

**CHALLENGES OF FEEDING PREMATURE BABIES DURING THE FIRST SIX
MONTHS OF LIFE: A SURVEY ON EXPERIENCES BY TEENAGE MOTHERS**

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DECLARATION

I Emily Awinda do hereby declare that this research project is my original work and has not been presented either wholly or partially to this University or any other institution for the award of any degree or diploma.

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APPROVAL

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DEDICATION

I dedicate this work to; my husband George, my children Dona, Becky, Jeff and Taliha.

To my mother Rebecca, a noble lady indeed.

To all mothers of babies that are born prematurely for working tirelessly to feed these angels appropriately.

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ABBREVIATIONS AND ACRONYMS

FGD	Focus Group Discussion
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
LBW	Low Birth Weight
KDHS	Kenya Demographic Health Survey
KNH	Kenyatta National Hospital
MCH	Maternal Child Health
MDG	Millennium Development Goals
MOH	Ministry of Health
NCAPD	National Coordinating Agency for Population and Development
NBCU	New Born Care Unit
NVIVO	A computer software package that aid in qualitative data analysis
SGA	Small for Gestational Age
SPSS	Statistical Package for Social Sciences
UNICEF	United Nations Children’s Fund
UNPD	United Nations Population Division
UON	University of Nairobi
WHO	World Health Organization

OPERATIONAL DEFINITIONS

Exclusive breast feeding	Feeding an infant only on breast milk with no additional foods or liquids, not even water
Feeding challenges	Problems experienced with feeding premature babies
Gestational age	The age of a pregnancy which can be based on the actual beginning of the last monthly period
Low Birth Weight baby	A baby with a birth weight of less than or equal to 2500grams Regard less of gestational age at the time of birth
Premature Baby	A baby born before completion of 37 weeks or 259 days of gestation.
Primary caregiver	The person who takes full responsibility for the baby's feeding.
Small for gestational age baby	A baby smaller in size than normal for gestational age-weight below the 10 th percentile for gestational age
Teenage Mother	Females who have given birth and are within the age bracket of 13 to 19 years.
Weaning	Introducing other foods to a baby's exclusive diet of formula or breast milk.

ABSTRACT

Background: Feeding of premature babies is a challenge and more so by teenage mothers. The challenges experienced by teenage mothers in regard to successful breastfeeding of premature babies are uniquely associated with their age and the surrounding environment (Smith, 2012).

Objective: To determine the challenges faced by teenage mothers when feeding premature babies during the first six months of life.

Methods: A cross-sectional descriptive survey involving 167 teenage mothers whose babies were born prematurely and were within the age group of six weeks to six months was conducted among the teenage mothers attending Maternal Child Health (MCH) clinic at Pumwani Maternity Hospital, Nairobi. Both quantitative and qualitative data was collected using a semi-structured questionnaire and a focus group discussion guide respectively. Quantitative data was analyzed using SPSS version 20 while the qualitative data was categorized and analyzed and references made based on the study themes. Descriptive statistics was used to examine quantitative variables. Person's Correlation Coefficient was used to test the association and significance between the variables. Confidence interval was set at 95%, p value at <0.05.

Results: Results were presented in form of frequency tables, charts, graphs and narrative explanation. Majority (68%, n=115) of the mothers used breastfeeding method to feed their babies. Teenage mothers aged 18 to 19 years were likely to exclusively breastfeed compared to those within the age bracket of 15 to 17 years. Majority (82.6%, n = 138) of the mothers fed the babies on demand. Feeding options of the babies were influenced by the health care providers, family members and peers. More than half (52%, n = 87) of the respondents reported insufficient breast milk supply as a challenge they faced when breastfeeding the baby among other challenges.

Conclusion: Not all the babies were exclusively breastfed for the first six months of life. The babies were introduced to other feeds before attaining the age of six months. This is because teenage mothers perceive they have insufficient breast milk supply for the babies. The mothers' decision on feeding options during illness depends on advice they get from family members among other people around them.

Recommendations: Creation of awareness among the teenage mothers and the significant members of their families on importance of breastfeeding exclusively before six months of age is necessary. Initiation of interventions that will improve lactation among teenage mothers is necessary. There is need for technical and positive family support to improve the feeding practices among teenage mothers at home.

CHAPTER ONE

1.1 Introduction

Premature baby is defined as a baby born before completion of 37 weeks of gestational period while teenage mother refers to a female between the ages of 13 to 19 years who has become pregnant and is a parent to her child (WHO, 2012). The birth of a premature baby can bring considerable emotional stress to the mother and thus the families (Shaikh, 2013). A teenage mother's challenges in regard to successful breastfeeding are uniquely attributed to her age and the prevailing circumstances (Smith, 2012). Studies done have associated premature births to teenage pregnancy (Birungi, 2011). Premature babies need adequate nutrition for survival and proper development (Price and Groh-Wargo, 2013). These babies therefore require special attention because of their vulnerability (WHO, 2012).

1.2 Background of the Study

Approximately more than fifteen million live births, (10%) of preterm babies occur each year while their mortality rate is approximated to be one million world-wide (Wood, 2013). Africa and Asia have the highest preterm birth rates at 31% and 54% respectively totaling to 85% as reported by (WHO, 2012). Approximately thirteen million (10% world total) teenage pregnancies are reported every year (Ugboma, 2012). Among the developed world, United States of America (USA), leads in the rates of teenage mothers while in the developing countries, the Sub-Saharan Africa has the highest numbers (53%) teenage mothers (Achoka, 2012).

It was projected 18.1 million girls will give birth before age 15 and 18 in Sub-Saharan Africa by the year 2020 (UN, 2013). The United Nations Populations Division (UNPD) world prospects revealed Kenya's teenage birth rate in 2009 was 98.52 births among 1000 women aged 15 to 19 years.

Preterm delivery is one of the adverse child out comes in teenage pregnancy (Birungi, 2011). The chances of survival for the preterm babies differ across the world (Law, 2013). More than

half of the global neonatal death complications are related to prematurity and are from the Sub-Saharan Africa (WHO, 2012).

The Millennium Development Goal (MDG) number 4 had a focus on reducing child mortality rate by two thirds between 1990 and 2015 (WHO, 2012). A study done in East Africa by Tanya, 2012, revealed there was persistent high neonatal mortality rate within the Sub-Saharan Africa at 41 per 1000 live births. According to Gladstone, (2011), babies who are born prematurely have higher chances of dying compared to the term babies and the infants are at a greater risk of getting malnutrition and developmental delay compared to term babies. Children born of teenage mothers are at a greater risk for educational disabilities and mental disorders (Dawn, 2012 and Gladstone, 2011). The Kenyan Demographic and Health Surveys (KDHS) of 2008 / 2009, revealed Kenya was among the forty seven countries within the Sub-Saharan Africa contributing to more than 90% maternal and child mortality. The KDHS 2008/09 revealed deaths of infants within the neonatal period was about 60%. Many children who survive the neonatal period in Kenya are still at risk of dying within infancy period (UNICEF, 2011). The infant mortality rate in Kenya was 48% by 2011 (UNICEF, 2011). Hence, improvement of the survival chances for preterm babies will help the countries within the Sub-Saharan region achieve the United Nations (UN) MDG number 4, a reduction in young child deaths by two thirds (WHO, 2012).

1.3 Statement of the Problem

The KDHS, 2008/09 reported almost half of the population in Kenya is below the age of 18 years. While the National Coordinating Agency for Development (NCAFD) report reveals about 32% of uneducated teenage girls start child bearing (NCAFD), 2011, and 26% of teenagers give birth by the age of 18 years (UNICEF, 2011) in Kenya. At Pumwani Maternity Hospital, approximately 2400 deliveries are recorded every month; out of these deliveries, about 420 are preterm deliveries. According to Birungi, (2011), preterm delivery is associated with teenage mothers. Teenage mothers are young girls who are still growing and are not prepared

physiologically, social economically, as well as psychologically for demands of motherhood (Achoka, 2012). Hence, the teenage mother who is still undergoing developmental challenges of adolescence, require attention of another person. In the event that these mothers give birth, this compounds the problem since she is expected to deal with multiple issues while caring for the baby. Feeding is an essential aspect in the care of the premature baby. Therefore there is demand for much effort from the teenage mother to meet the expected feeding requirements associated with prematurely born baby. The teenage mother is likely to face some challenges in the course of feeding her baby when born prematurely.

1.4 Justification of the Study

Teenagers are a population faced with many challenges. Coping with the responsibility of appropriate feeding of the vulnerable prematurely born babies, could be quite challenging to the teenage mother. Among other challenges the teenage mothers experience in the course of feeding their babies includes potential social embarrassment of breastfeeding in public, lack of technical support about breastfeeding while at home, breastfeeding that transgress their own social norms, and lack of own freedom to associate with peers at the expense of feeding the baby. With such challenges, the teenage mother may not give her baby the appropriate amount of feeds, at the required frequencies and using the appropriate feeding methods. The premature babies have special needs to be taken care of. Hence, there is need for appropriate feeding. Appropriate feeding in the first six months of life for a prematurely born baby is important to help the babies grow up and develop well. It is necessary to identify supportive mechanisms to help the teenage mothers adopt appropriate feeding practices while caring for their premature babies at home to help reduce deaths associated with prematurity.

1.5 OBJECTIVES

1.5.1 Broad Objective

To determine the challenges of feeding premature babies experienced by teenage mothers during the first six months of life.

1.5.2 Specific Objectives

- i. To determine the types of feeds given to premature babies in the first six months of age.
- ii. To determine the methods used by teen mothers to feed premature babies within the first six months of age.
- iii. To establish the frequency of feeding premature babies by teenage mothers within the first six months of age.
- iv. To identify factors that influence feeding of prematurely born babies by their teenage mothers during the first six months of age.

1.6 Research Questions

- I. What types of feeds are given to the premature babies by their teenage mothers at home?
- II. What feeding methods are practiced by the teenage mothers post discharge?
- III. How often are the premature babies fed by their teenage mothers after discharge?
- IV. What factors influence teenage mothers' feeding of their prematurely born babies at home?

1.7 Research Hypothesis

Teenage mothers are least likely to exclusively breastfeed their premature born babies on demand up to six months of age.

1.8 Benefits of the Study

The findings of the study are helpful for designing educational and support programs focused on teenage mothers of prematurely born babies below six months of age to enable them effectively feed the babies at home.

1.9 Theoretical Framework

Callista Roy's Adaptation model was utilized in the study. Adaptation is the central feature and core concept of the model. Problems in adaptation arise when the human adaptive system is unable to cope with or respond to stimuli from the environment so as to maintain integrity of the system. The adherence to prescribed feeding regimens for a premature baby by a teenage mother was subject to many factors, some within her control and others are out of her control. The adapted feeding practices were dependent on both the teenage mother's ability to sustain the feeding practices and the prematurely born baby's ability to feed as was dictated by the existing circumstances. Such circumstances were maternal age, education, marital status, the baby's degree of prematurity by gestation and birth weight.

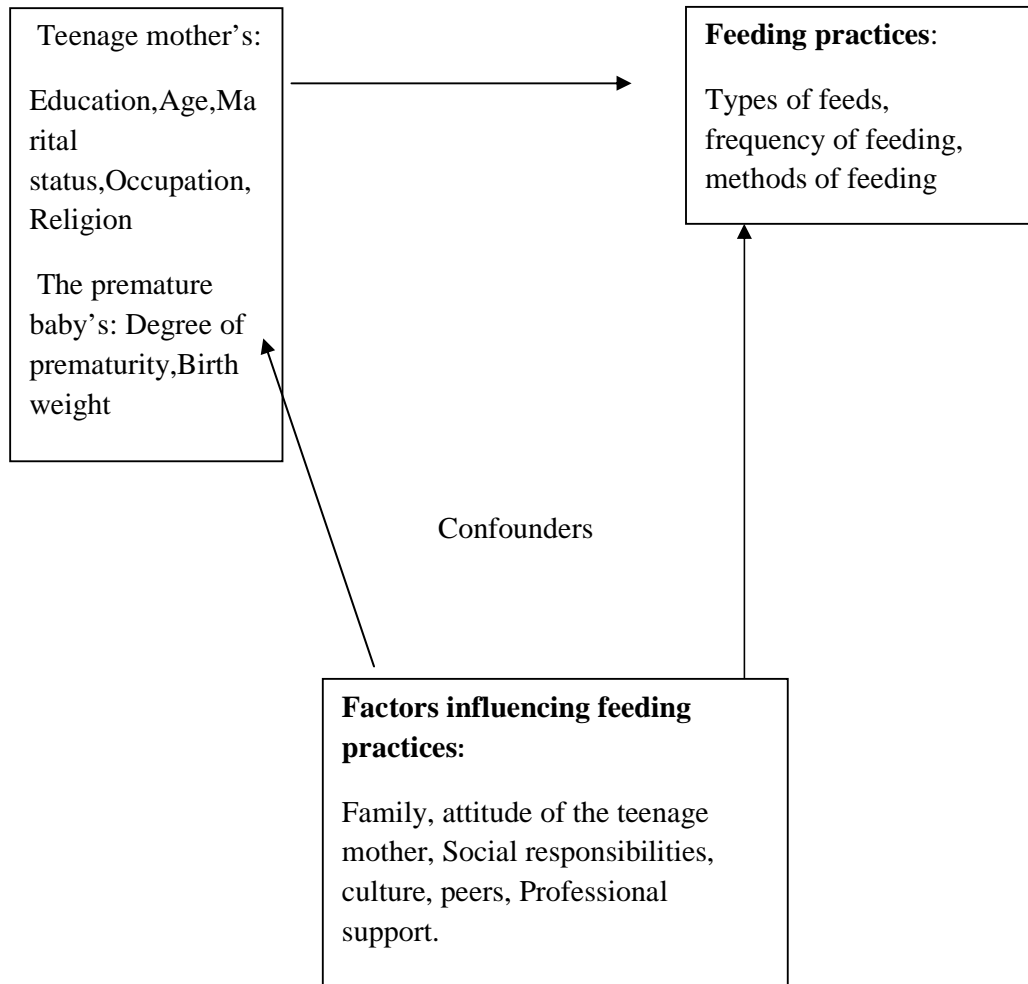
Teenage mothers within the age bracket of eighteen to nineteen years were more likely to exclusively breastfeed their babies compared to the mothers within the age bracket of fifteen to seventeen years. Maternal marital status and educational level were not statistically related to the feeding method the mothers used. There was a relationship and a statistical significance between the birth weight and the current weight of the babies ($r = -1$) and ($p = 0.00$) respectively. Despite the low weight at birth, the current weight of the babies had increased.

1.10 Conceptual Framework

Figure 1.1 Conceptual Frame Work

Independent variables

Dependent Variables



CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

It was a projected 18.1 million girls will give birth before age 18 and 15 years in sub-Saharan Africa by the year 2020 (UN, 2013). Preterm delivery is one of the outcomes in teenage pregnancy (Birungi, 2011). Approximately, fifteen million preterm live births occur every year across the world, Law, (2013) and an approximate of one million die each year (Wood, 2013). The chances of survival of these babies are varied across the world. Babies who are born prematurely are at high risk of dying compared to the term babies and the infants are more likely to have malnutrition and delayed milestones compared to term babies (Gladson, 2011).

2.2 Types of Feeds

Breast milk is the preferred feed for the preterm babies because it has the essential nutrients for the baby and easy for the baby to tolerate (Law, 2013). Breast milk provides several benefits to a baby born prematurely such as protection against infection (Lawson, 2012). Breast milk enhances the baby's neurological development as well as reducing the chances of nosocomial infections minimizing complications during hospitalization through to discharge (Pinkerton and Wilkinston, 2012).

A study done in South Africa by Ijumba, (2012) revealed teenage mothers gave their babies other feeds besides breast milk as early as at one month. The mothers reported they had insufficient breast milk and some feeds served as medicines. The study revealed babies were fed on formula milk, commercial baby foods, porridge, water, sugar water, tea and local brew by their grandmothers. Porridge and formula milk were regularly given to infants at the age of one month (Nor, 2012). A another study done among teenage mothers in United States of America revealed teenage mothers gave their babies formula feeds because of influence from their families (Smith, 2012). However, some teenagers had intentions to breastfeed their babies even before delivery

(Condon, 2012). These group of teenage mothers said breast milk was cheap compared to formula milk. In addition, teenage mothers did not like waking up at night to prepare formula milk. In his study, Dawn, (2012) established that 70.2% of teenagers had the intentions to exclusively breastfeed compared to 75.9% adults. The protein content in formula feeds is reduced because of sterilizing the formula (Price and Groh-Wargo, 2013). This has an implication that the teenage mothers as much as they are well informed of the types of feeds to give to their babies technical support to give the appropriate feeds is necessary.

In the current era of HIV/AIDS, some teenage mothers in Kenya would prefer formula feeds for their baby (MOH, 2013). As per Ministry of Health-MOH, (2013) guidelines, these mothers can give breast milk exclusively for the first six months then add complementary feeds without abruptly stopping the breast milk and such an option can be discussed prior delivery.

2.3 Feeding Methods of Premature Babies by the Teenage Mothers

Breastfeeding method is considered by some teenagers to be easier than formula feeding (Condon, 2012). Some teenagers perceive formula feeding to be an expensive and labor intensive method (Condon, 2012). However, Kate, (2014) identified some mothers preferred bottle feeding method because it is less restrictive and they can be assisted to feed the baby by other people. Continued breastfeeding after discharge can be motivated by the health care professional while in the New Born Care Unit (NBCU) (McGrath, 2013). Sometimes teenagers are well aware of the benefits of breastfeeding method, but they choose bottle feeding method because it is the accepted norm among their peers (Condon, 2012). A peri-urban South African community study by Ijumba, (2012), revealed teenage mothers did not choose to breastfeed their babies because they perceived constraints, embarrassment, loss of freedom, sagging breasts, and peer influence among other reasons. The mothers thought they would lose their beauty and eventually not be attractive to their boyfriends (Ijumba, 2012). There is need to intervene appropriately in terms of

policy making and implementation to help the large population of teenage mothers breast feed their babies according to the WHO's recommendations.

Smith, (2012), identified many reasons to unsuccessful breastfeeding among teenage mothers to include: lack of skills and knowledge for successful breastfeeding while attending to other responsibilities such being a student or employed, unpleasant moments of pain and leaking and inadequate health care support. In the United States of America, many teenage mothers lack social support to breastfeed due to the fact that the family members advocated for use of other feeding methods such as bottle feeding. According to Tucker, (2011), teenage mothers would prefer to initiate breastfeeding but it is not done exclusively because they opt to bottle feed when outside their homes.

2.4 Frequency of Feeds for a Preterm Baby

Owing to the vulnerability of the prematurely born baby, the teenage mother who is the primary care giver to the baby should be well acquainted with the frequency of feeding her baby while at home (WHO, 2012).

The need for optimal amount of nutrition that can be met with proper feeding frequencies for preterm babies is very critical (Price and Groh-Wargo, 2013). This is because hyperglycemia especially in the very young premature babies is strongly associated with morbidity and mortality (Arsenault, 2012). On the other hand, hypoglycemia has bad outcomes like impaired neurological development (Arsenault, 2012). Increased frequency of feeds to the babies has been viewed to be an inconvenience to the mothers (Kate, 2014).

Smith, (2012) identified teenage mothers initiated breastfeeding but the duration was short. According to WHO, (2011), reported by Renfrew, (2013), initiation of breast feeding and its continuation is practiced at different rates across the world. These variations could be attributed

to factors such as availability of care, support from health professionals and family/community, policy relating to infant feeding, societal culture/norms among others (Renfrew, 2013).

The government of Kenya in line with the WHO report (2012) recommendations advocates for breastfeeding initiation within the first hour of life. However, according to Kimani-Murage, (2011), a study done in Nairobi Kenya, 40% of the infants are not breast fed within this period. This indicates that many newborns including those born to teenage mothers are denied the opportunity to get the essential nutrients for survival immediately they are born. While in the hospital following delivery, preterm babies are fed three hourly to ensure that they are getting enough feeds to meet the metabolism of the body (MOH, 2013). Once they are able to breastfeed then the feeding is done on demand exclusively for the first six months unless contra indicated. Thereafter, the babies are breastfed up to two years of age or even beyond (MOH, 2013).

2.5 Factors Influencing Feeding of Premature Babies by the Teenage Mothers

Teenage mothers are not against the health benefits of breast feeding (Tapp, 2010). But these mothers have decided their own personal benefits that hinder them from appropriate feeding practices. The mothers perceive breastfeeding a practice that is not socially supported in public areas (Tapp, 2010). They are faced with challenges to breast feed outside their homes as much as the health care professionals advise them to express breast milk or to find a private place to feed (Tucker, 2011). The common barriers to breast feeding initiation and it's continuation identified by Tucker, (2011) and Ijumba, (2012) among teenage mothers, are embarrassment, loss of freedom because the mothers have to attend to their daily activities which may include going back to school or employment. There is need to prepare these mothers well of what they should expect early enough in the prenatal period, at birth and post-delivery so that they can have smooth transition to their new roles of feeding their babies. Teenage mothers that get professional and family support are able to cope well with the early days of breast feeding because they have been prepared on what to anticipate (Condon, 2012).

2.5.1 HealthCare Professionals Influence

The extent to which health professionals influence the decisions made by teenage mothers on feeding practices is varied (Tucker, 2011). Sometimes this may have a positive bearing on feeding practices and some teenage mothers may choose to breastfeed because they are advised by the healthcare professionals (Condon, 2012). On other hand, some teenagers may simply not follow what they have been told by the health professionals when they perceive too much pressure is put on them (Condon, 2012). A study by Nor, (2012), identified some mothers silently rejected the advice given by health care providers on feeding when it conflicted with the mother's perspective about what is appropriate. Professional support in the early days of the post-partum period both in the hospital and at home is important to help address the technical issues the teenage mothers are likely to face with the breastfeeding (Tucker, 2011). Because majority of these mothers discontinue to breast feed within the first four weeks due to technical problems they are faced with (Smith, 2012).

2.5.2 The Family Support

Family support is a source of influence to feeding practices by teenage mothers because the teenage mothers tend to take up similar feeding practices they have seen being done by their mothers or other close relatives (Kate, 2014, Tucker, 2011, and Tomeleri and Marcon, 2009). Female members in the family act as role models but may lack technical guidance to help many of the teenage mothers tackle some problems they face while feeding at home (Tucker, 2011). For example some teenage mothers regard it a family practical culture to give their babies tea (Tomeleri and Marcon, 2009). Grassley, (2010) identified teenage mothers get influence from their family members such as their mothers and fathers of the infants on feeding their babies.

2.5.3 Influence by Peers

Peer influence is a factor to the way teenage mothers may feed their babies. Some teenage mothers may rely on the negative information from their friends about the negative experiences

on breast feeding like nipple pain and this may influence them not to choose to breastfeed (Tucker, 2011). Few teenagers because of cultural pressures from their peers for example the demand to bottle feed the baby, take it to be a normal practice (Condon, 2012).

The technical guidance together with moral support of reassurance may help build confidence in the teenage mothers and subsequently lead to appropriate feeding methods (Smith, 2012). According to Babafemi and Adeleke, (2012), breastfeeding teenage mothers who are married receive good psycho-social support. But the fact that most teenagers are school goers points to the schools also to be in a position to give the necessary assistance to those who may become mothers to meet both their academic goals and their mother role of feeding their babies (Sheerana, 2013).

CHAPTER THREE: RESEARCH METHODS

3.1 Study Design

This was a cross sectional descriptive study where both quantitative and qualitative data were collected to determine the feeding challenges experienced by teenage mothers of premature babies up to six months of age.

3.2 Study Area

The study was conducted at Pumwani Maternity hospital. The hospital offers maternity services and is located on the eastern part of Nairobi County. The hospital was founded in 1926 through a charitable organization called Lady Grigg Welfare League. Pumwani Maternity Hospital is the largest maternity hospital in East and Central Africa (Ndwiga, 2013). Pumwani Maternity Hospital is within the jurisdiction of Nairobi County but there is a hospital management board that over sees running of the daily activities within the hospital. The Hospital has antenatal and postnatal services, a maternity ward and a clinic, specialized nursery for premature babies and services for Prevention of Mother to Child Transmission of HIV (PMTCT). Immunization, supplementary nutrition, counseling and referral are among the Hospital's vital follow up care as out-patients. This study was conducted at the Maternal Child Health (MCH) clinic of the hospital. At the time of the study, the number of normal deliveries in a day at the Hospital was ranging from 60 to 100 while Caesarean Sections deliveries were between 10 and 15. Out of these total daily deliveries, 12 to 15 were preterm deliveries.

3.3 Study Population

Study population comprised of randomly selected teenage mothers aged 13 to 19 years whose babies were born prematurely and the babies were six weeks to six months of age and were attending the MCH clinic at the Hospital.

3.4 Sampling and Sample Size

3.4.1 Sampling Frame

The sampling frame included postnatal mothers aged 13 to 19 years with infants aged six weeks to six months attending the MCH clinic at Pumwani Maternity Hospital. The sampling frame was generated through screening of the mothers that attend the clinic.

3.4.2 Sample size determination

Determination of sample the size was done using the Fisher et al., 1998 formula, $n = Z^2 P (1-P)/d^2$ Where n is the desired sample size, Z = 95% confidence interval or 1.96 standard normal deviate, P = Estimated proportion of teenage mothers whose babies were born prematurely. Prevalence of 50% according to Mugenda and Mugenda (2003) was used. P = 0.5, d = Degree / level of precision set at +-5% = 0.05. Average normal daily deliveries at Pumwani maternity hospital was 80 which translated to 2400 per month. While the daily average premature baby deliveries was 14 translating to 420 premature deliveries per month. This gave 17.5 as percentage of premature babies in the hospital. Substituting this in the formula,

$$n = 1.96^2 * P(1-P) / d^2$$

$$d^2$$

$$n = \frac{1.96^2 \times 0.5 \times 0.5}{0.005^2}$$

$$0.005^2$$

$$n = 384$$

Since the target population was less than 10,000, the sample size was adjusted using the formula:

$$nf = \frac{n}{1 + (n/N)}$$

Where: nf = desired sample size

n = sample size of population more than 10 000 (calculated as 384)

N = estimate of the population size of premature babies born at Pumwani Maternity Hospital every month (420).

Therefore; nf = $\frac{384}{1 + (384/420)}$

$$= \frac{384}{1 + 0.9143}$$

$$= \frac{384}{1.9143}$$

$$= 200.59$$

nf = 384;

1.9143

Thus desired sample size (nf) was 200.59 approximated to the nearest whole number it was 201.

3.4.3 Selection of Study participants (Study procedures)

Upon approval of the research proposal by the Ethics and Research Committee of Kenyatta National Hospital/University of Nairobi (ERC KNH/UON), permission was sought from the Pumwani Maternity hospital management board thereafter the officer in-charge of the MCH clinic to be allowed to conduct the study. A systematic random sampling technique was used at the MCH clinic as investigator screened for those mothers that were eligible for the study. The

first participant was selected randomly from the mothers attending the MCH clinic who met the eligibility criteria. Then a sampling interval to select every n^{th} participant was determined by dividing the total population with the desired sample size (premature babies' population at Pumwani Maternity hospital; 420 divided by 201 equals 2.089 ~ 2). Thus every second mother to arrive at the clinic during the study period that met the eligibility criteria and consented to participate in the study was interviewed.

The investigator with the help of two trained research assistants explained to the mothers who had consented to participate, the purpose and the details of the study as per the information sheet (Appendix 1). Upon the participants accepting to participate and signing the consent form, data collection using a semi-structured questionnaire commenced in a private room for privacy and confidentiality. A Focus Group Discussion (FGD) was conducted on a different day with the mothers who had consented to participate and had been given appointment for the discussion. The teenage mothers were asked if the baby was born before completion of nine months of pregnancy period. Nine months of pregnancy is equivalent to 259 days (37 weeks gestation period). In addition, the mother's MCH clinic booklet was to confirm the maturity of the baby at birth using the mother's last monthly period (LMP) and date of delivery. Besides verbal inquiry, the age of the mother was confirmed using the records in the MCH clinic book and the national identity card for those aged 18 to 19 years.

3.4.4 Inclusion Criteria

- Teenage mothers aged 13 to 19 years with premature babies aged six weeks to six months attending the MCH clinic at Pumwani Maternity Hospital. These are babies who were born before completion of 37 weeks gestation period (nine months of pregnancy).
- Eligible teenage mothers who consented to participate in the study.

- Teenage mothers aged 13 to 17 years whose parents/guardians consented for their participation in the study.

3.4.5 Exclusion Criteria

- Term babies, normal weight babies, small for gestation age babies (SGAs) appearing small in body as prematurely born but were born after completion of 37 weeks gestation period.
- Low birth weight babies (LBW) born after completion of 37 weeks gestation period.
- Mothers above 19 years of age and those below 13 years of age.
- Teenage mothers whose babies were born prematurely and the babies were not within the age bracket of six weeks to six months.
- Teenage mothers who did not consent for the study
- Teenage mothers of age 13 to 17 years whose parents/guardians declined for their participation in the study.

3.5 Data Collection

3.5.1 Study Instruments

A semi-structured questionnaire and FGD guide were used to collect quantitative and qualitative data from the teenage mothers respectively. The questionnaire contained structured questions on demographic details of the mothers and the babies, types of feeds, methods of feeding, frequency of feeding the premature baby and factors that influence feeding practices of these babies by their teenage mothers at home. The FGD guide consisted of questions that guided discussion on teenage mothers' views on feeding of their premature babies at home.

3.5.2 Pre-testing of the Questionnaire

The data collection tools (questionnaire and FGD guide) were pretested at the KNH MCH among fifteen teenage mothers. The feedback obtained was used to validate the tools. Pretesting of the questionnaire assisted in the making of clarifications on respondents' understanding of the questions. Pretesting also helped to identify the sensitive issues in the questions that were addressed before commencement of the study. The FGD guide testing assisted in detecting the flow and span of the discussion which helped to enhance the discussion prior the actual study.

3.5.3 Medical Records

Besides verbal enquiry, the MCH record booklets for the teenage mothers who consented were reviewed to confirm maturity of the baby at birth, the birth weight of the baby and the age of the mother.

3.5.4 Data Collection

Data was collected by use of a semi-structured questionnaire (Appendix 5) and one focus group discussion was conducted among a group of 8 teenage mothers. The questionnaires were administered by the investigator and two research assistants. The questionnaires were filled one at a time to ensure completeness. Upon finishing the interview, each participant was appreciated and released after ensuring that she had been given the services she had sought from the hospital. The qualitative aspect entailed conducting one FGD for the eligible mothers who had consented and had been given appointments for the FGD. The FGD comprised of mothers aged 15 to 19 years of age. The investigator explained to those eligible mothers who had given consent to take part the purpose of the FGD which was conducted in a private room, for privacy and confidentiality. Note taking was done by one research assistant during the discussions.

3.6 Data Management

The quantitative raw data that was obtained daily was cleaned, checked for completeness and correctness. Data coding was done by the researcher and data was computed on excel sheet. The questionnaires were checked for completeness and errors at the end of each day. Data validation was done to check and correct problems such as missed data, double entered values or data entered in the wrong field. The FGD notes were transcribed soon after the discussions by the investigator.

3.7 Data Analysis

The quantitative data that was computed on excel sheet was exported to computer Statistical Package for Social Sciences (SPSS) version 20 and analyzed using descriptive statistics (Mean, Mode, Median, Minimum, Maximum and Standard Deviation). Pearson's Correlation Coefficient was used to establish correlation and significance between the variables. The confidence interval was set at 95%, P value at <0.05 . P values less than 0.05 were considered significant. The qualitative data was categorized into themes and described according to the themes. Some of the reported statements by focus group participants were verbatim.

3.8 Presentation of Results

Results of the study were presented in form of frequency tables, charts and graphs and a narrative explanation accompanying each form of presentation.

3.9 Minimizing Errors

A pre-test was carried out at the KNH MCH clinic to ensure internal validity and reliability of the study tools. To minimize recall bias, the study was restricted to mothers whose babies were aged six weeks to six months. The researcher utilized the MCH clinic record books for both the mother and the baby to verify some data.

3.10 Study Limitations

The results of the study cannot be generalized to the mothers in the country because of the small sample size and the study only focused on the MCH of Pumwani Maternity Hospital. Out of the proposed sample size of 201, only 167 (83% of sample size) respondents participated in the study.

3.11 Dissemination of Study Results

The summary of the findings of the study will be presented to Pumwani Maternity Hospital and the KNH/UON research ethics committee for data base. A report of the study will be submitted to the University of Nairobi, School of Nursing Sciences and to Prime K who sponsored the study. A manuscript will be presented for review and publication in a journal and presentation of the same in nursing conferences.

3.12 Ethical Considerations

1. This study was approved by the joint UON/ KNH Ethics and Research Committee.
2. Permission to collect data was granted by Pumwani Maternity Hospital authorities.
3. Informed consent was sought from each respondent prior data collection.
4. The participants were assured of confidentiality, anonymity and benefits of the study.
5. Participation to the research was voluntary and refusal to take part did not affect the services given to them.

CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS

4.1 Results

A total of 167 teenage mothers who delivered babies before completion of 37 weeks gestation period participated in the study. The analyzed quantitative data was presented in form of tables, bar graphs and pie charts that showed frequencies (n), percentages (%), Pearson's correlation coefficients (r) and P values (p). The qualitative data was presented as per the categorized study themes.

4.2 Demographic Profile of mothers and Babies

4.2.1 Babies' characteristics:

The mean age of the babies was 3.05 months. The babies mean weight at birth was 2.2 kilograms (kgs). The highest birth weight of the babies was 2.5 kgs, and the lowest birth weight was 1.4 with a standard deviation of 0.375. The current mean weight of the babies was 3.9 kgs. The highest current weight of the babies was 7.2 kgs, while the lowest current weight was 2.1kgs with a standard deviation of 1.295 as seen in table 4.1.

Table 4.1 The baby's characteristics

		N	%	Mean	Median	Min	Max	Std dev.
Age in Months of babies	1.5 months	29	17%	3.05	3	1.5	6	1.47
	2 months	40	24%					
	3 months	51	31%					
	4 months	7	4%					
	5 months	18	11%					
	6 months	22	13%					
	Total	167	100%					
Birth weight (kgs) of babies	1-2 kgs	102	61%	2.16	2.15	1.4	2.5	0.0375
	2-2.5 kgs	65	39%					
	Total	167	100%					
Current weight (kgs) of babies	2-3kgs	40	24%	3.945	4.1	2.05	7.15	1.295
	3-5kgs	69	41%					
	5-8kgs	58	35%					
	Total	167	100%					
Birth order of babies	1	134	80.2%					
	2	30	17.9%					
	3	3	1.8%					
	Total	167	100%					

4.2.2 Maternal characteristics

Most (74.9%, n = 125) respondents were aged between 18 and 19 years while those aged between 15 and 17 were 25.1% (n = 42). About one third, (30.5%, n = 51) respondents had completed secondary school while 20.4% (n = 34) had not completed secondary school and (19.6%, n = 33) had not completed primary school. Majority (59.3%, n = 99) of the respondents were married, while (29.3%, n = 49) were single and a few (11.4%, n = 19) had separated as illustrated in table 4.2.

Table 4.2 Maternal characteristics

		N	%
Age(Bracket)	13-14	0	0
	15-17	42	25.1%
	18-19	125	74.8%
Educational level of the respondents	None	0	0%
	Primary not completed	33	19.7%
	Primary completed	49	29.3%
	Secondary not completed	34	20.4%
	Secondary completed	51	30.5%
Occupation of the respondents	Not formally employed	72	43.1%
	Casual worker	8	4.8%
	Domestic worker	4	2.4%
	Formal employment	0	0%
	Self employed	39	23.4%
	Not employed	44	26.3%
Religion	Christian	129	77.2%
	Muslim	32	19.1%
	Neither Muslims nor Christians	6	3.6%
Marital Status of the Respondents	Single	49	29.3%
	Married	99	59.3%
	Separated	19	11.4%
Residence for non-Married teenage mothers	Parents	47	69.1%
	Relatives	21	30.8%

4.2.3 Relationship between marital status of the mother and level of education

As shown in table 4. 3, there was a correlation coefficient between marital status of the mother and level of education ($r = 0.906$). However the difference was not statistically significant ($p = 0.278$).

Table 4.3 Relationship between marital status of the mother and level of education

Education Level	N	Status	N	R	P
Primary not completed	33	Single	49	0.906	0.278
Primary completed	49	Married	99		
Secondary not completed	34	Separated	19		
Secondary completed	51				
Total	167	Total	167		

4.2.4 Relationship between baby's current weight and birth weight

As shown in table 4.4, there was a correlation coefficient between the birth weight of the babies versus their current weight ($r = -1$). The difference was statistically significant ($p = 0.00$).

Table 4.4 Relationship between baby's current weight and birth weight

	Weight	N	%	R	P
Birth weight (kgs) of babies	1-2 kgs	102	61%	-1	0.00
	2-2.5 kgs	65	39%		
	TOTAL	167	100%		
Current weight (kgs) of babies	2-3kgs	40	24%		
	3-5kgs	69	41%		
	5-8kgs	58	35%		
	TOTAL	167	100%		

4.3 Types of Feeds

Most 64.1%, ($n=107$) respondents fed their babies on breast milk alone, and 26.9%, ($n=45$) fed them on both breast milk and formula milk. Only (8.9%, $n=15$) said they were feeding the babies on formula milk only. There was a correlation coefficient between the types of feeds and age of the babies ($r = -0.082$). The difference was statistically significant ($p=0.001$) as illustrated in table 4.5.

Table 4.5 Relationship between the types of feeds and the babies' age

Type of feeds	N	Age of babies(months)	N	χ^2 (df)	R	p
Breast Milk only	107	1.5	29	78.2 (2)	-0.082	0.001
Formula milk only	15	2	40			
Breast milk and formula milk	45	3	51			
		4	7			
		5	18			
		6	22			
TOTAL	167		167			

4.3.1 Relationship between maternal age and types of feeds given to babies

There was a correlation coefficient between the mothers' age and the types of feeds given to the babies by the mothers ($r = -0.51$). However, the difference was not statistically significant ($p = 0.660$), as seen in table 4.6.

Table 4.6 Relationship between maternal age and types of feeds given to babies

Age bracket of mother	N	Type of feeds	N	R	p
13-14	0	Breast Milk	107	-0.510	0.660
15-17	42	Breast milk and Formula milk	45		
18-19	125	Formula milk	15		
Total	167	Total	167		

4.3.2 The age at which complementary foods were introduced to the baby

Out of the 167 mothers in the study, 90 (53.9%) reported that they had introduced their babies to other foods while the remaining (46.1%, $n = 77$) fed their babies on breast milk alone. Of these 90 mothers as illustrated in table 4.7, majority of the mothers (48.9%, $n = 44$) had introduced other foods by the age of two months, some (25.6%, $n = 23$) mothers had introduced other foods within the first month of age of the babies. As shown in table 4.8, most (43.3%, $n=39$) of the participants introduced the other foods to their babies because they had insufficient supply of breast milk. Parents'/guardians' advice as a reason to introduce other foods was given by 3.3%, ($n = 3$) of the respondents and 22%, ($n=20$) of the participants gave other reasons such as the

baby had refused to breastfeed and friends' advice prompted them to introduce other foods to the babies.

Table 4.7 Age at which complementary foods were introduced to the babies

Age of baby	N	%
At birth	7	7.8%
Within 1 st month	23	25.6%
Within 2 nd month	44	48.9%
Within 4 th month	10	11.1%
Within 5 th month	2	2.2%
At six months	4	4.4%
TOTAL	90	100%

Table 4.8 Reasons for introduction of complementary foods to the babies

Reason for Introducing Foods	N	%
Insufficient breast milk supply	39	43.3%
Baby refused/peers' advice	20	22.2%
Baby was crying	20	22.2%
Baby was old enough for other foods	6	6.7%
Parents'/guardians' advice	3	3.3%
Health care providers' advice	2	2.2%
TOTAL	90	99.9%

4.4 METHODS USED TO FEED BABIES

As seen in table 4.9, majority (68.8%, n=115) of the mothers breastfed the babies, while (20.9%, n=35) said they used a cup and spoon to feed their babies and only (10.2%, n=17) of the respondents reported the use of bottle feeding method.

Table 4.9 Feeding methods used to feed babies.

Feeding Method	N	%
Breast Feeding	115	68.9%
A cup and Spoon	35	20.9%
Bottle Feeding	17	10.2%
Total	167	100%

4.4.1 Relationship between marital status of the teenage mothers and feeding methods

As shown in table 4.10, there was a correlation coefficient between marital status and the method of feeding the babies ($r = -0.667$). However, the difference was not statistically significant ($p = 0.535$).

Table 4.10 Relationship between marital status of the mothers and feeding methods

Status	N	Feeding Methods	N	R	P
Single	49	Breast feeding	115	-0.667	0.535
Married	99	Cup and spoon	35		
Separated	19	Bottle feeding	17		
Total	167	Total	167		

4.4.2 Relationship between educational level of the mothers and feeding methods

Table 4.11 illustrates that there was a correlation coefficient between the mother's educational level and the method of feeding adopted ($r = -0.290$). However the difference was not statistically significant ($p = 0.813$).

Table 4.11 Relationship between educational level of the mothers and feeding methods

Feeding Methods	N	%	Feeding Method	N	r	P
Primary completed	49	29.3%	Breast Feeding	115	-0.290	0.813
Primary not completed	33	19.8%	A cup and Spoon	35		
Secondary completed	51	30.5%	Bottle Feeding	17		
Secondary not completed	34	20.4%				
Total	167	100%	Total	167		

4.4.3 Relationship between the mother's age and combining of the feeding methods

There was a correlation coefficient between the mother's age and use of either combined breast feeding and bottle feeding methods or breast feeding and a cup and spoon methods ($r = 1$). The difference was statistically significant ($p = 0.00$), as seen in table 4.12.

Table 4.12 Mothers' age and use of combined feeding methods

Use of Combined Feeding Methods	N	Age bracket	N	R	P
Yes	142	18-19	125	1	0.00
No	25	15-17	42		
		13-14	0		
Total	167		167		

4.4.4 Reasons for combining the feeding methods

As seen in table 4.13, majority (85%, n=142) of the respondents said they did not combine any of the feeding methods, while (15%, n=25) of the respondents said that they were mixing the feeding methods. Out of the 25 respondents who combined the feeding methods, majority (80%, n = 20) reported the babies were not getting adequate feeds with one feeding method.

Table 4.13 Use of combined feeding methods and reasons

	Response	N	%
Use of either combined breast feeding plus a cup and spoon or breast feeding and bottle feeding?	No	142	85%
	Yes	25	15%
	Total	167	100%
Reason for combined feeding methods	Baby does not get enough of the feeds (not satisfied)	20	80%
	Advised by family members	3	12%
	Advise by peers	2	8%
	Total	25	100%

4.4.5: Reason for Selecting Feeding Method

Nearly one third (31.7%, n=53) of the respondents selected the feeding method because they were advised by the health care providers, while 26.34%, (n=44) reported their family members advised them as seen in table 4.14. The results suggest other people influenced the feeding method the mothers used.

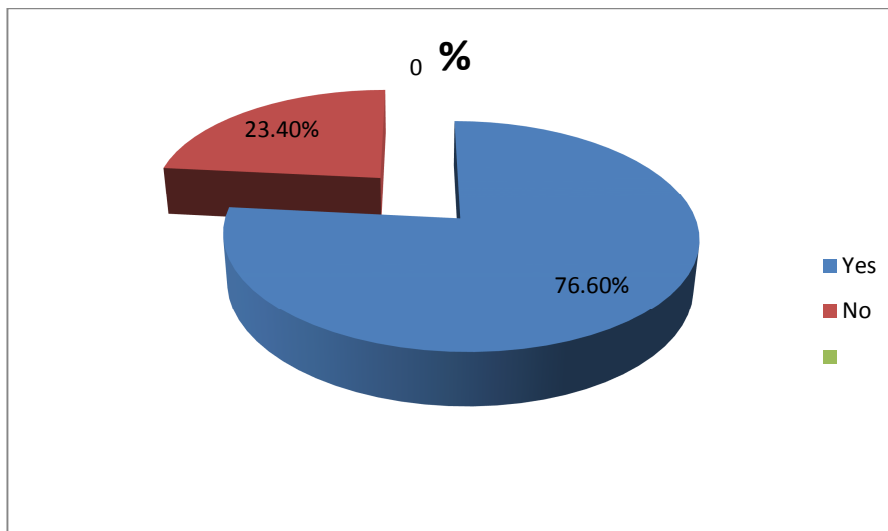
Table 4.14 Reason for selecting feeding method

Reason for selecting the feeding method	N	%
Health care providers' advice	53	31.7%
Family members' advice	44	26.3%
Baby not coping with other methods	29	17.4%
Feeding method easy to use	26	15.6%
Friends' advice	15	8.9%
TOTAL	167	99.9%

4.4.6 Success with the feeding method used

Majority (76.6%, n=128) of the mothers responded with a yes as regards to the success with the feeding methods adopted while 23.4%, as seen in figure 4.1. More babies fed to their satisfaction with the feeding methods their mothers used.

Figure 4.1 Success with the feeding method used



4.4.7 Mothers' Intention to change Feeding method

Slightly more than half (53.9%, n=76) of the respondents said they intended to change the feeding method at the age of six months while 18.4%, (n=26) reported to have had the intentions of changing feeding method of their babies within the age of four months period and 17.7%,

(n=25) said they intended to introduce new feeding method(s) at five months of age, as seen in table 4.15.

Table 4.15 Mothers' Intention to change Feeding method

Age Intended to change feeding method	N	%
two months	5	3.5
three months	9	6.4
four months	26	18.4
five months	25	17.7
six months	76	53.9
Others	1	0.7
Total	142	100

4.4.8 Problems experienced during breast feeding

As shown in table 4.16, most mothers (71.3%, n=82) said they experienced insufficient supply of breast milk during breastfeeding while 20.8% (n=24) of the mothers said breast pain on breast feeding was their problem.

Table 4.16 Problems experienced during breastfeeding

Problems:	N	%
Inadequate breast milk	82	71.3%
Pain during feeding	24	20.8%
No problems	7	6.1%
Baby not able to suckle	2	1.7%
Total	115	100%

4.4.9 Relationship between the mother's age and the problems experienced when breastfeeding

There was a negative correlation coefficient between the mother's age and the problems they faced when breastfeeding ($r = -0.271$). However, the difference was not statistically significant ($p = 0.826$) as seen in table 4.1.7.

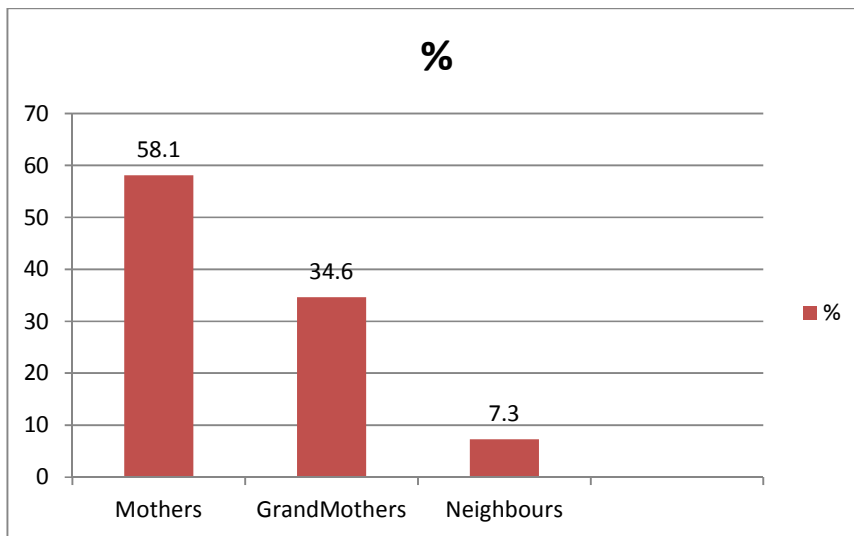
Table 4.17 Relationship between maternal age and challenges faced when breastfeeding

Opinion on challenges faced	N	Age bracket	N	R	P
Inadequate breast milk	87	13-14	0	-0.271	0.826
No challenges	50	15-17	42		
Baby not able to suckle enough	26	18-19	125		
Pain during breast feeding	4				
Total	167		167		

4.4.10 Person feeding the baby for more period of time every day

As illustrated in figure 4.2, Most mothers (58.1%, n=97) reported they fed the babies themselves while (34.6%, n = 58) said their babies were fed by the grandmothers and only (7.3%, n = 12) reported the neighbors fed the babies when their mothers were away either working or at school.

Figure 4.2 Person feeding the baby



4.4.11 Relationship between person feeding the baby and the baby's current weight.

As seen in table 4.18, there was a negative correlation coefficient between the babies who were fed by other people besides their mothers and the current weight of the babies ($r = -1$). The differences were statistically significant ($p = 0.00$). Table 4.18 also illustrates that there was a negative correlation coefficient between the mother feeding the baby and the baby's current weight (-0.927). The difference was not significant ($p = 0.245$).

Table 4.18 Relationship between person feeding the baby and the baby's current weight

Person feeding the baby	N	Weight	N	R	P
Mother	58	2-3kgs	40	-0.927	0.245
Neighbors	12	3-5kgs	69	-1	0.00
Grandmothers	97	5-8kgs	58	-1	0.00
Total	167	Total	167		

4.5 The Feeding Frequency

4.5.1 Feeding frequency in 24 hour period

Most (82.6%, n = 138) respondents reported they fed their babies on demand while the remaining 17.4%, n = 29 said they had a schedule for feeding the babies. There was a correlation coefficient between frequency of feeding the babies and the current weight of the babies ($r = 0.615$). However, the difference was not statistically significance ($p = 0.579$) as seen in table 4.19.

Table 4.19 Relationship between frequency of feeding and the babies' current weight

Frequency of feeding baby within 24 hours	N	Current weight of baby	N	N	P
Once	0	2-3kgs	40	0.615	0.579
Twice	0	3-5kgs	69		
Thrice	0	5-8kgs	58		
Four times	0				
> Five Times	167				
Total	167		167		

4.5.3 Indication of satisfaction when feeding the baby

As illustrated in table 4.20, majority of the respondents (72.5%, n = 121) reported they did not know the indication for their babies satisfaction when feeding.

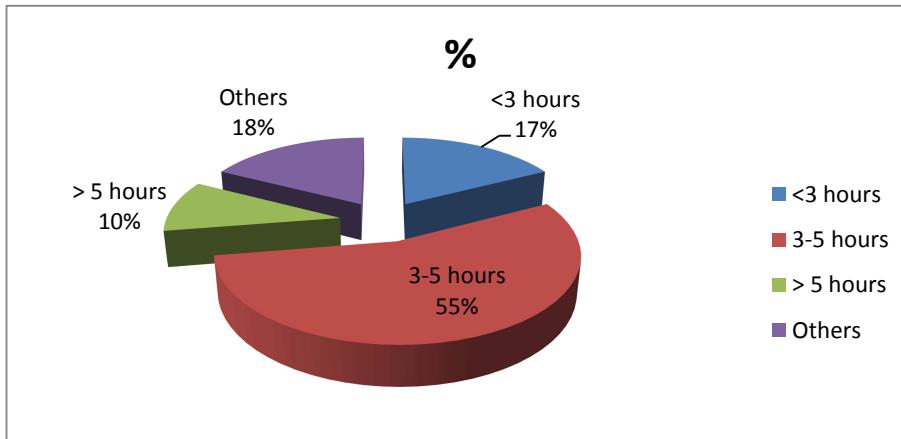
Table 4.20 Indication of satisfaction when feeding

Indication of Satisfaction of the Baby	N	%
Do not know	121	72.4%
Refusal to continue feeding	23	13.7%
Baby completes the feeds	21	12.6%
Both breasts are emptied	2	1.2%
Total	167	100%

4.5.4 Period the baby is under care of other people

As seen in figure 4.3, most (55%, n=92) of the respondents said they left their babies under the care of others for a period of three to five hours in a day. Some (18%, n=30) gave varied responses such as they occasionally left their babies for less than three hours, sometimes three to five hours and mostly they did not leave their babies with anyone.

Figure 4.3 Period the baby is under care of others



4.5.5 Reason for leaving babies under care of others

Out of the total 167 respondents, (17.4%, n=29) reported they never left their babies with anyone. From the remaining 138 respondents as seen in table 4.21, more than half (55.8%, n=77) gave other reasons such as visiting friends and attending to personal matters as the reasons they left their babies under the care of other people, some (41.4%, n = 57) attributed it to employment.

Table 4.21 Reason for leaving babies under care of others

Reason	N	%
Visiting friends, attending to personal matters	77	55.8%
Employed	57	41.4%
School	4	2.9%
Total	138	100%

4.5.6 Age the respondents started to leave their babies under care of other people

As shown in table 4.22, slightly more than half (53%, n=73) the respondents started to leave their babies under the care of other people at the age of two months, some 17%, (n=24) reported they started to leave the babies at the age of five to six months and (16%, n=22) reported they did it at one month.

Table 4.22 Age the respondents started to leave their babies under care of others

Age	N	%
1 month	22	16%
2 months	73	53%
3-4 months	19	14%
5-6 months	24	17%
Total	138	100%

4.5.7 Effects on baby feeding while under care of other people

Most (71.7%, n=99) respondents reported the babies fed normally even under the care of other people while (25.4%, n = 35) gave other reasons such as did not know and occasionally the babies were not fed well as seen in table 4.23.

Table 4.23 Effects on baby feeding while under care of other people

Effects	N	%
Feeds normally	99	71.7%
Occasionally not fed well/ did not know	35	25.4%
Underfed	4	2.9%
Total	138	100%

4.6 Factors That Influence Feeding Practices at Home

4.6.1 Person providing advice on feeding options during illness.

As seen in table 4.24, slightly more than one third (37.7%, n = 63) of the respondents got advice from their mothers on feeding options when the babies were ill. Some (35.3%, n = 59) reported they were advised by the health care providers and (26.9%, n = 45) said their friends advised them on feeding options during the illness of their babies.

Table 4.24 Person providing advice on feeding options during illness.

Person providing advice on feeding	N	%
Health Care Providers	59	35.3%
Mother	63	37.7%
Friends	45	26.9%
Total	167	100%

4.5.2 Foods given to babies during illness other than the usual feeds

The respondents were asked to state the types of foods they gave their babies during illness. Majority (79%, n=132) of the respondents did not change the usual foods they gave to their babies when they fell sick with (16.16%, n=27) breastfeeding only during sickness of their babies. The rest (4.79%, n=8) gave other foods such as fruits, honey, porridge, hot water and glucose.

4.6 Focus Group Discussion

A focus group discussion (FGD) was conducted to find out the challenges the teenage mothers were faced with at home with the feeding of their babies. The group had eight teenage mothers who were aged between 15 and 19 years. With the guidance by the researcher, the mothers responded to the questions discussing them as follows:

4.6.1 Understanding of exclusive breast feeding

From the FGD, the mothers stated exclusive breastfeeding is giving the baby breast milk alone for six months. This is supported by one participant R3 who said – *Breastfeeding the baby for six months without introducing other food.*

4.6.2 Feeding methods

Information on method of feeding their babies at home concurs with the findings of the quantitative data whereby two participants gave their response to the question on how a baby who was born prematurely was being fed at home by their mothers. R5 – *Tunanyonyesha tu kwa*

matiti. (We just breastfeed) while R6 – Mtoto anapewa maziwa na uji tukitumia chupa, na pia ananyonyeshwa. (The baby is fed with milk and porridge by use bottle, also the baby is breastfed. Among other reasons why the mothers use bottle to feed their babies at home was to top up for the feeds because the baby according to one participant (R1), did not get enough milk from the breast. R1 – Kuna wakati mtoto hashibi kwa matiti, sasa anaongezwa uji kwa chupa au kikombe. (At times the baby is not satisfied on breast milk, thus the baby is added porridge using a bottle or cup). But there may be more other reasons for use of bottle, cup and spoon to feed the babies at home. Because one participant stated that she uses the bottle when she leaves the baby at home while going out in search of employment.

4.6.3 Challenges faced when feeding the babies at home

The participants cited various challenges of feeding at home. These included pain on breastfeeding during early puerperal period R1 - *Hapo mwanzo nilikua nikiumwa na matiti nikimnyonyesha, lakini saa hii sina shida. (Sometime back, I was experiencing pain on breast while breastfeeding but now I have no problem).* Flat nipples as a problem affecting some teenage mothers resulted in their babies not feeding well. R7 - *My nipples were flat and the baby was not able to breastfeed properly. But I came to the clinic for assistance.* The issue of how to warm the expressed breast milk also was raised as a problem when the mother is away and has left the milk she expressed to be given to the baby. According to R4 – *The expressed milk if left for the baby, the helper gives her when it is cold or she warms it directly on fire.* Some babies are given gripe water for stomach pains /cramps by their mothers. The stomach pains as reported by one of the participants affected the baby and the baby was not able to feed well. R8- *Baby sometimes cries a lot, and I tend to think it is stomachache, I give gripe water. The crying makes her not to feed well.*

CHAPTER FIVE: DISCUSSION

5.1 Introduction

Optimal feeding is an essential aspect in the care of premature babies because premature babies need adequate nutrition for survival and proper development which can be enhanced with proper feeding method (Price and Gro-Wargo, 2013). The objective of the study was to determine challenges experienced by teenage mothers when feeding premature babies during the first six months of life. The study specifically investigated on the types of feeds given to the babies, methods used to feed the babies, feeding frequencies and factors that influence the feeding.

5.2 Demographic Characteristics of the respondents and the types of Feeding

Majority of the respondents in the study were aged between eighteen and nineteen years. A few were in the age bracket between fifteen and seventeen years. There was no respondent within the age bracket of fourteen years and below. Similar age brackets of teenage mothers have participated in other studies done (Nesbitt, 2012 and Smith, 2012). The results suggest there is reduction on teenage motherhood in the age bracket between thirteen and fourteen years compared to the ages fifteen years up to nineteen years. Teenage mothers between thirteen and fourteen years may be shying off from taking their babies to the clinic because they lack the confidence of taking care of their babies and in most cases, they are still in school. Thus the young mothers leave the responsibility to their parents and guardians. A study done by Ijumba, (2012) revealed some teenage mothers left their babies under the care of the grandparents.

There was a correlation and a statistical significance between the birth weight and the current weight of the babies ($r = -1$) and ($p = 0.00$) respectively. Despite the low weight at birth, the current weight of the babies had increased. The increase in weight for the babies is an indicator of growth and development. Increase in weight for the babies can be attributed to appropriate and optimal feeding of the babies.

5.3 Types of feeds given to the preterm babies at home

Most participants had initiated their babies on breast milk exclusively. This is quite commendable. However, it was significant that mothers would start to add other feeds to breast milk as the baby's age increased ($p = 0001$). This could be attributed to lack of confidence and insufficient preparation of the teenage mothers to continue breastfeeding their babies exclusively for six months. Smith, (2012), identified teenage mothers initiated breastfeeding but they were not able to sustain it. The mothers as identified by Smith, lacked confidence and skills to breastfeed. Teenage mothers need support from health care providers and family members to build up their confidence and acquire breastfeeding skills.

The participants demonstrated the understanding of exclusive breastfeeding. However, not all the babies were exclusively breastfed because some were left to be fed by other people such as the neighbors and grandmothers who gave the babies other foods besides breast milk. The results are in consistent with the findings by Ijumba, (2012) whereby the babies that were left by the teenage mothers under the care of their grandmothers were not fed exclusively fed on breast milk. They were fed on foods as formula milk, porridge, sugar water. For successful feeding of the babies, based on the findings, significant members of the family need to be included in the education of feeding the babies that are born to teenage mothers.

5.3.1 Types of feeds given to preterm babies versus the age of the mothers

Teenage mothers within the age bracket of eighteen to nineteen years were more likely to exclusively breastfeed their babies compared to the mothers within the age bracket of fifteen to seventeen years. The eighteen to nineteen years age bracket could be more experienced in the care for the babies compared to their younger counterparts. Nesbitt, (2012), identified the first time teenage mothers, at sixteen years of age and above, were more likely to exclusively breastfeed their babies at three months of age. Breast feeding is a recommended method by

WHO. The younger teenage mothers within the age bracket seventeen years and below should be educated on importance of exclusive breastfeeding.

The results revealed teenage mothers added some other foods to breast milk before the age of six months because they had a perception that they have insufficient breast milk supply and were also advised by people around them such as family members. Teenage mothers may be lacking proper preparation on appropriate feeding of their babies thus cannot sustain feeding their babies exclusively on breast milk. The mothers become vulnerable to influence from other people. Most teenage mothers discontinued to breast feed within the first four weeks due to technical problems they are faced with (Tucker, 2011). There is need to provide support and educate the teenage mothers on importance of feeding the babies on breast milk exclusively for the first six months.

Majority of the mothers had introduced other foods to their babies at the age of two months. This suggests majority of the teenage mothers feed the babies on breast milk exclusively for the first one month of life when they are in the hospital. But after discharge, they do not continue because of the people around them. Similar findings by Ijumba, (2012) revealed teenage mothers introduced other feeds to their babies at the age of one month. Also, teenage mothers are more likely to wean their babies earlier even if they had chosen to breastfeed (Grassley, 2010). The mothers need positive social support from the health care providers when they are learning how to breastfeed to help to solve the challenges they experience as the baby grows. Inclusion of significant family members of the teenage mothers in the education on the importance of feeding the babies exclusively on breast milk is as well necessary.

5.4 Methods of feeding the babies

Majority of the participants used breastfeeding method to feed the babies. Marital status and educational level of the mothers did not influence the feeding method the mothers used. Despite their education level and marital status, teenage mothers do not independently make decisions on the method of feeding. The study findings revealed mothers were advised by friends, their

mothers and health care providers on the method of feeding. Similar findings by Tucker, (2011), identified some teenage mothers chose a method of feeding because of negative influence from other sources like the friends. The findings of Condon, (2012), revealed teenage mothers would choose to bottle feed their babies because it was an accepted practice among their peers. Nesbitt, (2012), identified teenage mothers bottle fed their infants because they perceived discomfort and inconveniences with breastfeeding. Continued breastfeeding method can be motivated by health care providers while the babies are in New Born Care Unit. Health care providers' support is necessary during the postnatal period.

Some participants used combined feeding methods because they perceived the baby was not getting enough breast milk. There are some respondents who reported they were advised by their family members and peers to combine the feeding methods. This affects the decision making by the teenage mothers' on method of feeding the babies. Family members as identified by Smith, (2012) were not supportive to teenage mothers to use breastfeeding method. But they encouraged the use of other feeding methods such as bottle feeding. There is need to educate the significant members of their families on the importance of breastfeeding method before the age of six months.

The study identified varied reasons for the choice of the feeding method used by the respondents. Nearly one third of the mothers attributed their choice of feeding method to advice from health care providers while the others reported to have been advised by their family members and friends. The results suggest other people influenced the feeding method the mothers used. Family support as identified by Tucker, (2011), and Tomeleri and Marcon, (2009), is a source of influence to feeding practices by teenage mothers because they tend to take up the similar feeding practices they have seen done by their mothers or other close female relatives. Similar findings by Grassley, (2010), revealed the decisions made by teenage mothers on feeding their

babies are influenced by families. Family members of the mothers are key when educating the teenage mothers on breastfeeding method of the prematurely born babies.

5.5 Frequency of feeding the baby

The study identified majority of the participants fed their babies on demand. Feeding the babies on demand would ensure adequate feeds for the baby. The results are contrary to the findings that have shown babies who are born prematurely are likely to suffer malnutrition and delayed milestones when compared to the term babies (Gladstone, 2011). Based on the findings, teenage mothers ensure optimal frequencies of feeding their babies. This is an important aspect for the babies' nutritional requirements for optimal growth and development. The results are contrary to the findings of the study done by Kate, (2014), whereby the mothers viewed an increased frequency of feeding babies to be an inconvenience. Teenage mothers should be encouraged to maintain and improve on the feeding frequencies.

Majority of the babies who were fed by other people, the mothers reported the babies' feeding was not affected. The current weight of the baby was not influenced by the person that fed the baby ($p = 0.728$). The results suggest even in the absence of their mothers, the babies are fed adequately may be because the other people that are left to feed the babies are well informed on feeding the babies from their past experiences. According to Ijumba, (2012), grandmothers were left to feed babies by teenage mothers. They assumed the role of the mother to the babies and fed them adequately. The results show the necessity to include other family members in education on appropriate feeding of babies within the first six months of life.

5.6 Factors that influence feeding practices at home

Almost all the participants reported they did not give their babies any special food during illness. This is commendable because even the few who gave special food during illness reported they did not stop to feed their babies on the usual foods the babies had been getting before.

Implications here are that teenage mothers are well informed of feeding options of their babies during illness. Contrary to the findings of Nor, (2012), mothers gave their babies water and traditional medicines for cleansing purposes.

Some teenage mothers were advised on feeding options by their mothers while a few were advised by health care providers and their friends. The results have implications that teenage mothers are vulnerable to advice on feeding their babies from various sources including their peers. Similar findings have been documented by Condon, (2012) revealing the demand to bottle feed as the norm among peers having an influence to some teenage mothers. It is of importance to encourage the mothers to follow on the importance of following advice from the professionals on feeding their babies especially when ill.

5.6.1 Challenges faced by mothers

Almost half of the mothers reported they had insufficient supply of breast milk for their babies. Mothers' perceptions of not having enough breast milk supply for the babies led to early introduction of other foods. Insufficient breast milk supply by the mother would be as a result of reduced frequencies of breastfeeding (Mogambi, 2011). A study done by Nor, (2012), revealed mothers fed the babies on porridge and formula milk because they perceived they did not have enough breast milk. Technical support from the health care provider is necessary to help the mothers have confidence in being able to adequately supply breast milk to their babies.

The study identified the age of the mothers did not determine the challenges they faced when feeding their babies. Besides insufficient breast milk supply, the mothers raised other challenges such as pain on breastfeeding during early puerperal period, flat nipples, the expressed breast milk given to the baby either when cold or is directly warmed on fire by those who are left to take care of the baby. Some babies get abdominal cramps which interfere with the feeding. It is likely that the mothers lack skills, knowledge and resources for successful breastfeeding for example options of preserving expressed breast milk. Smith, (2012) identified similar challenges

of breastfeeding among teenage mothers such as lack of skills and knowledge for successful breastfeeding, unpleasant moments of pain, leaking and inadequate health care support. Education on antenatal care and hospital delivery for teenage mothers is necessary to identify and deal with any feeding problems following discharge from hospital. The mothers need education on appropriate storage of expressed breast milk for the babies. Health care providers' support is also necessary to address the problems that affect breastfeeding. A lactation expert is needed during the antenatal and postnatal period to help address the breast feeding problems among teenage mothers.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Not all the babies that are born prematurely to teenage mothers are exclusively breastfed for the first six months of life. Some babies are introduced to other feeds at the age of two months because of the perception of insufficient breast milk supply to satisfy the baby. Nor, (2012) revealed teenage mothers introduced other foods to babies before the age of six months because they perceived they did not have enough breast milk. Educational and support programs focused on exclusive breastfeeding for teenage mothers is necessary to enable effective feeding of the prematurely born babies within the first six months of life.

The feeding decision of the babies during illness was influenced by family members. However, majority of the mothers maintained the same feeds for their babies when sick. Family support as identified by Tucker, (2011), and Tomeleri and Marcon, (2009), is a source of influence to feeding practices by teenagers because the new mothers tend to take up the similar feeding practices they have seen done by their mothers or other close female relatives. Similar findings by Grassley, (2010), revealed the decisions made by teenage mothers on feeding their babies are influenced by families. The results of the study show the necessity to include other family members in education on appropriate feeding of babies within the first six months of life.

Besides insufficient breast milk supply, teenage mothers encountered feeding challenges at home that included painful breast and flat nipples. Attention of a lactation expert at the antenatal and postpartum clinic is necessary.

6.2 RECOMMENDATIONS

1. There is need to create awareness by the Pumwani Maternity Hospital health care providers on importance of exclusive breastfeeding before six months of age among the teenage mothers and the significant members of their families.
2. There is need for technical support from the Pumwani Maternity Hospital health care providers and positive family support to improve the feeding practices among teenage mothers at home.
3. Initiation of interventions that will improve lactation among the teenage mothers such as having a lactation expert at the MCH of Pumwani Maternity Hospital to assist the mothers deal with problems of lactation is necessary.

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APPENDICES

APPENDIX1: RESEARCH INFORMATION SHEET FOR STUDY PARTICIPANTS.

Study Title: CHALLENGES ON FEEDING PREMATURE BABIES DURING THE FIRST SIX MONTHS OF LIFE: A SURVEY ON EXPERIENCES BY TEENAGE MOTHERS.

INTRODUCTION TO THE RESEARCH AND THE RESEARCHER

My name is Emily Awinda, a post graduate student in Master of Science in Nursing, at the University of Nairobi. I'm conducting a research study at Pumwani Maternity Hospital at the MCH clinic. The purpose of the study is to determine the challenges of feeding premature babies during the first six months of life as experienced by teenage mothers attending the MCH clinic at the hospital.

Data Abstraction

In order for this study to be successful, I request for your participation in the study by responding to the questions that I will be asking you. You will be expected to answer the questions to the best of your knowledge. Since you are mothers of babies who were born prematurely, I would like to collect information on the challenges you encounter to feed your babies at home.

Assurance of Confidentiality

Any information collected from you during this study shall remain confidential. It shall only be used for the intended purpose for the betterment of the community. You will be given a copy of the consent form to fill in if you voluntarily consent to take part in the study. You will not be identified in any form on the questionnaire. But you will be accorded a number that will remain confidential to the investigator alone. However, the overall findings of the study will be discussed regarding all participants without revealing anybody's identity.

Rights of the Participants

Your participation in this study is purely voluntary and if you decline to participate, you will not be denied any services that you are supposed to be given. You will be free to withdraw from the study at any time.

Benefits /Risks of the Study

The findings of the study will be used to identify appropriate approaches to feeding of prematurely born babies at home by teenage mothers. These will enable the investigator to make recommendations on the best approaches to support the teenage mothers in feeding the prematurely born babies at home. This will inform the health care providers at Pumwani Maternity hospital on the areas of emphasis while taking care of these babies. The national policy makers will also be alerted on the areas that need to be given priority when planning for feeding the premature born babies among the teenage mothers in the country. The findings will further assist resource allocation to priority areas locally and nation-wide. The findings of this study will also be used for future research in this field.

There is no risk your baby will be exposed to during the study. You will not be subjected to any invasive procedures during the study. This study may impose minimal risks to you that could be psychological as you realize that you may have not fed your baby rightly. In-case of any psychological challenges in the course of the study, kindly consult the investigator for counseling services.

Compensation

The study does not have any monetary incentive to the participants.

Duration of Participation

This study will require you to respond to the questions as posed to you by the investigator as the questionnaire is filled. Thereafter, there shall be no further follow-up interviews. This process will take about 25 to 30 minutes of your time.

Contact Information

In-case you have any clarifications or questions concerning this study, you may ask or contact Emily Awinda, MScN student at the University of Nairobi on cell phone number 0720989495, or chairperson, KNH/UON/ERC. P.O.BOX 20723-00200. Tel: 020-2725272. My supervisors are Dr. WaithiraMirie and Mrs. Angeline Kirui both from the University of Nairobi, School of Nursing Sciences.

Emily MusimbiAwinda

OR The chairperson

University of University of Nairobi,

KNH/UON-Ethics and Research Committee

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APPENDIX 2 CONSENT FORM (MOTHERS AGED 18 TO 19 YEARS)

The information above about the study has been explained to me and I voluntarily agree to take part in this study. I willingly give my consent to give information required for the study.

Teenage mother's signature/thumb mark.....

Researchers' signature.....

Date.....

IDHINIYAKUSHIRIKIKWENYEUTAFITI (WAMAMA WENYE UMRI WA MIAKA 18 HADI 19)

Nimeelezewanamtafitikuhusuutafitiutakaofanwyananimekubalikushirikikwenyezoezihilikwahiari yangu.Ninaakubalikutoahabarizitakazotakikanakwaajiliyazoezihili.

Sahihi/ kidolegumba cha mama.....

Sahihiyamtafiti.....

Tarehe.....

APPENDIX 3 ASSENT FOR THE MINORS (MOTHERS AGED 13 TO 17 YEARS)

The information above about the study has been explained to me and I voluntarily agree to take part in this study. I willingly assent to give information required for the study

Minor's Signature/Thumb mark.....

Researcher's Signature.....

Date

IDHINI YA KUSHIRIKI KWENYE UTAFITI (MADOGO).

Nimeelezwakinagaubagakuhusuutafitinanimekubalikushiriki.

Sahihi/Kidolegumba cha Madogo.....

Sahihi ya mtafiti.....

Tarehe.....

APPENDIX 4 CONSENT FORM (PARENT/GUARDIAN)

The information above about the study has been explained to me and I voluntarily agree for my daughter to take part in this study.

Parent's/guardian's signature.....

Researcher's signature.....

Date.....

IDHINI YA KUSHIRIKI KWENYE UTAFITI (MZAZI/MLEZI)

Nimeelezwa kikamilifu kuhusu utafiti utakaofanywa na nimekubali kwa hiyari yangu mtoto wangu wa kike kushiriki.

Sahihi/Kidole gumba cha mzazi/mlezi.....

Sahihi ya mtafiti.....

Tarehe.....

APPENDIX 5 RESEARCH INSTRUMENT

TOPIC: CHALLENGES OF FEEDING PREMATURE BABIES DURING THE FIRST SIX MONTHS OF LIFE: A SURVEY ON EXPERIENCES BY TEENAGE MOTHERS.

QUESTIONNAIRE NUMBER: DATE:.....

INSTRUCTIONS FOR FILLING THE QUESTIONNAIRE:

1. Please fill in the date and questionnaire number appropriately
2. Please tick the appropriate box or complete the answer
3. There is no right or wrong answer
4. Answer the questions to the best of your understanding

SECTION 1.0: SOCIAL DEMOGRAPHIC DATA

PART A:THE BABY’S DETAILS

1.1 What is the date of birth of your baby? Day....., Month....., Year.....

1.2 What was the weight of the baby at birth?.....kilograms (Verify with the baby’s immunization clinic card/book and the mother’s delivery records from her antenatal book).

1.3 What is the current weight of your baby?.....kilograms

1.3 What is the birth order of your baby?

1 First

2Second

3Any other (specify).....

PART B : THE MOTHER’S DETAILS

1.4 How old are you?(Verify age with the records of delivery/antenatal book to check the age she the antenatal clinic).

1 13-14 years

2 15-17 years

3 18-19 years

1.6 What is your highest educational level?

- 1 None
- 2 Primary not completed
- 3 Secondary not completed
- 4. Secondary completed

1.5 What is your occupation?

- 1 House wife
- 2 Casual worker
- 3 Domestic worker
- 4 Formal employment
- 5 Self employed
- 6. Others specify.....

1.7 What is your religion?

- 1 Christian
- 2 Muslim
- 3 None
- 4 Others specify.....

1.8 What is your marital status?

- 1 Single
- 2 Married
- 3 Separated
- 4 Others specify.....

1.9 If you are not married, whom do you stay with?

1 Parents

2 Relatives

3 Any other (specify).....

SECTION 2.0 TYPES OF FEEDS

2.1What foods do you give to your baby currently?

1 Breast milk alone

2 Formula milk alone

3 Breast and formula milk mixed

4 Others specify.....

2.3 If your baby is not feeding on breast or formula milk, when did you start giving your baby the foods he/she is getting currently?

1 At birth

2 Within the first month of age

3 Within the second month of age

4 Within the fourth month of age

5 Within the fifth month of age

6 At six month of age

2.4 What made you introduce these other foods at that time?

- 1 Breast milk was not enough
- 2 Baby was old enough
- 3 Baby was crying
- 4 Advised by health worker
- 5 Advised by mother
- 6 Others (specify).....

2.5 If your baby is not feeding on breast milk, who buys for the baby the feeds?

- 1 Myself
- 2 My parents
- 3 Any other (specify).....

2.6 What would you comment about the availability of your baby's feeds?

- 1 Available every time
- 2 Not easily available
- 3 Any other (specify).....

2.7 If the baby's feeds are not easily available, what else do you give to the baby?

- 1 Tea
- 2 Sugar/glucose solution
- 3 Any other (specify).....

2.8 In your own opinion, how long is the baby supposed to exclusively get breast milk?

- 1 One month
- 2 Two months
- 3 Three months

4 Four months

5 Five months

6 Six months

SECTION 3.0 METHODS OF FEEDING

3.1 What method do you use to feed your baby if you are not breast feeding?

1 Bottle feeding

2 cup and spoon

4. Others specify.....

3.2 Why did you choose this method?

1 Advised by family members

2 Easy to use

3 Advised by friends

4 Informed in the hospital

5. Others specify.....

3.3 Do you feel the baby feeds and gets enough with the method you use?

1. Yes 2. No

3.4 If breast feeding the baby, at what age do you intend to change the method of feeding?

1 Two to three months

2 Four months

3 Five months

4 Six months

5 Any other (specify)

3.5 What problems have you experienced with breast feeding?

1 Pain during feeding

2 No enough milk

3 Baby not able to suckle

4 Others specify.....

3.6 Do you mix any of the feeding methods?

1 Yes 2 No

3.7 If yes, why do you mix them?

1 Baby does not get enough

2 Advised by family members

3 Advised by peers

4 Others specify.....

3.8 What methods of feeding do you mix?.....

3.9 If using the feeding bottle, how often do you wash the bottle in 24 hours?

1 Every time the bottle is used

2 Once

3 Twice

4 Three times

5 Any other (specify).....

3.10 Where do you get the water you use in the house?

1 Tap

2 Vendors

3 Any other (specify).....

SECTION 4.0 FREQUENCY OF FEEDING THE BABY

4.1 When do you feed this baby?

1 On demand

2 Scheduled

4.2 How many times is this baby fed in 24 hours?

1 Once

2 Twice

3 Thrice

4 Four times

5 > Five times

4.3 What is the indication to you that the baby has fed to satisfaction every time of feeding?

1. Refusal to continue feeding

2. When baby's abdomen distends

3. Baby completes the feeds

4. Both breasts are emptied

5. Any other specify.....

4.4 Who feeds the baby in your absence?

1 Mother

2 Neighbors

3 Any other (specify).....

4.5 How long is the baby left under the care of other people every day?

1 Less than three hours

2 Three to five hours

3 More than five hours

4 Any other (specify).....

4.6 Why do you leave the baby under the care of other people?

1 Employed

2 Schooling

3 Any other (specify).....

4.7At what age was the baby when you started leaving him/her under the care of other people?

1 Immediately after birth

2 One month

3 Two months

4 Three to four months

5 Five to six months

4.8 How is the baby's feeding affected when left under the care of other people?

1 Under fed

2 Feeds normally

3 Not fed

4 Any other (specify).....

Section 5.0 Factors that influence feeding practices of the prematurely born baby by teen mothers at home

5.1 When was the last time your baby was seen in the hospital?

1 Less than one week ago

2 One to two weeks ago

3 Four weeks ago

4 Any other (specify).....

5.2 Why was the baby taken to the hospital?

1 Child welfare clinic

2 Baby was ill

3 Any other (specify).....

5.3 If baby was ill, where was the baby treated?

1 Out patient

2 In patient

5.4 If baby was treated as an in-patient, how long was he/she in the hospital?

1 Less than one week

2 More than one week

3 Any other (specify).....

5.5 Does your baby get any special food during illness?

1 Yes 2 No

5.6 If yes to the above, do you normally stop giving the baby the usual feeds during illness?

1 Yes 2 No

5.7 What foods do you give to the baby during illness?

1

2

3

5.8 In your own opinion, are there any foods or drinks that should be given to a baby any time for any reason?

1 Yes 2 No

5.9 If yes to the above, what foods or drinks should the baby be given?

Foods

Reasons for with holding the usual foods/drinks

1.....

.....

2.....

.....

Drinks

1.....

.....

2.....

.....

5.10 Who gave you the information on how to feed the baby during illness?

1 Health worker(s)

2 Mother

3 Friends

1 Others (specify).....

5.11In your own opinion, what challenges do you face with the feeding of your baby?

1.....

2.....

3.....

4.....

THANK YOU.

APPENDIX 6 PARTICIPANT INFORMATION SHEET FOR FOCUS GROUP DISCUSSION

My name is Emily Awinda, a post graduate student in Master of Science in Nursing, at the University of Nairobi. I'm conducting a research study at Pumwani Maternity Hospital at the MCH clinic. The purpose of the study is to determine the challenges of feeding premature babies during the first six months of life as experienced by teenage mothers attending maternal child welfare health clinic at the hospital. I request for your participation in the study by you taking part in the discussion. My colleague's name is.....

Data Abstraction

We would like to tape the discussion on a digital recorder so that we can make sure to capture the thoughts, opinions and ideas we hear from the group. No names shall be attached to the focus group and the digital recorder will be destroyed upon transcription of the information. You will be free to give any information you have without fear or hesitation because there is no wrong or right answer. You are free to answer any question or refuse. It will be of importance that during the discussion, one person contributes at a time and we request for the respect of each other's opinion and confidentiality.

Assurance of Confidentiality

Any information we discuss hear shall remain confidential and we will not associate your name with anything you say in the focus group. The information shall only be used for the intended purpose for the betterment of the community. You will be given a copy of the consent form to fill in if you voluntarily consent to take part in the study. You will not be identified in any form whatsoever. However, the overall findings of the study will be discussed regarding all participants without revealing anybody's identity.

Rights of the Participants

Your participation in this study is purely voluntary and if you decline to participate, you will not be denied any services that you are supposed to be given. You will be free to withdraw from the study at any time.

Benefits /Risks of the Study

The findings of the study will be used to identify appropriate approaches to feeding of prematurely born babies at home by teenage mothers. These will enable the researcher to make recommendations on the best approaches to support the teenage mothers in feeding the prematurely born babies at home. This will inform the health care providers at Pumwani Maternity hospital on the areas of emphasis while taking care of these babies. The national policy makers will also be alerted on the areas that need to be given priority when planning for feeding the premature born babies among the teenage mothers in the country. The findings will further assist resource allocation to priority areas locally and nation-wide. The findings of this study will also be used for future research in this field.

There is no risk your baby will be exposed to during the study. You will not be subjected to any invasive procedures during the study. This study may impose minimal psychological risks to you as you realize that you may have not fed your baby in the right way. In-case of any psychological challenges in the course of the study, kindly consult the investigator for counseling services.

Compensation

The study does not have any monetary incentive to the participants.

Duration of Participation

The discussion will take thirty to forty five minutes and nobody will be victimized for the information she will give. Thereafter, there shall be no further follow-up interview/ discussions. But you are also free to choose not to talk though your views are of great value to the study.

You will be free to ask any question before the start and at the end of the discussion. If you will have any concerns about the study you are free to contact the following:

Emily MusimbiAwinda

OR The chairperson

University of Nairobi,

KNH/UON-Ethics and Research Committee

School of Nursing Sciences,

Professor Guantai

Cell Phone Number: 0720989495

Tel: 7263009

Email: awindaemily3@gmail.com

Fax: 725272 Email: uonknherc@uonbi.ac.ke

APPENDIX 7 CONFIRMATION OF CONSENT FOR FGD (MOTHERS AGED 18 TO 19 YEARS).

I have fully understood the content about participation in the discussion about the study. I voluntarily agree to take part in the discussion.

Teenage Mother's Signature/Thumb mark.....

Researcher's Signature.....

Date

IDHINIYAKUSHIRIKIKWENYEMJADALAWAUTAFITI (WAMAMA WENYE UMRI YA MIAKA 18 HADI 19).

Nimeelezwakinagabagakuhusumjadalawautafitinanimekubalikushiriki.

Sahihi/Kidolegumba cha Mama.....

SahihiyaMtafiti.....

Tarehe.....

APPENDIX 8 FOCUS GROUP DISCUSSION GUIDE

RESEARCH TOPIC: CHALLENGES OF FEEDING PREMATURE BABIES DURING THE FIRST SIX MONTHS OF LIFE: A SURVEY ON EXPERIENCES BY TEENAGE MOTHERS.

Introduction:

Welcome and thank you for agreeing to participate in the discussion. My name is Emily Awinda and my colleagues' name is..... We are conducting a study to determine challenges of feeding premature babies during the first six months of life as experienced by teenage mothers. Thus your valuable opinions will be received gladly to help identify appropriate approaches to feeding of prematurely born babies at home by teenage mothers. Our discussion shall be guided by the questions as I will pause to the group and nobody will be victimized for any responses given. Kindly feel free to talk because any views given are neither right nor correct. My colleague will take note as we discuss as well as record the discussion. We are going to spend a maximum of forty five minutes. You are free ask any question before we start.

Group norms:

We shall collectively come up with the norms for the group before we start the discussion as guided by the following questions;

1. What is your understanding of exclusive breast feeding? *Probe: how long?*
2. In your own understanding, explain how the baby who was born prematurely is expected to feed? *Probe: Breastfed? Fed with cup and spoon? Fed with a bottle Frequency?*
3. How do you feed your babies at home? *Probe: Fed with porridge? Feeding is scheduled? Fed only during the day?*
4. What problems do you experience at home with the feeding of your babies? *Probe: Insufficient breast milk? Nipple pain on breast feeding? Lack of money to buy baby's feeds? Breastfeeding is not accepted by peers?*
5. What do you do as teenage mothers to cope with the challenges? *Probe: Mix the feeds? Schedule the feeding? Leave the baby under the care of somebody else?*
6. What concerns and recommendations would you give to improve the feeding of your babies?

Conclusion:

We have come to the end of our discussion and we appreciate your coming and sharing your thoughts, opinions, and ideas with us. No follow up shall be made concerning the discussion.

THANK YOU.

**APPENDIX 9: CONFIRMATION OF CONSENTFORFGD
(PARENT/GUARDIAN)**

I have fully understood the content about participation in the discussion about the study. I voluntarily agree for my daughter to take part in the discussion.

Parent's/Guardian's Signature/Thumb mark.....

Researcher's Signature.....

Date

IDHINIYAKUSHIRIKIKWENYEMJADALAWAUTAFITI (MZAZI/MLEZI).

Nimeelezwakinagaubagakuhusumjadalawautafitinanimekubali mtoto wangu kushiriki.

Sahihi/Kidolegumba cha Mzazi/Mlezi.....

SahihiyaMtafiti.....

Tarehe.....

APPENDIX 10 ASSENT FOR THE MINORS FOR FGD (MOTHERS AGED 13 TO 17 YEARS)

I have fully understood the content about participation in the discussion about the study. I voluntarily agree to take part in the discussion.

Minor's Signature/Thumb mark.....

Researcher's Signature.....

Date

IDHINIYAKUSHIRIKIKWENYEMJADALAWAUTAFITI (MADOGO).

Nimeelezwakinagaubagakuhusumjadalawautafitinanimekubalikushiriki.

Sahihi/Kidolegumba cha Madogo.....

SahihiyaMtafiti.....

Tarehe.....

APPENDIX 11 UTAFITI HABARI KARATASI KWA AJILI YA WASHIRIKI WA UTAFITI

CHEO UTAFITI: CHANGAMOTO KWA AJILI YA CHAKULA WATOTO MAPEMA WAKATI WA MIEZI SITA YA KWANZA YA MAISHA: UTAFITI NA UZOEFU WA VIJANA MAMA.

UTANGULIZI: UTAFITI NA MTAFITI

Jina langu ni Emily Awinda. Mimi nina baada ya mwanafunzi kuhitimu katika chuo kikuu cha Nairobi, shule ya sayanzi ya uuguzi. Ninafanya utafiti katika hospitali ya uzazi ya Pumwani kwenye kliniki ya afya ya uzazi mtoto. Lengo la utafiti huu ni kuamua changamoto ya kulisha watoto waliozaliwa mapema wakati wa miezi sita ya kwanza ya maisha kama uzoefu na wa vijana mama wanaohudhuria kliniki ya afya ya uzazi mtoto ya hospitali ya Pumwani.

UCHUKUAJI WA TAARIFA

Ili utafiti huu ufuzu, ninakuomba kushiriki kwako katika utafiti kwa kujibu maswali ambayo nitakaokuuliza. Utajibu maswali kwa kadri ya ujuzi wako kwa vile wewe ni mama ambaye ni wa kuzaa mapema. Ningependa kukusanya taarifa juu ya changamoto unayopitia kulisha mtoto wako nyumbani.

HUHAKIKA WA USIRI

Taarifa yoyote zitkazokusanywa kutokana na utafiti huu zitabaki kuwa siri. Zitatumika tu kwa ajili ya buresha jamii. Utapewa nakala ya fomu ya kujaza kama wewe kwa hiari na ridhaa ya kushiriki kwenye utafiti. Huwezi kutambuliwa vyovyote katika utafiti huu. Hata hivyo, matokeo ya jumla ya utafiti itajadiliwa kuhusu washirika wote pia kwa ujumla bila kufafanua washiriki wowote au mtu yeyote.

HAKI YA WASHIRIKI

Ushiriki wako katika utafiti huu utakuwa kwa hiari, na kama wewe ungependa kushuka kwa kushiriki utaruhusiwa na pia huwezi kukataliwa huduma ambaye unahitaji. Utakuwa huru kuondoka kwenye utafiti wakati wowote.

FAIDA/HATARI YA UTAFITI

Matokeo ya utafiti itatumika kubaini mbinu sahihi za kulisha watoto waliozaliwa mapema na wamama vijana nyumbani. Pia yatawezesha kutengeneza amri/njia bora za kuwasaidia akina mama vijana katika kuwalisha hawa watoto nyumbani. Wataalam wa huduma za afya wa hospitali ya uzazi ya Pumwani nao watajulishwa maeneo ya msisitizo wakati wanapowahudumia akina vijana mama wa kuzaa mapema. Haya matokeo pia yatawezesha kutunga sera za kuhamasisha katika maeneo ya kupewa ambayo yatapelelewa kipau mbele wakati wa kupanga kwa ajili ya kulisha watoto waliozaliwa mapema na vijana mama katika nchi. Matokeo yataaidia ukawaji wa rasilimali kwa maeneo ya kipau mbele ndani ya nchi na taifa kwa jumla. Tena matokeo ya utafiti huu yatumika kwa kufanya utafiti katika siku za usoni. Hakuna hatari ambayo motto wako atawekwa wakati utafiti utakuwa unaendelea. Utafiti huu pengine utakuletea usumbufu wa saikolojia wakati utatambua ya kwamba haujamulisha mtoto wako vile invyofaa. Kukitokea shida yeyote ya saikolojia, wakati utafiti unapoendelea, tafadhali julisha mchunguzi wa huduma wa ushauri.

FIDIA

Utafiti hauna motisha ya kifedha kwa washiki.

MUDA WA KUSHIRIKI

Uchunguzi huu utahitaji majibu ya maswali kama yalivyowekwa na mchunguzi kwa maswali ya kujazwa. Baada ya hapo, hapatakuwa na kufatiliwa kwa mahojiano. Mchakato huu utachukua muda wa dakiaka kati ya ishirini na tano nusu saa.

MAWASILIANO YA HABARI

Wakati wowote utakapohitaji ufafanuzi yeyote au maswali kuhusu utafiti huu, unaweza kuuliza au wasiliana na Emily Awinda, mwanfunzi wa chuo kikuu cha Nairobi kwa nambari ya simu 0720989495, au mwenye kiti, KNH/UON/ERC, sanduku la posta 20723-00200, nambari ya simu 020-2725272. Wasimamizi wangu ni daktari Waithira Mirie na Bi Angeline C. Kirui, wote kutoka chuo kikuu cha Nairobi, shule ya sayansi ya uuguzi.

APPENDIX 12 FOMU YA IDHINI KWA LENGU MAJADILIANO YA KUNDI

CHEO UTAFITI: CHANGAMOTO KWA AJILI YA CHAKULA WATOTO MAPEMA WAKATI WA MIEZI SITA YA KWANZA YA MAISHA: UTAFITI NA UZOEFU WA VIJANA MAMA.

UTANGULIZI: UTAFITI NA MTAFIGI

Jina langu ni Emily Awinda. Mimi nina baada ya mwanafunzi kuhitimu katika chuo kikuu cha Nairobi, shule ya sayanzi ya uuguzi. Ninafanya utafiti katika hospitli ya uzazi ya Pumwani kwenye kliniki ya afya ya uzazi mtoto. Lengo la utafiti huu ni kuamua changamoto ya kulisha watoto mapema wakati wa miezi sita ya kwanza ya maisha kama uzoefu na wa vijana mama wanaohudhuria kliniki ya afya ya uzazi motto ya hospitali ya Pumwani. Nakuomba ushiriki kwa uchunguzi kwa kuchangia kwa mjadala ya kikundi. Jina la mwenzangu ni.....

UCHUKUAJI WA TAARIFA

Tungependa kuunasa mjadala kwa kinasa digitali ili tuweze kuhakikisha kukamata mawazo, maoni na sisi kusikia kutoka kwa kikundi waziwazi. Hakuna majina yeyote itakayohusishwa na kikundi na kinasa digitali kitaharibiwa baada ya kupata taarifa zilizorekodiwa kikamilifu. Utakuwa huru kutoa taarifa zozote bila uoga au kusita kwasababu hakuna makosa au jibu sahihi. Utakuwa huru pia kijibu swali lolote au kukataa. Itakuwa ni muhimu kwamba wakati wa mjadala mtu mmoja kuchangia kwa wakati wake na kasha tunomba heshima ya maoni ya kila mmoja na usiri.

HUHAKIKA WA USIRI

Taarifa yoyote zitakazojadiliwa hapa zitabaki kuwa siri. Zitatumika tu kwa ajili ya kuboresha jamii. Utapewa nakala ya fomu ya kujaza kama wewe kwa hiari na ridhaa ya kushiriki kwenye utafiti. Huwezi kutambuliwa vyovyote katika utafiti huu. Hata hivyo, matokeo ya jumla ya utafiti itajadiliwa kuhusu washirika wote pia kwa ujumla bila kufafanua washiriki wowote au mtu yeyote.

HAKI YA WASHIRIKI

Ushiriki wako katika utafiti huu utakuwa kwa hiari, na kama wewe ungependa kushuka kwa kushiriki utaruhusiwa na pia huwezi kukataliwa huduma ambaye unahitaji. Utakuwa huru kuondoka kwenye mjadala wakati wowote.

FAIDA/HATARI YA UTAFITI

Matokeo ya utafiti itatumika kubaini mbinu sahihi za kulisha watoto waliozaliwa mapema na wamama vijana nyumbani. Pia yatawezesha kutengeneza amri/njia bora za kuwasaidia akina mama vijana katika kuwalisha hawa watoto nyumbani. Wataalam wa huduma za afya wa hospitali ya uzazi ya Pumwani nao watajulishwa maeneo ya msisitizo wakati wanapowahudumia akina vijana mama wa kuzaa mapema. Haya matokeo pia yatawezesha kutunga sera za kuhamasisha katika maeneo ya kupewa ambayo yatapewa kipau mbele wakati wa kupanga kwa ajili ya kulisha watoto waliozaliwa mapema na vijana mama katika nchi. Matokeo yatsaidia ukawaji wa rasilimali kwa maeneo ya kipau mbele ndani ya nchi na taifa kwa jumla. Tena matokeo ya utafiti huu yatatumika kwa kufanya utafiti katika siku za usoni. Hakuna hatari ambayo motto wako atawekwa wakati utafiti utakuwa unaendelea. Utafiti huu pengine utakuletea usumbufu wa saikolojia wakati utatambua ya kwamba haujamulisha mtoto wako vile invyofaa. Kukitokea shida yeyote ya saikolojia, wakati utafiti unapoendelea, tafadhali julisha mchunguzi kwa huduma wa ushauri.

FIDIA

Utafiti hauna motisha ya kifedha kwa washiriki.

MUDA WA KUSHIRIKI

Uchunguzi huu utahitaji majibu ya maswali kama yalivyowekwa na mchunguzi kwa maswali ya kujazwa. Baada ya hapo, , hapatakuwa na kufatiliwa kwa mahojiano. Mchakato huu utachukua muda wa dakiaka kati ya ishirini na tano nusu saa.

MAWASILIANO YA HABARI

Wakati wowote utakapohitaji ufafanuzi yeyote au maswali kuhusu utafiti huu, unaweza kuuliza au wasiliana na Emily Awinda, mwanfunzi wa chuo kikuu cha Nairobi kwa nambari ya simu 0720989495, au mwenye kiti , KNH/UON/ERC, sanduku la posta 20723-00200, nambari ya simu 020-2725272. Wasimamizi wangu ni daktari Waithira Mirie na Bi Angeline C. Kirui, wote kutoka chuo kikuu cha Nairobi, shule ya sayansi ya uuguzi.

APPENDIX 13 ETHICS AND RESEARCH COMMITTEE APPROVAL LETTER



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
(254-020) 2726300 Ext 44355

Ref: KNH-ERC/A/181

Link: www.uonbi.ac.ke/activities/KNHUoN

Awinda Emily Musimbi
School of Nursing Sciences
College of Health Sciences
University of Nairobi

Dear Emily

RESEARCH PROPOSAL: CHALLENGES OF FEEDING PREMATURE BABIES DURING THE FIRST SIX MONTHS OF LIFE: A SURVEY ON EXPERIENCES BY TEENAGE MOTHERS (P142/03/2014)

This is to inform you that the KNH/UoN-Ethics & Research Committee (KNH/UoN-ERC) has reviewed and **approved** your above proposal. The approval periods are 10th June 2014 to 9th June 2015.

This approval is subject to compliance with the following requirements:

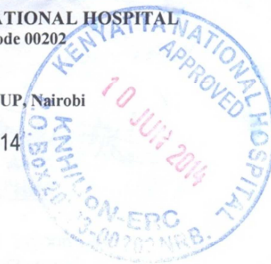
- a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH/UoN ERC before implementation.
- c) Death and life threatening problems and severe adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH/UoN ERC within 72 hours of notification.
- d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH/UoN ERC within 72 hours.
- e) 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.*)
- f) Clearance for export of biological specimens must be obtained from KNH/UoN-Ethics & Research Committee for each batch of shipment.
- g) Submission of an *executive summary* report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

For more details consult the KNH/UoN ERC website www.uonbi.ac.ke/activities/KNHUoN.



KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

10th June 2014



Protect to Discover

Yours sincerely



PROF. M. L. CHINDIA
SECRETARY, KNH/UON-ERC

- c.c. The Principal, College of Health Sciences, UoN
 The Deputy Director CS, KNH
 The Chairperson, KNH/UoN-ERC
 The Assistant Director, Health Information, KNH
 The Director, School of Nursing Sciences, UoN
 Supervisors: Dr. Waithira Mirie, Mrs. Angeline C. Kirui

Protect to Discover

APPENDIX 14 PUMWANI MATERNITY HOSPITAL APPROVAL LETTER

PUMWANI MATERNITY HOSPITAL



Tel: 02/6763291-4
Fax: 02/6762965

P.O. Box 42849
Code: 00100- GPO
Nairobi

PMH/DMOH/75/0450/2014

12th June 2014

TO:

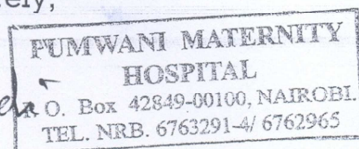
Awinda Emily Musimbi
School of Nursing Sciences
College of Health Sciences
University of Nairobi.

RE: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that that the research entitled "**Challenges of Feeding Premature Babies During the First Six Months of Life: Survey of Experiences by Teenage Mothers**" 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,



DR. L.O. KUMBA
MEDICAL SUPERINTENDENT

APPENDIX 15 TABLE.....(GHANNT CHART)

ACTIVITY	Nov. 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	April 2014	May 2014	June 2014	July 2014
Proposal Writing									
Presentation for correction and approval									
Printing questionnaire for pilot study pilot field work, training research assistants									
Analysis and evaluation of pretest of questionnaire									
Finalization and printing of research instrument									
Field data collection									
Data cleaning									
Data analysis and report writing									
Defence of project report									
Dissemination ;submission, publication.									

APPENDIX 16 TABLE.....(RESEARCH BUDGET)

<u>Description</u>	<u>Unit</u>	<u>Cost per unit</u>	<u>Tot. cost. Ksh.</u>
<u>Proposal writing.</u>			
1.typing and printing	50	25	1250
2.research note book and stationary	1	900	900
3.biro pens, pencils and erasers	10, 5, 4	@ 20, 40, 15	460
4.photocopy	6*50	@3 per page	900
5.UON/KNH ethics committee	1	2,000	2,000
6. Digital recorder	1	3,000	3000
7. Pumwani Maternity Hospital	1	6,000	6,000
Preparation of instrument			
1. Typing and printing	11	25	275
2. Photocopy	30*11	3	990
Staff cost			
Transport for Investigator	40 days	500	20,000
Statistician	1	10,000	10,000
Research assistants	2*40days	500	40,000
Data processing and binding			
1. Typing and printing preliminary results	30	25	750
2. Photocopy for supervisors	80*2	3	480
3. Typing and printing final draft	80	25	2,000
4. Printing and binding final copies	10	1,000	10,000
5. Publishing			
Subtotal			99,005
Contingencies 10%		10% total cost.	9,900.5
Grand Total			108,905.50