

Perception and Practice of Kangaroo Mother Care after discharge from the Women and Newborn Hospital, Lusaka, Zambia

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Introduction

Globally, it is estimated that 15 million babies are born premature and low birth weight (LBW) every year [1]. Premature and LBW infants are at an increased risk of morbidity and mortality, [2]. They are also prone to complications such as inhibited growth and development, chronic disease and lifelong disability [3]. Complications of preterm and LBW are the leading causes of death among children under the age of 5 years accounting for nearly 1 million deaths globally [4]. In Zambia, the neonatal mortality rate is 24 per 1000 live births and the majority of these neonatal deaths are equally attributed to complications of prematurity and LBW including sepsis and asphyxia Vancouver.

Much of the morbidities and mortalities that occur among the preterm and LBW babies are preventable [5]. Improving the care that is provided to the preterm and LBW babies can significantly reduce these morbidity and mortality rates. This care must include feeding to prevent hypoglycaemia, temperature maintenance to prevent hypothermia, hygienic cord, and skincare to prevent neonatal sepsis and early detection and treatment of any complications [4].

While technological advances such as incubators improve care outcomes in premature and LBW infants, they are not readily available in low and middle-income countries like Zambia. Kangaroo Mother Care (KMC) is one effective alternative to providing care to the preterm and LBW infants. It promotes exclusive and frequent breastfeeding, skin-to-skin contact, and support for the mother-infant dyad. Skin-to-skin contact between the mother and her preterm and LBW baby is associated with reduced risk of hypothermia, severe illness, nosocomial infection, length of hospital stay and improves growth, breastfeeding, and maternal-infant attachment [5].

Kangaroo Mother Care also promotes early discharge from the hospital with continuing KMC at home and close follow-up [6]. Kangaroo Mother Care has been found to improve the outcome in premature and LBW babies and is an effective strategy for weight gain in neonates with delayed weight gain [7]. When compared with conventional care, KMC is associated with decreased mortality among preterm and LBW babies. KMC decreases the risk of neonatal sepsis, hypothermia, hypoglycaemia, and hospital readmission [8].

At the Women and Newborn Hospital in Lusaka, Zambia, an average of 21000 deliveries are recorded every quarter. Of these deliveries, about 40% are premature and LBW babies [9]. These babies are admitted to the Neonatal Intensive Care Unit (NICU) immediately after birth and later transferred to the KMC unit for continued care after their condition has stabilized. These neonates are only discharged from the hospital once they can breastfeed and show a sustained increase in weight for 3 consecutive days and their weight must be above 2000g. Before discharge, mothers are educated on the need to continue with KMC practice at home, and follow up visits are scheduled with the first one being at least 2 weeks after discharge. However, these babies are usually readmitted to the hospital soon after discharge with problems such as hypothermia, sepsis, and respiratory infections [9]. This study aimed at determining the perception and practice of KMC among mothers with preterm and LBW babies after they have been discharged from the Women and Newborn Hospital in Lusaka, Zambia.

Materials And Methods

This was a cross-section study that was conducted in May 2017 at the Women and

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Newborn Hospital in Lusaka, Zambia. The Hospital has a KMC unit where all preterm and LBW neonates weighing less than 2000grams but in a stable condition are nursed till discharge from hospital. The study comprised of 79 postnatal mothers with preterm and LBW babies who came for follow up care 2 weeks after they were discharged from the hospital. All postnatal mothers who reported for follow up care with babies who were either preterm or LBW and were previously admitted to the KMC unit at the Women and Newborn Hospital were eligible for inclusion in the study. The selected sample size was scientifically calculated basing on the flow of clients during their review dates.

It was calculated basing on the following prevalence formula and assumptions:

$$n = Z^2 \times P \times X (1-P) / d^2$$

Where P = the proportion/prevalence

Z = 1.96 is the standard normal variate at 95% confidence level

d = ± 0.05 precision.

Since the population size was less than 1000, the calculation was adjusted using the following formula;

$$n = (1.96 \times 1.96) 40 \% (1-40\%) / (0.05 \times 0.05)$$

$$n = 1.536 \times 0.6 = 368.64$$

$$0.0025$$

Final n = n

$$1 + n/N$$

Where n is the calculated sample size using prevalence/ proportions

N is the population size being adjusted for

$$368.64 = 4.684$$

$$1 + 368.64/100$$

Therefore final n = 368.64/4.684 = 79.

Simple random selection method was used to select the participants from among those that reported for review during the period of data collection until the sample size number was achieved. A structured interview schedule with three sections was used for data collection. The sections included questions on socio-demographic characteristics of the mother, mothers' perception of KMC and the practice of KMC. The data collection tool was designed by the researchers and a pilot study was conducted at Levy Mwanawasa general hospital to determine the validity and reliability of the tool.

Before administering the interview schedule, the researchers explained to the mother the purpose and nature of the study. The mother was informed that participation in the study was voluntary and that she was free to withdraw from the study without any penalties. She was also informed that there were no incentives provided for taking part in the study. The mother was assured of confidentiality and privacy. The researchers obtained a signed informed consent. Numbers were assigned to the interview schedules instead of the participants' names to maintain anonymity. The mothers were interviewed one at a time

after they were seen by the Neonatologist and each interview took about 20 minutes. After the interview, the researchers checked the interview schedule for completeness and thanked the mothers for taking the time to participate in the study. All the 79 interview schedules were appropriately administered. None of the participants refused to take part in the study thereby giving a 100% response rate. Data was processed and analysed according to the study variables and objectives using the statistical package for social sciences (SPSS) version 23 software. Frequency tables and charts were used to present the findings of the study. Cross tabulations and chi-square tests were run to test the significance of the association between the variables.

Ethical Considerations

The research proposal was submitted to the University of Zambia Biomedical and Research Ethics Committee for ethical clearance. Permission was obtained from the Senior Medical Superintendent at the Women and Newborn Hospital to conduct the study at the institution. Participants signed informed consent before the interview.

Results

Socio-demographic data

The study showed that almost all 78 (99%) of the participants were aged between 18 and 39 years while only 1 mother was aged above 40 years. Most 65 (82.3%) of the respondents were married and were multipara. Majority 74 (94%) of the respondents lived in high-density populated areas of Lusaka and only 12% of the respondents were in formal employment. All the respondents had spontaneous vaginal delivery (Table 1).

Table 1: Socio-demographic data (n=79)

Characteristic	Frequency	Percentage (%)
Age		
18-25 years	36	45.6
26-30 years	22	27.8
31-39 years	20	25.3
40 and above	1	1.3
Marital status		
Single	14	17.7
Married	75	82.3
Education level		
None	1	1.3
Primary	26	31.6
Secondary	42	53.2
Tertiary	11	13.9
Parity		
Prim para	19	20
Multipara	60	80
Mode of delivery		
Spontaneous vaginal delivery	79	100

Table 1 shows that the most of respondents were aged below 39 years. And the majority of our respondents were married 75 (82.3%).

Perception and Practice of KMC

This the study showed that the majority 74 (94%) of the respondents perceived KMC as good and beneficial with 69 (87.3%) of the mothers perceiving warmth as one of the

benefits of KMC (Figure 1). Majority 76 (96%) of the mothers indicated that KMC has benefits such as increased weight gain, increased breast milk production, and enhanced bonding between the mother and the baby.

However, most of the respondents 66 (84%) did not practice KMC after they were discharged from the Women and Newborn Hospital (Figure 2). Majority 71(90%) of the respondents said

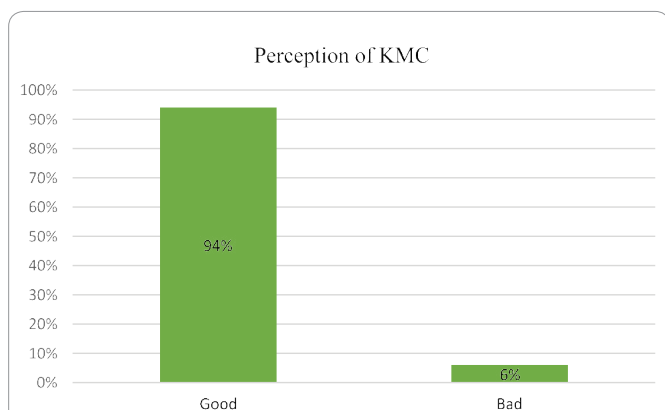


Figure 1: shows that majority (94%) of the respondents perceived KMC as good.

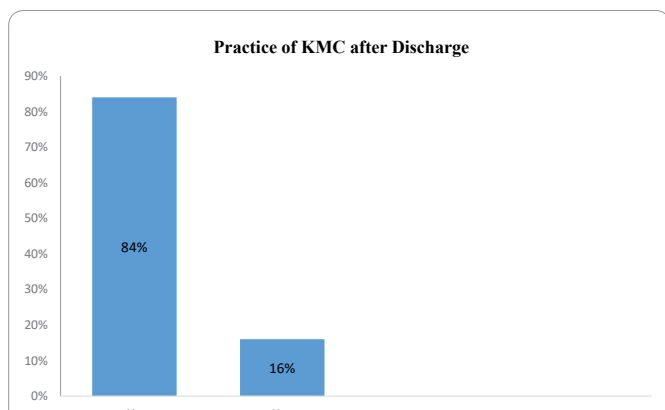


Figure 2: shows that most (66%) of the respondents did not practice KMC after discharge from the hospital.

they were not followed up after they were discharged from the hospital. Health-care workers were critical for implementation in hospitals or health facilities. Their main role was to educate the parents about kangaroo mother care.

Relationship between variables

The study showed that majority of the mothers 34(94%) aged between 18 and 25 years had a good perception of KMC. A Chi-square test was done to test this association and it gave a p-value of 0.002 indicating that being a younger mother had a statistically significant association with a good perception of KMC. The study also showed that of the respondents aged between 18 and 25 years 30(83%) had a poor practice of KMC. Chi-square test gave a p-value of 0.698 indicating that there is no significant association between being a younger mother and the good practice of KMC. The study did not show any significant association between level of education and both practice and perception of KMC with a p-value of 0.505 and 0.840 respectively. The study further showed that only 12 (16.2%) of the mothers who had a good perception of KMC also had a good practice of KMC while the majority (83.8%) had a poor practice of KMC. A Chi-square test was done to test the significance of the association between good practice and good perception of KMC and it gave a p-value of 0.285 indicating that there was no significant association between good perception and good practice of KMC (Table 2).

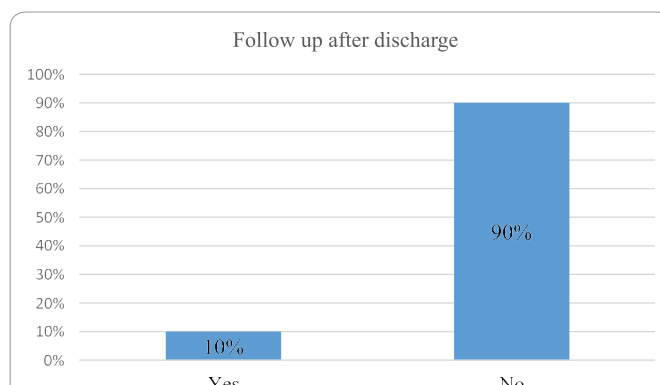


Figure 3: shows that majority (90%) of the respondents were not followed up by midwives after discharge from the hospital.

Table 2: Relationship between Variables

AGE	PERCEPTION		TOTAL	P- VALUE	
	POOR	GOOD			
18-25 years	2(2.5%)	34(43%)	36(45.6%)	0.002	
26-30 years	1(1.3%)	21(26.6%)	22(27.8%)		
31-39 years	1(1.3%)	19(24%)	20(25.3%)		
40 and above	1(1.3%)	0	1(1.3%)		
Total	5(6.3%)	74(93.7%)	79(100%)		
LEVEL OF EDUCATION	PERCEPTION		TOTAL	P-VALUE	
	POOR	GOOD			
	none	0(0%)	1(1.3%)	1(1.3%)	0.505
	primary	3(3.9%)	22(27.8%)	25(31.6%)	
	secondary	2(2.5%)	40(50.6%)	42(53.2%)	
Tertiary	0(0%)	11(13.9%)	11(13.9%)		
Total	5(6.3%)	74(93.7%)	79(100%)		

Table 2 shows that being a younger mother (18-25years) was significantly associated with a good perception of KMC with a p-value of 0.002

Discussion

The study showed that most of the mothers were married aged between 18 and 39 years old which was within the childbearing age. The Zambia Demographic Health Survey 2013-2014 report, also reported that the majority of women in Zambia have had their first delivery by the age of 18 years old and the average age for marriage in Zambia is 18 years Vancouver

Marriage is highly valued among families in Zambia and a spouse is one cardinal source of social support who can help promote KMC especially in the home setup. In this study, mothers indicated that it was important to receive support while practicing KMC. However, the majority of the mothers said that they did not receive support while at home which made it very difficult for them to continue practicing KMC after discharge from the hospital. Other studies, [10,11], also reported that support from family members facilitates the practice of KMC while at home. Another study to determine the knowledge, attitude, and practice in KMC implementation and the impact of knowledge on the attitude and the practice of KMC reported that the practice of providing KMC for greater number of hours increased when the mothers were at home as compared to the hospital because of the encouragingly high spousal support at home, as reported by the mothers [12].

[13] in a study to explore how fathers of premature infants experience and potentially benefit from using the skin-to-skin practice reported that though fathers consider themselves less important as compared to the mothers concerning their infant, skin to skin enhance the fathers' ability to play a caring role in their infant's life. It also enhances an understanding of their role as fathers.

This study showed that most of the respondents were residing in high-density areas. Most of the homes in these areas are small and have many occupants which pose a challenge for the mothers to continue practicing KMC after discharge from hospital. This study also revealed that 79% of the mothers from high-density areas cited inadequate space and lack of privacy in their homes as reasons for not practicing KMC after discharge from the hospital.

Similarly, [11], reported that lack of privacy at home was a major hindrance to KMC practice in about 25% of the mothers.

This study showed that most mothers were multipara. Though not mentioned by mothers in this study, multiparity would be a factor that would affect the practice of KMC after discharge from the hospital as the other children would equally demand attention from the mother. [14], reported that mothers in their study stated that demand for attention by other children while doing KMC was a challenge faced by multipara mothers to continue with KMC at home.

Perception of Kangaroo Mother Care

This study revealed that the majority (94%) of the mothers perceived KMC as good. Many factors can influence the mother's perception of KMC. Such factors include the benefits of KMC. Mothers

reported that KMC made them feel good and that it was beneficial to both the mothers and the babies. Majority of the mothers perceived warmth as one of the benefits of KMC.

Similarly, [15] in a study to explore mothers' experiences of KMC during hospitalization of their preterm babies at an academic hospital in Johannesburg reported that KMC was beneficial because the closeness as well as continuous interactions between the mothers and their babies facilitated a maternal-infant attachment. Vancouver in a study done in Colombia on experiences of mothers practicing KMC also reported that mothers felt empowered by the skin-to-skin experience and that it was their unique contribution to their infant's well-being. [16] in their longitudinal study to determine the perception and practice of KMC after discharge from hospital in Kumasi, Ghana, reported that most of the mothers had favorable opinions of KMC and thought KMC was beneficial to them and their babies. The mothers were equally willing to recommend KMC to other mothers because of the benefits associated with KMC. [14] also reported that over 95% of the mothers enjoyed KMC at home and all the mothers stated that they would recommend KMC to other mothers with low birth weight infants. Although influence of culture on KMC was not determined in this study, KMC may not be socially acceptable and conflict with traditional customs and cultural norms have been reported to influence perceptions and the success of adoption of KMC among mothers [17].

Practice of Kangaroo Mother Care

This study found that majority of the respondents (84%) did not practice KMC after they were discharged from the Women and Newborn Hospital. This is despite the fact that most of them knew KMC and its benefits. Mothers indicated that lack of support from their spouses (90%), feeling tired or sick (82%) and lack of follow-up by the midwives (90%) were some of the major reasons for not practicing KMC while at home.

[18] in a study conducted in Malawi to review the mothers' experiences of KMC at Bwaila hospital and Zomba Central hospital reported that lack of support or assistance with skin-to-skin contact, multiple roles of the mother, stigma, and culture affected compliance and continuation of KMC at home. [19] in a systematic review that sought to identify the most frequently reported barriers to KMC practice for mothers, fathers, and health practitioners, as well as the most frequently reported enablers to practice for mothers reported that KMC may be physically and emotionally difficult and often requires support from family members, health practitioners, or other mothers. [14] in a study to explore the mother's knowledge and experiences with KMC at home after discharge from the hospital reported that the commonest reason for stopping KMC after discharge was that baby became uncomfortable and some of the mothers did not know that somebody else could assist with KMC. In addition, the inability to do domestic chores, sleep comfortably at night or give attention to other children while doing KMC were also cited as reasons for not continuing with KMC after discharge.

Health care providers are critical for implementation of KMC by playing the main role of educating mothers about KMC as well as providing follow up care after discharge from the hospital. Equally, the time needed to provide KMC was a potential barrier for mothers, fathers and families, due to responsibilities at home and work and time needed for commuting, preventing them from devoting the time needed for continuous and extended KMC [17].

Contrary to findings of this study, [16] reported that almost all (99.5%) of the mothers were still practicing either intermittent

or continuous KMC at first follow up visit. This was despite the knowledge of KMC being low at outset. Once initiated, mothers continued practicing KMC in hospital and at home and their infants gained optimal weight.

[11] in a study to estimate the proportion of mothers who continued to practice KMC at home and evaluate potential factors influencing KMC practice found that KMC training while in hospital enabled mothers to continue practicing KMC after discharge as the study reported that 82.5% of the mothers were able to continue the practice satisfactorily at home after discharge.

Another study to identify barriers and facilitators to KMC implementation and identify solutions for overcoming the barriers by [10], also found that family support facilitated the practice of KMC among mothers with LBW babies post-discharge from Koja District Hospital in North Jakarta. [20] also reported that receiving help from family members and witnessing other women perform KMC with positive outcomes was a necessity if mothers were to adopt and practice KMC themselves.

Limitations

The study has to be seen in the light of some limitations. The study design (cross-section survey) and self-reports may have led mothers to under or overrate their practice of KMC while at home. This affects the generalisation of the study findings and therefore contextual factors such as socio-demographic characteristics and data collection technique must be considered. The smaller sample size could have impacted the precision of the results and so further study needs to be done to include other KMC facilities in Zambia with a larger sample.

Conclusion

Despite KMC being perceived as good by mothers, they did not practice it while at home after they were discharged from the hospital. Mothers found it difficult to practice KMC because of factors such as feeling tired or sick, lack of support from partners, lack of follow up by midwives, and engagement in performing daily chores at home. Support persons like husbands or mothers and in-laws must be involved in the health education sessions so that they can offer support to the mothers after discharge from the hospital. Midwives must strengthen support and follow up visits to mothers with preterm and low birth weight babies after discharge from the hospital for mothers to continue the practice of KMC in their home setup.

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