

Supporting factors and barriers in implementing kangaroo mother care in Indonesia

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Abstract

Background Kangaroo mother care (KMC) was introduced to Indonesia in the 1990s. Since then, KMC has not been widely implemented and has not received national policy support.

Objective The objectives of this case study were to implement KMC by an intervention that would ultimately benefit ten hospitals in Java, Indonesia, as well as identify supporting factors and barriers to KMC implementation.

Methods An intervention with four phases was conducted in ten hospitals. Two teaching hospitals were supported to serve as training centers, six hospitals were supported to implement KMC and two other hospitals were supported to strengthen existing KMC practices. The four phases were comprised of a baseline assessment, a five-day training workshop, two supervisory visits to each hospital, and an end-line assessment.

Results A total of 344 low birth weight infants received KMC during the intervention period. Good progress with regards to implementation was observed in most hospitals between the first and second supervisory visits. Supporting factors for KMC were the following: support received from hospital management, positive attitudes of healthcare providers, patients, families and communities, as well as the availability of resources. The most common challenges were record keeping and data collection, human resources and staff issues, infrastructure and budgets, discharge and follow-up, as well as family issues. Challenges related to the family were the inability of the mother or family to visit the infant frequently to provide KMC, and the affordability of hospital user fees for the infant to stay in the hospital for a sufficient period of time.

Conclusion KMC appeared to be well accepted in most hospitals. For an intervention to have maximum impact, it is important to integrate services and maintain a complex network of communication systems. [Paediatr Indones. 2012;52:43-50].

Keywords: kangaroo mother care, implementation, barriers, supporting factors, Indonesian hospitals

Kangaroo mother care (KMC) is a low-cost health care method that is practiced in conjunction with conventional newborn care, especially in preterm and low birth weight (LBW) infants. The infant is positioned skin-to-skin in an upright position against the mother's chest. Intermittent KMC entails keeping the infant in this position for a few hours per day, while in continuous KMC the infant is cared for in this position for more than 20 hours per day. Other components of KMC are the promotion of exclusive breastfeeding where possible, earlier discharge of infants (combined with appropriate follow-up measures), and the provision of appropriate support for mothers and infants by health workers and their families.¹ The physiological, behavioral and psychosocial benefits of KMC are well documented.²⁻⁴ Evidence also exists for the safety and effectiveness of KMC to reduce the risk of neonatal deaths.^{2,5}

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Introducing and strengthening KMC in low- and middle-income countries often take place along the backdrop of the Millennium Development Goals, which highlight the need for action in order to improve the quality of maternal and newborn care. According to the Indonesian Demographic Health Survey of 2007, the national neonatal mortality rate was 19 per 1,000 live births and the infant mortality rate was 34 per 1,000 live births.⁶ “According to World Health Organization estimates, mortalities in the early neonatal period (0-6 days) comprised 78% of all neonatal mortalities in the first 28 complete days after birth in 2000.⁷ Prematurity is one of the leading causes of neonatal deaths.⁶ There is limited data available on the prevalence of LBW in Indonesia. According to Kusharisupeni, LBW occurrence ranges between 7% and 14%, with figures as high as 16% in some districts.⁸ The data provided by the Ministry of Health points to a LBW rate of about 17%,⁹ with 51% of the in-hospital newborn deaths in 2004 being due to LBW.¹⁰

KMC was introduced to Indonesia in the 1990s and has since been practiced in a number of hospitals, especially teaching hospitals attached to universities. Professional organizations, such as the Indonesian Society for Perinatology (Perinasia), were instrumental in establishing KMC and keeping the momentum of the program going. A number of studies were conducted on the safety and acceptability of KMC.¹¹⁻¹⁵ However, the results of this research were not adopted as national policy. Therefore, a need was identified to strengthen KMC in hospitals where it was already practiced and to expand KMC to more hospitals.

The objective of this paper is to describe the intervention undertaken between January and June 2010. This intervention aimed at improving quality and coverage of KMC, by means of strengthening KMC practices in a number of hospitals and introducing KMC as a new practice to other hospitals.

Methods

In the 18 months prior to the intervention, Cipto Mangunkusumo Hospital (RSCM), Jakarta and Dr Soetomo Hospital, Surabaya were developed as training centers and their KMC practices were strengthened. Eight more hospitals from Jakarta Metropolitan Area (*Daerah Khusus Ibukota - DKI*), as well as from West Java and East Java, were also recruited to participate in the KMC intervention. These hospitals comprised two provincial teaching hospitals, four district hospitals, one maternity hospital and one mother and child hospital. The number of deliveries for 2009 ranged between 600 and 8,000 in these eight hospitals, with an average LBW rate of 20.8%.

The intervention consisted of four components: baseline assessment, training key health professionals, two on-site supervisory or on-the-job training visits to each hospital, and end-line assessment. Two workshops, where individual hospitals provided feedback on their progress, were also conducted at strategic points during the project. **Table 1** shows an overview of the timeline of the intervention. This article reports on the findings of the first three phases.

The baseline assessment (January and February 2010) was used to obtain an overview of newborn care practices that might facilitate or hamper the implementation of KMC in the project hospitals. Information elicited was related to the following: nature of the healthcare facility, facilities for newborns, mother- and baby-friendly status, implementation status of KMC, feeding and weight monitoring, documentation and patient records, follow-up systems after discharge, and staffing issues. We also identified the strengths of the facilities and challenges they experienced.

The three five-day training workshops held during February 2010 were attended by about four

Table 1. Timeline of the intervention

Months 1-2	Month 2	Month 3	Months 3-5	Month 6
<i>Phase 1:</i>	<i>Phase 2:</i>		<i>Phase 3:</i>	<i>Phase 4:</i>
Baseline assessment (10 hospitals)	Three training workshops	National KMC workshop	<ul style="list-style-type: none"> • Two supervisory visits to each hospital • Collection of patient data 	<ul style="list-style-type: none"> • End-line assessment (10 hospitals) • Feedback workshop

delegates from each hospital, as well as an official from each of the provinces where the hospitals were located, bringing the number of participants to 43. Each workshop offered theoretical and practical components. Key to the training was the development of a plan of action by each hospital, which would be used as a road map to monitor progress and to adapt as necessary during the course of intervention.

Between March and May 2010, each hospital received two supervisory visits by members of PerinAsia. The qualitative notes on the visits were documented on a template specially devised for this purpose, and included feedback on key planned actions, provision of monthly statistics, and a general discussion on other issues and challenges. Ward visits were conducted to observe infants in the KMC program and to view records, protocols and guidelines. The visits were also used to interview mothers on their experiences with KMC and to review the KMC skills of staff members. In addition, areas for improvement, future plans and follow-up actions were discussed.

The end-line assessment (June 2010) comprised two major components. First, all hospitals captured key indicators on a standardized KMC monitoring form (*buku pemantauan*) for each patient who received KMC during the period of March to May 2010. Second, KMC implementation progress was measured by means of a standardized progress-monitoring instrument, with items covering the following themes: history of KMC implementation, types of KMC practiced, involvement of different role-players, resources and space, observation of KMC, KMC documentation, health promotion, as well as staff orientation and training in KMC. The results of the end-line assessment will be reported elsewhere.

Qualitative data was collected at various points throughout the intervention. Apart from the data collected during supervisory visits, the baseline and end-line instruments and the evaluation tool of the training workshops contained open-ended questions that yielded useful data. Presentations made at the two feedback workshops were also used for this purpose. Different data sources served as additional input and were utilized to identify both supporting factors and barriers to KMC implementation.

Results

In addition to the two hospitals acting as training centers for the intervention, two other hospitals were already implementing intermittent KMC at the time of the intervention. One of these hospitals expanded its services to include the provision of a room where continuous KMC could be practiced. Three hundred and forty-four (344) infants received some form of KMC (mostly intermittently) in the ten participating hospitals during the intervention period (March to May 2010). A total of 136 infants received KMC at the two training centers and 208 received KMC at the remaining eight hospitals. The 208 infants in the latter hospitals comprised 21% of the total of 979 LBW infants born in these hospitals during this period.

The action plans formulated at various points in the intervention had similar categories of activities summarized as follows: formalization of KMC in the hospital structure, infrastructure and equipment, dissemination, integration of KMC components, and 'going beyond the basics'. **Table 2** provides more detail on each of these categories.

The short time-frame of the project allowed for only two supervisory visits and, due to logistical complexity, it was not possible for the same team to visit the same hospital on both occasions. Most hospitals were prepared and willing to implement or improve KMC, utilizing the services of an enthusiastic, dedicated and committed KMC team. However, some hospitals experienced problems obtaining written support from the hospital director and management. It also appeared as though most women and families accepted the KMC program in a positive way.

The progress observed in KMC implementation between the first and second supervisory visits was remarkable, given the short time-frame. In many instances, progress exceeded the activities listed in the hospitals' action plans. Some hospitals had already acquired a room and equipment for continuous KMC whereas, in other hospitals, the acquisition of equipment had been approved by management. Sensitization, in-house orientation and training, and KMC education all took place, including the utilization of existing leaflets and posters or the development of local brochures or posters.

One of the objectives of the supervisory visits was to assist KMC hospital teams to find creative solutions

Table 2. Detailed plans of action

Category	Actions
Formalization of KMC in the hospital structure	<ul style="list-style-type: none"> • The formation of a KMC team responsible for overseeing all the implementation activities in the hospital • Getting support and buy-in from the director and senior management • Drafting of a decree and standard operating procedures • Establishing or strengthening a KMC recording and reporting system
Infrastructure and equipment	<p>Actions and structural changes required for:</p> <ul style="list-style-type: none"> • the establishment of a ward for continuous KMC and/or a space or room for intermittent KMC • procurement of chairs, (adult) beds, slings, hats and other equipment
Dissemination	<p>Aimed at different role-players:</p> <ul style="list-style-type: none"> • Sensitization • Orientation • Education • Health promotion
Integration of KMC components	<ul style="list-style-type: none"> • The improvement of breastfeeding practices • Follow-up of KMC babies after discharge via networking and home visits
'Going beyond the basics'	<ul style="list-style-type: none"> • Networking and collaboration with the health office, other hospitals and community health centers (<i>puskesmas</i>), as well as the community at large • The inclusion of KMC in antenatal care • The extension of visiting times for mothers to enable them to do more KMC • Monitoring and evaluation • Research

to the challenges facing them. The main challenges were record-keeping, human resources, issues faced by the families of the LBW infants, as well as the follow-up of these babies.

Factors that influenced the implementation of KMC were derived from the qualitative data sets that were available. These factors were organized around the following themes: 'basics' in place, hospital characteristics, support from hospital management, healthcare providers on the ground, resources, as well as patients, families and communities. Factors that spanned the entire health system, or various activities within the same hospital, included challenges relating to changing behaviors and the different types of support required from all levels of the health system and in-hospital structures.

Commitment to KMC at the central government level was strongly perceived as a supporting factor, whereas a similar understanding and commitment at the regional, district or city level were perceived as challenges. Other factors generally perceived as supportive were hospitals with some KMC experience prior to the start of the intervention, and the existence of a decree and standard operating procedures (SOPs) for KMC at the hospital level. The attention, commitment, and support from hospital management

were generally considered to be a supportive factor, especially where there was a good understanding of what KMC entailed and a belief in its benefits. Factors that were mainly perceived as supportive, but with some pockets of resistance, were staff acceptance of, and commitment to KMC, and staff collaboration and teamwork.

A number of factors were perceived as supportive in some settings, while posing a challenge in others. These factors included operational support, staff members' experience and competence, staff training, the ability to integrate KMC into newborn care practices, as well as acceptance and understanding of KMC by the family. The arrangement of the necessary space for KMC and the availability of equipment (e.g., digital scale) were mainly perceived as a challenge, although a few institutions regarded it as a supportive factor. Some hospitals were also better prepared to deal with data collection on a new KMC monitoring form that had to be coordinated with previously existing medical and administrative records. Hence, we observed variations in the quality of data recordings.

Staff issues were generally perceived as a challenge with regard to staff numbers, workload and rotations. The absence of KMC roles and

responsibilities in job descriptions and/or a high workload did not allow for sufficient focus on KMC in some hospitals. KMC-trained staff members were sometimes also rotated elsewhere in the hospital. Although all hospitals had staff trained in KMC, some of the other staff members involved in postnatal care in some hospitals appeared to have received insufficient in-house orientation. Therefore, it was not always clear whether an appropriate level of staff competence in KMC practices had been reached.

Hospital resource challenges revolved around budget and infrastructure. In addition, high patient numbers and referrals from elsewhere presented a challenge for some hospitals.

A major challenge we identified was the lack of access to an appropriate level of post-discharge care for LBW infants. The large number of patients going home against medical advice was emphasized by staff members in most participating hospitals. Comments were also made about the failure of clients to return with the baby for follow-up visits. To provide greater continuity of care, staff expressed the need for a special area or space in the perinatology unit to conduct follow-up examinations, which were otherwise done in outpatient clinics.

Challenges facing the family revolved around distance and health-care user fees. The distance between home and the health care facility hampered frequent visits necessary for intermittent KMC. User fees for mother and baby to room-in for continuous KMC also constituted an issue in some hospitals, whereas mothers were able to negotiate a special arrangement with management in other hospitals for a waiver of fees. Some staff members also had the perception that family constraints influenced the practice of continuous KMC in the hospital. These family constraints included financial difficulties, other children to care for at home, and mothers' lack of understanding of the KMC concept. It was also reported that not all mothers agreed to breastfeeding. Furthermore, it appeared as though not all hospitals had appropriate eligibility criteria for starting KMC, and some infants received KMC only for a day or two prior to discharge. This observation gives rise to the question of whether parents had acquired sufficient skills in KMC practice while under professional supervision and before returning home with the infant.

Discussion

Each hospital received two supervisory visits during the intervention. Providing outreach support with a view to improving KMC practice is in line with current best practice regarding outreach and continuous feedback,¹⁶⁻¹⁸ including its use in the implementation of KMC.^{19,20} However, when compared to programs in other countries, the time-frame of this project was shorter. For example, in a South African scale-up program in KMC, the period between the first training and the end-line assessment comprised of at least six to eight months, compared to the four months in this study. The two South African outreach programs included two and three supervisory visits, respectively, with longer intervals between visits.^{19,20} The utilization of structured action plans was similar to the South African model. For future programs it is recommended that KMC implementation interventions should span at least 12 months, between the first training and the end-line assessment.

Factors facilitating the implementation of KMC in this project were similar to those in other studies. The positive support from the Ministry of Health could be seen as an endorsement by opinion leaders.¹⁹ The decree signed by most of the hospitals in this study was similar to that of the South African implementation trials, where chief executive officers signed an undertaking to implement KMC.^{19,20} Identified as important issues in one of the South African studies,²¹ good planning for implementation, especially with regards to infrastructure and human resources, as well as gaining the support of management, was positively experienced in some of the hospitals in our study. Staff members' enthusiasm was also noted in other studies as being important for successful implementation.^{20,21}

During the process of implementation, challenges may be expected. The challenges hospitals faced with the implementation of KMC were similar to those experienced in other lower-income countries, in individual institutions and in KMC scale-up programs.²²⁻²⁴ Some challenges, such as finding space and facilities for continuous KMC, require longer-term solutions. The importance of having hospital management on board and working in collaboration with provincial or district structures, was also emphasized in other studies.^{19-21,24,25} The difficulties

experienced in requesting health staff to complete the KMC monitoring forms highlighted the importance of minimizing burdens for staff members with the introduction of new forms. When KMC is introduced, there are always questions about the human resource implications and the fear of an increased workload. Staff shortages and the rotation of KMC-trained staff members were also reported as constituting a challenge to nursing and clinical supervision in Malawi.²³ Personal communication reports from South Africa indicated that there had been an initial increase in workload when getting KMC started, including designing and drawing up documentation (e.g., SOPs and information leaflets for families), but once KMC had become institutionalized, the staff workload actually decreased, especially where continuous KMC was practiced (Personal communication, Elise van Rooyen). In a study undertaken in Sardjito Hospital, Yogyakarta, Haksari *et al.*¹³ reported that where continuous KMC was practiced, staff members spent 40% less time on routine tasks and 50% less time on emergency work.

Further investigation needs to be done in identifying challenges facing families practicing KMC, as it was not always clear which challenges constituted real problems and which were actually health workers' perceptions of these challenges. Haksari *et al.*, for example, found that only three out of 22 mothers practicing continuous KMC "were worried about the care of their children left at home".¹³ Another factor requiring further consideration is the charge of user fees in the case of LBW infants who needed prolonged hospital care, as well as for mothers and babies in the case of rooming-in for continuous KMC. By providing continuous KMC, the duration of the hospital stay might be decreased. The average hospital stay for infants receiving continuous KMC at Sardjito Hospital was 13 days, compared to 18 days for infants receiving conventional care.¹³ In a recent Cochrane systematic review, it was found that intermittent KMC actually decreased the duration of infants' hospital stay by 2.3 days.²

One of the major challenges identified in this study was appropriate follow-up care of LBW infants after hospital discharge. The Sardjito Hospital study found that higher numbers of KMC infants were brought back for follow-up visits than infants who had received conventional care.¹³ Some constraints

of follow-up procedures are inherent to any highly decentralized health system with different reporting lines for different types of healthcare facilities. Existing district structures, such as the Making Pregnancy Safer – Child Survival (MPS-CS) committees, have the potential to address this particular challenge in a more systematic way. This would entail appropriate training in the follow-up care of LBW infants who need special care, and the establishment of a communication and referral system where community health centers could be developed as step-down facilities, as well as the use of active surveillance to track down and follow up on infants via the routine health information system, referred to as Local Area Monitoring and Tracking (LAMAT).

KMC seems to have been well accepted at most of the intervention hospitals. Generally, staff members, i.e., doctors, nurses, midwives and administrative staff, were positive about KMC. In hospitals where directors were supportive, great strides in KMC implementation or in maintaining their practices were observed. However, hospitals need regular support over a longer period of time than was possible to achieve in this study. Such support could, for example, result in an increase in the percentage of LBW infants receiving KMC in hospitals where KMC services are provided. Ideally, and in order to be sustainable in the long term, regular supervisory visits should become part of the outreach function of all provincial hospitals.

Looking back at the overall process of this intervention, there were important lessons to be learned in the basic steps required before embarking on a scale-up process in hospitals.

First, a great deal of advocacy and orientation is required before the start of any KMC program, in order to prepare local district health offices, local legislative members, hospital managers and other key stakeholders who would be instrumental in supporting program implementation and assisting with the roll-out in the community.

Second, greater organizational preparation and more discussions about the intervention with hospital managers are required when KMC is introduced as a service in the hospital healthcare system including more specific discussions on issues of infrastructure, human resources, as well as additional data-capturing activities required for monitoring KMC effectiveness.

Third, a more concerted effort should be made to integrate the KMC program into other indispensable components of the institution, such as lactation management or other components of the Mother- and Baby-friendly Hospital Initiative.

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