

**ACCEPTABILITY OF KANGAROO MOTHER CARE BY MOTHERS WITH
PREMATURE BABIES: A CASE STUDY OF THE WOMEN AND NEWBORN
HOSPITAL, LUSAKA, ZAMBIA.**

BY

GERTRUDE SIBUCHI M KAMPEKETE

BSc. N, RN/EM

A Dissertation submitted in partial fulfilment of the requirements for the Degree
of Master of Science in Midwifery and Women's Health

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Signature.....Date.....

Head of Department

Name:.....Date.....

Department of Midwifery, Women and Newborn, School of Nursing, University of Zambia

CERTIFICATE OF APPROVAL

The University of Zambia, School of Nursing approves this Dissertation by **Gertrude Sibuchi M Kampekete**, in partial fulfilment of the requirements for the award of Master of Science Degree in Midwifery and Women's Health, at the University of Zambia, School of Nursing.

Examiner 1

Name

Signature.....Date.....

Examiner 2

Name

Signature.....Date.....

Examiner 3

Name.....

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DEDICATION

This research paper is dedicated to my husband Charles Kampekete without whose support, love, understanding, financial, moral support and encouragement, my studies and this work would not have been a success.

To my children: Chisumpa Kampekete, Eugene Kampekete and my sister Pauline.

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ABSTRACT

Kangaroo Mother Care (KMC) is a low cost method of care for premature and low birth weight infants in areas with inadequate incubators and power outages. KMC has been found to be an evidence-based approach to reducing mortality and morbidity in preterm infants.

This study aims to assess the acceptance levels of Kangaroo Mother Care by mothers with premature/low birth weight babies.

A cross sectional analytical design using both qualitative and quantitative approach was used. Data was collected using semi structured interview schedule from 60 mothers with premature babies and five key informants using an interview guide. Respondents were purposively sampled at the University Teaching Hospital KMC unit. Data was analysed by using Statistical Package for Social Sciences (SPSS) version 22 program and chi-square test was used to test for associations among variables. Binary logistic regression modelling was employed to predict the outcome. Data obtained by interview guide was summarised in a narrative form.

Study findings indicate that 60% of women found KMC acceptable and were able to practice continuously in spite of not having prior knowledge of KMC before admission. Acceptance changed in mothers with high knowledge, where acceptance rose to 74.2%. The observed pattern was found to be statistically significant as the chi-square test yielded a p-value of 0.02. This finding suggests an association between Mothers' knowledge about Kangaroo Mother Care and acceptance of care. The study revealed that the longest serving key informant at the KMC Unit had served for two (2) years and three (3) informants had not received any training on KMC.

The current study revealed that Kangaroo Mother Care was acceptable by mothers and their families and that most mothers had relatively high knowledge on KMC. Despite mothers having relatively high knowledge on KMC, most mothers did not receive any information on KMC before admission to hospital. Acceptability was significantly associated with knowledge of the mother on KMC. There is need to intensify Information, Education and Communication (IEC) to the communities on Kangaroo Mother Care.

Keywords: Kangaroo Mother Care, Acceptability, Knowledge, Premature, Low birth weight

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ABBREVIATION

CI	Confidence Interval
CDE	Classified Daily Employee
CSO	Central Statistics Office
ENAP	Every Newborn Action Plan
ENC	Essential Newborn Care
ERES	Excellence in Research Ethics and Science
IEC	Information, Education and Communication
KMC	Kangaroo Mother Care
MCDMCH	Ministry of Community Development Mother and Child Health
NHRA	National Health Research Authority
NICU	Neonatal Intensive Care Unit
OR	Odds Ratio
PMNCH	Postnatal Maternal and Newborn Child Health
SD	Standard Deviation
SIDA	Swedish International Development Cooperation Agency
SNL	Saving Newborn Lives
SPSS	Statistical Package for Social Sciences
STS	Skin to Skin
UNICEF	United Nations Children's Fund
UNZA	University of Zambia
USAID	United States Agency for International Development
UTH	University Teaching Hospital
WHO	World Health Organisation
ZDHS	Zambia Demographic and Health Survey

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Kangaroo Mother Care (KMC) method is an important intervention in the care of premature babies. The method involves infants being carried, usually by the mother, with skin-to-skin contact in between the breasts (WHO, 2015). The first thing mothers need is to acquire knowledge which can have an effect on their attitude to practise and hence accept Kangaroo Mother Care Method. Health Care Providers need to understand KMC for them to provide effective care and advocate the spread of implementation. A supportive environment is too important for mothers to accept KMC. In this study, acceptability of Kangaroo Mother Care by mothers with premature/low birth weight babies was assessed.

1.2 Background information

Kangaroo Mother Care is a low cost method of care for premature/low birth weight infants in areas with inadequate incubators and power outages (Suman et al., 2008; Ellen, 2015, WHO, 2014). KMC was first initiated in Colombia due to shortages of incubators and the incidence of severe hospital infections of newborn infants during hospital stay (Flacking et al., 2011). According to the World Health Organization's (WHO) definition, KMC consists of prolonged skin-to-skin (STS) contact between mother and infant, exclusive breastfeeding whenever possible, early discharge with adequate follow-up and support, and initiation of the practice in the facility and continuation at home (WHO, 2014).

KMC has been found to be an evidence-based approach to reducing mortality and morbidity in preterm infants (Seidman et al., 2015). Studies have shown that it contributes to reduction of preterm mortality by 40% and reduces infection/sepsis, weight gain in premature babies and improves emotional attachment in mothers (Conde-Agudelo, 2014, Lawn et al., 2010). KMC has shown benefits for homeostasis and preterm infants who receive this care are more likely to maintain a healthy body temperature, and show increased cardio respiratory stability (WHO, 2015). Research from various countries shows that KMC is a cost-effective method for treating preterm infants (Broughton et al., 2011), and mothers who have practiced KMC find it acceptable (Muddu et al., 2013, Nguah et al., 2011). KMC's impact on the mother has been shown to decrease depressive tendencies and reduce mothers' stress (Save the children, 2013).

The United Nations Children's Emergency Fund (UNICEF) (2012), showed that KMC is a universally available and biologically sound method of care for all newborn babies, particularly premature infants in both developed and developing countries.

KMC has emerged as a key intervention package for a number of newborn health initiatives, and this is epitomized by the Every New-born Action Plan (ENAP) (PMNCH, 2015). Many agencies, such as Save the Children's Saving Newborn Lives III (SNL), United States Agency for International Development (USAID), WHO and the Bill & Melinda Gates Foundation, have made KMC a priority (Save the Children, 2013; MCHIP, 2012; WHO 2015).

A Study conducted in western Rajasthan showed that mothers did not feel any discomfort in holding the baby in KMC position. The mothers also said that they were ready to give KMC as per instructions given by the Doctors/nurses and they had no problems in keeping the babies in skin to skin for a long time (Gupta, 2007).

Another study conducted in Malawi at Zomba and Bwaila hospitals to assess the knowledge of mothers on KMC, the results revealed that mothers had a positive attitude towards practising KMC and had high knowledge on importance and benefits of KMC (Chisenga et al., 2014).

Despite the benefits of KMC some mothers are not comfortable to practise it (Hockenberry, 2014). A study conducted in Ghana showed that in some areas it is common to carry babies on the back, therefore, it seemed strange to place a baby in front (Nguah, 2011).

A study conducted in South Africa on Knowledge and attitudes of nursing staff and mothers towards Kangaroo Mother Care in the eastern sub-district of Cape Town showed that the main identified obstacles to acceptability of KMC were; the mothers' lack of KMC knowledge, and a lack of KMC training of all nursing staff (antenatal clinic and hospital), and the mothers feelings of being isolated from their spouses and families (Flacking et al, 2011).

In Zambia government issued an official Ministerial decree to introduce KMC, but this ended with a change of government in 2011 (Vwalika, 2014). The realignment of government ministries led to movement of the Mother and Child Health directorate from Ministry of Health to the Ministry of Community Development Mother and Child Health (MCDMCH).

It was at this ministry that the Zambia Newborn Framework a policy document and Essential Newborn Care (ENC) guidelines were developed in 2013 and 2014 respectively with the help of government and its partners, KMC was included in the Packages to standardize the practise (**ibid**).

The documents were developed to contribute to the reduction of neonatal morbidity and mortality in the country and they have since been disseminated and orientations of maternity based staff were done country wide. Ministry of Health in collaboration with partners has also adapted an Essential Newborn Care training package for frontline Health Care Providers where KMC has been included as a method of care for premature and low birth weight babies (Information accessed from Ministry of Health, Zambia).

Furthermore, Save the Children seized an opportunity to improve Monze and Lufwanyama KMC units in Zambia that existed at the time. They also provided technical and material support to have a Kangaroo Mother Care unit which is also a Center of Excellence to be officially opened at UTH on 6th May, 2014 (Vwalika, 2014). From the time the KMC unit was opened to 31 March, 2016, there have been 500 admissions and only three deaths. (Information accessed from Neonatal Unit at the University Teaching Hospital records).

Therefore, to adequately implement and effectively scale-up KMC in Zambia, it was critical to understand whether KMC is accepted by mothers of preterm babies as a method of care and to establish if there are any service - related factors affecting acceptability. The study aimed at investigating acceptability of KMC at the Women and Newborn Hospital (formally UTH) in Zambia with a view of generating evidence in this practise that is new in the country and to inform policy and management so that appropriate interventions could be instituted accordingly.

1.3 Statement of the problem

Despite overwhelming evidence regarding the benefits of KMC, commencement in Zambia has been slow. It was discovered that hypothermia was the leading cause of death in premature/low birth weight babies in areas with inadequate incubators following ongoing perinatal audits from joint departments of Obstetrics/Gynaecology and Paediatrics.

It was with this background that KMC was reintroduced, but there is not much evidence on acceptability (UTH, 2016). Therefore, it was important to carry out a study to determine acceptability of KMC by mothers of premature/low birth weight babies at UTH.

Selected hospitals were practising though not in a standardized way. Implementation started in 2010 after the then Minister of Health attended the Women Deliver Conference in USA. Implementation of KMC was imposed but with change of government in 2011, the minister left and implementation of KMC ceased (Vwalika, 2014).

Zambia endures a high neonatal mortality rate of 24/1000 live births (CSO, 2014), and of all newborn deaths, 37 % are attributed to preterm birth complications such as hypothermia (Liu et al., 2012). The Neonatal Intensive Care Unit (NICU) records at the University Teaching Hospital in Lusaka showed that in 2015, 40% of all admissions were premature babies (UTH records, 2016). Records also showed that about 50% of the premature babies had hypothermia related complications and from the total admissions 45% of the newborn babies who died weighed below 2000 gm (UTH records, 2016).

NICU had 20 working incubators with about 50-60 admissions of newborn babies per day. The number of incubators compared to the number of admissions was insufficient (UTH Records, 2016).

Deaths of newborn babies cause psychological effects on families and stirs up the Health Care System to investigate the causes of these deaths in order to improve care.

1.4 Theoretical / Conceptual framework

A theoretical framework is a group of concepts that are broadly defined and organized to provide a rationale or structure for interpretation of information (Burns and Grove, 2005). It gives a guide or acts like a map in research, determining what things need to be measured and what statistical relationships are to be looked at. It gives an understanding to an empirical enquiry.

In this study, reasoned action theory was applied to help understand human behaviour in acceptance of Kangaroo Mother Care among mothers of premature/low birth weight babies.

1.4.1 Reasoned Action Theory

The theory of Reasoned Action serves to understand an individual's voluntary behavior (Doswell et al., 2011). The ideas found within the theory of Reasoned Action have to do with an individual's basic motivation to perform an action. According to the theory, intention to perform a certain behavior precedes the actual behavior (Montano, 2008).

This intention is known as behavioral intention, and comes as a result of a belief that performing the behavior will lead to a specific outcome. Behavioral intention is important to the theory because these intentions "are determined by attitudes to behaviors and subjective norms" (Colman, 2015).

The theory of Reasoned Action suggests that stronger intentions lead to increased effort to perform the behavior, which also increases the likelihood for the behavior to be performed. Ajzen and Fishbein (1992) suggest two factors that determine intention: attitudes and subjective norms. An attitude is a person's opinion about whether a behavior is positive or negative, while "a subjective norm is a perceived social pressure arising from one's perception (Colman, 2015). A subjective norm describes the social pressure an individual feels to perform or not perform the behavior at hand. Together, attitudes and subjective norms are thought to determine behavioral intention. Behavioral intention then leads to performing the behavior.

The Theory of Reasoned Action theorists note that there are three conditions that can affect the relationship between behavioral intention and behavior. The first condition is that "the measure of intention must correspond with respect to their levels of specificity" (Ajzen, 1992). This means that to predict a specific behavior, the behavioral intention must be equally specific. The second condition is that there must be "stability of intentions between time of measurement and performance of behavior" (Ajzen, 1992). The intention must remain the same between the time that it is given and the time that the behavior is performed. The third condition is "the degree to which carrying out the intention is under the volitional control of the individual". The individual always has the control of whether or not to perform the behavior. These conditions have to do with the transition from verbal responses to actual behavior.

The Adapted Reasoned Action Theory in the Acceptability of Kangaroo Mother Care has been described further in Figure 1.

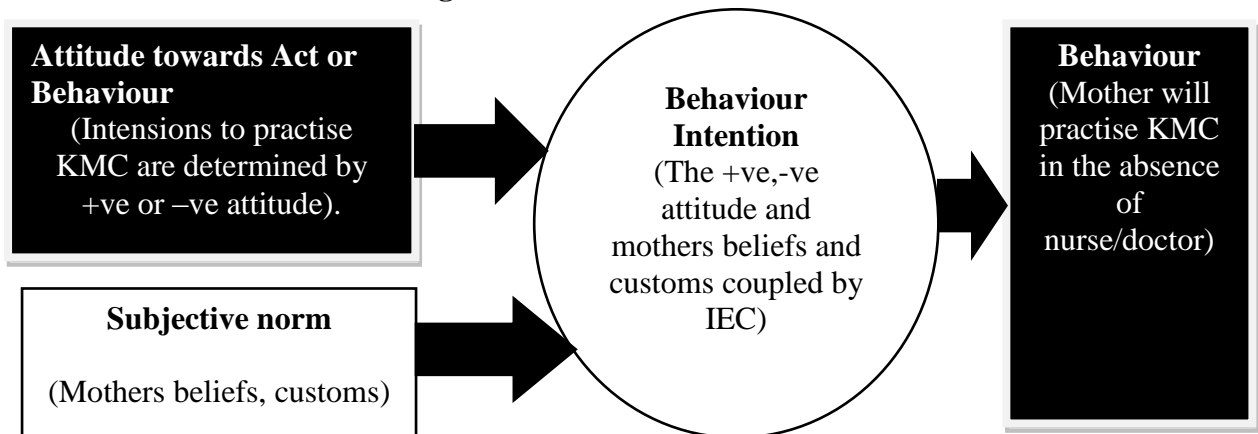


Figure 1: The Adapted Theoretical Framework of Reasoned Action by Ajzen and Fishbein (1980)

1.4.2 Application of the Theory to the Research

The Theory of Reasoned Action/Theory of Planned Behavior suggests that an individual's behavior is determined by their intention to engage in the behavior, which in the case of acceptability of Kangaroo Mother Care is a result of the mother's:

- **Attitudes:** A mother's beliefs about the attributes and outcomes of practising Kangaroo Mother Care, weighted by their evaluations of these attributes or outcomes.
- **Subjective Norms:** A mother's beliefs regarding important others' approval or disapproval of accepting to practise KMC (normative beliefs), weighted by their motivation to comply with these important others' wishes.
- **Perceived Behavioral Control:** A mother's perceived control over practising Kangaroo Mother Care in the presence or absence of nurses or doctors and barriers to not practising Kangaroo Mother Care method.

In general, according to this model, the more positive the attitude and the subjective norms are (towards practising Kangaroo Mother Care), and the greater the perceived practise is, the stronger the mother's intention will be to accept Kangaroo Mother Care.

1.5 Justification and significance of the study

Advantages of KMC cannot be overemphasized (WHO, 2015). Kangaroo Mother Care contributes towards reduction of morbidity and mortality among premature/low birth weight babies. Acceptability is vital to practising KMC. Regardless of the numerous advantages of KMC, it is not widely practised in Zambia and there is little or no evidence on acceptability of KMC. A study conducted in Malawi by Chisenga et al, 2014 showed that KMC was accepted by mothers. Therefore, it was important to establish the acceptability of KMC by mothers of premature/low birth weight babies in Zambia.

The purpose of this study was to determine the acceptability of Kangaroo Mother Care by mothers with premature/low birth weight babies admitted to the KMC Unit.

The findings from this study will be used to inform policy and management so that appropriate interventions can be instituted accordingly. The results will also serve as a starting point for researchers and program implementers looking to improve KMC programs in the country.

1.6 Research question

The research question that guided the study was:

- a) What are the factors influencing acceptability of KMC by mothers of preterm/low birth weight babies at UTH in Lusaka?
- b) Would improving the attitudes of mothers towards KMC increase their acceptability and use of KMC?

1.7 General objectives

The general objective was:

To investigate factors influencing acceptability of Kangaroo Mother Care as a method of choice in the care of premature/low birth weight babies at the University Teaching Hospital.

1.8 Specific objectives

The specific objectives were:

- 1.8.1** To assess the acceptance levels of KMC by mothers with premature/low birth weight babies.

- 1.8.2** To establish the knowledge levels of KMC among mothers with premature/low birth weight babies.
- 1.8.3** To ascertain factors influencing acceptability of KMC by mothers of premature/low birth weight babies.
- 1.8.4** To determine the association between socio-demographic characteristics of mothers nursing premature/low birth weight babies and acceptance of KMC.

1.9 Conceptual definitions

The conceptual definitions were:

1.9.1 Acceptability

It something that is considered to be socially alright or within the realm of what is appropriate, or something that is tolerable but not necessarily desired (Morsby's, 2008).

1.9.2 Premature Baby

A premature baby is one who is born too early, before 37 weeks. Premature/low birth weight babies may have more health problems and may need to stay in hospital longer than babies born later (UNICEF, 2012).

1.9.3 Kangaroo Mother Care

A universally available and biologically sound method of care for all newborn babies, but in particularly for premature/low birth weight babies with weight less than 2500 g (WHO, 2015). It has 3 components, skin to skin contact, exclusive breast feeding, support to the mother infant dyad (Ellen, 2015).

1.9.4 Low Birth Weight Baby

This is a birth weight of a live newborn infant of less than 2500 g regardless of gestational age (WHO, 2014).

1.9.5 Mother

A mother is a female who may inhabit or perform the role of bearing some relation to her children, who may or may not be their biological offspring (www.merriam-webster.com/dictionary/mother).

1.10 Operational definitions

1.10.1 Acceptability

In this study mothers of premature/low birth weight babies who agreed to place the baby in an upright position skin to skin, continuously for over 20 hours in a sitting position, sleep with the baby on the chest and agree to continue doing so at home were regarded as those who accept practicing KMC. Acceptability of KMC was measured by 6 items on the interview schedule. Mothers who provide KMC for 20 hours and accept to continue doing so at home. Those who scored from 4 to 7 marks on acceptability questions were regarded as those who accept practicing KMC.

1.10.2 Knowledge on Kangaroo Mother Care

Knowledge refers to mothers of premature babies who had facts or information on KMC.

The variable knowledge was measured by asking mothers eight (8) KMC knowledge questions. The variable knowledge was categorised into two (2), namely high and low levels of knowledge. Scores ranging from 10 to 16 were considered as high knowledge while those from 9 and below were considered low knowledge.

1.10.3 Traditional Beliefs

This refers to a mother who observes traditional beliefs that prevents her from practising KMC. Traditional beliefs were to be assessed by three “yes” and” no” questions. The total scores were 3. A score of 1 to 3 on these questions denoted that a mother observed traditional beliefs.

1.10.4 Family Support

This refers to the involvement of family members in the care of the preterm/low birth weight babies. Family support was assessed by asking two “yes and no” questions on family support. The total score was 2.

1.11 Variables

The dependent and independent variables for this study included:

1.11.1 Dependent Variables

In this study the dependent variable was:

Acceptability of Kangaroo Mother Care by mothers.

1.11.2 Independent Variables

The independent variables in this study were:

1.11.2.1.1 Knowledge of KMC

1.11.2.1.2 Service related factors (staff attitude, knowledge of KMC, Supportive environment). Socio – cultural factors (Family support, traditional beliefs)

1.11.2.1.3 Socio-demographic characteristics of the mother (age, marital status, level of education, tribe, and religion).

TABLE 1:11 Variables, cut off points and indicators

VARIABLES	INDICATORS	CUT-OFF POINTS	QUESTION NUMBER
DEPENDENT VARIABLES			
Acceptability of Kangaroo mother care	Accept	Provides care using Kangaroo method for over 20 hours and be able to continue at home and scores between 6 and 7 marks on acceptability questions.	15 – 24
	Does not accept	Does not provide care using Kangaroo method for 20 hours and refuses to continue at home and scores 5 marks and below on acceptability questions.	
INDEPENDENT VARIABLE			
Attitude of Staff	Positive	Scores of 5-10 on attitude questions	1- 13 On interview guide for key informants
	Negative	Scores below 5 on attitude questions	
Knowledge on Kangaroo Mother Care	High	Scores 12 – 15 on questions	25 – 32
	Low	Scores 0 – 11 on questions of knowledge	
Traditional Beliefs	Observe	Mother Observes traditional beliefs that prevents her from practising KMC	33 – 35
	Does not observe	Mother does not Observe traditional beliefs that could hinder her from practising KMC	
Family Support	Available	Family encourages mother to do KMC	36 – 37
	Not available	Family does not want mother to practise KMC	

CHAPTER TWO: LITERATURE

2.1 Introduction

This chapter focuses on literature review on acceptability of Kangaroo Mother Care (KMC) by mothers with premature/low birth weight babies as a method of care worldwide. The sources of literature included peer reviewed journals, reports, records from hospital registers, Ministry of Health, conference proceedings, theses, online and electronic data i.e. PubMed, Google and Google scholar. The purpose of literature was to determine what was already known about the topic so that a comprehensive picture of the state of knowledge on the topic could be obtained (Brink, 1996). This helped to minimize the possibility of unintentional duplication and increased the probability that the current study would make a distinct contribution. In addition, the researcher was availed with information on what had and had not been tried in regard to approaches and methods and types of data collecting instrument that existed and work or did not work. The literature review helped in refining the study and formed the basis for comparison during the interpretation of findings.

The articles reviewed are on acceptability of Kangaroo Mother Care, mother's knowledge on KMC, health staff attitude, family support and traditional beliefs which are the study variables.

2.2 Acceptability of Kangaroo Mother Care

Acceptability is defined as something that is considered to be socially alright or within the realm of what is appropriate, or something that is tolerable but not necessarily desired (Morsby's, 2008). Acceptability of Kangaroo Mother Care is an important aspect on the part of the mother as it is a basis to practise KMC effectively. Therefore, Counselling and Health Education can play a very important role in accepting KMC as a method of care for premature/low birth weight babies, hence the need to counsel the mother and family members before initiating KMC (Chisenga et al., 2014). A study done in India to determine feasibility and acceptability of Kangaroo Mother Care in a tertiary care hospital showed that KMC has been accepted by both mothers and health care professionals in various cultures and distinct circumstances and improves maternal-infant bonding (Sandeep et al., 2005). Good practise calls for acceptability of KMC as a method of care.

Another study conducted at Seth GS Medical College and KEM Hospital, Mumbai, India by Suman et al. (2007), showed that KMC was acceptable to most mothers and families.

The majority of mothers expressed happiness (71.5%), practised KMC easily (75.5%), without assistance (83.8%) and felt that their baby preferred KMC (65%). The above results show that mother's acceptability is related to good KMC practices.

Mother's accept KMC practise when they become aware of its benefits. A study conducted in Malawi by Chisenga et al. (2014) revealed that all respondents (100%) in their study agreed that KMC was beneficial to the infant. About 94.1% of the respondents denied being encouraged to practise KMC, whereas 5.9% indicated that they were encouraged to do it by Health Care Providers. Apart from the above reasons, 78.9% of the mothers said that they accepted to practise KMC because they had preterm infants. They did so to protect the infant as they believed that KMC saves lives and that it is good for health; for fast growth; and because the nurse had said so. The study recommended that strategies to improve acceptability and uptake be put in place such as mass media campaigns to promote awareness on KMC services as health education can help an individual to have a strong belief about a particular behaviour, in this case the benefits of KMC.

2.3 Mothers knowledge on KMC

Knowledge is the information and skills gained through education or experience (Hornby, 2010). Knowledge on KMC encompasses information and skills gained through education or expertise. In this study it refers to the range of information and understanding gained by mothers regarding KMC. A qualitative study conducted at Level II NICU of a teaching hospital in Southern India to assess acceptability and feasibility of KMC among the mothers of preterm/low birth weight babies showed that majority (82.2%) of the mothers had knowledge about KMC. All the mothers strongly agreed that the KMC method assists growth and development and pre-empts sickness in the baby. More than half of the mothers felt that amongst all the other methods, KMC was a viable method (Chavan et al., 2015).

A study on Knowledge and attitudes of nursing staff and mothers towards Kangaroo Mother Care in the eastern sub-district of Cape Town showed that mothers' lacked KMC knowledge and felt isolated from their spouses and families (Flacking et al., 2011). The study recommended that the lack of KMC knowledge could be rectified by educating all expectant mothers during their antenatal visits.

This could be carried out through talks, pamphlet distribution, and the use of audio-visual media, demonstrating how to practise KMC, and how to express breast milk, for example.

This might alleviate the anxiety and feelings of inadequacy that mothers experience after giving birth to a premature/low birth weight infant (Ellen, 2015). It further recommended that all nursing staff should receive training on KMC, even if they are not directly involved in its implementation. In this way, all nursing staff will be equipped to assist and advise expectant mothers on KMC.

Lack of Information Education and Communication (IEC) prior to hospitalisation can have an impact on the level of KMC knowledge. Chisenga and others (2014) conducted a qualitative descriptive study to review the mother's experiences at Bwaila and Zomba Central hospital in Malawi. The findings showed that there was little information outside health facilities on KMC, with only 16% participants having had knowledge prior to hospitalisation, with the majority (81%) hearing about KMC from friends. From these results it is apparent that the general lack of community sensitisation on KMC was the main reason for lack of accurate knowledge on KMC amongst the participants. The study concluded that mothers had a positive attitude towards KMC and high knowledge on importance and benefits of KMC despite the fact that they were not aware of KMC services prior to hospitalisation.

2.4 Health staff attitudes on KMC

In this study, attitudes are feelings regarding KMC and these were classified as either positive or negative. Engler et al. (2002) in a study conducted on neonatal nurse's knowledge and beliefs regarding KMC with preterm infants in an Irish Neonatal Unit found out that the greatest obstacles to implementation of KMC were attitude and lack of knowledge of health professionals and that attitude strongly influenced action. Even if Health Care Providers (HCPs) are aware of research literature, their own personal knowledge and beliefs could influence their encouragement or discouragement for KMC. According to Flynn and Leahy-Warren (2010) the positive or negative attitudes of staff affect parental practice of KMC.

Similarly, a descriptive study conducted by Chia, Gan and Sellick (2005) in Australia whose purpose was to determine the attitudes and practices of neonatal nurses in the use of Kangaroo Mother Care showed that neonatal nurses strongly supported the use of Kangaroo Mother Care in the Neonatal Intensive Care Unit.

The study also revealed that although the majority of nurses reported positive attitudes and practices, they identify a number of educational and practical concerns that needed to be addressed to ensure KMC with low birth weight infants is safe and effective. Therefore, if

these educational and practical concerns are addressed it can lead to improved KMC practices and attitude.

A study from eastern sub-district of Cape Town done by Solomon (2011) on Knowledge and attitudes of nursing staff and mothers towards Kangaroo Mother Care highlighted the fact that all of the nursing staff who were engaged in KMC (n = 15) had a positive attitude towards Kangaroo Mother Care. This study showed that for mothers to practise KMC successfully there is need for nurses to have positive attitude too.

2.5 Family support provided to mothers

KMC at its core is a family-friendly intervention that supports the mother-infant pair from the outset. Involving community members and families in the scale up of KMC could lead to best-practise care which can be championed from the home to the health facility and back (Bergh et al., 2014). Family support given to mothers practising KMC can have a positive effect. A study conducted on NICU care, staff and families in the United States of America (USA) to assess the impact of family - centred care initiative conducted by Cooper et al. (2007) showed that Kangaroo care/ holding of newborns brings some of the greatest comfort to families. The majority of the respondents who Kangaroo-cared/held their babies found that this activity provided the highest level of comfort. The study suggested that families needed more than just discharge preparation, but also a setting in which they could be empowered, encouraged and supported in caring for their baby as the primary caretaker from admission onward. It also suggested that parent participation from admission onwards demonstrated a decrease in stress, feelings of helplessness and eased the transition from hospital to home environment.

2.6 Traditional beliefs on KMC

There are some myths which may affect the practise of KMC. Claeson, Damstadt, Engmann (2014) wrote an article on Busting Myths: Taking Kangaroo Mother Care to the Next Level. In this article, it was highlighted that KMC is still a practise that is sputtering (globally less than one percent use) because of widely accepted myths that it was only a hospital-based, medical intervention for premature babies.

Another related myth is that KMC is a “poor-woman’s” intervention that is simply a poor substitute for more desirable high-tech, costly care like the incubator care that is the norm for preterm babies in most rich countries.

Traditional beliefs may impact positively or negatively on acceptability of KMC by mothers for instance, a study carried out to investigate resistance to the implementation of Kangaroo Mother Care by Liyanag (2005) in Srilanka found out that mothers did not consider direct skin - to - skin contact between a naked infant and the Kangaroo provider to be unusual or improper nor was there evidence of any cultural resistance to KMC. This is in contrast with a study by Nguah et al. (2011) conducted in Ghana, Kumasi on Perception and Practice of Kangaroo Mother Care after discharge from hospital. The results showed that many mothers were not practising KMC outside the home because they thought that it was not acceptable in the community. The usual practise of carrying newborns in Ghana is for mothers to wrap them against their backs and not on their chest. This concluded that mothers and the community need to accept KMC for mothers to feel comfortable to put their babies skin to skin between their breasts under their clothing and leave the baby on their chest 24 hours a day, using a semi-sitting position. The study suggested that more should be done to improve acceptability of KMC as a method of care for premature/low birth weight babies and that Health Care Providers should intensify on Information Education and Communication.

2.7 Conclusion

From the studies reviewed it was evident that mothers accepted practising KMC and some had knowledge of KMC while others did not. The mothers acquired the knowledge about KMC when they were admitted in the Neonatal Intensive Care Unit. Literature shows that Health Care providers' attitude strongly influenced action however some Health Care providers had a positive attitude towards KMC. Evidence shows that KMC brings comfort to families although mothers still have misconceptions about KMC.

The major limitation was that there was inadequate information on acceptability of KMC in Zambia. Prior to the current study, there was only one study on Kangaroo Mother Care which was identified. Therefore, the investigation on acceptability of Kangaroo Mother Care by mothers with premature/low birth weight babies at the Women and Newborn Hospital formerly known as University Teaching Hospital was necessary.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

Chapter three (3) presents the methodology that was used in this study. This chapter focused on research design, study setting, study population, sampling method, sample size, data collection instrument, data analysis, pilot study, ethical consideration, limitation of the study, Validity and reliability of the data collection tool that was used . The aim of this study was to determine the acceptability of KMC by mothers with premature/low birth weight babies at the University Teaching Hospital at the Kangaroo Mother Care Unit.

3.2 Research design

A cross sectional analytical design with both qualitative and quantitative approach was used to meet the research objectives. Cross sectional was used because the analysed data was collected at a specific point in time (Lobiondo-Wood and Haber, 2006). The cross sectional analytical design was used because it permits large amount of data to be collected at one point in time and helps to explore relationships among acceptability of KMC (dependent variable) and the independent variables (Knowledge of KMC, service related factors (staff attitude, knowledge of KMC, supportive environment), socio – cultural factors (Family support, traditional beliefs) and socio-demographic characteristics of the mother (age, marital status, level of education, tribe, and religion).

3.3 Research setting

The study was conducted at the University Teaching Hospital (UTH) the highest referral institution in Zambia at the Kangaroo Mother Care Unit. The health institution had the following wards: medical , surgical, paediatric, a maternity, postnatal, the Neonatal Intensive Care Unit (NICU) and Kangaroo Mother Care Unit which offered health services to mothers (the former) and newborn babies (the latter).

Babies with weight less than 2000 gm are admitted and offered special neonatal care, but not intensive care. It had a bed capacity of 10 adult beds elevated at the head end to enable mothers stay with their newborn babies in an upright KMC position 24 hours a day.

The room had a radiant heater which keeps the room warm and was conducive for nursing premature/low birth weight babies.

A phototherapy machine was placed in a corner to enable mothers with jaundiced babies place them in alternatively while practising KMC. Mothers had access to a hand washing basin, however there was no bathroom or toilet in the KMC room, thus they used bathroom and toilet facilities for the main postnatal ward. There was a television set where videos on KMC were supposed to be played. The nurses rotated on shifts 24 hours a day. The Classified Daily Employee (CDE) ensured that the place and linen were clean.

3.4 Study population

The study population were postnatal mothers admitted with premature/low birth weight babies.

3.4.1 Target Population

The target population for this study were mothers admitted with premature/low birth weight babies weighing less than 2000 gm in the KMC unit at UTH (only babies weighing less than 2000 gm are admitted in the UTH KMC unit). The Key informants who were the Health Care Professionals were the ones who dealt with management issues regarding KMC at the University Teaching Hospital in Lusaka. The reason for this selection was that mothers were the ones practising KMC and Health Care Professionals' were overseeing management issues.

3.5 Sample selection

Respondents who participated in the study were purposively selected. They were included in the study because they happened to be in the right place at the right time and were simply entered into the study until a desired sample size was reached.

3.6 Sample size

A sample size of 60 mothers with premature/low birth weight babies weighing less than 2000 gm practising KMC were included in the study.

In-depth interviews were held with 5 key informants overseeing KMC at UTH. The sample size was calculated using the prevalence formula which is $n = Z^2 \cdot P(1 - P)/d^2$. Where $n = 1.96^2 \times 0.5 \times 0.5 / 0.05^2 = 384$.

The 70 mothers were the average maximum number available in three (3) months which was arrived at by counting total number of premature /low birth weight babies who were admitted in the 10 bed capacity KMC Unit from the time it was opened in May, 2014 up to 31 March, 2016 which was 500 premature / low birth weight babies. The number of babies admitted in a period of 6 month from 15 October, 2015 to 21 March, 2016 was 131 babies.

The study was carried out in 3 months which, was half of the time period when 131 babies were admitted. This shows that this was a finite population size (less than 1000). The final n was got by adjusting for population size as follows: Find $n = \frac{n/1 + n/N}{2} = \frac{384/1 + 384/70}{2} = 384/6.49 = 60$.

3.7 Eligibility criteria

3.7.1 Inclusion Criteria

For this study, mothers that had preterm babies in the Unit practising KMC at the time of the study were included.

3.7.2 Exclusion Criteria

Mothers that had babies with weight above 2000 gm in the KMC unit were excluded.

3.8 Data collection tools

Two research instruments were used to collect data from respondents and these were a semi structured interview schedule and an interview guide.

3.8.1 Semi Structured Interview Schedule

The semi structured interview schedule had both open- and closed-ended questions and was adapted from other similar studies conducted by Nyqvist (2012), Solomons (2012), Chisenga, (2015) and Maternal and Child Health Integrated program (2015). The instrument for data collection was divided into five parts as indicated below:

- Section A comprised of Demographic Data to obtain personal details of participants such as age, number of children, marital status, religion, occupation, and educational status.
- Section B determined acceptability of KMC by mothers and knowledge of KMC and benefits in relation to outcome.
- Section C determined the knowledge of mothers practicing KMC.

- Section D determined family support of mothers' practicing KMC.
- Section E determined mother's traditional beliefs. A separate questionnaire elicited information on service related factors.

The research instrument was prepared in English language and translated in Nyanja for participants who could neither read nor understand English.

3.8.2 Interview Guide

The interview guide for health workers managing the KMC comprised questions on acceptability of KMC as indicated below:

Acceptability of KMC Service Related Questions

What is your current position?

How long have you worked in this unit?

Have you been trained in KMC?

Is KMC used in the management of premature/ low birth weight babies in this unit?

Please tell me, when was KMC introduced at this hospital?

In your opinion, what is the mothers' response to KMC like?

What are the benefits of KMC?

How often do you disseminate information on benefits of KMC?

What challenges do you face in reinforcing KMC?

Does the hospital infrastructure support implementation of KMC?

How do you support mothers in the implementation of KMC?

Is KMC sustainable?

How can KMC be improved?

3.8.3 Validity of the Data Collection Tool

To ensure validity, the research instrument for quantitative data was carefully evaluated by a panel of experts including the researcher's supervisors, the faculty at the department of Midwifery, Women and Newborn, School of Nursing, University of Zambia and the University Teaching Hospital Administration. The research instrument was administered face to face by the researcher and was adapted from Nyqvist (2012), MCHIP (2015), Chisenga (2015) and Solomon (2012). Validity was ensured by accurate and careful phrasing of each question to avoid ambiguity and leading respondents to a particular answer.

3.8.4 Reliability of the Data Collection Tool

The research participants were informed of the purpose of the interview and the need to respond truthfully. Additionally, a pilot study was conducted at Livingstone General Hospital in order to examine accuracy of the questions, and elicit the information that was sought.

Furthermore, corrections were made where necessary to make questions clear and provide information that was sought. The physical and psychological environment where data was collected was made comfortable by ensuring that there was privacy, confidentiality and general physical comfort.

3.8.5 Trust Worthiness of Research Tool

Guba and Lincoln (1981) propose four criteria for evaluating qualitative findings thus enhancing trustworthiness. Measures were put in place to ensure trustworthiness which included four strategies advocated by Lincoln and Guba, (1985:328). These are credibility, dependability, transferability and conformability.

- **Credibility**

Credibility in this study was achieved through the use of prolonged engagement, use of different methods of data collection that included interviews, observations, and field notes, discussions with experts in the field of qualitative research and a clear written description of how the study was conducted.

- **Dependability**

A description of how data was collected and analysed was clearly outlined and included in this study. This offered information as to how repeatable the research could be.

- **Transferability**

A detailed description of the research context was made available for the reader who so wishes to transfer and judge the sensibility of that transference.

- **Conformability**

The study procedures were well documented in this study in order to allow easy confirmation of the study findings by other reviewers.

3.9 Data collection techniques

Data on mothers acceptability of KMC was collected by use of a semi structured questionnaire hence the quantitative approach. Face to face interviews were conducted with each mother. In-depth interviews were held with Health Care Providers.

The interviews were conducted in a private room. Data was collected over a period of three months and four interviews were conducted per day lasting up to 30-45 minutes.

Before conducting the interview, the researcher introduced herself and verbal permission was sought from the respondents followed by a written consent.

Each interview started with an introduction and overview of the research including the objectives of the study from the information sheet. The respondents were informed that no names would be written on the research instrument. The researcher read out questions to the respondents and entered responses on the data collection instrument. Respondents were encouraged to ask questions and seek clarification on items they did not understand in the questionnaire. At the end of the interview the respondents were thanked for their participation.

3.10 Pilot study

The pilot study was carried out at Livingstone General Hospital KMC unit. Respondents who participated in the pilot were not included in the main study. The pilot study was conducted in order to identify flaws in the data collecting tool and to establish whether the variables would be measurable. The study sample for the pilot constituted 10% of the main study sample and semi structured interview schedule was used to collect data from the respondents. Purposive sampling method was used to select the respondents. The researcher made corrections on the questionnaire before the actual study was embarked upon.

3.11 Ethical consideration

The study followed the ethical principles guiding the use of human participants in research. Approval for the study was obtained from Excellence in Research Ethics and Science Converge (ERES) ethics Committee. The researcher requested written permission from National Health Research Authority – Ministry of Health (MOH), Provincial Medical Officer (PMO) and from the Senior Medical Superintendent at the University Teaching Hospital.

Informed consent was obtained from the respondents 18 years and above while assent was obtained from clients 15-17 years. The respondents were informed that the survey was voluntary, and that they did not have to participate if they chose not to or could withdraw at any time. Respondents were assured that confidentiality of responses would be maintained during and after data collection. Only numbers were assigned to each copy of the data collection instrument and no name was written on the data collection instrument. The numbers facilitated data entry and analysis so that no one could link the identity of the participants with the registration numbers.

The data once obtained was kept under lock and key and only the researcher had access to data. At completion of the study, all links between individuals and specific data was destroyed so that any future work with the research data is anonymous.

CHAPTER 4: DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

Chapter four (4) focuses on data analysis and presentation of findings. Data analysis involved breaking down existing complex factors into simpler parts and putting parts together in new arrangements for the purpose of interpretation. Data was collected from the University Teaching Hospital (UTH), Kangaroo Mother Care Unit from sixty (60) postnatal mothers with premature/low birth weight babies using a questionnaire. Five key informants were interviewed by using an interview guide. The tools were then edited for completeness and recorded on each interview day.

4.2 Data analysis

The study collected both quantitative and qualitative data. Quantitative data was analyzed using computer software packages namely Excel and Statistical Package for Social Sciences (SPSS) version 22. Chi square test was used to test associations between dependent variable (acceptability of Kangaroo Mother Care) and independent variables Knowledge, Traditional beliefs and Family support. A model to predict the combined effect of the independent variables on the dependent variable was developed using binary logistic regression.

Qualitative data was analyzed using content and thematic approaches. The researcher used content analysis in the initial analysis and the coding process to aggregate similar codes thereby forming major concepts or themes. Thematic approaches were used in analyzing frequencies to come up with an interpretation after identifying patterned meaning across a dataset.

4.3 Presentation of findings

The data in this study is presented according to the sequence and sections in the interview schedule. Bar graphs were constructed for the outcome variable.

Frequency tables were presented for each of the independent variables to indicate proportions of categories within each respective variable.

The research results were presented in the form of bar graphs, pie charts and frequency tables to summarize results of the study in a way that enables readers to understand findings easily.

Cross tabulations of variables were used to clearly show the relationship between variables and for the researcher to be able to draw meaningful inferences. The tables and charts have been clearly numbered and carefully labeled with self-explanatory headings.

4.3.1 SECTION A: Demographic characteristics of the sample (n=60)

This section presents two (2) components under characteristics of the baby (sex and birth weight of baby) and eight (8) under demographic characteristics of mothers with premature and low birth weight babies in terms of type of delivery, gravida, and mother’s age at last birthday, marital status, level of education, occupation and monthly income. The frequencies and summaries were used to summarize the ten (10) items under demographic characteristics of the sample.

TABLE 2: Baby Characteristics (n=60)

Variable		Frequency	Percent (%)
Sex of Baby	Male	26	43.3
	Female	34	56.7
	Total	60	100
Birth Weight of Baby	1,000 - 1,400g	51	85
	1,500 - 2,000g	9	15
	Total	60	100

Table 2 shows that majority (56.7%) of the babies were females whereas 26 (43.3%) were male. On the birth weight, the majority (85.0%) were in the range between 1,000 - 1,400g weight category while 9 (15.0%) weighed between 1,500 and 2,000g.

TABLE 3: Respondents Demographic Data (n=60)

Variable		Frequency	Percent (%)
Type of Delivery	Normal	39	65
	Caesarian	13	21.7
	Assisted	8	13.3
	Total	60	100
Gravida	Primi	24	40
	Multigravida	36	60
	Total	60	100
Mother's Age at Last Birthday	19 years and below	10	16.7
	20 - 25 years	20	33.3
	26 - 30 years	15	25
	Above 30 years	15	25
	Total	60	100
Marital Status	Single	15	25
	Married	44	73.3
	Separated	1	1.7
	Total	60	100
Level of Education	No education	1	1.7
	Primary	13	21.7
	Secondary	36	60
	Tertiary	10	16.7
	Total	60	100
Occupation	Not employed	39	65
	Self employed	10	16.7
	Formally employed	11	18.3
	Total	60	100
Monthly Income	No income	39	65
	K2,500 and below	13	21.7
	K2,501 - K5,000	4	6.7
	Above K5,000	4	6.7
	Total	60	100
Religion	Christian	60	100

Table 3 shows that majority (65.0%) of respondents had normal delivery, followed by 13 (21.7%) who were delivered by caesarian section and 8 (13.3%) had assisted delivery.

On the gravida, most (60.0%) respondents were Multigravida while 24 (40.0%) were Primigravidas.

The majority (66.7%) of the mothers were above 19 years, with 20 (33.3%) aged between 20 and 25 years, 15 (25.0%) aged between 26 and 30 years, and another 15 (25.0%) aged above 30 years.

Mothers aged 19 years and below constituted 10 (16.7%) of the respondents. On the marital status, most (73.3%) respondents were married, 15 (25.0%) were single and 1 (1.7%) was separated.

The majority (60.0%) of the respondents had attained Secondary education, followed by those with Primary education who constituted 13 (21.7%). Those who reported having attained tertiary education constituted 10 (16.7%) of the respondents, while 1 (1.7%) reported having attained no education.

In terms of occupation, 39 (65.0%) of the respondents were unemployed, 11 (18.3%) were formally employed and 10 (16.7%) were self-employed. The majority (65.0%) of the respondents reported having no monthly income, followed by 13 (21.7%) who reported earning a monthly income of K2, 500 and below. Those earning between K2, 501 and K5, 000 constituted 4 (6.7%) and those earning above K5, 000 also constituted 4 (6.7%) of the respondents. Concerning religion, all respondents reported being Christians.

4.3.2: SECTION B: Acceptability to practise Kangaroo Mother Care (n=60)

Five (5) questions were asked to respondents to elicit information on acceptability to practise Kangaroo Mother Care. Responses were assigned scores to determine acceptability of mothers to premature/low birth weight babies to practise Kangaroo Mother Care (KMC). The variables addressed were: comfort, continuation of KMC at home, husband's agreement with KMC, hours of practice and preference for either incubator care or KMC.

TABLE 4: Acceptability of Kangaroo Mother Care (n=60)

Variable		Frequency	Percent (%)
Felt comfortable when giving KMC	Yes	56	93.3
	No	4	6.7
	Total	60	100
Continue giving KMC at home	Yes	59	98.3
	No	1	1.7
	Total	60	100
Husbands who agreed with KMC	Yes	54	90
	No	2	3.3
	I am not sure	4	6.7
	Total	60	100
Number of hours mothers took to place the baby skin to skin	< 20 hours	10	16.7
	20 hours	9	15
	> 20 hours	41	68.3
	Total	60	100
Felt that the baby should have been in the incubator	No	60	100

The assigned scores to the above responses in **Table 4** assisted to determine the acceptability of Kangaroo Mother Care by mothers with premature/ low birth weight babies. Figure 2 below summarizes the acceptability of Kangaroo Mother Care.

FIGURE 2: Acceptability of Respondents to Kangaroo Mother Care (n=60)



The pie chart above shows that majority (60%) of the respondents Accepted the practise of Kangaroo Mother Care while 24 (40%) did not accept.

Therefore the general acceptability of Kangaroo Mother Care was scored and after adding the scores to get the total, respondents were deemed to have exhibited either acceptance or non-acceptance depending on their total score.

4.3.3: SECTION C: Knowledge on Kangaroo Mother Care (n=60)

To assess knowledge levels on Kangaroo Mother Care, the responses to questions 26 to 32 were assigned scores and the total scores were calculated for each respondent. The total score was then categorized according to the range in which it fell as either ‘High Knowledge’ or ‘Low Knowledge’. The table below shows the knowledge levels of respondents on Kangaroo Mother Care.

TABLE 5: Knowledge Levels on Kangaroo Mother Care (n=60)

Variable		Frequency	Percentage (%)
Information received on KMC before admission.	Yes	6	10
	No	54	90
	Total	60	100
Information received on KMC while in hospital.	Yes	58	96.7
	No	2	3.3
	Total	60	100
Source of information received.	Doctor	13	22.4
	Nurse	29	50
	Friend	4	6.9
	Relative	2	3.4
	Other	10	17.2
	Total	58	100
Adequacy of information received on caring for the baby.	Yes	38	65.5
	No	18	31
	Other	2	3.4
	Total	58	100
Types of KMC practice	Intermittent	6	10
	Continuous	54	90
	Total	60	100

Figure 3 illustrates the findings of low and high knowledge after scoring the responses on knowledge level regarding Kangaroo Mother Care.

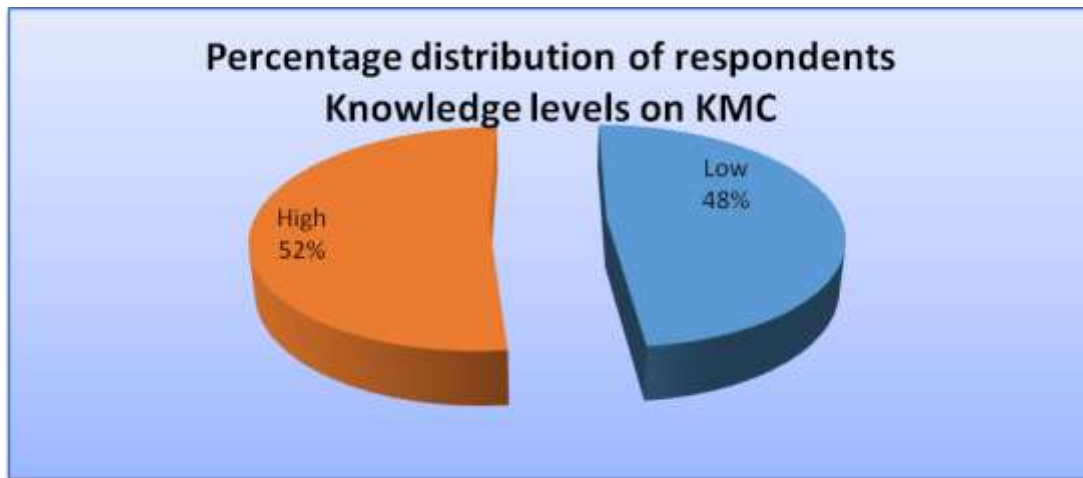


FIGURE 3: Knowledge on Kangaroo Mother Care (n=60)

Most (51.7%) respondents had high knowledge while 29 (48.3%) had low knowledge.

4.3.4 SECTION D: Traditional beliefs affecting implementation of KMC (n=60)

TABLE 6: Traditional Beliefs (n=60)

Variable		Frequency	Percent
View on putting naked baby between breasts	No	58	96.7
	I don't know	2	3.3
	Total	60	100
Observance of Traditional Beliefs	Does not observe	33	55
	Observes	27	45
	Total	60	100

Table 6 indicates responses from respondents who were asked whether it was wrong to put the baby naked skin to skin between breasts, the majority (96.7%) of the respondents did not agree while 2 (3.3%) did not know. The table further indicates that 27 (45%) of the respondents observed some traditional beliefs concerning premature babies while the majority (55%) did not observe.

4.3.5: SECTION E: Family support

TABLE 7: KMC Approval and Type of Support (n=60)

Variable		Frequency	Percent
Mother/mother-in-law/husband approval to KMC	Yes	57	95
	No	3	5
	Total	60	100
Family members support materially and financially	Yes	29	48.3
	Not every time	31	51.7
	Total	60	100

Table 7 shows mothers/mothers in law/husbands approval to the practice of Kangaroo Mother Care for premature/low birth weight babies, 57 (95.0%) of the respondents answered in the affirmative while 3 (5.0%) answered in the negative. On whether respondents received financial/material support from family members, all of them agreed, but the majority (51.7%) indicated that they did not receive support from family members all the time. After adding up the scores for the two questions on family support, the overall was determined as either available or unavailable depending on the respondents' total scores. This shows that family support was not available to 32 (53.3%) of the respondents but was available to 28 (46.7%) of the respondents as Figure 4 shows below.



Figure 4: Availability of Family Support (n=60)

4.3.6 SECTION F: Cross tabulations on relationships among knowledge and variables

TABLE 8: Relationship Between Babies' Birth Weights and their Mothers' Acceptance of Kangaroo Mother Care (n=60)

Birth weight	Acceptability of Kangaroo Mother Care		Total	P value
	Accepts	Does not accept		
1,000-1,400g	31 (60.8%)	20 (39.2%)	51(100.0%)	0.768
1,500-2000g	5 (55.6%)	4 (44.4%)	9(100.0%)	
Total	36 (60.0%)	24(40.0%)	60 (100.0%)	

Table 8 shows that acceptance of Kangaroo Mother Care was higher in mothers with babies born with a weight between 1,000 and 1,400g, where it stood at 60.8%. Acceptance dropped in mothers whose babies were born weighing between 1,500 and 2,000g, where it was recorded at 55.6%. This observed picture was however found not to be statistically significant as the chi-square test yielded a p-value of 0.768. The researcher therefore failed to reject the null hypothesis and concluded that there was no sufficient evidence to prove that there is an association between babies' birth weights and their mothers' acceptance of Kangaroo Mother Care. ($X^2 = 0.087$, $N=60$, $p > 0.05$, 2-tailed).

TABLE 9: Relationship between Gravida and Acceptance of Kangaroo Mother Care (n=60)

Gravida	Acceptability of Kangaroo Mother Care		Total	P value
	Accepts	Does not accept		
Primi	14 (58.3%)	10 (41.7%)	24 (100.0%)	0.830
Multigravida	22 (61.1%)	14 (38.9%)	36 (100.0%)	
Total	36 (60.0%)	24(40.0%)	60 (100.0%)	

Table 9 shows a cross tabulation of Gravida and Acceptance, it was observed that acceptance of Kangaroo Mother Care was higher in multigravida mothers. In prim gravida mothers, acceptance was at 58.3% and non-acceptance at 41.7%.

In Multigravida mothers, acceptance levels were 61.1% while non-acceptance was 38.9%. This was however found not to be statistically significant as the chi-square test gave a p-value of 0.830, which is greater than 0.05. Hence the researcher failed to reject the null hypothesis and concluded that there was no sufficient evidence to prove that there is an association between Mothers' gravid and their acceptance of Kangaroo Mother Care. ($X^2 = 0.046$, $N=60$, $p > 0.05$, 2-tailed).

TABLE 10: Relationship between Mother's Age and Acceptance of Kangaroo Mother Care (n=60)

Mother's age	Acceptability of Kangaroo Mother Care		Total	P value
	Accepts	Does not accept		
25 years and below	16 (53.3%)	14 (46.7%)	30 (100.0%)	0.292
Above 25 years	20 (66.7%)	10 (33.3%)	30(100.0%)	
Total	36 (60.0%)	24(40.0%)	60 (100.0%)	

From the cross tabulation in table 10, it was observed that acceptance of Kangaroo Mother Care increased with Mother's age. In Mothers aged 25 years and below, acceptance levels stood at 53.3% and non-acceptance at 46.7%. This changed in mothers aged above 25 years, where acceptance levels were 66.7% while non-acceptance levels were 33.3%.

The chi-square test conducted yielded a p-value of 0.292, implying that the observed pattern was not statistically significant since the p-value was greater than 0.05. Hence the researcher failed to reject the null hypothesis and concluded that there was no sufficient evidence to prove that there is an association between Mothers' ages and their acceptance of Kangaroo Mother Care. ($X^2 = 1.111$, $N=60$, $p > 0.05$, 2-tailed).

TABLE 11: Relationship between Marital Status and Acceptance of Kangaroo Mother Care (n=60)

Marital status	Acceptability of Kangaroo Mother Care		Total	P value
	Accepts	Does not accept		
Not married	7 (43.8%)	9 (56.2%)	16 (100.0%)	0.121
Married	29 (65.9%)	15 (34.1%)	44 (100.0%)	
Total	36 (60.0%)	24 (40.0%)	60 (100.0%)	

Table 11 shows that acceptance of Kangaroo Mother Care was higher in married mothers than in unmarried ones. In unmarried mothers, acceptance was recorded at 43.8% and non-acceptance at 56.2%. In married mothers, acceptance increased to 65.9% while non-acceptance reduced to 34.1%. A chi-square test was conducted to check the statistical significance of these results. The chi-square test yielded a p-value of 0.121, which is greater than 0.05. Hence the researcher failed to reject the null hypothesis and concluded that there was no sufficient evidence to prove that there is an association between mothers' marital status and their acceptance of Kangaroo Mother Care ($X^2 = 2.401$, $N=60$, $p > 0.05$, 2-tailed).

TABLE 12: Relationship between Level of Education and Acceptance of Kangaroo Mother Care (n=60)

Level of education	Acceptability of Kangaroo Mother Care		Total	P value
	Accepts	Does not accept		
Primary and below	8 (57.1%)	6 (42.9%)	14 (100.0%)	0.803
Secondary and above	28 (60.9%)	18 (39.1%)	46 (100.0%)	
Total	36 (60.0%)	24(40.0%)	60 (100.0%)	

From the cross tabulation results in table 12, it was observed that acceptance levels of Kangaroo Mother Care increased with an increase in levels of education.

Mothers with education levels of primary and below, acceptance was recorded at 57.1% and non-acceptance at 42.9%. This changed in mothers who had attained secondary education and above, where acceptance increased to 60.9% and non-acceptance decreased to 39.1%. After doing a chi-square test, the observed trend was found not to be statistically significant as the test yielded a p-value of 0.803.

Hence the researcher failed to reject the null hypothesis and concluded that there was no sufficient evidence to prove that there is an association between Mothers' education levels and their acceptance of Kangaroo Mother Care ($X^2 = 0.062$, $N=60$, $p > 0.05$, 2-tailed).

TABLE 13: Relationship between Employment Status and Acceptance of Kangaroo Mother Care (n=60)

Employment status	Acceptability of Kangaroo Mother Care		Total	P value
	Accepts	Does not accept		
Unemployed	23 (59.0%)	16 (41.0%)	39 (100.0%)	0.825
Employed	13 (61.9%)	8 (38.1%)	21(100.0%)	
Total	36 (60.0%)	24(40.0%)	60 (100.0%)	

In table 13, it was observed that mothers who were unemployed, acceptance levels were at 59% and non-acceptance at 41%. While in mothers who were employed, acceptance levels were 61.9% and non-acceptance were at 38.1%. This pattern was however found not to be statistically significant as the chi-square test yielded a p-value of 0.825. Hence the researcher failed to reject the null hypothesis and concluded that there was no sufficient evidence to prove that there is an association between Mothers' employment status and their acceptance of Kangaroo Mother Care. ($X^2 = 0.049$, $N=60$, $p > 0.05$, 2-tailed).

TABLE 14: Relationship between Knowledge and KMC Acceptance (n=60)

Knowledge on Kangaroo Mother Care	Acceptability of Kangaroo Mother Care		Total	P value
	Accepts	Does not accept		
Low	13 (44.8%)	16 (55.2%)	33 (100.0%)	0.02
High	23 (74.2%)	8 (25.8%)	27 (100.0%)	
Total	36 (60.0%)	24(40.0%)	60 (100.0%)	

From the cross tabulation in table 14 above, it was observed that mothers with low knowledge, acceptance of Kangaroo Mother Care stood at 44.8% and non-acceptance was at 55.2%. Acceptance changed in mothers with high knowledge, where acceptance rose to 74.2% while non-acceptance dropped to 25.8%.

The observed pattern was found to be statistically significant as the chi-square test yielded a p-value of 0.02. Hence the researcher rejects the null hypothesis and concludes that there is an association between Mothers' knowledge about Kangaroo Mother Care and their acceptance of the same care ($X^2 = 5.384$, $N=60$, $p < 0.05$, 2-tailed).

TABLE 15: Relationship between Observance of Traditional Beliefs and Acceptance of Kangaroo Mother Care (n=60)

Traditional beliefs	Acceptability of Kangaroo Mother Care		Total	P value
	Accepts	Does not accept		
Does not observe	19 (57.6%)	14 (42.4%)	33 (100.0%)	0.672
Observes	17 (63.0%)	10 (37.0%)	27(100.0%)	
Total	36 (60.0%)	24(40.0%)	60 (100.0%)	

From the cross tabulation in table 15, it was observed that mothers who did not observe traditional beliefs, acceptability of Kangaroo Mother Care was lower than in those who observed traditional beliefs. While mothers who did not observe traditional beliefs, acceptance stood at 57.6% and non-acceptance at 42.4%. Mothers who observed traditional beliefs, acceptance increased to 63% and non-acceptance reduced to 37%. The observed trend was however found not to be statistically significant as concluded from the chi-square test results above, where the p-value was 0.672. Therefore the researcher failed to reject the null hypothesis and concludes that there was no sufficient evidence to prove that there is an association between Mothers' observance of traditional beliefs on premature babies and their acceptance of Kangaroo Mother Care. ($X^2 = 0.180$, $N=60$, $p > 0.05$, 2-tailed).

TABLE 16: Relationship between Family Support and Acceptability of Kangaroo Mother Care

Family support	Acceptability of Kangaroo Mother Care		Total	P value
	Accepts	Does not accept		
Not available	18 (56.2%)	14 (43.8%)	32 (100.0%)	0.526
Available	18 (64.3%)	10 (35.7%)	28(100.0%)	
Total	36 (60.0%)	24(40.0%)	60 (100.0%)	

The results in table 16 above shows that mothers who had no family support, acceptance of Kangaroo Mother Care was lower (56.2%) and non-acceptance was at 43.8%.

Mothers with family support, acceptance levels increased to 64.3% while non-acceptance levels dropped to 35.7%. The chi-square test however was not statistically significant (p-value 0.526). Hence the researcher failed to reject the null hypothesis and concluded that there was no sufficient evidence to prove that there is an association between Mothers' observance of traditional beliefs and their acceptance of Kangaroo Mother Care ($X^2 = 0.402$, $N=60$, $p > 0.05$, 2-tailed).

4.3.7 Multivariate binary logistic regression model summary results

The researcher conducted a multivariate binary logistic regression test to check the combined impact of all independent variables on the acceptability of Kangaroo Mother Care by respondents and the results are as shown in table 17 below.

TABLE 17: Multivariate Logistic Regression Analysis - Quantitative Data

Independent Variable	Odds Ratio	95% Confidence interval	P-Value
Knowledge (1)	3.875	1.129 - 13.292	.031
Traditional Beliefs(1)	1.559	.467 - 5.197	.470
Family Support(1)	1.263	.376 - 4.238	.705
Education(1)	.797	.180 - 3.528	.764
Employment(1)	1.196	.289 - 4.951	.805
Age(1)	1.797	.442 - 7.301	.413
Marital Status(1)	1.857	.411 - 8.387	.421
Birth weight of the baby(1)	.592	.133 - 3.440	.491
Gravida(1)	.592	.133 - 2.632	.491

Table 17 shows the impact of changes in independent variables to the outcome of the model.

A change in knowledge levels from low to high contributed significantly to the outcome of the model, while changes in all other independent variables did not contribute significant change to the model. Changes in knowledge levels from low to high increase the odds of accepting Kangaroo Mother Care to 3.875 times while the odds of acceptance for married mothers were 1.857 times higher than for single mothers and 1.797 higher for mothers aged above 25 years in comparison to mothers aged below 25 years.

The odds of acceptability for mothers with babies born weighing between 1,500 and 2,000g reduced by 0.675 times as compared to mothers with babies weighing between 1,000 and 1,400g at birth. Similarly, the odds of accepting Kangaroo Mother Care for multigravida mothers in comparison to Primi gravida mothers reduced by 0.592 times.

4.4 Presentation of qualitative data

Data obtained by interview guide was summarised in a narrative form, the findings were interpreted and quotations that emerged from the discussions were selected to illustrate the main ideas.

4.4.1 Demographic characteristics and responses of key informants

Results showed that two key informants were aged 43 years, one was aged 53, the other was aged 54 and another was aged 56. Hence two informants were aged below 50 years while 3 were aged above 50 years.

Four (4) key informants were females while one (1) was a male. Three (3) key informants were Enrolled Nurses; one (1) was a Registered Nurse while one (1) was a Nursing Sister.

The longest serving key informant at the KMC Unit had served two (2) years and some months while the shortest serving had served for three (3) weeks. One key informant had served for ten (10) months while another one for five (5) months and the other for three (3) months. Hence only one informant had served for more than one year at the unit. The rest had served for less than a year.

Two (2) informants had undergone training in KMC while three had not been trained. All key informants affirmed that KMC was used in their unit for management of premature and low birth weight babies to keep them warm.

Four (4) key informants indicated that they disseminate information on the benefits of KMC every day while one informant said she does it when she is free. Three (3) key informants thought the hospital infrastructure supports the implementation of KMC while two informants thought otherwise. Four (4) key informants thought that KMC was sustainable while one informant was not sure.

4.4.2: Repeated themes from key informants

The main themes predetermined for the key informants to respond to were:

- Knowledge when the KMC unit was opened at the University Teaching Hospital.
- Opinion on what the mother's response to practising KMC was like.
- The benefits of KMC.
- Challenges faced in implementing KMC.
- Support for mothers in the implementation of KMC
- Improvement of KMC.

4.4.2.1 Knowledge on when the KMC unit was opened.

Three (3) key informants (1, 2 and 3) did not know the date when the KMC unit was officially opened at the hospital. While the other two key informants (4 and 5) among whom was the longest serving indicated the date when it was officially opened.

Key informant 1: Stated that *"I am only 3 weeks old on this ward, I have no idea when it was opened"*

Key informant 2: Stated that *"uuumh I am not sure....but it is not long ago"*.

Key informant 3: stated that *"It must be 2 to 3 years ago, I cannot remember correctly"*

Key informant 4: Stated that *"it was introduced on 6th May, 2014 by the Honorable Minister of Ministry of Community Development Mother and Child Health"*.

Key informant 5: Stated that *"This ward was officially opened on 6th May, 2014"*

4.4.2.2 Opinion on what mother's responses to accept KMC are like.

All the five (5) key informants indicated that KMC had generally been accepted by the mothers as a method of care for premature and low birth weight babies.

Informants 3 and 5 highlighted the importance of IEC in influencing the mothers' response to accept KMC, they had this to say *"mothers respond well to the practice of KMC once the Doctors and nurses educate them on the benefits of KMC to the baby and the mother"*. Key informant 4 described the response as *"Very positive"*, Key informant 1 simply said *"mothers follow instructions"*. Only informant 2 brought out the issue that not all mothers respond positively by indicating that 'some respond positively and some negatively'.

4.4.2.3 Benefits of KMC

Two major benefits came out of the responses from the key informants. Prevention of hypothermia was mentioned by informants 2, 4 and 5 as highlighted in the quote “*KMC keeps babies warm and so it prevents hypothermia*” while babies’ fast gain of weight was cited by informants 3 and 5 who said “*when these babies come they are very small, but they grow fast once admitted in this ward*”.

Other benefits that were mentioned included bonding between mother and baby, promoting exclusive breastfeeding and decrease in the occurrence of apnoeic spells and were reported as “*Mothers place babies on their chest for long hours and cover them for warmth. This promotes successful lactation and enhances exclusive breastfeeding. The upright position improves breathing hence less apnoeic spells*”. Informant 1 simply said ‘*Benefits are many, people learn a lot*’.

4.4.2.4 Challenges faced in reinforcing KMC

A number of challenges were highlighted by the key informants. Limited bed space in the units and shortage of staff was mentioned by informants 1 and 5 who had this to say “*The space in the ward only accommodates 10 beds, so new admissions depend on the discharges. The number of staff who work in the KMC unit are not enough compared to the work load*”. Informant 2 had this to say “*there are inadequate workshops and so most of us are not trained in KMC and there are also shortages of staff*”, informant 4 indicated that “*lack of wrappers for babies prevents KMC from being administered by mothers even as they move about*”, while informant 3 indicated that “*some mothers are stubborn*”.

4.4.2.5 Support for Mothers in the Implementation of KMC

Information, Education and Communication (IEC) came out as the prominent means of support given by key informants to mothers as it was mentioned by four of the informants. Key informant 4 indicated that “*I check and monitor mothers to ensure that KMC is done*”.

4.4.2.6 Improving KMC

Increasing bed space came out prominent as it was mentioned by key informants 1, 4 and 3. Key informant 2 said “*management should increase the number of staff in the KMC unit*”.

Key informant 5 suggested this “*more staff should be trained in KMC so that they can offer continuous IEC to mothers on KMC benefits, and government should put in place adequate KMC instruments such as heaters*”. Key informant 4 indicated that “*there is need to buy wrappers for the unit or allow mother to use their own*”

4.5 Conclusion

The data was collected from 60 postnatal mothers with premature and low birth weight babies who were purposively selected because they happened to be admitted in the KMC unit at the University Teaching Hospital.

Data was also collected from 5 key informants who work in the KMC unit. Data was analyzed using SPSS version 22 and chi-square was used to test associations. The data analysis and presentation findings showed that 60% of respondents Accepted to practice KMC. The cross tabulation showed that there is an association between mothers knowledge about Kangaroo Mother Care and their acceptance of the same care. The multivariate binary logistic regression test showed that knowledge levels from low to high increase the odds of accepting Kangaroo Mother Care to 3.875 times. The key informants reported challenges of having inadequate knowledge on KMC, shortage of staff, lack of wrappers among many others. There is need to address the identified challenges to improve survival of the increasing numbers of preterm babies in Zambia.

CHAPTER FIVE: DISCUSSION OF FINDINGS

5.1 Introduction

Chapter five (5) focuses on the study interpretations and discusses the study findings as well as the implications to the health care system. The discussion of the research findings is based on data collected and analysis of responses from a sample of sixty (60) mothers of premature newborn babies who were purposely selected and five (5) key informants who are health care professionals who deal with management issues regarding KMC in the KMC unit. Data was analyzed quantitatively and qualitatively. The main objective of the study was to determine the acceptability of Kangaroo Mother Care by mothers with premature newborn babies: a case study of the University Teaching Hospital (UTH), Lusaka, Zambia.

The dependent variable was acceptability of Kangaroo Mother Care for mothers with premature babies, while the independent variables included Knowledge on Kangaroo Mother Care, traditional beliefs and family support.

5.2 Demographic data of the sample

The demographic characteristics of the respondents relevant to this study included; sex of baby, birth weight, gravida of mother, age of mother, marital status, level of education, employment, income, religion and residential area,. The information on demographic characteristics was essential for interpretation of study findings and tribe was important because it helped the researcher to identify a suitable language to use for clear communication.

The results of the current study showed that majority (56.7%) of babies whose mothers participated in the study were females whereas 43.3% were males. While 85.0% of the babies weighed between the range of 1,000 - 1,400g weight category while 15.0% weighed between 1,500 and 2,000g. (*Table 2*). This is similar to a study on Kangaroo Mother Care to prevent neonatal deaths due to preterm birth complications conducted by Lawn et al (2010), babies of birth-weight <2000 g (assumed preterm) were included in the study which was conducted in Cape Town, South Africa.

This is because KMC substantially reduces neonatal mortality amongst preterm babies (birth weight <2000 g) in hospital, and is highly effective in reducing severe morbidity, particularly from infections.

Most (65.0%) of respondents had normal delivery, 21.7% were delivered by caesarian section and 3.3% had assisted deliver. Most (60%) of the mothers were multigravida. The majority (33.3%) of the mothers were aged between 20 and 25 years (*Table 3*). The current study results suggest that most mothers are youths. This can be explained on the basis of population findings which show that Zambia has a high proportion of women aged between 20-24 years (CSO, 2015). These young mothers need support and IEC on how to take good care of their babies.

The finding in *Table 3* shows that most (73.3%) of the respondents were married. These findings are similar to (CSO, 2015) which reports that 60% women are married, 28% never married and 9% were divorced/separated. Those married were likely to receive social support while in hospital and at home once discharged. This is in agreement with what Chan (2015) reported on social support (assistance received from other people to perform Kangaroo Mother Care), that uptake can be promoted by societal acceptance of paternal participation in childcare, by family and community acceptance of Kangaroo Mother Care. This calls for community sensitization in communities where gender roles are unequal to promote male involvement in the practise of KMC.

Majority of the respondents (60.0%) had attained Secondary education and 16.7% had attained tertiary education (*Table 3*). These results indicate that respondents were able to read and write. This increases the possibility of understanding and helps mothers to ensure that their premature newborn babies are given good care by practising KMC. They can as well read and understand some of the educational supportive materials and use information technology materials to obtain more information about Kangaroo Mother Care and its practice. CSO (2015) results which show that 40% women between 15-49 years attained secondary education, this is lower compared to men who attained 49%. This can be attributed to high drop out in school due to early pregnancy in adolescents which is at 29% (CSO, 2015).

Most (65.0%) of the respondents were unemployed, 18.3% were formally employed and 16.7% were self-employed.

While 65.0% of the respondents reported having no monthly income and only 6.7% had earnings above K5, 000. This could be attributed to high poverty levels in Zambia which are at 54.4% (CSO, 2015). Another possible explanation is that poverty continues to be a significant problem in Zambia despite its economy stabilizing and attaining single-digit inflation in 2000-2010.

Jesuit Centre for Theological Reflection basic needs basket for September 2010 shows that a family of six in Lusaka the capital city of Zambia needs approximately K867, 000 every month for food only and 80% of Zambians cannot meet the basic rights such as food, housing, clean water, education and medical care because they are living in inhuman conditions that are below the basic poverty datum line (Kelly, 2011). This is likely to affect acceptability as mothers would stop practising KMC to enable them look for food for the family.

Concerning religion, all respondents reported being Christians (*table 2*). This could be attributed to the fact that Zambia is a Christian nation (CCZ, 2005).

5.3 Acceptability of Kangaroo Mother Care

The first specific objective of the study was to assess the acceptance levels of KMC by mothers with premature/low birth weight babies. In this study mothers of premature/low birth weight babies who agreed to place their babies in an upright position skin to skin, continuously for over 20 hours in a sitting position, sleep with the baby on the chest and agree to continue doing so at home were regarded as acceptance of KMC. Acceptability of KMC in this study was measured by 6 items on the interview schedule. Mothers who placed their babies in skin to skin position for 20 hours or more and accepted to continue practising at home and scored from 4 to 6 marks on acceptability questions. If all these were met a mother was regarded as having accepted to practice KMC.

In the present study, majority (68.3%) of mothers placed their babies skin to skin for more than 20 hours, while 15% did so for 20 hours. Results further showed that most mothers (93.3%) felt comfortable when giving Kangaroo Mother Care while 6.7% said that they did not feel comfortable. Ninety percent (90%) of fathers agreed with mothers practising KMC. This study produced results which corroborate the findings of Sandeep et al (2005) who found that 79% of mothers felt comfortable during the KMC and eighty six (86%) mothers were happy with KMC and 64% fathers agreed with mothers giving KMC.

Sandeep carried out the study among mothers with premature babies, the purpose of the study was to determine the feasibility and acceptability of KMC in tertiary care hospital in India.

Continuing giving KMC at home after discharge is very important as this helps the premature baby to continue growing and being kept warm, 59 (98.3%) confirmed that they would continue giving KMC at home, similarly Chisenga et al., (2015) found that 88% of the mothers would continue practicing KMC at home.

The community and mothers need support for effective KMC implementation at home, this was identified as a weaker link by Charpak and Ruiz-Pelaez (2006). To strengthen this weakness, facility based KMC services should incorporate a community sensitization component in programs.

In the current study acceptance levels changed in mothers with high knowledge, where acceptance rose to 74.2% while non-acceptance dropped to 25.8%. Therefore there is need to intensify on IEC on KMC in the community and antenatal clinics.

Overall results showed that majority (60%) of mothers accepted the Kangaroo Mother Care (*figure 2*). In a similar study conducted in Karnataka, India by Chavan et al., (2016) results revealed that KMC was accepted by most (95.2%) of mothers and KMC mothers spent significantly more time with their babies practising KMC beyond the routine care taking activities. The possible explanation to this, in the present study is that health care providers attempt giving IEC on KMC, this helps mothers to accept practicing KMC. MCHIP (2012) gives a guide to sensitise Policymakers, program managers, politicians, service providers, community leaders, families, mothers and caretakers so that KMC becomes acceptable and the program succeeds.

5. 4 Mothers knowledge on KMC

The second specific objective of this study was to establish the knowledge levels of KMC among mothers with premature/low birth weight babies.

Overall results showed that 52% of respondents had high knowledge while 48% had low knowledge on KMC (*figure 3*).

Fifty percent (50%) of respondents received the information from nurses and only sixty five percent (65%) said the information they received was adequate. However ninety percent (90%) practised continuous KMC (Table 5). The current findings are not consistent with those of Chavan et al., (2015) who carried out a study among mothers of low birth weight babies on knowledge and acceptability of Kangaroo Mother Care where majority (82.2%) of the mothers had knowledge about KMC.

In this study, the knowledge levels of the respondents are not as high as those in Chavan's study, thus attributing it to the fact that the majority (90%) of respondents had not received information on KMC before admission with only 29 (50%) respondents who said they received KMC information from the nurse (table 5). There is need for nurses to give IEC to all mothers in the KMC and Neonatal Intensive Care Unit so that mothers have adequate knowledge.

The current findings are also consistent with those of Chisenga et al., (2015) who conducted a study on the review of mother's experiences at Bwaila hospital and Zomba Central hospital in Malawi and reported that results showed that eight four percent (84%) of the participants were not aware of KMC services before hospitalisation. However the poor knowledge can be attributed to lack of community sensitisation on KMC. There is need for community sensitisation on KMC so that mothers can be enlightened on KMC. World Health Organization (2015) recommends that to enhance acceptance and promotion of KMC, Professional associations can mobilize to work with health care providers to educate community leaders and families about the benefits of KMC and find mutually acceptable solutions to overcoming obstacles rooted in local cultural factors. If communities are sensitised, mothers can have prior knowledge on KMC before admission.

This study has been able to demonstrate that acceptance changed in mothers with high knowledge, where acceptance rose to 74.2% while non-acceptance dropped to 25.8%. The observed pattern was found to be statistically significant as the chi-square test yielded a p-value of 0.02 (Table 14). This finding suggests that there is an association between Mothers' knowledge about Kangaroo Mother Care and their acceptance of the same care ($X^2 = 5.384$, $N=60$, $p < 0.05$, 2-tailed). The findings therefore illustrate the need for increased efforts on giving education on KMC.

This information helps mothers and the community to acquire knowledge on KMC and contribute to reducing deaths of premature babies due to hypothermia. The multivariate binary logistic regression model summary results (*table 17*) shows that a change in Knowledge levels from low to high was expected to impact significantly on the outcome variable (Acceptability) while changes in all other independent variables were not expected to impact significantly on the outcome variable. Therefore it is important for mothers to receive information on KMC prior to admission and on the ward for them to accept practicing KMC. The IEC can be enhanced by training health personnel in KMC as *MCHIP (2012)* advocates that each cadre of health professionals providing care to mothers and new-born babies should be trained in KMC and conduct face-to-face facilitation and follow-up/supervision onsite, this has been proven to be a successful approach, as health care providers have the opportunity to practice what they have learnt in their working environment.

5.5 Factors influencing acceptability of KMC by mothers of premature/low birth weight babies

The third specific objective in the current study was to ascertain other factors influencing acceptability of KMC by mothers of premature/low birth weight babies. The other factors influencing acceptability of KMC by mothers of premature/low birth weight babies include health staff attitudes, traditional beliefs and family support provided to mothers. These factors are discussed below.

5.5.1 Health staff attitudes on KMC

In the current study, attitude is operationalized as the way nurses feel regarding KMC and it is classified as positive or negative. Overall results in the current study showed that nurses had a positive attitude towards the practice of KMC because they were willing to learn and support mothers in their practice of KMC. Results further indicated that among the five (5) key informants 2 (40%) had undergone training in KMC while 3 (60%) had not been trained (*table 25*), they stated that “*there are inadequate workshops and so most of us are not trained in KMC*”. The lack of KMC training prior to the present study is consistent with that of Dalal (2014) who conducted a study among Health Care Providers and reported that only 66 (45%) of the respondents had received KMC training.

This finding supports what was written in the Professional Health Care Association Joint statements by WHO (2015), that there is need to advocate for the incorporation of KMC into pre-service and in-service curricula for all health workers who care for new born babies to increase understanding of proper KMC implementation and to address health worker perceptions that may be barriers to its use.

It was encouraging to learn from key informant 4 who said that “*mothers respond well to the practice of KMC once the Doctors and nurses educate them on the benefits of KMC to the baby and the mother*”. This is consistent with findings from Hill’s (2010) study conducted in rural Ghana, in which findings were that women easily grasped the concept of KMC when they saw pictures of another mother practising KMC. In the current study, health care providers can do more on educating mothers by playing videos on KMC so that mothers can be encouraged to accept and practice KMC.

It was further stated that “*there are also shortages of staff*”, this could hinder the staff from being trained in KMC as they would be no one to supervise mothers. In such cases, in – service training is possible through on-site training and communication within the KMC unit.

This is agreement with Haxton (2012) who wrote an article on implementing skin-to-skin contact at birth using the Iowa model and applying evidence to practice, where there are staff shortages and busy schedules. This can have a positive impact on the attitude of the health care providers, thereby enabling them to give adequate Information Education and Communication (IEC) to mothers and the community resulting in better choices in new born health care and especially KMC. Similar findings by Bergh et al., (2017) in a Retrospective Evaluation of Kangaroo Mother Care Practices in Malawian Hospitals, findings were that Staff shortages were among the main challenges in ensuring sufficient training in KMC and the establishment of sustainable KMC practices. As a result of shortages there was insufficient nursing and clinical supervision in some units. Staff rotations also resulted in the loss of staff with skills in KMC, which become critical when new staff members are not orientated adequately. Despite these hardships, the dedication of staff did not go unnoticed.

Key informants cited some challenges faced in implementing KMC as follows “*lack of wrappers for babies prevents KMC from being administered by mothers even as they move about*”.

WHO (2003) guidelines say that for mothers to successfully implement KMC, there is need for a support binder (*chitenge*), it helps mothers hold their babies safely close to their chest. The guidelines state that to begin with, a soft piece of fabric, about a meter square, folded diagonally in two and secured with a safe knot or tucked up under the mother's armpit can be used. Later a carrying pouch of mother's choice can be used to replace the cloth. This helps the mother to freely use both hands and allow them to move around easily while carrying the baby skin to-skin. The findings illustrate the need to procure wrappers or binders for mothers to secure their babies skin to skin, this helps mothers to walk freely without risk of the baby slipping.

Health Care Providers are urged to support mothers who practise KMC by giving IEC on various topics to enhance and influence mothers to accept the practice. One key informant's response on supporting mothers in the implementation of KMC was that "*I check and monitor mothers to ensure that KMC is done*". This is in agreement with what Chan et al., (2015) wrote in the Bulletin for World Health that many women are not aware of Kangaroo Mother Care and its benefits; the probable reason is that health workers have not been trained or, if trained, they do not promote such care.

5.5.2 Traditional beliefs on KMC

This refers to a mother who observes traditional beliefs that prevents her from practising KMC. Traditional beliefs were assessed by three "yes" and "no" questions. The total scores were 2. A score of 1 to 2 on these questions denoted that a mother observes traditional beliefs.

In this study almost all (96.7%) of the mothers did not agree that it is wrong to place a naked baby skin to skin between breasts, while 3.3% were not sure whether it is wrong or not. Further results indicate that 45% of mothers observe some traditional beliefs concerning premature babies while the majority (55%) did not observe (*Table 6*). These results are not in agreement with results from a study done in Ghana by Nguah et al. (2011) which showed that KMC practice outside the home was not acceptable to a relatively large proportion of mothers at discharge despite most (90%) mothers attesting to the fact that KMC had been beneficial to them. Similar findings by Chan et al., (2015) in a systematic review of barriers and enablers revealed that Parental and familial adherence to traditional newborn practices was a hindrance to practising Kangaroo Mother Care.

5.5.3 Family support provided to mothers

This refers to the involvement of family members in the care of the preterm/low birth weight babies. Family support was assessed by asking two “yes and no” questions on family support. The mothers were asked whether they received approval to practice KMC and financial or material support from the family. Most (95%) of the mothers affirmed that they received approval to practice KMC from their mother/mother -in-law/husband (*Table 7*). Approval from key significant others is important for successful practice of KMC in the hospital and continuing at home after discharge. This is in agreement with what Save the Children (2004) emphasises on encouraging mothers to invite their mother/mother in law, husband or any other member of the family to the health facility so that they are given information on KMC. This helps in building a positive attitude of the family and ensuring family support to the mother which is beneficial for post-discharge home-based KMC. Counselling and support improves the uptake of KMC, this can be done through sensitisation meetings. This can help build confidence of families and communities hence increase acceptance of the practice.

Further more findings on financial/material support from family members showed that half (51.7%) of the respondents indicated that they did not receive support from family members all the time. This meant that they relied on receiving meals served by the hospital.

5.6 Associations among variables

The last specific objective was to determine the association between socio-demographic characteristics of mothers nursing premature/low birth weight babies and acceptance of KMC and acceptance of KMC with mothers KMC knowledge levels.

Acceptability of Kangaroo Mother Care by mothers with premature newborn babies has been associated with many factors by various studies. In this study results indicated that there was no statistically significant association between socio-demographic characteristics and acceptance of KMC as the chi-square tests yielded p-values of more than 0.05. The researcher therefore failed to reject the null hypothesis and concluded that there was no sufficient evidence to prove that there is an association between socio-demographic characteristics and mothers' acceptance of Kangaroo Mother Care.

Further results in this study showed that only knowledge was significantly associated with acceptance of KMC. It was observed that mothers with low knowledge, acceptance of Kangaroo Mother Care was 44.8% and non-acceptance was 55.2%. Acceptance changed in mothers with high knowledge, where acceptance rose to 74.2% while non-acceptance dropped to 25.8%. The observed pattern was found to be statistically significant as the chi-square test yielded a p-value of 0.02 (*Table 14*). This implies that knowledge is critical in acceptability of KMC.

5.7 Application of the theoretical framework to the current study

The study adapted the theory of reasoned action by Ajzen and Fishbein (1980). In this theory of Reasoned Action of planned behavior suggests that an individual's behavior is determined by their intention to engage in the behavior, which in the case of acceptability of Kangaroo Mother Care is as a result of attitudes. According to this model, the more positive the attitude and the subjective norms are towards practising KMC, the greater the perceived practice is, the stronger the mother's intention will be to accept KMC. The study indicated that 90 % of respondents did not receive information on KMC before admission.

This can have an effect on acceptability of KMC. However 96.7% of respondents received information on KMC while in hospital and 65.5% said the information was adequate (*Table 5*).

Adequacy of information has a positive effect on behavior intention as 90% of respondents exhibited positive behavior of practising continuous KMC (*Table 5*).

The findings in this study indicated that a change in Knowledge levels from low to high was expected to impact significantly on the outcome variable (Acceptability) while changes in all other independent variables were not expected to impact significantly on the outcome variable.

Knowledge level of respondents in this study determined the outcome variable which is acceptability of Kangaroo Mother Care by mothers with premature babies. The Reasoned Action/Theory of planned behavior applied in this study was appropriate.

5.8 Implications of the study findings

5.8.1 Nursing Education

The respondent's low knowledge can be attributed to inadequate education of nurses on KMC. It is important that nurses receive adequate knowledge on KMC during their pre-service training so that they share their knowledge with mothers with premature and low birth weight babies. There is need to advocate for the incorporation of KMC into pre-service and in-service curricula for nurses who care for new born babies to increase understanding of proper KMC implementation. This is very important because a knowledgeable nurse will feel confident to teach others what they have learnt.

5.8.2 Nursing Administration

The results show that 50% of those who gave information on KMC to mothers with premature babies were nurses, 65.5 % said the information they received was adequate (*Table 5*). One key informant said "*there are also shortages of staff, lack of wrappers for babies prevents KMC from being administered by mothers even as they move about*", and another said "*some mothers are stubborn*". The following can be done by nurse administrators:

- To alleviate shortage of staff, administrators should ensure that there are adequate numbers of nurses on the ward so that they have time to give adequate information on KMC.
- Nurse administrators need to intensify on the health education by ensuring that they supervise nurses to enhance knowledge and Acceptability of KMC.
- Nurse administrators to ensure that mothers use binders (or Chitenge) to secure babies on the chest in skin to skin.
- Advocate for increased investments to improve service delivery infrastructure and capacity of human resources to increase acceptability and coverage with KMC.

5.8.3 Nursing Practise

Nurses and midwives need to adequately define Kangaroo Mother Care and explain to mothers in the antenatal period so that they understand what it means to put a premature baby/low birth weight baby skin to skin contact with the caregiver. This will help in the acceptability and care of preterm babies because they would have understood the benefits of KMC such as gaining weight, keeping the baby warm, reduction of infections, improving breastfeeding.

A discharge plan should be prepared from the time the mother is admitted with a premature baby so that the mother and other family members can be involved in the care of the premature baby throughout admission until discharge. This can help improve their knowledge and acceptability because they would have had an opportunity of learning from nurses/midwives on the practice and ask questions on what is not clear.

Nurses/midwives need to improve on giving information, education and communication to mothers of premature and low birth weight babies. This can be done each time the caregiver/mother is transferred from the Neonatal Intensive Care Unit (NICU) for admission and videos on Kangaroo Mother Care (KMC) can be played thereafter on a daily basis so that they understand the benefits of KMC.

5.8.4 Nursing Research

This study revealed that most (90%) mothers did not receive information on KMC before admission. It is, therefore, necessary that health care providers take interest in researching on various aspects of KMC and conduct research on KMC on a large scale to improve knowledge and acceptability of mothers with premature newborn babies. It is important to educate community leaders and families about the benefits of KMC and find mutually acceptable solutions to overcoming obstacles.

5.9 Conclusion

The study sought to determine the acceptability of Kangaroo Mother Care by mothers with premature babies. Findings of this study revealed that 60% of respondents accepted Kangaroo Mother Care as a method of care for their premature babies.

Information, Education and Communication played a role in acceptance as results show that 93.3% of mothers felt comfortable to practice KMC even though 90% of respondents had not received information before admission.

This shows that the information that most (96.7%) received while in hospital yielded good results. In this study only knowledge had a significant association with acceptance of KMC. It is therefore important that nurses give adequate health education and information on KMC antenatal. Mothers need to be made aware that they have a very important role in the care of their premature babies by providing them with adequate information on KMC.

5.10 Recommendations

Based on the findings of this study, the following recommendations have been made:

1. There is need to conduct community based research on KMC in rural communities.
2. Intensify on community sensitization on KMC through training Safe Motherhood Action Groups (SMAG's).
3. To ensure that there is enough literature on KMC for postnatal mothers and community members.
4. Postnatal mothers to continue watching videos on KMC practice.
5. Provide KMC training to pre & in-service staff so that they give accurate and adequate Information, Education and Communication (IEC) on KMC.
6. Provide binders (chitenges) for mothers to secure their babies Skin to skin on mother's chest to allow mothers move freely without risk of baby's falling.
7. General Nursing Council to include KMC in the pre-service nursing curriculum so that nurses can give quality care to premature and low birth weight babies and IEC to mothers/community.

5.11 Strengths of the study

The study has achieved its main objective of determining the acceptability of Kangaroo Mother Care. The results showed that mothers accepted the practise of KMC and the study further revealed that knowledge levels of the mothers were significantly associated with acceptability of Kangaroo Mother Care as a method of choice in the care of premature/low birth weight babies at the University Teaching Hospital. The conducted study had a sample size of 60 but it was complemented by qualitative data. Statistical methods such as chi square and binary logistic regression were applied.

5.12 Limitations of the study

Discussed below are the limitations of this study.

The sample size was too small (60) to be representative of the population of Lusaka, thus the results cannot be generalized to the rest of the country.

Secondly, the study cannot establish causality because it used a cross sectional study design. The use of self-report method as a data collection method may yield socially desirable responses.

There was only one study conducted in Zambia on KMC. However, a few studies were conducted on the topic in other countries, hence the inadequate literature.

5.13 Dissemination of the results

The findings were disseminated at the UNZA Post graduate Seminar week held from 1st May to Friday 5th May, 2017. Bound approved copies of the dissertation were submitted as follows:

- School of Nursing Sciences, UNZA.
- The Medical Library, UNZA.
- In the peer reviewed Journal.

The abstract of this study will be distributed to MOH, Provincial Health Office-Lusaka and the Women and Newborn Hospital at University Teaching Hospital. The researcher also intends to disseminate the findings in meetings and seminars that will be taking place in Lusaka especially concerning Newborn Health issues. Information will also be disseminated to Non-Governmental organizations that are involved in newborn health issues such as World Health Organization (WHO), UNICEF, Save the Children, Centre for Disease Control and prevention (CDC), Center for Infectious Disease Research in Zambia (CIDRZ), Systems for Better Health (SBH) and Swedish International Development Cooperation Agency (SIDA).

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APPENDICES

APPENDIX I: RESEARCH WORK SCHEDULE

NO-	TASK TO BE PERFORMED	DATES	WEEKS	PERSONNEL	DAYS REQUIRED
1.	Literature review	Continuous		Researcher	
2.	Submit topic to Supervisor	15 th -22 nd February,2016	1	Researcher	7 days
3.	Submit first draft copy to supervisor	1 st – 15 th March,2016	2-3	Researcher	14 days
4.	Finalize research proposal	18th March to 12th April, 2016.	4- 8	Researcher	26 days
5.	Data Collection tool	13th to 20th April	9-10	Researcher	1 week
6.	Submit final draft to supervisor	22nd to 29th April	12-13		7 days
7.	Presentation of research proposal to graduate forum	4 th May 2016	14-15	Researcher	1 day
8.	Amending corrections	5 th to 12 th May	16-17	Researcher	7 days
11.	Clearance from ethical committee	14 th May to 13th July,2016	18 - 26	Ethical Committee	59 days
12.	Pilot study	10 th to 11 th August,2016	27- 27	Researcher	13 days
13.	Amending corrections	16 th August – 8 th September,2016	27- 29	Researcher	24 days
14.	Submission of amendments to ethics	9 th -13 th September,2016	30 -31	Researcher	5days
15.	Data collection	14 th September - 24 th November, 2016.	35 - 42	Researcher	70 days
16.	Data analysis	25 th November - 5th December, 2017	50 - 51	Researcher	5 days
17.	Report writing	16 th January – 14 th February, 2017	51 - 54	Researcher	28 days
18.	Submission of draft copy of research report to supervisor	5 th March- 30 th April	54 - 61	Researcher	55 days
19.	Oral and poster presentation	2 nd May,2017	61 -62	Researcher	1 day
20.	Finalizing research report and binding	6 th - 15 th November,2017	63- 72	Researcher	9 days
21.	Disposition of final research report	16 th – 28 th November,2017	73- 85	Researcher	12 days
22.	Monitoring and evaluation	Continuous		Researcher	

APPENDIX 11: PARTICIPANTS INFORMATION SHEET

PATIENT INFORMATION SHEET
UNIVERSITY OF ZAMBIA
DEPARTMENT OF NURSING SCIENCES
LUSAKA, ZAMBIA

APPROVED
13 JUL 2016
ERES CONVERGE
P/BAG 125, LUSAKA.

STUDY TITLE

**ACCEPTABILITY OF KANGAROO MOTHER CARE BY MOTHERS' WITH
PREMATURE/LOW BIRTH WEIGHT BABIES AT THE UNIVERSITY TEACHING
HOSPITAL.**

INTRODUCTION

My name is Gertrude Sibuchi Kampekete, MSc Nursing student at the University of Zambia. I wish to interview you as part of my research study on acceptability of Kangaroo Mother Care by mothers' with premature/low birth weight babies. You will be requested to share your views on Kangaroo Mother Care as well as any other related information with me.

PURPOSE OF THE STUDY

The information you are giving me will be used by policy makers to come up with strategies to improve care of newborn premature babies.

PROCEDURE

You have been selected to participate in this study because you have a premature/low birth weight baby admitted in the KMC unit. You will be interviewed at an appropriate date and time within the KMC unit where you are in the hospital. The length of the interview will be approximately 30 – 45 minutes. After the interview, you shall not be followed up, and this will be the end of the contact. If you agree to take part in the study, you may withdraw at any time without any disadvantage to you and your baby.

RISKS AND DISCOMFORTS

There is no risk involved in this study though part of your time will be utilised to answer some questions. Some questions may be sensitive or personal. If you need further discussion, it will be offered to you to help you understand the topic more.

BENEFITS

There is no direct benefit to you by participating in this study and no monetary favours will be given in exchange for information.

CONFIDENTIALITY

Your name will not appear in the research report and you will be identified by a number and therefore you will remain anonymous. I will also need your permission to write your views and comments. Information collected will be confidential to the extent permitted by the law. Please be assured that the study has the approval of the Research Ethics Committee of ERES Converge, Zambia. Please feel free to ask me any questions related to the study and your participation at any time.

APPROVED
13 JUL 2016
ERES CONVERGE
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APPENDIX 111: TRANSLATED INFORMATION SHEET

CHIDZIWITSO KWA WODWALA
UNIVERSITY OF ZAMBIA
DEPARTMENT OF NURSING SCIENCES
LUSAKA, ZAMBIA

Wokondedwa

Ine dzina langa ndine Getrude Sibuchi Kampekete, Ndiphunzira maphunziro a unamwino pa sukulu ya pamwamba yotchedwa University of Zambia. Ndifuna kufufuza pa kasamalidwe koyika mwana pa chifuwa kapena pakati pa mabere (kangaroo) kwa azimai aja omwe amabereka ana masiku asanakwane. **Inu mwasankhidwa popeza kuti munabereka mwana minyezi isanakwane ndipo ali wochepekera 2000gm ndipo muli kumusamala ma ola makhumi awiri (20) pa tsiku.** Mupemphedwa kuti mutiuzeko za kasamalidwe koyika mwana pa chifuwa ndi zina zace zomwe mungafune kugawana ndi ine. **Zonse zomwe muzalankhula zizatithandiza kubweretsa ubwino pa umoyo wa ana akhanda omwe abadwa minyezi isanakwane.** Izi zizacitika panthawi yoyenera pomwe muzapezeka ku chipatala. Mphindi zomwe tizakhala kufunsa mafunso ndi 30 kufikira pa 45. Tikasiliza kufunsa mafunso sitizayamba ukulondolani ayi.

Ngati muvomera kutengako mbali kumaphunziro awa, mungachoke nthawi iliyonse yomwe mungafune kopanda bvuto iliyonse kwa imwe ndi mwana wanu. Dzina lanu sizapezeka mu lipoti ndiponso kulibe yemwe azakuziwani.

Ndizapemphako chilolezo kwa inu kuti nilembe zomwe muzalankhula. Zonse zomwe ndizalembe zizang'ambidwa tikasiliza maphunziro athu. Chonde ziwani kuti kufufuza kwathu kunavomerezedwa ndi bungwe lochedwa Kufufuza Chiphunziro cha Chikhalidwe cha Anthu kapena kunena kuti **Research Ethics Committee of ERES Converge, Zambia** pa chingelezi. Chonde khalani omasuka kutengako mbali ndi kufunsa mafunso ogwirizana ndi maphunziro athu.

Kutengako mbali kwanu kuzayamikidwa kwambiri.

Ndine wanu wokhulupirika,

Getrude Sibuchi Kampekete

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Contacts: PI – P.O Box 50110, UNZA, Lusaka. Email-gsibuchi@gmail.com or 0977783970

Chairperson ERES IRB – Dr. E. Munalula, 33 Joseph Mwilwa Road, Lusaka.

Date: _____

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APPENDIX 1V: INFORMED CONSET FORM

CONSENT FORM

The purpose of the study has been explained to me and I understand the purpose, the benefits, risks and discomforts and confidentiality of the study. I further understand that:

If I agree to take part in the study, I can withdraw at any time without having to give an explanation and that taking apart in this study is purely voluntary.

I _____

(Names)

Agree to take part in this study.

Signed _____ Date _____

(Participant)

Participant's Right thumb print:

Signed _____ Date _____

(Witness)

Signed _____ Date _____

(Researcher)

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PERSONS TO CONTACT FOR PROBLEMS OR QUESTIONS

Gertrude Sibuchi Kampekete, PI – P.O Box 50110, UNZA, Lusaka. Email-
gsibuchi@gmail.com or 0977783970

Chairperson, ERES IRB – Dr. E. Munalula, 33 Joseph Mwilwa Road, Lusaka.

APPENDIX V: TRANSLATED INFORMED CONSENT

KUPATSA CHILOLEZO

CHILOLEZO CHODZIPERKA KUTENGAKO MBALI KU MAPHUNZIRO

Ine _____, ndizipereka kutengako mbali ku maphunziro yothandizira azimai kasamalidwe ka ana ndi kukhala ndi nzeru zakuya pa kuzindikira zinthu zomwe zili zofunikira pa umoyo.

Ndine wodzipereka kutengako mbali pa kupatsa chivomelezo, nzeru ndi kukhulupirira miyambo yoyenera ka samalidwe ka kangaroo kupyolera mu kufunsa mafunso.

Nawerenga ndi kumvetsetsa ndondomeko yonse yofufuza yomwe inena kuti kutengako mbali kwanga ndikudzipereka kwa ine nekha kotero kuti ningachoke pomwe nafunira. Nizakhala omatsuka kucita zimenezi kopanda bvuto iliyonse kwa ine ndi mwana wanga. Wofufuza andisimikizira kuti azasunga chinsinsi zonse zomwe tizakambilana ndiponso ndizapatsidwa danga yakuwona zomwe azalembe ngati ndifuna.

Tsopano ndapereka chilolezo kutengako mbali kumaphunziro amenewa.

Saini _____ Tsiku _____

Chidindo ca chala:

Wotengako mbali pa kufufuza

Saini _____ Tsiku _____

Wofunsa mafunso

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APPENDIX VI: SEMI –STRUCTURED INTERVIEW SCHEDULE

DATA COLLECTION INSTRUMENT

SEMI STRUCTURED INTERVIEW SCHEDULE

UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF NURSING SCIENCES

TOPIC

**ACCEPTABILITY OF KANGAROO MOTHER CARE BY MOTHERS WITH
PREMATURE NEWBORN BABIES: A CASE STUDY OF THE UNIVERSITY
TEACHING HOSPITAL (UTH), LUSAKA, ZAMBIA.**

**QUESTIONNAIRE FOR MOTHERS WITH PREMATURE/LOW BIRTH WEIGHT
BABIES OF BELOW 2000 GM.**

QUESTIONNAIRE NUMBER:

DATE OF INTERVIEW.....

LOCATION OF INTERVIEW.....

INSTRUCTIONS TO THE INTERVIEWERS

1. Introduce yourself to the respondent
2. Explain the purpose of the study
3. Do not write the names of the respondents on the questionnaire
4. Please ensure that all the questions are answered
5. Please tick (✓) the appropriate answers using the boxes provided and write the comments in the space provided
6. Assure the respondent that the information given will be treated as confidential
7. Thank the respondent at the end of each interview

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SECTION A: DEMOGRAPHIC DATA

For official use

1. Sex of baby: Male	<input type="checkbox"/>	Female	<input type="checkbox"/>	<input type="checkbox"/>
2. Birth weight of baby				
1) 1000 – 1400 g	<input type="checkbox"/>			<input type="checkbox"/>
2) 1500 – 2000g	<input type="checkbox"/>			<input type="checkbox"/>
3. Type of delivery				
1) Normal	<input type="checkbox"/>			<input type="checkbox"/>
2) Caesarian	<input type="checkbox"/>			
3) Assisted	<input type="checkbox"/>			
4. Gravida				
1) Primi	<input type="checkbox"/>			<input type="checkbox"/>
2) Multigravida	<input type="checkbox"/>			
5. Mothers age at last birthday?				
1) <19Yrs.	<input type="checkbox"/>			<input type="checkbox"/>
2) 20-25Yrs	<input type="checkbox"/>			
3) 26-30 Yrs	<input type="checkbox"/>			
4) >31Yrs	<input type="checkbox"/>			
6. What is your marital status?				
1) Single	<input type="checkbox"/>			<input type="checkbox"/>
2) Married	<input type="checkbox"/>			
3) Divorced	<input type="checkbox"/>			
4) Widowed	<input type="checkbox"/>			
5) Separated	<input type="checkbox"/>			
7. What tribe are you?.....				<input type="checkbox"/>

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8. What is your level of education?

- 1) No education
- 2) Primary
- 3) Secondary
- 4) Tertiary

For official use

9. What is your occupation?

- 1) Not employed
- 2) Self employed
- 3) Formal employment

10. How much is your income per month?

- 1) No income
- 2) < K2,500
- 3) 2,501- K5, 000
- 4) 5001- 10,000

11. What is your religion?

- 1) Christian
- 2) Moslem
- 3) Hindu
- 4) Others-----

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12. Where do you live?

.....
.....

13. After how long did you initiate breastfeeding after delivery?

.....

14. After delivery, how long did it take for you to come to KMC unit?.....

SECTION B: MOTHER'S ACCEPTABILITY

For official use

15. Do you feel comfortable when giving this care?

- 1) Yes
- 2) No

16. If yes to question 15, how do you feel putting the baby
Skin to skin?

.....
.....

17. If no to question 15, why?

.....
.....

18. Will you continue giving KMC at home?

- 1) Yes
- 2) No

19. If no to question 18, why?

.....
.....

20. If yes to question 18, why?

.....
.....

21. Does your husband agree with this care?

- 1) Yes
- 2) No
- 3) I am not sure

22. How many hours do you place your baby skin to skin?

- 1) < 20 hours
- 2) 20 hours
- 3) > 20 hours

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23. Did you feel your baby should have been in the incubator?

- 1) Yes
- 2) No

24. If yes to question 23, why?

.....

.....

SECTION C: MOTHERS KNOWLEGDE

25. What is Kangaroo Mother Care? (In your own words).

.....

.....

26. Have you ever received any information on KMC before admission?

- 1) Yes
- 2) No

27. While in hospital, have you received information on KMC?

- 1) Yes
- 2) No

28. If 'yes' to question 27, who gave you the information?

- 1) The doctor
- 2) Nurse
- 3) Friend
- 4) Relative
- 5) Others specify.....

29. If 'yes' to question 27, has the information been adequate in helping you to care for your baby?

- 1) Yes
- 2) No
- 3) Any other specify

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.....
.....
.....

30. If yes to question 29, what information did you receive on KMC? (Tick all the correct answers).

- 1) Keeps the baby warm
- 2) Improves breast feeding
- 3) Baby gains weight fast.
- 4) Prevents baby from infections.
- 5) Any other specify.....
.....
.....

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31. If yes to question 29, how long ago did you receive information on KMC?

.....
.....

32. What types of KMC do you practice?

- 1) Intermittent
- 2) Continuous

SECTION D: TRADITIONAL BELIEFS

33. Is it wrong to put baby naked between breasts?

- 1) Yes
- 2) No
- 3) I do not know

34. If 'no' to question 33 why?

.....
.....

35. In your community what beliefs do they have about premature babies?

.....
.....

SECTION E: FAMILY SUPPORT

36. Does your mother/mother in-law/husband approve KMC?

1) Yes

2) No

37. Do other family members support you materially/financially?

1) Yes

2) No

3) Not every time

THANK YOU FOR YOUR PARTICIPATION

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APPEDIX VII: TRANSLATED SEMI-STRUCTURED INTERVIEW SCHEDULE

MSC NAMWINO WOPHUNZIRA PA ZA UMOYO WA AZIMAI

CHIPANGIZO CHOTOLERA ZOFUFUZA

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Ndondomeko yofunsa mafunso

MAFUNSO

UNIVERSITY OF ZAMBIA

SUKULU LOPHUNZITSA ZA MANKWALA

CHIGAWO CA MAPHUNZIRO A UNAMWINO

MFUNDO

KUVOMEREZA KASAMALIDWE KOYIKA ANA PACHIFUWA KAPENA PAKATI
PA MABERE KWA AZIMAI AJA OMWE ABEREKA ANA MINYEZI
ISANAKWANE: TIZAFUFUZA KU CHIPATALA CACIKULU CA UNIVERSITY
TEACHING HOSPITAL (UTH)
MAFUNSO YA AZIMAI AJA OMWE ANABEREKA ANA MINYEZI ISANAKWANE
NDIPO ALI NDI SIKELO YO CHEPEKERA 2000 GM.

NAMBALA LA FUNSO:

TSIKU LOFUNSA MAFUNSO.....

KUMALO KOFUNSIRA MAFUNSO.....

LANGIZO KWA AJA OFUNSA MAFUNSO

1. Zidziwitseni kwa aja oyankha mafunso
2. Fotokozani lingo lamaphunziro
3. Osalemba maina ya anthu pa pepala yofunsirapo mafunso
4. Chonde tsimikizirani kuti mafunso onse ayankhidwa
5. Chonde chongani yankho yanu mu tuma bokosi tomwe twaikidwa ndiponso mungalembeenso ndemanga m'malo omwe apatsidwa.
6. Ndiponso muwauze oyankha mafunso kuti zonse zomwe tizakambilana zizakhala za chinsinsi.
7. Muwathokoze oyankha mafunso mukatha kufunsa

CHIGAWO COYAMBA: KUDZIWA CHIWERENGERO CHA KUBADWA

1. Mwana ndi mwamuna kapena m'kazi			
mwamuna	<input type="checkbox"/>	m'kazi	<input type="checkbox"/>
			<input type="checkbox"/>
2. Kodi analema makilo wotani pa sikelo?			
1) 1000 – 1400 g	<input type="checkbox"/>		<input type="checkbox"/>
2) 1500 – 2000g	<input type="checkbox"/>		
3. Kodi munabala mwana motani?			
1) Ninabereka kopanda bvuto	<input type="checkbox"/>		<input type="checkbox"/>
2) Anacita kunding'amba	<input type="checkbox"/>		
3) Anacita kunditandiza	<input type="checkbox"/>		
4. Muli ndi pathupi (mimba)			
1) Ndi mimba yoyamba	<input type="checkbox"/>		
2) Munakhalapo kale ndi ana	<input type="checkbox"/>		
5. Kodi muli ndi zaka zakubadwa zingati?			
1) Zaka Zochepekera 19	<input type="checkbox"/>		<input type="checkbox"/>
2) Pakati pa 20 ndi 25	<input type="checkbox"/>		
3) Pakati pa 26 ndi 30	<input type="checkbox"/>		
4) Zaka zopitirira 31	<input type="checkbox"/>		
6. Kodi umoyo wanu uli motani?			
1) Wosakwatiriwa	<input type="checkbox"/>		<input type="checkbox"/>
2) Wokwatiwa	<input type="checkbox"/>		
3) Chikwati chinatha	<input type="checkbox"/>		
4) Wofedwa	<input type="checkbox"/>		
5) Tinapatukana	<input type="checkbox"/>		
7. Kodi mtundu wanu ndi wotani?.....			<input type="checkbox"/>

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8. Kodi muli ndi maphunziro wotani?

- 1) Simunapiteko ku sukulu
- 2) Sukulu ya pulayimale
- 3) Sukulu ya sekondale
- 4) Yunivesite/ Koleji

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9. Kodi mugwira nchito yotani?

- 1) Sindinalembedwe ntchito iliyonse
- 2) Ndizisewenzera nekha
- 3) Ndine olembedwa nchito

10. Kodi mulandila ndalama zingati pa mwezi?

- 1) Sinitenga malipilo
- 2) Zochepekera K2,500
- 3) Pakati pa K2,501 ndi K5,000
- 4) Pakati pa K5001 ndi K10,000

11. Kodi mumapembeza chipembezo chotani?

- 1) Chipembezo cha chikhristu
- 2) Chipembezo cha chisilamu
- 3) Chipembezo cha chiHindu
- 4) Zina zace.....

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12. Nanga mukhala kuti?

.....
.....

13. Kodi panapita nthawi yotani kuyamwisa mwana pambuyo pakubala?

.....

14. Kodi panapita nthawi yotani kuti mubwere ku KMC pambuyo Pakubala mwana?.....

CIGAWO CACIWIRI: KUVOMEREZA KWA AMAYI

15. Kodi kusamalira mwana kumeneku mumagwirizana nako?

- 1) Inde
- 2) Ayi

16. Ngati muvomerezana nayo funso ya nambala la 13, kodi Mumanvera bwanji kuyika mwana pa thupi lanu?

.....
.....

17. Ngati simuvomerezana nayo funso la nambala 13, nchifukwa Ninji?

.....
.....

18. Kodi muzapitiriza kupatsa KMC ku nyumba?

- 1) Inde
- 2) Ayi

19. Ngati simuvomerezana nayo funso la nambala 18, nchifukwa Ninji?

.....
.....

20. Ngati muvomerezana nayo funso la nambala 18, nchifukwa Ninji?

.....
.....

21. Kodi amuna anu amavomereza kasamalidwe kotere?

- 1) Inde
- 2) Ayi
- 3) Sinidziwa

22. Kodi ndi maora angati omwe mumaika mwana pa thupi lanu?

- 1) Maora yopitirira makhumi awiri (20)
- 2) Makhumi awiri (20)
- 3) Maora yochepekera makhumi awiri (20)

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23. Kodi mwana wanu anali ufunika ukhala momwe muli mpweya wotentha?

- 1) Inde
- 2) Ayi

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24. Ngati muvomezana nayo funso la nambala 23, chifukwa ninji?

.....

.....

CHIGAWO CACITATU: NZERU ZA AMAI

25. Kodi kusamala mwana pa kumuyika pachifuwa (kangaroo) Kutanthauza chani? (mwamene muziwira inu)

.....

.....

26. Kodi munalandilapo uthenga uliwonse pa kasamalidwe koyika Mwana pachifuwa (KMC) mukalibe kumbwera muchipatala?

- 1) Inde
- 2) Ayi

27. Kodi muno muchipatala, munalandilapo uthenga uliwonse kasamalidwe koyika mwana pachifuwa?

- 1) Inde
- 2) Ayi

28. Ngati muvomera funso la nambala la 27, kodi anakuudzani ndani?

- 1) Dotolo
- 2) Namwino
- 3) Mnzanga
- 4) M'bale wanga
- 5) Zina zace mungalankhule.....

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29. Ngati muvomera funso la nambala 27, kodi uthenga unali wothandizira Kwa inu kuti musamale mwana wanu?

- 1) Inde
- 2) Ayi
- 3) Zina zace mungalankhule

.....
.....
.....

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30. Ngati muvomera funso la nambala 29, Kodi munalandira Uthenga wotani pa kasamalidwe koyika mwana pachifuwa.

(Chongani mafunso oyenera).

- 1) mwana azikhala motentha
- 2) Kuthandizira kuyamwisa mwana
- 3) Mwana amanenepa mofulumira
- 4) Kupewetsa mwana kutenga matenda
- 5) Zina zace mungalankhule.....

.....
.....

31. Ngati muvomera funso la nambala 29, kodi ndi liti pomwe Munalandirapo maphunziro wosamala mwana pakuyika Pachifuwa (KMC)?

.....
.....

32. Kodi ndi kasamalidwe kotani koyika mwana pachifuwa Komwe mumachita?

- 1) Molekezalekeza
- 2) Mosalekeza
- 3) Zina zace mungalankhule.....

.....
.....

CIGAWO CACINAI: CHIKHULUPIRIRO CA MIYAMBO

33. Kodi nichoyipa kuyika mwana malisece pakati pa mabere?

- 1) Inde
- 2) Ayi
- 3) Sindiziwa

34. Ngati muvomera funso la nambala 33, chifukwa ninji?

.....

.....

35. Kodi anthu amakhulupirira motani pa ana omwe abadwa osakhola
Kapena minyezi isanakwane kumalo komwe mukhala?

.....

.....

CIGAWO CACISANU: THANDIZO LA BANJA

36. Kodi amai anu, apongozi anu ndi amuna anu avomereza kuyika
mwana pa chifuwa (KMC)?

- 1) Inde
- 2) Ayi

37. Kodi banja lanu limakuthandizani zinthu monga ndalama ndi
zina zace Zofunikira?

- 1) Inde
- 2) Ayi

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APPENDIX VIII: MARKING KEY FOR STUDY VARIABLES

Marking Key for acceptability of KMC

Acceptability of KMC	Question	Correct answer	Maximum score
Question No			
15	Do you feel comfortable when giving this care?	Yes	1
16	How do you feel putting the baby Skin to skin?	I feel comfortable	1
17	If no to question 15, why	I do not feel comfortable	0
18	Will you continue giving KMC at home?	Yes	1
19	If no to question 18, why?	I do not feel comfortable	0
20	If yes to question 18, why?	It helps baby to grow/gain weight	1
21	Does your husband agree with this care?	Yes	1
22	How many hours do you place your baby skin to skin?	20hours and more	1
23	Did you feel your baby should have been in the incubator	No	1
24	If yes to question 20 why?	It is warmer	0
Total			7

Marking Key Mothers Knowledge on KMC

Knowledge of KMC	Question	Correct answer	Maximum score
Question No			
25	What is Kangaroo Mother Care?	It is putting baby skin to skin with mother	1
26	Have you ever received any information on KMC before admission?	Yes	1
27	While in hospital, have you received information on KMC?	Yes	1
28	Who gave you the information	Doctor, nurse, friend, relative. Any other	5
29	Has the information been adequate in helping you to care for your baby?	Yes	1
30	What information did you receive on KMC	KMC keeps baby warm, baby grows, improves breast feeding, prevents baby from infection	5
31	How long ago did you receive Information on KMC?	1 – 4 weeks ago	1
32	What types of KMC do you practice?	Continuous	1
Total			16

Marking Key Traditional beliefs on KMC

Knowledge of KMC	Question	Correct answer	Maximum score
Question No			
33	Is it wrong to put a naked baby between breasts?	NO	1
34	If no to question 33, why?	It helps keep the baby warm	1
35	In your community what beliefs do they have about premature babies?	They are immature and when they die they are disposed without funeral	1
Total			3

Marking Key FAMILY SUPPORT

Knowledge of KMC	Question	Correct answer	Maximum score
Question No			
36	Does your mother/mother in law/husband approve KMC	Yes	1
37	Do other family members support you materially/financially?	Yes	1
Total			2

APPENDIX 1X: INTERVIEW GUIDE

INDEPTH INTERVIEW GUIDE

QUESTIONNAIRE

UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF NURSING SCIENCES

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**TOPIC: ACCEPTABILITY OF KANGAROO MOTHER CARE BY MOTHERS
WITH PREMATURE NEWBORN BABIES: A CASE STUDY OF THE UNIVERSITY
TEACHING HOSPITAL (UTH), LUSAKA, ZAMBIA.**

INTERVIEW GUIDE FOR KEY INFORMANTS ON KMC

SERIAL NUMBER:

DATE OF INTERVIEW.....

LOCATION OF INTERVIEW.....

INSTRUCTIONS TO INTERVIEWERS

1. Introduce yourself to the respondent
2. Explain the purpose of the study
3. Do not write the names of the respondents on the interview guide
4. Ask all the questions
5. Assure the respondent that the information given will be treated as confidential
6. Thank the respondent at the end of each interview

Demographic data of the Participant

Age----- Gender **M** **F** (please circle one)

Acceptability of KMC Service related questions

- 1. What is your current position_____?
- 2. How long have you worked in this unit_____?
- 3. Have you been trained in KMC-----?
- 4. Is KMC used in the management of premature and low birth weight babies in this unit?

- 5. When was KMC introduced at this hospital-----?
- 6. In your opinion, what is the mothers' response to KMC like-----?

- 7. What are the benefits of KMC-----?

- 8. How often do you disseminate information on benefits of KMC-----?
- 9. What challenges do you face in reinforcing KMC-----?

- 10. Does the hospital infrastructure support implementation of KMC-----?
- 11. How do you support mothers in the implementation of KMC-----?
- 12. Is KMC sustainable-----?
- 13. How can KMC be improved-----?

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Thank you for time and participation