Original Research Article

The Efficiency of Teaching Programme on Kangaroo Mother Care Among Mothers of Low-Birth-Weight Babies: A Pre-Experimental Study

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ABSTRACT

Background: For an infant, a mother is the source of warmth and nutrition. Low- and middle-income countries which also include India, account for the majority of low-birth-weight babies. Kangaroo mother care is panoramic care given to all newborns, especially low birth weight babies and it is the most powerful method in lowering the morbidity and mortality in low-birth-weight and premature babies.

Material and Method: The research approach adopted for the present research was pre-experimental. The research was conducted at Government Multispeciality Hospital Chandigarh, India. Sixty mothers were included in the study. Samples were selected using the Purposive sampling technique. The instrument applied includes demographic variables and a questionnaire.

Findings: The results show knowledge scores in the pre-test, out of 60 mothers 71.7% have average knowledge and 28.3% have low knowledge. The median score of knowledge was 14.0 and the standard deviation was 2.78. In the post-test level of knowledge scores, 75% have high knowledge and 25% have average knowledge. The median score was 26 and the standard deviation was 3.30. The Wilcoxon rank test resulted in z= -6.749 and the p-value =<0.001, both of which indicate that the result is highly significant. The chi-square test was applied to find out whether there was a statistical association between the knowledge scores and their demographic variables. The chi-square test was applied to determine whether or not there was a statistically significant correlation between the two variables. The results show family income(p=0.043) and source of information (p=0.032) show the significance level at the 0.05 level.

Conclusion: The results of the research give statistical data that demonstrate unequivocally that participation in a Structured Teaching Programme has a substantial impact on the quantity of information possessed by mothers of low-birth-weight babies.

Key words: Knowledge, Structured teaching programme, Effectiveness, Kangaroo Mother Care, Low Birth Weight.

INTRODUCTION

Background: Kangaroo care is an approach of immediate skin-to-skin contact among mothers (or any family member) and their

untimely newborn children. It gives the impression of advancing the mental state of the mother, fortifying their bonding, and bracing maternal lactation.[1]

The birth weight and gestational age at the time of conveyance of a newborn are the foremost imperative determinants of its chance of survival, well-being, development, and advancement.[2] The normal weight of Indian infants varies from 2.5 to 3.5 kg. World Health Organization has characterized a low-birth-weight child as one whose birth weight is less than 2500gms independent of gestational age. Infants weighing 1500-2000gm are called very low birth weight babies, and the issues confronted by them are hypothermia, diminished heart rate, and hypoglycemia. They are as powerless or weak to be fed too. Kangaroo mother care makes a difference in decreasing mortality in low-birth-weight neonates, anticipating hypothermia and disease, improving birth weight, maintaining maternal-infant bonding, and enhancing breastfeeding.[3]

Kangaroo mother care includes holding a newborn in skin-to-skin contact, day and night, inclined and upright on the chest of the mother or other family individuals in case the mother is incapable of doing it all the time. It advances their well-being and prosperity through viable warmth control, breastfeeding, and attachment and guarantees physiological warmth and attachment. The two techniques of kangaroo mother care, are one is continuous kangaroo care (24 hours a day) and the other is intermittent kangaroo mother care (1-2 hours a day). There are three components of kangaroo mother care which include Kangaroo Position, Kangaroo Nutrition, discharge and follow-up. [4]

The infant should be placed on the parent's chest in a side-lying posture or a frontal or vertical position on the top part of the parent's chest with contracted arms and legs and the head turned sideways (the kangaroo position). A cap must be used to secure the infant's head and ensure that as much of their skin as possible is in coordinated contact with one or more coverings.[5]

The family should be educated regarding an ideal position to hold the baby. The baby should be tightly wrapped to stimulate all of his or her senses including vestibular, auditory, tactile, and natural holding tendencies.[6] Neonatal morbidity and death are reduced when the low-birth-weight infant is given the proper thermal management, such as through the use of an incubator or skin-to-skin contact with a kangaroo mother. Therefore, the best and simplest way that may be used is kangaroo mother care.[7] Following delivery, the newborn must have his or her head dried before being placed on the mother's chest while and after the first meal, measurements, and assessments should carried out. This technique can be used for premature babies continuously or in sessions that last no less than an hour.[8]

Since 2011, the 15th of May has been observed as International Kangaroo Mother Care Awareness Day. It is a day to raise awareness about improving kangaroo mother care in neonatal intensive care units, nurseries, and children's wards. However, babies must be stable before being cared for by a kangaroo mother. Kangaroo mother care makes sure that the mother uses her body heat to control the baby's body temperature. When the infant "sweats and refuses the kangaroo position", an indication that the child is old enough to independently maintain physiological homeostasis, the intervention is stopped.[9]

MATERIAL AND METHODS

One group pre-test and post-test, pre-experimental research design was used to carry out the research. The current research was conducted in a Government Hospital, Chandigarh, India. Sixty mothers were taken from the kangaroo mother care unit using a purposive sampling technique. The framework selected for this study is Imogine King's Goal Attainment model. A signed agreement to continue was requested from the Medical Superintendent and the Head of The Department of Paediatrics of the hospital, and permission was granted. The data were collected in two stages, on day 1

researcher took a pre-test from the participants followed by teaching on kangaroo mother care, and the 7th day again post-tests were given to the participants in the study. After the data were acquired, the analysis and interpretations of the data were carried out with the aims serving as the foundation. In the study, the demographic variables and knowledge scores of the mothers were investigated using the questionnaire. To measure the awareness of the mothers regarding kangaroo mother care, a self-structured questionnaire (multiple choice questions) was prepared. The validity of the instrument was determined by presenting it to seven professionals, and experts in the field of pediatrics. Based on the recommendations made by the experts, amendments have done and reorganizations of the tool were done. By Utilising the objectives and hypotheses of the research, the data were analyzed with the assistance of both descriptive and inferential statistics using IBM SPSS Version 20. The Socio-demographic factors of mothers were analyzed using eleven variables. Assessment of the pre-test and post-test knowledge scores of the samples was done. The efficacy of the teaching programme was assessed by comparing the scores using the Wilcoxon signed rank test. A Chi-square test was applied to find the association between both knowledge scores with their socio-demographic variables.

RESULTS

The assessment of sociodemographic variables of mothers shows that according to their ages, 46.7% of the 60 samples fall between the o26-30 years, 31.7% falls between the age of 21-25 years and 21.6% were in the age of 31-35 years. The mean age for the mothers is found to be 27.6 years. According to the degree of education attained by mothers,40% mothers were on secondary level, 23.3% were at primary level, 15% were illiterate and 21.7%had completed their graduation or higher. When looking at mother's job, we found that 60% mothers were homemaker, 25% were private employee, 10% were government employee and only 5 % ran their family business. In terms of family, the breakdown is as follows:55% of mothers belong to nuclear family, 45% belongs to joint family. According to the monthly income of families (in Rs.),66.7% of families have income above 8220 and 33.3% have income between 8219-4110. According to the number of children in families,53.3% have one child at home, 30% of families have no children at home and 16.7%+of families have two children at home. In terms of weight(grams), 63.3% babies lie between 1000-1500, 23.3% lies between 1500-2000 and 13.3% lies between 900-1000. In terms of type of pregnancy, 93.3% mothers carried single fetus and 6.7% were having twins. When looking at the source of information 65% mothers got the information from mass media, 31.7% got to know about kangaroo mother care from their friends and families and only 3.3 % got to know from newspapers.

Findings related to the assessment of pre-test and post-test knowledge regarding kangaroo mother care among mothers (Table 1) reveals that in pre-test 71.7% mothers have average knowledge while 28.3% mothers have low knowledge and no single mother had high knowledge regarding kangaroo mother care. The score of 14 was the median, and the standard deviation was 2.780. The post-test knowledge score of mothers regarding kangaroo mother care. 75% mothers of low-birth-weight babies have now higher knowledge and 25% of them have average knowledge regarding kangaroo mother care. The score of 26 Was chosen to represent the median score and the standard deviation was 3.306.

Comparison of scores related to kangaroo mother care among mothers of low birth weight babies by using Wilcoxon sign rank test (Table 2) represents that the z value equals to -6.749 and p value equals to <0.001, both of which implies that the result is highly significant at the level of 0.05. as a direct consequence of this, the alternative hypothesis has been validated. According to

the result of the study, participating in a structured teaching programme is an efficient method for enhancing mothers' knowledge regarding kangaroo mother care.

The chi-square test was applied to determine whether or not there was a statistically significant correlation between the two variables. As the results show, (table 3)age (p=0.562), educational status (p=0.061), occupation (p=0.602), type of family (p=0.054), no of children (p=0.244), the weight of the baby (p=0.975), type of pregnancy (p=0.193), so are found to be statistically insignificant which shows that there is no relation between pre-test knowledge scores regarding kangaroo mother care with these sociodemographic variables whereas family income(p=0.043) and source of information (p=0.032) shows the level of significance at the 0.05 level. In the post-test the results show (table 4) age (p=0.007) and source of information (p=.032) are found to be statistically significant at the level of 0.05. the other variables, education(p=0.352), occupation, type of family, family income, no of children, weight of the baby, and type of pregnancy were statistically insignificant which shows that there is no relation between post-test knowledge scores regarding kangaroo mother care with these sociodemographic variables.

Table 1- Assessment of pre-test and post-test knowledge scores of mothers   N= 60

Score range	Level of knowledge	Pre-test F(%)	Post-test F(%)
0-10	Poor	17(28.3%)	-
11-20	Average	43(71.7%)	15(25%)
21-30	High	Nil	45(75%)

Table 2- Comparison of scores related to the Kangaroo mother care.   N=60

Pre-test and Post-test Knowledge Scores	Rank/ Ties	N	Mean Ranks	Z value (Wilcoxon Signed rank test Value)	P value
Post-test score	Negative Rank	0[a]	0.00	-6.749[b]	<0.001
Pre-test score	Positive Rank	60[b]	30.50		
	Ties	0[c]			
Pre-test score < post-test score b) Post test score > pre-test score c) Post test score = pre-test score					

Table 3: To determine the association between pre-test knowledge scores with the sociodemographic variables.   N=60

Serial no.	Variables	Knowledge		χ^2 value	df	p-value
		Low	Average			
1.	**Age(years)** 21-25 26-30 31-35	4 8 5	15 20 8	1.115	2	0.562
2.	**Educational status** Illiterate Primary level Secondary level Graduate and above	8 4 2 3	1 10 22 10	6.771	3	0.061
3.	**Occupation** Home maker Private employee Government employee Family business	11 5 1 0	25 10 5 3	1.860	3	0.602
4.	**Type of family** Nuclear family Joint family Extended family Others	6 11 17 0	27 16 43 0	3.722	1	0.054
5.	**Family income (in Rs)** 8220 and above 4110-8219	8 9	32 11	4.104	1	0.043*

S. NO.	Variables			χ^2value	df	p-value
	2465-4109 1230-2464 <1230					
6.	**Number of children** 0 1 2	4 8 5	14 24 5	2.818	2	0.244
7.	**Weight of the baby** **<900** 900-1000 1000-1500 1500-2000	2 11 4	6 27 10	.051	2	0.975
8.	**Type of pregnancy** Single Twins Triplets	17 0	39 4	1.694	1	0.193
9.	**Source of information** Mass media Newspapers Friends and family Journals and magazines	8 2 7	31 0 12	6.911	2	0.032*

NB: χ=chi-square test, df=degree of freedom, NS=non-significant, (Significance at 0.05 level)

Table 4: To determine the association between post-test and sociodemographic variables. N=60

S. NO.	Variables	Knowledge		χ^2value	df	p-value1
		Average	**High**			
1.	Age (years) 21-25 26-30 31-35	3 12 0	16 16 13	9.955	2	.007*
2.	Educational status Illiterate Primary level Secondary level Graduate and above	3 5 6 1	6 9 18 12	3.267	3	.352
3.	Occupation Homemaker Private employee Government employee Family business	9 5 1 0	27 10 5 3	1.778	3	.620
4.	Type of family Nuclear family Joint family Extended Others	8 7	25 20	.022	1	.881
5.	Family income	9 6	31 14	.400	1	.527
6.	No of children 0 1 2	2 11 2	16 21 8	3.485	2	.171
7.	Weight of the baby <900 900-1000 1000-1500 1500-2000	2 8 5	6 30 9	1.173	2	.556
8.	Type of pregnancy Singlet Twins Triplets	14 1	42 3	.000	1	1.000
9.	Source of information Mass media Newspapers Friends and family Journals and magazines	8 2 7	31 0 12	6.911	2	.032*

NB: χ =Chi square test, df = degree of freedom, NS= non-significant, (significant at 0.05 level)

DISCUSSION

"Kangaroo mother care is a ray of hope for millions of children throughout the world who are born premature and underweight" said by UNICEF. Low-birth-weight infant medical care is complicated, necessitates expensive infrastructure and highly qualified staff, and is frequently very upsetting for families. Most hospitals in India cannot offer advanced machinery like incubators and knowledgeable and qualified staff to care for these infants. Hospital wards for pre and low-birth-weight newborns are frequently overcrowded, and there are not enough financial or personnel resources to provide adequate neonatal care. Kangaroo Mother Care has several advantages, including empowering mothers to care for their low-birth-weight babies, reducing infant mortality, promotion of breastfeeding, and decreasing the number of low-birth-weight babies visiting hospitals once getting discharged from the hospital. In light of these benefits, the government established a kangaroo mother care policy as a secure and efficient way to care for these babies. KMC frequently leads to shorter hospital stays, less need for expensive medical technology, more opportunity for teaching and family involvement, and better utilization of the healthcare system. The primary objective of the research was to assess the efficacy of an organized training programme on kangaroo mother care among mothers. **Payal T Vaghela (2020)** did the same research among antenatal mothers of selected hospitals in Mahasena City. The findings revealed the efficacy of the teaching programme as the post-test knowledge scores of mothers were significantly higher than the pre-test knowledge scores regarding kangaroo mother care.[10] **Gayathri S (2016)** conducted a similar study at a selected hospital at Rajkot Distt. on 30 postnatal mothers and the findings of the research showed that the structured teaching programme was efficient and led to improvement in the knowledge among mothers.[11]

CONCLUSION

Mothers who have attended the teaching programme have more knowledge related to Kangaroo Mother Care. The results of the research give statistical data that demonstrate unequivocally that participation in a Structured Teaching Programme has a substantial impact on the quantity of information possessed by mothers of low-birth-weight babies.

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