

Original research article

The Study of Knowledge, Attitude and Practices of Kangaroo Mother Care Among Mothers of Neonates Weighing 1500-2500g, Admitted in SNCU

¹Dr. Manali Saurabh, ²Dr. Chippy Haridas, ³Dr. Jagdish Avtar Nagar,
⁴Dr. Rajendra Kumar Gupta

¹Senior Resident, Department of Paediatrics, SHKBMH, Jhalawar Medical College, Jhalawar

²Postgraduate Resident, Department of Paediatrics, SHKBMH, Jhalawar Medical College, Jhalawar (Corresponding Author)

³Postgraduate Resident, Department of Paediatrics, SHKBMH, Jhalawar Medical College, Jhalawar,

⁴Senior Professor & HOD, Department of Paediatrics, SHKBMH, Jhalawar Medical College, Jhalawar

Corresponding Author: Dr.Chippy Haridas.

Abstract

Background: Neonates with weight less than 10th percentile or more than 2 SD below the mean for the gestation age are classified as small for gestational age. This group of neonates with poor intra uterine growth remains the cause of concern in developing countries including India.

Materials and Methods: 220 mothers of neonates with birth weight 1500-2500gms, admitted in neonatal unit of Shreemati Heera Kunwar Baa Mahila Hospital, Jhalawar Medical College, Jhalawar over a period of 1 year.

Results: Data were analyzed according to the objectives of the study using descriptive and inferential statistics. In present study, 80.00% babies birth weights were 2-2.5kg. In present study, 19.10% women knew regarding KMC. Regarding the benefits of kangaroo mother care to the baby, 156 (70.90%) responded that KMC mainly helps to maintain the body temperature warm, 20(9.90%) for frequent feeding and 44 (20.00%) didn't know the main use of KMC. All mothers feel close to baby, 218 mothers feel confident. 216 mothers were willing to continue KMC at home.

Conclusion: The potential effect of KMC will be seen in mothers with positive attitude if their knowledge will be improved by attitude of neonatal nurses and staff which can improve the practice of KMC worldwide with better results in all fields of the baby whether it is physiological parameters, developmental and cognitive ability improvement of babies is concerned.

Keywords: Kangaroo Mother Care, Low Birth Weight (LBW)

Introduction

Health is to be "a state of complete physical, mental and social wellbeing and not merely the absence of diseases or infirmity". This is the main objective of health services including maternal and child health of our nation. Birth weight is a good reflector of the status of maternal health. It is also true that birth weight is the single most important factor that affects neonatal mortality and morbidity, infant and childhood morbidity.¹

Birth weight may be classified as:²

- Normal weight (term delivery): 2,500–4,200 g (5 lb 8 oz–9 lb 4 oz)
- Low birth weight: less than 2,500 g (5 lb 8 oz)
- Very low birth weight: less than 1,500 g (3 lb 5 oz)
- Extremely low birth weight: less than 1,000 g (2 lb 3 oz)

Globally, babies with low birth weight, and preterm accounts 25 and 15 million, respectively. Almost all of them (96%) are in developing countries. They rates are highest in Africa which has 12% of the world's population but over 25% of the world's new-born deaths^{3,4} Almost 1 million children die due to complications of preterm birth. Low birth weight refers to birth weight below 2500 gm⁵. Preterm is defined as babies born alive before 37 completed weeks of gestation. Here are three sub-categories of preterm based on gestational age: Extremely preterm (<28 weeks), Very preterm (28 to< 32 weeks) and moderate to late preterm (32 to< 37 weeks).⁶ Low birth weight and prematurity are strongly associated with neonatal morbidities and mortality. Neonatal hypothermia is an important challenge associated with morbidity and mortality⁷

Kangaroo mother care is care of preterm infants carried skin-to-skin with the mother. It is a powerful, easy-to-use method to promote the health and well-being of infants born preterm as well as full-term. It was invented by Dr. Rey in 1978 and developed by Dr. Martinez and Dr. Navarrete until 1994, when the Kangaroo Foundation was created. Initially KMC was developed as response to overcrowding, and Lnsu^ucLent resources in neonatal intensive care units. But today KMC is formally endorsed by WHO⁸

KMC has a lot of benefits to the mother, for the preterm and low birth weight infants, for the institution, and for the community at large. For mothers, it increases milk volume, double rates of successful breastfeeding, feelings of confidence competence, and satisfaction regarding baby care. For preterm and LBW infant, it normalizes temperature, heart rate, respiratory rate, and strengthens the infant's immune system. It also reduces physiologic and behavioral pain responses, increases weight gain and enhances mother-infant bonding. Furthermore, it has Positive effects on infant's cognitive development, less nosocomial infection, and earlier discharge.⁹

KMC includes empowering the mother to care for her LBW infant, decreasing infant mortality, encouraging breast feeding and reducing the frequency of LBW babies visiting clinics after discharge from hospitals. KMC has shown to improve lactation in mothers, boost the physiological bonding between mother and neonate, improve sleep cycle and oxygenation in sick preterm' s and reduces the apneic spells.¹⁰

The beneficial effects of KMC on babies such as, stabilization of vital parameters (heart rate, respiration and oxygen saturation), better weight gain, improved survival and adequate thermoregulation has been documented world over and so is improved maternal confidence and lactation.¹¹ It also reduces physiologic and behavioral pain responses, increases weight gain and enhances mother-infant bonding. Furthermore, it has positive effects on infant's cognitive development, less nosocomial infection, and earlier discharge.¹²

The implementation of KMC also focuses on the decision-making process, which depends not only on the mother's desire and willingness, but also on the support provided by the family network and empathetic health care teams.¹³

Aims and Objective:

To study knowledge, attitude and practices of kangaroo mother care among the mothers of neonates of birth weight 1500-2500g, in SNCU, SHKBMH Jhalawar Medical College, Jhalawar. To Assess the level of knowledge, attitude and practices of kangaroo mother care in mothers of neonates. To correlate the level of change in the same; before and after the hospital stay.

Materials and Methods:

Source of Data: Mothers of neonates with birth weight 1500-2500gms, admitted in neonatal unit of Shreemati Heera Kunwar Baa Mahila Hospital, JMC, Jhalawar over a period of 1 year.

Type of the study: Prospective Observational Hospital based time bound study.

Sample Size: 220 (as per admissions in SNCU)

$$n = t^2 \times P \times (1-P) / e^2$$

$$t = 95\% \text{ confidence interval } \{t=1.96\}$$

P = Prevalence of admissions of neonates 1500-2500gms

Inclusion Criteria:

Mothers with low-birth-weight neonates (1500-2500gms)

Mothers who are willing to participate

Mothers available at the time of data collection.

Exclusion Criteria:

1. Mothers who are not willing to participate.
2. Mothers of neonates of birth weight >2500g.

Duration of the study: 1 Year

Method of Data Collection:

- Mothers of neonates of satisfying inclusion criteria admitted in SHKBM Hospital, Jhalawar were included in study.
- Written consent was obtained from the mother.
- Assessment of knowledge and perception were evaluated with help of a questionnaire.
- A detailed information and practice session of KMC organized.
- The change in behavior and perception was accessed with help of another questionnaire.

Kangaroo position:

Place the baby between the mother's breasts in an upright position, chest to chest. Secure him with the binder. The head, turned to one side, is in a slightly extended position. The top of the binder is just under baby's ear. This slightly extended head position keeps the airway open and allows eye-to-eye contact between the mother and the baby. Avoid both forward flexion and hyperextension of the head. The hips should be flexed and extended in a "frog" position; the arms should also be flexed. Tie the cloth firmly enough so that when the mother stands up the baby does not slide out. Make sure that the tight part of the cloth is over the baby's chest. Baby's abdomen should not be constricted and should be somewhere at the level of the mother's epigastrium. This way baby has enough room for abdominal breathing. Mother's breathing stimulates the baby.^{14,15}



Figure 1 : Correct Position of KMC

Babies can receive most of the necessary care, including feeding, while in kangaroo position. They need to be moved away from skin-to-skin contact only for:

- Changing diapers, hygiene and cord care; and
- Clinical assessment, according to hospital schedules or when needed.

The following points must be taken into consideration when counselling on KMC:

- Willingness: the mother must be willing to provide KMC.
- Full-time availability to provide care: other family members can offer intermittent skin-to-skin contact but they cannot breastfeed.
- General health: if the mother suffered complications during pregnancy or delivery or is otherwise ill, she should recover before initiating KMC.
- being close to the baby: she should either be able to stay in hospital until discharge or return when her baby is ready for KMC
- supportive family: she will need support to deal with other responsibilities at home

Danger signs¹⁶:

- Difficulty breathing, chest in-drawing, grunting
- Breathing very fast or very slowly
- Frequent and long spells of apnea
- The baby feels cold: body temperature is below normal despite rewarming
- Difficulty feeding: the baby does not wake up for feeds anymore, stops feeding or vomits
- Convulsions
- Diarrhea
- Yellow skin



Figure 2 : Mothers Practising KMC in SNCU

Observations And Results :

In present study, 19.10% women knew regarding KMC.

Table 1: Knowledge Regarding KMC wise distribution

Knowledge Regarding KMC	No of cases	Percentage
Heard regarding KMC	42	19.1
Not heard regarding KMC	178	80.9
Total	220	100

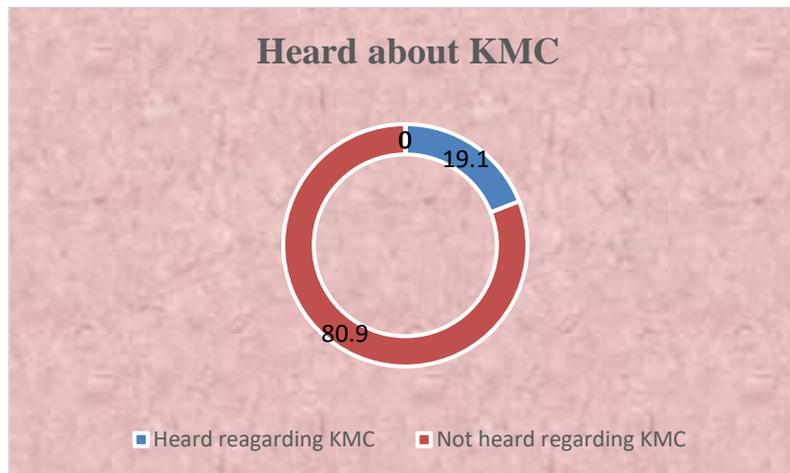


Chart 1 : Knowledge Regarding KMC wise distribution

Regarding the benefits of kangaroo mother care to the baby, 156 (70.90%) responded that KMC mainly helps to maintain the body temperature warm, 20(9.90%) for frequent feeding and 44 (20.00%) didn't know the main use of KMC.

Table 2: Knowledge Regarding benefits of KMC wise distribution

Benefits	No of cases	Percentage
Maintain body temp.	156	70.9
For frequent feeding	20	9.9
Not known	44	20
Total	220	100

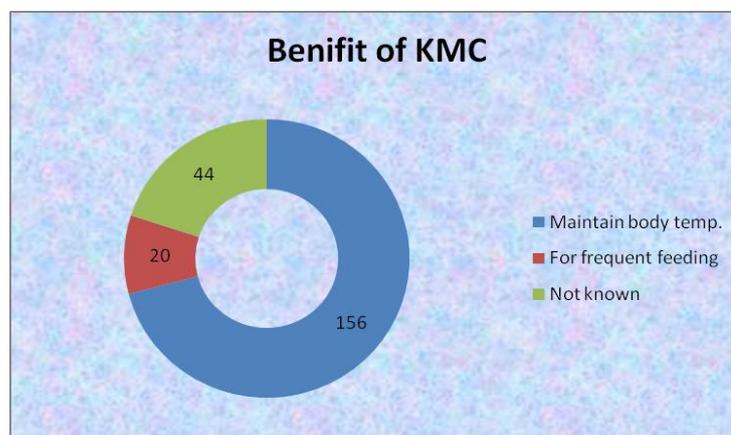


Chart 2 : Knowledge Regarding benefits of KMC wise distribution

All mothers feel close to baby, 218 mothers feel confident.

Table 3: Attitude regarding various aspect of KMC wise distribution

Attitude	No of responds	
	Yes	No
Did you feel close to baby	220	0
Mother feel confident	218	2

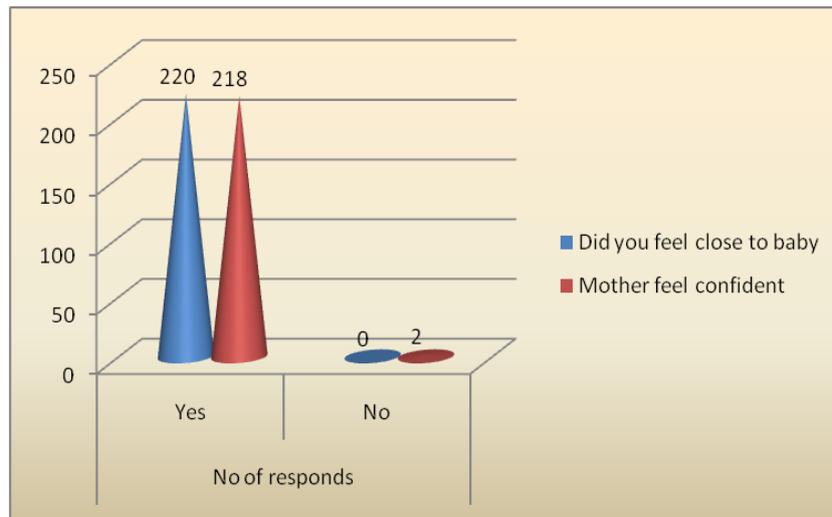


Chart 3 : Attitude regarding various aspect of KMC wise distribution

216 mothers were willing to continue KMC at home.

Table 4. Practice regarding various aspect of KMC wise distribution

Practice	No of responds	
	Yes	No
Continue at home	216	4

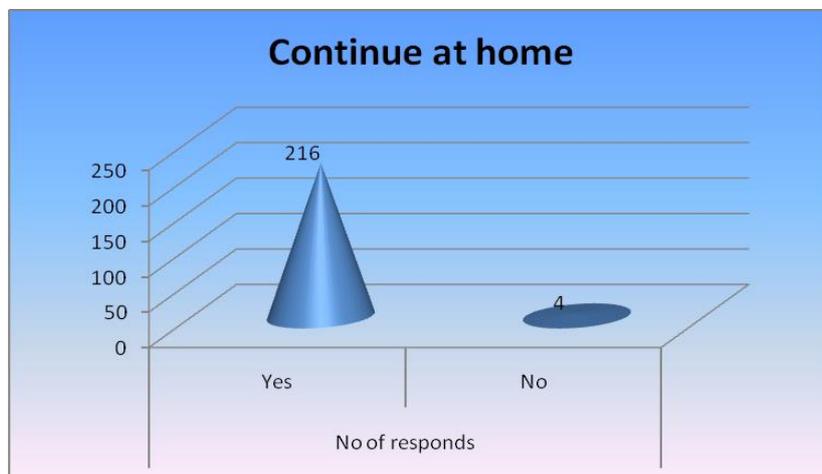


Chart 4 : Practice regarding various aspect of KMC wise distribution

Discussion:

The understanding about the procedure of KMC is crucial to ensure the best care for the baby. The psychobiological system implicated in the process of attachment has been associated with oxytocin, a hormone released during parturition and nursing as well as during contact, touch, and fondling. Oxytocin has been shown to play a role in the initiation of maternal affiliative behaviour and to affect positively the mother's mood.

In present study, 38.64 % patients maternal age was more than 30 Yrs. 45.00 % cases maternal education was illiterate. 45.00 % cases mothers were working. 70.00 % patients belonged to middle class.

Roba AA et al¹⁷ was found that a total of 349 postnatal mothers with preterm and low birth weight were participated in this study. Religion of Muslim, Orthodox Christian and protestant constitute 51.24%, 38.02% and 7.44% of study participants. The mean family's monthly income was 2127 Ethiopian Birr (97 USD). The mean family size was six.

Rakesh Kumar Shah et al shows the socio basic characteristic of the study participants. Mean age of participants was 29.1 year (SD= 8.51) and 71% of them were female.

Gulati P et al¹⁸ was found that most of them are in the age group of 25-30 years. In present study, 75.00% deliveries were normal vaginal delivery and most of the mothers delivered via normal vaginal delivery (67.8%) compared to lower segment caesarean section (32.2%). Regarding the benefits of kangaroo mother care to the baby, 156 (70.90%) responded that KMC mainly helps to maintain the body temperature warm, 20(9.90%) for frequent feeding and 44 (20.00%) didn't know the main use of KMC in our study.

Study conducted by **Rosant C. at** University of the Western Cape in Eastern Sub-district, Cape Town found that the majority of nursing staff had some knowledge of the advantages of KMC, appreciated its value and had a positive attitude towards KMC.⁷²

Similarly, Bang KS in a study done in the hospitals of Korea mentioned that nurses and doctors agreed that Kangaroo mother care promoted attachment and parental confidence as well as physical health of the infants.

Study by Strand et al. in the neonatal intensive care unit found that staff working in the NICU that gave unrestricted access was more positive about KMC.

Conclusion:

This evidence is sufficient to recommend the routine use of KMC in facilities for all stable babies <2.5 kg at birth. The potential effect of KMC will be seen in mothers with positive attitude if their knowledge will be improved by attitude of neonatal nurses and staff which can improve the practice of KMC worldwide with better results in all fields of the baby whether it is physiological parameters, developmental and cognitive ability improvement of babies is concerned.

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