

# KANGAROO MOTHER CARE: LIFE IN PREMATURE BABIES LIFE IN GHANA AND SUB SAHARAN AFRICA

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**Abstract:** Kangaroo mother care method of caring for preterm babies is a simple but proven method that saves preterm babies and helps with their proper development by reducing complications such as hypothermia (low body temperature). Preterm babies are highly susceptible to difficulty in breathing infections which are significant threats to their lives. The practice of kangaroo mother care, a significant number of premature babies survive the health problems associated with their birth. Although kmc is a cost effective intervention that supports preterm babies to survive, the emotional support that care givers require from health workers and family members contribute to make a big difference.

**Key Words:** Premature babies, still birth, mother care, Low birth weight (LBW) kangaroo mother care (KMC)

## 1.0 INTRODUCTION:

Every year, more than 20 million infants are born weighing less than 2.5kg – over 96% of them in developing countries. These low-birth-weight (LBW) infants are at increased risk of early growth retardation, infectious disease, developmental delay and death during infancy and childhood.

Conventional neonatal care of LBW infants is expensive and needs both highly skilled personnel and permanent logistic support. Evidence suggests that kangaroo mother care is a safe and effective alternative to conventional neonatal care, especially in under-resourced settings and may reduce morbidity and mortality in LBW infants as well as increase breastfeeding. Kangaroo mother care involves: early, continuous and prolonged skin-to-skin contact between a mother and her newborn, frequent and exclusive breastfeeding, early discharge from hospital.

## 2.0 METHOD:

Sample research where taken from scientific data from other works done and published in peer reviewed journals. They were analysed, criticized constructively, appraised and some which the writers deem fit was taken as a reference on this work.

Stratified and probity of empirical data and cross sectional surveys done on the subject matter was also revised by the authors in bringing out the final write up.

## 3.0 DISCUSSION:

### Image of Kangaroo Mother Care (KMC)

This is simply and basically the skin-to-skin contact the mother has with the child the child to simulate warmth and foster the WHO recommendations. Kangaroo mother care is a method of care of preterm infants. This guide is intended for health professionals responsible for the care of low-birth-weight and preterm infants. Designed to be adapted to local conditions, it provides guidance on how to organize services at the referral level and on what is needed to provide effective kangaroo mother care. The guide includes practical advice on when and how the kangaroo mother care method can best be applied.

Its key features are:

1. early, continuous and prolonged skin-to-skin contact between the mother and the baby;
2. Exclusive breastfeeding (ideally);
3. It is initiated in hospital and can be continued at home;
4. Small babies can be discharged early;
5. Mothers at home require adequate support and follow-up;
6. It is a gentle, effective method that avoids the agitation routinely experienced in a busy ward with preterm infants.

It was first presented by Rey and Martinez in Bogota, Colombia, where it was developed as an alternative to inadequate and insufficient incubator care for those preterm newborn infants who had overcome initial problems and required only to feed and grow. Almost two decades of implementation and research have made it clear that KMC is more than an alternative to incubator care. It has been shown to be effective for thermal control, breastfeeding and bonding in all newborn infants, irrespective of setting, weight, gestational age, and clinical conditions. Most published experience and research concerning KMC comes from health facilities, where care was initiated with the help of skilled health workers. Once a mother was confident in the care she gave her baby, she continued it at home under guidance and with frequent visits for specialised follow-up.

Three published randomized controlled trials (RCT) comparing KMC with conventional care were conducted in low-income countries. The results showed no difference in survival between the two groups. Almost all deaths in the three studies occurred before eligibility, i.e. before LBW infants were stabilised and enrolled for research. Infants weighing less than 2000g were enrolled after an average period of 3 -14 days on conventional care, in urban third level hospitals. The KMC infants stayed in hospital until they fulfilled the usual criteria for discharge, as the control infants did, in two of the studies, while in the third study they were discharged earlier and subjected to a strict ambulatory follow-up.<sup>25</sup>The follow-up periods lasted one and twelve months respectively.

The RCT carried out in Ecuador by Sloan and collaborators showed a lower rate of severe illness among KMC infants (5%) than in the control group (18%). The sample size required for that study was 350 subjects per group for a total of 700 infants, but only 603 babies were recruited. Recruitment, in fact, was interrupted when the difference in the rate of severe illness became apparent. The other controlled studies conducted in low-income countries revealed no significant difference in severe morbidity, but found fewer hospital infections and readmissions in the KMC group. Kambarami and collaborators from Zimbabwe also reported reduced hospital infections. High-income countries report no difference in morbidity. However, it is notable that no additional risk of infection seems to be associated with skin-to-skin contact.

### **3.1 Benefits**

Kangaroo mother care stimulates proper breathing in the baby and also helps the mother to produce adequate breast milk which contains the right amount of nutrients the preterm baby needs for proper development.

- KMC is at least equivalent to conventional care (incubators), in terms of safety and thermal protection, if measured by mortality.
- KMC, by facilitating breastfeeding, offers noticeable advantages in cases of severe morbidity.
- KMC contributes to the humanization of neonatal care and to better bonding between mother and baby in both low and high-income countries.
- KMC is, in this respect, a modern method of care in any setting, even where expensive technology and adequate care are available.
- KMC has never been assessed in the home setting.

This is mainly achieved by initiating various strategies to improve the care of new born babies through training of health workers, improving ante natal and post natal care services and encouraging family planning methods.

## **4.0 ANALYSIS:**

### ***4.1 KANGAROO MOTHER CARE AND HOW GHANA EMBRACED IT***

The four components of kangaroo mother care are all essential for ensuring the best care options, especially for low birth weight babies. They include skin-to-skin positioning of a baby on the mother's chest; adequate nutrition through breastfeeding; ambulatory care as a result of earlier discharge from hospital; and support for the mother and her family in caring for the baby.

The most important method of spreading kangaroo mother care has been by means of training programmes. Often, the training remains confined to hospital settings. A new approach was adopted in Ghana under a kangaroo mother care (KMC Ghana) project undertaken in four regions, with the support of UNICEF and the South African Medical Research Council's Unit for Maternal and Infant Health Care Strategies. Instead of merely providing training, a longitudinal, open door approach based on continuous support from health-care facilities was adopted.

Under the programme, kangaroo mother care is singled out for special attention for two to three years. This requires participants to focus on one aspect of newborn care, implement it well and in the process integrate it into the normal spectrum of newborn care practices.

The implementation model identifies specific roles for districts and regions, depending on the way authority is devolved in a country. In Ghana, the region is the nodal point for implementation, with districts being responsible for the actual implementation actions. Although half of all births still occur at home, one of the cornerstones of the KMC Ghana project is the establishment of centres of excellence at regional hospitals and 24-hour, continuous kangaroo mother care in each district hospital.

Implementation is overseen by a KMC Steering Committee in each region, consisting of one member from each of the districts. These representatives, in turn, establish steering committees at the district level. Although the focus is on introducing KMC in district hospitals, other health care facilities and community organizations are also sought as partners.

While a comprehensive evaluation of the KMC Ghana programme has yet to take place, preliminary evidence suggests that it is effective in improving the survival of low birth weight babies and strengthening the bond between mothers and newborns.

A study conducted in Ghana and published in the Ghana medical journal and titled: Progress with the Implementation of Kangaroo Mother Care in Four Regions in Ghana. The authors were A-M Bergh, R Manu, K Davy, E Van Rooyen, G Quansah Asare, JK Awoonor-williams, M Dedzo, A Twumasi, and A Nang-Beifubah really gave a detailed stage with variations on KMC as a method and how Ghana was embracing it. Their aim was to measure progress with the implementation of kangaroo mother care (KMC) for low birth-weight (LBW) infants at a health systems level.

### ***4.2 Method they used***

The purpose of the end-of-intervention assessment, which was called 'progress monitoring', was to review the status and level of KMC implementation and practice in health facilities in the four regions with a view to identifying strengths and challenges and, where necessary, making recommendations for improvement. This formed part of an action research design used for monitoring the process and outcomes of the intervention. Action research often entails a developmental and participatory approach where a group of people are intensely involved in the change process and reflect on ways of improving what they are doing. In the case of KMC Ghana health workers participated in the implementation of KMC in their quest to reduce mortality and morbidity in LBW infants. The research design was therefore emerging as the process unfolded, to accommodate individual differences and needs between regions, districts and facilities. The design of this exercise drew strongly on the experiences of other countries and on two randomised trials that measured the effect of different outreach strategies for the implementation of KMC in South Africa.

A standardised progress-monitoring instrument was used to collect quantitative and qualitative data for each hospital. The instrument makes provision for collecting comprehensive information on issues that could affect KMC practice and services.

Some items rely on the self-report by health workers and others on observations. Some of the quantifiable items contribute towards a progress score out of 30 points. The number of points scored by a health facility indicates which level of implementation that facility has reached. The model, which is described in detail elsewhere, has six levels of implementation: (1) creating awareness; (2) adopting the concept; (3) taking ownership; (4) evidence of practice; (5) evidence of routine and integration; (6) sustainable practice. Sufficient progress with implementation refers to a score on levels 4, 5 or 6. The period of one year would not provide implementers time to achieve the level of “sustainable practice” and was therefore neither an anticipated nor realistic goal.

### ***4.3 The Progress Monitoring Approach used by A-M Bergh, R Manu et. al***

The assessment exercise took place one year after the first workshops had been conducted. Altogether 38 hospitals were visited - 33 district hospitals, four regional hospitals and one teaching hospital. Participants had already been prepared for the monitoring process during the advanced workshops conducted six months earlier, when they were required to continue with the refinement and further development of their action plans. Additional guidelines providing information on what to prepare for the progress-monitoring visit were also distributed at a later stage, prior to the assessment. In each region, members of the regional steering committee were nominated to be trained as progress monitors or assessors. A total of six monitoring teams were trained, one for each of the two smaller regions and two for each of the two larger regions. Each team consisted of three to four members.

The three-week progress-monitoring process consisted of three components, which ran consecutively:

- a. Two-day preparation workshop to train the KMC progress monitors. This interactive workshop included a role-play to introduce participants to the progress-monitoring tool. On the second day a local hospital was visited and scored by the freshly trained ‘progress monitors’.
- b. Visit to each district and regional hospital in the four regions. Each team of monitors was accompanied by one of the three facilitators who had been involved in the KMC Ghana initiative from the outset and who had experience in monitoring progress with the implementation of KMC.
- c. One- or two-day debriefing workshop to compile the first draft of the report for each region. Feedback was given on the fieldwork and the quantitative data were collated and processed as far as possible. Each region collaboratively compiled its own report, which included recommendations and a discussion of the way forward.

The approach used differs somewhat from a formal summative evaluation at the end of a project. The progress-monitoring visits largely doubled as outreach visits used as an additional KMC learning opportunity for personnel at the health care facilities and for the trained progress monitors, who did not merely serve as data collectors, but also as peer facilitators.

## **5.0 FINDINGS:**

### ***5.1 Where KMC can be practiced effectively***

KMC can be implemented in various facilities and at different levels of care. The most common settings where such care can be implemented are described below:

### ***5.2 Maternity facilities***

Small maternity units with several deliveries per day, these facilities are usually staffed by skilled midwives but often have no doctors and lack special equipment (incubators and radiant warmers) and supplies (oxygen, drugs and preterm formula) for the care of LBW and preterm newborn infants. If possible, such infants are transferred

to a higher level of care; otherwise they are kept with their mothers and discharged early for home care. Hypothermia, infections, respiratory and feeding problems contribute to high mortality rates among those infants.

### **5.3 Referral hospitals**

This category includes a wide range of special care units in district and provincial hospitals. A common feature is the availability of skilled personnel (specialized nurses and midwives, paediatricians, obstetricians, or at least experienced physicians) and basic equipment and supplies for special neonatal care.

However, in reality, staff and equipment are often in short supply: competent physicians may be available a few hours per day only; small newborn infants are kept in large nurseries or wards, sometimes in contact with older patients. Mothers cannot stay with their infants and they have difficulty establishing and maintaining breastfeeding. Mortality may also be high for the same reasons. Abandonment may be a common problem.

### **5.4 Addressing KMC and the way forward**

Implementation of KMC and its protocol will need to be facilitated by supportive health authorities at all levels. These include the various ministries of health through the government, non-governmental organisations, hospital director and the people in charge of the health care system at district, provincial and regional levels.

A national policy ensures a coherent and effective integration of the practice within pre-existing structures of the health system and education and training.

Preterm babies are best born in institutions that can provide the special medical care required for managing their frequent complications. Thus, when a premature baby is expected, the mother should be transferred to such an institution before birth. If this is not possible, very small babies or small babies with problems should be transferred there as soon as possible.

The referral system should be organized in such a way as to guarantee the safety of mothers and their babies. National standards and protocols need to be developed for the care of small babies, including those mentioned above, once they have overcome the initial problems. Standards must include clear criteria for monitoring and evaluation. These can best be developed by the appropriate professional groups with the participation of parents. Furthermore, local protocols will be easier to implement if national policies and guidelines are clearly set out. Continuous monitoring and regular evaluation according to established criteria will help improve practice and design, and carry out research that may help refine the method. Each health facility that implements KMC should, in its turn, have a written policy and guidelines adapted to the local situation and culture. Such policies and guidelines will be more effective if they are agreed on by consensus, involving all the staff, where possible, in developing local protocols based on national or international guidelines. The protocol should cover KMC as presented here, and should, of course, include follow-up. It could also be complemented by detailed instructions on general problems (e.g. hygiene of staff and mothers) or on problems commonly occurring in preterm infants (e.g. prevention and treatment of infection). After the introduction of the KMC protocol, monthly meetings with the staff will be useful to discuss and analyse data and problems, and to improve the protocol if necessary.

### **5.5 Caring for the baby in kangaroo position**

Babies can receive most of the necessary care, including feeding, while in kangaroo position.

They need to be moved away from skin-to-skin contact only for:

- a. Changing diapers, hygiene and cord care; and
- b. Clinical assessment, according to hospital schedules or when needed.
- c. Daily bathing is not needed and is not recommended. If local customs require a daily bath and it cannot be avoided, it should be short and warm (about 37°C).
- d. The baby should be thoroughly dried immediately afterwards, wrapped in warm clothes, and put back into the KMC position as soon as possible.

## 6.0 RESULTS:

During the day, the mother carrying a baby in the KMC position can do whatever she likes: she can walk, stand, sit, or engage in different recreational, educational or income-generating activities. Such activities can make her long stay in hospital less boring and more bearable. She has to meet, however, a few basic requirements such as cleanliness and personal hygiene (stress frequent hand-washing). She should also ensure a quiet environment for her baby and feed him regularly.

The practice of kangaroo mother care (KMC) for premature babies helps to prevent about 75 percent deaths among the over 120,000 babies born before their due date in Ghana (Pediatric society of Ghana, 2016). World premature day, 17th November is commemorated annually to raise awareness of heavy burden of death, disability, the psychological stress and pain, suffering that preterm birth causes to families, communities and nations at large.

In affluent societies the main contributor to LBW is preterm birth. The rate has been decreasing thanks to better socioeconomic conditions, lifestyles and nutrition, resulting in healthier pregnancies, and to modern neonatal care technology and highly specialized and skilled health workers. In less developed countries high rates of LBW are due to preterm birth and impaired intrauterine growth, and their prevalence is decreasing slowly. Since causes and determinants remain largely unknown, effective interventions are limited. Moreover, modern technology is either not available or cannot be used properly, often due to the shortage of skilled staff.

Incubators, for instance, where available, are often insufficient to meet local needs or are not adequately cleaned. Purchase of the equipment and spare parts, maintenance and repairs are difficult and costly; the power supply is intermittent, so the equipment does not work properly.

Under such circumstances good care of preterm and LBW babies is difficult: hypothermia and nosocomial infections are frequent, aggravating the poor outcomes due to prematurity.

Frequently and often unnecessarily, incubators separate babies from their mothers, depriving them of the necessary contact. Unfortunately, there is no simple solution to this problem since the health of an infant is closely linked to the mother's health and the care she receives in pregnancy and childbirth.

For many small preterm infants, receiving prolonged medical care is important. However, kangaroo mother care (KMC) is an effective way to meet baby's needs for warmth, breastfeeding, protection from infection, stimulation, safety and love.

## 7.0 RECOMMENDATIONS:

Every health facility that offers maternal services should have a KMC unit especially in sub Saharan Africa where incubators are scarce in about 70% of the hospitals. Nurses and midwives should be given special training on kangaroo mother care in order to let them transmit these practical skill and powerful lifesaving technique to expectant mothers in the various hospitals.

## 8.0 CONCLUSION:

On balance the evidence shows that although KMC does not necessarily improve survival, it does not reduce it. After stabilization, there is no difference in survival between KMC and good conventional care. The hypothesis that KMC might improve survival when applied before stabilization needs to be further explored with well-designed studies. If such an effect on survival exists, it will be more evident and easier to demonstrate in the poorest settings, where mortality is very high.

As for morbidity, while there is no strong evidence of a beneficial effect of KMC, there is no evidence of it being harmful. In addition to the little evidence already published, some preliminary results on a small number of newborn infants with mild respiratory distress seem to confirm that very early skin-to-skin contact might have a beneficial effect. A word of warning about discharge: KMC infants discharged during the cold season may be

more susceptible to severe illness, especially lower respiratory tract infections, than those discharged during the warm season. A closer follow-up is needed in such cases.

It should be noted that all the studies so far have taken place in well-equipped hospitals, yet arguably the most significant impact of KMC will be felt in settings with limited resources. There is an urgent need for further research in these settings. In the meantime, it seems that where poor conventional care is available, KMC offers a safe substitute, with little risk of raised morbidity or mortality. In future KMC should also be linked to and integrated into relevant programmes and approaches such as Essential Newborn Care (ENC), the Baby-friendly Hospital Initiative (BFHI), the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) and High Impact Rapid Delivery (HIRD).

Other KMC scale-up projects elsewhere in the world found it important to continuously support regions for two to three years so as to enable health care facilities and districts to strengthen their KMC services and integrate KMC into all relevant programmes. Although health care workers participating in KMC Ghana were receptive and eager to learn about KMC, support for the initiative should continue, especially through the development of KMC centres of excellence and outreach programme.

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