# DETERMINANTS OF KANGAROO BABY CARE PRACTICE AMONG MOTHERS WITH PRETERM BABIES 0-2 MONTHSATTENDING MCH CLINIC, PUMWANI HOSPITAL, NAIROBI, KENYA

**DORCAS MWIKALI NZIVO**

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## DECLARATION AND APPROVAL

**Declaration by the Student**

This thesis is my original work and has not been presented for a degree or any other award in any other university.

Signature ..... Date 29/3/2022

**Dorcas M. Nzivo**

**MSCN /2016/58280**

**Approval by the Supervisors**

We confirm that the work presented in this thesis was carried out by the candidate under our supervision.

Signature ..... Date 29/03/2022.

**Dr. Jane Karonjo**

**School of nursing**

**Mount Kenya University**

Signature ..... Date 29/3/2022

**Ms. Esther Mate**

**School of Nursing**

**Mount Kenya University**

## DEDICATION

To my family. Thank you for your patience and understanding during the period of study.



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encouragement, support and inspiration through this thesis development process. Special thanks to my classmates, colleagues and School of Nursing lecturers who have given me valuable input. Special gratitude to the Almighty God for the gift of life and for enabling me do this work.



## ABSTRACT

The beneficial strategy for taking care of newly born infants irrespective of their weight, gestation period and the clinical condition is Kangaroo care. The method involves breastfeeding, skin to skin temperature control given to infants born prematurely. In low-cost neonatal units, the technique is utilized 24 hours per day (consistent KMC), yet in wealthy settings with cutting edge hardware, in spite of the proof of the security and availability of commodities there is constructive reduction in outcomes of KMC, the

strategy is normally actualized as shorter sessions (intermittent KBC).Continuous KMC initiatives have been recommended, including in high tech units immediately after an infant is born followed by resuscitation and stabilization done initially where necessity then Kangaroo care initiation. At Pumwani Maternity Hospital, there has been an increasing trend of preterm birth from 18.3%, 24.8% and 29.9% in the year 2015, 2016 and 2017. Similarly, there has been increasing trends of mortality and morbidity; however systematic information about the existing challenges facing KBC practice is little. The main purpose of this study was to establish factors influencing Kangaroo baby care among mothers with preterm infants at Pumwani Maternity hospital, Nairobi County, Kenya. This was descriptive cross-sectional design, targeting a sample size of133respondents out of which 111 responded; structured pretested questionnaire was used to collect data. Data was then cleaned manually, coded, then analyzed by SPSS version 24 statistical software and presented in bar charts, pie charts and tables. Majority of the participants were aged between 2534 years (52.3%, n=58) with larger proportion having secondary education (45.9%, n=51). Protestants (55.9%, n=62) outweighed other religions and it was evident that majority of the mothers were married (72.1%, n=80). Source of income was majorly from business (34.2%, n=38), with majority (53.2%, n=59) earning more than Kshs. 20,000 per month. The study found out that the level of education of the mother, gestational age of the baby, birth weight of the baby and age of the baby by the time of study were significantly affecting practice of KBC at p<.05.the study concluded that of all the socio-demographic characteristics, only increase in level of education of the mothers was significantly associated with good practice of KBC at p<0.05. Having knowledge on KBC during pre-natal period, mothers in the ward assisting and supporting one another on KBC and receiving support and training on KBC from the nurses was associated with increased chances of good KBC practice but were not statistically significant in determining KBC practice.Babies birth weight below 1.5 kg, gestational age below 28weeks,and post delivery age above 28 days were statistically significant in determining KBC practice. The study recommended that the government should increase its sponsorship for free education because increased education levels were associated with good KBC practice. Also, the nurses should continue educating mothers to ensure that acquired high knowledge levels of KBC are maintained.



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## LIST OF ABBREVIATIONS AND ACRONYMS

| | | |
|---|---|---|
| **AOR** | **:** | Adjusted Odds Ratio |
| **ANC** | **:** | Antenatal care clinics |
| **BFHI** | **:** | Baby friendly hospital initiative |
| **COR** | **:** | Crude Odds Ratio |
| **GA** | **:** | Gestation Age |
| **KBC** | **:** | Kangaroo Baby Care |
| **KC** | **:** | Kangaroo care |
| **KDHS** | **:** | Kenya Demographic Health Survey |
| **KMC** | **:** | Kangaroo Mother Care |
| **LBW** | **:** | Low Birth Weight |
| **MCH** | **:** | Maternal child health |
| **MKU** | **:** | Mount Kenya University |
| **OR** | **:** | Odds Ratio |
| **PLBW** | **:** | Preterm Low Birth Weight |
| **PMH** | **:** | Pumwani Maternity Hospital |
| **SDG** | **:** | Sustainable development goal |
| **SGA** | **:** | Small for gestational age |
| **SPSS** | **:** | Statistical Package of Social Science |
| **SSC** | **:** | Skin-to Skin Contact |
| **UNICEF** | **:** | United Nations International Children's Emergency Fund |
| **VIP** | **:** | Very important person |
| **WHO** | **:** | World Health Organization |

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background information

Preterm birth is characterized by WHO as all births before 37 completed weeks of gestation/pregnancy or less than 259 days since the first day of the woman's last menstrual/monthly period. Of the assessed 130 million children conceived every year globally, roughly 15 million are delivered preterm. (WHO, 2013). Rashness is a significant determinant of neonatal mortality and dismalness just as a huge supporter of long haul unfriendly wellbeing results. For example, of the assessed 3.1 million neonatal deaths that happened globally in 2013, around 1.08 million (35%) were straightforwardly identified with preterm birth. Complexities of preterm birth are the single biggest direct reason for neonatal deaths and the second most normal reason for under-5 passings after pneumonia. Rashness is a significant block to the achievement of the MDG-4 objective given its commitment to neonatal mortality. To speed up accomplishment of this thousand years objective, there is need to diminish preterm

birth.

Globally preterm births major health issue, it is the most common cause of mortality among the newborns premature birth and small for gestational age (SGA), is the commonest explanations behind low-birth-weight (LBW). They're likewise significant causes for neonatal mortalities. Low birth weight contributes 60% to 80%of all neonatal deaths (WHO, 2013). Worldwide commonness of low birth weight is 15.5%. This adds up to approximately 20 million low birth weight babies brought into the world yearly. Premature birth is evaluated as the immediate reason for 35% of neonatal passing on worldwide(Schindler, 2015), and preterm birth in a roundabout way adds to a significantly more prominent level of mortality since it expands the hazard that a newborn

baby will die from disease. Preterm births are ascending figuratively, both in high pay and low-pay settings (USAID, 2014).

Among the 10 nations with most noteworthy rates of preterm births comprise ofthose with high net worth like USA, middle class states for example, China,India, the Philippines, Brazil and Indonesia, and those that are of low income, like Pakistan, Bangladesh, Nigeria, and Democratic Republic of Congo(Vesel et al.,2015). Accordingly, doable interventions that are relevant in high-and low-income are needed. As indicated by various medicinal assessments and World Health. Organization, KMC aids decreasing mortality in newborn babies; underpins mental health and can prompt prior release from the clinic (Therese, 2017).

This can be realized in most countries in Africa like Ghana, Senegal South Africa though this was not a big challenge to the country and again in Ethiopia which at first seemed to be more resistant to the uptake of KMC(Cortes *et al.*, 2016). Among many African nations Rwanda – have set out in a progressively centered manner around scaling up KMC in the previous five or six years, utilizing an "enormous detonation" approach. Little scale-up ventures were trailed by a countrywide activity, focusing on all emergency clinics and network wellbeing focuses in Malawi and all area medical clinics in Rwanda in the meantime as a major aspect of infant care. In Mali and Uganda there was all the more an amazed methodology connected to accessible financing and backing (Solomons and Rosant, 2016).

According to Strobel, (2015)while parents in Africa trusted that Kangaroo mother care was less expensive than incubator care, absence of cash for transportation and the separation to emergency clinic were frequently reported as the greatest difficulties as they were low assets for infant care benefits in Africa. Absence of private space for moms to perform Kangaroo mother care and to stay in the clinic with the infant upset its take-up,

as did designation of assets for Kangaroo mother care. Take-up improved with moms not remaining at the emergency clinic, availability wrappers to hold the infant, furniture/beds where moms could practice Kangaroo mother care, rooms where moms could go through the night with the infant, private spaces and devoted players. Nations had alternate points of view when setting and executing their motivation, bringing about fluctuated KMC usage advance across, African nations. Ways to deal with improved nature of nurturing of preterm newborn babies in wellbeing facilities was positioned second out of 82 inquiries in worldwide research need setting for preterm and low birth weight (LBW) babies, exhibiting the significance of understanding economical usage of KM. This creates need for an improvement in health facilities which will facilitate KMC (Rahman, 2017).

Anderzén-Carlsson *et al*.,(2014) indicated that, lately numerous services of wellbeing in United Kingdom have worked together with improvement accomplishes and

wellbeing experts inside less fortunate areas to deliberately present, fortify, or advance the scale up of facility based KMC. Components that got consideration include: setting KMC practice arrangement and administration rules; creating clinical preparation materials, supervision timetables and requirements; incorporating recordkeeping and giving an account of KMC into routine observation and assessment frameworks; reporting execution; and costing KMC administration.

African specialists especially in health sector in South Africa define Kangaroo Baby Care as nearly, continuous or intermittent and consistent skin to skin contact between low birth weight newborn baby and mom, or a substituted care giver, for example, the dad or other relatives(Yusuf et al,2018). KBC begins in health facility and, if important, proceeds at home, for whatever length of time that the newborn infant requires, so as to control and regulate the infant's body temperature. This can promote the infant's term age in a perfect

world. The neonate needs to have breast milk for nourishment, which should be thought about and practiced by the newborn's mother or care givers at home set up after early release from hospital, and follow up ensured in a proper way Kangaroo Baby Care promoting LBW babies' progress after transition from intra-to extra uterine life and for supporting neonatal thriving and neonatal neurodevelopment of the neonate(Njoku, 2017).KBC gives an option in contrast to nursery care, without isolating the newborn baby from the mother (guardians) (Chan *et al* 2017), the division is anticipated by the skin-to skin contact. KBC is likewise a technique that includes the guardians in the baby's care/nurturing and empowers them to assume control over the duty regarding the newborn baby's care(Bergh 2016).

According to Njoku's research, there are two primary problems with KMC in Nigeria. The first problem was that there were no available indications showing rising or falling demand for KMC services. The second issue was the low uptake of KMC services and the manner in which it was first offered to healthcare institutions, clinicians, and patients. Future intervention design should take into account these results. It seems that

KMC was implemented in a way that was inconvenient for both providers and mothers. Medical professionals complained that it took too long and required too much paperwork. It was speculated that LBW moms would have felt more at ease using the approach in the familiar surroundings of their own homes. It's possible that higher uptake and efficiency would have come from introducing this intervention closer to the community and household (Njoku, 2017).

Kangaroo baby care is a technique for consideration of premature infants of weight under 2 kilograms. It incorporates selective and continuous breastfeeding withstanding skin-to-skin contact and nurturing for the mother- neonate dyad, and has appeared to decrease neonatal mortality in emergency clinic based investigations in undeveloped and

developing countries(Ramanathan et al 2016). The world health organization record Kangaroo baby care: a pragmatic guide that gives direction on the best way to implement the practice in wellbeing clinics and in expectation of resultant successful Kangaroo mother care (WHO, 2013).

In Kenya, Kangaroo mother care (KMC) is a proof based way to deal with lowering morbidity and mortality and in preterm neonates which was first initiated in Bogoti Columbia. As indicated by the WHO, KMC comprises Of prolonged skin to skin contact (SSC)between the neonate and mother, selected exclusive breastfeeding at whatever point conceivable, early release from hospital with sufficient development and backing, and inception of the training in the health institution and continuation at home(Nisha, 2016). In a Meta examination, KMC appeared to fundamentally diminish preterm newborn mortality by 40% and to better different results reducing occurrence of serious disease, sepsis, promoting enthusiastic connection with moms, and tremendous gain in weight versus customary neonatal consideration in preterm babies (Chan et 2016).

Another meta-examination in Kenya demonstrated a comparable mortality advantage despite of the fact that it didn't include many investigations in its examination (Murila et al.,2016). KMC is an important technique for treating preterm newborn babies (Kipchumba, 2015), that moms who have rehearsed KMC may think that it's adequate (Genesoni, 2015), and that KMC can positively affect the wellbeing of moms in specific cases (WHO, 2013). In this manner, KMC is a profoundly applicable intercession that ought to be considered for scaling crosswise over geologies. In spite of the fact that the WHO meaning of KMC indicates that the training ought to be started in an office setting, afew examinations and preliminaries have investigated to find out whether Kangaroo baby care can be successful in a network started setting, and its adequacy in this setting hasn't been decisively determined (WHO, 2013).

In this manner, Neonatal mortality remains a key issue of concern in Kenya and as of now remains at 22 for each 1,000 live births. Neonatal mortality currently represents 42% of all under 5 mortalities in Kenya and 59% of under 1 newborn child mortality. The primary drivers of neonatal demise are birth asphyxia, low birth weight which includes prematurity and sepsis. More than 180,000 infants in Kenya are brought into the world before term. Also, 12% of all babies conceived in Kenya are brought into the world untimely (USAID, 2014).

Maternity hospitals like Pumwani Maternity Hospital should have specialists with full details and skills to advice mothers/care for mothers before an d after birth on the fact that, the best spot for a baby immediately after birth is on stripped chest of the mother. The skin to skin contact, prescribed to be practiced each day, which is called Kangaroo Mother Care (KMC). At Pumawni Maternity hospital KMC has been very crucial for care of the preterm babies and facilitates achievement of exclusive breastfeeding and baby friendly practice. Likewise, during the early postpartum hours, the initial steps are made in the positioning procedure among mother and infant. Ongoing investigations have demonstrated that KMC is critical for the newborn's recuperation and improvement. Due to these major valuable impacts, at Pumwani Maternity Hospital, KMC has been increasingly more supported to use in the newborn baby care and particularly untimely birth infant care (USAID, 2014).

### 1.2 Statement of the Problem

Infants born prematurely have poorly functioning thermoregulatory mechanisms. There is a higher risk of morbidity and death due to hypothermia in these newborns, particularly in the first 12 hours following delivery (Charpak et al, 2018).

Above 2.7 babies die annually, representing 44% of infants dying before the age of five years around the world. Complexities of preterm births are the main source of deaths among newborn babies(Vittner, 2016). The weight at birth is the most important indicator for adverse prenatal, neonatal and infantile outcome. Above 80% of all neonatal deaths in developing and developed countries. Low birth weight babies have two to three times increased risk of morbidity and mortality resulting from infection as compared to the babies born of normal birth weight after controlling for all the confounding variables(Mwendwa, 2016). The new developmental seaquake of asphyxia at birth is thrice as much three time in low birth weight infants as compared to their counterparts small for dates infants  may have stunted growth throughout life leading to impaired physical work capacity(Rahman, 2017).

Africa has not been left aside by the concern of KMC since Martine (2013) studied the benefits of Kangaroo baby care in Africa with specification to Congo among other few countries and found that, in Congo,20parents of all newborn babies have low birth weight, also above 20,000 mothers yearly bear the tragedy of losing their newborn babies through death. The study failed to show clearly determine factors to Kangaroo baby care practice among mothers with preterm babies which remains a concern for this study to address with clarity(Rahman, 2017).

Many spots in Kenya, care for preterm infants is dominatingly clinic put together and depends with respect to the utilization of hatcheries and respirators which are hard to find and generally, children share hatcheries, which prompts cross-disease, where they are accessible, they are regularly inadequately kept up with because of temperamental force, hatchery temperatures vacillate, which might cause hypo or hyperthermia. For moms, this implies investing energy in emergency clinic and away from their families and their help system(Teresa, et al, 2016).

At the largest maternity hospital in Kenya, Pumwani maternity hospital, there has been an increasing trend of preterm birth from 18.3%, 24.8% and 29.9% in the year 2015, 2016 and 2017, (DHIS). Similarly, increasing trends of mortality and morbidity, however available systemic information on determinants of KBC practice is limited. This reason makes it important for study to be conducted specifically at Pumwani maternity hospital which is the largest maternity hospital in sub Saharan Africa which deals with KBC, since there seems to be no other study done in Kenya concerning the factors determining Kangaroo baby care practice among mothers with preterm babies. This study is a necessity to address the factors determining Kangaroo baby care and to enhance a better result of utilization of KBC.

### 1.3 Study objectives

#### 1.3.1 Broad objective

To assess the determinants of Kangaroo baby care among the mothers with preterm infants at Pumwani Maternity Hospital.

#### 1.3.2Specific Objectives

1) To determine socio demographic related factors that influence Kangaroo baby care practice among mothers with preterm babies at Pumwani Maternity Hospital, Nairobi County.
2) To assess the knowledge on Kangaroo baby care among mothers with preterm babies at Pumwani Maternity Hospital, Nairobi County.
3) To determine institutional related factors influencing Kangaroo baby care practice at Pumwani Maternity Hospital, Nairobi County.

### 1.4 Research Questions

I. What are the socio demographic factors influencing Kangaroo baby care practice at Pumwani maternity hospital, Nairobi county?

II. What is the knowledge of mothers influencing Kangaroo baby care practice among mothers with preterm babies at Pumwani maternity hospital, Nairobi County?

III. What are the institutional related factors influencing Kangaroo baby care practice at Pumwani maternity hospital, Nairobi County?

### 1.5 Null Hypothesis

There is no association between factors (social demographic, Pumwani Maternity Hospital maternal and institutional factors) and the practice on Kangaroo baby care among mothers with preterm babies at Pumwani maternity hospital, Nairobi County.

### 1.6 Justification

Moms of preterm neonates experience various stressors and negative feelings, for example, uneasiness, blame, defenselessness and sorrow. The condition, just as the appearance and practices of the preterm baby much of the time cause disturbances in accepting the mother's job and a reduced nature of mother neonate connection. These early issues may add to delayed troubles with moms and spot preterm babies in danger for further subjective, enthusiastic, conduct, and formative issue. There is need to conduct study on this area of factors determining Kangaroo baby care among mothers with preterm babies since more proof is required so as to suggest usage of KBC in asset rich conditions with cooperation of the two guardians. In spite of the fact that it's enticing to make this proposal considering differing cluster of advantages offered, questions stay

with respect on how execution is affected and how it may influence mortality, failure to thrive, and serious sickness.

The absence of information on the issue of preterm birth locally and the way that decrease and counteraction of rashness requires a superior comprehension of the logical systems just as the elements related with preterm birth made this concentrate vital. The review has in this way gone far in giving applicable information to connect the information hole that existed with respect to these elements.

The study will be beneficial as guidelines of care to the midwives and other health care givers. It will be used as reference for other scholars, stake holders and policy makers. There is need to conduct study on this area on the determinant Kangaroo baby care among mothers with preterm babies since need for more evidence is required so as to recommend implementation of Kangaroo care in resource reach environments with participation of both parents. The study will be beneficial as guidelines of care to the midwives and other health care givers. It will be used as reference for other scholars, stake holders and policy makers.

### 1.7 Significance of the study

The study will give significant data that will illuminate wellbeing offices to plan uncommon consideration for LBW youngsters on the grounds that most pass on inside 24 hours of conveyance because of helpless access of escalated care units and prepared medical services suppliers. All things considered, past investigations about the commonness and related variables of KBC among infants has not been directed in the study region. Along these lines, this study will give benchmark information on the KBC practice on preterm children at Pumwani Maternity medical clinic.

The identification of possible factors for KBC practice in the area will have more noteworthy contribution to program supervisors and approach producers for structuring, appropriate execution and assessment of projects on decrease of tyke mortality and improvement of new conceived consideration to accomplish supportable advancement objective (SDG) 3 of guaranteeing sound lives and advance prosperity for all at all age. One of the meaning of this study for wellbeing calling is that it will help to give proof put together practice with respect to infant care benefits that will work on the promotive, preventive and healing consideration of moms and infants. This will help health professionals to improve on the services they have been rendering and make the services better than before.

Furthermore, the findings of the study will create awareness in the community on KBC utilization which will contribute towards formulating a locally appropriate intervention to assist preterm mothers on its utilization. This awareness will prepare pregnant mothers of the unknown future which will help them accept the situation easily in case of any issue of the sort.

### 1.8 Assumption of the study

The study will be based at Pumwani Maternity Hospital, Nairobi County, thus other public hospitals within the county will be excluded. Therefore, study will be limited in generalization to other facilities in Nairobi County and even the whole country where the same practice is done but will give insight knowledge to stake holders the effective approach on KBC utilization. The study will be carried out between June 2019 and

September 2019.

### 1.9 Definition of Terms of Kenya

**Baby:** A preterm neonate who is requiring Kangaroo care.

**Mother:** A woman with preterm neonate who is eligible for practicing Kangaroo baby care.

**KMC:** Kangaroo care which is offered by the mother.

**KBC:** Kangaroo care practice which is offered by any member of the family.

**Preterm:** Is a term used to imply infants born before 37 weeks of gestational age.

**Low birth weight (LBW):** Is a baby born with less than 2500grams body weight.

**Kangaroo Baby care (KBC):** Is a method, which involves placing the infant with a hat and diaper on the parent's/care giver's chest to provide warmth to the baby. The neonate is positioned in an upright position under the parent's clothes on the naked skin.The care giver can be the mother, father, grandmother, house help etc.

**Kangaroo mother care (KMC):** Is a method, which involves placing the infant with a hat and diaper on the mother's chest to provide warmth to the baby. The neonate is positioned in an upright position under the parent's clothes on the naked skin.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

In this chapter, there is review of literature related to understanding the link between KBC use and maternal knowledge, institutional related factors and social demographic factors, the conceptual and theoretical frameworks that are guiding the study.

## 2.2 Socio-demographic factors that influence Kangaroo baby care practice

According to Kaki (2016) the medicinal utilization of this regular practice was initially presented by Edgar Rey Sanabria in Columbia in 1978 as a procedure to supplant the capacity of care units, which were hard to find in that nation. Newborn babies, who were preterm, however generally steady, were placed in persistent KC with their moms.

There are varieties in KC rehearse, and every bit of it includes SSC. For instance, Kangaroo mother care (KMC) alludes to SSC that is given persistently by the mother until the baby starts to sweat and oppose the position, a sign of progressive adult temperature boosting and homeostasis. Breastfeeding is as the baby demands, and release home happens sooner than expected, when the infant is steady and the mother is open to giving constant SSC. Fathers and other relatives can likewise be suppliers when the mother is inaccessible.

In African landmass explicitly in South Africa, Implementation of SSC in facilities has to a great extent been inspired by a longing to acculturate what has turned into a therapeutic encounter, and as fractional satisfaction of the necessities set out in the Baby Friendly Hospital Initiative (BFHI). The motivation behind SSC in asset rich nations has consequently been centered around encouraging the newborn progress to additional uterine life, advancing early nurturing and setting up sufficient breastfeeding.

SSC has indicated included advantage for the mother, including diminished rate of baby blues drain; notwithstanding, this survey centers are principally around the advantages to babies which are many. All the more as of late, solid proof identified with the torment easing advantages of SSC(Kaki, 2013).

Kavata (2016) expressed that, in Tanzania KC has been examined for its impact on mortality, thriving, physiological soundness, breastfeeding, parental nurturing, advancement, and torment control. However notwithstanding predictable positive discoveries for all results, selection of KC as a routine practice remains an amazing factor across settings. It is suggested that KC is a doable, intervention, and practical care, and ought to be standard of consideration for all babies, paying little attention to geographic area or financial status as it is cheap to implement.

Kangaroo baby care is a straightforward minimal effort practice which is exceptionally successful intervention for premature and low birth weight infants. In prenatal care where health messages are shared, or where there are training programs, they're found useful in improving learning of moms in Kangaroo baby care practice. In this way, instructive program on the practice of Kangaroo baby care can be given to Mothers. This thusly will better the care of the preterm and low birth weight babies. An aggregate of 35 moms were chosen for the examination. After the organized training system posttest information of the mothers in respect to Kangaroo baby care was administered, 6 (17.10%) moms demonstrated deficient information on Kangaroo baby care 25 (71.4%) moms had reasonably sufficient learning while 4 (11.5%) moms demonstrated satisfactory learning on Kangaroo baby care Kipchumba, (2015). According to Kipchumba (2015), albeit half of moms were at first fearful about KMC, practically all (98%) had the option to have their infant in the KMC position and felt it to be agreeable and less unpleasant than being isolated from their infant. Altogether, 96% of moms revealed improved certainty and sure

state of mind with KMC; 94% felt they were making a positive commitment to the consideration of their infant; and 98% felt enabled to proceed with KMC at home. The negative parts of KMC reported by moms were that it meddled with routine day by day exercises, for example, washing where one needs to bend (18%), and an absence of quality time for self (6%). High extents of other KMC supporters upheld (spouses 82.5%; close relatives 84%; other relatives 81%). *Cho et al*, (2016) described an observational study conducted in London health sector to evaluate the agreeableness of KMC to moms, relatives and human services specialists Babies (n=135) with mean birth weight 1460g got KMC from the mother (n=60), father (n=40), relative (n=32) or close relative (n=21). KMC care givers were interviewed utilizing a pre-determined poll containing 15 (questions recorded in the paper) and utilizing a Likert scale. Information were stratified into two subgroups (mother or other caregivers) for examination. Practically all (96%) moms reported that they comprehended the technique KMC as great, 12% expressed that required an extra instructional course.

In their study, Vesel *et al*. (2015) sought to explore the maternal experience of Kangaroo Mother Care (KMC) practice for premature babies in the neonatal emergency unit of a level 3 tertiary hospital in Ethiopia. The study utilized a naturalistic approach and included mothers of premature babies who were practicing KMC. The research design used in-depth, face-to-face interviews that were audio-recorded and transcribed for analysis. The use of individual interviews eliminated the possibility of participants being influenced by others, as might be the case with group interviews. On top of these, the use of open-ended questions encouraged participants to provide full and meaningful responses, rather than simply providing brief or superficial answers.

By utilizing this study design, Vesel *et al*. (2015) were able to gain a rich understanding of the maternal experience of KMC practice for premature babies in the neonatal

emergency unit. The individual interviews allowed participants to express their thoughts and feelings freely, without fear of judgment or criticism from others. This approach allowed for the exploration of personal experiences, perceptions, and emotions that might not have emerged in a group interview setting.

In Kenya nonetheless, transcendent care for little infants in medical clinics depends on acceptance to the utilization of nurseries (feed the children, 2016). What remains not clear is whether continuous KC ought to be prescribed in all settings or if there is a basic time of inception, portion, or length that is ideal, and accessibility of help by life partner and relatives. This study gives a blend of our present learning about the determinants of KC, featuring contrasts and likenesses of practice over gestational age, low birthweight and age after birth.

### 2.3 Maternal Knowledge on Kangaroo baby care

Cho *et al.*,(2016)described an observational study conducted in London health sector to evaluate the agreeableness of KMC to moms, relatives and human services specialists. Babies (n=135) with mean birth weight 1460g got KMC from the mother (n=60), father (n=40), grandparent (n=32) or close relative (n=21). KMC respondents were interviewed utilizing a pre-determined poll containing 15 (questions recorded in the paper) and utilizing a likert scale. Information were stratified into two subgroups (mother or other supplier) for examination. Practically all (96%) moms reported that they comprehended the technique KMC as great, 12% expressed that required an extra instructional course. Half of moms were at first fearful about KMC, practically all

(98%) had the option to keep up their child in the KMC position and felt it to be agreeable and less unpleasant than being isolated from their infant. Altogether, 96% of moms revealed improved certainty and good state of mind with KMC; 94% felt they were

making a positive commitment to the consideration of their infant's care and 98% felt enabled to proceed with KMC at home. The negative parts of KMC reported by moms in this study were that it meddled with routine day by day exercises, for example, washing (18%), and an absence of quality time for self (6%). High extents of other KMC participants upheld KMC (spouses, 82.5%; close relative, 84%; other relatives, 81%).

Chan G.*et al* (2016), An aggregate of 35 moms were chosen for the study. The outcome of the study, the practice by mothers in respect to Kangaroo baby care was expanded. 6 (17.10%) moms demonstrated deficient information on Kangaroo baby care 25 (71.4%) moms had reasonably sufficient learning while 4 (11.5%) moms had satisfactory learning on Kangaroo baby care. Kangaroo baby care. In addition, training projects are useful in improving learning of moms in Kangaroo baby care practice. In this way, instructive program on Kangaroo baby care can be given to Mothers prenataly. This thusly will better the care of the preterm and low birth weight babies Chan G.*et al* (2017). Therese (2017) conducted a study in Uganda using a mixed-methods design to assess the perspectives of both mothers practicing Kangaroo Mother Care (KMC) and social protection workers. The study included 50 newborns with birth weights ranging from 1070-2460g, and a purposive sample of 45 mothers were studied over a 6-week period, with a loss rate of 8%. The study also involved 33 medical service providers. The study found that all the mothers who participated in the study felt that KMC improved bonding between mother and baby, which made them feel more motivated, satisfied, and happier to contribute to the welfare of their babies. Furthermore, 87.7% of the mothers reported no issues in offering KMC to their neonates, with 30% believing that KMC extended their breast milk production. Additionally, 88% of the mothers expressed the intention to continue practicing KMC at home.

These findings suggest that KMC is well accepted and appreciated by mothers in Uganda, and that it has a positive impact on maternal bonding and the overall welfare of premature babies. The reported increase in breast milk production is also a notable benefit of KMC, as breast milk is essential for the growth and development of premature babies.

Ways to deal with and improve nature of consideration of preterm newborn children in wellbeing was positioned second out of 82 inquiries in worldwide research need setting for preterm and low birth weight (LBW) babies, exhibiting the significance of understanding economical implication of KMC at all levels of care. This creates need for an orientation on best way forward for KC practice in health facilities which will facilitate KMC practice(Rahman, 2017). Anderzén-Carlsson *et al*.,(2014) indicated that, lately numerous services of wellbeing of infants in United Kingdom have worked together with improvement champions and wellbeing experts inside less fortunate nations to deliberately present, upgrade or advance the scale up of facility based KC. Components that got consideration include: setting KC arrangement and administration rules; creating clinical facilitative materials, supervision timetables and apparatuses; incorporating recordkeeping and giving an account of KMC integration into routine observing and assessment frameworks; reporting execution; and costing KMC administrations.

In an assessment of a Kangaroo Care inpatient ward of a tertiary medical clinic in Malawi, 10% moms whose youngsters kicked the bucket revealed the separation to the wellbeing of their infants attributed to absence of transport facilitation as the reason they poorly sought emergency clinic intervention when something wasn't right with their infant; comparatively, almost 40% of moms detailed absence of money to pay for transport as the reason they turned out poorly at the wellness clinic for their subsequent center arrangements (Venancio and Almeida, 2014). In Kuala Lumpur, Malaysia, poor public

transportation and the trouble of coming back to the medical clinic every day in the wake of restarting work were the most often possible referenced difficulties to performing skin-to-skin contact once a day while the infant was still hospitalized (Vesel *et al.,* 2015). Again, free restorative administration empowered guardians to remain at the facility longer as required. Guardians in Harare, Zimbabwe trusted that KMC diminished the expense of clinic charges and expected that it was a less expensive alternative than customary nursery care or a drawn out emergency clinic (Genesoni, 2015).

Smith *et al*., (2017) in Kenya uncovered the disclosures of an examination guided for more than a year assessing the pleasantness of KBC to fathers and mothers. (There was no significance of KMC provided). The newborn babies with birth weight below1.8kg(n=89) were randomized to get whether Kangaroo baby care was given by the baby's mother or was conventional for example managed under incubators. The mothers were interviewed by means of semi structured surveys. Disclosures obtained from gatherings indicated that among the mothers 86% were content practicing KMC, whereas 14% believed customary system to be superior to KMC, 56% mothers approved of Kangaroo mother, 73% communicated their objective of continuing practice of KMC at home. In this study, 64% of the fathers who participated agreed with the method. It wasn't indicated whether all mothers invited to participate agreed

to.

Roba, and Naganuri, (2017) conducted a study at Pumwani Maternity Hospital to survey the information of moms of preterm infants in respect to Kangaroo mother care knowledge. A sample of 35 mothers was chosen for examination. Discoveries of investigation uncovered that. 17.1% of moms seemed to have insufficient information regarding Kangaroo mother care. 17.1% had moderate learning while (11.5%) moms displayed sufficient information on Kangaroo care. The practice of KMC is

straightforward with minimal effort and exceedingly viable intervention for premature infants, furthermore training project could be used to improve the learning among moms on KMC. Instructive consideration could be given to moms which will improve the practice and low birth weight care. In asset rich nations, SSC is viewed as reciprocal to incubator care, thus consistent KBC is uncommon (Cortes *et al*., 2016).

### 2.4 Institutional Factors

Worldwide, the reception of KMC via parental figures for the most part starts with regards to the wellbeing framework, and guardians may connect with any of the center segments of a wellbeing framework. Most investigations found out that financing and administration are parts of the wellbeing framework that affected parental figure selection of KMC (Shah *et al,*2017).

In majority of poor countries in the world, most studies indicate that the neonate who remain hospitalized after the mother is allowed to go home, is majorly caused by absence of cash for transportation and the separation to the emergency clinic which are regularly reported as the greatest difficulties to KMC execution; these are additional boundaries to coming back to the wellbeing health facility for follow up after both mother and baby are released, however proceeding with KMC(Mazumder *et al.,* 2017). Anderzén-Carlsson *et al*.,(2014)indicated that, lately numerous services of wellbeing in United Kingdom have worked together with improvement accomplices and wellbeing experts inside less fortune nations to advance the scale up of institution based KMC.

Components that got consideration include: setting KMC arrangement and administration rules; creating clinical preparing materials, supervision.

In Kuala Lumpur, Malaysia, poor availability of public transportation and the trouble of coming back to the medical clinic on a daily basis were the most often possible referenced

difficulties to performing skin-to-skin contact once a day while the infant was still hospitalized (Vesel *et al.,* 2015). Then again, free restorative administration empowered guardians to remain at the facility longer as required. Likewise, guardians in Harare, Zimbabwe trusted that KMC diminished the expense of clinic charges and expected that it was a less expensive alternative than customary hatchery care or a drawn out emergency clinic remain (Genesoni, 2015). In an assessment of a Kangaroo Care inpatient ward of a tertiary medical clinic in Malaysia, 10% moms whose youngsters kicked the bucket revealed the separation to the wellbeing clinic or absence of transport finance as the reason they poorly attended emergency and wellness clinic when something wasn't right with their infant; comparatively, almost 40% of moms detailed absence of transport support as the reason they turned out poorly to the clinic for their subsequent care (Venancio and Almeida, 2014).

Kangaroo baby care is a simple straightforward minimal effort practice which is exceptionally successful means of nurturing for premature and low birth weight infants. In addition, training projects are useful in improving learning of moms in Kangaroo baby care practice. In this way, instructive program on Kangaroo baby care can be given to Mothers during their stay in hospital. This will thus better the care of the preterm and low birth weight babies Ramaiah *et al.*,(2016). Cho *et al.*,(2016)also performed an observational study conducted in London health sector to evaluate the feasibility of KMC practice to moms, relatives and human services specialists. Babies

(n=135) with mean birth weight 1460g got KMC from the mother (n=60), father (n=40), relative (n=32) or close relative (n=21). KMC suppliers were talked with utilizing a pre-determined poll containing 15 (questions recorded in the paper) and utilizing a Likert scale. Information was stratified into two subgroups (mother or other players) for examination. Practically a huge number, i.e (96%) moms reported that they

comprehended the technique KMC great, 12% expressed that they required an extra instructional course.

At one facility in Kenya, materials donated for KMC were put into VIP units rather than the KMC ward (Elias & Ramu, 2014). Nonetheless, the arrangement of private spaces, a calm environment, and right assets advanced the acknowledgment and takeup of KMC (Anderzén-Carlsson *et al.*, 2014). Security screens or private rooms permitted the family detachment from medical clinic staff and different patients and offered a calmer climate for the moms to take up KMC (Cho *et al.*, 2016).

## 2.5 Theoretical Model

### Jean Watson

Goal is topromote health, nurturing, restoring client to health, and prevention of illness, Ajeh *et al*., (2017)

### Framework

### Theory of Human Caring

This theory states that nursing and caring promotes health, prevents illness and restores health. According to Watson (2017), "people can't be treated as articles and that people can't be isolated from self, other, nature, and the larger labor force." This idea is at the core of the Theory of Caring. Her theory encompasses the whole field of nursing and places special emphasis on the recursive interaction between the care recipient and the parental/nursing figure. "the centrality of human mindful and on the caring-to-caring transpersonal relationship and its mending potential for both the person who is mindful and the person who is being really focused on" lies at the heart of the theory (Watson, 2016).

The preterm baby requires special nursing care like Kangaroo care by the mother and others, also requires meticulous nurturingand good environmentto promote health, prevent illness, and thrive as a healthy human being. Just like in Jean Watson's theory of caring,Skin-to-skin care practiced in Kangaroo care isn't only a "nestling, delicate, warm activity for the newborn baby", it is however a caring/nurturing that achieves numerous advantages, for example, Kangaroo care counteracts a few maladies and promotes health for the newborn baby and improves wellbeing and thriving. It advances physiological dependability, encourages adjustment to the worries of thriving of the low birthweight baby, helps new-born's mind develop and create (neuro defense) and it is the embodiment of a wellbeing and naturalistic. If the preterm infant gets the skin to skin health management through Kangaroo infant care, there is advancement of development, and health (Kerstin *et al*,2018).

## 2.6 Conceptual Framework

**Independent Variable** **Intervening Variable** **Dependent Variable**

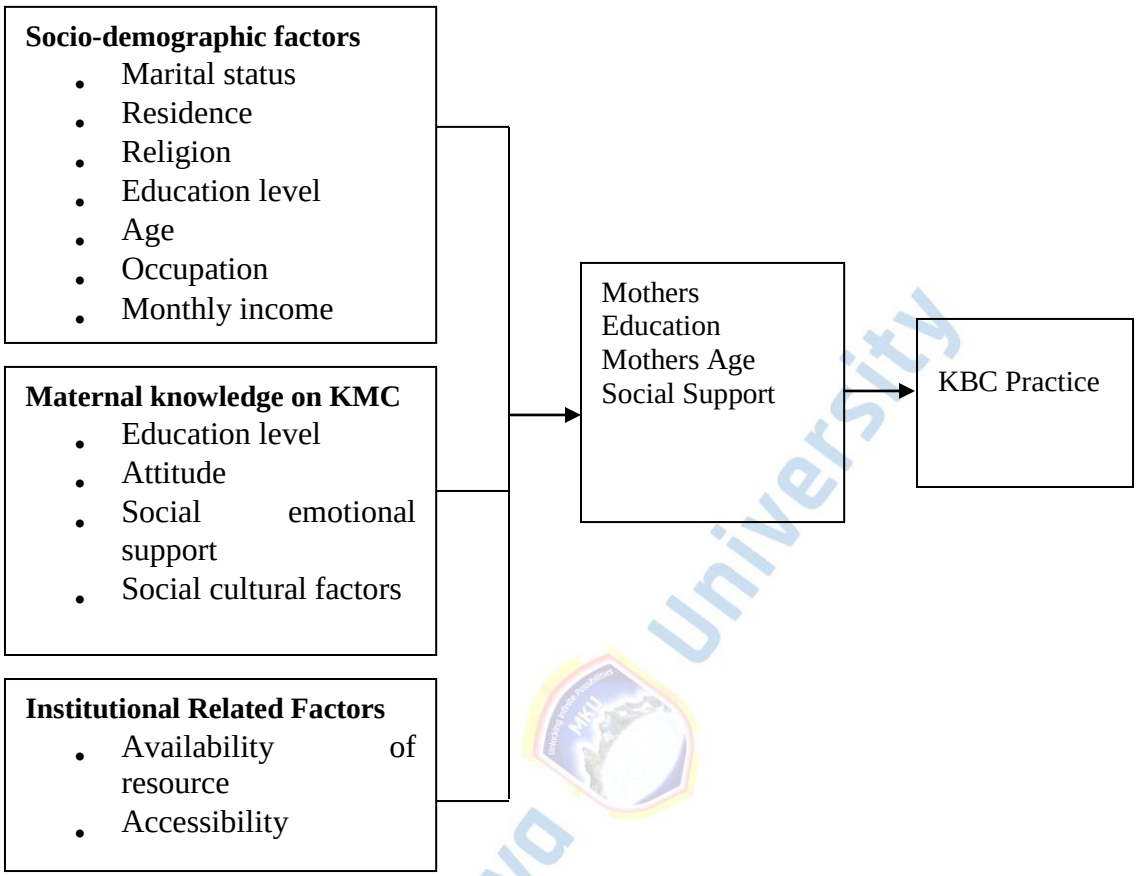


**Figure 1: Conceptual Framework**

**Source:** Adopted and modified from (Alnajjar, 2012)

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter documents various sections as follows research design, study area, study variables, sample population, sampling techniques and instruments, collection of data, analysis of data, interpretation of data and ethics.

### 3.2 Research Design

A research design is a procedure for gathering, analyzing, interpreting and reporting information in researches. This was descriptive cross-sectional design. The research adopted quantitative methods of data collection and processing. This layout was selected because it could accommodate a wide variety of data types (both quantitative and qualitative) and allowed for their integration. This avoided weaknesses of using quantitative method only.

### 3.3 Study Site

Pumwani hospital where the study was carried out at the heart of the capital city of Kenya Nairobi. The health facility is under the management of the county government county Number 047. The county is one of the most populous counties yet the smallest one of all the 47 counties in Kenya. The coordinates of Nairobi countyare 1°09′S36°39′E and 1°27′S37°06′E the area coverage in kilometers 696S SqkM (270 sq m). According to Kenya population survey of 2017, the population of Nairobi is estimated at 3.375 million. Nairobi's atmosphere according to Koppensorder is that Nairobi is endowed with sub-tropical good country atmosphere. Lying at 1,795 meters (5,889 ft) above the sea level, the night are quite often cold, especially in the month June/July season, the temperatures during this season fall up to 9 °C (48 °F). In the month all through to march is one of the seasons that the county records the most sunny and hottest season of the year whereby temperature in a normal day rise to above 20 degrees during the day. The average high temperatures for this season are 24 °C (75 °F). There are two wet seasons, however the rain may not be very heavy any time.

After the rainy season ends, the cloudiest part of the year begins, and it lasts until September. Nairobi's proximity to the equator makes the subtleties of seasonal change meaningless. There should be a rainy season and a dry season, it's been proposed.

The county has highest the number of sub counties in the country. There are seventeen 17 sub counties/constituencies in the county that have been further divided into five electoral wards in every sub county coming to 85 wards in all 17 sub counties. Pumwani Maternity Hospital (PMH) is primarily an obstetric emergency care hospital yet in addition gives other restorative services administrations identified with pregnancies, for example, antenatal and postnatal consideration services

administrations. It is the biggest referral maternity emergency health facility in Kenya. The emergency obstetric care hospital is situated in the eastern side of Nairobi and is encompassed by low pay local locations of Eastleigh, Mathare, Muthurwa and Majengo. It is a Nairobi County hospital that handles approximated at 1,500 deliveries per month of which 29.9% are preterm births.

### 3.4 Study Population

The study population constituted of all mothers with preterm babies aged 0-2 months attending maternal child health clinic practising KBC at Pumwani maternity during the study period.

#### 3.4.1 Inclusion Criteria

All respondents who had preterm babies 0-2 months at Pumwani maternity hospital All respondents who gave consent

### 3.4.2 Exclusion Criteria

Mothers of preterm babies above two months of age at the time of study period. All mothers with preterm babies who did not give consent to the study.

## 3.5 Sampling Method

This specific section outlined how and how many people were included in the study's sample. The population of interest was used to select a representative sample (Orodho, 2018). A sample, as defined by Fraenkel and Wallen (2020), is a subset of a larger population used to draw conclusions. In addition, Kombo and Tromp (2016) suggest that a diverse and large population sample is necessary for making generalizations about the full population with confidence. Sampling may be defined as "the process of selecting data from which a decision or inference can be drawn" (Kothari, 2016).

### 3.5.1 Sample Size Determination

The desired sample size was determined using Taro Yamane's Formula:

n = N /[1+N(e)^2] **Where-:**

n = sample size

N = population size (the universe) e = sampling error (usually

.10, .05 and .01 acceptable error)

^ = raised to the power of
Therefore: $n=351/1+351(0.05)^2$

n=186

1. Finite population correction formula

n=n0/1+(n0-1)/N therefore:

n=186/1+186-1/351 n=121 after adding

10% n=133

### 3.5.2 Sampling Method

Preterm babies register was used as the sampling frame, the study used systematic sampling methods to attain obligatory least possible sample size. Project aggregate figure of pre-term deliveries are 351 and 187 is the sample size therefore k=2. Simple random sampling was utilized to pick the main respondents and different respondents were picked by efficient sampling at time periods. The simple random sampling picked patient number 2. Accordingly, methodical example comprised of units with even chronic number i.e. 2, 4,6, 8,10.

## 3.6 Study Variable

**Dependent Variable- KBC practice**

**Independent Variables**- these included; Demographic and social factors (maternal educational level, residence, age of the mother, religion, maternal occupation, marital status); Maternal factors of the respondent (knowledge, attitude, social support etc); institutional factors (availability of resources, accessibility of resources).

## 3.7 Data Collection Tools and Procedure

### 3.7.1 Pre-Testing

As a trial run of the processes and tools the researcher plans to utilize, pilot testing plays an important role in the progress of the study. The researcher was able to save money because to the piloting process. Piloting was vital in order to clarify any ambiguity, identify wrongly phrased items and incidences of insufficient space to write responses as

well as clustering of questions. A pre-testing was carried out at Pumwani maternity to mothers at Kangaroo mother care room in newborn unit/department. The percentage of respondents that was sampled in the pretest was10% of sample size who took part in the actual study. The reason for carrying out pretesting was to verify the questionnaire's validity and to make it easy to understand the questions contained in the questionnaire forms, evaluate the consistency of variables in the questionnaire, challenges in getting the information as well as additional significant aspects and make changes accordingly to fit the study. One week prior to the actual date of collecting data, pre-test was done to check the consistency of the tool.

### 3.7.2 Quantitative Methods

Self-administered questionnaires (appendix iv) was used in this study, before actual data collection, the questionnaire was pretested and revised: -

The first part (I) covered- Socio-demographic, the second part (II) covered- Maternal and neonatal factors and Part-III covered- Institutional factors

### 3.7.3 Data Collection Procedure

Preparing of three research collaborators started quickly after getting approval to complete the study. The preparing of research aides helped the analyst to do expedient accumulation of information. The examination colleagues were chosen among available student midwives who were willing to participate and were on placement at the data collection site during the information gathering period. The exploration partners were prepared on the motivation behind the investigation, how to look for educated assent, how to utilize the tools, information gathering and information correct documentation. They were given two days to prepare and be in readiness on the abovementioned. Study

members were drawn closer to take part in the examination, the questioner disclosed to the moms the significance of the exercise and why their cooperation would be critical. The individuals who consented to partake in the exercise, signed an assent structure (Appendix iii) before the survey and this was controlled by means of up-close and personal detailed meetings.

Data collection was carried out by using questionnaire, which addressed issues regarding knowledge of the respondents, socio -economic factors, institutional factors and maternal/neonatal factors associated with practice of KBC. The researcher moderated discussion in the KC.

Clinical records were likewise surveyed to confirm data on the individual babies and other clinical data given by the moms. A portion of the data that was gotten from the clinical records incorporate; members' age, weight, diseases endured during pregnancy including vaginal infections, UTIs, syphilis disease, incessant ailments, HIV status, any difficulties that could have influenced the pregnancy, birth status for example in the event that singleton or numerous birth, infant's age in gestation weeks, infant's introduction to the world weight, any inconvenience present in the child and any disfigurements present in the infant.

### 3.8 Reliability and Validity

#### 3.8.1 Validity

It is said that validity is about the extent to which instruments quantify what they were intended to quantify. Each time, the results should be showing consistency. This can validate the tools for any study (Denscombe, 2017). The researcher will utilize the knowledge and experience of specialists and professors to evaluate the instruments and provide constructive criticism to guarantee reliability and accuracy. To verify validity,

the researcher will have professionals and professors review the instruments and provide input. The assurance of data quality was possible since properly designed data collection instrument the questionnaire was pretested before the actual study; those who carried out interviews were properly trained on data collection procedures as well as the coding of the questionnaire. Completed questionnaires were checked daily by the principal investigator for completeness and relevance. Before carrying out the real process and analysis, the research team received appropriate feedback every day in the morning.

### 3.8.2 Reliability

Reliability is essentially the effectiveness of any data gathering tool or instrument. Reliability demonstrates that whatever it is measuring, it is doing so consistently (Best & Khan, 2016). To ensure reliability of the questionnaire, the researcher avoided ambiguity in words, used correct and appropriate words and spellings so as to facilitate understanding and avoid embarrassing statements that can have negative influence on reliability of the questionnaire. The researcher also avoided complicated instructions and terms that might confuse the respondents. Before distributing the questionnaires to the participants, the researcher submitted it to the supervisor for editing, evaluation and approval. Recruitment of three research assistants was carried out and properly and they were trained on how to collect data using the adopted techniques as well and ethics. Midwife students on placement were the research assistants. The research students were assigned the responsibility of administering questionnaires to respondents as well making clarifications when the need arises. Preference was given to senior midwives because of their wide knowledge base of methodologies used in research.

### 3.9 Data Management and Analysis

Each administered questionnaire was keenly checked to ascertain its completeness, consistency, accuracy and data captured in the questionnaires was keyed into the computer using SPSS software application version 24 to analyze data. The summarized features of data collected and analyzed quantitatively were used to come up with statistical frequencies that describe major variables of the study. Odds ratio and p-value were worked out to find out if to some extent there is relationship existance between the two variables being investigated. P-value of less than 0.05 wastaken as statistically significant. Strategic relapse investigation was completed to survey determinants of KBC and to control for conceivable confounders. Bivariate investigation was utilized to evaluate the strength of a relationship between subordinate variable (KBC practice) and rundown of autonomous factors and test meaning of the affiliation was tried. Chances proportion with 95% certainty stretch was utilized to gauge strength of affiliation. Multivariate strategic relapse model was utilized to recognize the significant determinants by controlling for conceivable puzzling impacts and was directed by working out changed chances proportions with a 95% certainty span. Two calculated relapse models were created for maternal and institutional factors then factors with p esteem <0.05 were taken to the model. The discoveries were introduced in type of table, figures and pie diagrams.

### 3.10 Ethical Consideration

The ethical considerations that were considered in this study included ethical clearance by the respective parties, voluntary informed participation, total confidentiality, personal and general benefits to those involved, avoiding risks and ensuring informed consent.

Ethical clearance was also ensured, in that prior to data collection, ethical approval was sought from Mount Kenya University (MKU) research and ethical committee as well as NACOSTI. Permission to collect data was also sought from Pumwani Maternity Hospital administration.

Voluntary basis participation by those giving information was also considered and the participants were first given an explanation of the purpose of this research which is to collect data/information for decision making because it will assist will identifying the determinants of Kangaroo baby care practice.

Confidentiality to all the willing participants was assured. This means that all the information shared with those participating was not shared with other people. To ensure confidentiality, the interviews were all conducted in separate rooms, the questionnaires that were filled were stored under key and lock in a cupboard and the soft data in the computer was secured with a password which was only known to the researcher and not shared. Anonymity of those who gave information was totally maintained in a way that those who took part did not take write their names their names on the questionnaires used.

Personal and general benefits were also considered by the researcher explaining the nature of study to the participants and the benefits involved. There was no monetary benefits to the participants at all and this was explained right from the word go. However, the overall benefits may be improvement of services offered on KBC. Risks were also considered and there were no risks involved. In case one declined joining the study there were no negative effects or effects to the care offered. Mothers with preterm babies therefore had freedom of choice, whether or not to join the study and be participatory in providing information.

The choice of participant's acceptance to join the study did not prevent them from withdrawing from the study at any time they deed fit. The participant's withdrawal from

participating was not personalized in any way and did not lead to denial of services that the clients were receiving from the facility nor victimization whatsoever. Informed consent which is a very important aspect in a study was obtained from the participants by signing the provided consent form indicating their acceptance to participate in the study. All the participants had clear explanation on the purpose of the study, how confidentiality will be upheld, the benefits and risks of participating in this study.

It was ensured that every one of the members were 18 years of age or more from their national ID cards. The researcher assured the respondents that the data they gave was to be treated with extreme protection. The researcher guaranteed them that data was to be utilized for no other reason other than the one indicated in the study and that no unauthorized people would reach it at all. This motivated the members to give legit and complete data and for this reason, the names of the members were not shown up at any place on the information assortment instrument with the exception of a coded framework to be created and seen simply by the analyst.

The specialist welcomed and instructed the respondents to offer data without giving their personalities on information gathering instruments. This study utilized private codes to identify the participants. The data collection forms did not bear clients' names and clients were in this case identified by study numbers. Respondents were well educated that they reserved the option to decline from taking part in the study. They were mentioned to give data at their own time.

The information gathered from the respondents were dealt with and kept in high caution to evade access to unauthorized people. Confidentiality was highly adhered to at all levels of the study.

# CHAPTER FOUR

# RESEARCH FINDINGS AND DISCUSSIONS

## 4.1 Introduction

This chapter presents the research findings of the study with reference to specific research objectives. Findings for each specific objective of the study listed in chapter one will be presented in separate sub sections. First the study sought to study the demographic characteristics of the respondents and their association with practice of Kangaroo Baby Care (KBC) and this is presented in section 4.2. Section 4.3 presents data for objective two, maternal knowledge on KBC and how it is associated with practice of KBC. Section 4.4 presents data for objective three, institutional related factors affecting practice of KBC in Pumwani Maternity hospital. Section 4.5 presents data for logistic regression for maternal factors and institutional related factors affecting practice of KBC. The response rate was 83.5% for the study, with a prevalence rate for KBC practice at 28% (n=31) of the participants. The level of KBC practice was measured using four items which were computed into one variable; practice of KBC.

## 4.2 Socio-demographic characteristics influencing KBC practice

Using data collected from 111 moms at Pumwani Maternity Hospital, the researchers were able to learn important demographic information about the mothers who were the focus of the study. The data is as shown in the table below.

**Table 1: socio-demographic factors and practice of KBC**

| Characteristics | Poor KBC practice | Good KBC practice | Statistics |
|---|---|---|---|

| | | N | % | n | % | |
|---|---|---|---|---|---|---|
| Age(yrs) | 15-24 | 35 | 72.9% | 13 | 27.1% | $\chi^2$ =2.695,df=2, |
| | 25-34 | 43 | 74.1% | 15 | 25.9% | p=0.255 |
| | 35-44 | 2 | 40% | 3 | 60% | |
| Marital status | Single | 16 | 61.5% | 10 | 38.5% | $\chi^2$ =3.483, df=2, |
| | Married | 59 | 73.4% | 21 | 26.6% | p=0.175 |
| | Separated | 5 | 100% | 0 | 0% | |
| Religion | Catholic | 25 | 71.4% 74.2% | 10 | 28.6% 25.8% | $\chi^2$ =1.522,df=3 |
| | Protestant | 46 | 55.6% | 16 | 44.4% | p=0.675 |
| | Muslim | 5 | 80% | 4 | 20% | |
| | SDA | 4 | | 1 | | |
| Education | None | 1 | 100% | 0 | 0% | $\chi^2$=11.236 ,df=4, |
| | Primary | 27 | 81.8% | 6 | 18.2% | p=0.015 |
| | Secondary | 36 | 70.5% | 15 | 29.5% | |
| | College | 15 | 75% | 5 | 25% | |
| | University | 1 | 16.7% | 5 | 83.3% | |
| Income | <1000 | 21 | 72.4% | 8 | 27.6% | $\chi^2$=4.118,df=4, |
| | 1000-4999 | 3 | 100% | 0 | 0% | p=0.399 |
| | 10k-14999 | 3 | 75% | 1 | 25% | |
| | 15k-19999 | 14 | 87.5% | 2 | 12.5% | |
| | >20000 | 39 | 66.1% | 20 | 33.9% | |
| Occupation | Student | 4 | 66.7% 60.8% | 2 | 33.3% | $\chi^2$=4.255, df=4, |
| | Housewife | 14 | 92.3% 74.2% | 9 | 39.2% | p=0.373 |
| | Unemployed | 12 | 71.1% | 1 | 7.7% | |
| | Employed | 23 | | 8 | 25.8% | |
| | Business | 27 | | 11 | 29.9% | |

**Source:** Field Data (2021)

### 4.2.1 Age of the respondents

The ages of the mothers were rounded up in complete years and categorized as shown. It was found that the mothers had varied ages. Majority (52.3%, n=58) had an age bracket of 25-34 years, 43.2% (n=48) had an age between 15-24 years, 4.5% (n=5) had an age between 35-44 years. There was no available information or reason for this big gap in terms of number of respondents in this age category.

On assessing the relationship between age and practice of KBC; out of 48 mothers who were in the age bracket of 15-24 years, 13 of them were found to have good practice. In

the age group between 25-34 years, out of 58 participants, 15 of them had good practice of KBC and out of 5 mothers who were in age bracket of 35-44, 3 of them were having good practice of KBC. Increase in age was associated with increase of the chances of practicing KBC with Cramer's V of 0.156. However, these results were found not to be significant at $\chi^2$ (2, N=111) = 2.695, p=0.260, Fishers exact test p value=0.255.

### 4.2.2 Marital status of the respondent

The study also determined the marital status distribution among the mothers. The results indicated that there was a moderate association between marital status of the mother and practice of KBC at spearman's' rho of 0.176 and Cramer's V of 0.177. Out of 26 mothers who were single at the time of the study, 10 were found to have good practice of KBC. Among the 80 mothers who were married, 21 were having good practice of KBC and among 5 mothers who reported to be separated by the time of study; none of them was found to be practicing good KBC. These results were statistically not significant at $\chi^2$ (2, N=111) = 3.483, p=0.175, Fishers exact test p value=0.169.

### 4.2.3 Religion of the respondents

The participants reported to be from different religions which included; SDA, Muslim, Protestant and Catholic. Majority were Protestants followed by Catholics. Among the 62 Protestants who were the majority, only 16 were found to practice good KBC; among 5 SDA participants only one was practicing good KBC and out of 35 Catholics,

10 had good KBC practice. Also the Muslims participated in the study and out of 9 who participated, 4 were practicing good KBC. There was a weak association between religion and practice of KBC at Cramer's V of 0.117 and Spearman's Rho of 0.895. These

results were not statistically significant at $\chi^2$ (3, N=111) = 1.522, Fisher exact test p=0.675.

### 4.2.4 Area of residence of the participants

The hospital serves many estates in Nairobi, however in the current study, the participants hailed from Mathare North (N=11, 9.9%), Huruma (N=7, 6.3%), Kayole (N=5, 4.5%), Eastleigh (N=10, 9%), Kasarani (N=2, 1.8%), Maringo (N=2, 1.8%), Githurai Kimbo (N=1, 0.9%), Njiru (N=2, 1.8%), Syokimau (N=1, 0.9%), Dandora (N=6, 5.4%), Kawangware (N=2, 1.8%), Buruburu (N=1, 0.9%), Ryosambu (N=2, 1.8%), Majengo (N=13, 11.7%), Pipeline (N=2, 1.8%), Kitengela (N=1, 0.9%), Kariobangi South (N=6, 5.4%), Tassia (N=1, 0.9%), Saika (N=1, 0.9%), Biafra (N=1, 0.9%), Muthurwa (N=1, 0.9%), Makadara (N=1, 0.9%), Mbotela (N=1, 0.9%), Makongeni (N=1, 0.9%), Mlango kubwa (N=5, 4.5%), Githurai 45 (N=5, 4.5%), Jerusalem (N=3, 2.7%), Komarock (N=1, 0.9%), South B (N=1, 0.9%), Baba Ndogo (N=3, 2.7%), Kaloleni (N=1, 0.9%), Pangani(N=2, 1.8%), Bahati(N=2, 1.8%), Umoja 1(N=3, 2.7%), Korogocho(N=2, 1.8%), Donholm(N=1, 0.9%) and Ruaraka(N=1, 0.9%). There was a strong association between the residence of the practice of KMC at Cramer's V of 0.681 and on correlation; the association was negative at Spearmans' (r) of -0.097. However, the results were not significantly affecting practice of KMC with p>0.05.

### 4.2.5 Level of education of the mother

Level of education was varied from no formal education to university level. Both those who attended primary level of education certificate or dropped before completing primary level were classified as primary, secondary level of education consisted as those who had completed secondary level of education and university level included all those

who were in the university by the time of study or had completed university training. The study findings showed that majority of the participants (45.9% n=51) had secondary level of education followed by primary level of education (29.7%, n=33) and no formal education had the least proportion (0.9%, n=1).

One participant reported to have had no formal education by the time of the study and she was found to have poor practice of KBC. It was also noted that among the 33 who had primary level of education, 6 of them had good practice of KBC. There were 51 participants who had secondary level of education and among them 15 had good practice of KBC. Among the 20 participants who were in college by the time of the study, 5 were practicing good KBC and among the 6 who had university level of education, it was found that 5 of them had good practice of KBC.

These findings revealed that as the level of education increases, the good practice of KBC also increases. There was a strong association between level of education of the participant and practice of KBC at Phi value of 0.318 and Spearman's (r) of 0.231. These results were significantly affecting practice of KBC among the mothers with preterm babies in Pumwani at $\chi^2$ (4, N=111) = 11.236, Fisher exact test p=0.015. These results are in line with the findings of Rahman *et al*., (2017) which found level of education of the mother to significantly affect KBC practice.

### 4.2.6 Gross monthly household income for the participant

Since economic status is a sensitive issue, the income was categorized and the respondents were asked to tick the range in which their monthly income fell in. Majority reported to be earning above Kshs. 20,000 with the least proportion earning between Kshs. 1000 and kshs. 4999. There were no participants who reported to be earning between Kshs. 5000 and Kshs. 10000. There was a weak association between monthly

household income and practice of KMC at Phi of 0.193. On correlation, the Spearman's (r) was 0.061. These results were not significantly affecting the practice of KMC $\chi^2$ (4, N=111) = 4.118, Fisher exact test p=0.399.

### 4.2.7 Occupation of the participant

The mothers reported to be involved in various jobs and others were students at the time of the study. Majority (34.2%, n=38) reported to be involved in business, 27.9% (n=31) reported to be formally employed, 11.7% (n=13) were unemployed, 20.7% (n=23) were housewives and 5.4% (n=6) were students at the time of study. Among the 38 mothers who were involved in business, 11 were found to practice good KBC and among the 31 who were formally employed 8 of them had good practice of KBC. It was also noted that among 13 participants who reported to be unemployed, only one was found to be practicing good KBC. Out of the 23 mothers who were house wives at the time of the study, 9 had good KBC practice and among the six students who were nursing their preterm babies at the time of the study only two were practicing good KMC. There was a weak association between the mothers' occupation and practice of KBC at Cramer's V of 0.196 and negative correlation of Spearman's' (r) 0.049. These results were not statistically significant at $\chi^2$ (4, N=111) = 4.255, Fisher exact test p=0.373

## 4.3 Maternal knowledge on KBC

Maternal knowledge was assessed based on reported awareness of the practice and attitude was assessed based on ability to state the benefits of KBC. All the respondents (100%) reported to be aware of KBC practice and still all of them (100%) were able to list the benefits of KBC. Other maternal factors affecting KBC practice included the following:

### 4.3.1 Parity of the mother

The respondents gave varied parity. Majority of the respondents (46.8%, n=52) had a parity of 2-3, closely followed by parity of 1 (45.9%, n=51) and parity of above six had the least proportion (1.8%, n=2).

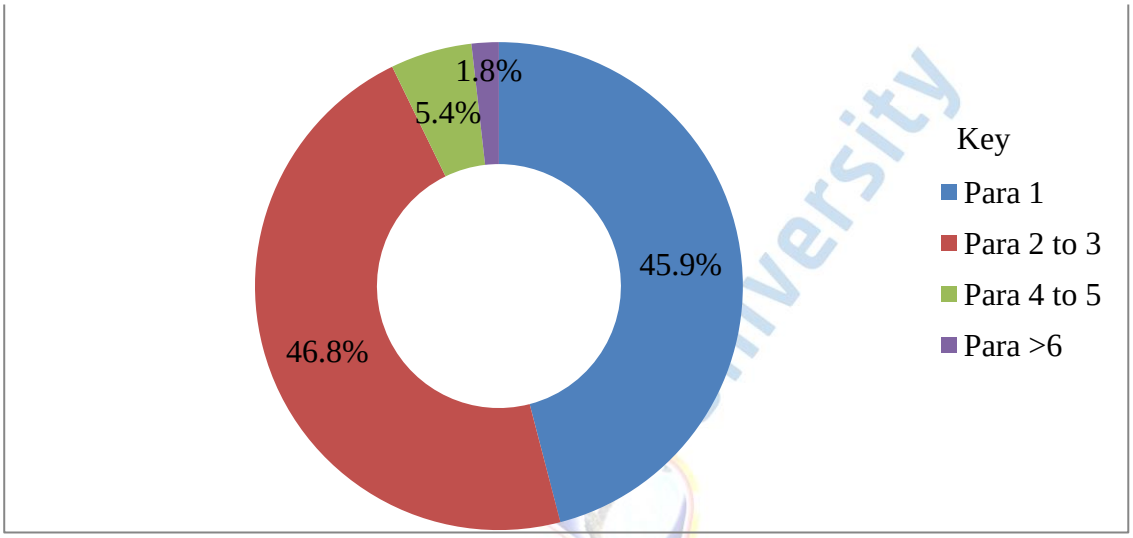


**Figure 2: Parity of the mothers**

The mothers in the study had varied numbers of previous deliveries (Parity), among the 51 mothers who reported to be having one previous delivery, 16 of them had good practice of KBC. Among 52 mothers who reported to have 2-3 previous deliveries, 13 had good KBC practice and it was found out that out of six mothers who had 4-5 previous deliveries, only one had good KBC practice. There were two mothers who reported to have had more than six previous deliveries and one of them had good KBC practice level. There was a weak association between the parity of the mother and practice of KBC at Phi of 0.112 and negative correlation of Spearman's (r) 0.046.

These results were not significantly affecting practice of KBC at $\chi^2$ (3, N=111) = 1.384, Fisher exact test p=0.626

**Table 2: Association between parity and practice of KBC**

| Variable | Category | Practice of KBC | | Total |
|---|---|---|---|---|
| | | Poor | Good | |
| Parity of the participant. | 1 | 35 | 16 | 51 |
| | 2-3 deliveries | 39 | 13 | 52 |
| | 4-5 | 5 | 1 | 6 |
| | >6 | 1 | 1 | 2 |
| Total | | 80 | 31 | 111 |

$\chi^2$ (3, N=111) = 1.384, Fisher exact test p=0.626

**Source:** Field Data (2021)

### 4.3.2 Gestational age of the baby at birth

The gestation of the babies ranged from 20 weeks to 35 weeks. Majority (53.2%, n=59) had gestations ranging between 29-35 weeks. These findings were summarized in fig 6 below.

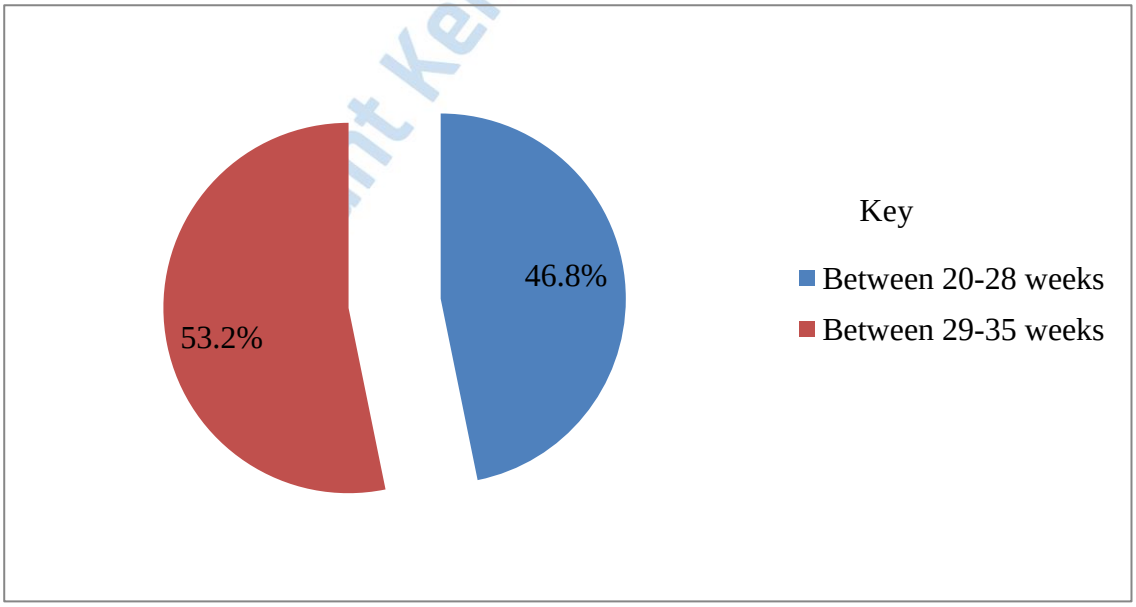


**Figure 3: Gestation age of the baby at birth**

The preterm babies in the study were born at different gestations but were categorized into two groups. Among the 52 mothers who had preterm babies who were born between 20 weeks of gestation to 28 weeks, 3 of them had good practice of KBC while among 59 mothers who had their preterm babies born between 29 weeks of gestation and 35 weeks, 28 mothers were practicing good KBC. These results indicated that the mothers whose preterm baby was born after 28 weeks of gestation were taking more time with their babies on KBC. It was not studied on the reason why the mothers whose babies were born below 28 weeks of gestation were not practicing good KBC, yet these are the ones expected to be doing good practice of KBC so that the babies can benefit from skin to skin care improving their respirations and weight gain. However, there was a strong association between gestational age of the baby and good practice of KBC at Phi of 0.464 and positive correlation of Spearman's' (r) 0.464. The mothers who had their babies born after 28 weeks of gestation were 14.753 times more likely to practice good KBC than those mothers whose babies were born before 28 weeks of gestation (OR=14.753, CI [4.131-52.679]) These results were statistically significant in determining the practice of KBC among mothers with preterm babies in Pumwani hospital at $\chi^2$ (1, N=111) = 23.865, Fisher exact test p<0.01. The results replicate the findings of Rahman *et al*., (2017) which indicated gestational age as a factor in determining KBC practice.The findings was summarized in the table 3 below.

**Table 3: Association between gestational age of the baby and practice of KBC**

| Variable | Category | Practice of KBC | | Total |
|---|---|---|---|---|
| | | Poor | Good | |
| Gestational age of the neonate of the participant. | 20-28 weeks | 49 | 3 | 52 |
| | 29-35 weeks | 31 | 28 | 59 |

| | | | |
|---|---|---|---|
| Total | 80 | 31 | 111 |

$\chi^2$ (1, N=111) = 23.865, Fisher exact test p<0.01

**Source:** Field Data (2021)

### 4.3.3 Birth weight of the baby

The weight of the babies nursed at the time of the study ranged from below 1.5 kg to above 2.5 kg. The findings on babies weight was summarized in the table 4 below.

**Table 4: Birth weight of the baby**

| Birth weight of the baby | Frequency | Percentage |
|---|---|---|
| Below 1.5 kg | 30 | 27 |
| 1.5-2 kg | 75 | 67.6 |
| Above 2 kg | 6 | 5.4 |

**Source:** Field Data (2021)

There were 30 mothers with babies born with birth weight of below 1.5 kgs, among whom one was found to practice good KBC. Among the 75 mothers whose babies had birth weight of between 1.5 and 2kgs, 28 of them were practicing good KBC and out of six mothers whose babies were born with birth weight of above 2kg only two of them were practicing good KBC. It was evident from the results that mothers who had their babies with birth weight of between 1.5kg to 2 kg were more likely to practice good KBC compared to those whose babies had a birth weight of above 2 kg. There was a moderate association between birth weight of the baby and practice of KMC at Cramer's V of 0.334 and a positive correlation of Spearman's' (r) 0.294. These results were statistically significant at $\chi^2$ (2, N=111) = 12.399, Fisher exact test p=0.002. Yusuf *et al*., (2018) also found out that the birth weight of the baby was a significant determinant in KBC practice.

**Table 5: Association between birth weight of the baby and practice of KBC**

| Variable | Category | Practice of KBC | | Total |
|---|---|---|---|---|
| | | Poor | Good | |
| Birth weight of the baby of the participant. | Below 1.5kg | 29 | 1 | 30 |
| | 1.5-2.0kg | 47 | 28 | 75 |
| | Above 2kg | 4 | 2 | 6 |
| Total | | 80 | 31 | 111 |

$\chi^2$ (2, N=111) = 12.399, Fisher exact test p=0.002

**Source:** Field Data (2021)

### 4.3.4 Age of the baby at the time of study

The age was categorized into two; neonatal age (0-28 days) and post neonatal age (above 28 days after delivery). Majority of the babies (61.3%, n=68) were found to be post neonatal age. This was represented in a pie chart.

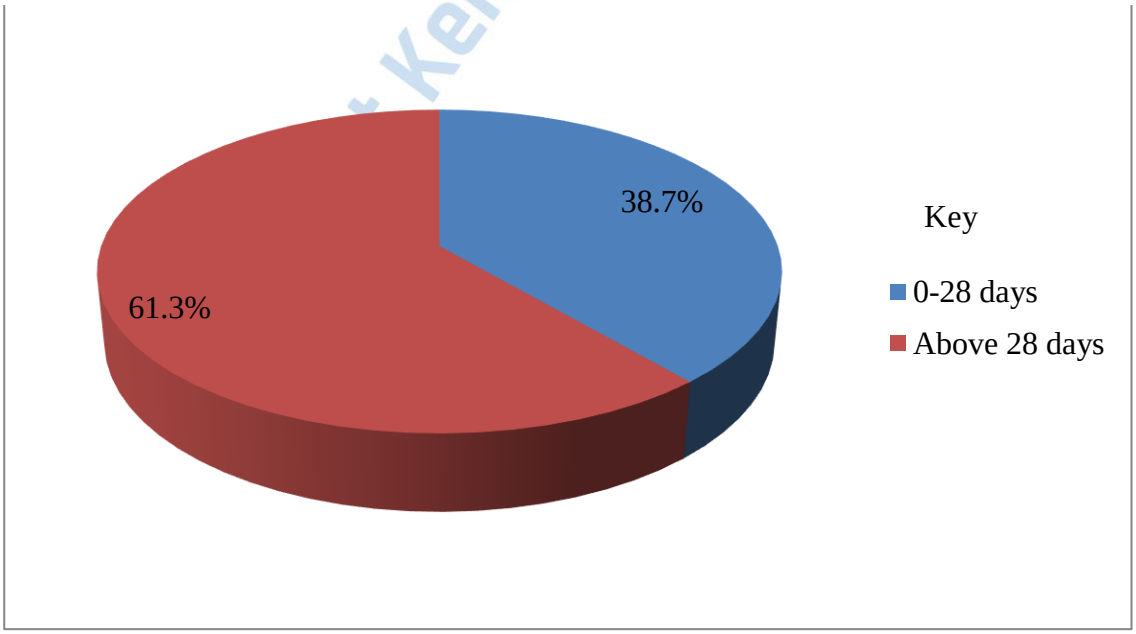


**Figure 4: Age of the baby post delivery**

At the time of the study, the babies were categorized into two groups; below 28 days of life and above 28 days of life after delivery. Among the 43 babies who had below 28 days of life, 20 of their mothers were found to practice good KBC while among 68 mothers whose babies had above 28 days of life, 11 of them were practicing good KBC. These results shows that the mothers whose babies had below 28 days of life were 0.222 times more likely to practice good KBC than those mothers whose babies had above 28 days of life (OR=0.222, CI [0.092-0.535]). There was a strong association between age of the baby post delivery and practice of good KBC at

Cramer's V of 0.638 and negative correlation of Spearman's' (r) 0.329. These results were statistically significant at $\chi^2$ (1, N=111) = 12.043, p=0.001. These results are in agreement with findings of Rahman *et al* (2017) which showed age and baby birth weight to be determining KBC practice. Another study by Yusuf *et al* (2018), showed that KMC practice was significantly associated with baby birth weight and not the age of the baby.

**Table 6: Association between age of the baby and practice of KBC**

| Variable | Category | Practice of KBC | | Total |
|---|---|---|---|---|
| | | Poor | Good | |
| Age of the baby of the participant. | Below 28 days | 23 | 20 | 43 |
| | Above 28 days | 57 | 11 | 68 |
| Total | | 80 | 31 | 111 |

$\chi^2$ (1, N=111) = 12.043, p=0.001

**Source:** Field Data (2021)

### 4.3.5 Initiation of KBC

All the mothers reported to know about KBC. However, the time they initiated KBC varied from one mother to another. Majority (94.6%, n=105) reported to have started KBC soon after deliver, with a few (5.4%, n=6) mother who reported to initiate KBC later on. The researcher probed more on how soon the mothers started KBC and this was indicated in terms of how many hours post delivery did they initiate KBC. The study found that majority (48.6%, n=54) of the mothers initiated KBC after more than 2 hours.

### 4.3.6 Importance of KBC

The mothers reported to know that KBC is important for the well being of their babies. Majority cited that KBC improves bonding with the baby; others reported that it helps to keep the baby warm and increase baby weight.

**Table 7: Importance of KBC**

| Importance of KBC | Frequency | Percentage |
|---|---|---|
| Improves bonding | 70 | 63 |
| Helps to keep baby warm | 75 | 67.6 |
| Increase baby weight | 62 | 55.8 |

**Source:** Field Data (2021)

### 4.3.7 Practice of KBC

Majority of the respondents (94.6%, n=105) reported to be practicing KBC at night.

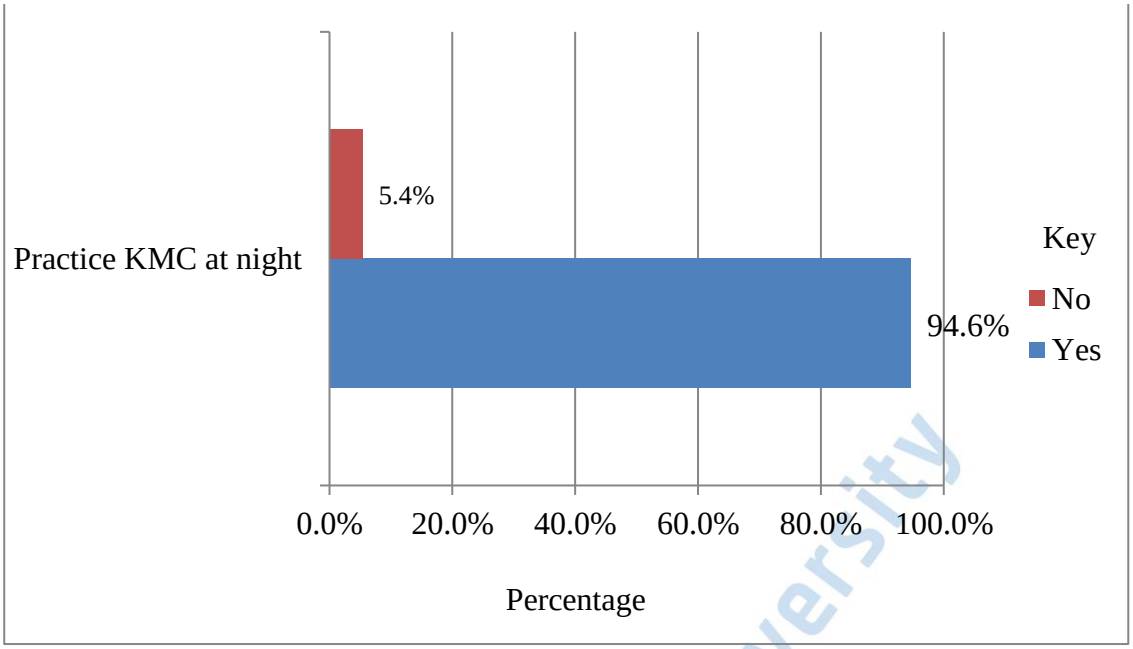


**Figure 5: Practice KBC at night**

The respondents were asked to indicate for how many hours a day they practiced KBC with their babies. Majority (84.7%, n=94) reported to be practicing KBC for more than 15 hours a day, 6.3% (n=7) reported to be practicing KBC for 10-15 hours, similar proportion also reported to practice KBC for 5-9 hours a day and 2.7% (n=2) reported to only practice KBC for less than 5 hours a day. These findings were represented in bar chart shown in figure 5.

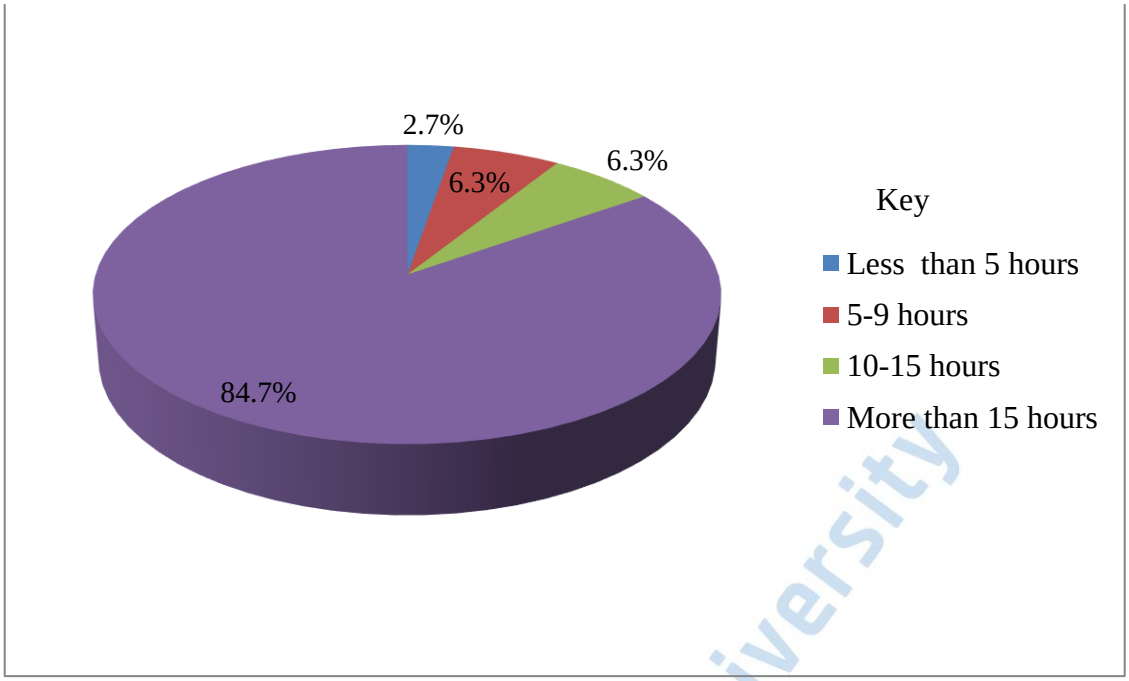


**Figure 6: How many hours the mothers practiced KBC in a day**

In the same study, the mother indicated after how long they started KBC. It was found that 40.5% (n=45) had started KBC immediately, 10.8% (n=12) started KBC in less than 2 hour after delivery and 48.6% (n=54) mothers reported to have initiated KBC after 2 hours post delivery.

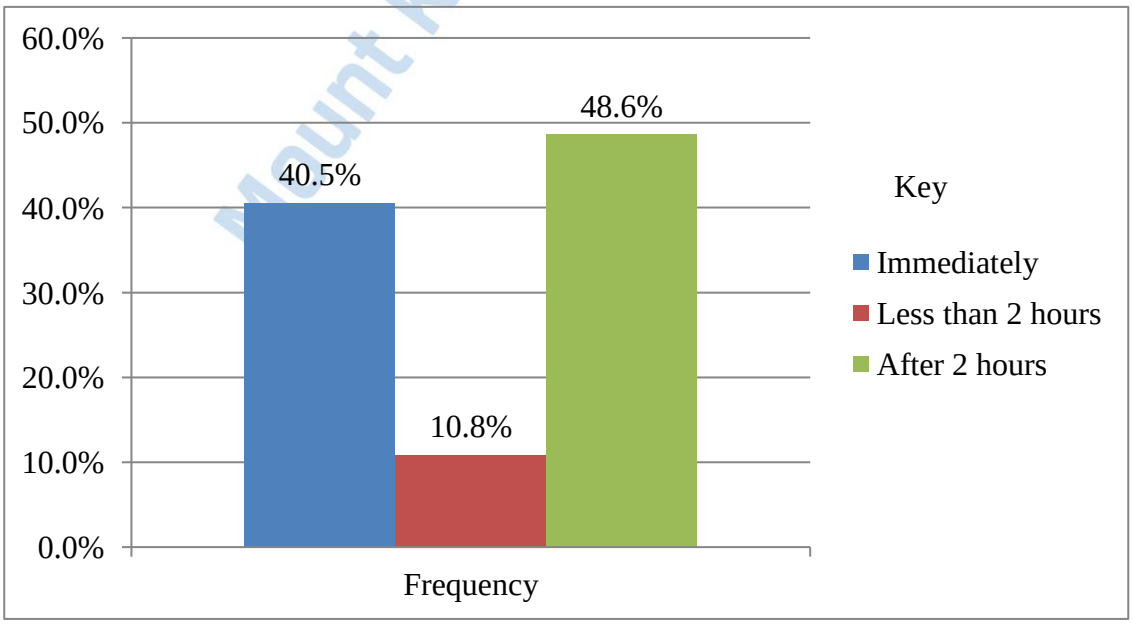

**Figure 7: Time frame when the mothers initiated KBC post delivery**

All those who practiced KBC for more than fifteen hours a day were considered to have good practice of KBC since World Health Organization (WHO) guidelines for KBC recommends at least 3 hourly KBC practice. The other three items that were considered to measure level of practice of KBC included, starting KBC soon after delivery, starting KBC immediately after delivery and practicing KBC at night. All these four factors were computed into a single variable: level of KBC Practice. In the computed variable, individual participants had a range of score from 1 to 4. This practice was further categorized as good KBC practice and poor KBC practice. Those who scored 4 in the four items were considered to have good practice of KMC while those who scored 3 or less than 3 were considered to have poor practice. Therefore, the prevalence of good practice of KBC was found to be at 28%.

**Table 8: Level of practice of KBC**

| Level of KBC practice | Frequency | Percentage |
|---|---|---|
| Good practice | 31 | 28 |
| Poor practice | 80 | 72 |

**Source:** Field Data (2021)

### 4.3.8 Problems associated with KBC

Majority of the mothers (93.7%, n=104) reported to have no problem with KBC, however a small percentage (6.3%, n=7) of the mothers reported to have some problems with KBC.

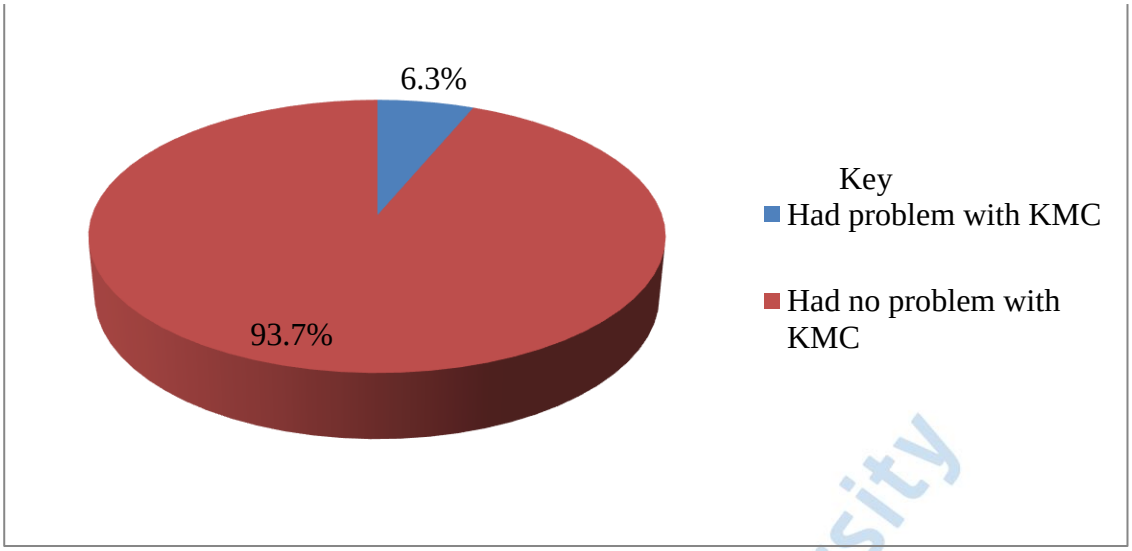


**Figure 8: Prevalence of problems with KBC**

For the mothers who reported to have problems with KBC, they indicated to lack social support to practice KBC, others reported that they were tired of holding the baby in KBC position for long and others indicated not to be conversant with the skill of holding the baby in KBC position. Similar problems were reported in another study by Martime *et al* (2013) which showed lack of support as a key problem.

**Table**

**9: Problems associated with KBC**

| Problems associated with KBC | Frequency | Percentage |
|---|---|---|
| Lack of social support | 5 | 71 |
| Tired of holding baby in KBC | 4 | 57 |
| Lack of KBC skill | 2 | 28 |

**Source:** Field Data (2021)

## 4.4 Institutional factors associated with practice of KBC

**Table 10: Institutional factors and practice of KBC**

| Characteristics | | Poor KBC practice | | Good KBC practice | | Statistics |
|---|---|---|---|---|---|---|
| | | n | % | N | % | |
| KMC laps provision | Yes | 62 | 74.7% | 21 | 25.3% | $\chi^2$ =1.128, df=1, p=0.288 |
| | No | 18 | 64.3% | 10 | 35.7% | |
| KMC support from staff | Yes | 80 | 72.7% | 30 | 27.3% | $\chi^2$ =2.604, df=1, p=0.107 |
| | No | 0 | 0% | 1 | 100% | |
| KMC support from fellow mothers | Yes | 42 | 67.7% | 20 | 32.3% | $\chi^2$ =1.308, df=1 p=0.253 |
| | No | 38 | 77.6% | 11 | 22.4% | |
| KMC education during ANC | Yes | 26 | 65% | 14 | 35% | $\chi^2$=1.554 ,df=1, p=0.213 |
| | No | 54 | 76.1% | 17 | 23.9% | |

**Source:** Field Data (2021)

### 4.4.1 Provision of KMC laps

The mothers reported that in most of the times they are provided with the KMC laps to use when holding the babies in KMC position. More than half of the participants

(74.8%, n=83) reported to have received KMC laps from the hospital to use during KMC sessions.

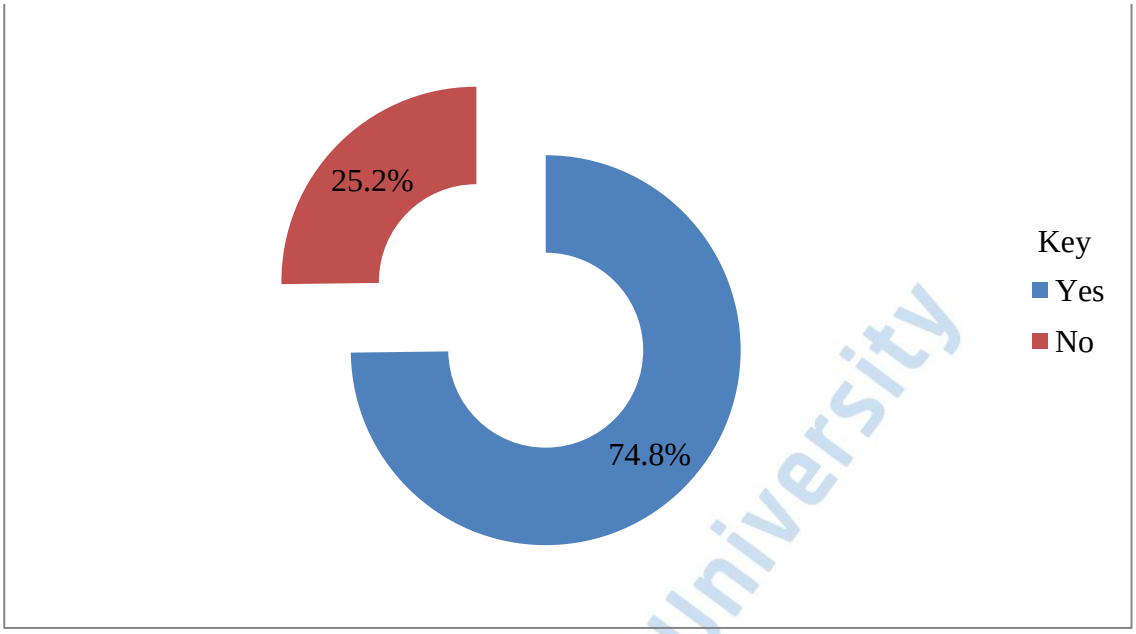


**Figure 9: Provision of KBC laps by the hospital**

Out of the 83 participants who reported to be provided with KBC laps, 21 of them were found to be having good KBC practice and among the 28 who reported to be missing the KBC laps sometimes, 10 of them had good KBC practice. There was a weak association between provision of KBC laps by the hospital and practice of KBC at Phi of 0.101 and a positive correlation of Spearman's' (r) 0.101. However, these results were not significantly affecting practice of KMC at $\chi^2$ (1, N=111) = 1.128, p=0.288

**11: Provision of KBC laps in the hospital**

| Variable | Category | Practice of KBC | | Total |
|---|---|---|---|---|
| | | Poor | Good | |

**Table**

| | | | | |
|---|---|---|---|---|
| Provision of KMC laps to the participant. | Yes | 62 | 21 | 83 |
| | No | 18 | 10 | 28 |
| Total | | 80 | 31 | 111 |

$\chi^2$ (1, N=111) = 1.128, p=0.288

**Source:** Field Data (2021)

### 4.4.2 Reception of support with KBC from nursing staff

Majority of the mothers reported to have received necessary support from the nursing staff. This was indicated by 99.1% (n=110) of the mothers. For the one who indicated not to have gotten necessary support indicated to be missing KBC lap most of the time.

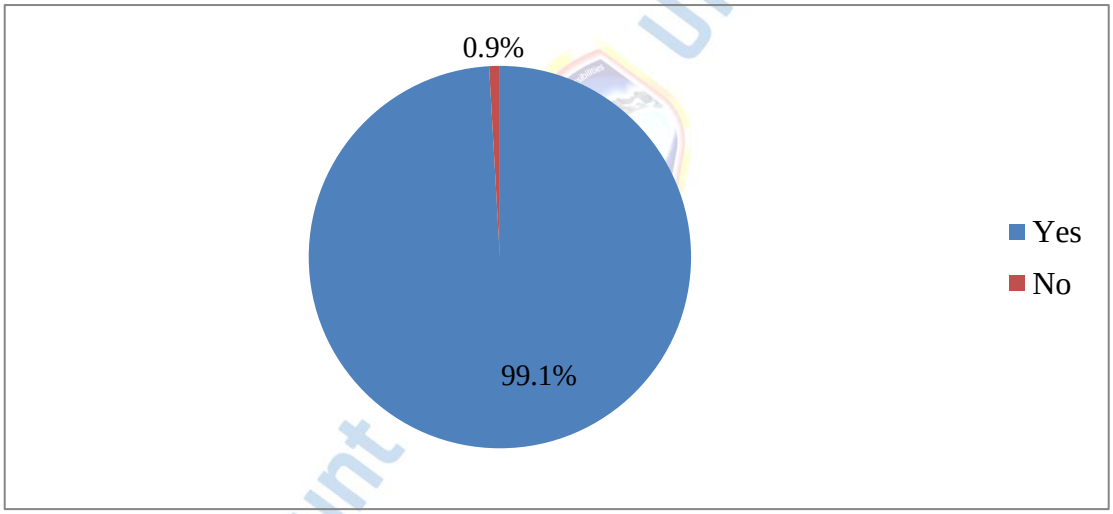


**Figure 10: Reception of necessary support from nursing staff**

Only one respondent reported not to have received necessary support from the nurses and these results were not significantly affecting practice of KBC at p>0.05.

### 4.4.3 Reception of support with KBC from other mothers

The participants indicated to have received support from other mothers. This was especially the newly admitted mothers who received support from the mothers who had

been in the ward for some time by the time of study. This was evident from the results which showed that 55.9% (n=62) mothers had received support from other mothers.

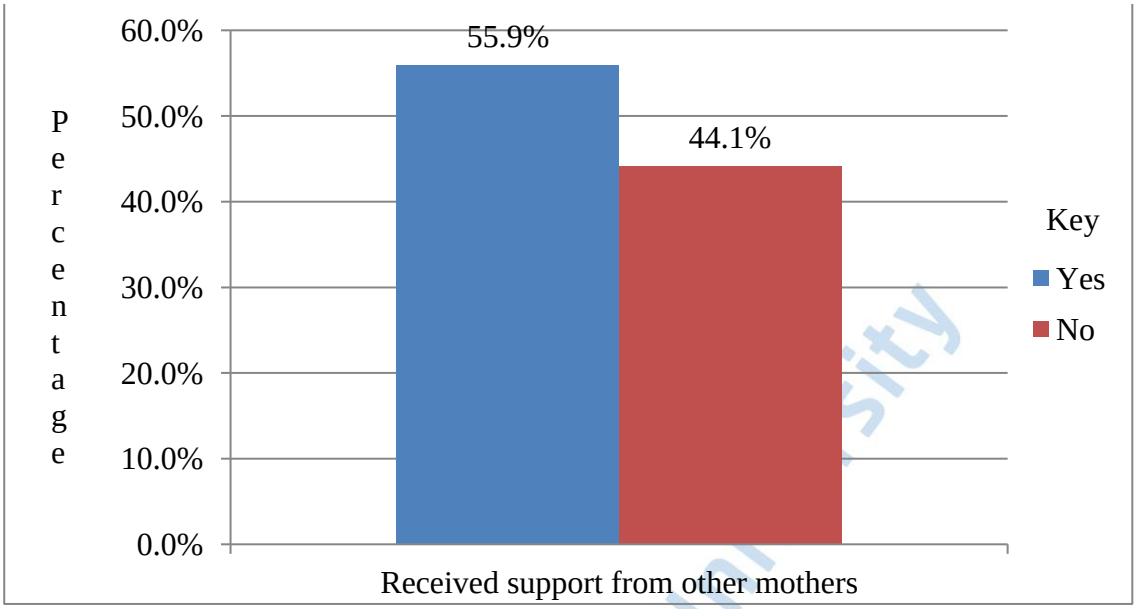


**Figure 11: Reception of support with KBC from other mothers**

Out of 62 mothers who reported to be supported by other mothers for KBC practice, 20 of them were found to have good KBC practice and among 49 who never received support from other mothers, 11 of them were practicing good KBC. There was a weak association between receiving support from other mothers and practice of KBC at Phi of –0.109 and negative correlation of Spearman's' (r) 0.109. The mothers who received support from other mothers in ward were 0.608 times more likely to practice good KBC than those who didn't receive the support (OR=0.608, CI [0.258-1.432]). However, these results were not significantly affecting practice of KMC at $\chi^2$ (1, N=111) = 1.308, p=0.253.

**12: Reception of support for KBC from other mothers in the ward**

| Variable | Category | Practice of KBC | | Total |
|---|---|---|---|---|
| | | Poor | Good | |

**Table**

| | | | | |
|---|---|---|---|---|
| Participant received support with KBC from other mothers in the ward | Yes | 42 | 20 | 62 |
| | No | 38 | 11 | 49 |
| Total | | 80 | 31 | 111 |

$\chi^2$ (1, N=111) = 1.308, p=0.253

**Source:** Field Data (2021)

### 4.4.4 Reception of health education on KBC during pre natal clinics

The mothers reported to have been taught by nurses on duty during the clinics. This was agreed by 36% (n=40) participants.

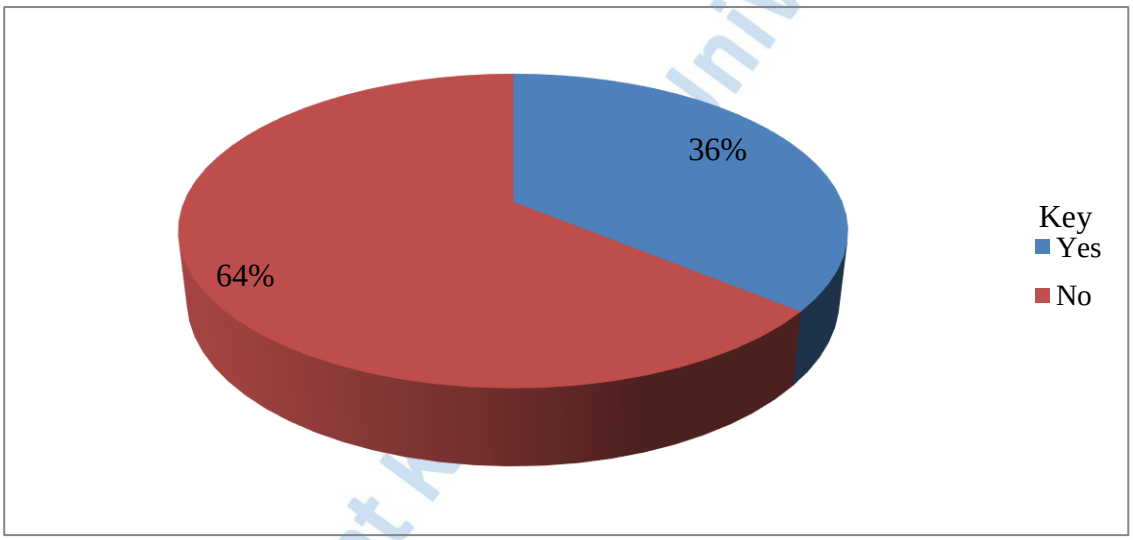


**Figure 12: The participant received health education on KBC during prenatal period**

Among the 40 mothers who reported to have been health educated on KBC during prenatal period, 14 of them were found practicing good KBC while among the 71 who were not educated on KMC during the pre natal period, 17 of them were having good

KBC practice. There was a weak association between health educating the mothers on KBC during pre natal period and actual practice of KBC post delivery at Cramer's V of

0.118 and negative correlation of Spearman's' (r) 0.118. Despite these findings, the study found that the mothers who received the health education on KBC during the prenatal period were 0.585 times more likely to practice KBC post delivery than those who never received the teachings (OR=0.585, CI [0.250-1.365]). However, these results were not significantly affecting practice of KBC at $\chi^2$ (1, N=111) = 1.554, p=0.213. These results are in line with those reported by Rahman *et al*., (2017) on factors affecting KBC, in their study, health education during pre natal period increased the chances of the mothers practicing KBC in post natal period. **Table 13: Health education on KBC during pre natal period**

| Variable | Category | Practice of KBC | | Total |
|---|---|---|---|---|
| | | Poor | Good | |
| Participant received health education on KBC during pre natal period | Yes | 26 | 14 | 40 |
| | No | 54 | 17 | 71 |
| Total | | 80 | 31 | 111 |

$\chi^2$ (1, N=111) = 1.554, p=0.213

**Source:** Field Data (2021)

The researcher probed more on the details of what the mothers were taught, and the findings revealed that that the mothers were taught on benefits of KBC which included; helps maintain baby body temperature (warmth), improving bonding with the mother, improves breathing of the baby (respirations), and promotes growth of the baby. These

results are congruent with the findings of Murila *et al*., (2016) which found KBC to help babies in thermoregulation and weight gain.

### 4.4.5 Antenatal care clinic (ANC) attendance

The mothers reported to have attended ANC at various hospitals. These hospitals include; Mathare North health center (4.5%, n=5), Kayole 1 Hospital (1.8%, n=2), Pumwani maternity hospital (33.3%, n=37), Kasarani health center (5.4%, n=6), Makadara health center (2.7%, n=3), Njiru health center (2.7%, n=3), South B clinic (1.8%, n=2), Kayole health center (2.7%, n=3), Ruaraka health center (1.8%, n=2), Mbagathi hospital (1.8%, n=2), Pumwani health center (1.8%, n=2), pipeline nursing home (1.8%, n=2), Kariobangi South (3.6%, n=4), Kaloleni (0.9%, n=1), Huruma nursing home (1.8%, n=2), St. Vincent Eastleigh (1.8%, n=2), St. John Githurai (1.8%, n=2), Jerusalem clinic (0.9%, n=1), Umoja health center (3.6%, n=4), Bahati health center (4.5%, n=5), Baba Ndogo health center (2.7%, n=3), Huruma lions clinic (8.1%, n=9), Korogocho health center (1.8%, n=2), Eastleigh health center (2.7%, n=3), Dandora health center (1.8%, n=2), Kariobangi North health center (0.9%, n=1), None of the clinics (0.9%, n=1).

## 4.5 Regression analysis

The study found out four determinants of good practice of KBC. These included; level of education of the mother, gestational age of the baby at birth, the baby's birth weight, and age of the baby by the time of the study. These four factors were used to develop a regression model. The factors were entered in the model stepwise, with an entry point of 0.05 and removal point of 0.01. Stepwise forward regression was run followed by backward regression. These produced a model that was fit for the variables under study.

**Table 14: Variables in the equation**

| | B | S.E | Wald | df | Sig. | Exp (B) |
|---|---|---|---|---|---|---|
| Step 0 constant | -0.948 | 0.212 | 20.081 | 1 | .000 | .388 |

**Source:** Field Data (2021)

**Table 15: Omnibus tests of model Coefficients**

| | | Chi-square | df | Sig. |
|---|---|---|---|---|
| Step 1 | Step | 89.623 | 5 | .000 |
| | Block | 89.623 | 5 | .000 |
| | Model | 89.623 | 5 | .000 |

**Source:** Field Data (2021)

**Table 16: Model Summary**

| Step | -2 log likelihood | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|---|
| 1 | 41.861 | .554 | .798 |

**Source:** Field Data (2021)

**Table 17: Variables in the equation**

| | | B | S.E | Wald | df | Sig. | Exp (B) | 95% C.I for EXP(B) Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| Step 1 | What is your educational level? | .914 | .593 | 2.379 | 1 | .123 | 2.494 | .781 | 7.968 |
| | What was the gestation age of this baby? | 2.754 | 1.048 | 6.902 | 1 | .009 | 15.710 | 2.013 | 122.612 |
| | What was the birth weight of this baby? | -.880 | .814 | 1.170 | 1 | .279 | .415 | .084 | 2.044 |
| | How old is the baby now? | -.053 | .850 | .004 | 1 | .950 | .948 | .179 | 5.017 |
| | Constant | 13.874 | 2903.911 | .000 | 1 | .996 | 1060335.402 | | |

**Source:** Field Data (2021)

The results after adjusting for confounding factors indicated that the main determinant of good practice of KBC among mothers nursing their preterm babies in Pumwani hospital was the gestational of their preterm babies.

## 4.6 Discussion of Findings

### 4.6.1 Socio-demographic characteristics influencing KBC practice

Firstly, the study found that the age of the mother was a significant factor in KMC practice. Mothers who were aged 30 years and above were more likely to practice KMC compared to those who were below 30 years of age. This finding is consistent with previous studies that have shown that older mothers are more likely to engage in KMC (Bergh et al., 2013).

Secondly, the study found that the level of education of the mother was significantly associated with KMC practice. Mothers with higher levels of education were more likely to practice KMC compared to those with lower levels of education. This finding is consistent with previous studies that have shown that maternal education is a significant predictor of KMC practice (Charpak *et al*., 2017).

Thirdly, the study found that the occupation of the mother was significantly associated with KMC practice. Mothers who were employed were more likely to practice KMC compared to those who were not employed. This finding is consistent with previous studies that have shown that maternal occupation is a significant predictor of KMC practice (Bergh *et al*., 2013).

Finally, the study found that the number of children that the mother had was significantly associated with KMC practice. Mothers who had fewer children were more likely to practice KMC compared to those who had more children. This finding is consistent with previous studies that have shown that the number of children that a mother has is a significant predictor of KMC practice (Charpak *et al.*, 2017).

### 4.6.2 Maternal knowledge on KBC

The study found that the level of maternal knowledge on KMC was generally low, with only 38.9% of the mothers having adequate knowledge on KMC. The study also found that maternal knowledge on KMC was significantly associated with KMC practice. Mothers who had adequate knowledge on KMC were more likely to practice KMC compared to those who had inadequate knowledge. This finding is consistent with previous studies that have shown that maternal knowledge on KMC is a significant predictor of KMC practice (Chan *et al*., 2017).

Furthermore, the study found that the main source of maternal knowledge on KMC was healthcare providers, with 62.5% of the mothers reporting that they had received information on KMC from healthcare providers. However, the study also found that only 36.6% of the mothers had received information on KMC during antenatal care. This highlights the need for healthcare providers to provide more information on KMC during antenatal care to increase maternal knowledge on KMC.

### 4.6.3 Institutional factors associated with practice of KBC

The study found that the availability of KMC guidelines, protocols and job aids was positively associated with the practice of KMC among the mothers. Mothers who reported that they had access to KMC guidelines, protocols and job aids were more likely to practice KMC compared to those who did not have access. This finding is consistent with previous studies that have shown that the availability of guidelines and protocols can improve the implementation of KMC (Sloan *et al*., 2012).

Furthermore, the study found that the availability of KMC training for healthcare providers was positively associated with the practice of KMC among the mothers.

Mothers who reported that healthcare providers had received KMC training were more likely to practice KMC compared to those who reported that healthcare providers had not received KMC training. This finding is consistent with previous studies that have shown that the training of healthcare providers can improve the implementation of KMC (Bergh *et al.,* 2015).

The study also found that the availability of KMC equipment and supplies was positively associated with the practice of KMC among the mothers. Mothers who reported that KMC equipment and supplies were available were more likely to practice KMC compared to those who reported that KMC equipment and supplies were not available. This finding is consistent with previous studies that have shown that the availability of equipment and supplies can improve the implementation of KMC (Bergh *et al*., 2015).

# CHAPTER FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

This chapter presents the summary of the results, followed by the conclusion drawn from the results and finally makes recommendations for; practice, policy makers and future research. The study assessed socio-demographic characteristics of the mothers, maternal knowledge on KMC and institutional related factors affecting practice of KMC. Each of these objectives was assessed using varied number of items.

## 5.2 Summary of the results

### 5.2.1 Socio-demographic factors affecting practice of KBC

The mothers age was varied and majority (52.3%,n=58) had an age bracket between 25-34 years. When age was associated with practice of KBC, the relationship was not significant. The married mothers were having the largest proportion of the participants (72.1%, n=80), on association of marital status with KBC practice the results were not significant. Another factor that was assessed in the study was religion of the participants which was also not significant. The mothers were mostly (55.9%, n=62) protestants by religion with a few Muslims (8.1%, n=9). On residence of the mothers, it was evident that they hailed from various estates in Nairobi.

The mothers reported to have attained various levels of education, with majority (45.9%, n=51) having secondary level of education. Increase in level of education of the mothers was significantly associated with good practice of KBC at $p<0.05$. On Occupation, majority of the mothers (34.2%, n=38) reported to be business women, however, occupation was not significantly associated with good practice of KBC. The mothers' monthly household income was also assessed and majority were found to be earning

above Kshs. 20 000 but this did not significantly affect their practice of KBC. **$H_0$1** which stated that there was no relationship between socio-demographic characteristics and practice of kangaroo baby care among mothers attending MCH clinic at Pumwani maternity hospital **was accepted.**

### 5.2.2 Maternal knowledge affecting KBC practice

Maternal knowledge was assessed based on reported awareness of the practice and attitude was assessed based on ability to state the benefits of KBC.

Other maternal factors e.g. parity of the mothers was found to be varied. Some were para-1, with majority (46.8%, n=52) being between Para 2-3. However, the parity of the mother was found not to significantly affect KBC practice. The babies were categorized into those who were born between 20 weeks and 28 weeks and those born between 29 weeks and 35 weeks of gestation. Majority were found to have been born after 28 weeks of gestation. On analysis, mothers with babies who were born after 28 weeks showed good practice of KBC than those who delivered before 28 weeks of gestation. These results were found to be significantly affecting practice of KBC at $p<.05$.

Majority of the babies (67.6%, n=75) were born with birth weight of between 1.5kg and 2kg. Mothers whose babies had birth weight of below 1.5kg and above 2kg were found to be less practicing KBC compared to those whose babies were born with birth weight of 1.5kg-2kg. These results were statistically significant at $p<.05$. Also the age of the baby at the time of study was assessed and it was found that mothers with babies who were above 28 days old were practicing KBC more than those whose babies were below 28 days of life. These results were also significantly associated with practice of KBC at $p<.05$. All the mothers reported to have been taught about KBC by the nurses and were aware of the benefits of KBC.

On initiation and practice of KBC, majority (94.6%, n=105) of the mothers initiated KBC soon after delivery, on specific timing, 40.5% (n=45) mothers started KBC immediately after delivery, 84.7% (n=94) of the mothers practiced KBC for more than 15 hours a day. The study also found out that 94.6% (n=105) mothers practiced KBC at night. When a general variable for good practice was computed, it was found that despite all the mothers practicing KBC, those who consistently practiced good KBC were 28% (n=31). Those who didn't practice KBC consistently cited lack of support as a problem they were facing. **$H_0$2** which stated that there was no relationship between maternal factors on kangaroo baby care practice among mothers attending MCH clinic at Pumwani maternity hospital **was rejected.**

### 5.2.3 Institutional related factors affecting KBC

The mothers reported to have been provided with KMC laps, this was supported by majority of them (74.8%, n=83). This finding was not statistically affecting practice of KBC. Almost all the mothers except one reported to have had received the support they needed from the nurses, but this too was not significantly affecting KBC practice. The mother also reported to have received support with KBC from other mothers in the ward. Those mothers received support from other mothers were found to be more likely to practice good KBC but the results were not statistically significant.

The study also found that all the mothers except one had attended Antenatal Care (ANC) clinic in various health centers and clinics. During the prenatal period, 36% (n=40) of the mothers reported to have been told about KBC by the nurses who were serving them. It was found that having this knowledge prenatally increased the chances of good practice of KBC but the results were not statistically significant. It was also reported that during the ANC visits the mothers who received health talks about KMC

were enlightened about its benefits which the mothers were able to name at the time of the study.

**$H_0$3** which stated that there was no relationship between institutional factors on kangaroo baby care practice among mothers attending MCH clinic at Pumwani maternity hospital **was rejected.**

## 5.3 Conclusions

### 5.3.1 socio-demographic characteristics

Of all the socio-demographic characteristics, only increase in level of education of the mothers was significantly associated with good practice of KBC at $p<0.05$.

### 5.3.2 Maternal factors on KBC

All mothers demonstrated good knowledge and understanding of KBC.

As it is impossible to separate mother and baby during postpartum, some neonatal factors were also looked into and it was evident that baby's birth weight below 1.5kg, gestational age at birth below 28 weeks and post-delivery age above 28 days affected

Kangaroo baby care practice negatively.

### 5.3.3 Institutional factors affecting KBC practice

Having knowledge on KBC during pre-natal period, mothers in the ward assisting and supporting one another on KBC and receiving support and training on KBC from the midwives was associated with increased chances of good KBC practice but were not statistically significant in determining KBC practice.

## 5.4 Recommendations

### 5.4.1 Socio-demographic characteristics

The government should increase its sponsorship for free education because increased education levels were associated with good KBC practice. This in the long run will reduce neonatal mortalities and improve the economic status of the nation.

### 5.4.2 Maternal factors on KBC

The midwives should continue educating mothers to ensure they that the high knowledge levels of KBC are maintained.

Based on the researcher's conclusion on the above findings, this study is suggesting that instead of focusing only on initiation and practice of KBC, the institution can consider ways of sharing health messages with mothers whose babies' birth weight is below 1.5 kg, gestational age below 28 weeks, and age post delivery above 28 days to enhance the practice.

### 5.4.3 Institutional factors affecting KBC practice

The institution is doing a commendable job in KC support for mothers, however they can source more baby laps for mothers and share health messages with the KC mothers on importance of good KBC practice even for those whose birth weight is below 1.5 kg, gestational age below 28 weeks, and age post delivery above 28 days. This can translate into improved KBC practice. None of the institutional factors significantly influenced KBC practice. This is evident that the institution was doing a commendable job in support for KC practice.

Mothers with babies birth weight below 1.5 kg, gestational age below 28weeks, and age post delivery above 28 days are reluctant to practice Kangaroo care.

### 5.5 Recommendation for further study

Finally, the researcher would like to suggest other researchers to investigate challenges faced by the mothers, the factors influencing KBC practice among mothers with babies birth weight below 1.5 kg, gestational age below 28weeks, and age post delivery above 28 days attending MCH clinic at Pumwani maternity hospital, Nairobi county.



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## APPENDICES

**Appendix I: Questionnaire**

**Study ID:……..**

**Date:……./……../…….**

Instructions: Do not write your name or nay other personal data on the questionnaire.

Please follow instruction while answering questions in each area.

The information given here will remain confidential.

**Part 1: Socio-Demographic Characteristics** 1.

How old are you? (In completed years) ☐

2. What is your current marital status?

Single ☐

☐

☐

☐

☐

Married

Separated

Divorced

Widow

3. What religion do you follow?

SDA ☐

Muslim ☐

Protestant ☐

☐

Catholic

4. Where do you reside? …….

5. What is your educational level? (Based on last completed grade level)

No formal education ☐

Primary ☐

Secondary ☐

College level ☐

University level ☐

6. What is your current occupation?

Student ☐

House wife ☐

Unemployed ☐

Employed ☐

Business woman ☐

7. What is your monthly household income?

Less than Ksh 1000 ☐

Ksh 1000-4999 ☐

Ksh 5000-9999 ☐

Ksh. 10000-14999 ☐

Ksh 15000-19999 ☐

More than Ksh 20000 ☐

**Part 2: MATERNAL FACTORS RELATED TO KNOWLEDGE ON KMC**

8. What is your parity?

a. 1 ☐

b. 2-3 ☐

c. 4-5 ☐

d. >6 ☐

9. What was the gestational age of this baby?……..

10. What was the birth weight of this baby?.....

11. How old is the baby now?.....

12. Do you know Kangaroo Mother Care?

☐

☐

a. Yes

b. No

13. How soon after delivery did you start with KMC

☐ a. Yes

☐ b. No

14. After how many hours did you start KMC?

a. Immediately ☐

b. Less than 2 hours ☐

c. After more than 2 hours ☐

15. For how many hours per day do you practice KMC?

a. Less than 5 hours ☐

b. 5-9 hours ☐

c. 10-15 hours ☐

d. More than 15 hours ☐

16. Do you practice KMC with this baby during the night?

☐ a. Yes

☐ b. No

17. Please explain in your own words why you think KMC is important?.....

……

……

18. Do you experience any practical problems with KMC?

☐ a. Yes

☐ b. No

19. If you experience any practical problems, could you name them?

a. ……..

b. ……

c. ……..

**Part 3: INSTITUTIONAL FACTORS**

20. Are you provided with KMC laps?

21. Yes ☐

a. No ☐

22. Do you feel that you received adequate support with KMC from the nursing staff?

23. Yes ☐

a. No ☐

24. If not, could you name the support that you needed/would have liked to receive?.....

25. Did you get support on KMC from the other mothers in the ward?

a. Yes

b. No

26. Which clinic did you attend during your pregnancy for pre-natal care?.....

27. Did anybody at the pre-natal clinic inform you about KMC?

a. Yes

b. No

28. If yes, who gave you information on KMC?.....

29. If yes, can you mention some of the things on KMC that you were informed about?

a. …….

b. …….

c. ……

d. ……

**Appendix II: Consent Form**

**TITLE: DETERMINANTS OF KANGAROO BABY CARE PRACTICE AMONG MOTHERS WITH PRETERM BABIES AT PUMWANI MATERNITY HOSPITAL, NAIROBI COUNTY, KENYA**

My name is Dorcas Nzivo; I am a postgraduate student at MKU, College of Health Science, in the Department of Nursing. I want to lead an examination study, which I welcome you to participate in. I'm leading a study on "determinants of Kangaroo baby care practice among mothers with preterm babies" the data will be utilized to fortify serviceable practices and successful guidance for pregnant mothers.

**Strategies to be followed**

Backing in this assessment will require that I present you a couple of requests and no strategy will be performed on you. You save the choice to decrease interest in this assessment. You will get a comparative thought and restorative thought/organizations if you agree to join the assessment and your decision will not change the thought you will get from the middle today or that you will get from another office at later.

It would be ideal if you recall that interest in the investigation is intentional. You may pose inquiries identified with the examination whenever.

You may decline to react to any inquiries and you may stop the meeting whenever. You may likewise quit being in the investigation whenever with no outcomes to the administrations you get from this facility or some other associations now or later on.

**Discomforts and risks**

There are no inquiries you will be posed to that might humiliate or make you awkward. Be that as it may, if this occurs, you may decline to address these inquiries on the off chance that you pick so. You may likewise stop the meeting whenever. The meeting may add around 30 minutes to the time you will take accepting your standard administrations. You may decline to react to any inquiries and you may stop the meeting whenever. You may likewise quit being in the investigation whenever with no outcomes to the administrations you get from this facility or some other associations now or later on.

**Benefits**

In the event that you take an interest in this examination you will assist us with learning how to give compelling data that medicinal services suppliers are passing up a major opportunity that can improve the wellbeing and care of preterm infant and decrease the danger of complexities, you will likewise profit by being exhorted more on the best way to think about the preterm neonate.

**Reward**

Taking an interest in this investigation is completely deliberate and hence no reward will be given at all.

You may decline to react to any inquiries and you may stop the meeting whenever. You may likewise quit being in the investigation whenever with no outcomes to the administrations you get from this facility or some other associations now or later on.

**Confidentiality**

The meetings will be directed inside the wellbeing office. Your name won't be recorded on the poll. The poll will be guarded in a bolted bureau for keeping. Everything will be kept private.

**Contact information**

If you have any questions you may contact Dorcas Nzivo (principle investigator) on

0722640129…….. Dr…Karonjo... (Supervisor)on 0725514358..or
Ms. Esther Mate…(Supervisor)on 0721340463... or the MKU-Ethical Review

Committee Secretariat on……., secretary …….

**Participant's statement**

All of the above information is self-evident to me as it relates to my curiosity about the probe. I was given the opportunity to ask questions, and the answers I requested were satisfactory. My cooperation in this investigation is totally deliberate. I comprehend that I will at present get a similar consideration and therapeutic treatment whether I choose to leave the examination or not and my choice won't change the consideration I will get from the center today or that I will get some other facility at some other time.

Code of participant…….

Signature or thumb print …… Date ……

**Investigator`s statement**

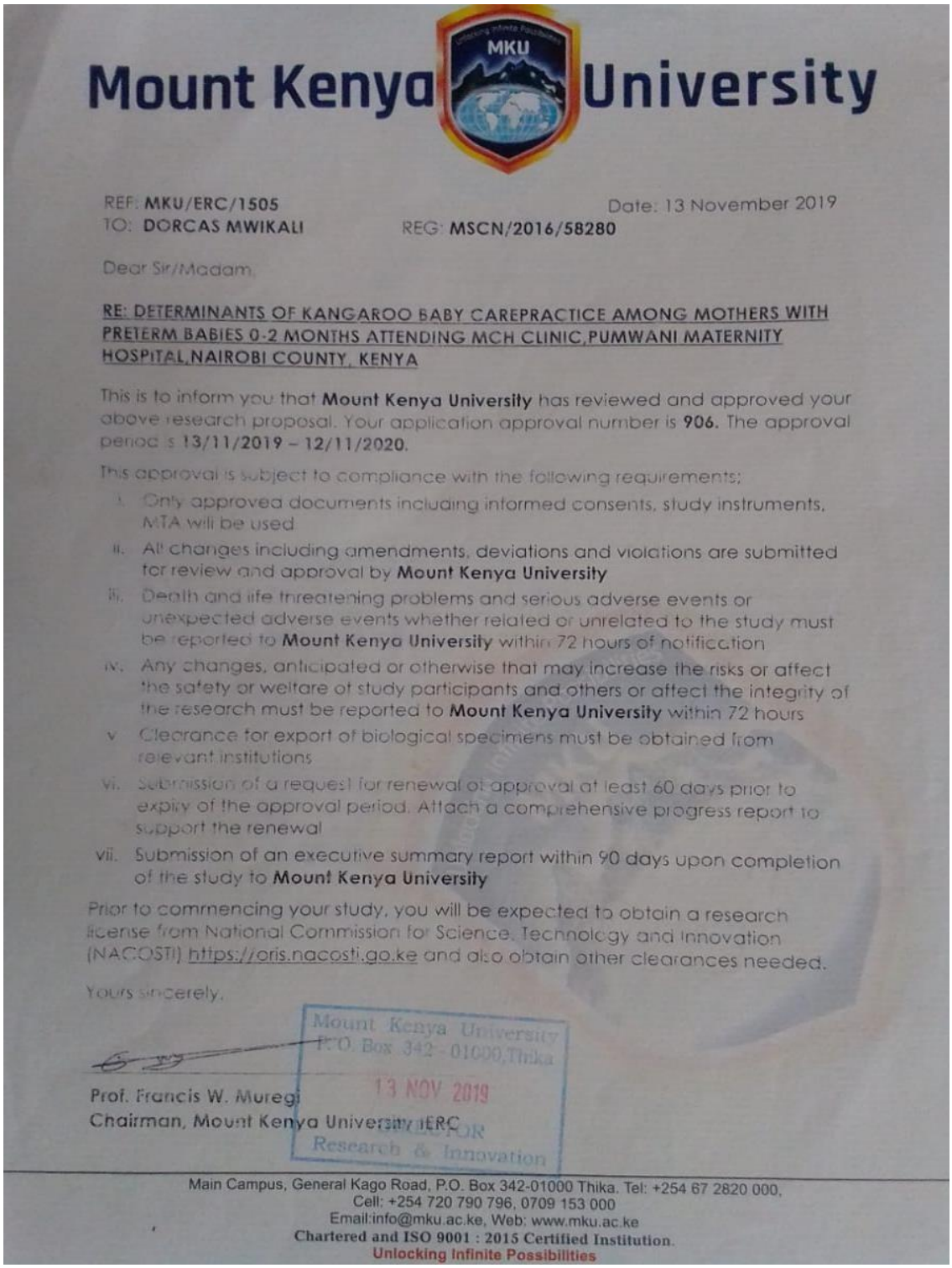
The undersigned has spoken with the volunteer and discussed the study's methods, risks, and benefits in a language understood by the participant.

Name of interviewer……..

……. ……

Interviewer signature Date

## Appendix III: ERC Letter



Mount Kenya University

REF: MKU/ERC/1505 Date: 13 November 2019
TO: DORCAS MWIKALI REG: MSCN/2016/58280

Dear Sir/Madam,

**RE: DETERMINANTS OF KANGAROO BABY CAREPRACTICE AMONG MOTHERS WITH PRETERM BABIES 0-2 MONTHS ATTENDING MCH CLINIC,PUMWANI MATERNITY HOSPITAL,NAIROBI COUNTY, KENYA**

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **906.** The approval period is **13/11/2019 – 12/11/2020.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://oris.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

Prof. Francis W. Muregi
Chairman, Mount Kenya University IERC

Mount Kenya University
P.O. Box 342-01000,Thika
13 NOV 2019
DIRECTOR
Research & Innovation

Main Campus, General Kago Road, P.O. Box 342-01000 Thika. Tel: +254 67 2820 000,
Cell: +254 720 790 796, 0709 153 000
Email:info@mku.ac.ke, Web: www.mku.ac.ke
**Chartered and ISO 9001 : 2015 Certified Institution.**
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**Appendix IV: Postgraduate Letter**

Mount Kenya University

## SCHOOL OF POSTGRADUATE STUDIES

MSCN/2016/58280

10th December, 2019

*The Director,*
*Research Coordination Division,*
*National Commission for Science Technology and Innovation,*
*P.O. BOX 30623 - 00100,*
*NAIROBI.*

Dear Sir/Madam,

RE: DORCAS MWIKALI NZIVO - REGISTRATION NO. MSCN/2016/58280

The purpose of this letter is to introduce the above named student who is pursuing a **Master of Science in Nursing degree** in the **Department of Nursing Education, Leadership, Management & Research** in the **School of Nursing**.

The title of her research is *"Determinants of Kangaroo Baby Care practice among Mothers with Preterm Babies 0-2 months attending MCH Clinic, Pumwani Maternity Hospital, Nairobi County, Kenya".*

She has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data for his research between December, 2019 and March, 2020.

Any assistance accorded to her will be highly appreciated.

Thank you.

Mount Kenya University
School of Postgraduate Studies
P. O. Box 342 - 01000 Thika

Dr. Samuel M. Karenga, Ph.D
Dean, School of Postgraduate Studies

Main Campus, General Kago Road, P.O. Box 342-01000 Thika. Tel: +254 67 2820 000,
Cell: +254 720 790 796, 0709 153 000
Email:info@mku.ac.ke, Web: www.mku.ac.ke
**Chartered and ISO 9001 : 2015 Certified Institution.**
Unlocking Infinite Possibilities

## Appendix V: NACOSTI Authorization

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **493191**

Date of Issue: **03/February/2020**

**RESEARCH LICENSE**

**This is to Certify that Ms.. DORCAS NZIVO of Mount Kenya University, has been licensed to conduct research in Nairobi on the topic: DETERMINANTS OF KANGAROO BABY CARE PRACTICE AMONG MOTHERS WITH PRETERM BABIES 0-2 MONTHS ATTENDING MCH CLINIC, PUMWANI MATERNITY HOSPITAL, NAIROBI COUNTY, KENYA for the period ending : 03/February/2021.**

License No: **NACOSTI/P/20/3252**

**493191**

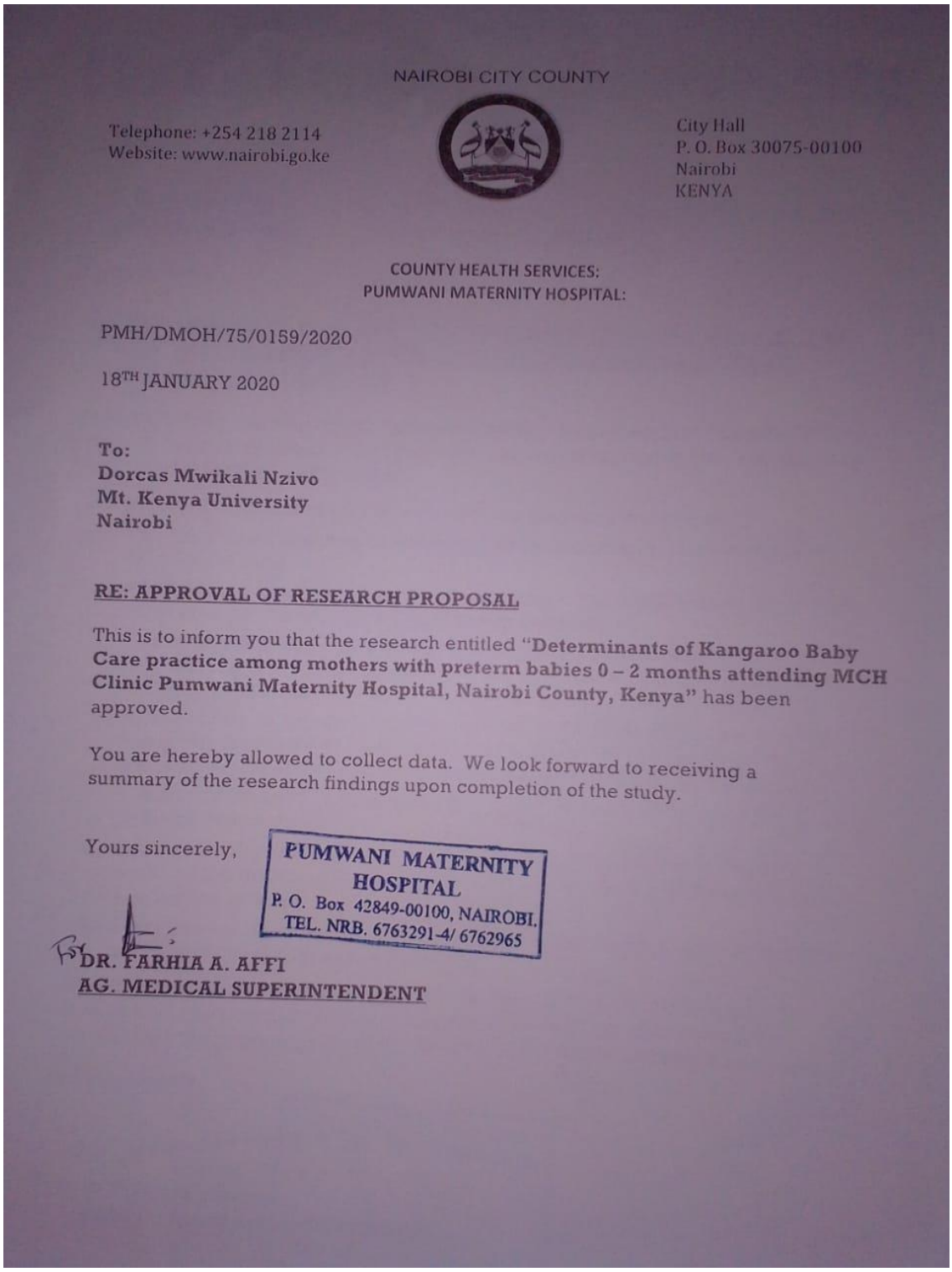
Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

## Appendix VI: Authorization from Nairobi County



NAIROBI CITY COUNTY

Telephone: +254 218 2114
Website: www.nairobi.go.ke

City Hall
P. O. Box 30075-00100
Nairobi
KENYA

COUNTY HEALTH SERVICES:
PUMWANI MATERNITY HOSPITAL:

PMH/DMOH/75/0159/2020

18TH JANUARY 2020

**To:**
**Dorcas Mwikali Nzivo**
**Mt. Kenya University**
**Nairobi**

**RE: APPROVAL OF RESEARCH PROPOSAL**

This is to inform you that the research entitled "**Determinants of Kangaroo Baby Care practice among mothers with preterm babies 0 – 2 months attending MCH Clinic Pumwani Maternity Hospital, Nairobi County, Kenya**" has been approved.

You are hereby allowed to collect data. We look forward to receiving a summary of the research findings upon completion of the study.

Yours sincerely,

PUMWANI MATERNITY HOSPITAL
P. O. Box 42849-00100, NAIROBI.
TEL. NRB. 6763291-4/ 6762965

For DR. FARHIA A. AFFI
AG. MEDICAL SUPERINTENDENT

**Appendix IX: Map of Nairobi County**

**Appendix X: Kangaroo Positioning Images**

**Appendix XI: Similarity Index**

# DETERMINANTS OFKANGAROO BABY CARE PRACTICE AMONG MOTHERS WITH PRETERM BABIES 0-2 MONTHSATTENDING MCH CLINIC, PUMWANI HOSPITAL, NAIROBI, KENYA

*by* Dorcas Mwikali Nzivo

**Submission date:** 13-Apr-2023 05:45PM (UTC+0300)
**Submission ID:** 2063502391
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DETERMINANTS OFKANGAROO BABY CARE PRACTICE AMONG MOTHERS WITH PRETERM BABIES 0-2 MONTHSATTENDING MCH CLINIC, PUMWANI HOSPITAL, NAIROBI, KENYA

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