

# Motivation and barriers to Kangaroo mother care amongst health service providers in Kenya

Murila F<sup>1</sup>, Obimbo MM<sup>2,4</sup>, Musoke R<sup>1</sup>, Tsikhutsu I<sup>3</sup>, Migiro S<sup>3</sup>, Ogeng'o JA<sup>2</sup>

<sup>1</sup>Department of Paediatrics, University of Nairobi

<sup>2</sup>Department of Human Anatomy, University of Nairobi

<sup>3</sup>Ministry of Health, Kenya

<sup>4</sup>Department of Obstetrics and Gynaecology, University of Nairobi

**Correspondence to:** Dr. F. Murila, Department of Paediatrics, University of Nairobi, P. O. Box 00100 – 30197, Nairobi, Kenya  
Email: [florence.murila@uonbi.ac.ke](mailto:florence.murila@uonbi.ac.ke)

## Abstract

**Introduction:** Kangaroo Mother Care (KMC) is a useful and cheap method of caring for low birth weight and premature newborn infants in economically underprivileged countries where access to incubators is limited. Data on knowledge of and barriers to this method amongst health care professionals are important in informing planning for newborn care health services but are largely lacking for African population.

**Objective:** This study aimed at assessing the knowledge of and barriers to Kangaroo Mother Care amongst health care providers in Kenya.

**Method:** A structured pretested questionnaire was administered to 155 health workers in Kenya to test the knowledge and barriers to KMC. Data were analyzed using SPSS version 15.0 for windows and results presented using tables, bar and pie charts.

**Results:** All the 155 health care professionals had heard of Kangaroo Mother Care. Almost half did not have sufficient information on benefits and requirements for KMC. Most respondents (91.2%) thought that personnel with special skills on the practice were needed to oversee it. The most common barriers to practice of Kangaroo Mother Care were inadequate skills (59%), uncooperative mothers (22%), reluctant health care provider (11%) and fear for the safety of the baby (8%).

**Conclusion:** Most of health professionals in Kenya are aware of Kangaroo Mother Care. Its practice is, however, hampered by their lack of know-how of its benefits, requirements and inadequate skills. Training programs to enlighten health care professionals are recommended.

**Key words:** Kangaroo Mother Care, Health care, Kenya

## Introduction

Kangaroo Mother Care (KMC) is a method of caring for a low birth weight and preterm newborn infant where the baby's and mother's skin are in direct contact. It is achieved by placing the baby between the mother's breasts (1). This fosters the health and well-being of low birth weight and preterm babies by promoting effective thermal control, breast feeding, infection prevention, bonding, early recognition of and response to complications (2-4). This method is especially useful in economically challenged countries where access to conventional services of incubators is limited or too expensive for the general population (5). KMC is estimated to reduce neonatal mortality by a significant proportion in resource limited settings.

To be effective, such a method requires the commitment of both the mother and the health care staff (6). Data on knowledge of and barriers to KMC amongst health care providers is important in informing planning for newborn care but is scarce for the Kenyan population. This study

therefore investigated knowledge of and barriers to the use of KMC amongst Kenyan health workers.

## Materials and Methods

This cross-sectional survey was conducted by administration of a structured questionnaire to 155 health workers who attended training workshop on essentials of newborn care towards the end of 2008. The workshop had been sponsored by the Ministry of Medical services of the Republic of Kenya, UNICEF and the World Health Organization (WHO). The questionnaire was administered before the beginning of the training. The health workers were drawn from all counties of the country. Participants included; 46 enrolled nurses (qualify from middle level colleges with a certificate in nursing), 61 Kenya registered nurses (qualify from middle level colleges with a diploma in nursing), 5 degree nurses (qualify from the university with a degree in nursing), 23 clinical officers (qualify from the middle level college with a diploma in clinical medicine), 10 medical officers

who hold the degree in Bachelor of Medicine and Surgery and 1 specialist paediatrician. Participation was voluntary. Authority and permission for the study were given by the Ministry of Medical Services. The participants were asked to provide data on their source of information on KMC, benefits of KMC, selection criteria of infants for KMC, adjunct facilities or optional replacements for KMC and barriers towards implementation of the KMC. In regards to barriers, the respondents were asked to rate, in order, the influence of four items in achieving the practice of KMC. The options included: inadequate skills, reluctant mother, fear for the safety of the baby and too much work for the health care worker. Data collected were analyzed using SPSS version 15.0 Chicago Illinois. The difference in knowledge of gestational age suitability for KMC amongst clinicians and nurses was determined using student t test at 95% confidence interval. P value of  $\leq 0.05$  was considered as significant. Results are presented by tables, bar and pie charts.

## Results

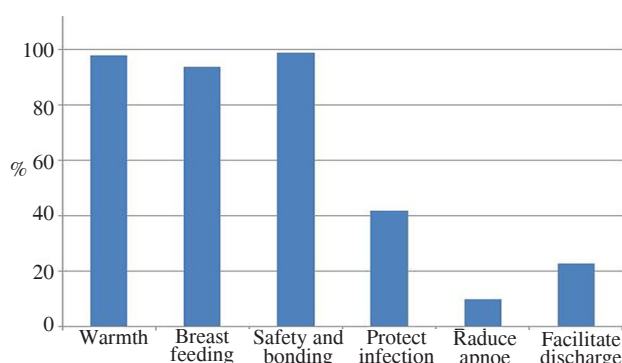
All the 155 workers responded to the questionnaire. The majority of the clinicians (57%) had heard about KMC from their colleagues at work place. The rest (43%) heard about it while at school. Of those who learnt of KMC from their colleagues, majority heard it from nurses (Table 1).

**Table 1:** Source of KMC Information

Source	No.	(%)
Other nurses	34	38.7
Nursing instructors	25	28.4
Doctors	17	19.4
Other	12	13.6
Total	88	100

**Knowledge of KMC:** Overall, 51% had satisfactory information on KMC. When asked to endorse or reject options given for its benefits, a great majority (95%) of the clinicians were aware that KMC was beneficial. The main benefits endorsed were provision of warmth (98%), encourages unlimited breast feeding (93%), safety and bonding (99%). Most were, however, not perceptive that KMC protects against infections (42%), reduces apnoea and bradycardia (8%) and may facilitate quick discharge from the hospital (23%) (Figure 1).

**Figure 1:** Knowledge of health benefits of KMC



Over half of the participants (59.3%) had proper knowledge of the gestation suitable for KMC, 25.8% thought that it was only meant for preterm newborns and 12.9% thought it was suitable only for the term baby. When this knowledge was compared against the professional groups (clinicians versus nurses) the difference was found to be statistically significant ( $p=0.029$ ).

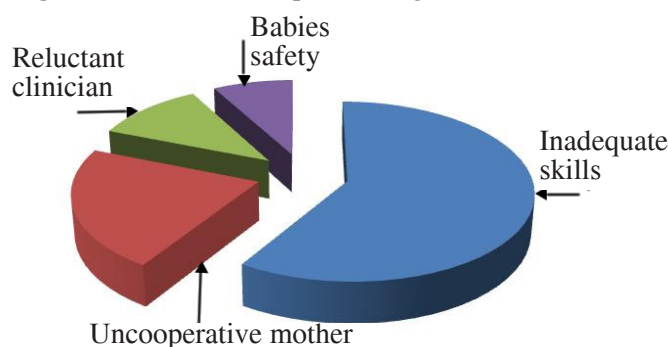
The knowledge about the adjunct requirements for KMC was limited. The majority, 83.9% stated that there was no need for incubators, 76.1% thought that preterm formula was not necessary, 75.5% dismissed drugs as unnecessary, 67.1% responded that there was no need for feeding cups and 60.6% said that monitoring devices for the baby were unnecessary. A rather high proportion (91.2%) felt that there was need for personnel with special skills for the method to effectively be implemented (Table 2). A few of the respondents 11% had not heard of the adjunct requirements.

**Table 2:** Adjunct requirements for KMC

	Yes	No	Don't know
Incubators	11 (7.1%)	130 (83.9%)	14 (9%)
Personnel with special skills	141 (91.2%)	7(4.6%)	7(4.6%)
Feeding cups	39 (25.2%)	104 (67.1%)	12 (7.7%)
Preterm formula	21 (13.5%)	118 (76.1%)	16 (10.3%)
Drugs	18 (11.6%)	117 (75.5%)	20 (12.9%)
Monitoring devices	45 (29%)	94 (60.6%)	16 (10.3%)

**Barriers to KMC:** The commonly encountered barriers to the practice of KMC were inadequate skills (59%), uncooperative mothers (22%), reluctant health care providers (11%) and fear for the safety of the baby in 8% of the cases (Figure 2). The belief that technology is better than KMC was affirmed by all the respondents.

**Figure 2:** Barriers to implementing KMC



## Discussion

All the participants had heard about KMC but only 51%, did have satisfactory information. This proportion (51%) is comparable to those made amongst health care providers

in the United States (US) and Colombia (7,8). Inadequate knowledge common to all these populations implies that the practice and teaching of KMC has not been adequately emphasized. A long-term solution to lack of sufficient knowledge manifest here requires rigorous training about KMC to the health workers (9). Low income countries are nevertheless worst hit because of minimal access to alternative measures to KMC. Although the practice of KMC may be widely spread in some countries, it is not particularly evidence based but may merely be based on perceptions (10). Thus wide practice in any part of the world should not be necessarily confused with adequate knowledge of KMC.

*Knowledge of KMC:* Most health care providers heard about KMC from their colleagues. This observation is comparable to those of previous studies, that colleagues have played an important role in shaping their peers' behavior (10). This has been perceived to influence increased application of beneficial decisions to the mother and the newborn (10,11). This observation is contrary to expectations that one would acquire such information while still at school (12). Though it appeared like a number of clinicians possessed information on KMC, it was noted that most of it was not properly understood as most of the health care providers were not able to call reasonable judgment on KMC application. It was noted that nursing staff significantly lacked knowhow on gestational suitability for candidates of KMC as compared to doctors. It is therefore imperative that the health care institutions that intend to implement KMC must dedicate some time and resources to raising the level of awareness amongst its staff (13,14). Such endeavours require that the senior staff have sufficient knowledge and train the junior staff (2). In a Kenyan scenario for example, a consultant paediatrician or a senior medical officer should train the clinical officers and nurses. This mode of knowledge acquisition has been widely accepted as the most efficient way of passing medical information (14) as part of continuing medical education.

Most curricula used in training of health professionals either do not include or have very limited time allocated for emphasis on acquisition of skills for the care of pregnant mothers and the newborn infants (15). Moreover, teachers are ill equipped with reference material on perinatal and or neonatology because they lack the will to search for current evidence (16). This scenario calls for urgent review of training programs and government funding for such skills to be passed to the medical and nursing students formally during their pre-service training (17).

Although Kangaroo Mother Care has been touted to be superior to modern technologically advanced methods (18-20), there is need to strike a common ground in taking advantage of technology to bolster KMC. Such a requirement is especially paramount in resource rich countries where access to technology is unlimited (21). In

this series the respondents were negative about utilization of modern technology to supplement KMC or vice versa. Such flawed views can only be corrected via sufficient medical education.

*Barriers to KMC:* Observed barriers towards implementation of KMC in this study, namely inadequate expertise, uncooperative mothers, reluctant health care providers and fear for the safety of the baby were similar to those reported in literature (7,8,22,23). Notable is the fact that there is shortage of skilled professionals to carry out KMC. To a great extent this is a true but a surmountable barrier that can be overcome through short courses. Mothers may be uncooperative in carrying out KMC because of lack of confidence in the practice or due to the call of other duties (24). Some simply lack the knowledge on the importance of KMC (25). We cannot, however, be conclusively sure that mothers lack sufficient knowledge on importance of KMC. Many health care providers who are reluctant to encourage the mothers to perform KMC care hold an opinion that KMC is time consuming (26). This has had an effect of limiting the participation of many health care workers especially given their constrained numbers (27). Further, many are afraid of being blamed if something went wrong (28). This is especially true for nurses who in most of the Kenyan hospitals do not make decisions without consulting a doctor. To overcome this barrier empowerment of nurses with skills and autonomy may prove useful in promoting the practice.

Due to lack of adequate information, both the health care staff and clinicians fear for the safety of the babies. Similar observations have been made (7,8). Although this appears to be a caring attitude, it actually denies the baby of an effective and freely available mode of management. Mistakenly, some staff fear that there could be accidental removal of intravenous canula, medication could stop running and or the babies are too small to withstand KMC (28). There is need to mitigate such falsehoods by disseminating proper information through holding of frequent training workshops and designing evidence based manuals for use within the hospital institutions especially amongst the health staff working in the Neonatal Intensive Care Units (NICU) (29) while at the same time attempting to bridge the gap between the parents and health care staff through opening up communication channels and increasing awareness of KMC.

## Conclusion

Most of the health professionals in Kenya are aware of Kangaroo Mother Care. Its practice is, however, hampered by their ignorance of the benefits, requirements and inadequate skills. Training programs to enlighten the health care professionals are recommended.

## Conflict of interest

The authors declare that they have no conflict of interest.

## References

1. Cattaneo A, Davanzo R, Uxa F and Tamburlini G. Recommendations for the implementation of kangaroo mother care for low birth weight infants. *Acta Paed.* 1998; **87**: 440-445.
2. Charpak N, Riuz JG, Zupan J, et al. Kangaroo mother care 25 years after. *Acta Paed.* 2005; **94**:514-522.
3. Lawn JE, Cousens S, Zupan J. Four (4) million neonatal deaths: When? Where? Why? *Lancet.* 2005; **365**:891-900.
4. Pattison RC, de Jong G and Theron GD. Primary causes of perinatal wastage. *South Afr Med J.* 1989; **75**: 50-52.
5. Institute of Medicine. Preterm birth, causes, consequences and prevention. Washington DC; National Academies Press. 2007.
6. Anderson GC. Current knowledge about skin to skin (Kangaroo) care for preterm infants. *J Perinatol.* 1991; **11**:216-226.
7. Charpak N, de Calume Z and Ruiz J. Problems and solutions for the implementation of KMC according to the level of care and country's development. [http://kangaroo.javeriana.edu.co/descargas/reportefinal\\_ingles.pdf](http://kangaroo.javeriana.edu.co/descargas/reportefinal_ingles.pdf)
8. Engler A, Cusson R, Bahnsen M, et al. Kangaroo care, National survey of practice, knowledge, barriers and perceptions. *Amer J Maternal and Child Nursing.* 2002; **27**:146-153.
9. Sanders D. The Struggle for Health: Medicine and the Politics of Underdevelopment. MacMillan, London. 1995.
10. Wallin L, Rudberg A and Gunningberg L. Staff experiences in implementing guidelines for Kangaroo Mother Care- a qualitative study. *Intern J Nursing Studies.* 2005; **42**: 61-73.
11. Blencowe HM. Setting up Kangaroo Mother Care at Queen Elizabeth Hospital, Blantyre - a practical approach. *Malawi Med J.* 2005; **17**:39-42.
12. Barrows HS. Practice-based learning; Problem – based learning applied to medical education. Southern Illinois University. 1994.
13. Charpak N and Ruiz-Peláez G. Resistance to implementing Kangaroo Mother Care in developing countries, and proposed solutions. *Acta Paed.* 2006; **95**: 529-534.
14. Cullen R. The medical specialist; information gateway or gatekeeper for the family practitioner. *Bull Med Lib Ass.* 1997; **85**: 348–355.
15. Essential Newborn Care (ENC).Teaching Learning Package for Pre-service Education. World Health Organization collaborative centre for training and research in Newborn care India. [http://www.newbornwhocc.org/essential\\_newborn\\_nursing\\_training-2010.htm](http://www.newbornwhocc.org/essential_newborn_nursing_training-2010.htm)
16. Hilty DM. The present and future interface of technology and medical education. *Acad Psych.* 2006; **30**:437 – 438.
17. Ferguson E. Factors associated with success in medical school; systematic review of literature. *Br Med J.* 2002; **324** : 952 doi: 10.1136/bmj.324.7343.952
18. Charpak N, Ruiz-Pelaez JG, Figueroa de CZ and Charpak Y. A randomized controlled trail of kangaroo mother care: results of follow-up at 1 year of corrected age. *Pediatrics.* 2001; **108**: 1072-9.
19. Kambarami RA, Chidede O and Kowo DT. Kangaroo care versus incubator care in the management of well preterm infants- a pilot study. *Annals Trop Paed.* 1998; **18**: 81-86.
20. Leach A, McArdle TF, Banya WA, et al. Neonatal mortality in a rural area of the Gambia. *Annals Trop Paed.* 1999; **19**: 33-43.
21. Nyquist KH. How can Kangaroo mother care and high technology be comparable? *J Human Lactation.* 2004; **20**:72-74.
22. Blencowe H, Kerac M and Molyneux E. Safety, effectiveness and barriers to follow-up using an 'early discharge' kangaroo care policy in a resource poor setting. *J Trop Paed.* 2009; **55**: 244-248.
23. Dutcher J. Nursing attitudes about Kangaroo care in United States. Abstract presented at National Association of Neonatal Nurses annual meeting, Nashville TN 1996.
24. Brok J. Evaluation of and agreement between Cochrane neonatal reviews and clinical practice guidelines for newborns in Denmark. PhD Thesis. 2010. [http://www.ctu.dk/ctu.nsf/096feb611d810e5ac1256c6f005ffbe4/30e24dff832dd2c0c125707b0028f766/\\$FILE/Jesper%20Brok%20ph\\_d.pdf](http://www.ctu.dk/ctu.nsf/096feb611d810e5ac1256c6f005ffbe4/30e24dff832dd2c0c125707b0028f766/$FILE/Jesper%20Brok%20ph_d.pdf)
25. DiMenna L. Considerations for implementation of a Neonatal Kangaroo Care Protocol. *Neonatal Network.* 2006; **25**:405–412.
26. Doyle LW. Kangaroo mother care. *Lancet.* 1997; **350**:1721-2.
27. Cattaneo A, Davanzo R, Bergman N and Charpak N. Kangaroo mother care in low income countries. *J Trop Paed.* 1998; **44**:279-282.
28. Flynn A and Patricia L. Neonatal nurses' knowledge and beliefs regarding kangaroo care with preterm infants in an Irish neonatal unit. *J Neonatal Nursing.* 2009; **16**: 221-228.
29. Department of Reproductive Health and Research, World Health Organization (2003). Kangaroo mother care: a practical guide 1st ed. Geneva: WHO.