

Knowledge Regarding Importance of Kangaroo Mother Care for LBW Babies among Staff Nurses

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Abstract

Background: Kangaroo mother Care (KMC) is a type of care for low birth weight (LBW) babies whereby the LBW baby is placed in an upright position against the mother's chest, with early skin-to-skin contact between the mother and infant. Despite the apparent feasibility of KMC, currently, only a few low birth weight babies in low-income countries have access to this intervention. Therefore, present study aimed to assess the effectiveness of self instructional module (SIM) on knowledge regarding importance of KMC among staff nurses at Geetanjali & Pacific hospital, in Udaipur. **Method:** Quantitative Pre-experimental research design was selected to conduct study. Only 80 staff nurses were selected as samples based on exclusion and inclusion criteria through non-probability convenient sampling techniques. **Results:** The mean post-test knowledge score 25.71 (91.82%) was apparently higher than the mean pre-test knowledge score 12.3 (43.93%). The calculated "t" value of 19.47 was significantly higher than the table value 1.96 at 0.05 level of significance. This indicates that there was significant difference in pre test and post test knowledge score of respondents and SIM was effective in increasing the knowledge of the respondents regarding importance of KMC for LBW babies. There was a significant association between knowledge of staff nurses and demographic variables such as Age in years ($\chi^2= 10.473$), Work experience ($\chi^2= 10.196$). **Conclusion:** Self instructional module was effective in improving the level of knowledge of staff nurses regarding Kangaroo Mother Care (KMC).

Keywords: Self Instructional Modules; Staff Nurses; Low Birth Weight Babies; Kangaroo Mother Care.

Introduction

Nearly 20 million low-birth-weight (LBW) babies are born each year, because of either preterm birth or impaired prenatal growth, mostly in developing countries. They contribute substantially to a high rate of neonatal mortality whose frequency and distribution correspond to those of poverty. LBW and preterm birth are thus associated with high neonatal and infant mortality and morbidity. Of the estimated 4 million neonatal deaths, preterm and LBW babies represent more than a fifth. Therefore, the care of such infants becomes a burden for health and social systems everywhere.¹ Kangaroo Mother Care (KMC) is one of the most promising ways to save preterm and low birth weight babies in high- and low-income settings alike. This form of care, initiated in hospital, involves teaching mothers and other caregivers how to keep newborns warm through continuous, 24 hours per day, skin-to-skin contact on the mother's chest. KMC has been shown to prevent infections, promote breastfeeding, regulate the baby's temperature, breathing, and brain activity, and encourages mother and baby bonding.² Globally, Prematurity is the leading cause of newborn deaths and the second leading cause of death after Pneumonia in children under the age of five. India is the biggest contributor to the world's prematurity burden, with almost 3.6 million premature births-accounting for 23.6% of the around 15 million global pre-term births reported each year of these, 13%are live

pre-term births. Measures such as antenatal Steroid injections, Kangaroo mother care, antiseptic cream for the umbilical cord, and antibiotics to treat newborn infections were some of the measures to save premature babies.³ worldwide more than 20 million babies are born each year with low birth weight. This represents 15.5% all births. Of these low birth weight babies, 95.6% are born in developing countries. The World Health Organization defines low birth weight baby at birth less than 2500grams. Of these babies, approximately one third die before stabilization or first twelve hours. Low birth weight and very low birth weight babies require intensive neonatal nursing care from often limited resources at a vast expense.⁴ A systematic review focusing on infants with birth weights <2000 g in low- or middle-income countries found a significant reduction in neonatal mortality when KMC was started in the first week of life (RR 0.49, 95% CI 0.29 to 0.82). A recently updated Cochrane review explored the effectiveness of KMC as an alternative to conventional NICU care of low-birth weight infants (birth weight <2500 g). Based on 16 studies (2518 infants), 11 of which were conducted in low- or middle-income countries, the review concluded that KMC reduced not only mortality at discharge (RR 0.60, 95% CI 0.39 to 0.93), but also severe illness, infections and length of hospital stay, as well as improving mother-infant bonding, breastfeeding and maternal satisfaction.⁵

Objectives

- To assess the pre-test knowledge score of staff nurses regarding importance of Kangaroo Mother Care for low birth weight babies.
- To administer the self instructional module regarding importance of Kangaroo Mother Care for low birth weight babies.
- To assess the post- test knowledge score of staff nurses regarding importance of Kangaroo Mother Care for low birth weight babies among staff nurses.
- To assess the effectiveness of self instructional module on staff nurses regarding importance of kangaroo Mother Care for low birth weight babies.
- To find out the association between pre- test knowledge score of staff nurses regarding importance of kangaroo Mother Care for low birth weight babies with selected demographic variables.

Hypothesis (at 0.05 significance level)

H₁: There will be significant difference between pre test and post test knowledge scores among staff nurses regarding importance of Kangaroo Mother Care (K.M.C) for low birth weight babies.

H₂: There will be significant association between knowledge of staff nurses regarding importance of Kangaroo Mother Care (KMC) for low birth weight babies with selected demographic variables.

Materials and Method

A quantitative, Pre-experimental, One group pre- test and post- test research approach was used to assess the effectiveness of self instructional module on knowledge regarding importance of kangaroo mother care (KMC) among staff nurses. The present study was conducted at Geetanjali hospital & Pacific hospital, Udaipur after obtaining permission from authorities. The sample consisted of staff nurses meeting inclusion criteria and those willing to participate in study. Through non probability purposive sampling method techniques 80 staff nurses were selected. The tools selected for the present study include socio-demographic scale and structured questionnaire. Structured questionnaire consists of questionnaires for assessing the knowledge of staff nurses about kangaroo mother care (KMC). 28 multiple choice questions were used to assess the knowledge. Based on total scores obtained, the level of knowledge is divided into three levels. Those who scored below 50% (correct less than 14 questions) were in Inadequate level of knowledge category, between 51 - 75% (correct between 15-21 questions) were in Moderate level of knowledge category and Above 75% (correct between 22-28 questions) were in Adequate level of knowledge category. The construct validity was found to be $r = 0.71$. This was highly desirable so no modification was made. Prior to tool administration all subjects were given an information sheet, explaining the purpose and outcome of study. Informed consent was taken from participants and self explanatory tools were administered to participants. Permission for study was taken from concerned authorities. The data collected from participants was analysed using SPSS software 21 version.

Results

According to table 1, majority of the respondents 69% belongs to the age group of 21-30 years, 20% respondents were 31-40 years, 10% respondents were 41-50 years and only 1% respondents belongs to age group of above 51 years. Majority of the respondents, 51% were Hindus and 44% of respondents were Christians and only 3% were belongs to Muslims and other religions. Majority of the respondents 70% were GNM, 11% respondents were Post Basic B.Sc. Nursing, 16% respondents were B.Sc. Nursing and 3% respondents were M.Sc. Nursing. Majority of respondents, 45% had work experience of 0-5 years,

31% of them had 6-10 years, 23% had experience of 11-20 years and 1% had experience of more than 21 years. Regarding sources of knowledge majority of the respondent 48% respondent had information regarding KMC from health personnel, 42% respondent got the information from Electronic media regarding KMC and 9% respondents got information regarding KMC from Print Media and only 1% respondents got information from some other sources.

According to table 2, area wise analysis in pre test shows that the maximum mean percentage score obtained by the respondents was 60% in the aspect of eligibility criteria for baby and mother for KMC, 50% score obtained equally in the concept of KMC, area of hygiene and breast feeding respectively, 43% in the aspect of concept of low birth weight while 42% in the aspect of method and procedure, and 37% obtained in the components and benefits of KMC. Area wise analysis in post test reveals that the maximum mean percentage score, 100% obtained in the area of breast feeding, equally 93% obtained in concept of low birth weight and components and benefits of KMC, 92% obtained in aspect of method and procedure of KMC, equally 90% in the aspect of eligibility criteria for baby and mother for KMC and hygiene while 80% obtained in the concept of KMC.

The data given in below tables 3 and 4 revealed that majority 50% of the staff nurses had inadequate knowledge and 50% had moderate knowledge in the pre test. After administration of self instructional module 96.25% of the subjects had adequate knowledge, 3.75% had moderate knowledge regarding importance of KMC for LBW babies. Paired t-test and chi-square findings: The mean post test knowledge score is 25.71 (91.82%) is greater than the mean pre test knowledge score 12.3 (43.93%) which was statistically significant at 0.05 level of significance in paired t-test ($t = 19.47^*$ at $p < 0.05$ level). As per table 5, there was a significant association between pre-test knowledge scores and

Table 1. Distribution of sample according to socio demographic variables.

Demographic Variables	Samples	
	Frequency	Percentage %
N=80		
Age (in years)		
21-30 years	55	68.75%
31-40 years	16	20.00%
41-50 years	08	10.00%
> 51 years	01	1.25%
Religion		
Hindu	41	51.25%
Muslim	02	2.50%
Christian	35	43.75%
Others	02	2.50%
Educational Qualification		
GNM	56	70.00%
PB B. Sc. Nursing	09	11.25%
B. Sc. Nursing	08	10.00%
M. Sc. Nursing	07	8.75%
Work Experience		
0-5 years.	36	45.00%
6-10 years	25	31.25%
11-20 years	18	22.50%
Above 21 years	01	1.25%
Source of Knowledge		
Health personals	38	47.50%
Electronic media	34	42.50%
Print media	07	8.75%
Others	01	1.25%

socio demographic variables like age in years and work experience but the rest of the socio demographic variables were

not significantly associated with the pre test knowledge score. Thus it is concluded that self instructional module was effective in enhancing the knowledge of staff nurses regarding kangaroo mother care (KMC) in low birth weight babies and there was partial association with pretest knowledge score and selected socio demographic variables of staff nurses.

Table 2: Area wise pre test and post test knowledge score of respondents regarding importance of Kangaroo mother care for Low birth weight babies.

Area	Maximum Score	Pre-Test Scores		Post Test Scores	
		Mean	Mean %	Mean	Mean %
		N=80			
Concept of LBW	6	2.6	43.33%	5.6	93.33%
Concept of KMC	2	1	50%	1.6	80%
Components and benefits of KMC	3	1.1	36.67%	2.7	93.33%
Eligibility criteria for baby & mother for KMC	2	1.2	60%	1.8	90%
Methods and procedure of KMC	13	5.4	41.54%	11.9	92.31%
Hygiene	1	0.50	50%	0.9	90%
Breastfeeding	1	0.50	50%	1	100%
Total	28	12.3	43.93%	25.71	91.82

Table 3: Pre-test and post-test level of knowledge regarding kangaroo mother care (KMC) among staff nurses.

Level of Knowledge Regarding Kangaroo Mother Care (KMC)	Sample Group			
	Pre-Test Scores		Post Test Scores	
	Freq.	%	Freq.	%
Inadequate Knowledge (0-50%)	40	50%	00	00%
Moderately adequate Knowledge (50-75%)	40	50%	03	3.75%
Adequate Knowledge (76-100%)	00	00%	77	96.25%

Table 4: Pre-test and post-test knowledge score mean, SD and paired 't' test value regarding kangaroo mother care (KMC) among staff nurses.

Knowledge	Mean	Mean %	SD	DF	Paired 't' value	Inference
Pre-test	12.3	43.93%	5.8	79	19.47*	Significant
Post-test	25.71	91.82%	2.07			

Table 5: Associations between pre-test knowledge scores in staff nurses with their socio-demographic variables.

Demographic Variables	Level of knowledge			χ^2	df	Level of significance
	Below median	Above median	Total			
N=80						
Age						
21-30 years	32	23	55	10.47	3	S
31-40 years	08	08	16			
41-50 years	00	08	08			
> 51 years	00	01	01			
Religion						
Hindu	23	18	41	0.817	3	NS
Muslim	01	01	02			
Christian	16	19	35			
Others	01	01	02			

Educational Qualification

GNM	33	23	56	5.77	3	NS
PB B. Sc. Nursing	04	05	09			
B. Sc. Nursing	01	07	08			
M. Sc. Nursing	03	04	07			

Work Experience

0-5 years.	20	16	36	10.19	3	S
6-10 years	17	08	25			
11-20 years	04	14	18			
Above 21 years	00	01	01			

Source of Knowledge

Health personals	23	15	38	3.838	3	NS
Electronic media	14	20	34			
Print media	03	04	07			
Others	01	00	01			

S- Significant

NS- Not significant

Discussion

The present study was aimed at assessing the knowledge of staff nurses regarding kangaroo mother care in low birth weight babies and providing them a self instructional module to enhance their knowledge. The key focus of the present study was kangaroo mother care in low birth weight babies. A study conducted by Kiran Batra, Mamta (2014)⁶ on "Effectiveness of structured teaching protocol on knowledge related to Kangaroo mother care among staff nurses revealed that the overall mean knowledge score in a pre test was 20.52 whereas it had been increased to 29.54 in the post test. In our study there was increase in post test mean knowledge level in various aspects regarding KMC among LBW babies, this finding was also supported with study conducted by Kiran Batra, Mamta (2014)⁶ in which they have revealed about item-wise knowledge increase in post test regarding KMC among staff nurses. The statistical paired 't' test indicated that enhancement in the mean knowledge scores is highly significant (t value=4.77, p level=0.005).⁶ Present study revealed that staff nurses were having inadequate (50%) and moderately adequate (50%) level of knowledge during pre-test and in the post test (96.25%) staff nurses were having adequate level of knowledge, and 3.75% staff nurses were having moderately adequate level of knowledge regarding kangaroo mother care in low birth weight babies. The overall mean of pre-test knowledge among staff nurses regarding importance of kangaroo mother care for low birth weight babies was 12.3 with standard deviation of 5.8 and mean of post-test was 25.71. This revealed that the respondents had significantly higher knowledge after exposure to the self instructional module. Our finding which suggest enhancement in the knowledge level also supported by a study conducted by Shubharani, Muragod S. (2013)⁷ and Samya El-Nagar, Josephin Lawend (2013)⁸ with the similar results.

After self instructional module, post-test changed as only 3 (3.75%) staff nurses had moderately adequate level of knowledge and 96.25% staff nurses had adequate level of knowledge regarding kangaroo mother care for low birth weight babies. This result was statistically significant at 0.05 level in paired t-test (t = 19.47*). The findings are supported by a study conducted by Gayatri S. Sampada S (2016)⁹ et al. on effectiveness of Structured Teaching Programme (STP) on kangaroo mother care among mothers of low birth weight babies: calculated paired 't' value (t calculated =3.04 p <0.005)) was greater than tabulated value.⁹ A study conducted by Komal et al (2017)¹⁰ on effectiveness of STP on knowledge of postnatal mothers regarding KMC also found similar result with present study which were in pretest, majority of postnatal mothers (80%) had average knowledge and 20% of had below average knowledge regarding kangaroo mother care. In post-test, majority of postnatal mothers (95%) had good knowledge and 5% had average knowledge regarding kangaroo mother care. The pre-test mean knowledge score was 21.38 and the posttest mean knowledge score was 29. Our finding revealed that there was a

significant association between knowledge of staff nurses and demographic variables such as Age in years ($\chi^2= 10.473$), Work experience ($\chi^2= 10.196$). The result also supported by study conducted by Arohi Dalal, Bala D. V. (2013)¹¹, on knowledge and attitude regarding kangaroo mother care practice among health care providers in Ahmadabad District. A statistically significant association was observed between training status of the HCPs and their total score regarding knowledge related to KMC ($p<0.001$) as well as their age and total score ($p<0.01$).

Conclusion

The study concluded that the self instructional module has a significant effect in terms of gain in the level of knowledge among staff nurses regarding KMC in LBW babies. This study also showed that there was significant association between the pre-test knowledge score and the demographic variables such as age and work experience. The exclusive breastfeeding is vital for not only health babies but also for the LBW babies¹². The present study highlighted the need of different educational interventions to enhance the knowledge of the nurses.

Limitations: Though, the study was conducted with the best efforts, still perfection is rare and following limitations can be outlined- The small size of the sample made it difficult to draw generalization, non probability purposive sampling method was used for conducting this study which restricts the generalization of result. A structured questionnaire was used for data collection which restricts the amount of information that can be obtained from the respondents, only knowledge was assessed; no attempt was made to assess their attitudes and practice due to time shortage and less resources.

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Conflict of Interest: There was no conflict of interest involved while conducting the present study.

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