

Effectiveness of Kangaroo Mother Care (KMC) on Lactation among Mothers of Low Birth Weight (LBW) Newborn

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Abstract

Background: Prematurity is one of the main causes of neonatal mortality in India. The birth of a LBW infant can have adverse effect on the breastfeeding pattern.

Methodology: True experimental research design was used for this research study. Mother of LBW newborn admitted at Krishna Hospital, Karad were selected as a sample for this study. Simple Random Sampling Technique was used for selection of sample. 120 samples were included in this study. There were 60 mothers in experimental (KMC) and 60 mothers in control group.

Results: There were majority of women from 18 -30 yrs. of age category in KMC and CMC group. Majority of women were well educated and had education from 1st – 15th standard. In KMC Group, The mean of BBAT Scale in pretest was 3.833 and SD 1.416 and in posttest it was mean 7.133 and SD 0.8919. In CMC group, the mean of BBAT Scale in pretest was 4.650 and SD 1.516 and in posttest it was mean 5.733 and SD 1.614. So KMC improve Lactation also.

Conclusion: This study shows a great impact on Lactation. KMC can helpful to gain weight of the LBW babies.

Keywords: Kangaroo Mother Care, BBAT (Bristol Breastfeeding Assessment Tool), Lactation, Low Birth Weight, effectiveness.

Background

“Nothing in this world can take the place of the mother for an infant, the mother is the source of warmth and nutrition.”

Pregnancy is a magical time for that every mother waiting to have in her life time, to bring out a creature within her, arising for pregnancy is an creative time for each woman. It carried out enjoyment of being able to upbringing an angel coupled with hardship that doesn't let her sleep till result of pregnancy. A gorgeous time which carried out a new live to the world, pregnancy convert lady from woman to mother. ¹

Dr. Stern proved that becoming a mother means of shifting of role from woman to mother during which she is experiencing both changes that are physical and psychological.²

Incidence of LBW highest in South Asia, India second highest in the world In 2013, as many as 22 million newborns—an estimated 16% of babies born globally—had Low Birth Weight, in conformity with the UNICEF. In terms of regional variations, South Asia had the highest incidence of LBW, with 28% newborns weighing less than 2.5 kg.³

Kangaroo embryo Baby are born very immature - as are human “premature” babies. It is in fact extremely premature, very tiny, about the size of a peanut. When it is born, the kangaroo baby has no hair and is called a PINKY. This means the pink skin of baby can be in direct contact with the inside of the pouch, which is mostly skin with very few hairs. Hence: skin-to-skin contact.⁴

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Kangaroo mother care is a skin-to-skin contact which is a part of revolution in premature infants care method defined as continuous (as close to 24 hrs./day as possible) skin-to-skin contact between mother and her infant, ensured by placing infant in a strictly upright position on mother's chest (kangaroo position). Nutrition is based on (but not limited to) breast milk. We can start KMC as soon as baby is stable, and receiving oral feeds.

A RCT was conducted among the 50 LBW babies at Krishna Hospital, Karad by Ms. S. Mane in 2012. Its result shows that the KMC was effective for maintaining temperature regulation, improving weight, LATCH and arousal regulation of LBW babies.⁸ As compare to this study I had evaluate maternal factors related to birth and care of LBW babies. Lactation was evaluated by using BBAT Scale. Mothers who delivered LBW baby, they are suffering from stress and anxiety and it may lead to poor lactation and latch. So there is demand to ameliorate breastfeeding, whereas it will help to improve health status of dyad and also helpful to achieve goal of the KMC.

Methodology

The true experimental design was used on 120 (60 in control group and 60 in experimental group) mothers of LBW newborn which were selected by simple random sampling technique, by using lottery method in KMC Ward at Krishna Hospital, Karad.

The study conducted on Mothers delivered baby ≤ 2.499 kg. birth weight. The tool used for collecting data was BBAT standardized scale. Data was collected from September 2018 to October 2018.

Formal permission was obtained from Ethical committee of KIMSUDU. The informed consent was taken from the respondents. Lactation was assessed before intervention for both groups. KMC was given to experimental group and rooming in, swaddling, breastfeeding were given to control group. KMC was started on 2nd day of delivery, for 8hrs. /day by $\frac{1}{2}$ to 1 hr. interval and each episode for 30 – 45min for 7 days. Post observation was assessed for both group on 7th day.

Results

The data was analyzed as per objectives of study:

- To assess effectiveness of KMC (Kangaroo Mother Care) on lactation among mothers of LBW (Low Birth Weight) newborn.

- To find an association between effectiveness of KMC on lactation with selected demographic variables.

Table No. 1 reveals that in KMC group there was improvement in BBAT scale by means of and significant effect found as $p (< 0.0001)$. In CMC group there was improvement in BBAT scale and significant effect found as $p (< 0.0001)$; but was not as more as KMC group, only some amount of lactation was improved as shows difference between pretest (Mean = - 3.300 and SD = 1.453) and posttest's (Mean = -1.083 and SD = 1.319). So as to compare CMC, KMC was effective to improve lactation.

There was significant association found between KMC and variables like age of the mother, Education, Parity, mode of delivery and Weight of the newborns at birth.

There was significant association found between CMC and variables like age of the mother, education (secondary), parity, mode of delivery, Weight of the baby at birth ($< 1.5\text{kg}$ to 2.499 kg) . There was no significant association found between primary and graduate education and weight of newborn ($P > 0.05$)

Table No. 1 – Pretest and Posttest mean and SD of BBAT (Bristol Breastfeeding Assessment Tool) scale of KMC group and CMC group

Group	Areas of analysis	Mean	SD	t-value	P – value
KMC Group	Pretest	3.833	1.416	17.590	< 0.0001 Extremely significant
	Post test	7.133	0.8919		
	Difference	-3.300	1.453		
CMC Group	Pretest	4.650	1.516	6.364	< 0.0001 Extremely significant
	Post test	5.733	1.614		
	Difference	-1.083	1.319		

Discussion

In a year, about 20 million infant with LBW are born worldwide which imposes a heavy burden on health care and social system in developing countries.⁶

In the past, parents of premature babies were excluded from care directly after birth, including the neonatal ICU. Now, it's known that separation causes harm to all babies – especially preterm infants and also its harmful for mother also.

In the present study there is amelioration in good latching and profuse breast milk secretion on 5th or 7th

day of KMC as effect of skin to skin contact similar findings were noted by the study done by Ramanathan K, Paul VK⁷ et.al. the result shows that, the number of mothers exclusively breastfeeding their babies at 6th to 7th day of KMC was double in the KMC group than in the control group (12/14 vs. 6/14) ($p < 0.05$). It suggest that Kangaroo mother care has positive effect on the success of the breastfeeding as well breastfeeding status after 5th or 7th day of KMC intervention and total breastfeeding duration.

In the present study breastfeeding was improved after providing KMC to interventional group. Similar findings were noted in the article from Iran Red Crescent Med J., which was written by Mohammad Heidarzadeh, Mohammad Bagher Hosseini et. al⁸. Results shows that 157(62.5%) mothers performed kangaroo mother care (KMC group) versus 94 (37.5%) in conventional method care (CMC group). In KMC group 98 (62.5%) mother's lactation was improved vs. 34 (37.5%) mothers in CMC group were present with improved lactation; but it was not as much as improved than KMC group as $P = < 0.0001$ for KMC group, at the time of hospital discharge. It suggest that Exclusive breastfeeding is essential components of Kangaroo Mother Care.

During data collection investigator come across with a fruitful experience by subject related to KMC effect, she said that there was increased breastmilk secretion than prior, after giving KMC. In a present study mother's had initially decreased milk production investigator observed that after giving KMC there was increase in their milk production as $p < 0.005$. Similar findings were noted in a randomized controlled trial conducted by Mrs. S. Mane⁵ at Krishna Hospital, Karad. Her results showed improved lactation as KMC was significantly effective than CMC as $p < 0.005$.

In the present study there was significant effect of KMC on Lactation after giving KMC than CMC group, the mean of BBAT Scale in pretest was 3.833 and SD 1.416 and in posttest it was mean 7.133 and SD 0.8919. In CMC group, the pretest mean of STAI Scale was 4.650 and SD 1.516 and in posttest it was mean 5.733 and SD 1.614. So KMC improve Lactation and it was improved in KMC group mothers than CMC group mothers. Similar findings were noted in a randomized control trial done by Mohammad Heidarzadeh, Mohammad Bagher Hosseini⁸ et. al. on The Effect of Kangaroo Mother Care (KMC) on Breast Feeding at the Time of NICU Discharge noted that in KMC mean = 27.75 ± 5.45 and

in CMC mean = 28.10 ± 6.03 respectively, as $P = 0.48$.

Conclusion

The study concluded that KMC is an effective method to improve lactation. This difference was significantly proven, as $P < 0.0001$.

The present study observed that mothers from KMC group had improved Lactation pattern as compare to CMC group ($P < 0.0001$) as per paired 't' test. Lactation improved in KMC group after giving KMC than before. Previously amount of milk was less; but after skin to skin contact amount of milk increased.

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