International Journal of Nursing and Health Research
www.nursingjournal.in
ISSN: 2664-6420
Received: 22-09-2026, Accepted: 22-10-2026, Published: 06-11-2026
Volume 8, Issue 4, 2026, Page No. 42-46

A study to assess the knowledge and attitude regarding Kangaroo Mother Care among mothers of preterm and low birth weight babies

Krishna Sree G[1], Darly T Philip[1], Agin Antony Das[2], Anna Sabu George[2]
[1] Lecturer, N.S. Memorial College of Nursing, Kollam, Kerala, India
[2] N.S Memorial College of Nursing, Kollam, Kerala, India

Abstract
Kangaroo Mother Care (KMC) is an effective, low-cost method of care for preterm and low birth weight babies. The study aimed to assess the knowledge and attitude regarding kangaroo mother care among mothers of preterm and low birth weight babies and to find the correlation between knowledge and attitude and their association with selected demographic variables. A non-experimental descriptive research design with a quantitative approach was adopted. A total of 60 mothers were selected using purposive sampling technique from selected hospitals in Kollam district. Data were collected using a structured knowledge questionnaire and attitude scale. Results revealed that 75% of mothers had moderate knowledge and 96.7% had a favorable attitude towards kangaroo mother care. There was no significant correlation between knowledge and attitude. There was a significant association between knowledge and type of family and there was a significant association between attitude and age, family monthly income. The study concludes that although mothers had a positive attitude, structured educational interventions are necessary to improve knowledge regarding kangaroo mother care.

Keywords: Kangaroo Mother Care, knowledge, attitude, preterm, low birth weight

Introduction

Kangaroo mother care is an evidence - based practice approach for giving care particularly those who are premature, low birth weight or vulnerable. It involves skin to skin contact between the mother and her baby, promoting physical and emotional closeness. The baby is placed in an upright position under the mother's clothes with the cap and sock. Kangaroo mother care is a powerful tool for promoting maternal and infant wellbeing. By practicing kangaroo mother care postnatal mothers can foster a deeper connection with their babies, support their physical and emotional development and enhance their own confidence and wellbeing.

Preterm birth and low birth weight (LBW) are significant public health concerns worldwide. According to the World Health Organization (WHO), approximately 15 million babies are born preterm each year, and LBW affects an estimated 20 million babies annually. Kangaroo Mother Care (KMC) is a method of care that involves skin to-skin contact between the mother and her baby which promotes breastfeeding and early discharge from the hospital. Kangaroo mother care has been shown to improve outcomes for preterm and low birth weight babies, including reduced mortality rates, improved weight gain, and enhanced cognitive and motor development. Kangaroo mother care empowers mothers, increasing their confidence in caring for their infants, promotes better mental health outcomes for mothers, reducing stress and anxiety and fosters a strong bond between the mother and infant, promoting a lifelong connection.

Kerala has a newborn mortality rate of 4.4 per 1000 live births. Kangaroo mother care can help to reduce those rates by promoting warmth, breastfeeding, and bonding. Kangaroo mother care facilitates easier latching and increased milk production, leading to improved breast-feeding outcomes. Kangaroo mother care promotes physical and emotional closeness between mother and their babies, enhancing maternal infant bonding and attachments. A Kerala based study (2021) conducted in government hospitals showed that kangaroo mother care improved weight gain and breastfeeding outcomes in preterm infants. [3]

Maternal knowledge and attitude play crucial role in adoption and implementation of kangaroo mother care. Studies have shown that mothers who are knowledgeable about kangaroo mother care and have a positive attitude towards it are more likely to practice kangaroo mother care and experience its benefits. Assessing knowledge and attitude of kangaroo mother care among postnatal mothers helps to identify the areas for improvement, ultimately leading to better newborn health outcomes. Prolonged kangaroo mother care practice significantly improves thermal regulation and reduced infections in preterm babies. [4]

The objectives of the study were to

- Assess the knowledge and attitude regarding KMC among mothers of preterm and low birth weight babies.
- To find the correlation between knowledge and attitude regarding kangaroo mother care among mothers of preterm and low birth weight babies.
- To find the association between knowledge regarding kangaroo mother care and selected demographic variables among mothers of preterm and low birth weight babies.
- To find the association between attitude towards kangaroo mother care and selected demographic variables among mother of preterm and low birth weight babies

Materials and Methods

A quantitative, non-experimental descriptive research design was adopted for the study. The study was conducted in N.S Memorial Institute of Medical Science and Upasana Hospital, Kollam district. The population comprised

mothers of preterm and low birth weight babies. A sample of 60 mothers was selected using purposive sampling technique.

Research approach
The study used quantitative approach to assess the knowledge and attitude regarding kangaroo mother care among mothers of preterm and low birth weight babies in selected hospitals at Kollam district.

Research design
The research design adopted for the study was non-experimental descriptive research design.

Study setting
The study was conducted in NS Memorial Institute of Medical Science and Upasana hospital at Kollam district.

Population
Population of the study consists of mothers of preterm and low birth weight babies admitted in selected hospitals at Kollam district.

Sample and sample size
Sample included in the study were mothers of preterm and low birth weight babies admitted in NS Memorial Institute of Medical Science and Upasana Hospital at Kollam district. Total 60 samples were selected in which 40 were collected from NS Memorial Institute of Medical Science and 20 were selected from Upasana Hospital, Kollam.

Sampling technique
In the study, samples were selected by purposive sampling techniques

Inclusion criteria
The present study included mothers who:
- have preterm babies with gestation week between 30 to 36 weeks.
- have babies with low birth weight between 1.5kg to 2.5kg.
- who are admitted in selected hospitals during data collection.
- who can read and write English or Malayalam.

Exclusion criteria
The present study excluded mothers:
- who have high risk babies.
- who have babies with birth weight above 2.5kg.
- with babies who were on ventilator care.
- who were health care professionals.

Tools or Instruments
Tool consisted of self-administered knowledge questionnaire and 5-point attitude scale. Self-administered questionnaire has three sections
- **Section a:** Socio demographic profile.
- **Section b:** Structured knowledge questionnaire to assess the knowledge regarding kangaroo mother care.
- **Section c:** Attitude scale to assess the attitude towards kangaroo mother care.

Content validity of tool
The content validity of the tool was obtained from different experts in the field of Nursing. Modifications were made in the tool according to the suggestions of the experts. The final draft was submitted to experts after corrections and they were agreed and accepted the tool.

Reliability of the tool
Split half reliability of research tool was done; the tool was administered to 6 mothers of preterm and low birth weight babies. In the present study Karl Pearson's coefficient of correlation formula was used to calculate the reliability of tool. The reliability quotient r=
0.82 for knowledge questionnaire, and reliability quotient r= 0.9 for attitude scale, which indicates that the tool is highly reliable.

Result
The findings revealed that among 60 mothers, 6.7% had inadequate knowledge, 75% had moderate knowledge, and 18.3% had adequate knowledge regarding kangaroo mother care. Regarding attitude, 96.7% of mothers had a favourable attitude towards kangaroo mother care. The correlation between knowledge and attitude was not statistically significant ($r=0.23$, $p>0.05$). There was a significant association between knowledge and type of family and there was a significant association between attitude and age, family monthly income.

Table 1: Knowledge level regarding KMC

Knowledge Level	Frequency	Percentage
Inadequate	4	6.7
Moderate	45	75
Adequate	11	18.3

Table 1 indicates that among 60 mothers of preterm and low birth weight babies, 6.7% (4) of them had inadequate knowledge, 75% (45) of them had moderate knowledge, 18.3% (11) of them had adequate knowledge regarding Kangaroo mother care.

Table 2: Attitude regarding KMC

Attitude	Frequency	Percentage
Unfavourable	2	3.3
Favourable	58	96.7

Table 2 indicates that among 60 mothers of preterm and low birth weight babies, 3.3% (2) of them had moderately favourable attitude, 96.7% (58) of them had favourable attitude towards Kangaroo mother care.

Table 3: Correlation between the knowledge and attitude regarding KMC

Si no	Variables	Correlation Coefficient	"p" Value
1	Knowledge	0.23	0.070
2	Attitude		

Table 4 indicates the correlation between the knowledge and attitude regarding kangaroo mother care among mothers of preterm and low birth weight babies. Computed correlation coefficient $r=0.23$ ($p=0.07$) was not significant at $p=0.05$, which indicates that even though there was weak positive correlation between the knowledge and attitude regarding kangaroo mother care among mothers of preterm and low birth weight babies, it was not significant.

Table 4: Association between the knowledge regarding kangaroo mother care and selected demographic variables

Sl.no	Demographic variables	χ^2 value	'P'value
1.	Age in years	5.31	0.98
2.	Religion	2.37	0.29
3.	Education of mother	3.07	0.53
4.	Occupation of mother	4.32	0.29
5.	Occupation of father	6.17	0.54
6.	Family monthly income	6.35	0.99
7.	Type of family	15.14	0.02*
8.	Area of residence	1.75	0.23
9.	Number of children	4.25	0.41
10.	Birth order of child	2.0	0.46
11.	Type of delivery	2.47	0.18
12.	Health status of baby	1.25	0.93

*significance p<0.05

Table 4 shows that there was a significant association between the knowledge regarding kangaroo mother care and selected demographic variables among mothers of preterm and low birth weight babies such as type of family ($\chi2$=15.14, p=0.02) and there was no significant association between the knowledge regarding kangaroo mother care and selected demographic variables among mothers of preterm and low birth weight babies such as age in years ($\chi2$=5.31, p=0.98), religion ($\chi2$=2.37, p=0.29), education of mother ($\chi2$=3.07, p=0.53), occupation of mother ($\chi2$=4.32, p=0.29), occupation of husband ($\chi2$=6.17, p=0.54), family monthly income ($\chi2$=6.35, p=0.99), area of residence ($\chi2$=1.75, p=0.23), number of child ($\chi2$=1.43, p=0.41), birth order of the child ($\chi2$=2.0, p=0.46), type of delivery ($\chi2$=2.47, p=0.18), health status of baby ($\chi2$=1.25, p=0.93).

Table 5: Association between the attitude towards kangaroo mother care and selected demographic variables

Sl.no	Demographic variables	χ^2 value	'P'value
1.	Age in years	11.72	0.012*
2.	Religion	1.38	0.63
3.	Education of mother	0.31	0.62
4.	Occupation of mother	2.21	0.17
5.	Occupation of father	1.93	0.64
6.	Family monthly income	11.72	0.007*
7.	Type of family	2.00	0.29
8.	Area of residence	2.36	0.12
9.	Number of children	1.11	0.328
10.	Birth order of child	0.95	0.36
11.	Type of delivery	2.70	0.12
12.	Health status of baby	0.21	0.88

Table 5 show that there was significant associatiom between the attitude towards
kangaroo mother care and selected demographic variables among mothers of preterm and low birth weight babies such as age in years ($\chi2$=11.72, p=0.012), family monthly income ($\chi2$=11.72, p=0.007) and there was no significant association between the attitude towards kangaroo mother care and selected demographic variables among mothers of preterm and low birth weight babies such as religion ($\chi2$=1.38, p=0.63), education of mother ($\chi2$=0.31, p=0.62), occupation of mother ($\chi2$=2.21, p=0.17), occupation of husband ($\chi2$=1.39, p=0.64), type of family ($\chi2$=2.0, p=0.29) , area of residence ($\chi2$=2.36, p=012), number of child ($\chi2$=1.11, p=0.38), birth order of the child ($\chi2$=0.95, p=0.36), type of delivery ($\chi2$=2.70, p=0.12), health status of baby ($\chi2$=0.21, p=0.88) at p=0.05.

Discussion

The study findings indicated that although most mothers had a favorable attitude towards kangaroo mother care, their knowledge level was predominantly moderate. These findings are consistent with previous studies which highlight the need for continuous education and counselling. The lack of significant correlation between knowledge and attitude suggests that positive attitude alone may not ensure adequate practice of kangaroo mother care.

Description of Sample Characteristics of Mothers of Preterm and Low Birth Weight Babies

In the study, majority 55% (33) of them were aged to 26-30years, least 15% (9) of them aged to 18-25 years. Regarding religion, majority 48.3% (29) of them were Hindu, least 27.7% (13) of them were Muslim.

Regarding educational status, majority 86.7% (52) of them were graduated, and least 1.7%
(1) of them were completed Primary education.

Regarding occupation of mother, majority 33.3% (20) of them were private employee, least 6.7% (4) of them were government employee.

Regarding occupation of father of newborn, 51.7% (31) of their fathers were private employee, 13.3% (8) of their fathers were self employee and none of them were unemployed.

Regarding family income, majority 73.3% (44) of them had Rs.25000-50000 monthly income and least 11.7% (8) of them had Rs.50000 and above family monthly income.

According to the type of family, majority 83.3% (50) of them from nuclear family, 15%
(9) of them from joint family and 1.7% (1) of them from is extended family.

Family based on area of residence, majority 53.3% (32) of them were residing in urban area and least 46.7% (28) of them were residing in rural area.

Regarding the number of children, among mothers, majority 65% (39) of them were having one child and least 5% (3) of them having >2 child.

Regarding type of delivery, majority 53.3% (32) of them were had cesarean section, and least 3.3% (2) of them had vaccum delivery.

Assessment of Knowledge and Attitude Regarding Kangaroo Mother Care Among Mothers of Preterm and Low Birth Weight Babies

The study reveals that, among 60 mothers of preterm and low birth weight babies, 75%

(45) them had moderate knowledge, 18.3% (11) of them had adequate knowledge, 6.7%
(4) of them had inadequate knowledge and regarding attitude, 96.7% (58) of them have favourable attitude and 3.3% (2) of them have unfavourable attitude and none of them had unfavorable attitude towards Kangaroo mother care.
In a descriptive cross-sectional study at the Lagos University Teaching Hospital (LUTH) in Nigeria, involving 60 mothers. The study found that 80% of respondents had heard of kangaroo mother care (KMC), 65% had a good attitude towards kangaroo mother care and knowledge significantly influenced attitude and practice ($p < 0.05$). [6]

Correlation Between Knowledge and Attitude Regarding Kangaroo Mother Care Among Mother's of Preterm and Low Birth Weight Babies

The study results showed that the Coefficient of correlation r=0.23 (p=0.070) indicates a weak negative correlation between the knowledge and attitude regarding Kangaroo mother care among mothers of preterm and low birth weight babies. The mean knowledge score was M=17.02 with standard deviation SD =3.5. The mean attitude score was M= 59.4 with standard deviation SD =5.3. It was inferred that even though had weak positive correlation there was no significant (p>0.05) correlation between the knowledge and attitude regarding Kangaroo mother care among mothers of preterm and low birth weight babies.
A cross-sectional study on knowledge and attitude regarding kangaroo mother care practice among health care providers was conducted in 7 health centres located in Ahmedabad district. The study was conducted in 2 primary health centres and 5 urban health centres. A total of 145 health care providers were studied. The analysis revealed a weak negative correlation between knowledge and attitude (r = -0.23). The result showed that there were no statistically significant association was observed between the training status of the health care providers and their total score regarding knowledge related to kangaroo mother care ($p<0.004$). [7]

Association Between the Knowledge Regarding Kangaroo Mother Care and Selected Demographic Variables Among Mothers of Preterm and Low Birth Weight Babies

The result of the study showed that there was a significant association between the knowledge regarding kangaroo mother care and selected demographic variables among mothers of preterm and low birth weight babies such as type of family ($\chi2=15.14$, p=0.02) and that there was no significant association between the knowledge regarding kangaroo mother care and selected demographic variables among mothers of preterm and low birth weight babies such as age in years ($\chi2=5.31$, p=0.98), religion ($\chi2=2.37$, p=0.29), education of mother ($\chi2=3.07$, p=0.53), occupation of mother($\chi2=4.32$, p=0.29), occupation of husband ($\chi2=6.17$, p=0.54), family monthly income ($\chi2=6.35$, p=0.99), area of residence ($\chi2=1.75$, p=0.23), number of child ($\chi2=1.43$, p=0.41), birth order of the child ($\chi2=2.0$, p=0.46), type of delivery ($\chi2=2.47$, p=0.18), health status of baby ($\chi2=1.25$, p=0.93).
In a descriptive cross-sectional study to assess the knowledge and attitude of postnatal mothers regarding kangaroo mother care in a tertiary care center, involving 150 postnatal mothers. The study utilized a structured questionnaire to collect data from the participants. the association between the level of knowledge regarding Kangaroo Mother Care (KMC) and selected socio-demographic variables among mothers of preterm and low birth weight babies was analyzed using appropriate inferential statistics. There was a statistically significant association between knowledge level and educational status of the mother($\chi2=8.72$, p=0.013), occupation of the mother($\chi2=6.45$, p=0.040), family income($\chi2=7.89$, p=0.019) and there was no statistically significant association between knowledge and variables such as age of the mother($\chi2=2.31$, p=0.315) , religion($\chi2=1.85$, p=0.396), type of family($\chi2=1.12$, p=0.571) ,area of residence($\chi2=0.98$, p=0.322), parity($\chi2=1.67$, p=0.196), type of delivery($\chi2=2.05$, p=0.358).[8]

Association Between the Attitude Towards Kangaroo Mother Care and Selected Demographic Variables Among Mothers of Preterm and Low Birth Weight Babies

The result of the study showed that there was a significant association between the attitude towards kangaroo mother care and selected demographic variables among mothers of preterm and low birth weight babies such as age in years ($\chi2=11.72$, p=0.012) and family monthly income ($\chi2=11.72$, p=0.007) and there was no significant association between the attitude towards kangaroo mother care and selected demographic variables among mothers of preterm and low birth weight babies such as religion ($\chi2=1.38$, p=0.63), education of mother ($\chi2=0.31$, p=0.62), occupation of mother ($\chi2=2.21$, p=0.17), occupation of husband ($\chi2=1.39$, p=0.64), type of family ($\chi2=2.0$, p=0.29) , area of residence ($\chi2=2.36$, p=012), number of child ($\chi2=1.11$, p=0.38), birth order of the child ($\chi2=0.95$, p=0.36), type of delivery ($\chi2=2.70$, p=0.12), health status of baby ($\chi2=0.21$, p=0.88).
In a descriptive cross-sectional study to assess the knowledge, attitude, and practice of kangaroo mother care among 300 postnatal mothers of preterm and lowbirth weight babies atpublic health facilities in Ethiopia. The study used a structured questionnaire to assess knowledge, attitude, and practice towards kangaroo mother care. The study found that maternal age, educational status, residence and antenatal care attendance were significantly associated with attitude toward kangaroo mother care. [9]

Conclusion

The study concludes that mothers of preterm and low birth weight babies possess a weak positive attitude but moderate knowledge regarding kangaroo mother care. Structured health education programs and reinforcement by healthcare professionals are essential to improve maternal knowledge and ensure effective implementation of kangaroo mother care.

References

1. World Health Organization. Kangaroo mother care: a practical guide. Geneva: World Health Organization, 2003.
2. World Health Organization. Preterm birth fact sheet. Geneva: WHO, 2019. Global Public Health Concern, World Health Organization. Preterm birth: Key facts [Internet]. WHO, 2018, Available from:

https://www.who.int/newsroom/factsheets/detail/preterm-birth.
3. Mortality and Regional Relevance, Lawn JE, Kinney MV, Black RE, *et al*. Every Newborn: Progress, priorities, and potential beyond survival [Internet]. The Lancet, 2014 [cited 2025 Jun 12]. Available from: https://www.thelancet.com/series/every newborn 2014.
4. Knowledge Gaps and Study Aim, Charpak N, Ruiz JG, Zupan J. Kangaroo mother care: 25 years after [Internet]. Acta Paediatrica, 2005, Available from: https://onlinelibrary.wiley.com/doi/10.1111/j.1651222.2005.tb01950.x
5. Gupta M, Jora R, Bhatia R. Knowledge and attitude of mothers regarding kangaroo mother care. Int J Community Med Public Health,2019:6(2):678–682.
6. Pradhan M, *et al*. Knowledge, attitude and practice of kangaroo mother care among 100 mothers of preterm and LBW babies in a tertiary care hospital, Odisha, Indian Journal of Neonatology,2024:38(1):1-6 doi: 10.1177/09732179241242227 (https://doi.org/10.1177/09732179241242227).
7. Dalal A, Bala DV, Chauhan S. A cross-sectional study on knowledge and attitude regarding kangaroo mother care practice among health care providers in Ahmedabad district. Int J Med Sci doi:10.5455/ijmsph.2013.091220131.
8. Gulati P, Bhat S, Maben R, Soans ST. Study to assess the knowledge, attitude and practice of kangaroo mother care among postnatal mothers in a tertiary care centre of Mangalore, Karnataka, India. Int J Contempt Pediatr,2019:6(3):999-1002.
9. Gebeyehu NA, *et al*. Knowledge, attitude and practice toward kangaroo mother care among postnatal women in Ethiopia. BMC Pregnancy Childbirth, 2022.