

Original Article



Implementation Barriers for Practicing Continuous Kangaroo Mother Care from the Perspective of Neonatologists and Nurses

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Abstract

Introduction: Kangaroo mother care (KMC), as a complement to incubator care, is one of the ten recommendations of the World Health Organization (WHO) for the care of preterm infants. The KMC stabilizes the heart rate, improves oxygen saturation, makes weight gain better, and reduces crying in the infant. In order to launch KMC unit, the barriers for implementing this type of care should be recognized.

Methods: This qualitative research was conducted using a focus group discussion and individual semi-structured interview with nurses, doctors, executive and management staff of a neonatal unit of a third level teaching hospital in Tabriz, northwest Iran. The participants were selected using purposeful sampling. Content analysis was used for analyzing data. Data were analyzed by MAXQDA 10 software.

Results: After analyzing data, four main themes were extracted including mother-related barriers, father-related barriers, physician-related barriers, and system-related barriers.

Conclusion: Based on the findings of the research, it seems that in order to facilitate practicing continuous KMC, much emphasis should be placed on training the parents and health care providers. Furthermore, in some cases, reforming the payment system for physicians, providing an instruction for performing continuous KMC, and continuous assessment of hospitals annually are necessary.

Introduction

Preterm birth is the main cause of infant death. One in 10 babies is born premature, and every year, around 15 million babies are born premature in the world.¹ According to Blencow et al., the prevalence of preterm birth in Western Asia (including Iran) is higher than 10%.² The outcomes of preterm birth impose a heavy financial burden on families and the healthcare system.³⁻⁵ Kangaroo care as a complement to incubator care is one of the ten recommendations of WHO for the care of preterm infants, which is presented as a natural method for regulating the newborn infant's body temperature and care for the infants, as it can solve the problems caused by lack of incubators and mothers' being separated from their newborns in the neonatal care units. Also Kangaroo care stabilizes the heart rate, improves oxygen saturation, better weight gain and reduces crying in the infants.⁶⁻⁸ Studies of WHO concerning clinical trials conducted to evaluate the impact of continuous kangaroo mother

care (KMC) have shown that compared to routine care, continuous KMC reduces the risk of mortality by 40% at discharge or at 40 to 41 weeks' gestation. Moreover, the risk of having hospital infection until discharge or at 40 to 41 weeks' gestation is lower by 51% compared to regular care.⁹ KMC is an easy and acceptable method for mothers. Because of its significant benefits, KMC should be practiced in all neonatal treatment centers as much as possible.¹⁰⁻¹² Implementation of an intervention such as KMC requires an efficient system. For example, infant caregivers should have both sufficient knowledge about the benefits of this type of care and be skilled enough in its implementation.¹³⁻¹⁵ In Iran, intermittent KMC was introduced in 2000 in the Ministry of Health, and in 2012 it was performed intermittently in Al-Zahra hospital in Tabriz. Investigations indicated that the average use of KMC in Iran was once a day with an average of 32 minutes, which is much lower than the standard average for intermittent KMC.^{16,17} Since continuous KMC was

launched in Iran for the first time, health care managers and decision-makers in Ministry of Health and Medical Education decided to set up a program in accordance with the standards.

In order to launch this unit, the barriers in the implementation of this type of care should be recognized. Since main part of launching a program in any environment depends on healthcare providers like physicians, nurses and midwives, as well as managers and policymakers, this qualitative study was carried out with the purpose of identifying the barriers in the implementation of continuous KMC from the viewpoints of the physicians and nurses.

Materials and Methods

This qualitative study which utilized conventional content analysis was conducted in northwest Iran in a teaching hospital with a third level newborn intensive care units (NICUs) consisting of 24 beds, in which about 5000-6000 births take place in this hospital annually. This referral hospital provides services to patients from all social classes (mainly the lower socioeconomic classes). It also consists of a women's care unit with high-risk pregnancies. In this hospital, skin-to-skin contact is immediately performed after birth as a routine care for newborns. At present, skin-to-skin contact is carried out at approximately 60-minute intervals in neonatal units and NICU.

Sampling was accomplished after obtaining the ethics license from the Regional Ethics Committee of Tabriz University of Medical Sciences (ethics code: IR.TBZMED.REC.1398.497). Data saturation was completed within 7 sessions. The participants in this study included 17 nurses, 4 midwives, 5 neonatologists, head of the hospital, hospital manager, matron and director of administrative affairs. Purposeful sampling was performed in each of these homogenous groups. Sampling continued until no new ideas were obtained from the interviews and discussions.

In this study, focus group discussion and individual interviews were used to collect data. Homogeneous focus group discussions were used to discover people's perceptions and perspectives. Furthermore, a heterogeneous group discussion was arranged in which all executive staff like the officials, physicians, nurses and midwives could participate, and all new ideas and viewpoints were recorded. In some cases, where access to the interviewees was hard, or additional explanations were required, individual interviews were used.

Group discussion was guided by two people; one started the discussion and tried to obtain information, and the other was supervising the discussion in the right direction, not letting it be drawn to marginal issues. First, a semi-structured questionnaire was prepared and given to some of the faculty members with an expertise in neonatal care. Their comments were then used in the questionnaire. These people were out of the research process. The questionnaire contained some questions on

the barriers and facilitators related to continuous KMC from the viewpoints of the treatment staff involved in this type of care. The questions in the questionnaire were as follows:

How familiar were you with KMC?

How inclined are you to make continuous Kangaroo mother care (CKMC) part of your routine hospital care?

To what extent is performing KMC necessary in neonatal unit?

What are the most important barriers in launching CKMC in your opinion?

How can these barriers be removed?

A pilot survey was used to test the questionnaire in a group discussion session, and an individual interview and unnecessary items were deleted. Again, some other questions were raised to guide the discussion so that we would get a full understanding of this issue. A questionnaire containing demographic characteristics was also developed that included age, gender, field of study, and work experience.

In general, 4 in-depth semi-structured interviews were conducted with four neonatologists; four homogeneous group discussions were held with the nurses and midwives; 1 heterogeneous group discussion was conducted which included the officials, the matron, supervisor, head nurses, nurses and neonatologists. In order to keep the information confidential, all the stages of recording, copying and coding were done anonymously. A written informed consent was obtained from the participants prior to the interview. The length of discussions and interviews was 30-90 minutes. The interviews were taped and transcribed. In case of any problem in the copies of the tapes, necessary information was obtained from the individuals again.

Group discussions were conducted in the hospital in a room outside NICU. During the focus group discussion, all participants received an informed consent form and showed their agreement. One of the researchers who was present at the meeting as an observer helped us prevent giving a prominence to someone or making someone seem passive, and he tried to guarantee equal participation and cooperation of the individuals in the group discussion. Several viewpoints and responses were presented during group discussions. The first author and corresponding author were the researchers who interviewed the participants in the study and facilitated group discussion, and they did not have any administrative positions in the hospital.

The interviews were recorded with the permission of the participants, and then they were transcribed word by word. The text of the interviews was reviewed several times. The sentences and meaningful units were extracted, the codes were named and the themes were extracted and classified. MAXQDA 10 software was used to analyze the qualitative data of the study.

In the method of the qualitative content analysis, three approaches, namely conventional, directed and cumulative, are usually taken into account. In this study, use was made of the conventional approach. In this method, the data analysis is begun by reading all the text in a repeated manner in such a way that the researcher indulges him or herself into the data to gain an overview. Then, the texts are read word-by-word for extracting the codes and the objective words seeming to incorporate the primary thoughts or concepts are seminally specified. Then, the researcher advances through the text and takes notes based on the preliminary analysis and his or her own initial beliefs and thoughts. In the continuation of this process, the labels of the codes that reflect more than one main thought are revealed. These are mostly extracted directly from the text. Next, the codes are classified based on their differences and similarities. The created categories were utilized for organizing and grouping codes into meaningful sets.¹⁸

Rigor of finding was improved by Lincoln and Guba criteria. Including credibility, transferability, confirmability and dependability. Credibility was achieved by heterogeneous group of participants. We gathered views of nurses as well as neonatologist. Transferability was considered by complete documentation of activities. Confirmability was guaranteed with check out of interviews and coding them by two researchers of research team. For enhance dependability authors described context of research, and considered rules during the research.¹⁹

Results

A total of 27 (84%) nurses and midwives and 5 (%16) physicians (4 neonatologists and 1 pediatrician) with a mean age of 40, who had the required qualifications, participated in the study (Table 1). One of the physicians was the head of the hospital, and three of the nurses were matron and head nurses. The mean of their work experience in neonatal unit was 10 years. Interview with the participants showed that there are several barriers in the implementation of KMC, and these problems prevent having a uniform, coherent and regular performance. Analysis of these experiences resulted in the emergence of 4 themes and 11 categories (Table 2).

Barriers Associated with Mothers

Mothers as the main key to care have a major role in the barriers as well as facilitators of this type of care. Cultural barriers, physical and mental problems, and mother's health problems are among the major problems related to mothers.

Cultural Problems Associated with Mothers

The interviewees believe that in Iran the new mother is more considered as a person who receives care than one who provides care. As a result, this role change is difficult for mothers.

Table 1. The Mean of demographic characteristics of the research participants (N=32)

Demographic characteristics	Mean (SD)	Min	Max
Age (year)	40 (10.8)	23	60
Work experience (year)	15 (9.8)	1	29

Table 2. Themes extracted from the study

Theme	Category
Barriers associated with mother	Cultural barriers
	Mother's physical problems
	Mother's psychological problems
	Mother's hygienic and training problems
Barriers associated with father	Lack of support for father
	Father's lack of support
	Cultural issues related to father
Barriers associated with physicians	Cognitive barriers
	Material barriers
Barriers associated with system	Financial barriers
	Lack of facilities

"Postpartum mothers would like to have a person who takes care of them and they want to be more receiver of care than a caregiver" (A nurse with 13 years of work experience).

"In our culture, everybody is in a hurry and wants to be discharged soon" (A neonatologist with 12 years of work experience).

Women have become easy-going in recent years. It seems as if a sense of irresponsibility has been induced and the main problem is the mothers' irresponsibility. The mother's innate ability is important, and this ability has lessened.

Mothers' Physical and Mental Problems

The participants also mentioned that some mothers do not have enough strength and energy for a long-term care of their infants due to going through physical crisis of pregnancy and delivery. Pain and bleeding are the most important physical problems. Postpartum depression and the mother's mental crisis cannot be overlooked.

"A mother may take some medicine to relieve the pain after delivery, and so she may not control the infant well... the mother herself is sick...a help-seeker...she's bleeding, and she needs care. If she has a private nurse, she can look after the mother in addition to supporting the infant... someone who wouldn't let the blood pressure drop, don't let her convulse ... don't let the infant fall" (A midwife with 10 years of work experience).

"Mothers are away from family... they usually suffer postpartum depression...if she's given birth to a twin and one infant is home and the other here at the hospital, the mother should be always traveling. And some of them who

come from other cities to hospitalize their infants, lose their patience and say they can't keep the infant at the hospital any longer." (A nurse with 20 years of work experience).

Mothers' Hygienic and Training Problems

According to the nurses, lack of participation of the mother and her relative with regard to observing hygiene was another major barrier. The presence of another person in the unit other than the mother has increased the traffic, which can cause infection and is considered another barrier in healthcare. Also, due to lack of proper training, mothers do not have correct views concerning this type of care.

"The mother cannot admit that the infant must be connected to her for hours. She thinks she should always sit and do nothing. We should teach the mother that she can do her job and do it in spite of having the infant such as reading, watching a movie and so on" (A specialist with 10 years of work experience).

The Barriers Associated with the Father

The fathers can contribute in KMC in two ways; they can either improve this type of care by supporting the mother or perform this care themselves directly. However, there are some barriers in both forms of this participation as follows:

Lack of the Father's Support and Lack of Supporting the Father

The participants explained that there was no time or a specific program for training the fathers to perform KMC. According to the participants, fathers did not have a sense of possession towards their infants, and neither did they feel obligation towards their infants, and neither did they support the mothers sufficiently. The father's lack of support for the mother causes the mothers to leave caring earlier.

"Most of the time, the fathers do not have enough time or the patience for care. They are busy working from morning till night, and when they're at the hospital, they say they're too busy for such things." (A specialist with 12 years of work experience).

Cultural Problems Associated with Fathers

The participants explained that fathers' poor participation in caring their infants is because of their traditional beliefs. Fathers believe that caring for babies is basically a maternal duty, which is deeply rooted in traditional culture. Therefore, they were really not willing to perform KMC, and only few fathers participated in KMC. The participants said that most of the time their defined role in a traditional society makes them avoid caring for their infants directly. Such a belief was seen especially in the families living in smaller cities.

In some families with low education level or low cultural conditions, the mother is blamed for the birth of a premature infant, and it is considered the mother's

weakness. Therefore, not only does it upset the mother, but it also becomes a cultural barrier for the father in supporting the mother. On the other hand, some traditional families prefer a male child, so if the child is a female, the family, and particularly the fathers, will be discouraged from caring.

"Sometimes because the mother gives birth to a premature female infant, they may be neglected and even disrespected by their husbands, and the father may not be motivated enough to continue caring." (A nurse with 10 years of work experience).

The Barriers Associated with Physicians

Cognitive Barriers

Nurses also mentioned that the physicians were indifferent to CKMC, and believed that the physicians' reluctance for caring was because of their overwork or fear and anxiety towards the new method. Therefore, launching a C-KMC unit had nothing interesting for the physicians.

The interpretation of the interviews showed that physicians believe the hospitalized infant is a member of a family whose caring has been temporarily transferred to the NICU team. Although they believed in the impact of the family's presence and considered the family the cause of increased infant's recovery, they were unwilling to leave the care entirely to a tired and untrained mother. Physicians admitted that they had not practically seen the result of this type of care and had only read about it in the articles, and that is why they were not willing to perform it.

"We've not seen any successful and effective model of this type of caring in our country, which could make us be interested to do this type of care continuously." (A specialist with 29 years of work experience)

"The physician must make sure that there is a person to do this caring correctly. Recruiting enough staff, staff's caring and knowledge are important. We need watchful staff not to let anything happen to the mother." (A specialist with 12 years of work experience)

Material Barriers

Since this type of care would cause the infant to be discharged earlier from the NICU and neonatal unit, this can be one of the potential barriers for the physicians in the implementation of this method.

"Those physicians who are working in private sector as well as public sector don't welcome this method because performing KMC would cause the infant to be discharged earlier from NICU, and this means the physicians income decreases." (a specialist with 8 years of work experience)

The Barriers Associated with the System

According to the interviewees, the whole healthcare system plays a role in performing KMC. Some of the issues that prevent performing KMC in this regard can be financial or non-financial barriers as follows:

Financial Barriers

The interviewees believed that the undefined hospital tariffs as well as the financial conflicts of interest of shareholder physicians (the cost of performing C-KMC is lower than the NICU) were among financial barriers.

“The tariff of bed has not been defined yet, and if the amount is very different from the NICU bed rate and is as cheap as the infants’ normal beds, it will not be welcomed by heads of hospitals and physicians.” (A specialist with 8 years of work experience).

Lack of Facilities

Lack of enough space, facilities and equipment has been stated as the major barrier for parents’ participation for caring the infants. The participants explained how the facilities for mothers are limited in NICU, and this is a factor that prevents mothers from participating in KMC. They said that facilitating the requirements and increasing welfare facilities encourages mothers to participate. The following quote shows how these barriers prevent performing KMC in the neonatal unit:

Lack of private space in the neonatal unit sometimes upsets the mothers. Religious beliefs and conservative culture prevent women from breastfeeding or providing KMC in the presence of men in the unit (fathers or physicians or male service personnel).

The non-standard ratio of nurses to patients and the high work pressure in the neonatal unit have been introduced as the most important challenge for nurses in training the parents, their presence, and participation in caring. Interviews showed that nurses experience a variety of problems and challenges while they are training the mothers and mothers are participating in care. Training the mothers with low education level was one of the main challenges.

“Training is not very effective when the mother’s education level is low and she’s faced with the stress of having a premature infant.” (A nurse with 18 years of work experience)

“At present we are seriously short-handed, and if we want to provide more care, we’ll be under pressure.” (A nurse with 28 years of work experience)

Discussion

This was the first study concerning the barriers existing in launching continuous KMC as an independent unit. Performing any kind of program in the healthcare system is challenging and difficult, especially when healthcare system decision-makers want the program to run consistently and on a large scale. In order to consistently perform a care in the healthcare system, an in-depth study of the barriers and facilitators present in it is strongly recommended.

Four themes were obtained that included barriers associated with mother, barriers associated with father, barriers associated with physician and barriers associated

with the system.

Lack of the mothers’ familiarity with this type of care and lack of the mothers’ patience was one of the most important barriers. Nurses and physicians believed that mothers did not have enough patience to perform this care. In a study conducted by Hakimi et al., lack of mothers’ patience was one of the main barriers in performing KMC at home. Generally speaking, sitting for hours to perform KMC was not an easy task, and it required strong motivation.²⁰ It seems that one of the major reasons in this regard is lack of knowledge about its numerous advantages. Using family members and husband to support the mother can also be helpful.²¹

Another barrier related to the mother was the physical, mental and hygienic barrier that the participants emphasized several times, and mentioned some experiences in this field. This finding was also found in similar studies. For example, in a systematic study by Seidman et al., on identifying the barriers and capabilities KMC in mothers, he suggested mothers’ pain and tiredness as one of the major barriers of care.²² Most studies indicated that the mother’s physical and mental health was among the predictors of performing KMC.²³

Since the mother is the core of care, the main focus for facilitating the conditions should be placed on the mother. In some developed countries, welfare conditions and facilities are facilitated by the mother’s 24-hour presence along with welfare facilities in the unit.¹³ However, in the developing countries, lack of welfare facilities for the mother prevents performing this care. For instance, lack of support for mothers who had to stay with their infants at the hospital was one of the challenges that Bergh et al., faced in implementing continuous KMC in Ghana.²⁴ Also, in Seidman and colleagues’ systematic study, lack of facilities was among mothers’ barriers in performing this care.²² The findings of this study showed that the role of training the mothers is undeniable. In his systematic study, Smith states that healthcare providers should explain the advantages of KMC for the infants to everyone involved.¹³ In the present study, lack of sufficient training for mothers was among the barriers. The hospital in our study is a referral hospital in the northwest of the country that admits infants from surrounding cities. Mothers often came from faraway cities with different cultures; they were mostly illiterate and affected by stress caused by a premature infant. Mothers’ low education level, different culture and high stress prevented the staff’s effective interaction and training for mothers. On the other hand, the high workload of the staff and insufficient number of nurses meant that mothers could not afford the time to receive training.

One of the most important issues was the fathers’ lack of support in performing KMC. Fathers’ lack of support has several reasons. Fathers’ lack of knowledge is one of the reasons of their lack of support.²⁰ Here, cultural norms play a determining role. The results of Chan and

colleagues' systematic study, which is consistent with the present study, emphasize that sociocultural structures are effective in caring for infants in a way that a premature birth in some cultures is considered as a stigma, and the mother does not receive proper support from her relatives, especially from her husband.²⁵

Training for fathers can have a supportive role for fathers and also can cause fathers to have further support for mothers, help them perform KMC, and as a result the quality of caring for the infant improves.

The physicians providing care for the premature infant are one of the main effective elements in performing and successfully continuing C-KMC. In our study, the specialists reported unfamiliarity with KMC as another barrier, which is consistent with the findings of Namnabati et al. The study conducted by Nam Nabati et al., in Iran shows that the physicians are not so sure about KMC performed by a tired, sad and depressed mother. In the above-mentioned study, lack of the physician's prescription for KMC is one of the most important barriers for performing KMC, which is due to their fear of the mother's physical and mental problems such as depression.¹⁷

The findings of Jamali and colleagues' in Pakistan confirm that managers and service providers play a key role in effectively performing KMC at the facility level, and their support increases the motivation and enthusiasm of other healthcare providers towards KMC.²⁶ According to Higman et al., it seems that continuous and comprehensive training to physicians as well as employing other financial incentives can turn the presence of a physician as a barrier into a KMC facilitator.²⁷

In this study, lack of a proper physical space and the required facilities for the mothers was considered a barrier. The results similar to this finding have been shown in some studies. It appears that this finding is particularly true for the countries that have problems financing healthcare.

In Uwaezuoke's study, providing physical infrastructures and continuous training of specialists is considered among basic requirements of the system for performing KMC.²⁸ It is recommended that the structures of the hospitals be organized so that an increase in the number of hospitalizations along with an increase in the number of manpower and facilities would be possible.¹⁵ Since performing KMC does not require a specific and expensive technology, it appears that this problem will be solved easily by proper financial resource management.

In this study, the staff's negative attitude towards performing KMC was not among the extracted themes. In all individual interviews and group discussion meetings, none of the nurses and physicians had any negative attitude with regard to this type of care. All participants in the study believed that performing KMC regularly can significantly improve the quality of services for premature infants and have a significant role in the health of both infant and mother. The physicians and nurses

Research Highlights

What is the current knowledge?

Continuous kangaroo care is a simple yet useful care that improves the survival of premature and low birth weight infants. The health promotion system and employees have an important role in implementing this care. Care implementation can be facilitated by identifying barriers from the perspective of continuous kangaroo care providers and trying to remove them.

What is new here?

As there are differences in the infrastructures of the health system, there is a method for the payment of physicians and nurses in each system. According to the results of this research, to facilitate performing continuous kangaroo care, in addition to emphasizing the training of parents, physicians, nurses and health personnel, some modifications in the payment system of physicians, and the existence of instructions and continuous evaluation of this type of care in hospitals is essential.

participating in the study have repeatedly stated that they have evidently observed the positive effects of this type of care in reducing the infant's need for oxygen, promoting breastfeeding, as well as improving the mother's mental state.

One of the limitations of this study is the absence of mothers in a group discussion to identify barriers to CKMC implementation. Given that mothers are the main core of CKMC presentation, it is recommended that studies be conducted to identify barriers to maternal care.

Conclusion

A comparison between the finding of the present study and similar studies indicated that the barriers existing in Iran are almost like those of other countries. In some cases, some barriers are different from those of other countries, which can be due to the differences in the structure of the health system, physicians and nurses' level of income, and the infrastructures existing in each system. According to the results obtained from the present study, it can be concluded that in order to facilitate performing continuous KMC, training parents, physicians, nurses and healthcare staff should be emphasized further. In addition, in some cases, reforming the payment system for physicians, providing an instruction for performing CKMC and continuous assessment of hospitals annually are necessary.

This study was conducted in a hospital in northwest Iran and indicated the viewpoints of the physicians, nurses and executive staff working in a teaching hospital. The results obtained from this study cannot be generalized to the whole country.

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Ethical Issues

Before interviewing, the participants were ensured that their participation in the study is voluntary. All of the collected information was used with the observance of the confidentiality rules. The consent letters were filled by them consciously. The ethical permit of the research's accomplishment was acquired from the ethics committee of Tabriz University of Medical Sciences.

Conflict of Interest

The authors declare no conflict of interest.

Authors' Contributions

Study conception and design: MM, SH; Data collection: MM, SH; Data analysis and interpretation: MM, SH, NS, MH, MBH; Drafting of the article: MM, SH; Critical revision of the article: MM, SH, NS, MH, MBH.

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