



Original Article

Neonatal nurse skills and Kangaroo Mother Care (KMC) training: One year post-training evaluation

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ABSTRACT

Perinatal Kangaroo Mother Care (KMC) training could improve the competence of health officers' knowledge and skills. Both trying the module and evaluating its results are important.

Aim: This study aimed to assess the skills of neonatal nurses one year after KMC training in the Pasar Rebo District General Hospital.

Method: A qualitative approach that included in-depth interviews, group discussions, and observations of the neonatal nurses' skills in KMC was implemented. Thematic analysis was performed.

Results: A year after follow-up, there was neither KMC training nor a clear policy. It was mentioned that there was a standard operating procedure (SOP) of KMC and routine transfer of health personnel. However, there were no KMC IEC materials or free KMC gowns to support the training.

Conclusion: The development of KMC services in the hospital not only provided training for health personnel but also required continuation, a clear policy, a SOP, and education support materials.

1. Introduction

The Kangaroo Mother Care (KMC) method can prevent the occurrence of hypothermia because the mother's body can provide warmth to the baby continuously through the method of skin-to-skin contact (SSC; WHO, 2003; DiMenna, 2006; Pratomo et al., 2012; Lim, 2018). The KMC model includes SSC between a mother and her preterm infant in a hospital as well as after discharge while breastfeeding exclusively and with follow-up care (Nyqvist et al., 2010a). Based on research results, the benefits of KMC can also improve the emotional relationship between the mother and baby, the cardiovascular system, thermal stability, and oxygen saturation as well as reduce episodes of apnoea and shorten the length of the hospital stay (Bohnhorst et al., 2004; Ludington-Hoe et al., 2004; Heimann et al., 2010).

Studies have found that babies who receive KMC have better health outcomes (Ludington-Hoe et al., 2006). KMC is now widely adapted all over the world for the care of preterm infants (WHO, 2014; Nyqvist et al., 2010a). SSC also increases the incidence of exclusive breastfeeding, which improves weight gain and promotes early hospital discharges (Conde-Agudelo and Díaz-Rossello, 2014). Furthermore, SSC improves the uptake of breastfeeding in preterm infants (Nyqvist et al., 2010b; Flacking et al., 2011). KMC also reduces parental stress and

fosters maternal-infant bonding (Heimann et al., 2010; Conde-Agudelo and Díaz-Rossello, 2014). From the perspective of neuroscience Bergman (2014) proposed that zero separation of mother and newborn should be maintained at all cost within the health services.

In Malawi, KMC was introduced in 1999 and in 2011, an evaluation was made regarding the implementation of the KMC in fourteen facilities (Bergh et al., 2012). It was reported that in some districts, more health workers underwent in-service training in KMC compared to those in other districts. It was also found that some providers were of the opinion that they could not provide KMC services unless they underwent special training in either KMC or integrated maternal and newborn care (Bergh et al., 2012).

Another study reported on the evaluation of KMC training after 6 months. The results indicated that the implementation of SSC among infants with extremely low birth weight was hindered by the safety of the infant as well as parental reluctance to implement SSC. Furthermore, this study emphasized the need for both education and continuing training for health providers to assist them in gaining SSC skills for infant care. It is very important for the health provider to have both experience and confidence in assessing SSC's appropriateness for an infant while ensuring parental readiness, creating a conducive environment, and complying with transfer procedures (Lim, 2018).

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KMC has been implemented in Indonesia since the late 1990's. Starting in 2008, through the Health Service Program (HSP)/United States Aid for International Development (USAID), support was given to the Ministry of Health to implement KMC in ten hospitals in the country. A 2012 study found that a lack of access to appropriate KMC care for low birth weight infant (LBWI) became a major challenge for the sustainability of the KMC implementation (Pratomo et al., 2012). The results of another country's study evaluated that one month after KMC training, among the midwives, the informants had some competence in both lactation management and KMC skills. However, some informants reported difficulties in counselling concerning breastfeeding problems (Ayunin and Pratomo, 2018).

According to Kirkpatrick, training is an effort to increase knowledge, change behaviour, and develop skills (Yardley and Dornan, 2012). The KMC training is one way to improve the competence of health officers regarding the knowledge and skills for caring for LBWIs. As a part of the research stage in the development of referral health services for the LBWIs in Koja General District Hospital (GDH Jakarta) and the Karawang GDH (West Java), a KMC training module, which was intended for the hospital personnel was developed by the Indonesian Society for Perinatology (Perinasia). The KMC training module consisted of eight topics: 1. Problems of LBWIs; 2. Benefits and implementation of KMC; 3. Socio-cultural aspects of KMC; 4. Communication in KMC; 5. Giving breastmilk to LBWIs; 6. Discharge planning; 7. KMC practice; and 8. Counselling practice in KMC. Prior to the actual use of the modules in the two targeted hospitals, it was considered necessary to try out the modules with the hospital personnel under similar conditions.

To test the feasibility of the KMC training module, training for the hospital personnel was conducted from January 31st through February 1st, 2017 by the Faculty of Public Health of the Universitas Indonesia KMC Research Team in cooperation with Perinasia. Twelve nurses from the NICU participated in this training. Additionally, this study aimed to evaluate the neonatal nurse skills (one year after KMC training) in the Pasar Rebo GDH.

2. Methods

The research design was qualitative, using in-depth interviews, group discussions, and observations of skills ability to measure the extent to which the participants applied the results of the KMC training in their working place. In-depth interviews were implemented with eight of the informants, namely, the director of the hospital, chairman of the paediatric department, paediatricians, chief of the NICU and perinatology ward, and chiefs of both the delivery room and postpartum ward. Group discussions consisting of 3 groups were performed. Both instruments consisted of the following: the description of KMC training activities implemented one year ago; KMC policy and personnel; the transfer of health personnel who attended KMC training; health education in KMC, KMC equipment, and facilities; and the recording of and reporting on KMC. The data collectors of both the in-depth interviews and group discussions were the research team assisted by a research assistant.

Observations were also conducted to observe the neonatal nurses, who were divided into three groups of four people each. Role play was used to designate a nurse and a patient, which was simulated to enable the observation of the related KMC skills of each nurse. The observer was Ms. N, a leading KMC trainer from Perinasia who held a Master of Nursing degree from the Faculty of Nursing Science, Universitas Indonesia. The observed nurses were requested to demonstrate five steps relating to new-born care, namely, kangaroo position, temperature measurements, putting newborns into and expelling from the KMC position, and the breastfeeding position. Each step was assessed by the trainers and given a score from 0 to 100.

Prior to data collection an informed consent was completed for each of the informants and key informants. Neonatal nurses who underwent

the observations also filled out the form. Pretesting of the in-depth interviews and group discussions was performed on two similar informants, one health care worker and one management staff member from a similar hospital nearby. Pretesting of the instruments took place in the Tebet sub-district hospital on April 27th, 2018, and the actual data collection was conducted May 1st-24th, 2018.

The key informants' characteristics from the in-depth interviews included an average age of 53 years, with a range of 37–60 years, while the average work experience was 19.8 years, with a range of 7–27 years. Their educational background varied from an Associate Bachelor to the Magister Science level.

The backgrounds of the informants for both the group discussions and observations were as follows: the average age was 36 years with range of 25–45 years and the average length of work experience was 12.4 years with range of 3–17 years. The majority possessed an Associate Bachelor Degree in Nursing.

A thematic analysis was used to identify as well as arrange the existing themes within the dataset, which examined commonality, differences, and relationships in various aspects of the dataset (Gibson and Brown, 2009). The verbatim account of all discourse and sounds was transcribed and encoded to established themes. Two themes will be presented as follows: (a) nursing practice assessment one year after KMC training, and (b) the policies, standard operating procedures (SOP) and support for KMC.

3. Results

The two themes identified from the interview data, observations, and group discussion are detailed below.

3.1. Nursing practice assessment one year after KMC training

All participants described a variety of skills and competencies that nurses were expected to acquire in implementing KMC safely. These included acquiring sufficient knowledge, experience, and confidence in KMC as well as skills in the assessment of an infant's readiness. All participants perceived informal teaching, bed-side teaching, and classroom teaching as supportive factors in promoting KMC as these helped to improve their skills and confidence in decision making. However, none of the participants had participated in any continuing education program concerning KMC. Some participants perceived that KMC could increase their workload and was time consuming. Most participants indicated that continuing education would change nurses' attitudes as well as improve their KMC comprehension.

3.1.1. Visual aids and lecture

The results of the in-depth interviews and group discussions included almost all well-trained health worker informants mentioning that they did not use any visual aids in providing information on KMC to patients. The trained health workers informed the patient about KMC through a short lecture and, then, practiced it directly with the patient's baby.

"KMC practice of skin to skin contact was demonstrated directly between the mother and her baby" (Informant from Discussion Group 3).

3.1.2. Information, education, and communication (IEC) materials

The nurse informants and the management said that there was no media or IEC materials available for delivering KMC education. In addition, the informants were of the opinion that KMC education media should be reproduced. Furthermore, the KMC counselling should be given directly to the patient.

"We have no media here; we use oral presentation. It would be nice if we could have media or IEC material. As mothers were afraid of holding a small baby, it would be better if they practiced using baby dolls"(an

informant participating in Discussion Group 1).

3.2. Policies, standard operating procedures, reporting & recording and support equipment for KMC

3.2.1. KMC policy and personnel

Few of the participants emphasized the importance of having a clear policy that incorporated clear criteria for KMC to ensure infant safety. This helped to avoid inconsistent KMC practices and their conflicting information. Furthermore, some of the participants expressed the availability of a standard operating procedure (SOP) for KMC. However, the SOP was not displayed in an easily recognized place but was kept in a filing book.

Job transfer of personnel was a routine function of the hospital management, including the KMC trained personnel. If the new position was related to maternal and newborn care, it was considered useful. However, if the KMC trained personnel were moved to an unrelated department, then their training was perceived as wasted.

“For transfer of job, it is a routine function that was performed in the maternal and new-born health division. When the personnel was transferred to another department, which was unrelated to maternal and new-born health, sometimes we feel that it was a loss of trained personnel”(Informant, IK, management staff, 37 years-of-age, 7 years of working experience).

3.2.2. KMC equipment

The KMC equipment, especially the KMC gown, was available in the hospital but was only lent to the mother and she was recommended to buy one in the cooperative shop or to bring her own traditional gown from home.

“We are recommended to buy the KMC gown in the cooperative shop; otherwise, we have to bring our own gown from home” (a member of Discussion Group 3).

3.2.3. Recording and reporting of KMC

All informants indicated that there was recording and reporting of the LBWIs. However, it was done manually by the head personnel who were assisting with the KMC. Recordings of the patient when she goes home were also made by the officer in charge.

“Yes, we have a recording book; therefore, we need the cooperation of health personnel in charge to fill it out” (an informant, member of Discussion Group 2).

“When the patient was home, she was given a control card to come back to the growth and development clinic. Sometimes, the mother asked if she could go to the public health centre, or puskesmas. We told her that at least the first revisit must be in the hospital; then, the following could be to the puskesmas” (an informant, member of Discussion Group 2).

4. Discussion

4.1. Nursing practice assessment one year after KMC training

In general, continuing education created a change in both nurses' attitudes and KMC understanding. Unfortunately, in this study, after undergoing KMC training, none of the participants received any relevant continuing education for the last 12 months. Lim (2018) reported that none of the participants in her study had engaged in any continuing SSC education program. Furthermore, all participants in this study agreed that their SSC skills for LBWIs were acquired through learning from their own colleagues and informal training supervision from their senior nurses. A study evaluating combined KMC and lactation management training (Ayunin and Pratomo, 2018), which was

conducted six-weeks post-training, found that the informants acknowledged that they were more responsive to LBWI cases. Unfortunately, they did not feel confident in providing counselling skills to needed mothers.

In this study, most participants indicated that visual aids were not used during the dissemination of KMC information to the patient. A study by Bergh et al. (2014) reported that during their KMC training, a feeding aid for calculating the expressed breast milk volume for LBWIs was used. In other countries, few facilities had job aids to guide the KMC practice. Another study, reported by Ham-Baloyi et al. (2018), showed that the educational strategy format contained multiple teaching methods. The most frequent methods used by the health practitioners were in-service training and symposiums, seminars, forums and workshops. The other methods included videos or DVDs.

When giving examples to patients, nurses did not use media such as lifelines, posters, flipcharts, or baby rhymes. Nurses encouraged families to carry long cloths or to buy kangaroo clothes sold in employee cooperatives. One family member was asked to accompany the mother when receiving KMC counselling; the patient's baby was taken from the room and KMC was directly applied to this mother without using a baby mannequin. The mothers practiced until the mother could do it herself.

4.2. Policies, standard operating procedures, reporting & recording and support for KMC

The majority of the informants mentioned that there was no clear policy relevant to KMC after the training. Some of the informants mentioned that there was a standard KMC operating procedure. However, it was kept in a file, and this document was not displayed in an easily accessible place.

Job transfer was a routine function of the hospital management. If the KMC-trained personnel were transferred to a department unrelated to maternal and new-born health, the training investment was perceived as useless. A similar study from the same country was reported by Pratomo et al. (2012), who indicated that the KMC staff members were sometimes rotated elsewhere in the hospital. As a consequence, they could no longer focus on developing KMC in the hospital. Bergh et al.'s (2014) study outside of the country also had similar results; they showed that other facilities reported too many staff rotations and insufficient new staff orientation. This could have been aggravated by the absence of guidelines and protocols at the facility level.

Regarding the equipment, particularly the KMC gown, it was available to be lent to the patient. When the patient went home, the mother was not equipped with the gown to be used at home. The mother was advised to bring her own traditional gown from home.

In this study, all informants reported that there were recordings and reports of the LBW infants. This was primarily completed manually by the person responsible for assessing the KMC. Similar previous studies indicated that the main challenges for KMC implementation were record-keeping, human resources, issues faced by the families of the LBW infants, and the follow-up with these infants. This was reported by Pratomo et al. (2012).

Another study reported by Bergh et al. (2014) found that some health facilities were able to provide a record review with aggregated data pertaining to KMC taken from general or special KMC registers. However, the accuracy was often questionable. No facility recorded intermittent and continuous KMC data separately. In one country's facilities, it was expected to send regular reports with more detailed information to a central office at the Ministry of Health, but it was unclear if and how these reports were used to monitor KMC quality or to scale up.

5. Conclusion and recommendations

A follow-up KMC training did not exist during the one year period. There were no IEC materials relevant to KMC to support the training.

There was a standard procedure of KMC, but it was kept in a file and not properly displayed. The job transfer of personnel took place as a routine management function. The hospital still did not provide the KMC gown freely. Recording and reporting were done manually in a special book. The following recommendations were, therefore, made to the hospital management: conduct a follow up refresher KMC training at least once a year, provide IEC materials, and display SOP clearly. In addition, the reporting and recording is suggested to be digitalized and KMC gown should be part of free newborn package care included in the government insurance. Both supportive KMC supervision and routine training should be provided so routine job transfer of personnel will not affect the KMC program in the hospital.

Conflicts of interest

None.

Ethical clearance

The study design and procedures were approved by both the Ethics Committee from the Faculty of Public Health, Universitas Indonesia (Approval number: No. 310/UN2.F10/PPM.00.02/2018, dated April 24th, 2018) and the Pasar Rebo General District Hospital Ethics Committee (Approval number: No. 2583/-1779.1, dated May 15th, 2018).

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