants in both groups were recorded on the Infant Follow-up Form before the next feeding.	No statistically significant differences were detected between the groups when compared for demographic and clinical characteristics. The body temperature and O ₂ saturation of the participants in the KMC group were significantly higher, and their respiratory and heart rates were lower than those in the SC group. Transition time to full enteral feeding was significantly shorter, and FI occurred significantly less in infants in the KMC group than in the SC group (p < 0,05). No statistically significant differences were observed between groups in terms of infant weight gain or length of hospital stay (p > 0,05).
https://pubmed.ncbi.nlm.nih.gov/35501762/	Kangaroo Method AND newborn AND effectiveness	Jamehdar, Mahboubeh Divband, Aboulhassan Valizadeh, Leila Hosseini, Mohammadbagher Hakimi, Sevil	KMC by surrogate can have an effect equal to KMC by mother in improving the nutritional behavior and arterial oxygen saturation of the preterm infant: results of a controlled randomized clinical trial. ⁽²⁶⁾	2022	Randomized controlled trial	To investigate the effect of the kangaroo mother method (KMC) applied by the mother and her surrogate on the nutritional behavior and physiological function of preterm infants.	This study was a randomized controlled clinical trial conducted with 70 preterm infants admitted to the NICU. The infants in the intervention group were given MAT (by mother and surrogate) 3 times a day, while the infants in the control group were given MAT by mother 3 times a day	The PIBBS scale score in both groups increased significantly over 4 days; this difference was not significant between groups. [Adjusted mean difference (95 % CI): 0,66 (-2,36 to 1,03), p = 0,438]. Within group, among physiological functions, only O ₂ saturation increased

<https://pubmed.ncbi.nlm.nih.gov/35033000/> Kangaroo OR skin-to-skin method Landry, Marc Antoine Kumar, Kumar Tyebkhan, Juzer M. Levesque, Valerie Spinella, Marcello Mindful Kangaroo Care: mindfulness intervention for mothers during skin-to-skin care: a randomized control pilot study.⁽²⁷⁾ 2022 Pilot

for up to 4 days and 60 minutes each time. The primary outcome was to compare the effect of AMC by mother and surrogate on feeding behavior as measured by the Preterm Infant Breastfeeding Behavior Scale (PIBBS), and the secondary outcome was to compare the effect of AMC by mother and surrogate on physiological outcomes. significantly during the study. However, this increase was not statistically different between the two groups. [Adjusted mean difference (95 % CI): 0,102 (-0,68 to 0,88), p = 0,761].

To explore the feasibility and acceptability of teaching and practicing mindfulness during the application of the mother kangaroo method in mothers of preterm infants, as well as to document the preliminary results of the method on stress, anxiety, depression and maternal mindfulness. In this randomized, controlled pilot study, fifteen mothers per group completed the study. The MKC group demonstrated significant intragroup reductions in anxiety (p = 0,003), depression (p = 0,02), and stress (p = 0,002), as well as significant increases in curiosity (p = 0,008) and decentering (p = 0,01) scores on the Toronto Mindfulness Scale, all with medium to large effect sizes. Only increases in curiosity and decentering were significant between groups. Fourteen mothers considered the intervention acceptable and one, neutral.

https://pubmed.ncbi.nlm.nih.gov/38754454/	Kangaroo Method AND newborn AND effectiveness	Sinha, Bireshwar Sommerfelt, Halvor Ashorn, Per Mazumder, Sarmila Taneja, Sunita More, Deepak	Effectiveness of kangaroo mother care before clinical stabilisation versus standard care among neonates at five hospitals in Uganda (OMWaNA): a parallel-group, individually randomised controlled trial and economic evaluation.	2021 Randomized controlled trial	To compare the effectiveness and safety of the mother kangaroo method initiated before clinical stabilization versus standard care in neonates.	We conducted a single parallel group randomized controlled trial in five hospitals in Uganda. Singleton or twin infants younger than 48 h weighing 700-2000 g without life-threatening clinical instability were eligible for inclusion. We randomly assigned (1:1) neonates to KMC initiated before stabilization (intervention group) or to standard care (control group) through a computer-generated randomization sequence with permuted blocks of different sizes, stratified by birth weight and recruitment site. Parents, caregivers, and health care workers were not masked to treatment assignment; however, the independent statistician performing the analyses was masked. After randomization, infants in the intervention group were placed prone and skin-to-skin on the caregiver's chest, secured with a KMC wrap. Neonates in the control group were cared for in an incubator or radiant warmer, according to hospital practice; KMC was not initiated until stability criteria were met. The primary outcome was all-cause neonatal mortality	Between October 9, 2019 and July 31, 2022, 2221 neonates were randomized: 1110 (50,0 %) to the intervention group and 1111 (50,0 %) to the control group. From randomization to 7 days of life, 81 (7,5 %) of the 1083 infants in the intervention group and 83 (7,5 %) of the 1102 infants in the control group died (adjusted relative risk [RR]: 0,97 [95 % CI: 0,74-1,28]; p = 0,85). From randomization to 28 days, 119 (11,3 %) of the 1051 infants in the intervention group and 134 (12,8 %) of the 1049 infants in the control group died (RR: 0,88 [0,71-1,09]; p = 0,23). Even if policy makers do not consider it important to prevent neonatal deaths, the intervention would have a 97 % probability, from the health professional's perspective, and an 84 % probability from the societal perspective, of being more cost-effective than standard care.
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https://pubmed.ncbi.nlm.nih.gov/35067976/	Kangaroo OR skin-to-skin method	Charpak, Nathalie Tessier, Rejean Ruiz, Juan Gabriel Uriza, Felipe Hernandez, José Tiberio Cortes	Kangaroo mother care had a protective effect on the volume of brain structures in young adults born preterm. ⁽²⁹⁾	2022	Randomized controlled trial	To determine whether kangaroo mother method (KMC) administration in infancy affected brain volume in early adulthood.	at 7 days, analyzed by intention-to-treat. The economic evaluation assessed incremental costs and cost-effectiveness from a disaggregated societal perspective.	Standardized tests of cognitive, memory, and motor skills were used to determine brain volume in 20-year-old adults who participated in a randomized controlled trial of KMC versus incubator care. Multivariate analysis of brain volume by KMC exposure was performed.	Standardized tests of cognitive, memory, and motor skills were used to determine brain volume in 20-year-old adults who participated in a randomized controlled trial of KMC versus incubator care. Multivariate analysis of brain volume by KMC exposure was performed.
https://pubmed.ncbi.nlm.nih.gov/40238094/	Kangaroo Method and Nursing Care	Kristoffersen, Laila Støen, Ragnhild Bergsen, Håkon Flottorp, Silje Tjøm Magerøy, Grete Grunewaldt, Kristine Hermansen Aker, Karoline	Immediate Skin-to-Skin Contact in Very Preterm Neonates and Early Childhood Neurodevelopment: A Randomized Clinical Trial. ⁽³⁰⁾	2025	Randomized Controlled Trial	To assess whether immediate skin-to-skin contact in preterm infants improves neurodevelopmental outcomes in early infancy.	This randomized, open-label, clinical trial was conducted in three Norwegian neonatal units between February 2014 and October 2020. Participants were preterm infants born between 28 weeks 0 days and 31 weeks 6 days gestation, with a birth weight greater than 1000 g and without major congenital malformations or need for intubation or oxygen therapy greater than 40 %. The intention-to-treat analysis was performed between July 2023 and July 2024.	Of 108 included infants (68 [63 %] males; mean [SD] gestational age, 30 weeks 3 days [1 week 1 day]), 51 received skin-to-skin contact and 57 received standard care. Eighty-six (80 %) were followed up at 2 to 3 years, and 81 (75 %) completed the BSID-III and were analyzed for the primary outcome. The mean difference in cognitive composite scores on the BSID-III was 0,21 (95 % CI, -5,26 to 5,68; P = 0,94). There was no difference between groups in the proportion at risk for	

<https://pubmed.ncbi.nlm.nih.gov/36379593/> Kangaroo Method AND newborn AND effectiveness Choudhary, Tarun Shankar Mazumder, Sarmila Haaland, Oystein A Taneja, Sunita Bahl, Rajiv Martines, Jose Bhan Effect of kangaroo mother care initiated in community settings on financial risk protection of low-income households: a randomised controlled trial in Haryana, India.⁽³¹⁾ 2022 Randomized controlled trial To evaluate the veracity of the kangaroo mother method, across socioeconomic domain. We included 4475 low birth weight infants, randomly assigned to a ciKMC group (2491 infants) and a control group (1984 infants), in a large trial conducted between 2017 and 2018 in Haryana, India. We used Gaussian family generalized linear models with an identity link to estimate the mean difference in out-of-care waiting time, and Cox regression to estimate HRs of CHE and impoverishment between the trial groups. developmental delay at 2 to 3 years: 21 of 41 (51 %) and 22 of 45 (49 %) in the skin-to-skin contact and standard care groups, respectively (odds ratio, 1,10 [95 % CI, 0,47-2,56]; P = 0,83). More infants in the skin-to-skin contact group were breastfed at hospital discharge (42 of 50 [84 %] vs. 36 of 54 [67 %]; P = 0,04). Overall, during the 8-week observation period, the mean operative expenditure for medical care per infant was lower (US\$20,0) in the ciKMC group than in the control group (US\$25,6), i.e., a difference of -US\$5,5; 95 % CI -US\$11,4 to US\$0,3; p=0,06. Among infants who sought care, spending was lower by US\$8,5 (95 % CI: -US\$17,0 to -US\$0,03; p=0,03) in the ciKMC group than in the control group. The HR for impoverishment due to seeking medical care was 0,56 (95 % CI: 0,36 to 0,89; p=0,01) and 0,91 (95 % CI: 0,74 to 1,12; p=0,37) for CHE.

	https://pubmed.ncbi.nlm.nih.gov/33849584/	Kangaroo Method AND newborn AND effectiveness	Agudelo S Gamboa O Acuña E Aguirre L Bastidas S Guijarro J J Jaller M Valderrama M Padrón M Gualdrón N Obando E Rodríguez F Buitrago L	Randomized clinical trial of the effect of the onset time of skin-to-skin contact at birth, immediate compared to early, on the duration of breastfeeding in full term newborns. ⁽³²⁾	2021	Randomized controlled trial	To evaluate the effectiveness of community-initiated kangaroo mother care (KMC) for the purpose of reducing health care-related financial risks.	We included 4475 low birth weight infants, randomly assigned to a ciKMC group (2491 infants) and a control group (1984 infants), in a large trial conducted between 2017 and 2018 in Haryana, India. We used Gaussian family generalized linear models with an identity link to estimate the mean difference in out-of-care waiting time, and Cox regression to estimate HRs of CHE and impoverishment between the trial groups.	Overall, during the 8-week observation period, the mean operative expenditure for medical care per infant was lower (US\$20,0) in the ciKMC group than in the control group (US\$25,6), i.e., a difference of -US\$5,5; 95 % CI -US\$11,4 to US\$0,3; p=0,06. Among infants who sought care, spending was lower by US\$8,5 (95 % CI: -US\$17,0 to -US\$0,03; p=0,03) in the ciKMC group than in the control group. The HR for impoverishment due to seeking medical care was 0,56 (95 % CI: 0,36 to 0,89; p=0,01) and 0,91 (95 % CI: 0,74 to 1,12; p=0,37) for CHE.
Web of Science	https://www-scopus-com.uta.lookproxy.com/record/display.uri?eid=2-s2,0-85196692757&origin=resultslist&sort=plf-f&src=s&sot=b&sdt=cl&cluster=scosubjabbr%2C%22NURS%22%2Ct%	Kangaroo Method AND nursing care	Koreti M Muntode Gharde P	Breastfeeding at discharge and in the third stage of the Kangaroo Mother Care among hospitalized preterm infants. ⁽³³⁾	2022	Randomized Controlled Trial	To review the effect of kangaroo care for low birth weight infants to gain and also verify breastfeeding.	A thorough analysis of existing studies was conducted using primary sources such as PubMed and Google Scholar, as well as associated terms such as Medical Subject Heading (MeSH). In addition, clinical health and specialists offered their perspectives on the	Kangaroo mother care (KMC) showed both short- and long-term benefits for low birth weight infants, improving their survival, neuropsychological development, breastfeeding rates, and mother-infant bonding. Infants who received

<https://www-scopus-com.uta-lookproxy.com/record/display.uri?eid=2-s2,0-85218764477&origin=resultslist&sort=plf-f&src=s&sot=b&sdt=cl&cluster=scofreetoread%2C%22al%22%2Ct&s=TITLE-ABS-os=2> Kangaroo Selvi, S. Method AND nursing care

A Systematic 2025 Meta-analysis Assessment of The Impact of Kangaroo Mother Care on Preterm Infants' Physiological Characteristics.⁽³⁴⁾

To evaluate the kangaroo mother method (KMC) and its effectiveness in preterm infants and their physiological parameters, guided by their temperature and oxygen saturation.

application of KMC to strengthen the emotional connection between mothers and infants.

A thorough search was carried out in digital repositories such as PubMed, Embase, the Cochrane library, Scopus and CINAHL. Studies published in English from 2013 to 2023 addressing preterm and low birth weight neonates were considered. MeSH terms and keywords related to KMC were applied. A meta-analysis was performed to assess

KMC had better growth parameters, increased breastfeeding rates during hospital stay and after discharge, and a stronger relationship with their mothers. In addition, KMC was more effective in very low birth weight (VLBW) infants. It was also observed that the implementation of KMC made the babies more relaxed and confident, which improved their overall growth and development.

Of the initial 120 investigations that met the search criteria, the synthesized findings indicate that KMC sessions of one hour or shorter have a significant impact on neonatal vital signs, particularly temperature and oxygen saturation. Neonates receiving KMC showed improvements in these parameters compared to conventional care.

<p>https://www-scopus-com.uta.lookproxy.com/record/display.uri?eid=2-s2,0-85177694511&origin=resultlist&sort=plf-f&src=s&sot=b&sdt=cl&cluster=sco-subjabbr%2C%22NURS%22%2C%2Bscosubtype%2C%22ar%22%2C%2Bscofreeto-read%2C%22all%22%2C&ts=TITLE-ABS-in-to-skin%29&sessionSearchId=248fc1b0e5d4cfa02ce2384461b616da&relpos=44</p>	<p>Kangaroo Method AND nursing care</p>	<p>Afande Mukhola B Kivuti-Bitok L Chepchirchir A</p>	<p>Challenges Faced by Mothers Practicing Kangaroo Mother Care (KMC) in a Resource-Limited Setting During the COVID-19 Pandemic: Insights From the Voices of Mothers of Preterm Babies and Their Suggested Solutions.⁽³⁵⁾</p>	<p>2023 Descriptive Cross-cutting</p>	<p>To investigate the challenges faced by mothers implementing the kangaroo method in the COVID-19 pandemic and to document the suggestions they describe.</p>	<p>outcomes on aspects such as respiration rate, heart rate variability, and thermal regulation in preterm infants who received KMC compared to standard care.</p> <p>A descriptive analysis was conducted in the Neonatal Section of Kenyatta National Hospital (KNH). Interviews were conducted with 82 mothers, using a form of questions that the researcher managed, covering both closed and open-ended questions. Data obtained from the open-ended questions were examined thematically.</p>	<p>The results underscore the importance of KMC as an effective intervention in neonatal care. It is suggested that future research explore the optimal durations and frequencies of KMC sessions to maximize its benefits.</p> <p>The main factors that affected the practice of KMC were: fear of the baby contracting COVID-19, fear of contracting COVID-19, and social distancing restrictions. Mothers suggested interventions such as the need for more KMC rooms, provision of appropriate clothing, strict enforcement of COVID-19 prevention guidelines, and increased family support for the practice.</p>
<p>https://www-scopus-com.uta.lookproxy.com/record/display.uri?eid=2-s2,0-851KEY%28Kangaroo+care+AND+prematuarchId=01ec5fbfe3dc8b93c82326os=1</p>	<p>Kangaroo Method AND nursing care</p>	<p>Foong W Foong S Ho J Gautama D Leong J Tan P Baskaran M</p>	<p>Exploring factors influencing the uptake of kangaroo mother care: key informant interviews with parents.⁽³⁶⁾</p>	<p>2023 Qualitative</p>	<p>To understand the factors influencing the uptake of kangaroo mother care in the setting in order to intervene and provide better options for adaptability.</p>	<p>Triandis' model of social behavior was adopted as the theoretical basis. Interviews were conducted with parents and health professionals, specifically with nine parents of preterm infants who had undergone</p>	<p>Among the facilitating factors for KMC adoption were positive feelings such as warmth and satisfaction, the sense of parenthood that KMC generates, and the benefits for both the baby and the</p>

KMC, chosen through purposive sampling. The interviewers who conducted the interviews had the necessary training. The information collected was transcribed and examined according to Triandis' Theory of Interpersonal Behavior. parents. On the other hand, the main barriers were lack of knowledge about KMC, initial negative feelings such as fear, uncertainty and embarrassment, prioritization of time for milk expression, overcrowding in the room, lack of space and privacy, limited visiting hours, lack of support and poor communication, which generated misunderstandings about KMC.

A quasi-experimental study was conducted over time with 48 mother-infant pairs in each of two sets: the control group and the intervention group. The control group received usual care, while the intervention group participated in an educational program on kangaroo care. Data were obtained through self-completed kangaroo care surveys. Chi-square tests, a general linear model, and repeated measures ANOVA were applied to analyze the data. Most of the mothers were Malay, multiparous, cesarean section and preterm. At 3 months post-intervention, the experimental group reported a significant reduction in stress, positive perception and good knowledge about kangaroo care implementation. In addition, perceived barriers to kangaroo care decreased significantly in the experimental group after 3 months.

http://www-scopus-com.uta-lookproxy.com/record/display.uri?eid=2-s2,0-85135805523&origin=resultslist&sort=plf-f&src=s&sot=b&sdt=cl&cluster=scofreetoread%2C%2All%22%2Ct&s=e86&relpos=28 Kangaroo Method AND newborn AND effectiveness Samsudin S Chui P Camara A Abdullah K Maternal care program in the neonatal intensive care unit improved mothers' perceptions, knowledge, perceived barriers and stress relates to premature infant.⁽³⁷⁾ 2023 Quasi-experimental To evaluate the effectiveness of a motherhood and newborn care education program.

<p>https://pubmed.ncbi.nlm.nih.gov/33488739/</p>	<p>Kangaroo Method AND newborn AND effectiveness</p>	<p>Shukla V Chaudhari A Nimbalkar S Phatak A Patel D Nimbalkar A</p>	<p>Skin-to-Skin Care by Mother vs. Father for Preterm Neonatal Pain: A Randomized Control Trial (ENVIRON Trial)⁽³⁸⁾</p>	<p>2021 Randomized</p>	<p>To compare skin-to-skin care (SSC) provided by mother and father for the management of neonatal pain in preterm infants as assessed by the Prematurity Neonatal Pain Profile score.</p>	<p>Sixty-four stable preterm infants (28 to 36 weeks' gestation) born in a level 3 neonatal intensive care unit were included. Allocation was randomized using a computer-generated sequence. In group A, the mother offered skin-to-skin contact 15 minutes before the first heel prick, while the father offered skin-to-skin contact before the second prick. In group B, the order of skin-to-skin contact providers was changed. The PIPP score was measured at 0, 1 and 5 minutes after the heel prick by two independent assessors using video recordings.</p>	<p>Mean (SD) birth weight was 1665,18 (339,35) grams and mean (SD) gestational age was 34,28 (2,24) weeks. There were no statistically or clinically significant differences between groups in the PIPP score at 0, 1 and 5 minutes (p=0,38; p=0,66; p=0,65 respectively). There were also no significant differences between groups for any of the components of the PIPP score (all p values > 0,05). At 5 minutes, the PIPP score approached the 0-minute level in both groups.</p>
<p>https://www-scopus-com.uta.lookproxy.com/record/display.uri?eid=2-s2,0-8518825062kin%29&sessionSearchId=248fc1b0e5d4cfa02ce2384461b616da&relpos=43</p>	<p>Kangaroo OR skin-to-skin method</p>	<p>Kristoffersen L Bergseng H England H Bagstevold A Aker K Stone R</p>	<p>Skin-to-skin contact in the delivery room for very preterm infants: a randomised clinical trial.⁽³⁹⁾</p>	<p>2023 Randomized and systematic</p>	<p>Toevaluephysiological parameters of skin-to-skin contact.</p>	<p>A randomized, controlled clinical trial was conducted in three neonatal hospitals in Norway. Participants were preterm infants with a gestational age between 28 weeks and 31 weeks and 6 days and a birth weight greater than 1000 grams, who were born by cesarean section or vaginal delivery. The intervention involved two hours of early skin-to-skin contact between mother and infant, compared to usual care,</p>	<p>A total of 108 infants (63 % male, 57 % cesarean section, mean GA 30,3 weeks and mean birth weight 1437 g) were included. During the first 2 hours after randomization, 4 % (2 of 51) and 7 % (4 of 57) were hypothermic (<36,0°C) in the SSC and SC groups, respectively (p=0,68). Significantly fewer infants in the SSC group had hyperthermia (>37,5°C) (26 % (13 of 57) vs 47 % (27 of 51), p=0,02). No infants</p>

Scopus	https://www.revista-portalesmedicos.com/revista-medica/conocimientos-y-actitudes-de-los-beneficios-del-plan-canguro-para-la-lactancia-	Kangaroo Method AND nursing care	Giomara T.	Knowledge and attitudes of the benefits of the kangaroo plan for breastfeeding. ⁽⁴⁰⁾	2023 Qualitative	To evaluate the level of knowledge about the Kangaroo Mother Method in mothers of newborns who attended their neonatal check-ups in a public hospital in Ecuador.	where the newborn was separated from the mother and transferred to the neonatal unit in an incubator.	required mechanical ventilation during the first 2 hours. The mean duration of SSC was 120 minutes (80-120) in the intervention group. There were no differences in heart rate, respiratory rate or oxygen saturation between groups during the first 24 hours.
ProQuest	https://www.proquest.com/type=Scholarly%20Journals	Kangaroo Method AND nursing care	Kirbaş ZOdabaşlı Aktaş EBayraktar BÖzkan H	Effect of kangaroo mother care and white noise on physiological-stress parameters in heel lancing: randomized controlled study. ⁽⁴¹⁾	2024 Randomized Controlled	To evaluate the effects of kangaroo care and white noise on physiological parameters and stress markers, specifically cortisol and glucose-regulated protein GRP78, in neonates subjected to the stressful intervention of heel lancing during routine metabolic examinations.	A randomized controlled study was conducted in a hospital gynecology service between January and September 2023. 90 infants were divided into three groups: 30 infants in the Kangaroo Care Group (KCG), 30 infants in the White Music Group (WMG) and 30 infants in the Control Group (CG). All infants were randomly	68 % have a high level, while 32 % have a medium level of knowledge about the Kangaroo Mother Method. The likelihood test for the schooling variable showed an asymptotic significance of $0,048 < 0,05$. A Student's t-contrast was applied for the variables age and level of knowledge, yielding a bilateral sig. of $0,00 < 0,05$.
								A statistically significant difference was determined between the values of total crying time, pulse and saturation according to the groups ($p < 0,001; p = 0,001$). A statistically significant difference was determined between mean cortisol values and GRP78 measurements

<p>https://www.proquest.com/early%20Journals</p>	<p>Skin-to-skin OR Kangaroo Method</p>	<p>Conde-Agudelo, Agustin Belizán, José M</p>	<p>Characteristics of skin-to-skin contact in Brazilian neonatal units: a multicenter study⁽⁴²⁾</p>	<p>2023</p>	<p>Multicenter, descriptive, longitudinal.</p>	<p>To describe the onset, duration, location and who performs skin-to-skin contact in Brazilian neonatal units.</p>	<p>Multicenter, descriptive, longitudinal study, conducted from May 2018 to March 2020, in five Kangaroo Method reference neonatal units in Brazil, including newborns weighing up to 18,000. Maternal and newborn characteristics were collected from medical records and interviews. The practice of skin-to-skin contact was recorded on cards attached to the bed and completed by staff and parents. Analysis was performed using descriptive statistics.</p>	<p>divided into groups. Stress parameters were measured by the saliva collection method and physiological parameters by the saturation device. according to group and time interaction (p < 0,001). KCG was more effective in reducing total crying time and stabilizing pulse, saturation, salivary cortisol and GRP-78 values compared to WNG and GC. A total of 405 newborns were included, 51,4 % male, mean gestational age of 31,4 weeks and birth weight of 1,412g. Regarding skin-to-skin contact time, the median frequency of daily contact was 1,5 times (CI: 1,2 - 2,4), the time/day was 147 min/day (CI: 106,7 - 263,0) and the first contact was 5 days after birth (CI: 4,0-8,0). The longest contact time/day was performed by mothers, with a median of 137,8 min/day (110:95,6-232,1) and the second stage of the Kangaroo Method, Kangaroo Intermediate Care Unit, was the site of the longest contact time, with a median of 184,4 min/day (10:124,7-455,4).</p>
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https://www.proquest.com/Motherly%20Journals	Kangaroo Mother	Morales Castellanos, Sara Maria; López, Nubia Castiblanco; Brunhilde Goethe Sánchez	Mother Method with home oxygen therapy: maternal cultural care, a nursing perspective ⁽⁴³⁾	2022 Qualitative	To describe the meaning of maternal cultural care of preterm and/or low birth weight infants with home oxygen therapy.	Qualitative study with ethnographic approach, conducted in an outpatient Kangaroo Program of a hospital in Bogotá, Colombia. After informed consent and institutional approval, 8 mothers participated in the research, the dense description or saturation of the sample was given with 21 interviews recorded in the homes and transcribed verbatim. Madeleine Leininger's theory of diversity and universality of cultural care and James Spradley's in-depth interview were used for data collection and analysis.	The meaning assigned by the mothers to the care of the child with home oxygen is described in 9 domains: oxygen as a vital need, cultural knowledge, knowledge and education on the administration of home oxygen, procedures and their difficulties, the mother's displacement with the premature child with home oxygen, hygiene and clothing, increased costs, father and relative participation and alteration of maternal emotions.
https://www.proquest.com/Motherly%20Journals	Kangaroo Mother	Carolina Garzon Esguerra Logo Charpak, Nathalie Logo Flor Matilde Muñoz Avendaño Logo Floriano Parra, Mayra J Logo Giron, Martha E Logo	Nutritional impact of a monthly mini-market on preterm and/or low birth weight infants ⁽⁴⁴⁾	2020 observational, descriptive and prospective	To evaluate the nutritional impact of a monthly mini-market of high nutritional value delivered, through educational talks, to families of preterm and/or low birth weight (LBW) newborns, within the framework of the Mother Kangaroo Program (PMC), in Bogotá and Cundinamarca; also, to identify the risk factors that predispose the onset of malnutrition (<-2DE).	Observational, descriptive and prospective study of a cohort of 392 children enrolled in 10 PMC who present in their follow-up a nutritional risk or confirmed malnutrition coming from families with income \leq to 2 minimum wages and who receive monthly a high nutritional value mini-market with educational talk after 3 months of corrected age (CE).	According to the Sistema de Aseguramiento en Salud, there were no differences in nutritional outcomes. The delivery of the mini-markets did not have an impact on nutrition but on adherence to the BMPs. At 40 weeks, 19,2 % had a weight \leq -2DE, of which 20 % had Intrauterine Growth Retardation (IUGR) at birth. At 3 and 12 months CE, 24,5 % and 36,5 % had a weight \leq -2DE. The rest were at dietary risk. Two risk factors were significant: maternal age and degree of malnutrition at entry.

<p>https://www.proquest.com/Method etype=Scholarly%20 Journals</p>	<p>Kangaroo Method</p>	<p>Goudard, Marivanda Julia Furtado¹; Lamy, Zeni Carvalho¹; de Caldas, Laize</p>	<p>Characteristics of skin-to-skin contact in Brazilian neonatal units: a multicenter study.⁽⁴⁵⁾</p>	<p>2023</p>	<p>multicenter descriptive, longitudinal</p>	<p>To describe the onset, duration, place and who performs skin-to-skin contact in Brazilian neonatal units.</p>	<p>Descriptive, longitudinal, multicenter study, conducted from May 2018 to March 2020, in five Kangaroo Method neonatal units in Brazil, which included newborns weighing up to 1800g. Maternal and newborn characteristics were collected from medical records and interviews. The practice of skin-to-skin contact was recorded on cards attached to the bed, completed by the team and by the parents. The analysis was performed using descriptive statistics.</p>	<p>A total of 405 newborns were included, 51,4% male, median gestational age 31,4 weeks and birth weight 1412g. Regarding the time of skin-to-skin contact, the median frequency of daily contact was 1,5 times (IQ: 1,2 - 2,4), the time/day was 147 min/day (IQ: 106,7 - 263,0) and the first contact at five days of life (I1Q:4,0-8,0). The longest contact time/day was performed by mothers, with a median of 137,8 min/day (IQ:95,6-232,1) and the second stage of the Kangaroo Method, the Kangaroo Intermediate Care Unit, was the place where contact was performed for the longest time, with a median of 184,4 min/day (I10:124,7-455,4).</p>
<p>https://www.proquest.com/=Scholarly%20 method Journals</p>	<p>Kangaroo OR skin-to-skin method</p>	<p>Universidade de São Paulo-USP, Escola de Enfermagem de Ribeirão Preto - USP</p>	<p>Nurses' experiences in facilitating early bonding between mothers and premature infants: a qualitative multicenter study⁽⁴⁶⁾</p>	<p>2024</p>	<p>Qualitative descriptive</p>	<p>this study aims to explore the experiences of neonatal nurses in facilitating early bonding between mothers and premature infants.</p>	<p>A descriptive qualitative approach was adopted, using focus group discussions with 13 participants from four referral hospitals in a large city in a developing country. Subsequently, in-depth interviews were conducted with three participants.</p>	<p>three main themes emerged, highlighting barriers and facilitators to early bonding between mothers and preterm infants. The study also explored care practices that seek to facilitate early bonding in the social environment of preterm infants, involving mothers, families, nurses, and hospitals.</p>

https://www.proquest.com/etyp=Scholarly%20Journals	Kangaroo OR skin-to-skin method	Yalena Ortiz Anaya; Juan Guillermo Rojas	Cultural Practices Provided at Home by the Zenú Indigenous Mothers to their Premature Children and to Those with Low Birth Weight. ⁽⁴⁷⁾	2022	Qualitative ethnographic	The objective of this study was to understand the cultural care practices of Zenú indigenous mothers to their premature and low birth weight newborns through the implementation of the Mother Kangaroo method at home.	Qualitative study with a particularist ethnographic approach, with the participation of eight mothers and two key informants trained in the Mother Kangaroo method, who were interviewed and observed in their homes, in the municipalities of San Andrés de Sotavento, Tuchín, Sampués and San Antonio de Palmitos, in the departments of Córdoba and Sucre (Colombia), respectively. An ethnographic analysis was carried out. The criteria of data saturation and methodological rigor typical of qualitative research were applied.	Eight Zenú indigenous mothers and two family key informants participated in the study. Themes that emerged were context, a different experience, adaptations of the Mother Kangaroo method in the home, and care, protection and healing practices based on customs and cultural tradition.
https://www.proquest.com/type=Scholarly%20Journals	Kangaroo OR skin-to-skin method	Oscar Camilo Pantoja-Gomez; Diaz-Castro, Rosalba; Caicedo-Rodriguez, Martha Isabel; Rosas-Roldan	Bronchopulmonary dysplasia in patients of a kangaroo mother program in Popayán-Colombia. Retrospective cohort study. ⁽⁴⁸⁾	2022	Research Article	The objective was to characterize patients with BPD, describe their nutritional, neurological and respiratory involvement in a PMC.	A retrospective cohort study was performed in the PMC of a University Hospital with ethics committee approval. It included patients with BPD between 2015-2018, without major malformations. We evaluated nutritional, neurological and respiratory status at 40 weeks, 6 and 12 months of corrected age using height/age at 6 and 12 months. Abnormal Amiel Tisson test in 98 %. About 75 % presented respiratory symptoms between 6 and 12 months and 33 % had at least one hospital readmission.	Four hundred ninety patients were admitted in four years, 50 with BPD (10,2 %); 58 % with BPD-moderate, none with BPD-severe. 96 % were of low socioeconomic stratum, 46 % <29 weeks of gestational age and 90 % of them were subjected to mechanical ventilation. We found compromised mean height/age at 6 and 12 months. Abnormal Amiel Tisson test in 98 %. About 75 % presented respiratory symptoms between 6 and 12 months and 33 % had at least one hospital readmission.

<p>https://www.proquest.com/Scholarly%20Journals</p>	<p>Kangaroo OR Skin-to-skin method</p>	<p>CárdenasAguilera, Juan Guillermo Logo Rocío Chacón Acevedo Logo Erika López López Logo</p>	<p>Psychological impact of mothers on the risk of chronic kidney disease in their children⁽⁴⁹⁾</p>	<p>2023</p>	<p>Quantitative transnversa and qualitative phenomenological</p>	<p>To evaluate the psychological impact of kangaroo mothers on the risk of chronic kidney disease in their premature or low birth weight infants, as well as to describe their experiences in this situation.</p>	<p>This was a mixed study with a cross-sectional quantitative and qualitative phenomenological component. Mothers with children with low birth weight or prematurity at risk of chronic kidney disease were included. The main outcomes were the frequency of anxiety, depression and parental stress measured with standardized instruments. Emerging categories of mothers' reported experience are also described.</p>	<p>Twenty-seven mothers were included in the analysis period, whose average age was 27,11 ± 6,93 years. The 51,85% were immigrants and all belonged to the low socioeconomic stratum. For100% of the mothers some level of anxiety was identified, where 44,44% had moderate depression and 29,63% minimal depression, in addition, the median score on the parental stress scale was 89 points. Within the emerging categories of the phenomenological analysis, coping, guilt, trust, faith and hope, support, social interaction and family role, among others, were found.</p>
<p>https://www.proquest.com/w/2797161615/4344D18E9B264FCCPQ/12?sourcetype=Scholarly%20Journals</p>	<p>Skin-to-skin OR Kangaroo Method</p>	<p>Giraldo-Marín, Isabel-Cristina; Natalia Andrea Henao Murillo; María Camila Rodríguez</p>	<p>Factors associated with the duration of breastfeeding in mothers of babies cared for in a kangaroo family program.⁽⁵⁰⁾</p>	<p>2022</p>	<p>Quantitative</p>	<p>To determine the factors associated with the duration of breastfeeding in mothers of babies cared for in a kangaroo family program.</p>	<p>Quantitative , observational study with secondary source of a retrospective cohort of 707 infants followed up at admission, 40 weeks, 3 and 6 months of corrected age in the kangaroo family program of a public hospital in the municipality of Rionegro (Antioquia, Colombia) from 2016 to 2019.</p>	<p>49,6% of the babies were born with low weight for gestational age and 51,5 % were female. 58,3 % of the mothers were unemployed and 86,2 % lived with their partner. At entry into the kangaroo family program, 94,2 % of the babies were breastfed and at six months they were 44,7 %. The variables associated with the duration of breastfeeding up to six</p>

<https://www.proquest.com/skin-to-skin-method> Journals
 OR
 Rosane Meire Child health 2021 Qualitative
 Munhak da Silva monitoring and
 Logo; Pancieri, prematurity: the
 Leticia Logo Zilly, impact of the
 Adriana Logo; COVID-19 pandemic.
 Fabiana Aparecida ⁽⁵¹⁾
 Spohr Logo

to analyze elements of qualitative study
 child health monitoring in the perspective
 with a history of of philosophical
 prematurity in the hermeneutics, conducted
 midst of the COVID-19 by the interpretive
 pandemic. movement of the child
 care experiences at home.

12 mothers and 14 2-year-
 old children participated,
 with online interviews by
 instant text message and
 data analysis by sense
 interpretation.

months, according to
 the explanatory model,
 were: the mother
 living with her partner
 (adjusted prevalence
 ratio - PAR: 1,34) and
 receiving breastfeeding
 when entering the
 kangaroo family
 program (PAR: 2,30).

Fragile elements to
 child health monitoring
 were highlighted:
 communication gaps,
 lack of guidance,
 vaccination delays,
 interrupted care
 demands; vulnerable
 elements to child
 development: social
 distancing hindering
 coexistence among
 peers, increased use of
 screens, irritation and
 vindictive behaviors,
 overload of maternal
 attributions; and
 elements strengthening
 maternal care:
 attention to contagion,
 experience and
 satisfaction in the
 maternal role, extension
 of time spent with the
 child, recognition of
 respiratory signs and
 symptoms, mainly
 febrile.

<p>https://www.proquest.com/scholarly-methods/Journals</p>	<p>Kangaroo skin to skin method OR</p>	<p>Laura Palomares González Logo Iván Hernández Caravaca ;Gómez García, Carmen Isabel Sánchez-Solís de Querol, Manuel</p>	<p>Parental presence during invasive pediatric procedures: What does it depend on⁽⁵²⁾</p>	<p>2023 Qualitative</p>	<p>family-centered care during invasive procedures has been endorsed by many professional organizations dedicated to health care. The objective of this study was to assess the attitudes of health care professionals regarding parental presence during invasive procedures performed on children.</p>	<p>Pediatric health care providers (divided into professional categories and age ranges) from one of the most important hospitals in Spain were asked to answer a questionnaire and write free-text comments.</p>	<p>A total of 227 professionals responded to the survey. In their responses, the majority (72%) of the participants reported that parents are sometimes present during interventions, although there were differences between the different professional categories in this respect. Procedures in which parents were present were considered “less invasive” (96% of cases), while only 4% were present for those considered “more invasive”. The older the professionals, the less necessary the presence of parents was considered.</p>	
<p>Scielo</p>	<p>https://www.scielo.br/j/rngenf/a/9WrgD9Rfby7Y7ywnC3sjLcN/?lang=en</p>	<p>Kangaroo Method AND nursing care OR</p>	<p>de Souza Lde Queiroz VAndrade SCésar Ede Melo VOliveira S</p>	<p>Anxiety and depression in mothers of newborns in intensive care units⁽⁵³⁾</p>	<p>2021 Descriptive observational</p>	<p>To evaluate the classification and factors associated with anxiety and/or depression in mothers of newborns in a neonatal intensive care unit and to elaborate the nursing process after psychological testing.</p>	<p>A study was conducted with 91 mothers of newborns in intensive care in a northeastern maternity unit, using a characterization form and a Beck anxiety and depression inventory.</p>	<p>Most of them had severe anxiety (93,4%) and moderate depression (50,5%). There was statistical significance between anxiety with planned pregnancy (p=0,022) and vaginal route of delivery (p=0,028), as well as depression with abortion (p=0,027) and mechanical ventilation (p=0,017).</p>

https://scielo.pt/scielo.php?script=sci_arttext&pid=S0874-020000300014&lng=pt&nrm=iso&tlng=pt	Kangaroo Method AND nursing care	Lopes VVaccari A Rodrigues FHerber S	Parental experiences in the performance of the kangaroo position with underweight recumbents ⁽⁵⁴⁾	2020	Exploratory-descriptive	To describe the paternal experience during the performance of the kangaroo position with their low birth weight newborn.	Exploratory-descriptive research, with a qualitative approach, conducted in neonatology, in the southern region of Brazil. The information was collected through semi-structured interviews and subjected to thematic content analysis.	Five parents participated. Three categories were constructed, which contemplated the ambivalence of feelings; the facilities and difficulties experienced; and the strengthening of the parent-child bond.
https://www.scielo.br/j/ean/a/59JP4k/?lang=en	Kangaroo Method AND nursing care	Ferreira DSilva MGalon TGoulart BAmaral JContim D	Kangaroo method: perceptions on knowledge, potentials and barriers among nurses. ⁽⁵⁵⁾	2019	Exploratory-descriptive	To analyze the knowledge, potentialities and barriers related to the implementation of the Kangaroo Method in the perception of nurses working in maternal and child units of a teaching hospital.	Exploratory-descriptive research, with qualitative approach, guided by the Humanized Care Policy for Low Birth Weight Newborns, Kangaroo Method. Conducted between January and March 2018, with eight maternal and child unit nurses. Data were collected in the period between January and March 2018, through semi-structured interviews, transcribed and subjected to Thematic Content Analysis associated with Atlas Ti version eight resources.	Three categories emerged: Barriers to the development of the Kangaroo Method; Knowledge about the Kangaroo Method; and Powers of the Kangaroo Method.
https://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0717-020000100224&lng=es&nrm=iso&tlng=es	Kangaroo Method AND newborn AND effectiveness	Barraza Peña CJofré Aravena VRamírez Ochoa JBarraza Peña CJofré Aravena VRamírez Ochoa J	Perceptions associated with the kangaroo mother method of mothers with preterm newborns ⁽⁵⁶⁾	2020	Qualitative	To know the perceptions of mothers of premature newborns, associated to the condition of prematurity, incubator care and use of the Mother Kangaroo Method.	A study was conducted in a with qualitative methodology, between July and December 2015, through case study, based on Glaser and Corbin's Grounded Theory using the Constant Comparison Method. The sampling was of purposive or opinionated type	The premature newborn has an emotional impact on the mother, generating negative feelings, which are caused by hospitalization and incubator care. The Mother Kangaroo Method is a protective factor in the positive

<https://www.scielo.br/j/jped/a/tMzTjs/?lang=en> Kangaroo Method AND newborn effectiveness Souza RWolkers PPereira LRomão RMedeiros EFerreira DRinaldi AAzevedo V The possible mediating relationship promoted by the self-efficacy of breastfeeding associated with the Kangaroo Method on indicators of exclusive breastfeeding.⁽⁵⁷⁾ 2022 Transversal

To evaluate the mediating role of breastfeeding self-efficacy on the association between the Kangaroo Neonatal Intermediate Care Unit and exclusive breastfeeding.

constituted by 22 dyads: mother and premature newborn of the Pediatric Critical Patient Unit of a hospital in southern Chile. For the analysis, open, axial and selective coding was used, limiting the sample according to the theoretical saturation criterion.

emotionality of the mother, favoring her joy, tranquility, early affective bonding and empowerment.

Cross-sectional study conducted in the Neonatal Unit of a Brazilian university hospital between September 2018 and March 2020. The sample consisted of 114 newborns weighing ≤ 1800 g and their mothers, who were divided into those who participated in the first and second stage of the Kangaroo Method and those who only went through the first stage, categorized as the Conventional group. To assess breastfeeding self-efficacy, the Breastfeeding Self-Efficacy Scale - Short Form was used. The Mann-Whitney test was used to compare breastfeeding self-efficacy score between groups, and Fisher's exact test was used to compare exclusive breastfeeding rates. Adjusted structural equation modeling was used to verify the mediating effect of breastfeeding self-efficacy. The significance level adopted was 5 %.

The kangaroo group had a higher rate of exclusive breastfeeding at hospital discharge ($p= 0,000$). There was positive association between kangaroo stay ($p= 0,003$) and breastfeeding self-efficacy score ($p= 0,025$) with exclusive breastfeeding rate at hospital discharge. Breastfeeding self-efficacy did not act as a mediator.

https://www.scielo.br/j/brjp/a/RwDYBC/?lang=en	Kangaroo Method AND newborn AND effectiveness	Montanholi LDaré MLeite AGuarda LScochi C	Analgesic effect of kangaroo position method versus sucrose during heel punctures in newborn: randomized clinical trial Analgesic effect of kangaroo position method versus sucrose during heel punctures in newborn: randomized clinical trial. ⁽⁵⁸⁾	2023 Randomized clinical trial	Compared behavioral and physiologic responses and adverse effects in newborns subjected to kangaroo position or 25 % sucrose for analgesia in two heel punctures applied during the first hours of life.	Randomized clinical trial with 80 newborns and 40 mothers. Data were collected during two heel pricks. Kangaroo position was performed for three minutes before, during and three minutes after the heel pricks. Oral 25 % sucrose (0,5 mL/kg) was administered two minutes before the punctures and the neonates were kept in a cradle. Each data collection was divided into nine phases. Facial action, cry and heart rate data were analyzed by descriptive and comparative analyses. Facial actions, assessed by the Newborn Facial Coding System scale, were used to test the hypothesis. The frequency of gastric side effects was calculated. Ethical aspects were preserved.	Facial actions did not differ ($p>0,05$) between groups in the two data collections. There were no relevant changes in heart rate between and within groups. Neonates in the kangaroo group cried more than those in the sucrose group ($p<0,05$) in the second collection. In sucrose administration, more side effects were observed in the first ($p=0,02$) and second collection ($p=0,007$).
https://www.scielo.br/j/rpp/a/Fyb6R/?lang=en	Kangaroo Method AND newborn AND effectiveness	O r n e l a s S G u i m a r ã e s RSilva Lde Castro Romanelli RBouzada M	Third stage of the kangaroo method: exclusive breastfeeding and growth of preterm and/or low birth weight newborns. ⁽⁵⁹⁾	2024 Retrospective	To evaluate the rates of exclusive breastfeeding (EBF) and growth of preterm and/or low birth weight newborns during the third stage of the Kangaroo Method (TSKM), at discharge.	Retrospective study in a public referral maternity hospital between January/2014 and December/2017, including preterm (less than 37 weeks) and/or low birth weight (less than 2500 g) newborns. The information was collected from medical records. Statistical analysis was performed in the SPSS program.	A total of 482 infants were included and followed up at the TSKM outpatient clinic. The mean gestational age was 33 weeks (variation: 24-39 weeks) and birth weight, 1715 g (variation: 455-2830 g). SMF was present in 336 (70,1 %) neonates at hospital discharge and in 291 (60,4 %) at TSKM discharge.

<p>https://www.scielo.br/j/csc/a/fVVs8B/?lang=en</p>	<p>Kangaroo Method AND newborn AND effectiveness</p>	<p>Souza ALamy ZGoudard MMarba SCosta Rde Caldas Lde Oliveira Azevedo VLamy-Filho F</p>	<p>Factors associated with skin-to-skin contact less than 180 min/day in newborns weighing up to 1,800 g: multicenter study⁽⁶⁰⁾</p>	<p>2023 Observational prospective</p>	<p>To evaluate factors associated with skin-to-skin contact time <180 min/day in newborns weighing up to 1,800 g during neonatal hospitalization.</p>	<p>Prospective observational cohort study conducted in neonatal units of reference for the Kangaroo Method in Brazil. Data from 405 dyads (mother/infant) were analyzed between May 2018 and March 2020. Maternal and neonatal explanatory variables were collected from medical records and interviews. Skin-to-skin contact was recorded on forms placed at the bedside, completed by parents and staff.</p>	<p>Each additional day of hospital stay increased the probability of infant formula (IF) use by 9,3 % at hospital discharge and 10,3 % at TSKM discharge. Staying in the Kangaroo Neonatal Intermediate Care Unit (NICU) favored SCI at hospital discharge and at TSKM discharge (p<0,001). Not performing the kangaroo position increased the likelihood of formula administration to the newborn at hospital discharge by 11 %. Weight gain and head circumference growth were greater in infants using formula (p<0,001). The outcome variable was mean skin-to-skin contact time < 180 min/day. The hierarchical model was performed using Poisson regression with robust variance. The variables associated with the outcome were “no easy access to hospital”, “no previous knowledge of the kangaroo method” and “having had morbidities during pregnancy”. Mothers who do not have easy access to the hospital and who are unaware of the</p>
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https://www.scielo.br/j/ape/a/wx7MCG/?lang=pt	Kangaroo Method AND newborn AND effectiveness	Goudard MLamy Zde Caldas LMarba SCosta Rde Lima Gde Oliveira VLamy-Filho F	Characteristics of skin-to-skin contact in Brazilian neonatal units: a multicentric study ⁽⁶¹⁾	2023	Multicentric descriptive	To describe the onset, duration, place and who performs skin-to-skin contact in Brazilian neonatal units.	Descriptive, longitudinal, multicenter study, conducted from May 2018 to March 2020, in five Kangaroo Method reference neonatal units in Brazil, which included newborns weighing up to 1800g. Maternal and newborn characteristics were collected from medical records and interviews. The practice of skin-to-skin contact was recorded on cards attached to the bed, completed by the team and by the parents. The analysis was performed using descriptive statistics.	kangaroo method should be priority targets for health policies to develop strategies that promote greater exposure to skin-to-skin contact during the hospitalization period of their infants.	A total of 405 newborns were included, 51,4 % male, median gestational age 31,4 weeks and birth weight 1412g. Regarding the time of skin-to-skin contact, the median frequency of daily contact was 1,5 times (IIQ: 1,2 - 2,4), the time/day was 147 min/day (IIQ: 106,7 - 263,0) and the first contact was at five days of life (IIQ: 4,0-8,0). The longest contact time/day was performed by mothers, with a median of 137,8 min/day (IIQ:95,6-232,1) and the second stage of the Kangaroo Method, the Kangaroo Intermediate Care Unit, was the place where contact was performed for the longest time, with a median of 184,4 min/day (IIQ:124,7-455,4).
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https://www.scielo.br/j/tce/a/dqwPRh/?lang=en	Kangaroo OR skin-to-skin method	Viana Vda Cunha Castro LRufino AMadeiro A	Prevalence and factors associated with breastfeeding in the first hour of life: a cross-sectional study. ⁽⁶²⁾	2024 Cross-sectional	To analyze the prevalence and factors associated with breastfeeding in the first hour of life.	Cross-sectional study with puerperal women from public maternity hospitals in Teresina, Piauí, Brazil, between 2020 and 2021. Sociodemographic and behavioral data of the woman and her partner, obstetric characteristics, in addition to partner violence during pregnancy were evaluated. Hierarchical analysis was performed by multiple logistic regression, with calculation of adjusted odds ratio (ORaj) and 95 % confidence intervals (95 %CI).	A total of 413 women were interviewed. The prevalence of breastfeeding in the first hour of life was 66,8 %. The presence of a companion (ORaj=1,66; 95 %CI 1,34-2,29), skin-to-skin contact with the newborn (ORaj=2,14; 95 %CI 1,04-4,38) and having had a natural delivery (ORaj=2,06; 95 %CI 1,90-4,73) increased the odds of breastfeeding in the first hour. Lack of partner (ORaj=0,47; 95 %CI 0,25-0,86) and partner with non-white skin (ORaj=0,45; 95 %CI 0,24-0,83) decreased the odds of breastfeeding.
https://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0717-2400100228&lng=es&nrm=iso&tlng=es	Kangaroo OR skin-to-skin method	Elena Sepúlveda-Guerra ADra Sara Mendoza-Parra EGloria Barraza-Peña CSepúlveda-Guerra E	Patterns of behaviors observed in mothers of newborns under stress. ⁽⁶³⁾	2024 Descriptive	To determine if the reagents observed in the Attachment During Stress (ADS) scale correspond to the behavior patterns observed in the recordings of the mother-child dyads, by saturation of the sample, during skin-to-skin contact during newborn visitation hours, in a neonatology unit of a public hospital of the Biobío Region, Chile.	Descriptive study, conducted in the first semester 2019, based on the observation of 21 mother-child dyads, during the period of visits to their hospitalized children in the neonatal unit, prior consent and orientation of the application of skin-to-skin contact. Fifteen 40-minute audio-video recording sessions were conducted and transcribed, classifying the behavioral patterns and their relationship with the dimensions expressed by the scale.	The dimensions established in the ADS scale are related to the behavior patterns observed in the skin-to-skin contact of the dyad, where the item "Gaze" was the one that obtained the highest percentage.

<p>https://www.scielo.br/j/jped/a/Q6fQx/?lang=en</p>	<p>Kangaroo method OR skin-to-skin</p>	<p>De Padua P Campanha A Clara De Magalh MAes-Barbosa -Prata-Barbosa ARodrigues-Santos GALves Da Cunha L</p>	<p>Exclusive breastfeeding and length of hospital stay in premature infants at a Brazilian reference center for kangaroo mother care.⁽⁶⁴⁾</p>	<p>2024 Retrospective</p>	<p>To evaluate exclusive breastfeeding at discharge and length of hospital stay in preterm infants undergoing or not the Kangaroo Mother Care Method (KMC).</p>	<p>A retrospective cohort study was conducted involving preterm infants < 1800 g admitted to the neonatal unit of a KMC referral center. Infants were grouped into the KMC group and the non-KMC group. Multiple logistic and Poisson regressions were performed to assess the association between exclusive breastfeeding at discharge and length of hospital stay, adjusted for potential confounders.</p>	<p>The study compared 115 mother-infant dyads, divided into 78 in the kangaroo mother care (KMC) group and 37 in the non-KMC group, showing that the KMC group presented significant benefits, such as lower prevalence of adverse maternal conditions (6% vs. 32%), higher prenatal visits, higher birth weights and gestational ages, lower incidence of necrotizing enterocolitis, lower use of parenteral nutrition and deep vascular access, higher exclusive breastfeeding (65% vs. 8%) and shorter length of hospital stay (28 vs. 42 days); in addition, multiple regression indicated that the KMC group was 23 times more likely to exclusively breastfeed at discharge and had a 19% reduction in hospitalization time, highlighting the positive impact of this practice on maternal and infant health.</p>
<p>http://www.scielo.org/co/scielo.php?script=sci_arttext&pid=S1657-24000200002&lng=en&nrm=iso&tlng=en</p>	<p>Kangaroo method AND preterm infants AND nursing interventions.</p>	<p>Castiblanco-López NManrique Abril FVesga Gualdrón LCastiblanco-López NManrique Abril FVesga Gualdrón L</p>	<p>Kangaroo Massage: Intervention which Improves the Perceived Maternal Self-Efficacy⁽⁶⁵⁾</p>	<p>2024 Randomized clinical trial</p>	<p>Testing the effect of KCM on perceived maternal self-efficacy to support mother-child interaction at home.</p>	<p>Pragmatic, double-blind, randomized clinical trial, developed in three phases: 1) integration of CBM and Kathryn Barnard's theory, 2) study design, and 3) execution and results. Two groups were defined:</p>	<p>Homogeneous groups were defined for sociodemographic variables and maternal-perinatal history. Mothers who applied the MBC recorded higher scores of perceived</p>

<p>https://www.scielo.br/j/jped/a/g46F/?lang=en</p>	<p>Kangaroo method AND preterm infants AND nursing interventions.</p>	<p>Campanha P Magalhães-Barbosa Santos GPrata-Barbosa ACunha A</p>	<p>Maternal-fetal and neonatal characteristics associated with Kangaroo-Mother Care Method adherence⁽⁶⁶⁾</p>	<p>2023 Retrospective</p>	<p>To describe the association of maternal and neonatal characteristics with adherence status to the in-hospital stages of the Kangaroo-Mother Method - KMC (full, partial and no adherence).</p>	<p>Retrospective cohort study that included infants < 2500 g admitted to a reference maternity hospital for KMC in Rio de Janeiro between January and December 2018. Maternal and neonatal characteristics were distributed according to adherence status to KMC in-hospital stages. In the first stage, KMC is performed in the Neonatal Intensive Care Unit and in the Conventional Neonatal Intermediate</p>	<p>maternal self-efficacy at 7 and 14 days compared to control mothers [RTE (lower bound; upper bound) - day 7: control = 0,502 (0,437; 0,567) vs. MBC = 0,503 (0,426; 0,581), and day 14: control = 0,564 (0,482; 0,640) vs. MBC = 0,719 (0,650; 0,776)].</p> <p>Of the 166 dyads, 102 (61,5 %) participated in two stages. Those who did not participate in any stage (n = 52; 31,3 %) had lower level of schooling, higher frequency of adverse conditions and were more often single mothers; Mothers who participated only in the first stage (n = 12; 7,2 %) had more preterm and sick babies. Conditions associated with adherence to the two</p>
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http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S2227-021000400008&lng=en&nrm=iso&tlng=es Kangaroo method AND preterm infants AND nursing interventions. Matassini-Eyzaguirre S Cam-LFernandez-Sierra Barriers to the implementation of the Kangaroo Mother Method.⁽⁶⁷⁾ 2021 Qualitative

To analyze and discuss the barriers to the implementation of the Kangaroo Mother Method in a social security hospital in Lima, Peru.

Care Unit. The second stage is completed in the Kangaroo Neonatal Intermediate Care Unit. A multinomial multiple regression was performed with KMC adherence as a three-category dependent variable and maternal and neonatal characteristics as independent variables.

stages compared to non-adherence were: middle education (OR = 2,34; 95 % CI = 1,08-5,07), presence of a partner (OR = 3,82; 95 % CI = 1,7-8,61), absence of adverse conditions (OR = 3,54; 95 % CI = 1,59-7,89) and absence of neonatal resuscitation (OR = 2,73; 95 % CI = 1,22-6,1).

Qualitative study with ethnographic design conducted between October 2019 and January 2020. Observation and in-depth interviews were the data collection tools used with mothers, family members and health personnel (HCW). Ten mothers and eight health personnel from a social security hospital in Lima, Peru were interviewed.

The most important barriers to the application of the kangaroo mother method were those related to humane treatment and knowledge of the method on the part of the health personnel. On the part of the kangaroo mothers, economic and family aspects are the ones that have a negative influence on their involvement in the kangaroo mother method.

http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S2216-020000100310&lng=en&nrm=iso&tlng=pt Kangaroo method AND newborns AND nursing interventions. Nietzsche EPapa MTerra LReisdorfer ARamos TAntunes ANietzsche EPapa MTerra LReisdorfer ARamos TAntunes A Canguru Lifelong Learning Method: 2020 Qualitative strategies for its implementation and execution.⁽⁶⁸⁾

To understand the context in which the kangaroo method is developed from the actions of Continuing Health Education.

This is an exploratory qualitative study. Twelve professionals from the health team participated in the study. Data collection was done through a semi-structured interview and then the data were subjected to analysis to validate their content.

Three categories of analysis emerged: kangaroo method - conceptions and understandings: continuing education - teaching-learning strategies; and kangaroo method and teamwork - limits and possibilities.

Cinahl / CISNE	Knowledge, attitudes and practices about kangaroo mother care among nursing staff in a hospital in Jakarta, Indonesia PLOS One	Kangaroo Method AND nursing care	Adisasmita Alzati Y Choirunisa S Pratomo HAdriyanti L	Kangaroo mother care knowledge, attitude, and practice among nursing staff in a hospital in Jakarta, Indonesia. ⁽⁶⁹⁾	2021 Cross-sectional	To demonstrate that kangaroo mother care (KMC) decreases morbidity and mortality rates among preterm and low birth weight infants. Therefore, this study aimed to obtain baseline data on the knowledge, attitudes, and practices of KMC (KMC) among nurses caring for mothers and newborns in a hospital in Indonesia.	This cross-sectional study included 65 participants from three hospital wards of Koja District Hospital, North Jakarta. Participants included 29 perinatal ward nurses, 21 puerperium ward nurses and midwives, and 15 labor and delivery ward midwives. Data on KMC KAP were collected using a self-administered questionnaire with closed-ended questions. Each questionnaire could be completed in approximately 1 hour.	Among the included nurses, 12,3 % (8/65) were found to have received specific KMC training, while 21,5 % (14/65) had received more general training that included KMC content. About 46,2 % of the nursing staff had a good knowledge of KMC, 98,5 % had a good knowledge of the benefits of KMC, and 100 % had a positive attitude toward KMC. All nurses in the perinatal ward had some experience in assisting and implementing KMC. Some of the KAPs observed among the nursing staff were lack of knowledge about KMC-eligible infant weight and weight gain of infants receiving KMC, lack of education/training about KMC, and concerns about equipment needed in KMC rooms.
Transforming neonatal nursing: a randomized controlled trial comparing kangaroo care and standard protocols for survival in preterm infants with respiratory distress syndrome BMC Nursing Full Text	Kangaroo Method AND nursing care	Ramadan O Alshammari A Alruwaili A Elsharkawy N Alhaiti A Baraka N	Transforming neonatal nursing: a randomized controlled trial comparing kangaroo care and standard protocols for survival in preterm infants with respiratory distress syndrome. ⁽⁷⁰⁾	2025 Prospective, multicenter, randomized controlled trial.	Identifying if Kangaroo Mother Care (KMC) has shown promise in stable preterm infants, its effectiveness for those requiring respiratory support remains unclear. This study evaluated the implementation of nurse-led KMC for preterm infants with RDS.	A prospective, multicenter, randomized controlled trial was conducted in four neonatal intensive care units in Tanta, Egypt (January 2023-June 2024). Two hundred and forty preterm infants (<2000 g) with RDS were randomized to nurse-implemented KMC (n = 120) or standard care (n = 120). The KMC	The KMC intervention significantly improved 28-day survival (adjusted HR = 0,42, 95 % CI 0,28-0,63, p < 0,001) and reduced nosocomial infections by 55 % (RR = 0,45, 95 % CI 0,27-0,75, p < 0,001). KMC recipients showed faster respiratory improvement, shorter	

[https://link.springer.com/article/10,1186/s12884-020-03423-8?utm_tr&utm_campaign=getftr_pilot&getftrator=mendeley](https://link.springer.com/article/10.1186/s12884-020-03423-8?utm_tr&utm_campaign=getftr_pilot&getftrator=mendeley)

Kangaroo Method AND nursing care

Salim NShabani
JPeven KRahman
QKc AShamba
DRuysen HRahman
AKc NMkopi
NZaman SShirima
KAmeen SKong
SBasnet OManji
K K a b u t e n i
T B r o t h e r t o n
HMoxon

Kangaroo mother care: EN-BIRTH multi-country validation study.⁽⁷¹⁾

2021 Observational

Tracking data, coverage, and quality of knowledge management, both in surveys and routine information systems, impedes scale-up. This article evaluates the measurement of KMC as part of the Every Newborn Birth Indicators Research Tracking in Hospitals (EN-BIRTH) study.

protocol, implemented for a minimum of 6 hours per day until hospital discharge, integrated continuous skin-to-skin contact, promotion of exclusive breastfeeding, and structured parent education. Outcomes included 28-day survival, respiratory status (Silverman-Anderson scores), nosocomial infections, maternal-infant bonding, growth trajectories, and clinical outcome metrics.

duration of CPAP (-2,2 days, $p < 0,001$) and higher rates of exclusive breastfeeding at discharge (74,2% vs. 48,3 %, $p < 0,001$). Maternal competence scores showed progressive improvement with increased bonding and responsiveness.

The EN-BIRTH study, conducted between 2017 and 2018 in five hospitals in Bangladesh, Nepal, and Tanzania, used time-stamped clinical observation as a reference standard to collect data on mother-baby pairs in KMC (Kangaroo Mother Care) areas. Coverage recorded in registries and in the discharge survey was assessed against observed data using recommended denominators (≤ 2000 g and ≤ 2499 g). Gaps in KMC quality and experience as well as service delivery were identified. In Tanzanian hospitals, skin-to-skin duration (daily dose) and feeding frequency were analyzed. Qualitative data obtained

The study analyzed 840 mother-baby pairs and assessed KMC (Kangaroo Mother Care) coverage. Observed coverage was 100 %, while that reported by the survey was 99,9 % and that recorded in the registries was 92,9 %. The specific KMC registries were more accurate than the general ones. Facilitators such as perceived usefulness of the data and barriers such as duplication of data and work overload for health personnel were identified. There were gaps in KMC quality, especially in components related to position and wearing a hat. In Temeke, Tanzania,

Dianlet	https://dialnet.unirioja.es/servlet/igo=9809579	Kangaroo Method AND nursing care	Morales Castellanos, Sara Maria Castiblanco López, Nubia Goethe Sánchez, Brunhilde	Kangaroo mother method with home oxygen therapy: maternal cultural care, a nursing point of view ⁽⁷²⁾	2022 Qualitative	To identify how in Colombia, approximately 12 % of births are premature, which increases mortality and physiological complications in neonates. The highest rates of prematurity are registered in Atlántico, Bogotá, Antioquia and Santander. Many of these babies require oxygen and mechanical ventilation, and about 40 % are discharged to kangaroo mother programs (KMC), where mothers play	from health workers and data collectors revealed facilitators and barriers in the design, completion, and use of routine records.	10,6 % of infants received skin-to-skin KMC for ≥20 hours daily, while 75,3 % received it for 12-19 hours. Regular feeding ≥8 times a day was observed in 36,5 % of infants in Temeke and 14,6 % in Muhimbili. Predominant assisted feeding was by cup. Family support was variable: in Bangladesh, grandmothers were frequently involved in KMC, but in the exit survey, 45 % of women reported no arrangements for support from other family members.	A qualitative study with an ethnographic approach was conducted in an outpatient kangaroo mother program (KMC) in Bogotá, Colombia. Eight voluntarily selected mothers participated, who were interviewed between two and three times in recorded and transcribed interviews, reaching 21 interviews in total. James Spradley's in-depth interview and Madeleine Leininger's cultural care theory were used to collect and analyze the information. The analysis was based	All the infants in the cases analyzed had home oxygen therapy from the time of recruitment until the last interview, in all the homes they had a large oxygen cylinder for permanence and another for displacement (portable oxygen bullet). The children of the informant mothers were between 1 and 2 months of chronological age, their birth weight ranged between 1270 g and 2690 g and their gestational age varied between 30 and 36
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<https://dialnet.unirioja.es/servlet/igo=9418934> Kangaroo Barraza Peña, Perceptions 2020 Qualitative
 Method AND Carmen Gloria associated with the
 nursing care Jofré Aravena, kangaroo mother
 Viviane Ramírez Ochoa, with premature
 Jonathan newborns⁽⁷³⁾

a central role in their care, strengthening bonding and promoting breastfeeding, although they also face anxieties and challenges in their adaptation. Early discharge with home oxygen requires specialized training for mothers, who, although they acquire skills and autonomy, must face extreme care at home. The article aims to investigate the meaning that mothers assign to the care of their children in these conditions and how this care is influenced by their beliefs, values and lifestyles.

To know the perceptions of mothers of preterm newborns (PTNB) associated with the condition of prematurity, incubator care and the implementation of the Mother Kangaroo Method (MMC), in order to base nursing care plans that recognize the mother as the main link in the care of the PTNB.

on identifying cultural categories relevant to the home care of neonates with oxygen. The study met rigorous ethical and methodological criteria.

A qualitative study was conducted in 2015, using the case study method and based on Strauss and Corbin's Grounded Theory, combined with Uwe Flick's Constant Comparison Method. The analysis was conducted using open, axial and selective coding, and the sample was limited by theoretical saturation. Data were collected through audio and video recordings of 60-minute sessions during the application of the Mother Kangaroo Method (MMC),

weeks. All were in the neonatal intensive care unit for at least 20 days and had been on oxygen at home for at least 7 days. The participants interviewed were between 15 and 38 years of age, 5 of the mothers had completed high school, 2 were in tenth grade and 1 was in technical studies. Depending on the stage of the process, they attended the PMC 1 to 5 times a week for oxygen monitoring and weaning. They traveled to the assigned appointments by bus or cab, almost always accompanied.

The study analyzed the perceptions of mothers of preterm newborns (PTNB) between 20 and 34 years of age, all multiparous, with incomplete secondary schooling, stable partner and religious beliefs. Three broad categories emerged: Prematurity condition, Incubator care, Implementation of the Mother Kangaroo Method (MMC). They also highlighted the importance of professional support, father's involvement and

<p>https://dialnet.unirioja.es/servlet/odigo=9485602</p>	<p>Kangaroo Method AND newborn AND effectiveness</p>	<p>Rodríguez Peña, Yaquelin Vázquez Camaño, Sofía Gutiérrez Rodríguez, Lester Zevallos Rodríguez, Yarelí Pérez Ortega, Marta Elizabeth</p>	<p>Application of the kangaroo mother method for the management of non-surgical pain in a group of newborns in a regional hospital in the Province of Veraguas, 2019.⁽⁷⁴⁾</p>	<p>2020</p>	<p>experimental, prospective and cross-sectional</p>	<p>To evaluate the effectiveness of the kangaroo mother method in the management of non-surgical pain in newborns.</p>	<p>The research was experimental, prospective and cross-sectional, with non-probabilistic, intentional or quota sampling. We worked with 16 term newborns (8 in the experimental group and 8 in the control group), selected with similar characteristics</p>	<p>Tolerance to pain: The group intervened with the kangaroo mother method showed greater tolerance to pain, evidencing moderate pain, while the control group presented intense pain after the painful medical procedure. Comfort and crying:</p>
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plus closing interviews, favoring the expression of feelings. The information was transcribed and analyzed manually based on emerging categories and subcategories. The sample was purposive, initially composed of 4 mother-RNPT dyads, reaching 22 dyads at the end of the study. Inclusion criteria were applied (prematurity from 32 to 34 weeks, weight >1500 grams, respiratory stability, among others) and informed consent and confidentiality were assured. Credibility, auditability and transferability were guaranteed by means of data triangulation and rigorous analysis. The entire process had ethical approval and was carried out in a hospital in Bogotá, in an environment that allowed privacy and free emotional expression of the mothers.

spiritual accompaniment in the neonatal unit.

(gestational age, weight, sex, type of medical procedure, among others). The study was carried out in the well-baby ward of a neonatology service, capturing the neonates during painful procedures such as vaccinations, injections and phlebotomies. The experimental group received the kangaroo mother method five minutes before the procedure, while the control group did not. The Susan Givens scale was used to measure pain, assessing behavioral and physiological variables before and after the procedure. The total score allowed pain to be classified into three levels: no pain, moderate pain or severe pain. Incidental variables such as hunger, cold or wet diaper were controlled, and it was guaranteed that the procedures were performed by the same professional for each pair of homologous neonates. The hypothesis (H1) proposed that there is a significant relationship between pain intensity and the use of the kangaroo mother method, statistically contrasted by means of the chi-square test.

Before the procedure, the intervened group showed no vigorous crying, while the control group had more than 10 % of the neonates crying vigorously. In addition, more than 35 % of the control group did not receive comfort after waiting two minutes. Vitals: The experimental group experienced little change in their vitals before and after the procedure. In the control group, the most significant variations were in heart rate and systolic blood pressure due to pain. Effectiveness of the kangaroo mother method: Comparison of means between the two groups showed that the kangaroo mother method was effective in offering comfort to the neonate, with less dispersion of means in the intervention group. Statistical relationship: It was statistically proven that there is a significant relationship between pain intensity and the use of the kangaroo mother method, confirming its effectiveness in pain control.

<p>https://dialnet.unirioja.es/servlet/o?codigo=10051761</p>	<p>Kangaroo method AND preterm newborns AND nursing interventions</p>	<p>Barraza Peña, Carmen Gloria Sepúlveda Guerra, Elena Belén</p>	<p>Patterns of behaviors observed in mothers of newborns under stress.⁽⁷⁵⁾</p>	<p>2024 Descriptive</p>	<p>To determine if the reagents observed in the Attachment During Stress (ADS) Indicator Scale correspond to the patterns of behavior observed in the recordings of the mother-infant dyads, by sample saturation, during skin-to-skin contact during newborn visitation hours, in a neonatology unit of a public hospital in the Biobío Region, Chile.</p>	<p>Descriptive study, conducted in the first semester of 2019, based on the observation of 21 mother-skin dyads observation of 21 mother-child dyads, during the period of visits to their children their hospitalized infants in the neonatal unit, with prior consent and guidance and orientation of the application of skin-to-skin contact. We conducted 15 sessions of 40 minutes of audio-video recording were made and transcribed, classifying the transcribed, classifying the behavioral patterns and their relationship with the dimensions expressed by the the dimensions expressed by the scale.</p>	<p>The dimensions The dimensions established in the ADS scale are related to the patterns of behaviors behavior patterns observed in the skin-to-skin contact of the dyad, where the item “Gaze”, which was the one that obtained the highest percentage.</p>
<p>https://dialnet.unirioja.es/servlet/o?codigo=9361589</p>	<p>Mother Kangaroo</p>	<p>Laplaza Soria, Beatriz, Gonzalo Velilla, Lorena Berdún Pueyo, Julia Alonso Arana, Laura Cebrián Rodríguez, Patricia, Aznar Galve Lorena</p>	<p>Importance of skin-to-skin contact (SCC) and physiological reactivity in the first hours of life.⁽⁷⁶⁾</p>	<p>2024 Meta-analysis</p>	<p>To evaluate the benefits of skin-to-skin contact (SSC) between mother and newborn immediately after birth, during a period of 90 to 120 minutes without interruptions. The aim is to highlight the benefits both for breastfeeding, the creation of the maternal-filial bond and the mother’s recovery, as well as for the</p>	<p>An analysis is made of the scientific evidence supporting skin-to-skin contact, comparing its practice with hospital interventions and routines that have historically interrupted this direct connection between mother and child. It examines both the instinctual aspects and the biological and hormonal benefits generated by PPC, and how maternal-</p>	<p>In view of all the present evidence it is undeniable that Skin-to-Skin Contact is highly beneficial for both mother and newborn, there are countless advantages such as: It intervenes in the baby’s thermoregulation and decreases its caloric losses, Decreased cortisol secretion and therefore decreased stress caused by</p>

protection and well-being of the newborn. filial separation during institutionalized care can negatively affect the well-being of both mother and infant. c h i l d b i r t h , Regularization of the fetal heartbeat, as well as its respiration. So we can conclude that Skin to Skin Contact as defined by the different guidelines and the WHO is one of the best (not) interventions that we can perform both health professionals and families to promote both breastfeeding and a strong bond between mother and child.

<https://dialnet.unirioja.es/servlet/o?codigo=9669643> Mother Castiblanco-Kangaroo Lopez, Nubia Gustavo, Fred Abril, Manrique Marcela, Lucy Gualdrón, Vesga Kangaroo infant 2024 Pragmatic Testing the effect of Pragmatic randomized clinical trial, double blind, developed in three phases: 1) integration of MBC and Kathryn Barnard's theory, 2) study design and 3) execution and results. Two groups were defined: intervention (CBM) and control (kangaroo position without massage), with 34 mother-infant dyads in each group. Recruitment was performed in an outpatient kangaroo program in Bogotá, Colombia. The implementation and follow-up was done through teleconsultation, the MBC video "Diary of my baby kangaroo" and simulators. The perceived maternal self-efficacy questionnaire was administered at

Kangaroo massage, an intervention that improves perceived maternal self-efficacy⁽⁷⁷⁾

Pragmatic randomized

Testing the effect of CBM on perceived maternal self-efficacy to favor mother-infant interaction at home.

Pragmatic randomized clinical trial, double blind, developed in three phases: 1) integration of MBC and Kathryn Barnard's theory, 2) study design and 3) execution and results. Two groups were defined: intervention (CBM) and control (kangaroo position without massage), with 34 mother-infant dyads in each group. Recruitment was performed in an outpatient kangaroo program in Bogotá, Colombia. The implementation and follow-up was done through teleconsultation, the MBC video "Diary of my baby kangaroo" and simulators. The perceived maternal self-efficacy questionnaire was administered at

Homogeneous groups were defined for sociodemographic variables and maternal-perinatal history. Mothers who applied the MBC recorded higher scores of perceived maternal self-efficacy at 7 and 14 days, compared to control mothers [RTE (lower bound; upper bound) - day 7: control = 0,502 (0,437; 0,567) vs. MBC = 0,503 (0,426; 0,581), and day 14: control = 0,564 (0,482; 0,640) vs. MBC = 0,719 (0,650; 0,776)].

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Mother Kangaroo

Moriche Conde, Natalia
 Auría Soro, Lorena
 Lou Argiles, Beatriz
 Vives Bermúdez, Beatriz
 Bordonaba García, Yaiza
 Medrano Medrano, Paola

Postpartum and skin-to-skin contact: the vital connection between mother and newborn⁽⁷⁸⁾

2024 Qualitative

To promote the care and well-being of both mother and newborn, highlighting the importance of skin-to-skin contact to strengthen the mother-child relationship, foster the baby's emotional development and provide a safe and loving environment.

three points in time: before the start of the study and at days 7 and 14 after the study. It was analyzed with a statistical design of longitudinal data in F1LDF1 factorial experiments.

The postpartum period represents one of the most significant and transformative stages in a woman's life. It encompasses not only the physical recovery after childbirth, but also the complex emotional and psychological changes that come with the arrival of a new being into the world. An essential element that facilitates this process is skin-to-skin contact, a practice that, despite its simplicity, has a profound and multifaceted impact on both mother and newborn. This paper explores in depth how postpartum and skin-to-skin contact are intrinsically related, highlighting the importance of this connection to the health and well-being of the new family.

Postpartum and skin-to-skin contact are deeply interrelated elements that play a critical role in the emotional and physical health of mother and baby. Skin-to-skin contact is not only a recommended practice, but an essential strategy that fosters emotional attachment and contributes to the mother's physical and psychological recovery. Understanding and valuing this connection can provide families with a more loving, secure and healthy environment for child development. Fostering greater awareness in society of the importance of skin-to-skin contact will be a significant step toward creating a more supportive environment for new families, while contributing to the health and well-being of the future

<https://dialnet.unirioja.es/servlet/lo?codigo=8754098>

Kangaroo Mother

Ruíz Guzmán, Gabriel de Jesús Alburquerque, Diana María Herrera Morban, Demian A. Japa Rodríguez, Josvane

Causes of rehospitalization in preterm infants followed in the mother kangaroo program up to 40 weeks of postconceptional age⁽⁷⁹⁾

2022 Descriptive observational

To know the causes of hospitalization in preterm infants in the kangaroo mother program up to 40 weeks of postconceptional age.

Adescriptive, prospective, cross-sectional, descriptive observational study in the population of preterm newborns of the Mamá Kangaroo Program, the sample consisted of 27 patients who were selected by non-probabilistic convenience sampling; all patients who presented rehospitalization and who met the inclusion criteria were chosen.

generation. Therefore, it is vital that both health professionals and families work together to ensure that these crucial practices are prioritized during the postpartum period.

The most frequent cause of rehospitalization was anemia of prematurity (44,44 %). The most frequent chronological age at the time of rehospitalization was 5 weeks for 25,93 %. The most affected sex was male (59,26 %). The most frequent gestational age at birth at the time of rehospitalization was 28 weeks for 25,93 %. The most predominant postconceptional age at the time of rehospitalization corresponded to 32 weeks for 18,52 %. Of the patients, 51,85 % attended follow-up visits 3 times a week. Of the patients, 77,78 % were undergoing their first rehospitalization. There were no cases of mortality during the course of the study.

Redalycs	https://www.redalyc.org/05275077004/	Kangaroo Method AND newborn AND effectiveness	Galeano, Sandra Patricia Osorio Maya, Ángela María Salazar	Preparing Parents for Discharge from the Neonatal Unit, the Transition, and Care of Their Preterm Children at Home. ⁽⁸⁰⁾	2023	Descriptive	To describe the main aspects related to the preparation of parents for the discharge and transition to home of their preterm children. To outline the educational content that should be provided to parents or primary caregivers. To offer recommendations for professional nursing practice in educational processes oriented to neonatal care. To make visible and facilitate the role of nursing in the accompaniment and follow-up of the health and well-being of premature infants and their families.	Descriptive analysis of the processes of preparation for discharge in neonatal care contexts. Review of multidimensional aspects (knowledge, skills, safety and confidence of parents) involved in training for home care of preterm infants. Consideration of individual, family, social and cultural characteristics of parents during preparation.	Identification of the preparation for discharge as a gradual process adapted to the clinical evolution of the child and the adaptation of the parents. Definition of essential educational content to be addressed with primary caregivers. Generation of recommendations to strengthen nursing practice, oriented to improve the follow-up and health outcomes of preterm infants and family well-being.
LILACS	https://seer.unirio.br/dadofundamental/article/view/12975	Kangaroo Method AND nursing care	Carlos Antonio de Lima Filho Camila Farias de Sousa Maria Aparecida	Kangaroo Method: perception of the nursing team in a high-risk maternity hospital ⁽⁸¹⁾	2024	Exploratory, descriptive	To analyze the nursing team's perception of the kangaroo method in a high-risk maternity ward.	Exploratory, descriptive study, with qualitative approach, conducted through semi-structured interviews to nurses of a high-risk maternity hospital in Recife (PE), developed between January and February 2020. The interviews were transcribed and subjected to analysis using Bardin's content technique.	Two categories were formulated, nursing care in the kangaroo method and benefits and challenges encountered in the kangaroo method. The participants related that nursing care is mainly based on guidance to mothers, shortage of professionals and low adherence were evidenced as the main challenges.

https://pesquisa.bvsalud.org/portal/resource/biblio-1406775	K a n g a r o o Method AND nursing care	Aires, Luana Claudia ; PADILLA, Maria Itayra ; dos Santos, Evangelia Kotzias Atherino ;	Power relations and knowledge of neonatal teams in the Kangaroo Mother Care implementation and dissemination. ⁽⁸²⁾	2022 qualitative	To analyze the power relations and knowledge, among the health team, that permeate the implementation and dissemination of the Mother Kangaroo Method in the state of Santa Catarina.	Socio-historical research, with qualitative approach, conducted in the state of Santa Catarina, from January to November 2019, based on interviews with 12 health professionals. The data were analyzed in the light of Foucault's genealogical proposal, with the help of Atlas.ti Cloud software.	The relationships of the neonatal team strengthened the actions of the Mother Kangaroo Method in the state, articulating the services and favoring the autonomy of health professionals. However, the kangaroo nurse stands out in this process, and the hegemonic medical discourse often still represses the other professional categories.
https://pesquisa.bvsalud.org/portal/resource/mdl-36100210	K a n g a r o o Method AND newborn AND effectiveness	M o h a m m a d i , Fatima; Basiri, Behnaz; Barati, Majid; Khazaei, Salman; Zahra- M a s o u m i , S e y e d e h ; S a d e g h i a n , Efat; Gillespie, Mark; Oshvandi, Khodayar .	Effectiveness of the mother kangaroo method on maternal resilience and breastfeeding self-efficacy using the role-play method in a neonatal intensive care unit. ⁽⁸³⁾	2022 Randomized Controlled	To evaluate the effectiveness of kangaroo mother care on maternal resilience and breastfeeding self-efficacy using the role-play method in the neonatal intensive care unit.	A randomized controlled trial was conducted. Mothers were randomized into two groups. Mothers in the intervention group were trained using the role-play method. Questionnaires were administered before and after the intervention. Data were analyzed using SPSS version 22.	The training showed a statistically significant difference in resilience score and breastfeeding self-efficacy in each group after the intervention. In addition, a statistically significant difference was revealed between both groups in resilience score and breastfeeding self-efficacy after the intervention.
https://pesquisa.bvsalud.org/portal/resource/mdl-34494889	K a n g a r o o Method AND newborn AND effectiveness.	A g u d e l o , Sergio I; Molina, Carlos F; Gamboa, Oscar A; Acuña, Eduardo.	Comparison of the Effects of Different Skin-to-Skin Contact Onset Times on Breastfeeding Behavior. ⁽⁸⁴⁾	2021 Clinical Trials/ Etiology Studies.	Encouraging skin-to-skin contact (SST) between mother and infant improves exclusive breastfeeding (EBF) rates in the neonatal period.	A multicenter clinical trial was conducted, with random assignment of participants to two different initiation times of SCB: immediate (at birth) and early (at 60 minutes of life).	A total of 297 infants were included (immediate IPC, n = 148; and early IPC, n = 149). No differences were found in early breastfeeding (93,6 % vs. 90,6 %; RR: 1,6; 95 % confidence interval: 0,07-3,82), breastfeeding effectiveness or exclusive breastfeeding in the neonatal period. Earlier initiation of

<p>https://pesquisa.bvsalud.org/portal/resource/es/mdl-33373672</p>	<p>Kangaroo Method AND newborn AND effectiveness</p>	<p>Travers, Colm P; Ramani, Manhatta n; Amable, Samuel J; Schuyler, Amelia ; Brown, Catherine; Dills, Madeline M; Davis, Claire B; Owner, Sack; Chomba, Elwyn; Aban,</p>	<p>Early Skin Care with Polyethylene Bag for Neonatal Hypothermia: A Randomized Clinical Trial.⁽⁸⁵⁾</p>	<p>2021 Randomized</p>	<p>To determine whether early use of polyethylene bags in conjunction with skin-to-skin contact, compared with skin-to-skin contact alone, reduces hypothermia in term infants born in resource-limited settings.</p>	<p>Infants born at term at the tertiary referral center in Lusaka, Zambia, were randomized using sequentially numbered sealed opaque envelopes in two phases: after birth (phase 1) and 1 hour after birth (phase 2) to receive skin-to-skin contact with polyethylene bags or skin-to-skin contact alone. Maternal and infant temperatures were recorded at birth, 1 hour later and every 4 hours until discharge or 24 hours later.</p>	<p>breastfeeding was observed in the immediate skin-to-skin contact group (22 vs. 27 minutes; $p < 0,001$).</p>	<p>We enrolled 423 infants from May 2017 to August 2017. The rate of moderate-severe hypothermia (temperature $<36,0^{\circ}\text{C}$) at 1 hour was 72 of 208 (34,6 %) in the skin-to-skin care group with a polyethylene bag compared with 101 of 213 (47,4 %) in the skin-to-skin care alone group (relative risk, 0,71; 95 % CI, 0,56-0,90; $P < 0,01$; number needed to treat = 8). Phase 1 treatment assignment significantly modified the phase 2 treatment effect ($P = 0,02$ for interaction effect). Among infants randomized to skin-to-skin care with a polyethylene bag in phase 1, the risk of moderate-severe hypothermia decreased in infants randomized to continue this intervention until discharge compared with infants randomized to skin-to-skin care alone. Rates of severe hypothermia, hyperthermia, and other adverse events did not differ significantly between groups.</p>
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https://pesquisa.bvsalud.org/portal/resource/biblio-1384343	Kangaroo Method AND newborn AND effectiveness	Barraza Peña, Carmen Gloria; Jofré Aravena, Viviane Eugenia; Ramírez Ochoa, Jonathan Andrés.	Perceptions associated with the kangaroo mother method of mothers with preterm newborns. ⁽⁸⁶⁾	2020	Qualitative	To know the perceptions of mothers of premature newborns, associated to the condition of prematurity, incubator care and use of the Mother Kangaroo Method.	A study was conducted in a with qualitative methodology, between July and December 2015, through case study, based on Glaser and Corbin's Grounded Theory using the Constant Comparison Method.	The premature newborn has an emotional impact on the mother, generating negative feelings, which are caused by hospitalization and incubator care. The Mother Kangaroo Method is a protective factor in the positive emotionality of the mother, favoring her joy, tranquility, early bonding and empowerment.
https://doi.org/10.9789/2175-5361.rpcf.v16.12975	Kangaroo care OR skin-to-skin	Carlos Antonio de Lima Filho, Camila Farias de Sousa, Maria Aparecida Farias de Souza, Sebastião Alves Santana Neto, Wagner Gonçalves Horta, Amanda de Oliveira Bernardino	Kangaroo Method: perception of the nursing team in a high-risk maternity hospital / Método Canguru: percepção da equipe de enfermagem em uma maternidade de alto risco. ⁽⁸⁷⁾	2024	Exploratory, descriptive	To analyze the nursing team's perception of the kangaroo method in a high-risk maternity hospital.	Exploratory, descriptive study, with qualitative approach, conducted through semi-structured interviews to nurses of a high-risk maternity ward in Recife (PE), developed between January and February 2020. The interviews were transcribed and subjected to analysis using Bardin's content technique.	Two categories were formulated, nursing care in the kangaroo method and benefits and challenges encountered in the kangaroo method. The participants related that nursing care is mainly based on guidance to mothers, shortage of professionals and low adherence were evidenced as the main challenges.
https://pesquisa.bvsalud.org/portal/resource/biblio-1150296	Kangaroo method AND preterm newborns AND nursing interventions	Abreu, Mariana Quindeler de Salles; Duarte, Elysângela Dittz; Dittz, Erika da Silva.	Construção do apego entre o binômio mãe e bebê pré-termo mediado pelo posicionamento canguru. ⁽⁸⁸⁾	2020	Qualitative, descriptive and exploratory.	To understand how mothers experience the kangaroo position in the Neonatal Intensive Care Unit and to understand the perception of attachment relationships with their babies through the kangaroo position.	Qualitative, descriptive and exploratory. Nine mothers over 18 years of age with infants admitted to the Neonatal Intensive Care Unit with gestational age equal to or less than 30 weeks, who performed the kangaroo position at least twice, participated. Mothers who already had children hospitalized in the Neonatal Intensive	The data were grouped by themes, the following categories emerged Maternity in the context of the Neonatal Intensive Care Unit, Mother-baby interaction during pregnancy and after the Kangaroo, Expectation and maternal reality in relation to the Kangaroo.

VHL	<p>https://pesquisa.bvsalud.org/portal/resource/es/mdl-39157886</p>	<p>Kangaroo Method AND nursing care</p>	<p>Kaynak, Serap; Ergün, Sibel.</p>	<p>Effect of post-discharge online kangaroo care training on breastfeeding self-efficacy in mothers with preterm infants: A randomised controlled study.⁽⁸⁹⁾</p>	<p>2024 Experimental study</p>	<p>To determine the effect of online kangaroo care (KMC) training provided post-discharge on breastfeeding self-efficacy in mothers with preterm infants.</p>	<p>Care Unit, mothers with twins, with psychiatric diagnosis and psychoactive drug users were excluded. Data were collected by means of a sociodemographic data collection form, a semi-structured interview before and after performing the kangaroo position and a participant's diary. Data collection was closed by saturation and analyzed according to Content Analysis, in the thematic modality.</p>	<p>This research was conducted as an experimental study with a randomized control group. Two groups were formed: kangaroo method and control. The study sample consisted of 68 mothers of premature infants. The mothers in the CM group received online CM training after discharge from the hospital. They were asked to perform MC regularly, at least once a day, for 20 minutes, 7 days a week. The Breastfeeding Self-Efficacy Scale was administered to the mothers before and after the training.</p>	<p>The results of the study revealed that the difference between pre- and post-test breastfeeding self-efficacy scores was statistically significantly higher among mothers who received online KC training compared to the control group ($p < 0,001$).</p>
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<p>https://pesquisa.bvsalud.org/portal/resource/es/mdl-39445728</p>	<p>Kangaroo Method AND nursing care</p>	<p>Starke, Veronica; Thernström Blomqvist, Ylva; Karlsson, Victoria.</p>	<p>Attitudes and Experiences Among Swedish NICU Nurses Regarding Skin-to-Skin Care of Infants Born at 22-23 Weeks of Gestation.⁽⁹⁰⁾</p>	<p>2024</p>	<p>Exploratory and descriptive</p>	<p>To investigate neonatal nurses' attitudes and experiences regarding early skin-to-skin contact for extremely preterm infants, born at gestational week (GS) 22-23, using an exploratory and descriptive approach.</p>	<p>An online survey was sent to all nurses in the 6 Swedish units routinely caring for extremely preterm infants. Descriptive statistics and qualitative content analysis were used to analyze the data.</p>	<p>The response rate was 258 of 547 (47 %). This study reveals a spectrum of attitudes and experiences among nurses, ranging from viewing early skin-to-skin contact as an integral aspect of infant care to considering it very challenging or simply not feasible. The results are presented in two categories that describe both facilitating factors and challenges associated with early skin-to-skin contact. Of note, facilitating factors include well-implemented guidelines that support early skin-to-skin contact. On the other hand, challenges include knowledge gaps and the paucity of scientific evidence demonstrating the safety of all skin-to-skin contact, including early skin-to-skin contact, for extremely premature infants.</p>
<p>https://pesquisa.bvsalud.org/portal/resource/es/mdl-39088471</p>	<p>Kangaroo Method AND nursing care</p>	<p>Abuhammad, Sawsan; Karimeh, Roaa; Mahadeen, Alia</p>	<p>The impact of an educational intervention on neonatal intensive care unit nurses' knowledge, attitudes, and perceptions</p>	<p>2024</p>	<p>Quasi-experimental</p>	<p>To evaluate the effectiveness of educational interventions on NICU nurses' knowledge, attitudes, and perceptions of parental participation in</p>	<p>A quasi-experimental pretest/posttest nonequivalent group pretest/posttest design was used to evaluate the effectiveness of educational interventions on NICU nurses'</p>	<p>The results showed that the educational group was statistically different in knowledge after the intervention ($t = -2,819$, $gl = 79$, $p \leq 0,001$). The mean pre-intervention attitude for</p>

<p>https://pesquisa.bvsalud.org/portal/resource/es/mdl-38900721</p>	<p>Kangaroo Method AND nursing care</p>	<p>Bakir, Emine; Eroglu, Kafiye. The Added Effect of Music-Assisted Kangaroo Care Applied to Mothers with Premature Babies in the Intensive Care Unit on the Amount of Breast Milk, the Initiation Time of Breastfeeding, and Anxiety Level.⁽⁹²⁾</p>	<p>2024 Descriptive observational</p>	<p>To determine the effect of the music-assisted kangaroo method applied to mothers with premature infants in the intensive care unit on the amount of breast milk, the initiation time of breastfeeding, and anxiety level.</p>	<p>The study was conducted with mothers whose preterm infants were hospitalized in the neonatal intensive care unit. The study sample size was 99 mothers.</p>	<p>85,5 % of the mothers were >35 years old, 30,1 % were high school graduates, 38,6 % had equal income and expenses, and 77,1% had a cesarean section. The state and trait anxiety levels of mothers in the music-assisted kangaroo method (MAKC), kangaroo method (KC), and control (C) groups decreased after day 1 according to follow-up times. The levels of trait anxiety of mothers in the MAKC group experienced on day 1 and day 6 were lower than those of mothers in the KC and C groups, with statistically significant differences (p < 0,05). Mothers</p>
<p>of parental participation in kangaroo mother care.⁽⁹¹⁾</p>	<p>kangaroo mother care (KMC) in the NICU.</p>	<p>knowledge, attitudes, and perceptions of parental involvement in KMC delivered in neonatal intensive care units in three hospitals. 160 nurses participated in the study, with a split of 80 in the educational group and 80 in the non-educational group.</p>	<p>the educational group was 19,81 (SD = 4,3). The findings expressed that the educational group was statistically different in attitude in the post-intervention phase (t = -3,66, gl = 79, p ≤ 0,001). The results reflect a significant effect on the educational group with respect to nurses' perspectives of parental involvement after the intervention (t = 5,496, gl = 79, p ≤ 0,001).</p>			

<https://pesquisa.bvsalud.org/portal/resource/es/mdl-38754454> Kangaroo Method AND newborn AND effectiveness effectiveness of kangaroo mother care before clinical stabilisation versus standard care among neonates at five hospitals in Uganda (OMWaNA): a parallel-group, individually randomised controlled trial and economic evaluation. (93)

Tumukunde, Victor; Medvedev, Melissa M; Tann, Cally J; Mambule, Ivan; Pitt, Catherine; Opondo, Charles; Kakande, Ayoub; Canter, Ruth; Haroon, Yiga;

2024 Randomized Controlled

To compare the effectiveness, safety, costs, and cost-effectiveness of MCM initiated prior to clinical stabilization versus standard care in neonates weighing up to 2000g.

We conducted a single parallel-group, randomized controlled trial in five hospitals in Uganda. Singleton or twin infants younger than 48 h weighing between 700 and 2000 g without life-threatening clinical instability were eligible for inclusion. We randomly assigned (1:1) neonates to MCM initiated before stabilization (intervention group) or to standard care (control group) through a computer-generated randomization sequence with permuted blocks of different sizes, stratified by birth weight and recruitment site. Parents, caregivers, and health care workers were unmasked at treatment assignment; however, the independent statistician who performed the analyses was masked. After randomization, infants in the intervention group were placed prone and skin-to-skin on the caregiver's chest,

in the MAKC group were found to start breastfeeding earlier than those in the KC and C groups, and the difference was statistically significant ($p < 0,05$).

The primary outcome was all-cause neonatal mortality at 7 days, analyzed by intention-to-treat. Economic evaluation assessed incremental costs and cost-effectiveness from a disaggregated societal perspective.

<p>https://pesquisa.bvsalud.org/portal/resource/es/mdl-38127581</p>	<p>Kangaroo Method AND newborn AND effectiveness</p>	<p>Freccero, Allison; Scala, Melissa; McLeod, Kelly Andrasik; Donahue, Bridgette</p>	<p>The Safety of Body Wraps on Skin-to-Skin Care in the Neonatal Population: A Pilot Study.⁽⁹⁴⁾</p>	<p>2024 Experimental</p>	<p>To discover whether IPC using a body wrap to hold preterm infants would increase the duration of IPC, decrease parental stress during IPC, and minimize adverse events to ensure that IPCs are safe and feasible.</p>	<p>Twenty-nine dyads of parents and preterm infants younger than 34 weeks postmenstrual age were enrolled. The first 15 dyads that met inclusion criteria were assigned to a standard care group for non-bodywrap IPCs. The remaining 14 dyads were assigned to an experimental group for IPC with body wrap. Each dyad performed 2 IPC holds. Parents completed the Parental Stress Scale and the Parental Feedback Form. Adverse events were also documented.</p>	<p>No statistically significant differences were found between the 2 groups in total skin-to-skin contact time (P = .33), number of adverse events (P = .31 for major events; P = .38 for minor events), average parental stress (P = .22), and parental confidence in performing skin-to-skin contact (P = .18).</p>
<p>https://pesquisa.bvsalud.org/portal/resource/es/mdl-36514142</p>	<p>Kangaroo Method AND newborn AND effectiveness</p>	<p>Samsudin, Sharmiza; Chui, Ping Lei; Kamar, Azanna Binti Ahmad; Abdullah, Khatijah Lim</p>	<p>Maternal Kangaroo care education program in the neonatal intensive care unit improved mothers' perceptions, knowledge, perceived barriers and stress relates to premature infant.⁽⁹⁵⁾</p>	<p>2023 Experimental</p>	<p>To evaluate the effectiveness of maternal kangaroo care education program for 1 and 3 months on mother's perception, knowledge, perceived barriers and stress.</p>	<p>Forty-eight mother-infant dyads per arm were enrolled in the control and experimental groups. The control group received standard routine care, while the experimental group received a maternal education program on the kangaroo method. Data were collected using self-administered kangaroo method questionnaires. Chi-square, general linear model and repeated</p>	<p>Demographics are majority Malay mothers with multiparous, cesarean delivery and prematurity. At 3 months post intervention, the experimental group reported significant reduction in stress, positive perception and good knowledge towards kangaroo method implementation. Mothers' perceived barriers to kangaroo</p>

https://pesquisa.bvsalud.org/portal/resource/mdl-36100210	Kangaroo Method AND newborn AND effectiveness	Mohammadi, Fateme; Basiri, Behnaz; Barati, Majid; Khazaei, Salman; Zahra-Masoumi, Seydeh; Sadeghian	Effectiveness of kangaroo mother care on maternal resilience and breastfeeding self-efficacy using the role-play method in a neonatal intensive care unit. ⁽⁹⁶⁾	2022	Randomized Controlled	To evaluate the effectiveness of kangaroo mother care on maternal resilience and breastfeeding self-efficacy using the role-play method in a neonatal intensive care unit.	measures ANOVA were used to analyze the data. A randomized controlled trial was conducted. Mothers were randomized into two groups. Mothers in the intervention group were trained using the role-play method. Questionnaires were administered before and after the intervention. Data were analyzed using SPSS version 22.	care decreased significantly after 3 months in the experimental group. The training showed a statistically significant difference in resilience score and breastfeeding self-efficacy in each group after the intervention. In addition, a statistically significant difference was revealed between both groups in resilience score and breastfeeding self-efficacy after the intervention.
https://pesquisa.bvsalud.org/portal/resource/mdl-40205609	Kangaroo care OR skin-to-skin	Tumukunde, Victor S; Sekitoleko, Isaac; Opondo, Charles; Nyirenda, Moffat; Tann, Cally J; Lawn, Joy E; Medvedev, Melissa M.	Kangaroo mother care among hospitalised neonates: evaluation of the validity of duration measurement methods compared to observation linked to the OMWaNA trial in Uganda. ⁽⁹⁷⁾	2025	Observational study	To evaluate the impact of the kangaroo mother method (KMC) on neonatal mortality and morbidity.	This observational study was integrated into the OMWaNA trial, which examined the impact of MCM on neonatal mortality before clinical stability. An independent observer (considered the gold standard) monitored neonates every 2 h to confirm MCM position, using an Android tablet-based application adapted from the EN-BIRTH study. The gold standard was compared with routine health care worker records and caregivers' daily reports of MCM.	Among 222 caregiver-newborn pairs, 219 initiated MCM. The mean daily duration of MCM recorded by the gold standard was 8,4 h (SD 3,5). Health care workers reported a mean of 8,5 h (SD 4,0), whereas caregivers reported 10,4 h (SD 3,8). The mean difference was 0,2 h less for health care workers (95 % CI -0,3 to 0,6) and 1,7 h more for caregivers (-2,1 to -1,3) compared with the gold standard. Agreement rates for individual episodes of KMC were 55,2 % (95 % CI 54,4-55,9) for health care workers and 58,2 % (57,2-59,0)

<p>https://pesquisa.bvsalud.org/portal/resource/es/biblio-1590354</p>	<p>Kangaroo method AND preterm infants AND nursing interventions.</p>	<p>Dias, Thamyles da Silva; Neves, Emely Borges Das; Sagica, Luciana Carvalho Mendes; Ferreira, Marcia de Almeida; Rodrigues, Diego Pereira; Paixão, Ana Rosa Tavares da; Tavares, Jessica Habr; Parente, Andressa Tavares.</p>	<p>Método canguru e equipe de enfermagem: vivências e aplicabilidade em UTI neonatal / Kangaroo method and nursing staff: experiences and applicability in neonatal uti / Método canguro y personal de enfermería: experiencias y aplicabilidad en uti neonatal.⁽⁹⁸⁾</p>	<p>2023</p>	<p>Cross-sectional descriptive exploratory study</p>	<p>To determine the experience of nursing staff in the practice of the kangaroo method in the neonatal ICU and what factors interfere with its applicability in this setting.</p>	<p>Cross-sectional descriptive exploratory study with a qualitative approach. Five professionals from the nursing team, including nurses and nursing technicians, participated in the research, describing their activities with newborns admitted to the neonatal ICU.</p>	<p>for caregivers. Participants with a helper (substitute KMC provider) had a longer daily duration compared to those without (mean difference of 1,89 h [0,89 - 2,84]; $p < 0,001$). The results showed that the Kangaroo Method is an important newborn care strategy, and four categories were defined from the interviews. Final considerations The Kangaroo Method is a strategy used by health professionals in the provision of comprehensive, humane and individualized care, being beneficial for both the newborn, his or her family and the team, promoting the strengthening of the bonds</p>
<p>https://pesquisa.bvsalud.org/portal/resource/es/biblio-1150296</p>	<p>Kangaroo method AND preterm newborns AND nursing interventions</p>	<p>Abreu, Mariana Quindeler de Salles; Duarte, Elysângela Dittz; Dittz, Erika da Silva.</p>	<p>Construção do apego entre o binômio mãe e bebê pré-termo mediado pelo posicionamento canguru.⁽⁹⁹⁾</p>	<p>2020</p>	<p>Qualitative, descriptive and exploratory</p>	<p>To understand how mothers experience the kangaroo position in the Neonatal Intensive Care Unit and to understand the perception of attachment relationships with their babies through the kangaroo position.</p>	<p>Qualitative, descriptive and exploratory. Nine mothers over 18 years of age with infants admitted to the Neonatal Intensive Care Unit with gestational age equal to or less than 30 weeks, who performed the kangaroo position at least twice, participated. Mothers who already had children hospitalized in the Neonatal Intensive Care Unit, mothers with twins, with psychiatric</p>	<p>The data were grouped by themes, the following categories emerged Maternity in the context of the Neonatal Intensive Care Unit, Mother-baby interaction during pregnancy and after the Kangaroo, Expectation and maternal reality in relation to the Kangaroo.</p>

<p>https://pesquisa.bvsalud.org/portal/resource/es/mdl-31493775</p>	<p>Kangaroo method AND preterm infants AND nursing interventions.</p>	<p>El-Farrash, Rania A; Shinkar, Dina M; Ragab, Dina A; Salem, Ramy M; Saad, Wessam E; Farag, Ahmed S; Salama, Dina H; Sakr, Medhat F.</p>	<p>Longer duration of kangaroo care improves neurobehavioral performance and feeding in preterm infants: a randomized controlled trial.⁽¹⁰⁰⁾</p>	<p>2020 Observational study</p>	<p>To investigate the effect of kangaroo care (KC) and its duration on neurobehavioral performance, stress response, breastfeeding success, and vital signs in preterm infants.</p>	<p>diagnosis and psychoactive drug users were excluded. Data were collected by means of a sociodemographic data collection form, a semi-structured interview before and after performing the kangaroo position and a participant's diary. Data collection was closed by saturation and analyzed according to Content Analysis, in the thematic modality.</p>	<p>One hundred twenty preterm infants were randomized to receive KC for 60 minutes daily, KC for 120 minutes daily, or conventional care (controls) for at least 7 days. Salivary cortisol was measured before and after the first KC session and then after 7 days. Temperature, respiratory rate, heart rate, and oxygen saturation were recorded before and after KC. Neonates were assessed using the Neonatal Intensive Care Unit Network Neurobehavioral Scale (NNS).</p>	<p>Both KC groups demonstrated higher scores on attention, arousal, regulation, suboptimal reflexes, and movement quality and lower scores on manipulation, excitability, and lethargy compared to controls ($p < 0,05$). Both KC groups scored higher on the infant breastfeeding assessment tool and achieved full enteral feeding more quickly than controls ($p < 0,05$). After the first KC session, an improvement in O saturation₂ and temperature was observed in the 120-min KC group compared with the 60-min KC group ($p < 0,05$). Salivary cortisol decreased in both KC groups compared to controls after 7 days ($p < 0,05$).</p>
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RESULTS

Maternal-filial emotional bonding

KC strengthens early attachment between mother and baby, which has positive effects on socioemotional development. According to Barraza Peña⁽⁵⁶⁾, skin-to-skin contact favors the emotional security of the newborn. Also, it reduces maternal anxiety, demonstrating that this method reduces the incidence of postpartum depression, improving the mother's confidence in the care of her child.

The NICU (Neonatal Intensive Care Unit) environment is very aggressive for a premature newborn due to overexposure to stress and pain, such as puncture and insertion of catheters, probes, mechanical ventilation, etc. For this reason, several researchers conclude that the bond between mother and baby is first formed in utero. It has been found that the fetus develops preferential responses to the mother's smells and sounds, which persist even after birth. Prolonged or sudden separation from the mother can have serious, long-term consequences for the child's physical, emotional, and mental health.⁽¹⁰¹⁾

Problems in Breastfeeding

KMC is an effective strategy to improve breastfeeding, reducing problems such as weak sucking and low milk production. A study found that skin-to-skin contact stimulates the production of oxytocin, facilitating milk ejection and increasing the frequency of feedings, as well as improving breast latch-on, making it easier for the baby to find the nipple and suckle effectively.

However, when this method is ineffective in breastfeeding, the technique loses effectiveness if the neonate has sucking problems or medical conditions that make feeding difficult. A key example is ankyloglossia, where the tongue is too tightly attached to the floor of the mouth, making it difficult to latch on and express milk.⁽¹⁰²⁾

A vital dilemma arises about the pathologies that mothers may present, such as the case of mothers with HIV. They face a significant challenge in applying the kangaroo method due to the transmissibility factor of the virus, which is transmitted through breast milk; therefore, it is recommended to use formulas. However, skin-to-skin contact is still beneficial for the baby; it does not present a risk of transmission and helps stabilize the baby. The difference lies in the care provided for breastfeeding.⁽¹⁰²⁾

Emotional stability and stress reduction

By providing skin-to-skin contact between the baby and its mother, this method creates a safe environment that reduces stress levels. The proximity between the mother allows for a decrease in cortisol production, the stress hormone. In addition, a study conducted in 2022 on the perception of mothers and family members participating in the kangaroo method demonstrates the calming effect of the mother's voice and that the warmth of the body favors the release of oxytocin, known as the "love hormone," strengthening the emotional bond between the two and reducing the discomfort of the baby and the mother.

From a neurological perspective, KMC contributes to the reduction of neonatal stress by decreasing cortisol levels in premature infants. A study shows that neonates in KMC have lower heart and respiratory rates, indicating greater physiological stability. Studies have demonstrated that neonates who receive this method have lower levels of crying and a greater sense of well-being compared to those who remain in incubators without direct contact.⁽¹⁰³⁾

Shorter hospitalization time and costs

According to Matassini⁽⁹⁾, one of the most significant problems in hospitals is the lack of space in the neonatal ICU, which increases mortality in newborns. However, it has been shown that this method is a highly effective alternative to reduce hospitalization time in premature newborns. By promoting skin-to-skin contact and breastfeeding, this method accelerates the baby's recovery, allowing for quicker discharge compared to traditional incubator care.

Thermal Regulation

KMC reduces the risk of hypothermia. According to the World Health Organization (WHO), skin-to-skin contact allows for maintaining a stable temperature similar to that provided by an incubator. Studies highlight that infants in KMC have lower thermal fluctuations and better metabolic adaptation.⁽⁹⁾

Skin-to-skin contact with the mother helps maintain a stable body temperature. Unlike incubators, which can generate thermal fluctuations, the maternal body acts as a natural regulator, adapting to the baby's needs. Studies have shown that preterm infants who receive kangaroo care experience fewer episodes of hypothermia, thereby reducing the risk of metabolic complications and improving their physiological stability. This mechanism is based on heat transfer by conduction, where the maternal skin provides a warm and constant environment, favoring the infant's homeostasis.⁽¹⁰⁴⁾

Physical development and weight gain

KMC facilitates weight gain in preterm infants, promoting healthy growth and development. A study concluded that infants on KMC have greater weight gain and better nutrient absorption. Additionally, exclusive breastfeeding is facilitated by skin-to-skin contact, which helps strengthen the baby's physical development.

This method stimulates the central nervous system, promoting better neuronal organization and synaptic connectivity. Studies have shown that neonates who receive kangaroo care exhibit greater stability in their neurological functions, resulting in improved sensory and motor responses. Neurological and psychomotor development in premature neonates is influenced by brain plasticity, a process by which the brain adapts and reorganizes its connections in response to external stimuli, acting as a positive stimulus, favoring the maturation of brain areas responsible for movement and coordination.⁽¹⁰⁵⁾

CONCLUSIONS

The conclusions that stand out in this article are the efficacy of this method and its impact not only on patients but also on healthcare personnel. It is proposed as an alternative, supported by multiple scientific investigations that demonstrate its effectiveness.

From a social and emotional perspective, KMC strengthens the maternal-infant bond, which has a positive influence on the baby's development. Research has shown that skin-to-skin contact reduces neonatal stress levels and improves the newborn's emotional stability. Likewise, mothers who practice this method report greater confidence in caring for their children and a reduction in postpartum anxiety symptoms, which contributes to a better adjustment to motherhood.

KMC has proven to be a cost-effective alternative for caring for preterm newborns, especially in countries with limited resources. The implementation of this method significantly reduces the need for incubators and prolonged hospitalization, which reduces the costs associated with neonatal care. Additionally, promoting early infant recovery optimizes hospital resources and improves the efficiency of the healthcare system.

Despite its multiple benefits, the application of KMC faces cultural and structural challenges in some hospital settings. According to a review in SciELO, the most common barriers include a lack of knowledge among medical staff and financial difficulties for families to access follow-up programs. Additionally, in some communities, traditional beliefs about neonatal care may influence the acceptance of the method, underscoring the importance of educational campaigns and training to ensure its effective implementation.

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