Editorial

Implementation of Kangaroo Mother care for low birth weight babies: supportive factors and barriers perceived by mothers

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Abstract

Introduction: Kangaroo mother care (KMC) consist of prolonged skin to skin contact between mother and infant and exclusive breastfeeding. It was originally developed to prevent hypothermia and to enhance bonding between mother and Infant. **Methods:** It was a questionnaire based cross sectional observational study. Questionnaire was prepared by authors in local native language and was validated by experts; mothers with babies fit for KMC were enrolled and interviewed with a predefined proforma having both open and close ended questions with their demographic details. **Results:** More than half (54%) of the mothers had no knowledge about KMC during their pregnancy. About 46% of them were made aware by their doctors (82.6%) or their relatives (mother/elder sisters). Most mothers get help from nursing staff (98%) and they felt that environment was conducive for the practice of KMC (70%) and they got help from other mothers (74%) and family members (84%). Barriers were pain due to stitches (44%), unfavorable condition to perform KMC (29.4%), fatigue/fear while performing KMC (16.3%), difficulty due to twins (9.8%). Pain/fatigue (53.75%) is the barrier to KMC according to the mothers; about 30% mothers felt temperature as a barrier while practicing KMC. **Conclusion:** They believed that their babies will become healthier and can feed easier after initiation of KMC. Inspiration from family members or other mothers are also an enabler of KMC. Lack of support from family members, other mothers as well as from nursing staff in some cases, this barrier can be improved by training of their family members.

Keywords: Barriers, Breast feeding, Kangaroo Mother Care, Low birth weight

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Introduction

World health organisation defines kangaroo mother care as KMC consist of prolonged skin to skin contact between mother and infant, exclusive breastfeeding whenever possible [1]. KMC was originally developed to prevent hypothermia in infants, promote exclusive breastfeeding and to strengthen the mother-infant bonding. KMC is an evidence-based approach to reduce mortality and morbidity in preterm and LBW infants [2,3].

Among newborns who were clinically stable, kangaroo mother care reduces mortality and if widely practiced it helps in weight gain could reduce deaths in preterm newborns [4]. KMC is steadily increasing in high-tech settings due to its proven benefits for both infants and mothers [5]. KMC can be started in hospital and if necessary, and continued at home, for as long as the infant needs it for temperature control, which can be up to term age. To adequately implement and effectively scale-up this intervention it is critical to understand the key factors that contribute to a mother's ability/inability to practice KMC. However inspite of the evidences and adoption, implementation of KMC has been limited and global coverage remains low.

Therefore, this study was planned at a tertiary care teaching hospital in central India to assess the supportive factors and barriers perceived by mothers during implementation of KMC.

Objectives

To find out the factors supporting initiation and practice of KMC and to find out the barriers perceived by mothers to implement and continue KMC.

Manuscript received: 6th February 2018
Reviewed: 16th February 2018
Author Corrected: 24th February 2018
Accepted for Publication: 28th February 2018

Methodology

This was a Questionnaire based cross sectional observational study that was conducted in department of pediatrics of a teaching hospital in central India, catering predominantly urban slums. During this study period once the babies were fit for KMC his/her mother was enrolled in the study after taking the written informed consent.

Enrolled mothers were sensitized about the advantages of KMC by one to one talk and audiovisual aids. After 3 days of KMC practice mothers were interviewed with the help of a predefined proforma having both open and close ended questions with their demographic details. Questionnaire was in native language which was easily understandable to the mothers. Appropriate statistical methods were applied and analysis was done. Study was started after getting approval from institutional ethical committee.

Inclusion criteria: Mothers of babies with birth weight <2.5kg requiring admission in NICU or Step down nursery and gave consent for enrollment in the study.

Exclusion Criteria: Mothers who didn't follow KMC practices for at least 3 days. Primary outcome to be measured: To identify supportive factors and barriers for practicing KMC as perceived by mothers of low birth weight babies. Statistical analysis Data were analyzed using relevant statistical tests after cleaning and coding.

Result

Among 50 mothers interviewed their mean age was 24.8 years (SD=2.82) and mean gestational age was 33.5 weeks (SD=2.00). Their babies sex ratio was almost equal. Majority of delivery done was normal (60%) Many of them belong to joint family (68%) having income more than Rs 5000/month (72%) and reside in the urban locality (62%). Most of the mothers completed their education up to higher secondary (78%) [Table-1].

Table-1: Demographic characteristics of mothers interviewed in the study.

		Number (N=50)	%
1. Gender of the baby	Female	22	44
	Male	28	56
2. Type of delivery	Normal	30	60
	Caesarean section	20	40
3. Type of family	Nuclear	16	32
	Joint	34	68
4. Income	<5000rs	14	28
	>5000rs	36	72
5. Residency	Urban	31	62
	Rural	19	38
6. Mother's education	Illiterate	0	0
	Primary	9	18
	High school	12	24
	Higher secondary	18	36
	Graduate	10	20
	Post graduate	1	2
7. Type of feeding	Mother's milk	41	82
	Formula milk	3	6
	Mixed	6	12

Majority of the mothers feed their own milk to the baby (82%). Most of the mothers started practicing KMC when their babies were <7days (44%). Total duration of KMC per day was between 2 to 4 hrs (62%), and duration per sitting were 1-2hrs. None of them performed KMC during nights [Table-2].

Table-2: Practice of KMC.

	Duration	N=50	%
1. when KMC was started(days)	<7days	22	44
	7-14 days	25	50
	>14 days	3	6
2. Total duration of KMC done per day	1- <2 hrs	12	24
	2-4 hrs	31	62
	>4hrs	7	14
3. Duration of KMC done per sitting	<1 hr	22	44
	>1 hr	28	56
4. Performance of KMC during nights	Yes	0	0
	No	50	100

More than half (54%) of the mothers had no knowledge about KMC during their pregnancy. About 46% of them were made aware by their doctors (82.6%) or their relatives (mother/elder sisters). Majority of them got help from nursing staff (98%) and they felt that environment was conducive for the practice of KMC (70%) and they got help from other mothers (74%) and their family members (84%) [table-3].

Table-3: Factors promoting initiation/inhibition of performance of KMC.

		Number (n=50)	%
1. Knowledge about KMC during pregnancy	Yes	23	46
	No	27	54
Knowledge given by	Doctors	19	82.6
	Others (family members)	4	21.7
2. Did mother get help from nursing staff	Yes	48	96
	No	2	4
3. Is environment conducive for KMC	Yes	35	70
	No	15	30
4. Did mother get help from other mothers	Yes	37	74
	No	13	26
5. Did mother get help from other family members	Yes	42	84
	No	8	16

Mothers perceived that KMC practice made them feel more attached towards the baby (48.75%), they believed that baby will become healthier (24.39%), they can feed easily while doing KMC (23.17) and baby temperature is maintained throughout the practice of KMC (4.8%). They felt pain in the stitches, fatigue, hot and humid climate and difficulty while practicing KMC acted as the barriers [Table-4].

Table-4: Perception of mothers to KMC.

		Number (N=50)	%
Why KMC is important for you	I felt more attached to baby	24	48.75
	I felt baby will become healthy sooner (gain weight)	12	24.39
	I could feed easily and much more amount of milk started to come	11	23.17
	Baby's temperature is maintained	3	4.8
		Number(N=50)	%
What are the barriers during performance of KMC	Pain due to stitches (LSCS/episiotomy)	22	44.26
	Uncomfortable environment (hot and humid)	15	29.4
	Fatigue	8	16.3
	Difficulty due to twins	5	9.8

By interviewing 50 mothers we found that majority of mothers (92%) felt good after practicing KMC, many of them disagreed that their workload increased by doing KMC (78%) and their knowledge about KMC is enhanced after the training (88%). They felt that more milk has started to come while practicing KMC. Many of them (56%) declined that practicing KMC can cause injury either to their babies (56%) or to their stitches (64%) [Table-5].

Table-5. Likert scale.

Perception	Response	N	%
Mothers felt good after doing KMC	Strongly disagree	0	0
	Disagree	2	4
	Neutral	2	4
	Agree	33	66
	Strongly agree	13	26
Mothers' workload is increased due to KMC	Strongly disagree	8	16
	Disagree	25	50
	Neutral	6	12
	Agree	11	22
	Strongly agree	0	0
There is an enhancement of the knowledge of mothers after KMC	Strongly disagree	0	0
	Disagree	0	0
	Neutral	6	12
	Agree	27	54
	Strongly agree	17	34
More milk has started to come after doing KMC	Strongly disagree	0	0
	Disagree	6	12
	Neutral	16	32
	Agree	15	30
	Strongly agree	13	26
Mothers felt that KMC can cause injury to the baby	Strongly disagree	8	16
	Disagree	20	40
	Neutral	8	16
	Agree	14	28
	Strongly agree	0	0
Mothers felt that KMC can cause injury to their stitches (LSCS/episiotomy)	Strongly disagree	15	30
	Disagree	17	34
	Neutral	3	6
	Agree	13	26
	Strongly agree	2	4

Discussion

In the present study, most important factor promoting initiation of KMC is the attachment with infants KMC (48.75%) which is quite similar and comparable to other studies [2,6]. Such percentage can be increased by proper counselling of expectant mother and family members. About 24.39% of mothers believed that their baby will become healthier and will gain weight that is found to be true in several studies and had better effect on daily weight gain [7]. Better and easier breastfeeding is a good enabler of KMC according to 23.17% of the mothers. Various researchers showed a significant positive effect on early breastfeeding and its duration. Studies have been reported that KMC had a greater positive effect on success rate than first breastfeeding itself [9]. Some mothers also believed that the baby's temperature is also maintained while practicing KMC. Proper warmth and temperature is provided by skin to skin contact with the babies. The results are comparable about the mothers perception on babies temperature regulation by KMC in other studies [10,11,12].

Other factors supporting initiation of KMC are support from family members other mothers of the hospital, help of the nursing staff and knowledge about the KMC during pregnancy which was quite similar to study by Seidman et al., in which support from the family is one of the top five enablers of KMC (72%) [13,14,15].

Apart from these many factors such as attachment with the baby, easier feeding, hope of becoming healthier, sooner discharge from the hospital, inspiration from mothers and doctors helped to enable the KMC.

There are certain barriers that mothers faced during KMC are pain due to stitches (44%), unfavorable condition to perform KMC (29.4%), fatigue/fear while performing KMC (16.3%), difficulty due to twins (9.8%). Pain/fatigue (53.75%) is the fourth barrier to KMC according to the mothers, about 30% mothers felt temperature as a barrier while practicing KMC. The barriers are quite comparable to few studies [16,17,18].

Other barriers include lack of knowledge about KMC, lack of support given to the mothers by their family members (26%), by other mothers in the ward (36%), nursing staff (4%) which was quite similar as per Smith et al., study in which 24% mothers felt, lack of help with KMC practice and other obligations as a barrier.

These barriers were identified too in available published literature [19]. Hot and humid climate is also one of the barrier for KMC that can be ruled out by making a separate KMC room that will maintain the temperature as well as privacy of the mother.

Difficulty in practicing KMC due to twins can be overcome by counselling their family members and by teaching them to perform KMC among themselves similarly pain due to stitches can be decreased by several counselling to the mother and showing them proper method to perform KMC. Anti-natal knowledge about the KMC is also one of effective ways to initiate KMC.

Conclusion

Factors supporting initiation of KMC are that mothers felt more attachment, calm and happier after KMC. They believed that their babies will become healthier and can feed easier after initiation of KMC. Inspiration from family members or other mothers are also an enabler of KMC.

Present study concludes that the lack of knowledge during pregnancy is one of the reason behind lack of practice of KMC. Other reasons include lack of support from their family members, other mothers as well as from nursing staff in some cases, that can be improved. Lack of support/promotion from family members is also an important barrier for the mother that can be improved by training of their family members.

Authors Contribution:

Dr Dinesh Mekle: Questionnaire preparation, Study design, Data entry monitoring. Dr Rajesh Patil: Questionnaire preparation, Manuscript preparation, Data analysis. Pratibha Jha: Data collection and entry, educating the mothers

What this study adds:

There is paucity of literature available on KMC practices in central India about how mothers perceived KMC. What are the common problems faced while practicing KMC. This study adds the knowledge of mothers about perception and barriers of KMC practice in central part of India.

Abbreviations

KMC: Kangaroo Mother Care, **LBW:** Low Birth Weight¸ **NICU:** Neonatal Intensive Care Unit, **LSCS:** Lower Segment Caesarean Section

Funding: Nil, **Conflict of interest:** None initiated, **Perission from IRB:** Yes

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How to cite this article?

Mekle D, Patil R, Jha P. Implementation of Kangaroo Mother care for low birth weight babies: supportive factors and barriers perceived by mothers. Int J Pediatr Res. 2018;5(2):87-92. doi:10.17511/ijpr.2018.i02.08.

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