

THE EFFECTIVENESS OF KANGAROO MOTHER CARE ON PREMATURE BABIES: A Scoping Review

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Abstract

Common causes of infant and neonatal mortality are asphyxia, asphyxia at birth due to obstructed labor, transverse location, and narrow pelvis, low birth weight (LBW) and sepsis. One of the interventions that can be given to infants with LBW is treatment of the Kangaroo Mother Care method. This method is a no-cost therapy that can be done by mothers because not all babies with LBW are able to get health services using advanced technology. The study aims to determine the effectiveness of Kangaroo Mother Care for premature babies. Five stages for scoping review were employed in this review including: identifying the question, identifying relevant studies, mapping data, critical appraisal, analyzing data and extraction data. A total of 10 journals were found and carried out thematic analyzes in the form of scoping review to identify the main points. The researchers classified the main points of the effectiveness of Kangaroo Mother Care for premature babies. There was an effect of KMC on LBW because the KMC method was a supportive treatment carried out by placing the baby in the mother so that direct contact between mother and baby occurred. KMC method had several benefits such as increasing emotional connection between mother and baby, stabilizing body temperature, stabilizing pulse heart rate and breathing and increasing body weight in premature babies.

Keywords: Kangaroo Mother Care, Preterm

1. INTRODUCTION

Premature babies are defined as neonates born before the 37 weeks of his pregnancy, in many cases that a premature-born baby has many problems such as having poor temperature control and can have complications Cardiovascular and respiration, further problems of premature infants will experience stress due to the intensive treatment performed by the medical due to the sound of the tools used for the handling of preamateur babies (incubators), bright light, and Invasive medical treatment procedures [1].

Indicators of death rates associated with children are Neonatal mortality (AKN), Infant death rate (AKB), and infant mortality rate (AKABA). The attention to the efforts to decrease neonatal mortality (0-28 days) is important because neonatal death contributes to 59% of infant mortality. Based on the results of the Indonesian Demographic and Health Survey (SDKI) in 2012, the neonatal mortality rate (AKN) in 2012 amounted to 19 per 1,000 of live births. This figure is equal to AKN based on the SDKI year 2007 and only decreased 1 point compared to the SDKI year 2002-2003 which is 20 per 1,000 live births [2].

In general, cases of infant death in DIY are fluctuating from 2014 – 2017. The year 2014 amounted to 405 and dropped quite a lot in the year 2015 i.e. to 329, down to 278 in 2016, but it was back up to 313 in 2017. The case of the highest infant death in Bantul Regency (108 cases) and the lowest in Yogyakarta (33 cases). The common causes of infant and neonatal death in DIY are

the weight of low birth babies (BBLR) and sepsis. In addition, other causes of infant death are often found in DIY, among others asphyxia at birth because of the long time on the road of birth, the cross, and narrow pelvis [3].

One of the actions that can be given to infants with BBLR is the treatment of Kangaroo Mother Care (KMC). This method is a no-cost therapy that can be done by mothers because not all babies with BBLR are able to get health services using advanced technology. Usually it is due to low socio-economic factors, geographic, transportation and communication, KMC was first implemented in Bogota, Colombia with the aim for reducing high pain and mortality rates at BBLR due to limited The NICU space resource. Babies with BBLR who received KMC treatment will have better psychological and emotional experience because with this method babies will gain warmth and closer to the mother so as to improve the baby's quality of life [4].

World Health Organization shows that KMC is the most effective method for stability body temperature, infection prevention, improving emotional bonding among mothers and infants, and the KMC is beneficial for babies to keep the baby's breath Regularly, babies are more easily getting breast milk so that the growth in premature baby weight gain is faster, in addition to the regular sleep patterns in infants given KMC wits help in brain development and more well secretions in the digestive process [1].

2. METHODS

The author filtered out 360 literature review from 2 databases (Pubmed and ProQuest) to be conducted a review.

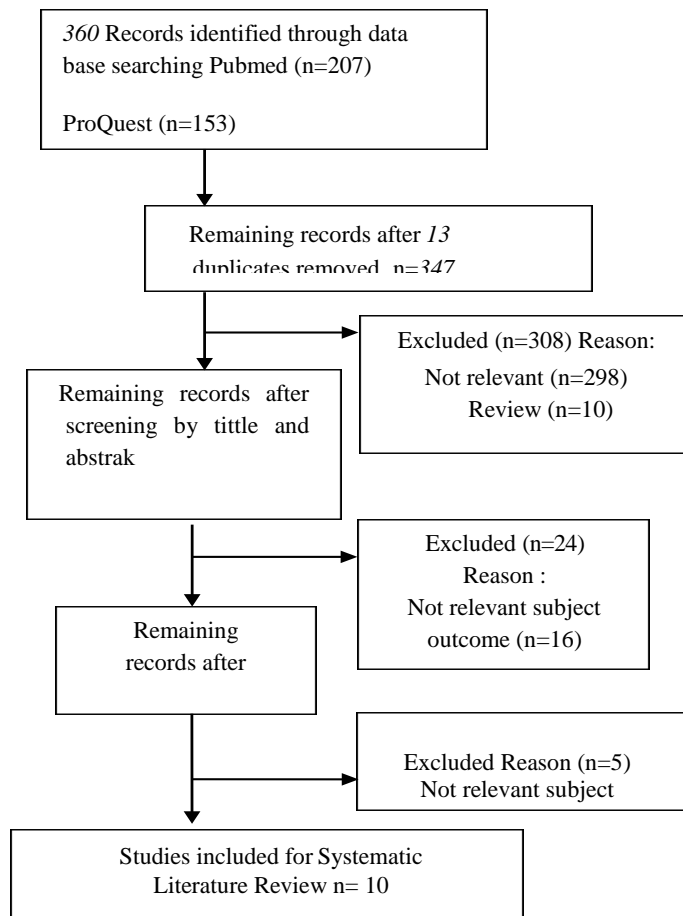


Figure 1. Process of selection articles

Researchers filtered out 360 literature review from 2 databases (Pubmed and ProQuest) to be conducted a review, all selected articles using quantitative methodology that were indexed Scopus to Q1 and Q2 standards as well as research conducted in developing and Forward, the population in this review is all babies who are born prematurely without complications given the method of intervention kangaroo mother care.

After doing critical appraisal selected 10 articles based on the rating of the author has a good quality and according to the topic, then carried out data extraction to enter key criteria such as title, author, year of publication Articles, research locations, research objectives, methodologies, research populations, and significant outcomes or conclusions.

NO	Title/ Author/ Year	Country	Aim	Method	Participant	Result
1	The effect of kangaroo ward care in comparison with intermediate intensive care on the growth velocity in preterm infant with birth weight < 1100 gram : randomized control trial / [5]	India	To compare the benefits of infant care with the KMC method with intermediate intensive care (IIC) in stable premature babies (birth weight <1100 g) in increasing growth rates in premature infants.	RCT	Of the 141 infants enrolled, 71 were randomized to KMC care and 70 for intermediate intensive care (IIC)	The main results of this study were an increase in body weight in the intervention group. Starting care for mother care kangaroos was very influential in increasing growth in preterm infants with birth weight <1100 grams. Starting KMC treatment should be an important component of care for infants having implications great in saving more newborns and improving quality care at limited resources.
2	Newly born low birth weight infants stabilise better in skin-to-skin contact than when separated from their mothers: a randomised controlled trial [6]	Vietnam	This study aims to compare the effectiveness of LBW infants given the Kangaroo method of mother care with LBW babies with conventional methods of care that babies are separated from their mothers	RCT	Of the 100 severely premature infants (1500-2500) were randomized to 50 control groups and 50 in the intervention group	In KMC care the baby shows a better condition and does not require respiratory support and intravenous fluids.

3	Earlier versus later continuous Kangaroo Mother Care (KMC) for stable low-birth-weight infants: a randomized controlled trial [7]	Mahajanga (Madagaskar)	To test the effectiveness of Kangaroos (KMC given as soon as possible within 24 hours after delivery) and KMC (which starts after the stability of the baby's condition generally after 24 hours after delivery) in low birth weight babies (LBW) in resource-limited countries	RCT	A total of 73 infants (intervention 37, control 36) were included Inclusion criteria: BB less than 2500, less than 24 hours, stable conditions such as breathing heart rate, family willing Exclusion criteria: prolonged apnea, use of intravenous infusion	At KMC, which is done immediately after labor within the first 24 hours, it has a significant effect on the physiological condition of premature infants.
4	The effects of kangaroo care in the neonatal intensive care unit on the physiological functions of preterm infants, maternal-infant attachment and maternal stress [1]	South Korea	This study was conducted to identify the effects of kangaroo treatment on physiological functions of premature babies, the relationship between mother and baby, and maternal stress	Quasy Experiment	Premature babies with gestational age > 33 weeks, with 40 preterm infants (20 in the experimental group and 20 in the control group)	This study shows that kangaroo treatment can be used to promote emotional bonding between mother and baby and stabilize physiological function (respiration) of premature babies

5	Randomized controlled trial on effect of intermittent early versus late kangaroo mother care on human milk feeding in low birth weight neonates [8]	India	The purpose of this study was to determine the effect of mother care kangaroo given immediately after birth to exclusive breastfeeding, infant growth, mortality and morbidity in LBW neonates compared to KMC treatment performed after the baby is stable	RCT	160 premature infants were divided into 2 groups (intervention group 80 and control group 80)	Giving KMC treatment for LBW done soon after the baby is born significantly increases breastfeeding in LBW babies compared to KMC treatment given after the baby is stable
6	The effect of kangaroo mother care on physiological parameters of premature infant in hamdan city ,Iran [9]	Iran	This study was intended to evaluate the effect of KMC administration on physiology in LBW	Quasy experiment	The samples used were 100 LBW infants divided into 2 groups, 50 LBW infants in the intervention group and 50 LBW infants in the control group	This study shows the effect of KMC on LBW physiological index (heart rate, respiratory rate, body temperature)

7	Effect of kangaroo mother care on physical growth, breastfeeding and its acceptability [10]	India	This study looks at the effects of KMC on the physical growth of premature babies and breastfeeding babies	RCT	The sample used was 50 premature babies who were given the KMC method and 50 premature babies as controls	The premature infant weight index given the KMC method was significantly greater than the control group, and exclusive breastfeeding was significantly higher than in the control group.
8	Effect of repeated kangaroo mother care on repeated procedural pain in preterm infant: randomized controlled trial [11]	China	this study to test the effectiveness of KMC in the pain of premature babies	RCT	The sample used in this study was 40 premature babies used for the intervention group and 40 premature babies used for the control group	The results of this study provide evidence that KMC for 30 minutes effectively reduces pain in premature infants (in the process of taking blood)

9	Randomized control trial of kangaroo mother care in low birth weight babies at a tertiary level hospital [12]	Nepal	This study was conducted to compare the effects of mother care for mother care and conventional methods in preterm infants	RCT	The sample used in this study was 126 premature infants where 63 in the intervention group and 63 in the control group	The results of this study showed that infants who were given the KMC method had increased body weight compared to infants who did not receive KMC and had a reduced incidence of hypothermia than those who did not receive KMC.
10	Kangaroo mother care for low birth weight babies: A randomized controlled trial a tertiary care hospital of bangladesh [13]	Bangladesh	The purpose of this study was to assess the effect of KMC on LBW compared to conventional methods of treatment	RCT	The subjects in this study were 40 LBW infants in the intervention group and 40 LBW infants in the control group	The results of this study KMC have a better effect on infant weight and exclusive breastfeeding in LBW infants

3. RESULTS AND DISCUSSION

- 3.1 Effect of kangaroo mother care towards physiological function of premature babies. From this review that aims to know the effects of Kangaroo mother care treatment on infant physiological function (body weight, body temperature, respiration rate, heart rate, and oxygen saturation), analyze differences bounding attachment between mother and Babies as well as to analyze the stress difference of the mother between the two groups with the results described that babies born in the gestational age > 33 weeks are divided into 2 groups, the intervention group get a kangaroo treatment 3 times/week with 30 minutes duration and control group placed in the NICU room which is monitored intensively without intervention with the results showing that the physiological effects only affect the respiration rate because during infant care is placed In the mother's chest leaning forward of 60 degrees this posture allows premature babies to lie down which causes increased negative pressure under the diaphragm so as to help the baby's pulmonary function is beneficial to the oxygen needs to stabilize Cardio respiration, if seen the increase in heart rate only due to the position and change in the position of sleep, the body temperature due to the skin, which occurs in the mother and her baby. In a systematic review of kangaroo mother care improves care compassion between mother and her baby stress reduction is caused by a lot of direct contact time spent by mothers and babies that make moms can adjust to and Environment, this stress is caused by a mother feeling guilty when looking at the condition of the baby that is mother born, the role of the family that lacks support [1]
- 3.2 Effectiveness of kangaroo mother care compared to conventional treatment at the speed of growth in premature infants. In experiments conducted in premature babies treated with kangaroo mother care compared to conventional treatment in the premature infant growth index showed significant results in infant weight because the mother Doing the Kangaroo mother care method will be more intensive to give her breast milk as well as the emotional bonds of mothers and babies are more well-established so that KMC treatment reduces death in neonatal. [5]
- 3.3 Influence of kangaroo mother care of physiological function (weight, body temperature, respiration rate, heart rate, and oxygen saturation) premature babies, the results of this study show significant results in the physiological index of the preterm infant given method kangaroo mother care [9]
- 3.4 The influence of KMC on the physical growth of infant indices that receive the KMC method shows significantly increased body weight and length compared to the control group [10]

KMC is an effective alternative method to stabilize the physiological function of premature infants (body temperature, heart rate, respiration, oxygen saturation), increasing the emotional bonds between the mother and the infant, the baby is easier to get breast milk Intensively so that the growth and weight gain of premature babies is faster, in addition to that regular sleep patterns in infants given KMC support help in brain development and better secretions in the digestive process [1]

The results obtained in this study are similar to those obtained from previous research heart rate was influenced by holding the baby upright and positioning the baby directly in the mother's chest, which led to Babies sleep better, oxygen saturation increases in the group given the intervention, KMC can maintain their body temperature because the infant receives direct warmth from skin contact to the skin with his mother, KMC treatment enhances love Affection between mother and baby, significant decline in the stress of the mother is seen in the intervention group compared to the control group.

The effectiveness of kangaroo mother care with conventional treatment in the premature infant growth Index shows significant results on the weight of babies because mothers who do the method of Kangaroo mother care will be more intensive to give breast milk And the emotional bonds of mothers and infants are more well-established so that KMC treatments reduce death in neonatal. [10], this research is based on what is done by [9] who said that kangaroo mother care is an effective method for treating BBLR that causes weight gain and breast-feeding exclusive.

A study from Sweden conducted by Whitelaw *et al* found that 71 premature infants with a body weight of < 1500 grams are advised to perform the KMC method because KMC has a 2 times higher prevalence in improving breast milk and raising bonding attachment between mother and baby.

The success of KMC methods is influenced by the knowledge, attitudes, family support and health care facilities provided. Good knowledge will certainly affect the attitude of mothers who will support the treatment of BBLR with this method KMC, another factor that affects the implementation of KMC is the support of the family because the family has the potential to determine the upbringing Best for the baby, therefore the family must be involved in an upbringing in the infant BBLR so that this treatment can succeed [4]

4. CONCLUSION

Based on the results of the above can be concluded that there is the influence of KMC on BBLR because the KMC method is a supportive treatment that is done by put a baby in the mother's chest so that there is direct contact between mother and baby, KMC method It has benefits such as improving the emotional connection between mother and infant, stabilizing body temperature, stabilizing heart rate, breathing as well as increasing weight in premature infants, therefore KMC recommended as a therapy for the treatment of BBLR that can be done by mothers directly, without cost with the provision of health education by health workers.

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