

To Evaluate the Effectiveness of Kangaroo Mother Care on Low Birth Weight Babies

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Abstract: *Objectives:* To Determine effect of kangaroo mother care on promotion of temperature regulation, weight, Latch and Arousal regulation of LBW babies, Determine the to determine the effect of kangaroo mother care on low birth weight babies and their mothers in experimental group versus control group, and to find an association between the effect of Kangaroo mother care on low birth weight babies of experimental group and their mothers with selected demographic variables. *Methodology:* Kangaroo Mother Care is an effective way to meet Low Birth weight babies Warmth, breast feeding, Latch, Arousal regulation and well being The present randomized controlled trial was conducted among the 50 LBW babies of Krishna hospital, Karad. Babies were randomized into KMC and CMC group with 25 babies in each group. *Results:* There is good effect of KMC from first day in Arousal, Latch and temperature regulation as compared to CMC. *Conclusion:* - KMC is cost effective, most acceptable and human method of caring for LBW babies.

Keywords: Kangaroo mother care, Low birth weight babies, temperature regulation, Latch, Weight and Arousal regulation

1. Introduction

Caring for LBW infants imposes a heavy burden on poor countries; an effective healthcare technique developed in 1978 may offer a solution to this problem and additionally be of use in wealthy countries too KMC is a special way of caring of LBW babies. It fosters their health and well being by promoting effective thermal control breast feeding, infection prevention and bonding. In KMC, the baby is continuously kept in skin to skin contact by the mother and breastfeed exclusively to the almost extent. KMC is initiated in the hospital and continued at home. The two components at KMC care.

- 1) Skin to skin contact: Early continues and prolonged skin to skin contact between the mother and her baby is the basic component at KMC. The infant is placed a mother's chest between the breast.
- 2) Exclusive breast feeding: The baby on KMC is breastfeed exclusively skin to skin contact promotes lactation and facilitates the feeding interaction KC is a scientifically sound and socially acceptable method.[1]

The name KC has arised because the kangaroo's babies are also prematures and their full growth and development occurs in the mothers kangaroo's pouch. One teat is attached to the pouch and it nourishes joy by mother's milk. The mother is the responsible person to take care of her baby and to meet the specific basic needs of the baby, which includes low, touch, warmth, safety and security, KC is believed to be beneficial to both infants and parents.[2]

2. Problem Statement

"A study to evaluate the effectiveness of kangaroo mother care on low birth weight babies at Krishna Hospital, Karad."

3. Objectives

- To Determine effect of kangaroo mother care on promotion of temperature regulation, weight, Latch and Arousal regulation of LBW babies
- To determine the effect of kangaroo mother care on low birth weight babies and their mothers in experimental group versus control group.
- To find an association between the effect of Kangaroo mother care on low birth weight babies of experimental group and their mothers with selected demographic variables.

4. Literature Survey

The reviewed literature for the present study:- A randomized trial study on "effect of kangaroo mother care on breast feeding "conducted by Vanacio In Pennsylvania, among selected 68 full term babies administered with 36 babies were selected for KC and 32 for standard care. Objective: Observation technique was used in the study for detecting number of breast feeding and milk production. The result showed that, the babies who had skin to skin contact shows increase in breast milk production. It concluded that kangaroo had a positive impact on breast feeding.[3]

An experimental study on "new born temperature during skin to skin care in mothers having breast feeding difficulties" conducted by chiu SH. Full term infants were selected and presided continues skin to skin contact for 4 hours a day. Results showed that 42 (87.5%) infants maintained temperatures between 36.5 and 37.6⁰C and concluded that in addition to the temperatures maintenance the new born infants safely breast feed in skin to skin contact with their mothers.[4]

5. Materials and Methods

The present randomized controlled trial was conducted among the 50 LBW babies of Krishna hospital, Karad, Babies were randomized into KMC and CMC group with 25 babies in each group. An evaluative research

6. Results

Analysis and interpretation of the data was based on the projected objectives of the study viz.

- 1) Determine effect of kangaroo mother care on promotion of temperature regulation, weight, Latch and Arousal regulation of LBW babies.
- 2) Determine the To determine the effect of kangaroo mother care on low birth weight babies and their mothers in experimental group versus control group

- 3) To find an association between the effect of Kangaroo mother care on low birth weight babies of experimental group and their mothers with selected demographic variables.

7. Organization of Study Findings

- 1) Sample characteristics
- 2) GroupWise distribution of the temperature, arousal regulation, weight and latch.
- 3) Association between KMC and CMC with selected sociodemographic variables of temperature, weight, arousal and latch.

Table 1: Group Wise mean median, SD of Arousal regulation in LBW babies

Group	Particulars	Day I	Day II	Day III	Day IV	Friedman test (P.Value)
C M C	Mean ±SD	3.2 ± 1.47	3.8 ±1.80	3.5 ±1.71	2.2 ±1.16	16.071 (0.0011)
	Median	3.00	3.00	4.00	2.00	
K MC	Mean ±SD	2.4 ± 1.41	2.6 ±1.82	1.8 ±1.33	2.0 ±1.86	4.514 (0.2110)
	Median	2.00	2.00	2.00		
Mann/Whitney test value		213	177.00	121.50	185.00	
P. value		0.0532	0.0084	0.0002	0.0133	

The findings of the table reveal that there is constant reduction in state of Arousal regulation from Day first to Day fourth in CMC group as significance effect of CMC

Table 2: GroupWise mean median, SD of Latch in LBW babies

Group	Particulars	Day I	Day II	Day III	Day IV	Friedman test (P.Value)
C M C	Mean ± SD	5.0 ± 1.80	5.8 ± 1.59	6.7± 0.93	6.7± 0.92	34. 668 (< 0.0001)
	Median	5.00	6.00	7.00	7.00	
K MC	Mean ±SD	5.4 ± 1.53	6.7± 1.27	7.2 ± 0.92	7.6 ± 1.10	41.190 (< 0.0001)
	Median	5.00	7.00	7.00	7.00	
Mann / Whitney test value P. value		265 0.3658	210 0.0470	210 0.0464	175 0.0076	

The finding of the table reveals that there is constant increase in Latch score from Day first to Day four on CMC group.

Table 3: GroupWise mean median, SD of weight in LBW babies

Group	Particulars	Day I	Day II	Day III	Day IV	Ordinary ANOVA test value (F. value) (P.Value)
CMC	Mean ± SD	2.2 ±0.21	2.1±0.28	2±0.32	2±0.31	1.363
	Median	2.20	2.18	2.14	2.18	
K MC	Mean ±SD	2.2±0.14	2.2±0.13	2.1±0.15	2.1±0.19	5.616
	Median	2.29	2.23	2.19	2.18	
Unpaired t test value		1.262	1.731	1.665	0.5862	
P. value		0.2130	0.0898	0.1024	0.0201	

The findings of the table reveal that there is no significant effect on weight in KMC.

Table 4: GroupWise mean median, SD of Temperature in LBW babies

Group	Particulars	Day I	Day II	Day III	Day IV	Ordinary ANOVA test value (F. value) (P.Value)
C M C	Mean ± SD	97.4±0.74	97.2±0.68	97±1.08	97±0.69	0.9451 (0.3611)
	Median	97.1	97.1	97	97.1	
K MC	Mean ±SD	97.5±0.99	97.9±0.80	97.8±0.61	98.2±0.61	3.152
	Median	97.6	98	98.6	98.1	
Unpaired t test value P. value		0.7871 0.4351	3.498 0.0010	3.348 0.0016	6.385 <0.0001	

The findings of the table reveals that there is constant temperature but it is less than normal temperature and no significant in temperature

8. Result

8.1 KMC and Temperature

In the present study it was observed that temperature regulation was more stable in the KMC group and this difference when compared to the CMC group and this difference was statistically significant.

8.2 KMC and weight

In the present study there is no significant effect on weight of LBW baby's in KMC compared to CMC group as p is 0.2589. It may be because of the physiological changes in the first week of birth.

8.3 KMC and Arousal regulation

In the present study there is significant effect on state of Arousal regulation of LBW babies in KMC compared to CMC group as p is 0.0532

8.4 KMC and Latch

In the present study there is a good Latch and profuse formation milk secretion even on first day of skin to skin contact as p is <0.0001 and also initiation of direct breast feed was earlier in the KMC group compared to CMC group. The findings indicate that KMC enhances promotion of breast feeding.

9. Conclusion

In the present study it was observed that temperature regulation was more stable in the KMC group than CMC group. There is no significant effect on weight of LBW baby's in KMC compared to CMC group. It may be because of the physiological changes in the first week of birth. There is significant effect on state of Arousal regulation of LBW babies in KMC compared to CMC group. There is a good Latch and profuse formation milk secretion even on first day of skin to skin contact. And also initiation of direct breast feed was earlier in the KMC group compared to CMC group. The findings indicate that KMC enhances promotion of breast feeding. Hence KMC is cost effective, safe, most acceptable method of caring for LBW babies.

10. Discussion

In present study there is significantly decrease in Arousal state from the first day in KMC as compared to CMC. Similar findings of the cerebral oxygenation response during Kangaroo mother care in low birth weight babies conducted by Esmot A et al shows that Baby with KMC is quiet sleep states.[5]

In present study mother were having initially decreased milk production felt that after giving KMC there was increase in their milk production. Similar findings an open randomized

controlled trial in bogota Colombia, has demonstrated increased duration as well as increased milk production in mothers giving KMC.[6]

11. Future Scope

a) Nursing Implication:

The findings of this study have implications for nursing practice, nursing education, nursing administration and nursing research.

b) Nursing Practice

The practice of kangaroo mother care needs to be encouraged in all postnatal wards, NICU and can be continued by the mother at home.

c) Nursing Administration

The findings of the study will help the nurse administrator to organize more workshops, panel discussion, short-term refresher courses and health education programme for nurses.

d) Nursing Research

Research suggests that early skin to skin contact is key to successful breastfeeding initiation it uses immediately after birth is rare.

e) Nursing Education

The institutes of nursing education should play an active role in conducting in-service education programme, workshops and continuing education programmes to educate nursing personnel of the hospital regarding kangaroo mother care

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