

Kangaroo Method and the Nutritional Status of Premature Infants: A Literature Review

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Keywords— *Kangaroo Method, Premature, Children, Mother.*

Abstract— *The Kangaroo Method (KM) is a model of humanized care in which minimally invasive practices are used through skin-to-skin contact between the baby and the mother or other family members. Objectives: To investigate the literature on the Kangaroo Method and its impacts on the nutritional status of preterm infants. Methods: This was a qualitative study, using the norms of a bibliographic review. The period of collection by electronic means published was from 2017 to 2022. Results: The physiological development of the premature baby may be directly associated with the prevalence of the Kangaroo Method to minimize invasive procedures for the baby. Breastfeeding during the Kangaroo Method is a positive factor for the contribution of its quality and influences its exclusivity. In addition, skin-to-skin contact makes the affective bond stronger and thus helps in the mother-baby relationship. Maternal complications are breast lesions and musculoskeletal pain. The multi-professional team is essential for the evolution of the kangaroo method and for the knowledge of family members about the correct method. Conclusion: The kangaroo method is a positive factor for preterm development. As it is a light treatment technology, non-invasive, easy to perform and economical, it should be encouraged.*

I. INTRODUCTION

Worldwide, an average of 15 million children are born prematurely each year, before 37 weeks of gestation, while 21 million are born with low ideal birth weight. It is crucial to emphasize that preterm babies are predisposed to develop health risks and complications, such as developmental delays, infections and nutritional changes. Such factors foster data in which they point out that the

main causes of death among children fewer than 5 years of age are related to prematurity [1].

The Ministry of Health (MS) characterizes as a newborn (NB) the human being who is during the neonatal period, which runs from birth to 28 days after it. Newborns soon after delivery have different needs according to birth weight and gestational age (GA), these being important markers for classifying and identifying babies at greater

risk of developing some complication, and consequently their death. When verifying any abnormality during pregnancy or after birth, this individual should be referred for monitoring [2].

According to data from the Department of Health Analysis and Surveillance of Non-Communicable Diseases (DASNT), of the Health Surveillance Department, in 2020 alone, 2,687,651 children were born in Brazil, of which 303,903 were premature babies born at less than 37 weeks, representing 11% of births. In the northern region in that same year, 34,972 premature births were registered, only in the state of Pará there were 15,832 reported cases, Belém presented itself as the second capital of the region with the highest percentage of records 2,430, accounting for 15% of registered premature births in the state [3].

The Kangaroo Method (KM) is a model of humanized care in which minimally invasive practices are used through skin-to-skin contact between the baby on her stomach and the mother's chest or abdomen, or other family members. Studies show that the CM influences the affective bond between the baby and his family, thermal regulation, reduction of considerable levels of pain, assists in Breastfeeding (BF) and influences the preterm hospitalization time. The CM is divided into three stages, starting in the Neonatal Intensive Care Unit, moving on to the Kangaroo Neonatal Intermediate Care Unit (UCINCa), and therefore the third stage at home, after hospital discharge [4, 5, 6].

Food plays a fundamental role for human survival, being a decisive factor for a better prognosis of the Preterm Newborn (PTNB). This fact is related to her role in physiological and neurological issues, due to the immaturity of the premature's organism, a good relationship between them can lead to a decrease in problems related to swallowing, breathing and sucking. Thus, the MC is a factor of study in which the method is used as a means of analysis between the reductions of intercurrent factors such as infections, inadequate growth, low immunological resistance, neuropsychomotor development and the deficient Oral Sensory-Motor System (OSS) and surrounded by a good nutritional supply [7,8, 4] (BUENO, 2005; CABRAL et al. 2009; LUZ, et al. 2020).

The development of techniques and technological measures that help in the development of the NB as well as the scientific development in hospital care directly contributes to helping the baby's prognosis, as well as the preterm survival. Therefore, the objective of the present study is to investigate the literature on the Kangaroo Method and its impacts on the nutritional status of preterm infants.

II. METHODOLOGY

2.2 Type of study

This study is a qualitative study, using the norms of a bibliographic review.

2.2.1 Study period

A review of the articles available in the literature in electronic media published from 2017 to 2022 was carried out. Data collection took place between February and March 2022.

2.2.2 Sample

The research was carried out in the academic database (BIREME), using the descriptors: Kangaroo Method, Breastfeeding, Preterm, Hospital Discharge, Weight Gain, Development, and Premature. The connective AND was used between the descriptors, Kangaroo Method AND Breastfeeding, Kangaroo Method AND Preterm, Kangaroo Method AND Hospital Discharge, Kangaroo Method AND Weight Gain, Kangaroo Method AND Development, Kangaroo Method AND Premature.

After data collection, the moment of analysis took place through a selective reading of the articles through the research theme, being probed according to the research objectives, in order to investigate an analysis on the Impact of the Kangaroo Method for the nutrition status of premature baby. Portuguese was the chosen language.

2.2.3 Inclusion criteria

Articles that observed premature babies who underwent the kangaroo method during the period of hospitalization were included.

2.2.4 Exclusion criteria

Duplicate articles, dissertations, non-indexed publications, theses and monographs were excluded.

After a brief reading to obtain the results, the sample consisted of 13 articles.

2.2.5 Data Collection and Analysis

After reading and selecting the articles, data were systematically obtained for the work, with classification, distribution and final analysis. Three steps were used for the analysis of qualitative data.

The first phase was the pre-analysis, starting from the separation through general readings.

The second stage took place through the analysis and organization to find relevant topics, for this, a spreadsheet assembled in the Microsoft Excel 2019

program, detailing topics of interest: year of publication, author, title, objectives, results and conclusions.

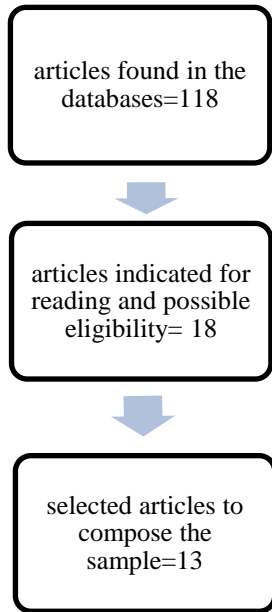


Fig.1: Flowchart of the integrative review articles selection process.

Source: Authors, 2022

The third stage consists of processing the articles filtered and analyzed with their assessments, formed in the theoretical framework of the program, giving rise to the results of the present study.

2.2.6 Ethical Aspects

Regarding the ethical aspects of the research, as it is a literature review, there was no need to submit it to the Research Ethics Committee, supported by resolution 466/12 of the National Health Council (CNS). However, all ethical means will be treated and taken care of to promote the veracity of the information and to protect the privacy and confidentiality of the research subject's data.

III. RESULTS

Table 1 represents the synthesis of the articles used in this review.

Table.1 presents the year, author, title, objectives, results and conclusion of the studies.

YEAR	AUTHORS	TITLE	OBJECTIVES	RESULTS	CONCLUSION
2017 [8]	NUNES, C. R. N.; et al.[9]	Relationship of duration of kangaroo position and mother-child interaction at hospital discharge	To analyze the influence of the Kangaroo Position duration on the initial interactions of the mother-preterm child dyad.	The longer the time in Kangaroo Position, the more newborns made attempts at physical contact with their mothers during breastfeeding (r=0.37; p=0.03).	The longer the time in Kangaroo Position, the more newborns made attempts at physical contact with their mothers during breastfeeding (r=0.37; p=0.03).

2017	FARIAS, S. R. <i>et al.</i> [10]	Kangaroo position in very low birth weight preterm newborns: a descriptive study	To describe the number of periods in which PTNBs, weighing less than 1500g, were in the kangaroo position throughout hospitalization and to seek relationships between maternal and neonatal variables with the performance of the Kangaroo position.	The beginning of the kangaroo position occurred on average at 30.8 days of postnatal life (SD=18.5) and the number of periods in which they were in the kangaroo position was on average 10.7 times.	We investigated 38 subjects, whose hospitalization period ranged from 18 to 136 days. The beginning of the kangaroo position occurred on average at 30.8 days of postnatal life (SD=18.5) and the number of periods in which they were in the kangaroo position was on average 10.7 times. The occurrence of the kangaroo position was less frequent than the opportunities arising from the maternal presence and was related to the greater supply of milk on demand.
2018	MEDEIROS, A. M. C.; <i>et al.</i> [11]	Feeding transition time in the tube-breast technique in low birth weight newborns of the Kangaroo Method.	Check the time spent in the transition from gavage feeding to exclusive oral feeding, using the tube-chest technique.	The history of medical complications significantly influenced the total transition time. Subgroups G1-A (10 days), G1-B (9 days) and G2-A (12 days), when compared to group G2-B (16 days), showed a greater chance of early discharge.	NBs without significant clinical complications had a shorter chance of discharge. NBs with clinical complications, who made the transition from gavage exclusively on the chest, had a shorter transition time than those who used cup/bottle complementation. The feeding transition using the probe-breast technique is important to be recommended in speech therapy in Neonatology.
2018	SILVA, J. M. G. P.; <i>et al.</i> [12]	Painful complaints in kangaroo care participants	To measure the main painful complaints in MMC participants using the visual analogue scale (VAS) and to verify the correlation between these complaints and the baby's age and weight.	It was observed that 46.16% reported some pain complaint at the time of admission and, on the seventh day, this percentage was 50%. The most affected site was the lumbar region with 66.7% and 61.3% in the two moments of the analysis being classified as moderate pain for 100% and 84.6%	KMM does not seem to interfere with the onset and worsening of musculoskeletal pain. However, puerperal women have significant muscle discomfort that can increase according to the weight gain of the RNBP, and the KMM is beneficial for the newborn. Adequate monitoring of these women can help in

				respectively, there was a correlation between increased pain and weight gain of the patient. newborn.	adherence to the method.
2018	SOUZA, A. K. C.; <i>et al.</i> [13]	Weight gain in newborns submitted to skin-to-skin contact	To compare weight gain between newborns submitted to skin-to-skin contact and those not submitted.	The history of medical complications significantly influenced the total transition time. Subgroups G1-A (10 days), G1-B (9 days) and G2-A (12 days), when compared to group G2-B (16 days), showed a greater chance of early discharge.	Skin-to-skin contact positively influences the weight gain and length of hospital stay of neonates. Use of infant formula does not influence weight gain for dyads in body contact. Gestational age, corrected gestational age, birth weight, weight on the first day of follow-up, time of gastric tube use, time of oral feeding is not correlated with weight gain.
2019	SOUSA, S. C.; <i>et al.</i> [14]	Strengthening the bond between the family and the premature neonate	To identify which are the Nursing interventions carried out in a Neonatal Intensive Care Unit that promote the strengthening of the bond between the family and the premature newborn.	It was observed that the most used interventions to strengthen the bond between premature newborns and the family is free entry of parents to the Neonatal Intensive Care Unit; diaper changes; diet administration; use of music and books to soothe babies; in addition to the kangaroo method.	It is concluded that the Nursing team that assists the high-risk neonate seeks to be attentive to the dimension of this phenomenon, seeking to develop interventions to strengthen the bond, in the best possible way, given that the benefits are mutual for all involved.

2020	NIETSCHE, E. A.; <i>et al.</i> [15]	Kangaroo Method: Continuing Education strategies for its implementation and execution	Knowing the context in which the kangaroo method is developed in a Neonatal ICU from the actions of Permanent Education in Health.	Three categories of analysis emerged: kangaroo method – conceptions and understandings; permanent education – teaching-learning strategies; and kangaroo method and teamwork – limits and possibilities.	It was observed that the institution was concerned with offering educational activities to professionals in the Neonatal ICU before implementing the kangaroo method, but it is necessary that discussions on the subject are constantly raised to improve the work developed by the health team.
2020	LEMOS, G. C.; <i>et al.</i> [16]	Effects of hydrotherapy on relaxation and weight gain in preterm infants in the neonatal care unit.	To investigate the effects of hydrotherapy on relaxation and weight gain in clinically stable PTNBs.	There was no statistically significant difference in weight gain ($p=0.127$). Regarding hemodynamic variables, the population studied showed an increase in respiratory rate (RR) on day 2 ($p=0.028$), and a decrease in body temperature on day 1 ($p=0.014$) and on day 2 ($p=0.005$). Regarding pain assessment, there were no statistically significant differences on both days.	Although the relaxation provided to the study population through the application of the method was observed, no statistically significant data were obtained to prove the relationship between the relaxation provided by the hydrotherapy and the weight gain of the PTNBs studied in the present study.
2020	DINIZ, K. T.; <i>et al.</i> [17]	Short-term effect of the kangaroo position on the electromyographic activity of preterm infants: a randomized clinical trial	To verify the short-term influence of the Kangaroo Position on the electromyographic activity of premature newborns.	In the Kangaroo Method Group ($n = 21$), there was variation in the values of electromyographic activity between the three moments of recording activity of the biceps brachii and hamstrings muscles. In the Control Group ($n = 23$), there was no statistical difference between the recording moments.	CP increases the short-term electromyographic activity of the biceps brachii and hamstring muscles

2020	SANTOS, K. E. F.; <i>et al.</i> [18]	Six Months of Exclusive Breastfeeding in the Very Low Weight Preterm Undergoing Kangaroo Method	To know the frequency and factors associated with exclusive breastfeeding in preterm follow-up.	Exclusive breastfeeding was present in 22 (26.8%) patients and 60 (73.2%) had already started using formula. Mean maternal age was 28/29 years, gestational age 30.3/30.4 weeks, birth weight 1295/1434g, duration of mechanical ventilation 5.0/5.8 and total hospital stay 56/49 days in the groups G1 and G2, respectively. The frequencies of cesarean delivery 68/61%, necrotizing enterocolitis 4.5/8.3%, severe periventricular hemorrhage 4.5/8.3%, late sepsis 19/16.9%, and readmission after discharge 4.5 /6.8% in G1 and G2 patients.	Compared to other cohorts and to the service itself in 2010, the rate of breastfeeding was high and, in particular, exclusive breastfeeding, a condition associated with better preterm development, and perinatal variables were not determinants of the success of exclusive breastfeeding. in these patients treated by the kangaroo method.
2020	SENA, M. R. D.; <i>et al.</i> [19]	Influence of the kangaroo position on the cardiopulmonary system of premature infants in a Neonatal Intensive Care Unit in the Amazon	To analyze the effect of the kangaroo position on the cardiopulmonary system of premature newborns admitted to a Neonatal Intensive Care Unit (NICU) in Pará.	Variation of results was observed, revealing a significant increase in body temperature of preterm infants during CP, reaching a median of 36.8°. In the other variables, BSA, HR, RR and SpO2, there were no statistically significant changes.	It was concluded that CP promoted an increase in the body temperature of premature newborns, where a better thermal control was observed, essential for the term regulation of preterm infants.
2021	ALVES, F. N.; <i>et al.</i> [20]	Impact of the second and third stages of the kangaroo method: from birth	Assess whether the Kangaroo Method has an impact on breastfeeding rates	The GCCa group showed superior results in terms of exclusive breastfeeding at hospital discharge, first outpatient consultation, fourth month of corrected gestational age, in	The second and third stages of the Kangaroo Method favored the practice and maintenance of exclusive breastfeeding, in addition to presenting lower readmission rates up to the sixth month of

		to the sixth month		addition to lower readmission rates.	corrected gestational age.
2022	TEIXEIRA, M. A.; <i>et al.</i> [21]	Profile of preterm infants undergoing speech therapy at a follow-up outpatient clinic	To describe the profile of preterm children, according to sociodemographic, clinical and care aspects, and the association with perinatal and postnatal data.	There was statistical significance ($p \leq 0.001$) in the association of gestational age with the following variables: birth weight, height, head circumference, use of the Kangaroo Method, feeding at discharge, ototoxic drugs, intracranial hemorrhage, sepsis and jaundice. Most babies (99.9%) performed the Guthrie Test with adequate results (95.3%).	Most families were low-income, with babies presenting late prematurity. Statistical significance was observed for the variables: type of delivery, weight, height, head circumference, use of ototoxic drugs, intracranial hemorrhage, sepsis and jaundice, with predominant alterations in extremely preterm infants.

IV. DISCUSSION

4.1 Weight Gain and Physiological Development

Amaral et al. [22] sought to assess the correlation between post-discharge feeding of newborns and the parameters of length of stay in the ICU and gestational age, a fact that resulted in the Kangaroo Method contributing to nutritional development as a positive response. These research methods were associated with Souza et al. [13] in a study with 46 neonates that sought to compare the weight gain in newborns who underwent skin-to-skin contact with those who were not in the Kangaroo Method. The results of this research highlighted those newborns that were in skin-to-skin contact showed greater weight gain compared to newborns that did not have this skin-to-skin contact. The authors referenced here highlight the possible benefits of CM when correlated with breastfeeding, these findings indicate that skin-to-skin contact results in the baby's development and consequently with weight gain.

Furthermore, a cross-sectional study by Leite et al. [23] aimed to seek the incidence of Breastfeeding after hospital discharge, showed that 95% of newborns on Exclusive Breastfeeding (EBF) in contribution to the

Kangaroo Method obtained the necessary weight gain after hospital discharge. These findings cooperate with the results of Souza et al. [13] in a qualitative cross-sectional study, sought to analyze which factors influenced the weight gain of babies hospitalized in a Neonatal Unit in Rondônia. The results described that babies who were in the kangaroo method gained more weight when compared to low birth weight newborns who did not undergo KM. With this, it can be highlighted that the Kangaroo Method when directly associated with contexts such as Breastfeeding are positive factors for the nutritional development of the baby.

According to Bera et al. [24] in a controlled clinical trial with 500 pairs of mothers and babies sought to analyze the effects of MC on the development of Indian babies. This author highlighted that low birth weight babies who underwent KM quickly reached physical growth parameters similar to babies with normal control patterns. These findings reinforce the studies by Diniz et al. [17] who through a randomized clinical trial that in their results proved the influence that the period of Kangaroo Method resulted in the development on the physiological characteristics of the newborn. Through this, one can demonstrate the relevance of the CM for the

physiological development of the premature baby and thus, the minimization of invasive procedures for the baby.

Mwendwa et al. [25] in a randomized controlled clinical trial with 157 babies admitted to the Kenyatta National Hospital in the city of Nairobi, Kenya, who underwent CM an average of 8 hours a day, obtained positive results regarding the babies submitted to CM, which developed faster than babies who did not use the CM, consequently being discharged more quickly. The previous study was similar to the randomized study by Diniz et al. [17] who concluded that skin-to-skin contact and the Kangaroo Position provide various sensory stimuli to premature newborns, contributing to tonic-postural adjustment with a positive impact on their baby's neuro-motor development. Thus, the skin-to-skin contact performed by the CM directly contributes to the baby's neurophysiological progress.

A cohort study carried out by Menezes et al. [26] sought to assess the clinical evolution, weight and rate of exclusive breastfeeding during the development of 137 preterm infants treated at a Public Maternity Hospital in the Northeast, in which they pointed out in their results that most of the studied individuals were with the ideal weight for remaining in CM even after hospital discharge. This study agrees with the findings of Farias et al. [10] in an observational study that analyzed the period that newborns were in KM and what their relationships were between maternal variables, resulting in that babies who had more time with skin-to-skin contact developed positively until the hospital discharge. These findings corroborate the perception that the CM time between the mother-baby binomial contributes to the improvement of the baby's clinical status.

Mota et al. [27] in a study with 14 premature newborns, observed their sensorimotor development, having as a response that babies who were in skin-to-skin contact, obtained a positive stimulus, being in a state of greater attention, and consequently more likely to be discharged from hospital. This finding is similar to the research by Farias et al. [10] who analyzed the time in which 38 NB were in Kangaroo Position in a Neonatal Unit of a Baby-Friendly hospital, highlighting positive results between the days of life in which the kangaroo position was started and the days of hospitalization of the babies, where babies who were in greater contact with the CM developed faster. Given the above, it is important to correlate the time of contact with the CM with the minimization of the hospitalization time.

Srinath et al. [28] in their prospective study in preterm newborns in a tertiary neonatal unit in Toronto sought to correlate the physiological and biochemical

responses of the mother-infant binomial after KM. The results identified positive changes in the physiological components measured through temperature and salivary cortisol in both the baby and the mother. This study is similar to the study by Lemos et al. [16] in a quantitative study in 10 preterm infants in the kangaroo method submitted to the treatment of hydrotherapy, in which they sought to answer the relationship between the hot bath and relaxation and weight gain, obtaining results in which the MC can be correlated with the reduction of stress levels and harmful stimuli. In this way, it is worth mentioning the positive effects of skin-to-skin contact and the benefits for the newborn's temperature and reduction of the baby's stress levels during the hospitalization period.

Çaka et al [29] in a randomized study with 80 preterm infants sought to analyze the effects of hot baths in reducing the duration of crying and in the physiological measures of the newborn, with positive results in the reduction of behavioral stress symptoms, such as crying, agitation and pulling arms after the immersion bath. Similar to the later study, by Lemos et al. [16] observed preterm that when they were subjected to hot baths, the signs of irritation and crying decreased. Thus, we can say that the relationship between the CM and the immersion bath is a contributing factor for the development of premature infants and, thus, the reduction of pain.

4.2 Breastfeeding

In a randomized clinical trial by Ward and Collaborators [30] with the objective of implementing practices to improve Exclusive Breastfeeding at an Urban University Hospital in Ohio, it was shown in results that the majority of mothers, in the Kangaroo Method housing, opted for exclusive breastfeeding. Such findings agree with the findings of Alves et al. [20] who described that the second and third stages of the Kangaroo Method favored the practice and maintenance of exclusive breastfeeding. Given the above, it can be observed that breastfeeding during KM is a positive factor for the contribution of breastfeeding, making it a quality factor and influencing its exclusivity.

A study by Vaz et al. [31] in their descriptive and qualitative research, aimed to describe the conception of mothers inserted in the second stage of the CM regarding breastfeeding. The survey results highlighted that mothers understand that breastfeeding allows the growth and development of their children, contributing to the increase in breastfeeding rates during the period of prematurity of the baby. This finding is similar to the study by Alves et al. [20], where increases in Exclusive Breastfeeding rates are described after the period of contact through the Kangaroo Method and later after the period of hospital discharge

from the RNPB. In this way, the files help to state that Breastfeeding in contribution to the CM becomes an essential applicability factor for the development of the RNPB.

Mazumder et al [32] through a randomized control trial in a community in Haryana, India, where their main objective was to evaluate the effect of CM in low birth weight babies, relating it to neonatal survival. The research results were in agreement with the objectives sought, which reported that the group of preterm infants who were in skin-to-skin contact developed better in the ideal latch on breastfeeding, when compared to the group that were not in the CM. These data are similar to the research by Medeiros et al. [11] who observed the success in the breastfeeding stage, in addition to highlighting that direct contact with the mother's breast proved to be a relevant performance in the baby's oral route, helping in the progress of the aspects of skill, coordination, adequate weight gain and not occurrence of clinical changes. These findings demonstrate that breastfeeding helps both in the development of the PTNB and in the baby's coordination performances.

Likewise, Morelius et al. [33] through a randomized study with 37 premature infants in a hospital in Switzerland, sought to correlate the effects of skin-to-skin contact with breastfeeding, observed that mothers who had skin-to-skin contact with their babies had higher rates of exclusive breastfeeding, consequently increasing the levels of nutritional development of preterm infants. This study is similar to the study by Medeiros et al. [11] who, in their cohort study with 165 preterm infants, reported that babies who breastfeed during skin-to-skin contact gained more weight than the population that used cup/bottle feeding. . In view of the studies analyzed, the agreement that breastfeeding through skin-to-skin contact is more favorable for the development of preterm infants.

4.3 Affective Bond

Costa et al. [34] researched what the feelings of mothers would be during the experience of the Kangaroo Method in a descriptive study carried out in a Neonatal Unit in a teaching hospital in the South of Brazil, concluding that through the interviews, it can be highlighted that the CM builds emotional bonds and approximation and contact with the baby. In an observational study with 32 pairs of the mother-baby binomial, Nunes et al. [9] with the aim of understanding whether initial interactions of the mother-preterm child dyad had an influence on the duration of the Kangaroo Position, noting that the duration had a positive effect in the relationship between mother and child. Due to these findings, it is worth emphasizing the importance of the CM

for the bond between the mother-baby binomial and its positive effects on both sides.

Cooijmans et al. [35] in a randomized clinical study with 116 mothers and their preterm babies, had positive results in the contact of the CM with the increase of the affective bond between the mother and the baby, reducing depressive symptoms, stress and anxiety. Similar to the findings of Nunes et al. [9] who verified the influence of the contact between the mother-baby binomial during skin-to-skin contact, resulting in a positive effect on communication and mother-child interaction. From this, it is worth mentioning that the prevalence of the affective bond between the mother prevails during the contact of the MC.

Vittner et al. [36] in a study with 28 preterm infants admitted to a Neonatal Intensive Care Unit, whose objective was to examine changes in salivary oxytocin (OT) and salivary cortisol (SC) levels of the baby and parents during skin contact to skin, observed that during skin-to-skin contact, oxytocin levels increased in parallel with reduced stress levels in both parents and babies. Similar to this finding, Sena et al. [19] in a study with 11 PTNBs in a NICU in Pará sought to analyze the effect of the kangaroo position on the cardiopulmonary system of hospitalized newborns, resulting in an increase in the body temperature of newborns, a factor that is directly linked to the release of oxytocin, and thus, stabilizing the baby's physiological parameters. These positive results may explain the influence of the bond between the family member and the baby and its positive effects during skin-to-skin contact.

Furthermore, Neu et al. [37] compared the impact of two different transfer techniques used in skin-to-skin care (nurse transfer and parent transfer) on the physiological stability of 15 premature babies, who in their results described that the babies were depleted. of energy, however, after skin-to-skin contact, the babies did not obtain energy expenditure, increasing their body self-regulation. Similar to this, Sena et al. [19] described that skin-to-skin contact helps in family bonding and better thermal control of the newborn. In view of the findings, it is essential to report that skin-to-skin contact makes the affective bond stronger and thus helps in the relationship of the binomial and consequently in the balance of the premature body temperature.

4.4 Maternal Intercurrences

In a study with 49 mothers of premature babies in an Intermediate Neonatal Care Unit (NICU) of a university

hospital in the interior of São Paulo, Castral et al. [38] MC time. This research is in agreement with the study by Silva et al. [38] who, in their longitudinal method carried out in a public maternity hospital in Recife, highlighted that muscle discomfort is a common complaint among mothers during the postpartum period and is correlated with physical overload, which is related to baby care and breastfeeding. In the meantime, it can be said that musculoskeletal pain when related to psychological factors can be a postpartum intercurrent factor for women.

Cirico et al. [40] in their quantitative research with 19 women in an accommodation at a University Hospital at the University of São Paulo reported that the majority had pain during breastfeeding due to fissures or other difficulties in breastfeeding. Research by Silva et al. [38] are in consensus regarding problems in breastfeeding, as pain from clefts was the main complaint of puerperal women in the process of breastfeeding in the MC of the maternity. These studied statements demonstrate that the pain caused by clefts during breastfeeding can be considered a maternal complication during breastfeeding in the CM.

A prospective study by Miracle and Collaborators [40] with the aim of analyzing which maternal decisions about the supply of milk to a low birth weight baby in a Tertiary Urban Neonatal Intensive Care Unit, the findings highlighted that the majority of mothers interviewed chose to breastfeed through of formulas because they were afraid of breast pain. This study is similar to the findings of Santos et al. [18], who in a cross-sectional cohort research, whose objective was to investigate the rate of Exclusive Breastfeeding (EBF) in preterm low birth weight, with the results of 60% of mothers opted for the non-exclusivity of EBF, often caused by pain and fissures. These studies emphasize that breastfeeding and its complications are still issues to be studied so that alternative means can be developed in order to reduce negative rates of discouraging the feeding method.

Kent et al. [42] sought to analyze the most recurrent factors regarding nipple pain in mothers during breastfeeding, resulting in the most recurrent factors being wrong positioning, tongue tied, infection, and inverted nipples. This study is similar to the research by Santos et al. [18] had negative responses regarding breastfeeding of mothers of preterm infants, in which most preferred to leave EB due to maternal complications. Given the above, the search for interventional means in the management of pain when breastfeeding should be encouraged.

4.5 Interdisciplinary within the kangaroo method

Medeiros et al. [43] when carrying out an observational and descriptive study, with the aid of

collecting data from medical and speech therapy records of 38 newborns, of both genders, admitted to the Kangaroo Neonatal Intermediate Care Unit (UCINCA), in a public maternity hospital in the city of Aracaju (SE), from August 2012 to April 2013, sought to investigate the association between gestational age and speech therapy intervention time to start oral feeding, when using the feeding transition technique of tube directly to the chest, and noted that when using this method in high-risk newborns with a close mean gestational age, with the same speech-language intervention time, the babies showed greater ability to coordinate sucking/breathing/swallowing movements, which as a consequence, effective breastfeeding at the mother's breast exclusively. This study presented similarities with those observed in the study by Teixeira et al. [21], in which it was possible to observe that most children who were followed up in the speech therapy sector managed to evolve at hospital discharge to exclusive breastfeeding, especially in babies born between 32 and 37 weeks. In this way, the inclusion of the speech therapist in neonatal units and in the Kangaroo Method, integrated into the interdisciplinary team, should be encouraged, since the latter can act early in the promotion of the practice of breastfeeding, contributing to promote and stimulate, in a safe, oral feeding, assist in the transition from the use of the tube to the mother's breast, contributing to the improvement of the quality of life of these NBs.

Basso et al. [44] and Segala et al. [45] in their studies on speech therapy performance in the Kangaroo Method in consecutively a Neonatal Intensive Care Unit (NICU), an Intermediate Neonatal Care Unit (NICU) and at the Kangaroo Method Neonatal Intermediate Care Unit (UCINCA) of the Hospital da Criança e Maternidade of São José do Rio Preto and in a Rooming-in Unit at the University Hospital of Santa Maria (UFSM), identified that early stimulation performed by the speech-language pathology team contributes to an improvement in the prognosis and better response of NBs to exclusive breastfeeding. , the continuity of breastfeeding after discharge and the improvement in the quality of life of this population. These favorable outcomes are also observed in the work by Teixeira et al. [21] in which the multidisciplinary team is essential for the progress of the little ones. In this way, in order to contribute to the clinical evolution of premature babies, the union of the Kangaroo methodology application and the speech therapy work corroborate the promotion of early breastfeeding, contributing in such a way that neonates are often able to be discharged from hospital probes and other devices used to assist in breastfeeding, showing the effectiveness of collaboration within the team.

Araújo et al. [46] in an exploratory descriptive study with 10 mothers in a kangaroo ward of the Maternity School Santa Monica, in Maceió, Brazil, discussed the importance of the multidisciplinary team in helping mothers during the baby's hospitalization process, to alleviate their fears, insecurities through support and information exchange. The findings corroborate the same line of reasoning as Nietsche et al. [15] in their qualitative approach study carried out in a Neonatal ICU of a university hospital, located in the interior of Rio Grande do Sul (RS), proved that the participation of the multidisciplinary team is essential to ensure the success of the practice of MC. Given the above, it is essential to reaffirm that the multidisciplinary team must be able to provide the necessary support to family members during the hospitalization period.

In a descriptive study carried out by Silva et al. [12] with nursing professionals who worked in the Neonatal ICU of a Maternity Hospital in Rio de Janeiro, sought to describe the multi-professional work in humanization programs in the NICU environment, which include the Kangaroo Method. The results described that the means of humanization, such as the MC, bring a satisfactory development to the evolution of the little ones hospitalized. This study is similar to that of Nietsche et al. [15] concluded that educational actions for health professionals regarding CM aim to enhance the assistance provided by the team to the NB and help their family. These findings contribute to reporting the importance of training on the kangaroo method from the perspective of professionals in the hospital environment.

Brant et al. [47] in a study with a qualitative approach, in which 32 pairs of mothers-infants who participated in a breastfeeding guidance and support group at the Exclusive Breastfeeding Outpatient Clinic of a Hospital located in Espírito Santo, Brazil. The women interviewed found that guidance on breastfeeding creates spaces for both informative and affective exchanges. These findings are confirmed by the research by Sousa et al. [14] in their study whose objective was to identify the actions of health professionals to strengthen the bond between the baby and the family, found that professionals should be mediators in establishing methods to provide a strengthening of affective bonds between the newborn, - born and their family within the NICU. In view of the highlighted topics, the importance of the multidisciplinary team in guiding family members during the breastfeeding period should be highlighted, as the exchange of information brings mutual benefits to all involved.

In a study carried out by Baptista et al. [48] sought to understand the importance of the clinical management

of breastfeeding carried out through the support of health professionals in the Neonatal Intensive Care Unit of the Antônio Pedro University Hospital, in Rio de Janeiro, showed that professionals must develop a sensitive listening behavior, observing and answering questions about nursing mothers and their difficulties with breastfeeding, encouraging the team's role in helping the mother to achieve a positive development through lactation, and in the bond between the mother-baby binomial. This content agrees with the findings of Sousa et al. [14] in their qualitative and descriptive research, concluded that nurses felt fulfilled and satisfied in being able to contribute to this strengthening of the affective bond of the premature newborn with the family.

V. CONCLUSION

This study sought to investigate in recent literature the influence of the kangaroo method on the nutritional status of premature infants. In the research, it can be seen that the longer the baby remains in the kangaroo method, the greater its development, whether physiological, neurological, and consequently weight gain. In this sense, this tool has been essential over the years for the evolution with discharge of the little ones, who need more complex care.

Through the research, it was highlighted that the kangaroo method is a positive factor for the development of preterm infants, since the searches showed the prevalence of notorious responses in the sensorimotor development of these, reduction of stress levels, neuro-motor development of the baby. and on the physiological characteristics of the newborn.

Furthermore, the findings in the literature corroborate that the kangaroo method is an auxiliary factor in the quality of breastfeeding. The practice of skin-to-skin contact influences breastfeeding due to the increased demand for mother-baby time and the affective bond, making the conduct continue after hospital discharge. The development of breastfeeding after hospital discharge reduces the levels of early weaning, and promotes the influence on exclusive breastfeeding until the baby's sixth month.

The main maternal complications related to the kangaroo method found in the literature highlighted are breast fissures and musculoskeletal pain that bring discouragement during skin-to-skin contact. In the same sense, psychological factors such as emotional exhaustion influence premature infants to give up exclusive breastfeeding. The findings in the literature still need to be analyzed to find viable means of intervention in order to

reduce negative rates of discouraging the exclusive breastfeeding method in preterm infants included in skin-to-skin contact.

The kangaroo method, as it is a non-invasive and easy-to-perform treatment method, deserves greater appreciation. With this, it is essential that public policies are implemented in order to value this method and thus use resources to propagate the performance in hospital institutions and in primary health care, promoting today a line of care for premature infants and thus reduce case fatality rates in this population.

REFERENCES

- [1] OPAS - Organização Pan-Americana da Saúde. Nova pesquisa destaca riscos de separar recém-nascidos de suas mães durante a pandemia de COVID-19. Genebra, 17 mar. 2021. Disponível em: <https://www.paho.org/pt/noticias/16-3-2021-nova-pesquisa-destaca-riscos-separar-recem-nascidos-suas-maes-durante-pandemia>
- [2] Brasil. Ministério da Saúde. Secretariade Atenção à Saúde. Departamento deAções Programáticas Estratégicas. Método Canguru : manual da terceira etapa do Método Canguru na Atenção Básica / Ministério da Saúde, Secretaria de Atenção à Saúde, Departamento de Ações Programáticas Estratégicas. – Brasília : Ministério da Saúde, 2018. 98 p. : il.
- [3] Brasil. Ministério da Saúde. Mês da prematuridade: Ministério da Saúde defende separação zero entre pais e recém-nascidos. Novembro, 2021.
- [4] Luz, S. C., Backes, M. T. S., Rosa, R., Schmit, E. L., & Santos, E. K. A. (2021). Kangaroo Method: potentialities, barriers and difficulties in humanized care for newborns in the Neonatal ICU. *Revista Brasileira de Enfermagem [online]*, 11 (2).
- [5] Krebs, V. A. (2022). Repercussões fisiológicas e psicossociais do contato pele a pele durante o desenvolvimento do recém-nascido. *Brazilian Journal of Health Review*, 5 (1), 1475-1485. doi:10.34119/bjhrv5n1-126
- [6] Nunes, A. M. L. A. (2022). Importância Do Método Canguru Para Recém- Nascidos Prematuros E/Ou De Baixo Peso Ao Nascer. *Revista Ibero - Americana de Humanidades, Ciências e Educação*, 8 (2). doi:org/10.51891/rease.v8i2.4186
- [7] BUENO, T. M. Repercussión delaseoenla estabilidad térmica delreciennacido de extremado bajo peso durante lasprimeras dos semanas de vida. *AnalesPediatria*, Barcelona, v. 63, n. 1, p. 5-13, 2005
- [8] Cabral IE, Groleau D. Breastfeeding practices after Kangaroo Mother Method in Rio de Janeiro: the necessity for health education and nursing intervention at home. *Esc Anna Nery Rev Enferm* 2009; 13(4):763-771.
- [9] Nunes, C. R. N., Campos, L. G., Lucena, A. M., Pereira, J. M., Costa, P. R., Lima, F. A. F., & Azevedo, V. M. G. O. (2017). Relação da duração da posição canguru e interação mãe-filho pré-termo na alta hospitalar. *Rev. paul. pediatr*, 35(2), 136-143. doi: <https://doi.org/10.1590/1984-0462/2017/35/2/00006>
- [10] Farias, S. R., Dias, F. de S. B., Silva, J. B. da, Cellere, A. L. de L. R., Beraldo, L., & Carmona, E. V. (2017). Posição canguru em recém-nascidos pré-termo de muito baixo peso: estudo descritivo. *Revista Eletrônica De Enfermagem*, 19. <https://doi.org/10.5216/ree.v19.38433>
- [11] Medeiros, A. M. C., Ramos, B. K. B., Bomfim, D. L. S. S., Alvelos, C. L., Silva, T. C., Barreto, I. D. C., Santos, F. B., & Gurgel, R. Q. (2018). Tempo de transição alimentar na técnica sonda-peito em recém-nascidos baixo peso do Método Canguru. *CoDAS* 30 (2). <https://doi.org/10.1590/2317-1782/20182017092>
- [12] Silva, J. M. G. P., Andrade, M. A., Nepomuceno, E. J., Cunha, C. M. P., & Maia, J. N. (2018). Queixas dolorosas em participantes no método mãe canguru. *Fisioterapia Brasil*, 19 (1). doi: <https://doi.org/10.33233/fb.v19i1.2177>
- [13] Souza, A. K. C. M., Tavares, A. C. M., Carvalho, D. G. L., & Araújo, V. C. (2018). Ganho de peso em recém-nascidos submetidos ao contato pele a pele. *Rev. CEFAC.*, 20(1), 53-60. doi: 10.1590/1982-021620182018317
- [14] Sousa, S. C., Medino, Y. M. S., Benevides, K. G. C. B., Ibiapina, A. S., & Ataíde, K. M. N. (2019). Fortalecimento Do Vínculo Entre A Família E O Neonato Prematuro. *Rev enferm UFPE on line*, 13(2), 298-306. doi: <https://doi.org/10.5205/1981-8963-v13i02a236820p298-306-2019>
- [15] Nietsche, E. A., Papa, M. M., Terra, L. G., Reisdorfer, A. P., Ramos, T. K., & Antunes, A. P. (2020). Método Canguru: estratégias de Educação Permanente para sua implementação e execução. *RevCuid.*, 11(1). doi: <http://dx.doi.org/10.15649/cuidarte.897>
- [16] Lemos, G. C., Almeida, T. V. C., Pinto, M. M., & Medeiros, A. I. C. (2020). Efeitos da ofuroterapia no relaxamento e ganho de peso em recém-nascidos prematuros na unidade de cuidados neonatal. *RevPesquiFisioter.*, 10 (3), 393-403. doi: 10.17267/2238-2704rpf.v10i3.2953
- [17] Diniz, K. T., Cabral Filho J. E., Miranda, R. M., Lima, G. M., Figueredo, N. P., & Araújo, K. F. (2020). Short-time effect of the kangaroo position on electromyographic activity of premature infants: a randomized clinical trial. *J Pediatr (Rio J)*, 96 (6). Doi: <https://doi.org/10.1016/j.jped.2019.10.003>
- [18] Santos, K. E. F., Vilela, J. C. G., Costa, T. P., Castro, É. F., & Maia, C. R. S. (2020). Seis meses de aleitamento Materno exclusivo no pré-termo de muito baixo peso submetido ao método canguru. *ResidPediatri*. 0(0):
- [19] Sena, M. R. D., Frare, P. B. F. S., da Cunha, V. S. M., & da Silva, R. L. F. (2020). Influência da posição canguru no sistema cardiopulmonar de prematuros em uma Unidade de Terapia Intensiva Neonatal na Amazônia. *REAS/EJCH*, 41 (1) DOI: <https://doi.org/10.25248/reas.e2419.2020>
- [20] Alves, F. N., Wolkers, P., Araújo, L., Marques, D., & Azevedo, V. M. G. O. (2021). Impacto da segunda e terceira etapas do método canguru: do nascimento ao sexto mês. *Revista de Enfermagem do Centro-Oeste Mineiro*, 11 (1), 4200. doi: <https://doi.org/10.19175/recom.v11i0.4200>

- [21] Teixeira, M. A., Britto, D. B. O. Escarce, A. G., de Paula, D. D., & Lemos, S. M. A. (2022). Perfil de prematuros em atendimento fonoaudiológico em um ambulatório de followup. *AudiolCommun Res.*, 27 (1). doi: <https://doi.org/10.1590/2317-6431-2020-2430>
- [22] Amaral, D. A., Matos, D. A. A., Gregório, E. L. (2015). Impacto De Uma Intervenção Pró-Aleitamento Nas Taxas De Amamentação De Prematuros Inseridos No Método Mãe Canguru. *Rev. APS*, 18(1), 57 - 63.
- [23] Leite, P. F. P., Freire, A. I. M. M., Ribeiro, S. P. A., Cabral, L. N., & Guilherme, J. P. (2017). Incidência de aleitamento materno no momento da alta da terceira etapa do método canguru da Maternidade Ana Braga. *Rev. Ciências de Saúde da Amazônia*, 1 (1).
- [24] Bera, A., Ghosh, J., Singh, A. K., Hazra, A., Mukherjee, S., & Mukherjee, R. (2014). Effect of kangaroo mother care on growth and development of low birthweight babies up to 12 months of age: a controlled clinical trial. *Acta Paediatrica*, 103(6), 643–650. doi:10.1111/apa.12618
- [25] Mwendwa, A. C., Musoke, R. N., & Wamalwa, D. C. (2012). Impact Of Partial Kangaroo Mother Care On Growth Rates And Duration Of Hospital Stay Of Low Birth Weight Infants At The Kenyatta National Hospital, Nairobi. *East African medical journal*, 89(2), 53–58.
- [26] Menezes, M. A., Garcia, D. C., de Melo, E. V., & Cipolotti, R. (2014). Preterm newborns at Kangaroo Mother Care: a cohort follow-up from birth to six months. *Revista paulista de pediatria :orgao oficial da Sociedade de Pediatria de Sao Paulo*, 32(2), 171–177. <https://doi.org/10.1590/0103-0582201432213113>
- [27] Mota, L. A. da, Sá, F. E. de, & Frota, M. A. (2012). Estudo comparativo do desenvolvimento sensório-motor de recém-nascidos prematuros da unidade de terapia intensiva neonatal e do método canguru. *Revista Brasileira Em Promoção Da Saúde*, 18(4), 191–198. <https://doi.org/10.5020/943>
- [28] Srinath, B., Shah, J., Kumar, P., & Shah, P. S. (2016). Cuidado canguru por pais e mães: comparação de respostas fisiológicas e de estresse em bebês prematuros. *J Perinatol* 36 (1), 401–404. <https://doi.org/10.1038/jp.2015.19>
- [29] Çaka, S. Y., & Gözen, D. (2017). Effects of swaddled and traditional tub bathing methods on crying and physiological responses of newborns. *Journal for Specialists in Pediatric Nursing*, 23(1), e12202. doi:10.1111/jspn.12202
- [30] Ward, L. P., Williamson, S., Burke, S., Crawford-Hemphill, R., & Thompson, A. M. (2017). *Improving Exclusive Breastfeeding in an Urban Academic Hospital. Pediatrics*, 139(2), e20160344. doi:10.1542/peds.2016-0344 .
- [31] Vaz, D. C., Silva, D. S., Santos, D. S. S., Bonfim, M. V., & Abreu, R. M. (2014). Concepção Materna Sobre A Amamentação Em Lactentes De Um Programa Do Método Mãe Canguru. *Revista Baiana de Saúde Pública*, 38 (2), 225-242.
- [32] Mazumder, S., Taneja, S., Dube, B., Bhatia, K., Ghosh, R., Shekhar, M., ... Bhandari, N. (2019). Effect of community-initiated kangaroo mother care on survival of infants with low birthweight: a randomised controlled trial. *The Lancet*. doi:10.1016/s0140-6736(19)32223-8
- [33] Mörelius, E., Örténstrand, A., Theodorsson, E., & Frostell, A. (2015). A randomised trial of continuous skin-to-skin contact after preterm birth and the effects on salivary cortisol, parental stress, depression, and breastfeeding. *Early Human Development*, 91(1), 63–70. doi:10.1016/j.earlhumdev.2014.12.
- [34] Costa, R., Heck, G. M. M., Lucca, H. C., Santos, S. V. (2014). Da Incubadora Para O Colinho: O Discurso Materno Sobre A Vivência No Método Canguru. *RevEnferm Atenção Saúde [Online]*, 3 (2), 41-53. doi:<https://doi.org/10.18554/>
- [35] Coolijmans, K. H. M., Beijers, R., Rovers, A. C., & Weerth, C. (2017). Effectiveness of skin-to-skin contact versus care-as-usual in mothers and their full-term infants: study protocol for a parallel-group randomized controlled trial. *BMC Pediatrics*, 17 (154). doi:10.1186/s12887-017-0906-9
- [36] Vittner, D., McGrath, J., Robinson, J., Lawhon, G., Cusson, R., Eisenfeld, L., ... Cong, X. (2017). Increase in Oxytocin From Skin-to-Skin Contact Enhances Development of Parent–Infant Relationship. *Biological Research For Nursing*, 20(1), 54–62. doi:10.1177/1099800417735633
- [37] Neu, M., Browne, J. V., & Vojir, C. (2000). The impact of two transfer techniques used during skin-to-skin care on the physiologic and behavioral responses of preterm infants. *Nursing research*, 49(4), 215–223. <https://doi.org/10.1097/00006199-200007000-00005>
- [38] Castral, T. C., Warnock, F. F., Ribeiro, L. M., Vasconcelos, M. G. L., Leite, A. M., Scocchi, C. G. S. (2012). Fatores maternos influenciam a resposta à dor e ao estresse do neonato em posição canguru. *Rev. Latino-Am. Enfermagem*, 20 (3).
- [39] Silva, L., Leite, J. L., Silva, T. P., Silva, I. R., Mourão, P. P., & Gomes, T. M. (2018). Management challenges for best practices of the Kangaroo Method in the Neonatal ICU. *Rev Bras Enferm [Internet]*, 71(6), 2783-91. doi: <https://doi.org/10.1590/0034-7167-2018-0428>
- [40] Cirico, M. O., Shimoda, G. T., & Oliveira, R. N. G. (2016). Qualidade assistencial em aleitamento materno: implantação do indicador de trauma mamilar. *Rev Gaúcha Enferm.*, 37(4) :e60546.
- [41] Miracle, D. J., Meier, P. P., & Bennett, P. A. (2004). Mothers' Decisions to Change From Formula to Mothers' Milk for Very-Low-Birth-Weight Infants. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 33(6), 692–703. doi:10.1177/0884217504270665
- [42] Kent, J., Ashton, E., Hardwick, C., Rowan, M., Chia, E., Fairclough, K., ... Geddes, D. (2015). Nipple Pain in Breastfeeding Mothers: Incidence, Causes and Treatments. *International Journal of Environmental Research and Public Health*, 12(10), 12247–12263. doi:10.3390/ijerph121012247
- [43] Medeiros, A. M. C., Sá, T. P. L., Alvelos, C. L., & Novais, D. S. F. (2014). Intervenção fonoaudiológica na transição alimentar de sonda para peito em recém-nascidos do Método Canguru. *Audiology-Communication Research*, 19 (1), 95-103.

- [44] Basso, C. S. D., Arroyo, M. A. S., Saes, M. A. B. F., Beani, L., Maia, A. B., & Lourenção, L. G. (2020). Índice de aleitamento materno e atuação fonoaudiológica no Método Canguru. *Revista Cefac*, 21 (5). doi:<http://dx.doi.org/10.1590/1982-0216/201921511719>
- [45] Segala, F., Bolzan, G. P., Nascimento, M. D., Gonçalves, D. S., Melchior, A., Moraes, M. V. M., & Weinmann, A. R. M. (2022). Influência do estímulo gustativo na pressão de sucção de recém-nascidos a termo. *CoDAS*, 34 (3). doi: <https://doi.org/10.1590/2317-1782/20212021002>
- [46] Araujo, A. M. G., Melo, L. S., Alves de Souza, M. E. D.C., Freitas, M. M.S M., Lima, M. G. L., & Lessa, R. O. (2016). A Experiência Do Método Canguru Vivenciada Pelas Mães Em Uma Maternidade Pública De Maceió/Al Brasil. *Rev. iberoam. educ. investi. Enferm.*, 6(3), 19-27
- [47] Brant, P., Affonso, H., & Vargas, L. (2009). INCENTIVO À AMAMENTAÇÃO EXCLUSIVA NA PERSPECTIVA DAS PUÉRPERAS. *Cogitare Enfermagem*, 14(3), 512-517. doi:<http://dx.doi.org/10.5380/ce.v14i3.16182>
- [48] Baptista, S. de S., Alves, V. H., Souza, R. de M. P. de, Rodrigues, D. P., Cruz, A. F. do N. da, & Branco, M. B. L. R. (2015). Manejo clínico da amamentação: atuação do enfermeiro na Unidade de Terapia Intensiva Neonatal. *Revista De Enfermagem Da UFSM*, 5(1), 23–31. <https://doi.org/10.5902/2179769214687>