

**AN ASSESSMENT OF ADHERENCE TO THE TEN STEPS OF THE BABY  
FRIENDLY HOSPITAL INITIATIVE GUIDELINES BY THE KENYATTA  
NATIONAL HOSPITAL MATERNITY UNIT**

**By**

**DR JOSEPHINE OJIGO**

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REQUIREMENTS OF THE DEGREE OF MASTER OF MEDICINE IN PAEDIATRICS  
AND CHILD HEALTH OF THE UNIVERSITY OF NAIROBI.**

**2015**

## DECLARATION

This dissertation is my original work and to the best of my knowledge has not been presented for the award of a degree in any other university or any other examination body.

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Dr. Josephine Ojigo (MB ChB)

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Date

Resident - Department of Paediatrics and Child Health, University of Nairobi

Tel: (+254 724) 394 318

Email: [joseojigo@yahoo.co.uk](mailto:joseojigo@yahoo.co.uk)

## APPROVAL

This dissertation is written and submitted as requirement for the award of the master's degree in paediatric and child health with our approval as University supervisors.

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Prof. Ruth Nduati (MB ChB, MMED Paeds, MPH)

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Date

Associate Professor of Paediatrics and Child Health

Tel: (+254 722) 235 323

Email: [ruth\\_nduati2000@yahoo.com](mailto:ruth_nduati2000@yahoo.com)

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Dr. Florence Murila (MB ChB, MMED Paeds, Neonatology)

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Date

Senior Lecturer and Consultant Neonatologist

Department of Paediatrics and Child Health, University of Nairobi

Tel: (+254 729) 430 022

Email: [fmurila@gmail.com](mailto:fmurila@gmail.com)

## **DEDICATION**

To Dad, Joseph Achila and Mum, Monica Aluoch for your LOVE for education and the never ending support. You are my pillars. Thanks a million.

My son Albright Achilla, may you grow to pursue knowledge to the highest level.

To Stan, for being there when you were there. Thank you.

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## **ABBREVIATIONS**

BF	Breastfeeding
BFHI	Baby Friendly Hospital Initiative
EBF	Exclusive Breastfeeding
HINI	High Impact Nutrition Interventions
HIV	Human Immunodeficiency Virus
IYCF	Infant and Young Child Feeding
KDHS	Kenya Demographic Health Survey
KNH	Kenyatta National Hospital
LW	Labour Ward
M.Med	Master of Medicine
M.Sc	Master of Science
MDGs	Millennium Development Goals
MoPHS	Ministry of Public Health and Sanitation
PROBIT	Promotion of Breastfeeding Interventions Trial
SHOs	Senior House Officers
SUN	Scaling Up Nutrition
U.S.	United States
UNICEF	United Nations Children's Fund
WHO	World Health Organization



## **DEFINITION OF TERMS**

**Early initiation of breastfeeding;** generally refers to observation or report of breast contact and infant suckling within the first hour of life. It does not necessarily demand that the feeding was assessed as an effective feed.

**Exclusive breastfeeding** means the infant has received breast milk from the mother or a wet nurse, or expressed breast milk, and no other liquids or solids with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines.

According to the WHO IYCF indicators, it refers to the percentage of children less than six months old who are fed breast milk alone (no other liquids) in the past 24 hours but in this study exclusive breastfeeding will be defined as the baby having received breast milk from the mother or expressed breast milk, and no other liquids or solids with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines in the first 7 days of life.

**Pre-lacteal Feeds:** - Any food, solid or liquid given to an infant before initiation of breastfeeding.

## **ABSTRACT**

### **Background**

Breastfeeding is known to be beneficial for maternal health and infants' optimal growth, development and health. The Baby Friendly Hospital Initiative (BFHI) is one of the most effective methods of improving exclusive breastfeeding and breastfeeding overall.

Despite the promotional efforts the rates of exclusive breastfeeding are still low worldwide. This could be due to inadequate maternal support both antenatally and postnatally as defined by the Ten Steps of Successful Breastfeeding in the Baby Friendly Hospital Initiative (BFHI) guidelines, hence the need to assess the implementation of these Ten Steps.

Kenyatta National Hospital is a certified Baby Friendly hospital with a busy maternity that had an average of 750 deliveries per month in the year 2012.

### **Objectives of the study**

This study was carried out mainly to assess the status of adherence to the Ten Steps of the BFHI by Kenyatta National Hospital. Secondary objectives were to quantify the proportion of newborns breastfed within first hour of birth, to correlate day 7 clinical outcomes of the infants to timing of breastfeeding initiation and the presence of information on breastfeeding support and to compare the mothers who initiated breastfeeding within the first hour of delivery to those having delayed initiation.

### **Methodology:**

This was a: -

1. Short longitudinal survey of the mothers involving observation of care from the time of delivery, an interview within 12-24 hours and a follow up interview at day 7.
2. Cross-sectional survey of the health care workers and
3. An institutional observation to ascertain adherence to step 1 of the Ten Steps.

Study materials were adapted from the WHO/UNICEF's IYCF assessment tool and the BFHI hospital self-appraisal and monitoring

## **Results**

We enrolled 103 mothers who had come to deliver at the KNH, with a mean age of 27 years (SD 5.5), range of 15 years to 40 years and 72 health care workers in the Maternity Unit, mean age of 37 years (SD 10.2). KNH was fully compliant with steps 6, 7, 8 and 9 giving an overall 40% compliance rate. The hospital did not achieve the threshold required to be classified as fully compliant with steps 1, 2, 3, 4, 5 and 10. The babies initiated to the breast within the first hour of birth were 68%. The median time to breastfeeding initiation was longer for those who experienced morbidity in the first 7 days of life compared to those who did not have any morbidity, 57.5 minutes versus 40 minutes respectively (p value = 0.713). In addition, 78% of mothers whose infants had morbidity had not received information on post partum breastfeeding support compared to 54% whose infants had no morbidity (p value = 0.292). Demographic characteristics of age, parity, marital status and level of education were comparable for mothers who had early initiation versus those with delayed breastfeeding initiation (p values of 0.797, 0.142, 0.838 and 0.707 respectively).

## **Conclusion**

This study found that Kenyatta National Hospital was not compliant with the Ten Steps of the BFHI. The proportion of newborns that had early initiation of breastfeeding (within 1 hour of birth) was 68%. There was a difference in neonatal mortality between the mothers who had early initiation of breastfeeding to those with delayed initiation but statistically it was not significant. There was also a difference in neonatal mortality between the mothers who received antenatal information on breastfeeding to those who did not but the difference was not statistically significant. There was no significant difference between the mothers who had early initiation of breastfeeding to those who initiated breastfeeding late as pertains to their age, parity, marital status and level of education.

## **Recommendations**

Kenyatta National Hospital should intensify implementation of the BFHI.

Larger studies on mothers and their infants to ascertain the long term effect of timing of initiation of breastfeeding to infant morbidity and mortality should be conducted.

## **BACKGROUND**

### **Introduction**

Breastfeeding is known to be beneficial for maternal health and infants' optimal growth, development and health. Breast milk is a natural first food and ideal nourishment for infants' survival. It has a significant positive impact on child growth and development and decreases the risk for many acute and chronic diseases. Exclusive breastfeeding in the first six months of life stimulates babies' immune systems and protects them from diarrhoea and acute respiratory infections – two of the major causes of infant mortality in the developing world – and improves their responses to vaccination.

Initiation of breastfeeding within the first hour has been found to improve neonatal survival by 2.4 fold<sup>1</sup>. Early initiation of breast feeding also enhances “Maternal- infant Bonding” which means the development of the core relationship between mother and child<sup>2</sup>.

Breastfeeding is thought to benefit the mother as it leads to reduced postpartum bleeding and early uterine involution, coupled with decreased risk of breast and ovarian cancers and hip fractures later in life. Exclusive breastfeeding is also used as a method of natural family planning for child spacing (Lactation Amenorrhea Method)<sup>3,4</sup>.

Breastfeeding is therefore recommended as the optimal strategy for feeding newborns and young infants. The WHO recommends exclusive breastfeeding of infants for the first six months of life. Thereafter; nutritionally adequate, safe and age appropriate complementary foods should be introduced, with continued breastfeeding up to two years of age or beyond<sup>5</sup>.

### **Recommended breastfeeding practices for the newborn <sup>5</sup>**

- Early initiation of breastfeeding within the first hour of birth.
- Exclusive breastfeeding for the first six months after birth
- Good attachment and positioning and prompt treatment of breast conditions such as engorgement, cracked nipples, mastitis, and breast abscesses

- Frequent breastfeeds, day and night (8-12 times per 24 hours and more frequently if needed, especially in the early weeks)
- Continuation of breastfeeding when mother or newborn is ill
- Extra support for feeding more vulnerable newborns, including low birth weight or premature babies, those born to HIV-infected women, sick or severely malnourished babies, and those in emergency settings such as war or natural disaster

**Early initiation of breastfeeding;** generally refers to observation or report of breast contact and infant suckling within the first hour of life. It does not necessarily demand that the feeding was assessed as an effective feed.

Early initiation lengthens the duration of breastfeeding by stimulating breastmilk production and sustenance of high levels of prolactin, the hormone that sustains lactation in the early months of breastfeeding. This minimizes risk of lactation failure, thus increasing chances of successful breastfeeding.

**Exclusive breastfeeding** means that the infant has received breast milk from the mother or a wet nurse, or expressed breast milk, and no other liquids or solids with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines. According to the WHO IYCF indicators, it refers to the percentage of children less than six months old who are fed breast milk alone (no other liquids) in the past 24 hours<sup>6</sup>. Exclusive breastfeeding is the most effective preventative intervention for ensuring child survival and is estimated to save 13% of all under-five deaths<sup>7</sup>.

### **Promotion of breastfeeding**

Various promotional efforts have been put in place to increase the exclusive breastfeeding rates and to improve proper breastfeeding techniques. These efforts include: -

- The Baby Friendly Hospital Initiative which has been shown to be one of the most effective methods of **improving exclusive breastfeeding and breastfeeding overall**<sup>8</sup>.
- Code of marketing breast milk substitutes – enacted into Kenyan law in Oct 2012 after 23 years of voluntary implementation.

- Health education materials – posters, videos

In Kenya, the promotion of exclusive breastfeeding for the first six months of life is the first of the 11 high impact nutritional interventions (HINI) that are part of the Scaling Up Nutrition (SUN) actions in an effort towards meeting MDGs 4 (Reduce child mortality) and 5 (improve maternal health)<sup>9</sup>. This intervention is expected to reduce child mortality by 13 %<sup>10</sup>.

### **The Baby Friendly Hospital Initiative**

This is a main strategy launched by WHO and UNICEF in 1991, following the Innocenti Declaration of 1990<sup>11</sup>. It is founded on the Ten Steps towards Successful Breastfeeding and is a global effort to implement practices that protect, promote and support breastfeeding. The global BFHI materials were revised, updated and expanded in 2009 for integrated care and in co-operates the code of marketing breast milk substitutes<sup>12</sup> and the requirement that health professionals be trained on lactation skills<sup>13</sup>. It also has elements of breastfeeding promotion through maternal antenatal education, postpartum lactation support and management even for mothers who are not breastfeeding. It provides modules on HIV and infant feeding and mother-friendly care, and gives more guidance for monitoring and reassessment formed by the WHO.

Globally, as at the year 2012, there were at least 21,328 ever-designated facilities. This is 27.5% of maternities worldwide: 8.5% of those in industrialized countries and 31% in less developed settings<sup>14</sup>

The BFHI has proven to be effective in improving the rates of early initiation, exclusive breastfeeding and breastfeeding overall.

### ***Ten Steps to Successful Breastfeeding***

Every facility providing maternity services and care for newborn infants should:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within half an hour of birth.

5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breast milk, unless medically indicated.
7. Practice rooming-in - that is, allow mothers and infants to remain together - 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Despite the benefits and promotional efforts, exclusive breastfeeding rates are still low worldwide with only slightly more than one third of all infants in developing countries being exclusively breastfed for the first six months of life. The reasons for the low prevalence of EBF could be lack of support for breastfeeding by social workers and health care providers and unsupportive hospital practices that delay early initiation of BF<sup>15</sup>.

## **LITERATURE REVIEW**

Improvements in early initiation of/and exclusive breastfeeding have been noted as major contributors to the improvements in child survival seen over the last two decades.

These improvements also provide optimal nutrition for early life. Optimal infant feeding includes early initiation of breastfeeding in the immediate postpartum period and exclusive breastfeeding for six months, followed by continued breastfeeding with gradual introduction of nutritionally adequate, age-appropriate complementary foods, initially those high in protein and micronutrients with continued breastfeeding up to two years of age or beyond<sup>5</sup>.

### **Value of breastfeeding**

Breast milk is a natural first food and ideal nourishment for infants' survival. It has a significant positive impact on child growth and development and decreases the risk for many acute and chronic diseases. Exclusive breastfeeding in the first six months of life stimulates babies' immune systems and protects them from diarrhoea and acute respiratory infections – two of the major causes of infant mortality in the developing world – and improves their responses to vaccination. It is estimated that 13% of child mortality could be prevented by 90% universal coverage with EBF of infants for the first 6 months of life<sup>10</sup>.

Kihara R. in her M.Med dissertation titled “Efficacy of Phone Based Counseling in Supporting Primiparous Women to Exclusively Breastfeed” followed up 180 mother-baby pairs for 14 weeks, after randomly assigning them to receive either standard health care messages alone (control group) or phone based breastfeeding support in addition to standard health care messages (intervention group) found a higher mortality rate in her control arm (28%) versus 7% in the intervention arm by 10 weeks, RR=0.25 [(0.1, 0.62) p<0.001]<sup>16</sup>.

Karen M. Edmond *et al* in their study in rural Ghana followed up 10,947 breastfed singleton infants born between July 2003 and June 2004. They found that there was a marked dose response of increasing risk of neonatal mortality with increasing delay in initiation of breastfeeding from 1 hour to day 7. Overall, initiation of breastfeeding within the first hour is associated with 2.4 fold survival compared to a delay of  $\geq 1$  day<sup>1</sup>.

Early initiation of breast feeding has also been found to enhance “Maternal- infant Bonding” which means the development of the core relationship between mother and child. A quasi-



experimental study done by Himani *et al* in Nehru hospital, India followed up 218 mother infant dyads with each group (control and experimental) having 109 mother infant dyads between August and September 2009 and found statistically significant differences between bonding scores of mothers who initiated breastfeeding within 1 hour and those initiating after 1 hour of delivery<sup>2</sup>.

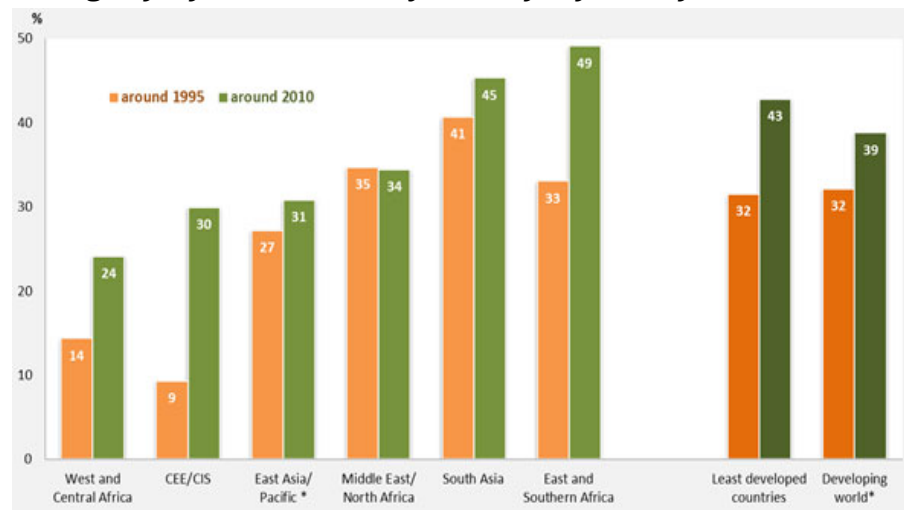
Breastfeeding also has benefits to the mother such as reduced postpartum bleeding and early uterine involution<sup>17</sup>, coupled with decreased risk of breast and ovarian cancers and hip fractures later in life. Exclusive breastfeeding is also used as a method of natural family planning for child spacing<sup>3, 4</sup>.

### **Current situation in Kenya and Globally**

Worldwide between 24 to 49% of children are breastfed exclusively (around the year 2010), which is an improvement from 9 to 41% (around the year 1995)<sup>18</sup>.

In the developing world, progress in exclusive breastfeeding has been modest, improving from 32 per cent around the year 1995 to 39 per cent around the year 2010, a relative increase of about 17 per cent.

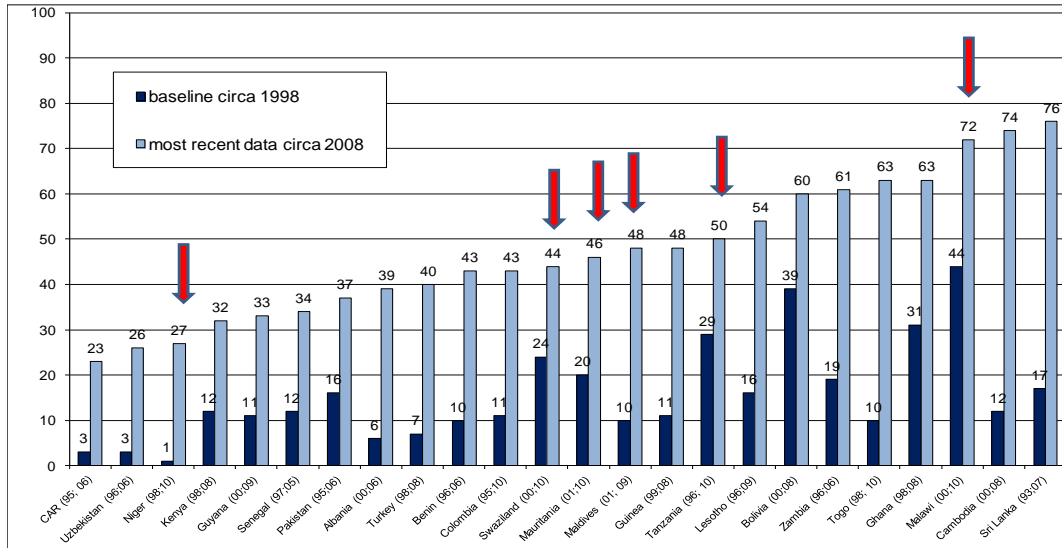
**Figure 1 - Percentage of infants exclusively breastfed for the first six months of life**



In Kenya, the rate of EBF till 6 months of age is 32% (KDHS 2008-2009), which is an improvement from 13% in 2003; while for ages 0-1 month it is 52%. In fact, Kenya is among the countries that improved its rates of exclusive breastfeeding by over 20%.<sup>19</sup>

**Figure 2- Countries with >20% increases in exclusive breastfeeding rates**

**24 countries with increases in exclusive breastfeeding > 20 percentage points**



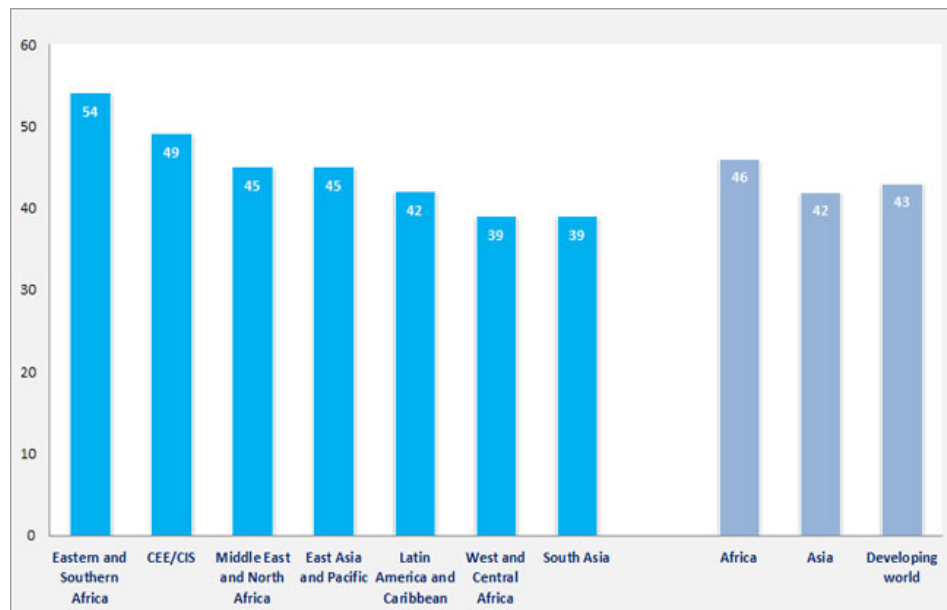
Source: UNICEF database 2011. The baseline is defined as between circa 1998 (1995-2001) and circa 2008 (2005-2011)

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This improved rate is still below the targeted rate of 80% by the year 2017<sup>20</sup> and below the 50% global target set by the 65th WHA in Geneva in May 2012<sup>21</sup>.

A recent trial has shown that early initiation of breastfeeding could reduce neonatal mortality by 22%.<sup>1</sup> In developing countries alone, early initiation of breastfeeding could save as many as 1.45 million lives each year by reducing deaths mainly due to diarrhoeal disorders and lower respiratory tract infections in children<sup>22</sup>. It probably assists in uterine involution thus preventing the risk of postpartum haemorrhage which is one of the major causes of maternal mortality<sup>17, 23</sup>. The worldwide range of early initiation is 39% to 43% while in the developing world it is less than 43%<sup>24</sup>.

**Figure 3- Rates of early initiation of breastfeeding worldwide**



There is early initiation of breastfeeding (within 1 hour of birth) for 58% of children, and 86% within one day after delivery in Kenya. Pre-lacteal feeds (something before breastfeeding initiation), are given to 42% of Kenyan children and this interferes with early initiation of breastfeeding<sup>25</sup>.

Sub-optimal breastfeeding practices put infants less than 6 months of age at risk. This involves not adhering to the recommended infant feeding practices and practising mixed feeding (Partial breastfeeding supplemented with other foods or caloric liquids) or bottle feeding (giving liquid or semisolid food including breast milk from a bottle with a nipple/teat). Mothers lack information on how bottle feeding interferes with optimal breastfeeding practices by causing nipple confusion and the increased diarrhoeal disease morbidity and mortality. Bottles with a nipple are particularly prone to contamination.

### **Promotion of breastfeeding**

In Africa, the vast majority of babies are breastfed. Even though it is a natural act, breastfeeding is also a learned behaviour. Mothers need skilled support to learn to position the baby and breastfeed optimally.

There is data showing the benefits of breastfeeding education and counseling by health professionals<sup>26</sup>, to enhance the mothers' breastfeeding confidence and knowledge by providing support in: -

- attachment and positioning techniques
- education about exclusive and unrestricted breastfeeding techniques
- assistance in interpreting their babies behaviour
- improving confidence in their ability to breastfeed.

The reasons for the low prevalence of EBF could be lack of support for breastfeeding by social workers and health care providers and unsupportive hospital practices that delay early initiation of BF. For reasons like these, effective antenatal and perinatal counseling and support are considered necessary to not only promote breastfeeding but also to prolong the duration of EBF up to six months of age<sup>27</sup>. Breastfeeding promotion, therefore, is a global priority with benefits for maternal and child health, especially in low/middle income countries where its relevance for child survival is undisputed.

### **Breastfeeding education**

Comprehensive and culturally appropriate breastfeeding education through counselors (be they doctors, nurses, midwives, lactation consultants or peer counselors) during the prenatal period, in the hospital during first week postpartum, and repeated, continual support in the mother's home is critical for facilitating breastfeeding among mothers. Both prenatal and postnatal education is important as the incidence of breastfeeding is affected primarily by prenatal education, whereas the duration and exclusivity of breastfeeding is affected by both prenatal and postpartum management.

A systematic review and meta-analysis of the U.S preventive task force on effectiveness of interventions to promote breastfeeding showed that, of all interventions, breastfeeding education was the most effective stand-alone intervention for increasing both initiation (difference 0.23; 95% confidence interval, 0.12-0.34) and short term duration (difference 0.39; 95% confidence interval, 0.27-0.50). It is most effective among disadvantaged populations with low rates of breastfeeding. Interventions that combine education and support are more effective than support

alone and should expand to all phases of pregnancy to be more effective than those limited to one phase<sup>28</sup>.

When education was combined with support programmes, larger increases were observed in initiation (from difference 0.06; 95% confidence interval, -0.02-0.15 to difference 0.21; 95% confidence interval, 0.07-0.35) and short term duration (from difference 0.11; 95% confidence interval, 0.30-0.19 to difference 0.37; 95% confidence interval, 0.17-0.58)<sup>29</sup>.

### **Baby Friendly Hospital Initiative**

This is a main strategy formed by the WHO and has been proven to be effective in improving exclusive breastfeeding and breastfeeding overall.

In the Republic of Belarus, a trial on Promotion of Breastfeeding Intervention (PROBIT) was done. Sites were randomly assigned to receive an experimental intervention (n=16) modeled on the Baby Friendly Hospital Initiative of the WHO and UNICEF, which emphasizes health care worker assistance with initiating and maintaining breastfeeding and lactation, and postnatal breastfeeding support, or to a control intervention (n=15) of continuing usual infant feeding practices and policies. Infants from the intervention sites were significantly more likely than control infants to be breastfed to any degree at 12 months (19.7% versus 11.4%; adjusted odds ratio 0.47; 95% confidence interval, 0.32-0.69), and were more likely to be exclusively breastfed at 3 months (43.3 % versus 6.4%;  $P<0.001$ ) and at 6 months (7.9% versus 0.6%;  $P=0.01$ )<sup>26</sup>.

Using a cross-sectional design, K.D. Rosenberg et al surveyed 57 Oregon birthing institutions about their breastfeeding support practices, with the objective of exploring the association between the Ten Steps of the BFHI. Compliance with the Ten Steps was used to determine an overall breastfeeding Support Score for each of Oregon's 57 birthing hospitals. They found that increases in overall hospital breastfeeding Support Scores were associated with increases in breastfeeding percentage at 2 days ( $p=0.021$ ) and at 2 weeks postpartum ( $p=0.011$ )<sup>30</sup>.

Dr Summer Sherburne et al performed a Quasi-experimental study in birth facilities in Maine to examine compliance with the BFHI as well as evaluate the BFHI and its components on breastfeeding initiation and duration overall and according to maternal education level. They sampled 915 mothers who gave birth in four hospitals that were BFHI-accredited or became accredited and 1099 mothers from six matched non-BFHI facilities and used maternal reporting

on seven (of 10) BFHI practices (breastfeeding practice score 0–7) and receipt of a gift pack with formula (yes/no). They found out that, 34.6% of mothers from BFHI-accredited facilities reported experiencing all seven BFHI breastfeeding practices, while 28.4% reported being given a gift pack with formula. Among mothers with lower education, the BFHI increased breastfeeding initiation by 8.6 percentage points (adjusted coefficient, 0.086 [95% CI, 0.01 to 0.16]) and, independently, each additional breastfeeding practice was associated with an average increase in breastfeeding initiation of 16.2 percentage points (adjusted coefficient, 0.162 [95% CI, 0.15 to 0.18]). They concluded that compliance with BFHI practices among BFHI-accredited facilities is not optimal and needs to be monitored<sup>31</sup>.

In their study titled Re-assessment of selected Baby-Friendly maternity facilities in Accra, Ghana, Nii Okai Aryeetey R. and Antwi C.L. re-assessed six selected hospitals between April and June 2011 in the Accra Metropolis one of the hospitals being a referral hospital. They interviewed a total of 90 health care workers, 60 pregnant women and 150 postpartum women including institutional observation. They found the weighted exclusive breastfeeding rate of 93.8 % with none of the facilities adhering completely to the Ten Steps. The overall rate of adherence was 42% (range=30-70%) and only step 7 was adhered to by all facilities. The referral hospital adhered only to steps 6, 7 and 8 (30% compliance). They concluded that there was poor adherence to Baby-Friendly practices in designated BFHI facilities and therefore recommended renewed efforts to support monitoring of designated facilities<sup>32</sup>.

## **Problem statement**

There is continued recognition the world over of the benefits of exclusive breastfeeding on infant and maternal health. Inadequate counseling and support to mothers wishing to breastfeed has contributed to the unacceptably high rate of premature cessation of breastfeeding. Education and skilled support is therefore the cornerstone, supporting the framework of lactation and breastfeeding particularly in initiation and sustenance of appropriate breastfeeding practices, and to prevent difficulties and overcome them when they occur. This support should be a routine part of regular prenatal, delivery and postnatal care<sup>33</sup>.

Mothers should also have access to skilled practical help from, for example, trained health workers, lay and peer counselors, and certified lactation consultants, who can help to build mothers' confidence, improve feeding technique, and prevent or resolve breastfeeding problems.

Various promotional efforts, the main one being the Baby Friendly Hospital Initiative, have been put in place to increase the exclusive breastfeeding rates and improve proper breastfeeding techniques. Despite these the rates of exclusive breastfeeding are still low.

Only one out of every 3 infants (39%) is exclusively breastfed for the first 6 months of life in the developing world, with a worldwide range of 24-49%<sup>18</sup>.

In Kenya, according to the demographic health survey 2008-2009, the rate of EBF till 6 months of age is 32%, while for ages 0-1 month it is 52%<sup>25</sup>. This is against the 'Universal Coverage' target of 90% coverage<sup>7</sup>. There is early initiation of breastfeeding (within 1 hour of birth) for 58% of children, and 86% within one day after delivery. Forty two percent (42%) of children are given prelacteal feeds, while 25% of children < 6 months are bottle-fed<sup>25</sup>.

These low rates could be due to inadequate maternal support both antenatally and postnatally as defined by the Ten Steps of Successful Breastfeeding, hence the need to assess the implementation of the Ten Steps in the Baby Friendly Hospital Initiative (BFHI).

## **Justification of Research**

There rates of exclusive breastfeeding are still low with high rates of sub optimal infant feeding practices worldwide despite the various promotional strategies put in place both globally and nationally.



KNH is a busy maternity with an average of 750 deliveries per month, between January 2012 and December 2012<sup>34</sup>.

It has about 210 health care personnel, both clinical and non-clinical, taking care of the mothers.

Hospital policy is in line with the BFHI guidelines however there is no current data on the hospital practice regarding infant feeding support for the newborns.

Dr. Kihara in her M.Med dissertation titled “Efficacy of Phone Based Counseling in Supporting Primiparous Women to Exclusively Breastfeed” found a high first week mortality in her control arm, among babies discharged from the maternity unit at KNH raising the question of whether mothers were sufficiently prepared on infant feeding<sup>16</sup>.

Therefore there is a need to assess the hospital’s implementation of the Ten Steps towards Successful Breastfeeding, a component of the Baby Friendly Hospital Initiative within the labour and postnatal wards.

## **Research Questions**

The overall research question for this study was: - Is the KNH maternity unit compliant with the BFHI policy?

## **Objectives of the study**

### **Primary objective**

To assess the compliance of KNH maternity unit with the ten steps of the BFHI

### **Secondary objectives**

1. To quantify the proportion of newborns breastfed within the first hour of birth.
2. To correlate day 7 clinical outcomes (morbidity and mortality) of the infants to timing of breastfeeding initiation and the presence of information on breastfeeding support.
3. To compare the mothers who initiate breastfeeding within the first hour of delivery to those having delayed initiation of breastfeeding.

## **STUDY MATERIALS AND METHODS**

### *Study Design, Area, Population, Sample Size, Procedure and Tools.*

#### **Study design**

The study methods used were:

1. A hospital based short longitudinal survey of the mothers to determine day 1 and day 7 infant feeding practices and a nested case control study on day 7 morbidity outcomes that compared mothers who initiated breastfeeding in the first hour to those that had delayed initiation.
2. A Cross-sectional survey of the health workers to determine their knowledge of the BFHI and infant feeding policy
3. An institutional cross sectional survey to audit compliance of KNH to Baby Friendly Hospital Initiative guidelines.

#### **Study area**

This study was carried out within the labour and postnatal wards of Kenyatta National Hospital which is located in the Upper Hill area of Nairobi County. KNH serves as a National Tertiary Referral facility and teaching hospital for the College of Health Sciences, University of Nairobi. It caters for the lower and middle socio-economic population. KNH also serves as a secondary level care facility for the population of Nairobi and its environs. As a result women present for delivery as referrals from primary level health care facilities or directly. It is a certified Baby Friendly Hospital with a busy maternity unit with an average of 750 deliveries per month in the year 2012<sup>34</sup>.

The maternity unit had around 210 health care workers, both clinical and non-clinical. The clinical healthcare workers are those involved in the direct care of the mothers and their babies (21 Consultant obstetricians and gynecologists, 52 SHOs (postgraduate students in obstetrics and gynaecology), 7 Medical officer interns, 100 Nurses, 4 Nutritionists, 2 Physiotherapists, 2 Occupational therapists) while the non-clinical staff, defined as those not directly involved in the care of mothers and their babies but due to their interaction would have a role in breastfeeding support and promotion (4 Clerical workers, 13 Support staff, 5 Patient porters). These workers take care of these mothers directly before, during and after delivery till discharge.

## **Study population**

All mothers who delivered at the KNH labour ward, either by caesarian section or normal vaginal delivery, and all the health care workers in the labour and postnatal wards who met the inclusion criteria. The health care workers included both clinical, (Consultant obstetricians and gynecologists, SHOs (postgraduate students in obstetrics and gynaecology), Medical officer interns, Nurses, Nutritionists, Physiotherapists, Occupational therapists) and non-clinical staff (Clerical workers, Support staff, Patient porters). These health care workers were selected from those working at the maternity unit (post natal and labour wards).

Participants who agreed to take part gave a written informed consent.

## **Inclusion criteria**

For mother-infant pair: -

- Delivery to a live infant
- Consent obtained

For healthcare workers: -

- Permanent or contract employees of KNH irrespective of duration of work (consultants in obstetrics and gynecology, Medical officers, Clinical officers, Medical officer interns, Clinical officer interns, Nurses, Nutritionists, Physiotherapists, Occupational therapists, Clerical workers, Catering staff, Cleaners, Patient porters) .
- Postgraduate students(M.Sc Nursing, M.Med Obstetrics and Gynecology)
- Consent obtained

## **Exclusion criteria**

For mother-infant pair: -

- Presence of serious maternal illness/condition that would compromise the interview process (eclampsia, coma)
- Still birth delivery
- Refusal to grant written informed consent

For healthcare workers: -

- Undergraduate and diploma students in training
- Workers on attachment
- Refusal to grant written consent

### Sample size

Sample size (N) was calculated using Fischer's formula with finite population correction

$$n' = \frac{NZ^2 P(1 - P)}{d^2(N - 1) + Z^2 P(1 - P)}$$

Where

**n'** - Required sample size with finite population correction

**N**=Total population size (taken as the average number of deliveries per month which according to the Health Information Systems Department, Kenyatta National Hospital is an average of 750 in the year 2012, and the total number of health care workers in the maternity unit at the time was 210)

**Z** =Statistic for a level of confidence = **1.96**

**P** =Expected proportion (P is **50%**, assuming that KNH will be 50% compliant to BFHI guidelines).

**d** is the precision of the estimated values in the study: **d** will be estimated at  $\pm 0.10$ .

The minimum sample size calculated for the population of mothers during the one month period of data collection was:

$$n' = \frac{750 \times 1.96 \times 1.96 \times 0.50(1 - 0.50)}{0.10 \times 0.10(750 - 1) + 1.96 \times 1.96 \times 0.50(1 - 0.50)}$$

$$n' = \frac{720.3}{7.49 + 0.96}$$

$$n' = 86$$

The minimum sample size for the population of health workers was

$$n' = \frac{210 \times 1.96 \times 1.96 \times 0.50(1 - 0.50)}{0.10 \times 0.10(210 - 1) + 1.96 \times 1.96 \times 0.50(1 - 0.50)}$$

$$n' = \frac{201.68}{2.09 + 0.96}$$

$$n'=67$$

There was a proportionate inclusion of all cadres of health care workers.

### **Measures of outcome**

1. The study mainly focused on compliance to the ten steps as outlined in global criteria in annex 1
2. Other outcomes measured were infant morbidity in relation to initiation of breastfeeding and presence of information on breastfeeding support.
3. Mother's characteristics in relation to timing of initiation of breastfeeding

### **Study procedure**

#### **1) Recruitment of women in the Labour ward**

The entry point was the KNH labour ward where mothers admitted for delivery were identified by the investigator and the research assistants. These mothers were either in the early active labour (cervical os 3-4cm dilated when examined by the primary care health worker) or admitted for elective caesarean section. A special tracking mark (study number) was stuck on the patient's file for easy identification and follow-up when the patient was admitted to the wards.

Sampling was systematic. The sampling interval was every ninth mother meeting the selection criteria, delivered either by caesarian section or vaginal being selected till the sample size was achieved. The starting mother's number was picked from a table of random numbers. This was to avoid sampling bias.

For those meeting the inclusion criteria, a written informed consent process to participate in the audit took place. The data collection process on mothers took place in three parts:

**a) Part one: -Observation of breastfeeding initiation in the delivery room**

Observation of care of the mother and baby to ascertain step 4 of the BFHI (help mothers initiate breastfeeding within the first hour of birth) was done.

**b) Part two: -Mother interviews in the postnatal wards**

Selected mother-baby pairs were interviewed within 12 to 24 hours of delivery to determine maternal socio-demographic and clinical characteristics, knowledge and practice regarding breastfeeding and health education mothers received on infant feeding - based on the BFHI self assessment tool. To ensure privacy and comfort of the mothers, the oral interviews took place in an enclosed room (doctor's room) after various observations had been made in the ward in relation to the ten steps of the BFHI.

**c) Part three: -Day 7 phone based interviews**

There were day 7 phone interviews by the principal investigator for mothers already discharged and gone home and face to face interviews for mothers still in the wards to determine infant feeding practice and first week infant morbidity and mortality, and whether they had been linked to community breastfeeding support resources.

Data collection was done 7 days a week by the principal researcher with the help of 3 research assistants. These assistants were qualified clinical officers who had been inducted on the ten steps of the BFHI to enable them understand the study better. They were also inducted on the purpose of the study, the whole study procedure and data collection. They took part during the pre-testing of the questionnaires.

**Health worker interviews**

A Cross-sectional survey of the Health Workers in the labour and postnatal wards was carried out after completion of data collection on the mothers. A list of the health workers was obtained and they were sampled randomly using computer generated random numbers. All cadres of health care workers were proportionately included.

A written informed consent was also obtained from the health care workers after which data was collected through a structured self administered questionnaire.

### **Institutional observation**

An observation of the labour and postnatal wards was done by the investigator using the BFHI hospital self-appraisal and monitoring tool (Annex 1) to ascertain adherence to step 1 of the Ten Steps.

### **Study tools**

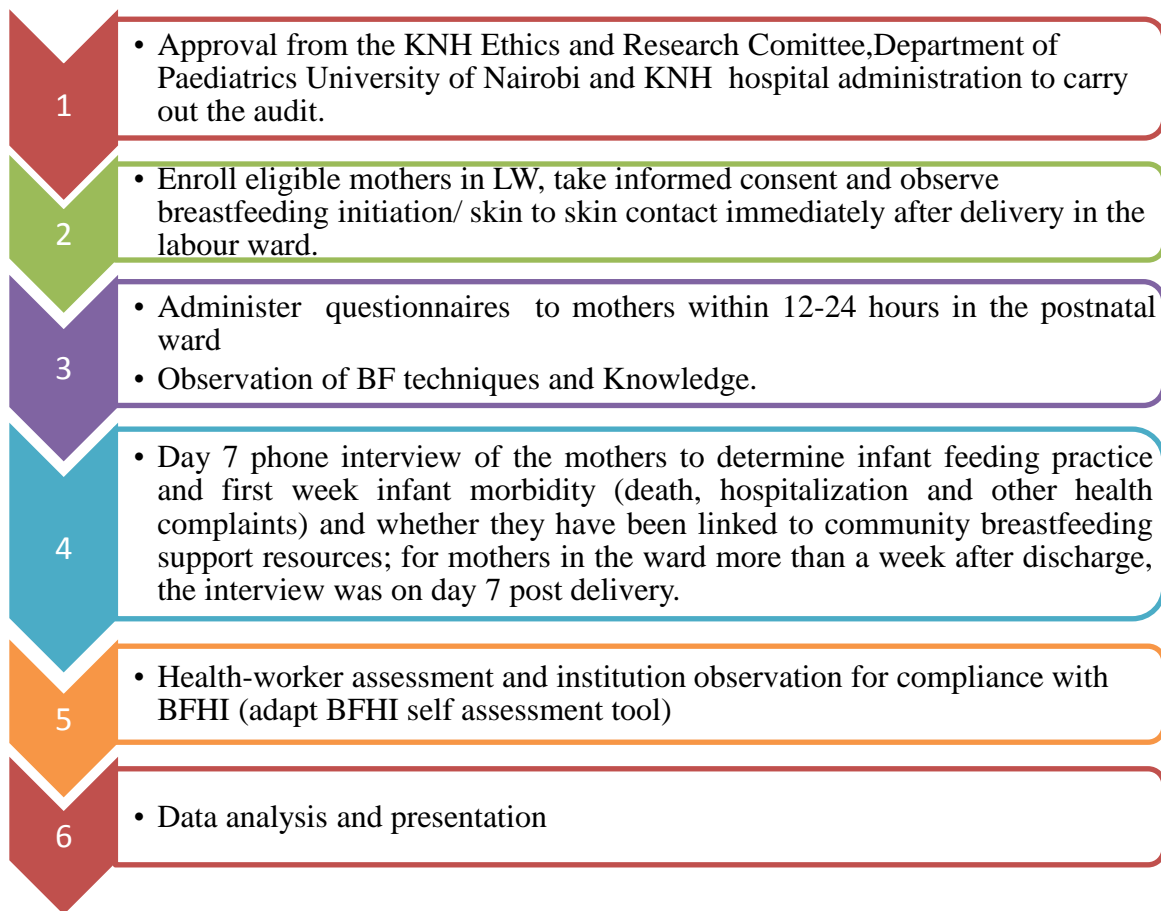
The development of the assessment tools was based on assessment of current practice and comparing results with agreed best practice standards (The global criteria as outlined in the BFHI hospital self-appraisal and monitoring tool in Annex 1).

Data collection was based on primary data obtained through pretested self administered questionnaires to the key respondents. Questionnaires to the mothers and the health workers were adapted from the WHO/UNICEF's IYCF assessment tool and the BFHI hospital self-appraisal and monitoring.

Data collection was also through observation of the health care workers' activities in the labour and postnatal wards and the mother's demonstration of breastfeeding techniques.

Questionnaires were pretested and collected at the end of the day for the purpose of quality control after they had been administered.

**Figure 4: - Flow Chart of the study procedure**



## **DATA ANALYSIS**

Data collected was stored in a password protected MS access database. Data analysis was performed using SPSS version 17.0 software. Description of the population was done by summarizing continuous data into means, standard deviations, medians and ranges and categorical data into proportions. Global criteria for the ten steps towards successful breastfeeding was measured and compared to the minimum cut off as shown in Annex 1. Early initiation of breastfeeding was presented as a proportion and its associated factors determined using Chi-square test for categorical data such as marital status and education while Student's t test was used for comparison of means such as for age. In addition, Chi square test was used to associate timing of breastfeeding initiation and day 7 outcomes that included hospitalization, death or those with other feeds introduced other than breast milk. All the tests of associations were done at 5% level of significance. Tables and charts were used to present the findings.



## **ETHICAL CONSIDERATIONS**

The study was conducted after getting approval from the Research and Ethics Committee of the Kenyatta National Hospital and the University of Nairobi.

### **Autonomy**

The study was carried out only after informed consent had been sought. There were no additional costs for participation in the study and the participants were free to withdraw from the study at any stage without penalty.

### **Informed Consent**

The participants had the details of the study fully explained to them before recruitment for the study followed by consent through signing/thumb print of the written informed consent form.

### **Confidentiality**

Ensuring that participants were assigned a study number at the beginning of the study; this was used for identification to protect their confidentiality. Data forms did not bear participants' names or clinic numbers, only their study numbers. A book bearing the names, assigned study number, the hospital number and mobile number of the patients studied were kept only by the researcher separate from the questionnaires.

### **Benefits**

Information obtained was shared with the hospital management to improve on hospital practices outlined in the Ten Steps of the BFHI that will promote breastfeeding.

## RESULTS

A total of 103 mothers, who delivered at the KNH in the month of June, 2014 and 72 health care workers were observed and interviewed on various aspects of the Ten Steps of the BFHI.

### Characteristics of the mothers.

Table 1 shows the characteristics of the mothers interviewed. The mean age was 27 years (SD 5.5) with a range of 15 years to 40 years. Of the 103 mothers, 52(50.5%) were primipara and 51 (49.5%) were multipara. Most (81.6%) mothers were married.

**Table 1: Characteristics of the mothers**

<b>Variable</b>	<b>Frequency (%) n=103</b>
<b>Actual age of mother (years)</b>	
Mean (SD)	27.0 (5.5)
Min-Max	15-40
<b>Parity</b>	
primipara	52 (50.5)
Multipara	51 (49.5)
<b>Marital status</b>	
Married	84 (81.6)
Single	17 (16.5)
Divorced	1 (1.0)
Missing	1 (1.0)
<b>Education level</b>	
Tertiary	43 (41.7)
Secondary	38 (36.9)
Primary	22 (21.4)
<b>Mode of delivery</b>	
Vaginal	66 (64.0)
Caesarean section without general anaesthesia	36 (35.0)
Caesarean section with general anaesthesia	1 (1.0)

## Characteristics of the health workers

**Table 2: Characteristics of the health workers**

<b>Variable</b>	<b>Frequency (%)</b>
<b>Age</b>	
Mean (SD)	37.0 (10.2)
Min-Max	18-68
<b>Designation</b>	
Nurse	32 (44.4)
Nutritionist	2 (2.8)
Consultant	7 (9.7)
SHO	17 (23.6)
Support staff	5 (6.9)
Physiotherapist	1 (1.4)
Occupational therapist	1 (1.4)
Medical officer intern	3 (4.2)
Patient porter	2 (2.8)
Clerical officer	2 (2.8)
<b>Occupation</b>	
Clinical	63 (87.5)
Non-clinical	9 (12.5)
<b>Gender</b>	
Male	25 (34.7)
Female	47 (65.3)
<b>Duration of years in service</b>	
Mean (SD)	5 (1.5-16)
Min-Max	0.2-32

Table 2 above shows the characteristics of the healthcare workers interviewed. There were a total of 72 health care workers with a mean age of 37 years (SD 10.2). Most (87.5%) were offered clinical services with females forming 65.3% of all the sampled health care workers.

Nurses formed the majority of the health care workers at 44.4% followed by postgraduate students in Obstetrics and Gynaecology (SHOs) at 23.6%.

The mean duration of service was 5 years (SD 1.5-16) with a range of minimum 3 months to maximum 32 years.

### **The hospital's performance in the Ten Steps**

The Ten Steps of the BFHI were assessed and analysed using various indicators adopted from the Global Criteria for the Ten Steps towards Successful Breastfeeding as outlined in the WHO's BFHI materials, Section 4: Hospital Self-Appraisal and Monitoring. The hospital was considered compliant when the maximum thresholds for all the indicators of the Ten Steps were adhered to.

The results for the Ten Steps are presented in the colour coded tables below, where red represents indicators that are below half of the set threshold, yellow represents indicators that have met 50% or more of the set threshold while green indicates the indicators that have been fully complied with as per the set threshold defined in the global criteria for the Ten Steps of the BFHI (Annex 1).

#### **Step 1: - Have a written breastfeeding policy that is routinely communicated to all health care staff.**

For Step 1 compliance, we looked at the presence of a Breastfeeding Policy and its display in critical areas of the Maternity Unit, that is, the delivery room, all the labour rooms in the labour ward, the nursing stations in labour ward and postnatal wards, the antenatal and postnatal rooms in both labour and postnatal wards and the notice boards in all the wards of the Maternity Unit.

Observation revealed the presence of a breastfeeding policy which was in a Lactation Management Training room in one of the postnatal wards but there were none displayed in any of the pertinent areas of the Maternity Unit described above.

**Step 2: - Train all health care staff in skills necessary to implement this policy.**

We interviewed health care workers (both clinical and non-clinical) on the awareness of a breastfeeding policy and if they had ever received any training or orientation on breastfeeding support to assess step 2.

Of the clinical health care workers interviewed, 88.9% were aware of the existence of a breastfeeding policy in the hospital. Only 47.6% had received some training or orientation on the policy while 28.6% could correctly name 2 of the ten steps. All the non clinical workers could give at least one importance of breastfeeding even though only 33.3% had received some orientation or training on breastfeeding support.

**Step 3: - Inform all pregnant women about the benefits and management of breastfeeding.**

For step 3 assessment, mothers were interviewed to know if they had received information on breastfeeding during their antenatal clinic attendance and their knowledge of that information.

Of the mothers interviewed, 81.4% reported having received antenatal information on BF. The majority of mothers (88%) could give at least two reasons why skin-to-skin contact is important , only 29% could give the importance of good positioning and attachment and 56.6 % were able to name two reasons why exclusive breastfeeding for the first six months of life is important.

The results for the hospital's performance in steps 1, 2 and 3 of the BFHI are summarized in table 3 below: -

**Table 3: Performance in steps 1, 2 and 3 of the Baby Friendly Hospital initiative**

Step	Indicator	Performance	
		Criteria	Actual
Step 1	Breastfeeding policy	Present	100%
	Display of BF policy	In all areas	0%
Step 2	<b>Clinical staff</b>		
	Aware of existence of a breastfeeding policy	≥80%	88.9%
	Ever received training or orientation on BF policy	≥80%	47.6%
	Can correctly name at least 2 steps of BF hospital	≥80%	28.6%
	<b>Non-clinical staff</b>		
	Ever received training or orientation on BF	≥70%	33.3%
	Can give at least 1 importance of breastfeeding	≥70%	100%
Step 3	Mothers report having received antenatal information on BF	≥70%	81.4%
	Mothers can give at least two reasons on importance of each of the following:-	≥70%	
	a. Skin to skin contact		88.0%
	b. Good positioning & attachment		28.9%
	c. Exclusive Breastfeeding for the first six months		56.6%

**Step 4: - Help mothers initiate breastfeeding within the first hour of delivery.**

Observation of deliveries to ascertain step 4 showed that in only 4.9% of the vaginal deliveries were babies placed and held in skin-to-skin contact with their mothers within 5 minutes after birth.

The babies initiated on breast feeding within the first hour of birth were 68%.

**Step 5: -Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.**

Clinical health care workers and the mothers were interviewed for step 5 assessment in addition to observing the mothers for their ability to demonstrate proper breastfeeding techniques.

Of the selected clinical staff members, 95.2% reported that they show mothers how to position and attach their babies for breastfeeding.

Of all the selected mothers, 77.7% reported having received assistance to breastfeed their babies after delivery but none could demonstrate proper positioning of the babies when breastfeeding.

Only 30% of the mothers interviewed reported that they had been told they needed to breastfeed or express milk 6 times or more every 24 hours to keep up the milk supply.

**Step 6: - Give newborn infants no food or drink other than breast milk, unless medically indicated.**

Interview of the mothers in the postnatal wards to ascertain compliance with step 6 indicated that babies who were exclusively breastfed from birth to discharge home were 96.1%.

The results for Kenyatta National Hospital's performance in steps 4, 5 and 6 are tabulated in table 4 below: -

**Table 4: Performance in step 4, 5, and 6 of the Baby Friendly Hospital initiative**

Step	Indicator	Performance	
		Criteria	Actual
Step 4	Babies placed skin to skin contact with their mothers within 5 minutes of birth.	≥75%	4.9%
	Babies were initiated on breast milk within the first hour of birth.	≥80%	68%
Step 5	Clinical staff report showing mothers how to position and attach their babies	≥80%	95.2%
	Mothers report receiving assistance in breastfeeding immediately after birth.	≥80%	77.7%
	Mothers can demonstrate correct positioning of babies while breastfeeding.	≥80%	0%
	Mothers report ≥6 times breastfeeding or expressing breast milk in 24 hours.	≥80%	30.1%
Step 6	Babies exclusively breastfed from birth to discharge home	≥75%	96.1%

**Step 7: - Practice rooming-in - that is, allow mothers and infants to remain together - 24 hours a day.**

To ascertain step 7, mothers were observed in the postpartum wards to determine whether they were together with their babies. They were also interviewed to ascertain whether they had been in the same room with their babies without separation for 24 hours prior to the interview.

Observation confirmed that 94.2% of the mothers and babies were together while 92.2% of mothers reported that they had been in the same room with their babies without separation for the 24 hours preceding the interview.



**Step 8: - Encourage breastfeeding on demand.**

To ascertain step 8, mothers were interviewed as to whether they had received information that would enable them recognize hunger signs in their babies.

Of the selected mothers 85.4% reported having been told how to recognize when their babies were hungry while 84.5% could describe at least 2 cues that indicate that the baby was hungry.

**Step 9: -Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.**

Mothers were observed together with their babies to see if there was any use of pacifiers or bottle with teats to ascertain step 9. Observation indicated that 99% of the babies were not on bottles, teats or pacifiers.

**Step 10: - Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.**

To assess step 10 of the BFHI, mothers were interviewed on the kind of breastfeeding support information they had received.

All the selected mothers could describe at least one type of help available for breastfeeding information upon discharge while only 42.7% reported having been given information on where to get help from upon discharge from the hospital.

The results of the hospital's performance in steps 7, 8, 9 and 10 are as shown in table 5 below: -

**Table 5: Performance in step 7, 8, 9 and 10 of the Baby Friendly Hospital initiative**

Step	Indicators	Performance	
		Criteria	Actual
Step 7	Mothers and babies are together.	≥80%	94.2%
	Mothers report being in the same room with babies without separation for the past 24 hours.	≥80%	92.2%
Step 8	Mothers report having been told how to recognize when babies are hungry.	≥80%	85.4%
	Mothers can describe 2 cues indicating babies are hungry.	≥80%	84.5%
Step 9	Babies are not on bottles, teats or pacifiers.	≥80%	99%
Step 10	Mothers report having information on where to get help on breastfeeding upon delivery.	≥80%	42.7%
	Mothers can describe one type of help.	≥80%	100.0%

### Summary of performance in the Ten Steps

Kenyatta National Hospital was fully compliant with steps 6, 7, 8 and 9 but was not compliant with the remaining steps when the various indicators for each step were used for assessment as shown in the summarized table 6 below: -

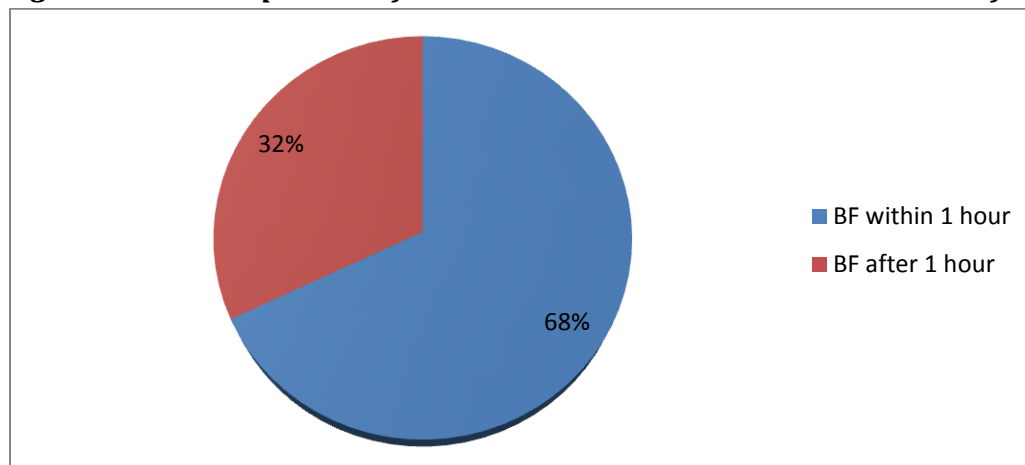
**Table 6: - Summary of performance in the Ten Steps by the number of indicators that the hospital complied with.**

Step of the BFHI	Total number of indicators needed for compliance	Number of indicators complied with by KNH
1	2	1
2	5	2
3	4	2
4	2	0
5	4	1
6	1	1
7	2	2
8	2	2
9	1	1
10	2	1
Total	25	13

### **The Proportion of babies initiated to the breast within the first hour**

The proportion of babies who were initiated on the breast within 1 hour of birth was 68% as shown in figure 5 below.

**Figure 5: -The Proportion of babies initiated on the breast within the first hour**



**Correlation between day 7 clinical outcomes of the infants to timing of breastfeeding initiation and the presence of information on breastfeeding support**

A 7 days post delivery interview was carried out on the mothers to find out the correlation between infant morbidity and mortality to the timing of breastfeeding initiation and to the presence of antenatal breastfeeding information. Of the 103 children delivered, 9 fell ill before day 7 of their life. The median time to breastfeeding initiation for those who had morbidity was 57.5 minutes while for those who had no morbidity was 40 minutes. This difference in morbidity however, was not statistically significant (P value of 0.713).

Of the mothers who had morbidity in their babies, 77.8% reported not having received antenatal information on breastfeeding while 53.8% of the mothers without morbidity reported not having received antenatal information. The difference in neonatal morbidity however, was not statistically significant (P value of 0.292).

The findings are tabulated in table 7 below: -

**Table 7: - Correlation between day 7 clinical outcomes of the infants to the timing of breastfeeding initiation and the presence of information on breastfeeding support.**

Variable	Day 7 outcome (morbidity)		P value
	Yes	No	
Median time in minutes to initiation of BF (IQR)	57.5 (25.0-90.0)	40.0 (25.0-70.0)	0.713
Got information on available BF support			
Yes	2 (22.2%)	42 (46.2%)	0.292
No	7 (77.8%)	49 (53.8%)	

**Comparison of the mothers who initiated breastfeeding within the first hour of delivery to those having delayed initiation of breastfeeding**

A comparison of mothers who initiated breastfeeding early to those having delayed initiation as pertained to their age, parity, marital status and level of education was done during the day 7 interview. The mean age was 27.4 for early initiators and 27.0 for those with delayed initiation

(P value 0.797). Of the mothers who had early initiation, 45.2% were primiparas compared to 54.8% multiparas while 63.3% of those with delayed initiation were primiparas (P value 0.142). Of the group that initiated breastfeeding early, 80.5% were married while 18.0% were single, compared to the group with delayed initiation where 86.7% were married with 13.3% single mothers (P value 0.838).

There was no significant difference between mothers who initiated breastfeeding early to those that had delayed initiation of breastfeeding as pertained to their age, parity, marital status and level of education as indicated in table 8 below: -

**Table 8: Comparison of the mothers who initiated breastfeeding within the first hour of delivery to those having delayed initiation of breastfeeding.**

Variable	Time to initiation of BF		P value
	Within 1 hour	Greater than 1 hour	
Age in years, mean (SD)	27.4 (5.2)	27.0 (6.5)	0.797
<b>Parity</b>			0.142
Primipara	33 (45.2%)	19 (63.3%)	
Multipara	40 (54.8%)	11 (36.7%)	
<b>Marital status</b>			0.838
Married	58 (80.5%)	26 (86.7%)	
Single	13 (18.0%)	4(13.3%)	
Divorced	1 (1.4%)	0 (0.0%)	
<b>Education level</b>			0.707
Tertiary	31 (43.1%)	12 (38.7%)	
Secondary	25 (34.7%)	13 (41.9%)	
Primary	16 (22.2%)	6 (19.4%)	

## **DISCUSSION**

Breastfeeding has been promoted for its known benefits for both the mother and the baby. One of the most effective methods to improve breastfeeding rates is the Baby Friendly Hospital Initiative mainly based on the Ten Steps towards Successful Breastfeeding<sup>8</sup>.

This study sought to assess the status of adherence to the Ten Steps of the BFHI by Kenyatta National Hospital, a designated Baby-Friendly Hospital.

Kenyatta National Hospital was found to be fully compliant to steps 6, 7, 8 and 9 (40% compliance). These findings are comparable to Aryeetey's study in Ghana where they found full compliance of the Referral Hospital to steps 6, 7 and 8 (30% compliance)<sup>32</sup>.

KNH was considered non-compliant to step 1 of the BFHI due to the fact that despite there being a written policy, it was not displayed at relevant places for the benefit of staff and clients. Concerning Step 2, despite most clinical workers being aware of the existence of a breastfeeding policy (89%), barely half of them (48%) had ever received training or orientation on the policy while only 29% could name at least two steps of the BFHI. This was reversed for the non-clinical staff all (100%) of who could give at least one importance of breastfeeding while only a third (33.3%) reporting having received any form of training or orientation. In Step 3, the majority of mothers (81%) reported having received antenatal information on breastfeeding. This is a higher figure compared to Dr Gathoni's earlier findings in her dissertation study titled "Mother's Knowledge, Attitude and Practice regarding Neonatal Illness and Assessment of Neonates at Kenyatta National Hospital" where she had found that only 53% of the mothers received antenatal information on breastfeeding<sup>35</sup>. Despite a high number of mothers having this information, only 29% could give at least two reasons why good positioning and attachment was important, 57% on reasons for exclusive breastfeeding of their babies for the first six months of life while 88% knew the importance of early skin-to-skin contact. For step 4, only 5% of the babies were seen to be placed in skin-to-skin contact with their mothers while 68% had early initiation of breastfeeding within the first hour of birth. This is comparable to the 2008-2009 KDHS findings where 58% of children in Kenya have early initiation of breastfeeding<sup>25</sup>.

For step 5, 95% of clinical staff reported showing mothers how to position and attach their babies to the breast. This is a much higher figure compared to the mothers who reported having

received assistance on the same (78%), while no mother could demonstrate how to correctly position their babies for breastfeeding. This could be explained by the fact that even though almost all clinical staff reported showing mothers how to position and attach, their knowledge was inadequate probably due to lack of training as seen in step 2 above, therefore inadequate/incorrect assistance to the mothers. The same explanation could also hold for the fact that only 30% of the mothers reported having received information on frequency of breastfeeding or breast milk expression to keep up the milk supply.

Step 6, 7, 8 and 9 were well performed with the hospital's compliance meeting the threshold for all the indicators. This was comparable to Aryeetei's study where the referral hospital performed above threshold for steps 6, 7 and 9<sup>32</sup>. In Aryeetei's study the probable reason for the good performance in step 7 was explained by the setting for their study which was in hospitals that lacked space therefore mothers had no option but to stay in the same bed with their children, where rooming in is encouraged. This could also be applicable to our setting, KNH, where due to the 'Free Maternity Care for all Mothers Initiative' which had been running for a year prior to the study period, there might have been increased numbers with limited space for both the mothers and their babies, hence the findings of almost all the mothers with their babies in the same bed. All the mothers knew at least one type of help available for breastfeeding support upon discharge but only 43% reported having received information on where to get help on breastfeeding postnatally.

The interviews at 7 days postpartum to correlate clinical outcomes of the infants to the timing of breastfeeding initiation and the presence of information on breastfeeding support revealed that the median time of breastfeeding initiation was longer for those who experienced morbidity in the first 7 days of life compared to those who did not have any morbidity, 57.5 minutes versus 40 minutes respectively (p value = 0.713), This was statistically not significant because of the small sample size used in this study. Community based observational studies in Ghana and Southern Nepal used very large sample sizes of 10947 and 22838 breastfed infants respectively where they found out that the apparent beneficial effects of early breastfeeding remained significant after controlling for other factors known to be linked with mortality around the time of birth and during infancy

A difference is also seen while correlating between availability of information on post partum breastfeeding support and morbidity by day 7, where 78% of mothers whose infants had morbidity had not received information on postpartum breastfeeding support compared to 54% whose infants had no morbidity ( $p=0.292$ ), though not statistically significant due to the small sample size used.

A comparison of the mothers who initiated breastfeeding early to those having delayed initiation as pertains to their age, parity, marital status and level of education revealed no difference in age between early initiators versus those who initiated late with a mean age of 27.4 and 27.0 respectively (P value 0.797). A difference in the timing of breastfeeding initiation was found not to be affected by marital status or education level of the mothers (P values of 0.838 and 0.707 respectively). Multiparas made up (55%) of those who initiated early, compared to primiparas who tended to initiate late (63% of the late initiation group). This difference though was statistically not significant (P value 0.142).

### **STRENGTHS OF THE STUDY**

1. We were able to observe most of the practical skills required for the indicators hence accuracy of the timed events.
2. Interviewer conducted the interviews in a non judgmental way and assured participants of confidentiality of the information given.

### **STUDY LIMITATIONS**

1. Probability of recall bias when assessing for antenatal information.
2. Small sample size to make significant correlation between infant morbidity and mortality to initiation of breastfeeding.



## **CONCLUSION**

This study found that Kenyatta National Hospital was not compliant with the Ten Steps of the BFHI.

The proportion of newborns that had early initiation of breastfeeding (within 1 hour of birth) is 68%.

The median time to breastfeeding initiation was longer for those who experienced morbidity in the first 7 days of life compared to those who did not though this was not statistically significant due to the small sample size used by the study.

The difference in neonatal mortality between the mothers who received antenatal information on breastfeeding to those who did not was not statistically significant due to the small sample size used in the study.

There was no significant difference between the mothers who had early initiation of breastfeeding to those who initiated breastfeeding late as pertains to their age, parity, marital status and level of education.

## **RECOMMENDATIONS**

Kenyatta National Hospital should intensify implementation of the BFHI.

Larger studies on mothers and their infants to ascertain the long term effect of timing of initiation of breastfeeding on infant morbidity and mortality should be conducted.

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## Appendix 1- INFORMATION AND CONSENT FORM FOR MOTHERS

Study number \_\_\_\_\_

**Study title:** -AN ASSESSMENT OF ADHERENCE TO THE TEN STEPS OF THE BABY FRIENDLY HOSPITAL INITIATIVE GUIDELINES IN KENYATTA NATIONAL HOSPITAL MATERNITY UNIT

**Principal Investigator:** Dr Josephine Ojigo (postgraduate student in Paediatrics and Child Health, University of Nairobi)

**Supervisors:** -Prof Ruth Nduati

-Dr Florence Murila

**Introduction:** -The purpose of this study is to assess the adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.

These guidelines are a global effort to implement practices that protect, promote and support breastfeeding which has been found to be beneficial to both baby and the mother.

The study also seeks to correlate day 7 infant feeding practice and clinical outcomes of the infants to timing of breastfeeding initiation and presence of breastfeeding support and to compare mother-baby pairs who initiate breastfeeding within first hour of delivery to those having delayed initiation of breastfeeding.

Procedures undertaken in this study will be: -

- A structured questionnaire administered to you about the various aspects of the steps in the Baby Friendly Hospital Initiative.
- Observation to ascertain the implementation of some of the steps which will start immediately after you have delivered.
- A follow up interview if you'll still be in the wards or a phone call if you will have been discharged home 7 days after delivery to evaluate your progress in the breastfeeding process.

**Benefits:** - The results will inform us on how adherent we are to the Baby Friendly Hospital initiative guidelines, thus guide us in making appropriate changes that will help us promote exclusive breastfeeding.

**Risks:** -There will be no risks to you or your child during the study. There will be no invasive procedures carried out in the study that may harm you or your child.

**Voluntarism:** - Your participation in the survey is voluntary. There will be no financial rewards to you for participating in the study. You are free to withdraw even after recruitment without consequences.

**Confidentiality:** - All information obtained about you and your baby will be kept strictly confidential. No personal information regarding you or your child will be released to any person without your written consent. We will however, discuss the general overall findings regarding our findings. We will not reveal your baby's or your identity in these discussions.

If you have any questions or need further clarifications about the study contact the principal investigator, *Dr Josephine Ojigo* on Phone number *0724-394318*.

If you have any questions on your rights as a participant contact the *Kenyatta National Hospital Ethics and Research Committee (KNH-ERC)* by calling *2726300 Ext. 44355*.

I, \_\_\_\_\_, having received adequate information regarding the study research, hereby agree and give consent for me to be included in this study as explained to me

I understand the purpose of the study and conditions of participation.

Participant's Signature/thumb print \_\_\_\_\_ Date \_\_\_\_\_

Phone number \_\_\_\_\_

I, \_\_\_\_\_, declare that I have adequately explained to the above participant the study procedure and given her time to ask questions and seek clarification regarding the study. I have answered all questions raised to the best of my ability.

Investigator's Signature \_\_\_\_\_ Date \_\_\_\_\_

## **Appendix 2- FOMU YA MAELEZO KUHUSU UTAFITI NA IDHINI KWA WAMAMA**

Nambari ya utafiti \_\_\_\_\_

**Kiini cha utafiti:** - Kutathmini uzingatiaji wa hatua kumi ya miongozo ya *Baby Friendly Hospital Initiative* katika hospitali kuu ya Kenyatta.

**Mtafiti mkuu:** Dkt Josephine Ojigo (mwanafunzi wa uzamili katika Chuo Kikuu cha Nairobi anayesoma kuhitimu kama daktari wa watoto).

**Wasimamizi:** -Prof Ruth Nduati

-Dr Florence Murila

Lengo la utafiti huu ni kufanya tathmini jinsi Hospitali kuu la Kenyatta inazingatia hatua kumi ya miongozo ya *Baby Friendly Hospital Initiative*.

Miongozo hii ni jitihada za kimataifa za kutekeleza mbinu za kulinda, kuendeleza na kuunga mkono kunyonyesha mtoto, ambayo imejulikana kuwa na manufaa kwa mtoto na mama

Utafiti huu pia ingependa kuhusisha malisho ya mtoto wako siku saba baada ya kuzaliwa na wakati ule ulimuanzisha kunyonya na pia kulinganisha wamama wale ambao wataanzisha kunyonyesha ndani ya saa ya kwanza baada ya kujifungua na watakaochelewa kunyonyesha.

Taratibu utakaofuatiliwa katika utafiti huu itakuwa -

- Utaulizwa maswali kuhusu masuala mbalimbali za hatua zilizoko katika miongozo ya *Baby Friendly Hospital Initiative*.
- Kuchunguza ili kuhakikisha utekelezaji wa baadhi ya hatua ya miongozo hizo. Huu utanzia kule chumbani mwa kujifungua punde tu utakapojifungua mtoto wako.
- Siku saba baada ya kujifungua, tutakupigia simu kama utakuwa umeenda nyumbani au kama bado utakuwa kwa wodi tutarudi kukuuliza maswali kuhusu jinsi unavyoendelea na unyonyeshaji wa mtoto wako.

**Umuhimu:** - Matokeo ya utafiti huu itatujulisha jinsi Hospitali kuu la Kenyatta inazingatia hatua kumi ya miongozo ya *Baby Friendly Hospital Initiative* na kwa hivyo kutuongoza katika kufanya mabadiliko sahihi ambazo zitatusaidia kukuza zaidi unyonyeshaji wa watoto.

**Madhara:** -Hakuna madhara au gharama yoyote yatakayotokana na kushiriki kwako au mtoto wako katika utafiti huu.

Kushiriki ni kwa hiari yako na hautashurutishwa kwa njia yoyote. Una haki ya kukataa kushiriki au kutamatisha ushirikiano wako wakati wowote bila kuhujumiwa. Hakuna malipo yoyote utakayopata ila shukrani kwa kukubali kushiriki katika utafiti huu.

Habari yote utakayotoa kukuhusu itawekwa kwa siri. Jina lako au la mtoto wako halitachapishwa popote bila idhini yako. Hata hivyo, majibu tutakayopata tutayajadili bila kutoa kitambulisho chako au cha mtoto wako kwa mtu yeyote.

Ikiwa una swali ama ungetaka kupata maelezo zaidi kuhusu utafiti huu, wasiliana na mtafiti mkuu *Dr Josephine Ojigo* kupitia nambari ya simu 0724-394318 au *Kenya National Hospital Ethics and Research Committee (KNH-ERC)* kupitia nambari ya simu 2726300 Ext. 44355.

Mimi, \_\_\_\_\_, nimekubali kwa idhini yangu kushiriki katika utafiti huu kama nilivyolezwa. Nimeelewa umuhimu wake na yanayohitajika kwangu kama mshiriki.

Sahihi ya mshiriki/alama ya kidole gumba \_\_\_\_\_ Tarehe \_\_\_\_\_

Nambari ya simu \_\_\_\_\_

Mimi nimeelezea mshiriki utaratibu wa utafiti kwa undani na nikampa muda wa kuuliza maswali. Nimejibu maswali yote niliyoulizwa kadri ya uwezo wangu.

Jina la mtafiti \_\_\_\_\_

Sahihi ya mtafiti \_\_\_\_\_ Tarehe \_\_\_\_\_



### **Appendix 3- HEALTHCARE WORKER INFORMATION AND CONSENT FORM**

Study number \_\_\_\_\_

**Study title:** -AN ASSESSMENT OF ADHERENCE TO THE TEN STEPS OF THE BABY FRIENDLY HOSPITAL INITIATIVE GUIDELINES IN KENYATTA NATIONAL HOSPITAL MATERNITY UNIT

**Principal Investigator:** - Dr Josephine Ojigo (postgraduate student in Paediatrics and Child Health, University of Nairobi)

**Supervisors:** -Prof Ruth Nduati

-Dr Florence Murila

**Introduction:** -The purpose of this study is to assess the adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.

These guidelines are a global effort to implement practices that protect, promote and support breastfeeding which has been found to be beneficial to both baby and the mother.

The study also seeks to correlate day 7 infant feeding practice and clinical outcomes of the infants to timing of breastfeeding initiation and presence of breastfeeding support and to compare mother-baby pairs who initiate breastfeeding within first hour of delivery to those having delayed initiation of breastfeeding.

Procedures undertaken in this study will be: -

- A structured questionnaire administered to you about the various aspects that involve the health care worker in the steps of the Baby Friendly Hospital Initiative guidelines.
- Observation to ascertain the implementation of some of the steps which will start within the delivery rooms and continue in the postnatal wards.

**Benefits:** - The results will inform us on how adherent we are to the Baby Friendly Hospital initiative guidelines, thus guide us in making appropriate changes that will help us promote exclusive breastfeeding.

**Risks:** -There will be no risks to you during the study. There will be no invasive procedures carried out in the study that may harm you.

**Voluntarism:** - Your participation in the survey is voluntary. There will be no financial rewards to you for participating in the study. You are free to withdraw even after recruitment without consequences.

**Confidentiality:** - All information obtained about you will be kept strictly confidential. No personal information regarding you will be released to any person without your written consent. We will however, discuss the general overall findings regarding our findings. We will not reveal your identity in these discussions.

If you have any questions or need further clarifications about the study contact the principal investigator, *Dr Josephine Ojigo* on Phone number *0724-394318*.

If you have any questions on your rights as a participant contact the *Kenyatta National Hospital Ethics and Research Committee (KNH-ERC)* by calling *2726300 Ext. 44355*.

I, \_\_\_\_\_, having received adequate information regarding the study research, hereby agree and give consent for me to be included in this study as explained to me

I understand the purpose of the study and conditions of participation.

Participant's Signature \_\_\_\_\_ Date \_\_\_\_\_

I, \_\_\_\_\_, declare that I have adequately explained to the above participant the study procedure and given her time to ask questions and seek clarification regarding the study. I have answered all questions raised to the best of my ability.

Investigator's Signature \_\_\_\_\_ Date \_\_\_\_\_

## **Appendix 4- FOMU YA MAELEZO NA IDHINI KWA WAHUDUMU WA AFYA**

Nambari ya utafiti \_\_\_\_\_

**Kiini cha utafiti:** - Kutathmini uzingatiaji wa hatua kumi ya miongozo ya Baby Friendly Hospital Initiative katika hospitali kuu ya Kenyatta.

**Mtafiti mkuu:** Dkt Josephine Ojigo (mwanafunzi wa uzamili katika Chuo Kikuu cha Nairobi anayesoma kuhitimu kama daktari wa watoto).

**Wasimamizi:** -Prof Ruth Nduati

-Dr Florence Murila

Lengo la somo hili ni kufanya tathmini jinsi Hospitali kuu la Kenyatta inazingatia hatua kumi ya miongozo ya *Baby Friendly Hospital Initiative*.

Miongozo hii ni jitihada za kimataifa za kutekeleza mbinu za kulinda, kuendeleza na kuunga mkono kunyonyesha mtoto, ambayo imejulikana kuwa na manufaa kwa mtoto na mama

Utafiti huu pia ingependa kuhusisha malisho ya mtoto wako siku saba baada ya kuzaliwa na wakati ule ulimuanzisha kunyonya na pia kulinganisha wamama wale ambao wataanzisha kunyonyesha ndani ya saa ya kwanza baada ya kujifungua na watakaochelewa kunyonyesha.

Taratibu utakaofuatiliwa katika utafiti huu itakuwa -

- Utaulizwa maswali kuhusu masuala mbalimbali yanayohusu wahudumu wa afya katika hatua zilizoko kwenye miongozo ya *Baby Friendly Hospital Initiative*.
- Kuchunguza ili kuhakikisha utekelezaji wa baadhi ya hatua ya miongozo hizo. Huu utanzia kule chumbani mwa kujifungua na kuendelea hadi kwa wodi za wamama ambao wamejifungua.

**Umuhimu:** - Matokeo ya utafiti huu itatujulisha jinsi Hospitali kuu la Kenyatta inazingatia hatua kumi ya miongozo ya *Baby Friendly Hospital Initiative* na kwa hivyo kutuongoza katika kufanya mabadiliko sahihi ambazo zitatusaidia kukuza zaidi unyonyeshaji wa watoto.

**Madhara:** -Hakuna madhara au gharama yoyote yatakayotokana na kushiriki kwako katika utafiti huu.

Kushiriki ni kwa hiari yako na hautashurutishwa kwa njia yoyote. Una haki ya kukataa kushiriki au kutamatisha ushirikiano wako wakati wowote bila kuhujumiwa. Hakuna malipo yoyote utakayopata ila shukrani kwa kukubali kushiriki katika utafiti huu.

Habari yote utakayotoa kukuhusu itawekwa kwa siri. Jina lako halitachapishwa popote bila idhini yako. Hata hivyo, majibu tutakayopata tutayajadili bila kutoa kitambulisho chako kwa mtu yeyote.

Ikiwa una swali ama ungetaka kupata maelezo zaidi kuhusu utafiti huu, wasiliana na mtafiti mkuu *Dr Josephine Ojigo* kupitia nambari ya simu 0724-394318 au *Kenya National Hospital Ethics and Research Committee (KNH-ERC)* kupitia nambari ya simu 2726300 Ext. 44355.

Mimi, \_\_\_\_\_, nimekubali kwa idhini yangu kushiriki katika utafiti huu kama nilivyolezwa. Nimeelewa umuhimu wake na yanayohitajika kwangu kama mshiriki.

Sahihi ya mshiriki \_\_\_\_\_ Tarehe \_\_\_\_\_

Mimi nimeelezea mshiriki utaratibu wa utafiti kwa undani na nikampa muda wa kuuliza maswali. Nimejibu maswali yote niliyoulizwa kadri ya uwezo wangu.

Jina la mtafiti \_\_\_\_\_

Sahihi ya mtafiti \_\_\_\_\_ Tarehe \_\_\_\_\_

## Appendix 5-QUESTIONNAIRE FOR BREASTFEEDING MOTHERS

**An assessment of adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.**

Study number \_\_\_\_\_

Date \_\_\_\_\_

(Tick whichever is applicable)

**Part 1:-** observe care of the mother and baby immediately after delivery (SVD and C/S).

1 Mode of delivery	Vaginal	
	Caesarean section without General Anaesthesia	
	Caesarean section with General Anaesthesia	
2 Time baby born (24 hour format), start stop watch.		
3 Baby gender	Male	
	Female	
4 Baby APGAR score (at 5 minutes)		
5 Baby birth weight (in grammes)		
6 Baby put to breast at time (exact time in minutes after birth)-stop stopwatch		
7 Skin-to-skin contact ( if yes note time in minutes after delivery)	Yes	Time
	No	

**An assessment of adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.**

Study number \_\_\_\_\_

Date \_\_\_\_\_

**Part 2:-** 12 – 24 hour interview to determine maternal socio-demographic and clinical characteristics, knowledge and practice regarding breastfeeding

(Tick the most appropriate)

**Mother’s demographics**

8 Actual age of the mother (in completed years)		
9 Parity of the mother		
10 Marital status	Married	
	Single	
	Divorced	
	Separated	
	Widowed	
11 Education level	Tertiary	
	Secondary	
	Primary	
	None	

**Step 3:- Inform all pregnant women about the benefits and management of breastfeeding.**

12 Did you attend Antenatal Care Clinic during this pregnancy?

Yes  No

12.1 If yes, which hospital?

KNH  Other (specify) \_\_\_\_\_

12.2 How many antenatal visits did you make? \_\_\_\_\_

**An assessment of adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.**

Study number \_\_\_\_\_

Date \_\_\_\_\_

13 In the antenatal clinic did you have a discussion on breastfeeding with the healthcare worker?

Yes

No

13.1 If yes, list two reasons you were given why:-

a. Skin-to-skin contact after birth is important?

i. Keeps baby warm and calm

ii. Promotes bonding

iii. Helps breastfeeding get started

iv. Other \_\_\_\_\_

b. Good positioning and attachment when breastfeeding is important?

i. Helps the baby to get lots of milk

ii. For mother to avoid sore nipples and sore breasts.

iii. Other \_\_\_\_\_

c. Exclusive breastfeeding of baby for the first 6 months, giving no other liquids or foods is important?

i. Protects against many illnesses such as chest infections, diarrhoea, ear infections

ii. Helps baby to grow and develop well

iii. Other \_\_\_\_\_

**Step 5:- Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.**

14 Were you offered assistance in breastfeeding your baby any time after delivery?

Yes

No

**An assessment of adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.**

Study number \_\_\_\_\_

Date \_\_\_\_\_

15 Can you please demonstrate to me how to correctly position your baby when breastfeeding?

Observe if baby is: -

- a. In line; ear, shoulder, hip in a straight line
- b. Close to mother's body; baby brought to breast not breast to baby
- c. Supported; head and shoulders, whole body if preterm
- d. Facing the breast; baby's nose to mother's nipple
- e. Other \_\_\_\_\_

16 Were you shown how to express your breast milk by hand?

Yes  No

16.1 If yes, please describe and demonstrate to me how you were shown to express milk. Observe if:-

- a. Mother is comfortably seated and relaxed Yes  No
- b. Massaging breast Yes  No
- c. Compressing the breast over the ducts area (at the junction of areola and normal skin) and moving towards nipple. Yes  No

16.2 How often were you told you should breastfeed your baby or express breast milk in a day (over 24 hours), to keep up milk supply? (write exact number of times given by the mother) \_\_\_\_\_

**Step 6:- Give newborn infants no food or drink other than breast milk, unless medically indicated.**

17 Did you ever breastfeed your baby? Yes  No

17.1 Did your baby receive anything to eat/drink before your milk came in (breasts full of milk)? Yes  No  Don't Know



**An assessment of adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.**

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Date \_\_\_\_\_

17.2 After the first breastfeed, has your baby been given anything else apart from breast milk?

Yes

No

Don't Know

**Step 7:- Practise rooming-in - that is, allow mothers and infants to remain together - 24 hours a day.**

18 Observe if mother is with the baby

Yes

No

18.1 If No, location of baby

Nursery

Neonatal ICU

Other (specify) \_\_\_\_\_

19 Have you been with your baby in the same bed for the past 24 hours?

Yes

No

19.1 If no, why? \_\_\_\_\_

**Step 8:- Encourage breastfeeding on demand.**

20 Have you been taught how to recognize when your baby is hungry?

Yes

No

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Date \_\_\_\_\_

- 20.1 If yes, please describe two cues that indicate your baby is hungry: -
- a. Increases eye movements under closed eye lids or opens eyes.
  - b. Opens his or her mouth, stretches out the tongue and turns the head to look for the breast.
  - c. Makes soft whimper sounds.
  - d. Sucks or chews on hands, fingers, blanket or sheet, or other object that comes in mouth contact.
  - e. Cries loudly
  - f. Other \_\_\_\_\_

**Step 9:- Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.**

21 Observe, is the baby being bottle fed or has a pacifier?  
Yes  No

22 Has your infant been fed via bottle with nipple any time since birth?  
Yes  No

**Part 3:-**day 7 phone interview

**Step 10:- Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.**

23 Have you been given information on where to get help on breastfeeding once you are discharged from the hospital?  
Yes  No

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23.1 If yes, please name the kind of breastfeeding support you have been informed of:-

- a. Community health facility
- b. Peer support groups
- c. Hospital

24 Has your baby been given anything else apart from breast milk?

Yes  No  Don't Know

24.1 If yes, what was given? \_\_\_\_\_

25 Has your baby fallen ill since discharge from hospital

Yes  No

25.1 What illness was it? \_\_\_\_\_

26 What day of life was your baby when she/he fell ill? \_\_\_\_\_

27 What was the outcome of the illness?

Illness resolved  Death  Still ill

Thank you very much

# Questionnaire II

## Appendix 6- HOSPITAL ASSESSMENT TOOL/QUESTIONNAIRE

**An assessment of adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.**

### Step 1:- Review of Breastfeeding/Infant Feeding Policy

1. Is there a written breastfeeding policy?

Yes

No

2. If yes, does:

a. The policy cover the following steps adequately?

i. Step 1\_\_\_\_\_Yes  No

ii. Step 2\_\_\_\_\_Yes  No

iii. Step 3\_\_\_\_\_Yes  No

iv. Step 4\_\_\_\_\_Yes  No

v. Step 5\_\_\_\_\_Yes  No

vi. Step 6\_\_\_\_\_Yes  No

vii. Step 7\_\_\_\_\_Yes  No

viii. Step 8\_\_\_\_\_Yes  No

ix. Step 9\_\_\_\_\_Yes  No

x. Step 10\_\_\_\_\_Yes  No

b. The policy uphold the *International Code of Marketing of Breast-milk Substitutes* by prohibiting:

i. The display of posters or other materials provided by manufacturers or distributors of breast milk substitutes, bottles, teats and dummies or any other materials that promotes the use of these products?

Yes

No

**An assessment of adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.**

- ii. Any direct or indirect contact between employees of these manufacturers or distributors and pregnant women or mothers in the facility?

Yes  No

- iii. Distribution of samples or gift packs with breast milk substitutes, bottles or teats or of marketing materials for these products to pregnant women or mothers or members of their families?

Yes  No

- iv. Acceptance of free gifts (including food), literature, materials or equipment, money, or support for in-service education or events from these manufacturers or distributors by the hospital?

Yes  No

- v. Demonstrations of preparation of infant formula for anyone that does not need them?

Yes  No

- vi. Acceptance of free or low cost breast milk substitutes or supplies?

Yes  No

- c. The policy require that HIV-positive mothers receive counselling, including information about the advantages and disadvantages of various infant feeding options and specific guidance in selecting the options likely to be suitable for their situations, supporting them in their choices?

Yes  No

**An assessment of adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.**

3. Is the policy written in appropriate languages understood by both the mothers and staff?

Yes  No

4. Which area of the wards is the policy displayed?

a) Labour ward

- |      |   |     |                          |    |                          |
|------|---|-----|--------------------------|----|--------------------------|
| i.   | Delivery room                                 | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| ii.  | Observation Room (4 <sup>th</sup> Stage Room) | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| iii. | Nursing station                               | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| iv.  | Nurses Office                                 | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| v.   | Common notice board                           | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |

b) GF A

- |      |                     |     |                          |    |                          |
|------|---------------------|-----|--------------------------|----|--------------------------|
| i.   | Nurses office       | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| ii.  | Nursing station     | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| iii. | Common notice board | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |

c) GF B

- |      |                     |     |                          |    |                          |
|------|---------------------|-----|--------------------------|----|--------------------------|
| i.   | Nurses office       | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| ii.  | Nursing station     | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| iii. | Common notice board | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |

d) Ward 1A

- |      |                         |     |                          |    |                          |
|------|-------------------------|-----|--------------------------|----|--------------------------|
| i.   | Nurses office           | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| ii.  | Nursing station         | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| iii. | Common notice board     | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| iv.  | Lactation training room | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |

# Questionnaire III

## Appendix 7-QUESTIONNAIRE FOR HEALTH CARE WORKERS

**An assessment of adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.**

Study number \_\_\_\_\_

Date \_\_\_\_\_

### Demographics

1. Age (in completed years) \_\_\_\_\_
2. Designation \_\_\_\_\_
3. Occupation
  - a. Clinical
  - b. Non-clinical
4. Gender                      Male                       Female
5. Duration of work in this hospital in: -  
Completed years                       Completed months

### Part 2:- steps 2 and 5

#### For clinical staff members:-

6. Are you aware of the existence of a breastfeeding policy?  
Yes                       No
7. Have you ever received any training or orientation on this breastfeeding policy?  
Yes                       No
- 7.1 Where was the training?
  - a. KNH
  - b. Well supervised self study
  - c. On-line courses
  - d. Other \_\_\_\_\_

**An assessment of adherence to the ten steps of the Baby Friendly Hospital Initiative guidelines in Kenyatta National Hospital maternity unit.**

Study number \_\_\_\_\_

Date \_\_\_\_\_

7.2 Please name for me at least two of the “Ten Steps towards Successful Breastfeeding”

a. \_\_\_\_\_

b. \_\_\_\_\_

8. Do you teach mothers how to position and attach their babies for breastfeeding?

Yes  No

**For non-clinical staff members:-**

9. Have you ever received any orientation and/or training concerning the promotion and support of breastfeeding since you started working at this hospital?

Yes  No

10. Please give me one reason why breastfeeding is important?

a. For baby’s growth

b. Protects baby against illnesses

c. Protects mother against illnesses

d. Other

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## Annex 1-Global Criteria for the Ten Steps towards Successful Breastfeeding

Every facility providing maternity services and care for newborn infants should:

STEP	GLOBAL CRITERIA
1. Have a written breastfeeding policy that is routinely communicated to all health care staff.	Breastfeeding policy is available and posted to all areas including labour and delivery areas, in-patient wards, post partum wards, nursing officer's office
2. Train all health care staff in skills necessary to implement this policy.	<p>Of the selected clinical staff members: -</p> <ul style="list-style-type: none"> <li>• <math>\geq 80\%</math> have received training at the hospital, prior to arrival or through well supervised self study or on-line courses on the 10 steps or received orientation on the policy.</li> <li>• <math>\geq 80\%</math> can name at least 2 of the ten steps</li> </ul> <p>Of the selected non-clinical staff members: -</p> <ul style="list-style-type: none"> <li>• <math>\geq 70\%</math> confirm that they have received orientation %/ or training on breastfeeding support and promotion since they started working at the facility</li> <li>• <math>\geq 70\%</math> can describe at least one reason why breastfeeding is important</li> </ul>
3. Inform all pregnant women about the benefits and management of breastfeeding.	<p>Out of the selected mothers who had at least 2 antenatal visits: -</p> <ul style="list-style-type: none"> <li>• <math>\geq 70\%</math> confirm that a staff member talked with them individually or offered a group talk that includes information on breastfeeding</li> <li>• <math>\geq 70\%</math> can give at least one reason about the importance of 2 of the following (skin-to-skin contact, good positioning and attachment and exclusive breastfeeding for the first six months)</li> </ul>
4. Help mothers initiate breastfeeding within half an hour of birth.	<ul style="list-style-type: none"> <li>■ Observation of vaginal deliveries shows that in <math>\geq 75\%</math> of the cases, babies are placed and held skin-to-skin with their mothers within 5 minutes after birth.</li> <li>■ <math>\geq 80\%</math> of the mothers with special care report they have had a chance to hold their babies skin-to-skin.</li> <li>■ <math>\geq 50\%</math> of mothers who had caesarean deliveries with general anaesthesia report their babies were placed in skin-to-skin contact with them within an hour of them being responsive and alert.</li> </ul>
5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.	<p>-Of the selected clinical staff members, <math>\geq 80\%</math> report that they teach mothers how to position and attach their babies for breastfeeding.</p> <p>- Of the selected mothers (including caesarean): -</p> <ul style="list-style-type: none"> <li>• <math>\geq 80\%</math> report they were offered assistance in breastfeeding any time after delivery.</li> <li>• <math>\geq 80\%</math> of those breastfeeding can demonstrate correct positioning of their babies when breastfeeding.</li> </ul>

	<ul style="list-style-type: none"> <li>• <math>\geq 80\%</math> can describe and demonstrate how they were shown to express breast milk by hand.</li> <li>• <math>\geq 80\%</math> report that they have been told they need to breastfeed or express milk 6 times or more every 24 hours to keep up supply</li> </ul>
6. Give newborn infants no food or drink other than breast milk, unless medically indicated.	<ul style="list-style-type: none"> <li>■ <math>\geq 75\%</math> of babies delivered are exclusively breastfed, or exclusively fed expressed breast milk from birth to discharge.</li> <li>■ <math>\geq 80\%</math> of mothers report that their babies received only breast milk.</li> </ul>
7. Practice rooming-in - that is, allow mothers and infants to remain together - 24 hours a day.	<ul style="list-style-type: none"> <li>■ Observation in the postpartum wards confirms that <math>\geq 80\%</math> of the mothers and babies are together.</li> <li>■ <math>\geq 80\%</math> of mothers report that they have been in the same room with their babies without separation for the past 24 hours</li> </ul>
8. Encourage breastfeeding on demand.	<p>Of the selected mothers: -</p> <ul style="list-style-type: none"> <li>• <math>\geq 80\%</math> report that they have been told how to recognize when their babies are hungry.</li> <li>• <math>\geq 80\%</math> can describe at least 2 cues that indicate the baby is hungry.</li> </ul>
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.	<ul style="list-style-type: none"> <li>■ Observation in postpartum wards indicate that <math>\geq 80\%</math> of the babies are not on bottles, teats or pacifiers.</li> <li>■ <math>\geq 80\%</math> of mothers report that as far as they know, their infants have not been fed using bottles with artificial teats (nipples).</li> </ul>
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.	<ul style="list-style-type: none"> <li>■ Of the selected mothers: - <ul style="list-style-type: none"> <li>• <math>\geq 80\%</math> report they have been given information on where to get help from upon discharge from the hospital</li> <li>• <math>\geq 80\%</math> can describe at least one type of help available for breastfeeding information upon discharge.</li> </ul> </li> </ul>

## ENQUIRIES

For any enquiries or further clarification, please contact:-

DR.JOSEPHINE OJIGO – PRINCIPAL INVESTIGATOR -0724-394318

## BUDGET

Category	Remarks	Units	Unit Cost (KShs)	Total (KShs)
Proposal Development	Printing drafts	1	1,000	1,000
	Proposal Copies	15	1,000	15,000
Data Collection	Stationery (Pens, Paper and Study Definitions)			2000
	Training research assistants	24 hours	1,000/day	3,000
	Research assistants	3	10,000	30000
Data Analysis	Statistician	1	35,000	35,000
Dissemination of findings	Poster presentation	1	3,000	3,000
Thesis Write Up	Computer Services			5,000
	Printing drafts	1	2,000	2,000
	Printing Thesis	5	2,000	10,000
Miscellaneous				30,000
<b>Total</b>				<b>136,000</b>

## TIME FRAME

ACTIVITY	FROM	TO
Research proposal Development and Presentation	September 2012	December 2013
Submission for ethical approval by KNH/UON ERC	December 2013	
Pretesting and seeking permission	April 2014	May 2014
Data collection/ Data analysis	May 2014	June 2014
Dissemination of findings	July 2014	
Thesis writing	July 2014	August 2014
Thesis submission	August 2014	