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Perceived Enablers and Barriers of Kangaroo Mother Care among Mothers and Nurses in Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia: A Qualitative Study

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ABSTRACT

Background: Kangaroo mother care is essential improves outcomes of premature and low birth weight infants. Even though kangaroo mother care is now recognized by global experts as an integral part of essential newborn care, the adoption and implementation of the kangaroo mother care is still challenging. Aim of this study to explore perceived enablers and barriers of kangaroo mother care among mothers and nurses in neonatal intensive care unit.

Methods: Descriptive Phenomenological study design was conducted in Tikur Anbessa Specialized referral Hospital at Addis Ababa with 13 mothers and 7 nurses from 10th May -15th July, 2020. In-depth interview used with semi-structured questionnaire and data was collected till saturation of information. Thematic analysis was done with ATLAS.Ti software version 7.5.16 .

Results: Major enablers and barriers of practicing kangaroo mother care among mothers and nurses reported that lack of understanding of KMC, family responsibility and workload, lack of awareness of KMC by community, social practice and traditional adaptation were the barriers to practice of KMC. Poor supervision and follow-up, limited resource especially sanitation resource are the major barriers related to health staff and setting. Nurses reported that scale- up of kangaroo mother care was influenced by absence of training, poor attention given by managers and administrative, shortage of rooms and facilities, workload and time shortage.

Conclusion: A complex array of barriers and enablers determine a mother's and nurses ability to provide KMC. Improve the mothers' to practice KMC and to promote the health of preterm infants, supports such as family, community and health professional support needed. Nurses needed in-service education, proper administration and less workload to promote KMC practice.

Keywords: Barriers, Enablers, Kangaroo mother care, Low birth weight, Preterm

Introduction

Kangaroo mother care (KMC) is a strategy created and developed by a team of pediatricians in the Maternal and Child Institute in Bogota, Colombia, in 1978. This method is involved with caring for preterm and low birth weight neonates through carrying them with skin-to-skin contact by the mother. Its key features include early, continuous, and prolonged skin-to-skin contact between the mother and her low birth weight neonate (1, 2).

In November 2015, the World Health Organization issued recommendations for the care of preterm neonates with KMC, which can be implemented through various facilities at different levels of care. However, low-income countries are most likely to benefit from KMC, where well-equipped facilities and skillful staffs are limited. In well-resourced neonatal care units in developed countries, still enhances mother-neonate bonding and breastfeeding and allows for rationalization of

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resources by freeing up incubators for sicker newborns (3). Although the benefits of this method are already demonstrated, the development of the KMC at neonatal intensive care unit (NICU) is still challenging. In Ethiopia, KMC was first introduced at Black Lion Hospital, Addis Ababa, in 1996. Since then, KMC services have been expanded to other hospitals and healthcare facilities at all levels. Recently, the policies of the Federal Ministry of Health (FMOH), Newborn and Child Survival Strategy, Health Sector Transformation Plan, and National Healthcare Quality Strategy have been targeted to reach 80% of preterm neonates to receive KMC by the year 2020 (4). Few studies were found on mothers and nurses' perceived enablers and barriers of KMC in Ethiopia. This study explored the perceived enablers and barriers of KMC among mothers and nurses at the NICU of Tikur Anbessa Specialized Hospital (TASH), Addis Ababa, Ethiopia. The identification of enablers and barriers to KMC practice has implications for long-term maternal and neonatal health. The integration of KMC interventions into healthcare systems requires caregivers and nurses to play a critical role in the adoption, diffusion, and assimilation of KMC. The findings would provide a better understanding for program managers and policymakers to design, properly implement, and evaluate programs regarding the reduction of neonatal mortality and improvement of newborn care. In addition, the results of the study would help improve the quality of newborn care in the nursing profession, especially thermal protection, by low-tech preventive measures. The findings would also provide information to healthcare professionals and healthcare facility administrators to alter policies and programs in their health facility. Furthermore, healthcare policy planners and FMOH would benefit from the findings in how to facilitate improvements in the implementation of KMC. The results of this study may help other researchers investigate the perceived enablers and barriers of KMC at larger scales and develop interventions to facilitate KMC update and practice.

Methods

Study area and period

This descriptive phenomenological study was conducted in TASH, which is a governmental hospital and is nominated as a center of excellence for KMC with 15 beds in NICU, within February 2019-September 2020.

Sample size determination and sampling procedure

The samples were selected using the convenience sampling strategy based on the availability of study participants. The samples were chosen from eligible mothers of neonates receiving KMC and nurses working at the KMC unit. Sampling was continued until reaching the saturation of data.

Data collection tools and procedures

Semi-structured open-ended questionnaires were developed with potential probes to achieve study objectives. The questionnaires were prepared in English, translated to the Amharic language, and then retranslated back to English. To collect the data, a notebook and digital tape recorder were used. Before collecting the data, the tools were checked for validity and reliability and oral consent was obtained from participants. In-depth interviews were conducted in Amharic, between 13 and 37 min in a private room in the hospital between 10 May-15 July 2020, and the interviews were recorded. The interview was conducted until information saturation was reached. Detailed interview memos and field notes were reviewed continuously throughout data collection. Saturation occurs if there is no data variation and, no new answer or information to the given question.

Data processing and analysis

Qualitative thematic data analysis was performed by identifying the themes. The coding process was accomplished using Atlas.ti software (version 7.5.16) to organize and support the coding process. All interviews were transcribed verbatim in Microsoft Word from audio recordings and translated to English. Interview transcripts, which were continuously reviewed through the interview procedure, were organized and analyzed to identify common themes. These codes were then categorized into broad categories and sub-categories.

Results

Perceived enablers and barriers of practicing KMC among mothers and nurses

Perceived enablers and barriers of practicing KMC among mothers and nurses The healthcare professionals primarily informed mothers of the benefits and procedures of KMC through health education after they were admitted to the NICU. All interviewed mothers reported that they had not heard anything about KMC before. All mothers

stated that they got experience with kangaroo care with their preterm infant at admission to the kangaroo mother care unit at NICU for the first time. Mothers reported major benefits of this method for themselves and their neonates.

Table 1 &2 describes about the socio-demographic factors of mothers and neonates, perceived enablers and barriers of practicing KMC among mothers and nurses by themes, subcategories, and codes of KMC in NICU.

Family supports

Family supports were reported in the form of encouraging and motivating mothers to ensure that they could perform KMC. One of the mothers stated: *"…My husband is educated and he knows what infant needs and he encourages me to practice KMC"* (participant 11, aged 29 years old).

Kangaroo mother care practice was impaired if the mothers had no other supporting family members to carry out other household chores. One of the mothers said: *"…This is an obstacle for me because of my workload and family responsibilities at home because no one helps me at home. It is only after I have done my job that I can use kangaroo care"* (participant 6, aged 36 years old).

Most mothers described that their families lacked information about the benefits and procedures of KMC, and poor knowledge and absence of previous exposure and experience might be barriers to practice KMC. One mother commented: *"…None of my family has ever practiced before and has no knowledge/ information about it. But I think my husband will accept and help me"* (participant 3, aged 23 years old).

Cultural and religious support

All mothers commented that they did not experience and perceive any barriers to practice kangaroo care related to religious and cultural views. In all religious and ethnic cultures in Ethiopian community , the mothers were told about how to caring the babies and keeping their neonates healthy, and if they were sick, they must need the medical attention along with spiritual and ethical manners. One mother stated: *"…As long as it is healthy for my child, there is no cultural or religious barrier. A mother has a duty to take care of her child"* (participant 11, aged 29 years old). Additionally, mothers reported that practicing kangaroo care was not against cannon of religion and it was not considered a sin: "*…There is no opposition from religion and culture because it is not a sin"* (participant 2, aged 26 years old).

Neonatal and maternal medical condition

Most mothers expressed fear for their neonate's health, especially in terms of his/her sleepiness. One mother said:*"…I was shocked because the baby had stopped breastfeeding and slept a lot. She was only awake when a tube was inserted into the nose. I decided to return to my home. I cried because I thought she was going to die because she did not wake up soon"* (participant 2, aged 26 years old).

The presence of surgical procedures during delivery and pain of the surgical wound affected the practice of kangaroo care. Mothers having cesarean section could not practice kangaroo care for a long duration and they felt pain when the neonates touched the wound as a result, they interrupt kangaroo care. A mother said:*"…I had surgery and I felt a slight pain when her leg touched the wound"* (participant 10, aged 22 years old). *"…There is a pain because I gave birth in surgery. This affects me to practice kangaroo care"* (participant 1, aged 35 years old).

Perception of nurses about the benefits of kangaroo mother care

The most frequently reported benefits of KMC by nurses were increasing weight gain, keeping newborns warm, boosting mother-newborn relationships, improving breastfeeding, and preventing newborns from infection. One of the nurses commented: *"…Kangaroo care gives premature babies the warmth. They need to be warm because they are born before 9 months. This heat can help them to gain weight and grow fast. It also protects against disease/infection. Because of the skin-to-skin touch, it increases the bond between the mother and the child"* (nurse 1, 10-year experience). *"…It also creates comfort, improves breathing pattern, and increases weight and growth" (*nurse 2, 10-year experience).

Nurses perspective on barriers and enablers of practicing kangaroo mother care

Caregiver support

Nurses reported that the willingness and voluntarism of mothers and well-organized and detailed information given to mothers by healthcare professionals were the major enablers to perform kangaroo care for preterm and low birth weight newborns. A nurse commented: *"…The mothers are very willing and happy to practice KMC. We tell them the benefits of KMC and*

how to hold the neonate in kangaroo" (nurse 7, 5-year experience).

The presence of surgical procedures during delivery and surgical site pain interrupted the mothers from practicing kangaroo care adequately. Nevertheless, these mothers tolerated the pain, sacrificed for their children, and practiced kangaroo with pain. *"…Mothers who have had a cesarean section say that there is a little pain, but they try to perform KMC. They do it while they are in pain. For mothers with heart disease, it is even more difficult to perform KMC"* (nurse 2, 10-year experience).

The long period needed on kangaroo made the mothers report some barriers related to the difficulty and discomfort of falling asleep. Some mothers also reported that kangaroo care was not comfortable for moving and walking. A Nurse reported: *"…Since kangaroo care is practiced for 24 h a day and night, it makes it difficult for mothers to fall asleep"* (nurse 7, 5-year experience).

Healthcare professionals and setting support

No attention has been given to KMC for thermal control by top managers and assigned healthcare professionals because of the poor room facilities affecting the practice of KMC. The workload of nurses working at NICU because of the shortage of healthcare professionals made them not give attention to the kangaroo mother room. One nurse commented that "…*It is not being given special attention by administrative. Pieces of training given to professionals are not enough and we have a workload because of the shortage of professionals and lack of time. There is not much monitoring and follow-up of neonates after entering the kangaroo room. As a result, sometimes neonates lost their lives in kangaroo; I experienced this situation during my stay"* (nurse 3, 12-year experience).

The absence of a suitable and equipped kangaroo room in the neonatal room was one of the barriers to nurses to practice kangaroo care broadly. One nurse commented: *"…In the past, the class was so large and many mothers came in, and in addition to healthcare professionals, mothers could learn from television and videos and saw the benefits and the procedures. But now there is only one room and it is very narrow and the television and video teaching is stopped"* (nurse 1, 10-year experience).

Table 1. Socio-demographic characteristics of the mothers and neonates at KMC in NICU of TASH, Addis Ababa, Ethiopia

Variable	Frequency (n=13)	Percentage (%)
Age (years)		
15-20	1	7.7
21-25	4	30.6
26-30	4	30.6
31-35	3	23
36-40	1	7.7
Educational status		
Primary school	5	38.5
Secondary school	5	38.5
College and above	3	23
Residence		
Rural	0	0
Urban	13	100
Religion		
Muslim	2	15.4
Orthodox	7	53.8
Protestant	2	15.4
Catholic	1	7.7
Occupation status		
Housewife	6	46.2
Day labor	2	15.4
Self-employed	2	15.4
Government employee	3	23
Neonatal gender		
Female	8	61.5
Male	5	38.5
Neonatal weight		
Less than 1,000 g	2	15.4

Table 1. Continued		
1,000-1,500 g	7	53.8
1,500- 2,000 g	4	30.6
Nurse		
Gender		
Male	0	0
Female	7	100
Years of experience		
Less than 5 years	7	100
More than 5 years	0	0

Table 2. Perceived enablers and barriers of practicing KMC among mothers and nurses by themes, subcategories, and codes in KMC of TASH, Addis Ababa, Ethiopia, 2020

Themes	Subcategories	Codes
Support of mother	Family	Volunteer and willing family, educated and small family size, workload and family responsibility, lack of understanding
	Community	Lack of awareness, social practice, and traditional adaptation
	Healthcare staff and setting	Private and quiet room, clear information and health education, poor supervision and follow-up, limited resources
	Culture and religion	Healthcare of neonates is not a sin and does not oppose cannon of religion
Medical condition	Maternal medical condition	Back pain, surgical procedures, fatigue, hypertension, and heart disease
	Neonatal medical condition	Ill and sleepy neonates
Support to Nurses	Caregiver	Volunteer and willing caregiver, lack of understanding, surgical procedures, having twins and more children, length of time
	Healthcare staff and setting	Lack of training, poor attention by managers, limited resources, workload, and time shortage

Discussion

Family support, encouragement, and motivation in performing KMC, as the enabling factor to increase the practice of KMC, was consistent with support from husbands, and family was the KMC enablers in a report of an international workshop on the implementation of KMC to care preterm newborns (5). The results of some studies conducted in Nigeria showed that family members' assistance with other household work was the most common KMC practice enabler (3).

Due to their heavy workloads and other household commitments, mothers have difficulty performing kangaroo care for their neonates. This finding is consistent with that of a study conducted in Southern Nigeria, where mothers lived in crowded families, had to perform other household work, looked after other older children, and as a result, they could not provide KMC for a longer time for their newborns (3). The mother's obligation to perform household chores is one critical barrier to perform KMC practice, and mothers perceive KMC as a burden for themselves.

The husband can only encourage the mothers to perform KMC but they did not involve themselves to perform KMC because they afraid of small infants and they fear the infants may fall and hurt. In this respect literature review of parents' experiences of kangaroo mother care indicates that parents had fear of harming their baby when providing KMC (6).

The community refused to practice kangaroo care out of home since they believed that holding the neonate in front would create the risk of falling and hurting him/her. These findings are consistent with the results obtained from a report on an international workshop on KMC, where culture-specific beliefs and disapproval by the community were barriers to practice KMC (5).

Kangaroo mothers in the KMC room received a lot of information on the benefits, procedures, and methods of caring for their newborns in KMC. The mothers found it cool to be alone without any disturbance. These quiet and private kangaroo rooms allowed mothers to practice KMC freely without interruption and being exposed to other mothers and healthcare staff. This study finding, similar to healthcare staff support and setting from healthcare workers, was one of the enablers for KMC practice, KMC implementation for the preterm neonate (7), and enablers and barriers of the practice of kangaroo care (6, 8).

Mothers complained that professional supervision and follow-up care were not adequate after they entered the kangaroo room. This report was consistent with parents' experiences of KMC, in which mothers reported that staff lacked enough time to help them to position the neonate on the mother's chest, which was a barrier to provide KMC for their neonate (6). This might be due to the international management problem in developing countries.

The absence of sanitation resources in the neonatal room prevents mothers to stay for a long time on kangaroo with their newborns, which is one of the barriers to practicing KMC among mothers in NICU due to poor healthcare management system. The mothers thought that having skin-to-skin contact with the neonate in a warm room without having a shower was not good for the neonate; during KMC, mothers used their own clothes instead of the hospital ones. This finding is consistent with study was done by the health service delivery system in systematic review of caregiver perspectives towards barriers and enablers of health system reported that lack of KMC resources (chairs, beds, linens, curtains, KMC wraps, etc.) in the hospital were obstacles to KMC adoption with the results of a study investigating the health service delivery system regarding the caregivers' perspectives towards barriers and enablers of health system reporting that the lack of KMC resources (e.g., chairs, beds, linens, curtains, and KMC wraps) in the hospital were obstacles to KMC adoption (7). This might be due to the similar structure of the healthcare system in developing countries.

Maternal and neonatal medical conditions revealed that the presence of surgical procedures during delivery was a barrier due to the presence of pain; therefore, it was not possible to perform KMC for a long time and the neonate's touch interrupted KMC practice. Additionally, mothers reported that their sleep was disturbed with a neonate on their chest, which in turn, made them feel fatigued. A similar finding was reported in an international workshop on KMC, in which pain/fatigue was identified during KMC, and difficulty of adhering to the kangaroo position while sleeping was determined as a barrier to practice KMC (8). This finding showed that mothers had a fear for their child's health; in other words, mothers were afraid that the neonates slept for a long time without waking up; as a result, they decided to remove KMC and return home. Similar findings were identified in Pakistan, in which due to the clinical condition of premature neonates, the mothers were afraid of practicing KMC (9). This result might be attributed to the nature of maternal psychology and the delicacy of neonates to be handled during KMC.

Nurses' perception toward the enablers and barriers of practicing KMC was that the willingness and voluntarism of kangaroo mothers and well-organized and detailed information given to mothers about the benefits and procedures of KMC by healthcare professionals were the major enablers to perform kangaroo care for preterm and low birth weight newborns. This finding was in line with that of a study conducted in rural Sindh, Pakistan, which identified support from the caregiver as a major enabler of practicing KMC (5, 9). It was found that surgical procedures interrupted mothers from practicing kangaroo care, mothers' willingness and volunteer acceptance of KMC allowed nurses to implement KMC easily, and nurses reported that mothers' unwillingness to stay for a long time in the hospital affected the practice of KMC (7, 10).

Common identified supportive barriers were the workload of nurses working at NICU, shortage of healthcare professionals leading to the lack of attention to kangaroo mother room, and the absence of infrastructure in kangaroo room affecting the routine scale-up of KMC practice. Similarly, a systemic review study investigated the barriers and enablers of KMC implementation from a healthcare systems perspective and reported that the most common barriers for nurses to scale up the practice of KMC were increased workload and insufficient staff, reduced resources, and poor supervision, as well as the absence of professionals' quality training, shortage of space, and the reluctance of management (5, 7, 9, 11). Healthcare professionals spend more time in the NICU than in the KMC room; therefore, most mothers complain that poor supervision and follow-up made them feel ignorance and neglect. This result is consistent with those of studies carried out in Rio de Janeiro and Bangalore, India, which reported that the same problem might occur in developing countries, where the lack or limited availability of professionals was a major barrier to scale-up kangaroo care (12, 13).

Conclusion

The mothers and nurses perceived a wide range of barriers and enablers that determined the ability to provide and perform KMC. To improve mothers' and nurses' performance of practicing KMC and promote the health of preterm neonates through KMC, it was necessary to receive supports from the family, community, and healthcare professionals and provide setting support by healthcare policy planners/FMOH. Nurses needed in-service education, proper administration, and less workload to promote KMC practice.

Limitations of the study

A focused group discussion (FGD) was

planned, however, not conduct in this study since due to the coronavirus disease 2019, the hospitals did not permit FGD implementation. The other limitation was related to the small sample size, meaning that few mothers were present in hospitals due to pandemic conditions.

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Conflicts of interest

The authors declare that they have no conflict of interest. Moreover, they had no significant competing financial, professional, or personal interests that might have influenced the performance or presentation of the work described in this manuscript.

Ethical consideration

Ethical clearance was obtained from the Research Ethical Committee of the School of Nursing and Midwifery, College of Health Science, Addis Ababa University. Permission was also sought and obtained from the Ethical Committee of TASH. Informed consent was obtained from study participants after that they were explained in detail about the purpose and benefits of the study, before the individual data collection. The participants were informed of the possibility of study withdrawal at any research stage. Confidentiality of data was strictly maintained throughout the study.

Authors' contributions

MG, RM, and MA conceived the study. MG, MA, and RM were involved in the design, fieldwork, data analysis and interpretation, report writing, and manuscript preparation. In addition, MG and RM drafted the manuscript. All authors reviewed, read, and approved the final version of the manuscript.

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