INITIATION OF BREASTFEEDING AMONG BABIES DELIVERED BY CAESERIAN SECTION IN KENYATTA NATIONAL HOSPITAL AND PUMWANI MATERNITY HOSPITAL.

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I wish to thank all those who assisted me in my research. I am eternally indebted to my supervisors, Prof. Musoke and Dr. Daniel Njai for their guidance, support and encouragement throughout the study period. Special thanks to my four research assistants for the meticulous work they put in enabling me to complete this dissertation on time. This dissertation involved mothers and their newborn in two high volume facilities in Kenya, in the Sub-Saharan African region. These neonates are starting their life in one of the most dangerous region for newborn 'health wise' in the world. Their willingness, through their parents and guardians, to participate in this study has provided my colleagues and me with greater insights on one parameter (breastfeeding) that has tremendous impact on their wellbeing. I therefore dedicate this work to them.

To My Husband and son, thank you for staying awake and raising my spirits as I toiled away.

Finally, to God, for being my constant source of strength.

DECLARATION

I, hereby declare that this research dissertation is my own original work and not a duplication of similar published work of any scholar for academic purpose as partial requirement of any college or otherwise. It has never been submitted to any other institution of higher learning for the award of a Certificate, diploma or degree in any field of the study. Any reference to work done by any other person or institution or any material obtained from other sources have been duly cited and referenced.

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ACRONYMS

ANC.	Antenatal care.
BFHI	Baby Friendly Hospital Initiative
CS	Caesarean section.
HIV	Human Immunodeficiency Virus
KDHS	Kenya Demographic and Health Survey
KNH.	Kenyatta National Hospital.
PMH	Pumwani Maternity Hospital.
PLF	Prelacteal Feeds.
SVD	Spontaneous vertex delivery.
UNICEF	United Nation Children Fund.
WHO	World Health Organisation.

DEFINITION OF TERMS

Baby –Friendly hospital is a hospital that encourages and helps women to successfully initiate and continue to breastfeed their babies and therefore receives special recognition for having done so.

Early initiation of breastfeeding is initiation of breastfeeding within an hour after birth for mothers who have delivered via spontaneous vaginal delivery or caesarean section mothers who have delivered under spinal anaesthesia. For mothers who have had a caesarean section under general anaesthesia early initiation is as soon as mother recovers from the general anaesthesia.

Exclusive breastfeeding means that the infant receives only breast milk. No other liquids or solids are given – not even water – with the exception of oral rehydration solution, or drops/ syrups of vitamins, minerals or medicines.

Healthcare worker defined as a healthcare professional within an institution that provides preventive, curative, promotional or rehabilitative health care services in a systematic way to individuals, families or communities.

Prelacteal feeds. Defined as the feeding of a newborn baby with any solutions or fluids before establishing or initiation of breastfeeding.

Some secondary defined as having gone to secondary school but did not complete and attain a certificate.

Sick mother defined as any mother who after delivery is not able to initiate breastfeeding because of health reasons e.g eclamptic mother, comatose but excludes post-spinal anaesthetisia headache.

ABSTRACT

Introduction: Baby Friendly Hospital Initiative (BFHI) recommends that a newborn is breastfed within the first hour and should not be given food or drink other than breast milk unless medically indicated. Early initiation of breastfeeding increases the chances of achieving exclusive breastfeeding. Even among baby friendly hospitals, studies have shown that women who deliver through a caesarean section experience a significant delay in initiating breastfeeding compared with women giving birth vaginally. Overall, therefore, caesarean section delivery may be negatively associated with successful implementation of BFHI. It is therefore important to know the initiation of breastfeeding among mothers delivered by caesarean section so as to find out areas that may need improvement and how to improve them.

Objective: To determine the time to initiation of breastfeeding and the prevalence of prelacteal feeding and type of prelacteal feeds(PLF) given to babies delivered through caesarean section in two major hospitals, Kenyatta National Hospital(KNH) and Pumwani Maternity hospital(PMH).

Method; A cross sectional hospital based study was carried out in KNH and PMH using pretested structured questionnaires that were interviewer administered. Three eighty-five mothers were interviewed (192 from PMH and 193 from KNH).Consecutive sampling of mothers who had delivered through caesarean section between August 2014 and October 2014 was done in the two hospitals with the assistance of two research assistants in each hospital. Data were analysed using STATA 11.0.

Results: The median age of the participants was 27 years, inter-quartile range (23-30). All the mothers interviewed were found to have had their caesarean section done under spinal anaesthesia. Two hundred and sixty one (68%) mothers were primiparous. Only 98 (25%) of the mothers had initiated

breastfeeding within an hour. The median time to initiation of breastfeeding at KNH was 1.5 hours; inter-quartile range (1-2hours) compared to 6 hours inter-quartile range (4-9 hours) at PMH. The main reason for delay in initiation of breastfeeding was hospital factors- delays in transferring mother from theatre to the ward. There was a significant association between delayed initiation of breastfeeding and giving PLF ($x^2$for trend $p<0.0001$). Thirty-four (8.9%) of mothers interviewed reported that their babies had been given prelacteal feeds.

Conclusion: Only 25% of mothers had initiated breastfeeding within one hour .PLF prevalence was 8.9%.The main reason for delay in initiation of breastfeeding was hospital factors- delays in transferring mother from theatre to the ward. The delay in initiation of breastfeeding was the major risk factor for increased risk of PLF.

Recommendation: Implementation of aggressive efforts to initiate breastfeeding in theatre while arrangements are being done to transfer mother and baby to the postnatal ward.

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1.0 BACKGROUND.

Baby Friendly Hospital Initiative (BFHI) is a joint United Nations Children Fund (UNICEF), and World Health Organization (WHO) attempt to improve the quality of perinatal care in hospitals especially early infant feeding. It was launched in hospitals in 1991-1992. The Ten Steps to Successful Breastfeeding is a summary of the guidelines for maternity care facilities presented in the joint WHO/UNICEF statement in 1989. The BFHI provides a framework for protecting, promoting and supporting breastfeeding[1] .Step 4 of BFHI recommends that a baby is breastfed within the first hour, while step 6 states that no food nor drink other than breast milk should be given unless medically indicated[1] .For ease of implementation, mothers who have had caesarean deliveries with general anesthesia should have their babies placed in skin-to-skin contact with them as soon as the mothers are responsive and alert. Those mothers who have had a caesarean delivery without general anesthesia should have their babies placed in contact immediately or within five minutes after birth. Further, BFHI suggests that breastfeeding activities in hospital are important to later breastfeeding[2].

The breastfeeding initiation rates in Kenya are generally low. The Kenya Demographic and Health Survey (KDHS) 2008-2009 put the figure at 58% for those breastfed within 1 hour and 82% for those breastfed within 1 day after delivery. Of great concern, KDHS suggests that up to 42% of newborn are given some form of PLF. Children born at home are more likely to receive a prelacteal feed (51 percent) than those born in a health facility (31 percent) [3] . Early initiation of breastfeeding increases chances of achieving exclusive breastfeeding. It is also associated with a longer duration of exclusive breastfeeding[4].Studies show that the longer a mother waits to initiate breastfeeding the more likely she is to use formula, and having a vaginal delivery is more predictive of exclusive breastfeeding as compared

to caesarean delivery[5]. Initiation of breastfeeding within the first hour also ensures that the baby does not miss on the colostrum which is immunologically beneficial to the baby [6]. A study in India showed that neonatal and post neonatal deaths were 5 to 6 times lower in infants fed colostrum than among those not fed colostrums [6]. Importantly, the timing of initiation of breastfeeding may exert an independent influence on death as a result of infectious diseases within the neonatal period, with the risk of death as a result of infectious causes increasing with increased delay in initiation of breastfeeding[7]. A study from rural Ghana [8] showed that early initiation within the first hour could prevent 22% of neonatal deaths and initiation of breastfeeding within the first day could prevent 16% of neo-natal deaths. In Kenya 60 percent of infant deaths occur during the first month of life with the neonatal mortality rate at 31 deaths per 1,000 live births [3]. A study in Nepal [9] found that approximately 19.1% and 7.7% of all neonatal deaths could be avoided with universal initiation of breastfeeding within the first hour and first day of life respectively.

Lactation is a function of supply and demand. Frequent nursing (every 2-3 hours) is very important in helping the mature milk to start flowing [10]. Delays and inconsistencies in initiating breastfeeding can cause critical differences in hormone levels that regulate milk flow and impact negatively on milk supply. Such delays and inconsistencies also interfere with the appearance of mature milk, putting the baby at risk for dehydration or excessive weight loss after birth [11-13]. However, despite the benefits of early initiation of breastfeeding, in many settings, healthcare workers do prescribe pre-lacteal feeds (PLF) routinely [14-19].

In a hospital based study in Nairobi-Kenya and involving 5 major hospitals the pre-lacteal feeding rate was 26.8%. In one of the hospitals nearly all (93%) of the infants received PLF [14]. Overall, many health workers routinely give PLF [14, 19]. Several reasons are given for these practices. Nurses use PLF for perceived breast milk insufficiency, doctors for prevention of dehydration, hypoglycemia and neonatal jaundice and non-medical staff to prepare the gastrointestinal tract for digestion and to quench thirst. On the other hand, mothers give PLF as a social custom because of insufficient breast milk, to keep the mouth and throat moist, to keep the body warm, rapid growth and to clear the bowel [14].

The rate of prelacteal usage is higher in community studies than in facility-based studies, with home deliveries than in hospital deliveries and in the rural places than the urban areas. However, some hospitals do not appear to be adhering to international recommendations on infant feeding [14, 19]. For clarity, any nutrition substance(s) including formula milk provided to a newborn before the establishment of lactation is considered a PLF [20]. By definition, a baby who is given PLF is not exclusively breastfed [4, 17, 21]. Because they can adversely affect breastfeeding, UNICEF/WHO discourages their use unless medically indicated [19]. Administration of PLF has been shown to lead to delays in initiation and establishment of lactation, decrease duration of exclusive breast-feeding, cause poor adherence to exclusive breastfeeding, may lead to early cessation of breastfeeding and may be associated with increased episodes of diarrhoea and increased mortality in infants [14, 22, 23]. Overall PLF may have lesser nutrient and immunological value and are often likely to introduce contaminants [20.]

In Nairobi ,Kenya, a study carried out involving both CS and SVD mothers in two slums showed that generally more than a third of the newborns were not breastfed in the first hour following delivery [24].Although most of these mothers deliver in health facilities the Nairobi residents of informal settlements did not initiate breastfeeding within an hour of birth. Given the inherent difficulties in

supporting the early initiation of breastfeeding even among normal vaginal deliveries, this difficulty increases especially in caesarean section delivery.

Worldwide, over the last several decades, the rate of caesarean sections may have increased beyond the WHO recommended rate of 5- 15% of all deliveries [25,26]. Similarly, in Kenyatta National Hospital, Kenya, a study revealed that 37.9% of all births occurred through caesarean section [27]. Although this is a referral hospital the rates may be higher than average and may signify a worrying trend given that preliminary studies suggest that caesarean section delivery may be associated with higher PLF practices [15,18,29]. A Systematic review revealed that rates of early breastfeeding are lower in mothers who deliver through caesarean section compared to those who have delivered through vaginal delivery [30]. Even among baby friendly hospitals, studies show that women who had a caesarean section experienced a significant delay in initiating breastfeeding compared with women giving birth vaginally [2,29]. Overall, therefore, cesarean section delivery may be negatively associated with successful implementation of BFHI step 4{ which states that health workers help mothers initiate breastfeeding within one hour of birth} and continuation of exclusive breastfeeding for the recommended duration of six months [2,28,30,31,32].

1.1 Justification

Given the above scenario and inconsistencies in initiating breastfeeding, it is critical to understand the contributing factors and the prevalence for prelacteal feeding specifically among cases of difficult deliveries such as caesarian section deliveries. This may help in developing strategies to minimize harmful practices among difficult deliveries [31]. Knowledge on initiation of breastfeeding and use of prelacteal feeds is essential to promote exclusive breastfeeding and early initiation of breastfeeding.

Globally Pumwani Maternity Hospital (PMH) and Kenyatta National Hospital (KNH) were some of the first hospitals to be designated as baby friendly and their continued performance is important especially with the revised BFHI recommendation as regards to assisting mothers who have delivered by caesarean section. Both hospitals have a high caesarean section rate hence need to document how they help mothers initiate breastfeeding.

1.2 Utility of study.

The study aimed to provide up to date data on the initiation of breastfeeding and the prevalence of PLF among babies delivered by caesarean section and factors underlying this practice. The intent was development of strategies for early initiation which is known to promote subsequent exclusive breastfeeding and to prevent the hindering factors.

1.3 Research question

- What is the initiation time of breastfeeding among caesarian deliveries at two high volume hospitals in Nairobi, Kenya?
- What are the prevalence of and the factors that may be contributing to use of prelacteal feeds among caesarian deliveries at two high volume hospitals in Kenya?

1.4 Objectives

Specific objective

1. To determine the time to initiation of breastfeeding among newborns delivered via caesarean section at KNH and PMH.

Secondary objectives

1. To determine the prevalence of administration of PLF among newborns delivered via caesarean section at KNH and PMH.
2. To determine reasons for delay in initiation of breastfeeding and factors that may contribute to the administration of PLF at KNH and PMH.

2.0 DESIGN AND METHODOLOGY

2.1 Study design

A hospital based cross sectional study was carried out.

2.2 Study sites

The study was carried out in the post-natal wards at KNH and PMH in Nairobi. Both are referral hospitals .

Kenyatta National Hospital

Kenyatta National Hospital (KNH) is the largest referral hospital in Kenya. It has one theatre designated for caesarean sections and another available in case of an emergency. It has 83 obstetrics beds for both post caesarean and SVD mothers. On average ten caesarean deliveries are performed daily at the hospital. There are three postnatal wards where the mothers and their newborns stay together until they are discharged. There is no specific designated caesarean section ward and mothers are admitted in any available postnatal bed in admitting ward. Healthcare workers in postnatal wards include nurses, obstetric resident doctors, and consultant obstetricians. On average two to four nurses work in each shift, which range from six to fifteen hours. The obstetric resident's average two to four, and conduct daily ward rounds on the mothers while the consultants conduct weekly ward rounds. The general condition of the newborn is examined by nurses on arrival to the postnatal wards. Thereafter the hospital staff rely on mothers to raise any concerns they may have about their newborn. KNH is a "Baby Friendly" certified hospital with an explicit policy on breastfeeding, which is displayed on posters in the postnatal wards. There are also three nutritionists allocated to the postnatal wards that usually do rounds on rotation basis.

Pumwani Maternity Hospital

Pumwani Maternity Hospital (PMH) is a referral maternity hospital in Nairobi. The hospital conducts close to 30,000 deliveries annually. It has 354 obstetrics beds, 144 baby cots and two theatres. Daily normal deliveries are 50-100 and caesarean sections are 10-15. It has three postnatal wards specifically for post caesarean mothers. Mothers who have delivered through caesarean section are admitted in specific caesarean section ward. Each of these wards has an average of two nurses per shift .A ward has on average 30 beds. A registered medical officer does a daily ward round. There is no nutritionist attached specifically to the ward, instead there are two situated in the outpatient unit.

2.3 Study population

The study population comprised of the postnatal mothers, and newborns, who had delivered through caesarean section in the hospitals from August 2014 to October 2014.One hundred and ninety two mothers from PMH and one hundred and ninety three mothers from KNH were interviewed.

Inclusion criteria

Mothers who delivered via emergency or elective caesarean section during the time of study and who gave consent for inclusion in the study.

Exclusion criteria

Any baby born to an HIV infected mother who had chosen not to breastfeed.

Sick babies delivered by caesarean section or any baby with a medical condition.

Sick mothers who could not initiate breastfeeding.

2.4 Sample Size estimation

In calculating the study sample size Fischer's formula was used, and the objective that would give a larger sample size applied, in this case the objective on prelacteal feed :-

a) N is the sample size

b) Z is the confidence level. Value of 1.96 is standard for confidence interval of 95%.

c) Estimate of expected proportion (p). The exact proportion of newborns prescribed PLF among caesarean section deliveries is unknown. Although literature suggests that among all delivery in hospitals prevalence is 30%, true proportion in caesarean delivery is unknown. Therefore a value of at least 0.5 (50%) was assumed.

d) Desired level of precision (d). This was factored at 0.05 (5%)

$$n = \frac{Z^2 p(1-p)}{d^2}$$

Minimum sample size of **385** was arrived at.

Given that the rate of daily caesarean section deliveries in the two hospitals was similar; this sample size was equally divided between the two facilities.

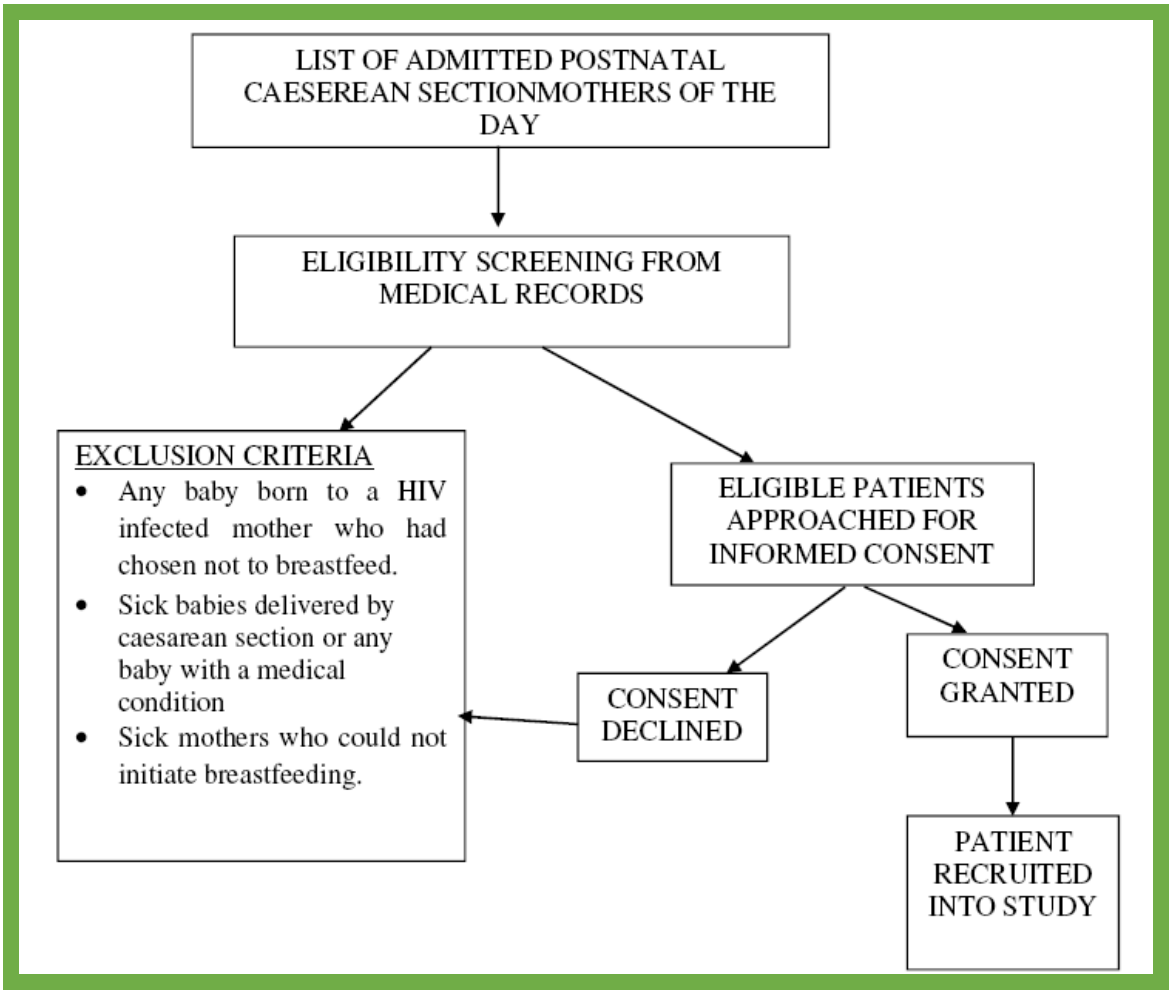
2.5 Study procedures

Study procedure for mothers

Consecutive sampling of mothers was done within 24 to 48 hours after delivery until the desired sample size was achieved (**Fig 1**). Recruitment was on a daily basis and involved interviewing the mothers who

met the inclusion criteria within the wards. The interviews for the mothers were carried out by the bedside after screening the area to create privacy. Interviews were carried out by the principal investigator and four trained nursing students after obtaining informed verbal consent. During the interviews, promotion of exclusive breastfeeding was done by talking to the mothers on its importance, addressing their issues or concerns on breastfeeding and also helping them position babies well during breastfeeding.

Fig 1: Flow chart showing recruitment procedure



2.6 Study tool(s)

A structured questionnaire interview administered was used to collect data from the mother baby pair. . A pilot study was carried out to validate the questionnaire. The principal investigator trained 4 nursing students, 2 in KNH and 2 in PMH in their final year of school to assist in administering the questionnaire .The assistants were trained on how to carry out the interview –this involved familiarising them with the inclusion/exclusion criteria, creating the setting, how to administer the interviews, how to assess a breastfeed .The principal investigator held practical sessions with them to make sure they were well trained . The questionnaire, administered by either the principle investigator or research assistants, was used to collect information on initiation of breastfeeding as well as administering of pre-lacteal feeds. Both close and open ended questions were asked and they addressed the following:

i. Mothers' sociodemographic status.
ii. ANC attendance including place of visit, number of visits and whether any information on time to initiation of breastfeeding was given.
iii. Birth period detailing type of CS(whether done under spinal or general anaesthesia and whether elective or caesarean) ,actual time of delivery as told by mother and as documented , where mother initially was given her baby to hold for the first time and where she started breastfeeding, how long/what time after delivery she started breastfeeding ,if breastfeeding started after an hour what was the reason for delay in initiation of breastfeeding, whether baby received any prelacteal feed and if so who requested and what was given and the duration. Whether rooming in was carried out.
iv. Other deliveries; if mother was multiparous we sought to find out time to initiation of breastfeeding of the other children and whether she had given prelacteal feeds.

2.7 Control of errors and biases

i. The questionnaire was pretested on a sample population to ensure validity of the questions before commencement of the study. Study tools were revised accordingly.

ii. The 4 research assistants trained by the principal investigator were guided in filling the questionnaire which ensured uniformity. Data collected were assessed on a daily basis to ensure completeness. Questionnaires incorrectly or incompletely filled were rejected if the mother had left the health facility or she was re-interviewed if still in hospital to correct errors. Data was then entered into a pre-programmed computer on a weekly basis. The data entered was crosschecked against the questionnaire to ensure validity of the entries

2.8 Study assumptions

i. The participants answered truthfully the questions asked during the interview.

ii. Misinterpretation of questions was minimal.

3.0 DATA ANALYSIS

The data was first entered into an excel data base for initial analysis. Final analysis was done using Stata 11.0 (StatsCorp, Tx, USA). For categorical data, the χ^2 test or Fischer's exact was used to explore for significant differences in proportions where appropriate. For these computations, the "***tab_chi***" command in Stata 11.0 was applied. For continuous data, the "***ttesti***" and "***median***" was used to explore differences in means and medians respectively. To test for trend across ordered groups, we applied the "***nptrend"*** command. Finally, to assess factors independently associated with initiation of breastfeeding logistic regression analysis using the "***binreg***" and or "**glm**" commands specifying the OR "Odds Ratio" in Stata 11.0 was applied.

4.0 ETHICAL CONSIDERATION

This study did not involve any invasive procedures or administration of any study drug/substance. Either in Swahili or English as appropriate informed consent was obtained from the study participants and participation was voluntary. Participants were at liberty to withdraw from the study at any time without their suffering any adverse effects for their decision. There was confidentiality at all times. Furthermore, the study protocol was submitted to KNH/UON ethical review committee before commencement of the study and upon approval a copy of the proposal was submitted to the PMH ethical review committee for their approval too according to protocol.

5.0 RESULTS

We interviewed 385 mothers who had delivered via caesarean section, 192 in PMH and 193 in KNH. This section begins by describing the demographic variables then describes the initiation of breastfeeding and prevalence of PLF. It then offers a detailed exploration of the variables collected and whether they affected the time to initiation of breastfeeding or increased the risk of giving PLF.

5.1 Demographic characteristics of mothers (Table 1)

The demographic characteristics of the 385 participants interviewed are as shown in Table 1.

Table 1: Demographic characteristics of the mothers

	KNH(n=193)		PMH(n=192)		Total (n=385)
Variable	**Number**	**Percent**	**Number**	**Percent**	**(KNH+PMH)**
Age					
<20 years	4	2.1	18	9.4	22(5.7%)
20-24 years	36	18.7	68	35.4	104(27.0%)
25-29 years	90	46.6	62	32.3	152(39.5%)
30-34 years	50	25.9	29	15.1	79(20.5%)
35+	13	6.7	15	7.8	28(7.3%)
Marital status					
Unmarried	23	12	33	17	56(14.5%)
Married	170	88	159	83	329(85.5%)
Parity					
Primigravida	133	69	131	68	264(68.6%)
Multigravida	60	31	61	32	121(31.4%)
Employment status					
Employed	118	61	124	65	242(62.9%)
Unemployed	75	39	68	35	143(37.15)
Education level					
Some primary	8	4.1	13	6.8	21(5.5%)
Completed primary	17	8.8	33	17.2	50(13.0%)
Some secondary	42	21.8	44	22.9	86(22.3%)
Completed secondary	86	44.6	76	39.6	162(42.1%)
More than secondary	40	20.7	26	13.5	66(17.1%)
Religion					
Christian	189	98	189	98	378(98.1%)
Islam	4	2	3	2	7(1.9%)

Age

The median age of the participants was 27 years, inter-quartile range(1QR) (23-30).The minimum age of mothers seen at KNH was 17years and the maximum age was 39 years. The minimum age of mothers seen at PMH was 15 years and the maximum age was 44 years. The median age among those attending KNH was 27 years, inter-quartile range (25-31) compared to 25 years inter-quartile range (22-29) for PMH. Therefore clients seen at PMH tended to be younger compared to those seen at KNH, and this was statistically significant (x^2=4.27, p=0.04).

Marital status

Overall 329 (86 %) of the participants, 170 (88%) from KNH and 159(83%) from PMH were married. There were no significant differences in marital status between those attending PMH and KNH (x^2 =4.9, P = 0.18).

Parity

Most (68%) of the mothers interviewed were primigravida, 133 from KNH (69%) and 131 from PMH(68%) and this did not differ across the two facilities (x^2=0.005, P = 0.945).

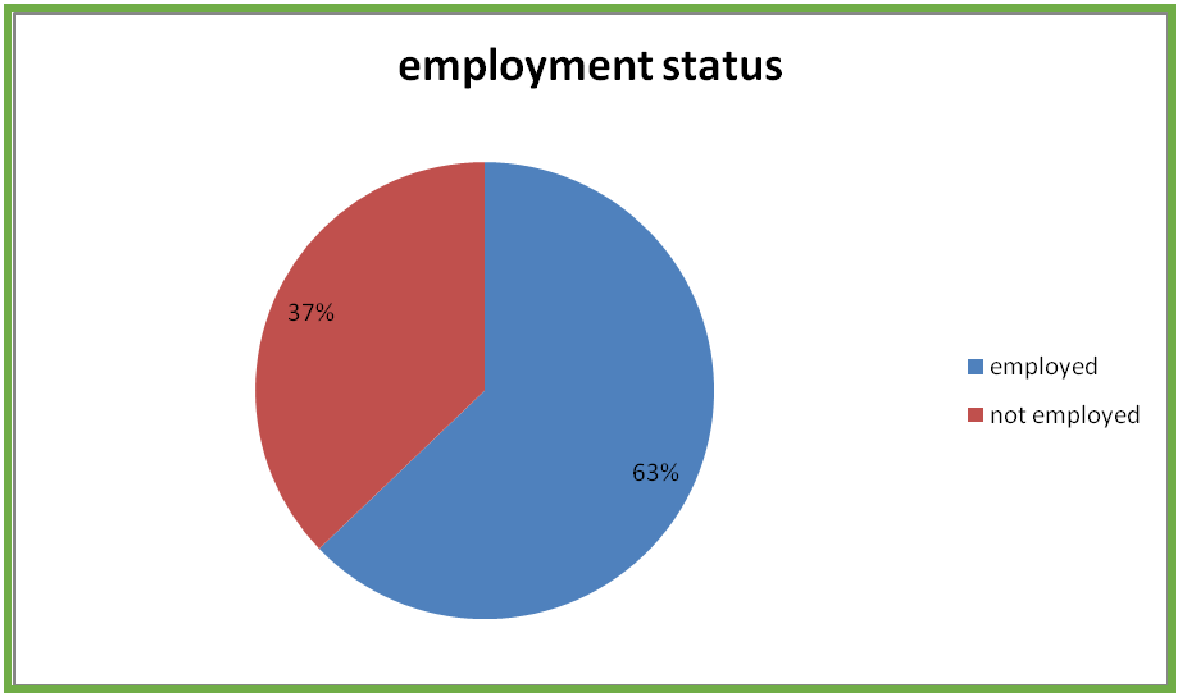
Education level

All the participants had some formal education with 162(42%) of them having completed secondary schooling. Clients visiting KNH were more likely 168(87%) to have post primary education than those visiting PMH, 146(75.9%) and this difference was statistically significant (x^2=7.9, p=0.005).

Employment

Thirty seven percent of the participants (143) reported to be unemployed as shown in **Fig 2** (75 from KNH and 68 from PMH)with the remainder(242) in employment either formal employment or self-employment (118 from KNH and 124 from PMH) . Employment status did not significantly differ between clients attending the two facilities (x^2=2.88, p=0.24).

Fig 2: Showing employment status among the participants



Religion

Most (98%) of the participants interviewed were Christians.

Place of residence

Almost all the participants (93%) were residents of Nairobi. The place of residence did not differ among the study participants from the two facilities (x^2=2.55, p= 0.11).

5.2 Time to initiating breast-feeding

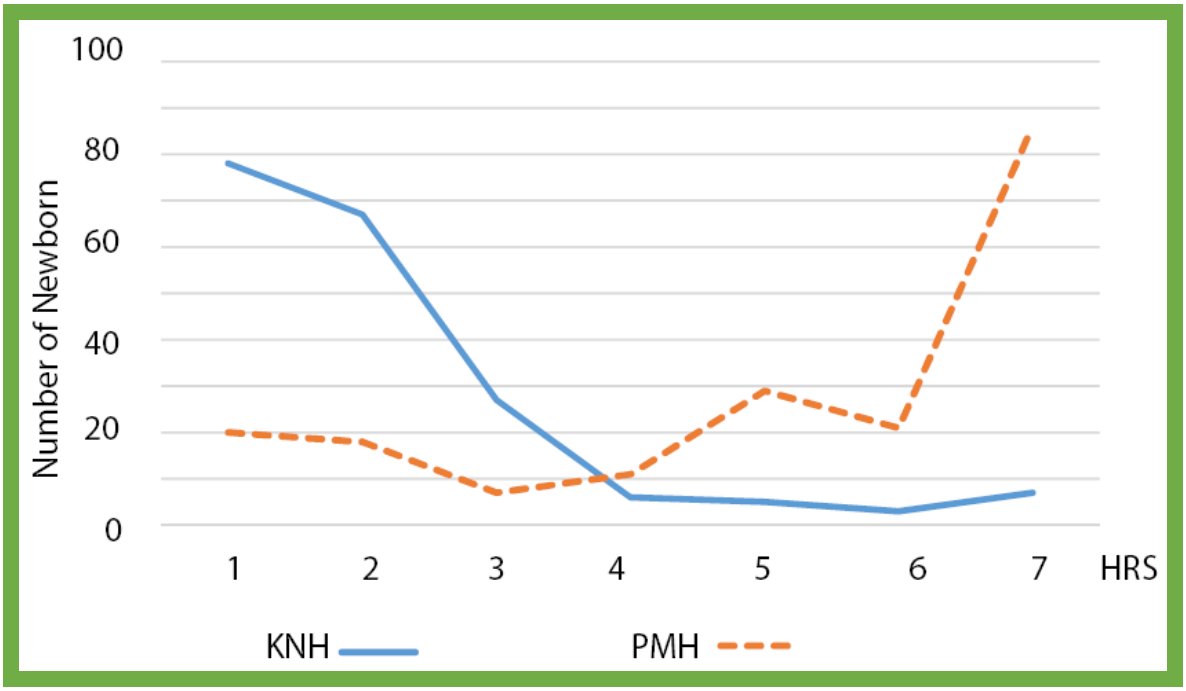
Although mothers reported to be exclusively breastfeeding, only one mother reported to have held her baby and initiated breastfeeding immediately after delivery. Only 25% of mothers had initiated breastfeeding within an hour of delivery (**Table 2**). The IQR to starting breastfeeding was 1 to 6 hours. Ninety-three (24%) of the mothers reported to have initiated breastfeeding after 6 hours. Of the mothers who initiated breast-feeding within 1 hour, none received PLF. Of those initiating breast-feeding between 1-6 hrs, 7/195(3.6%) were given PLF. On the other hand 27/93 (29%) of those who delayed in initiating breastfeeding beyond six hrs after delivery were given PLF. There was a significant association between delayed initiation of breastfeeding and giving PLF ($x^2$for trend $p<0.001$).

Further sub analysis revealed that only 20/192(10.4%) of mothers seen at PMH initiated breastfeeding within one hour compared to 78/193(40.4%) of those seen at KNH. Fig 2 shows initiation of breastfeeding in the two hospitals. Overall, the median time to initiation of breastfeeding at KNH was 1.5 hours; 1QR (1-2hours) compared to 6 hours IQR (4-9 hours) at PMH. These difference to initiating breastfeeding after CS as depicted in **Fig 3**, were significant ($x^2$142, $p<0.001$).

Table 2: Time to initiating breastfeeding.

Time (hrs) to Breastfeeding	Kenyatta National Hospital. N=193	Pumwani Maternity Hospital. N=192	Total. N=385
≤1	78 (40.4%)	20 (10.4%)	98(25.3%)
>1 to ≤2	67 (34.7%)	18(9.4%)	85(22.1%)
>2 to ≤3	27 (14.0%)	7 (3.7%)	34(8.9%)
>3 to ≤4	6 (3.1%)	11 (5.7%)	17(4.4%)
>4 to ≤5	5 (2.6%)	29 (15.1%)	34(8.9%)
>5 to ≤ 6	3 (1.6%)	21 (10.9)	24(6.2%)
>6	7 (3.6%)	86 (44.8)	93(24.2)
Total	193 (100%)	192(100%)	385 (100%)

Fig 3: Line graph showing time in hours to initiating breastfeeding in the two hospitals



5.3 PLF prevalence

Thirty-four (8.9%) of mothers interviewed reported that their babies had been given PLF. Of these, five (15%) reported that in their previous delivery, they had also received PLF for their newborn. In all cases except one, it was reported that the nurse was the one who suggested giving and gave the PLF. In one case, a mother is reported to have personally requested for PLF. The prevalence of PLF was 26/192(13.6%) in Pumwani Maternity Hospital (PMH) compared to 8/193 (4.2%) in Kenyatta National Hospital (KNH) and this difference was significant ($x^2 = 10.7$, P = 0.001).In all cases, the kind of PLF given was formula milk. This was given on average for two days. The reason cited for giving the PLF were perceived lack of milk.

5.4 Variables and how they affect initiation of breastfeeding

Demographic Variables

The various demographic factors outlined above were factored into a univariate model as shown in table 4. None of the factors significantly affected time to initiation of breastfeeding. Although education status was not significantly associated with delay in initiating breastfeeding, increased education status significantly decreased the risk of giving PLF. Eighteen percent of participants who only had primary education gave PLF compared to 7% of those with post primary education. The risk of giving PLF decreased with increasing education level, $x^2$for trend p=0.03.

ANC attendance and Quality of ANC services (Table 3)

ANC attendance

Of the 385 study participants, 377(98%) had attended ANC at least once; with 291(76%) completing the recommended four visits. However, the place of ANC attendance in most (76%) of the cases was a different facility other than the two study hospitals (KNH &PMH).

Table 3: ANC attendance among the participants

No. of ANC visits	**KNH. N=193(100%)**	**PMH. N=192(100%)**	**Total. N=385(100%)**
0	1 (0.5%)	6 (3.1%)	7 (1.8%)
1	0 (0%)	3 (1.6%)	3 (0.8%)
2	1 (0.5%)	7 (3.6%)	8 (2.1%)
3	29 (15.0%)	47 (24.5%)	76 (19.7%)
4+	162 (84.0%)	129 (67.2%)	291 (75.6%)

Attending ANC at least once, did not differ between clients seen at PMH and those seen in KNH (x^2 = 3.69, P = 0.6). However, clients seen at KNH were more likely to have attended more ANC visits (x^2 = 15.9, P = 0.001) compared to those seen at PMH. Not attending ANC was associated with increased risk of giving PLF, x^2 = 10.2, P = 0.001. The risk of giving PLF significantly decreased with increasing ANC visits, $x^2$for trend p=0.005. However ANC attendance was not associated with delay in initiation of breastfeeding (x^2=2.41, p=0.121).

Quality of ANC

Although most of the mothers attended ANC, and were universally counselled on the benefits of breastfeeding, only 180(47%) overall reported to have received information on the need to initiate breastfeeding within one hour of delivery. Further 111(57.5%) of those delivered at KNH reported to have had this counselling compared to 69(33.1%) of those seen at PMH. This difference was statistically significant (x^2 17.6, p<0.001). However knowledge of how soon to initiate breastfeeding was not found to be associated with time to initiation of breastfeeding nor giving PLF (x^2 = 0.49, P = 0.49).

Mode of Anaesthesia, timing of CS

Mode of anaesthesia

All the eligible mothers interviewed had CS carried out under spinal anaesthesia. Three hundred and twenty four (84%) of the CS were reported to be emergency and there were no significant differences between the two facilities ($x^2$4.16, p=0.13).CS type (emergency compared to elective) was not significantly associated with time to initiating breast-feeding (x^2= 0.08, P = 0.8). Furthermore, it was also not significantly associated with higher risk of PLF ($x^2$0.12, P = 0.7).

Timing of Caesarean Section.

Fifty seven percent (57%) of all CS were performed at night and there were no significant difference between the two facilities ($x^2$0.84, p=0.36). Timing of CS was not significantly associated with time to initiating breastfeeding ($x^2$4.35, P = 0.6) neither was it associated with giving PLF (x^2 2.1, p=0.15).

Table 4: Comparisons of variables of those who initiated breastfeeding within 1 hour and those who delayed, and variables of those who gave prelacteal feeds

Variable	Initiation of breastfeeding		P value	Received PLF	P value
	Within 1hr	After 1hr			
Median age (years)	27	27	$x^2$0.01, p<0.92	Yes=24yrs No=27yrs	$x^2$0.32, p=0.58
Parity					
Primipara	62(23.5%)	200(76.5%)	$x^2$1.41, p<0.24	25(9.5%)	$x^2$0.40, p=0.53
Multipara	37(29.2%)	86(70.8%)		9(7.5%)	
Marital Status					
Married	86(25.8%)	243 (74.2)	$x^2$0.40, p<0.53	26(7.9%)	$x^2$2.58, p=0.11
Unmarried	13(21.8%)	43 (78.2%)		8(14.6%)	
Employment status					
Employed	62(25.6%)	180(74.4%)	$x^2$0.05, p<0.83	20 (8.3%)	$x^2$0.28, p=0.60
Unemployed	35 (24.7)	108(75.3%)		14 (9.9%)	
Education level					
Some primary	3(14.3%)	18(85.7%)	$x^2$5.3, p<0.26	3 (14.3%)	**$x^2$11.03, p=0.03**
Completed primary	11 (22%)	39 (78%)		10 (20%)	
Some secondary	21 (24.4%)	65(75.6%)		5 (5.8%)	
Completed secondary	39(24.1%)	123(75.9%)		13 (8.0%)	
More than	23	43(64.6%)		3 (4.6%)	

secondary	(35.4%)				
ANC attendance					
Yes	97(25.7%)	281(74.3%)	x^2=2.41, p=0.121	31(8.2%)	**x^2=10.2, p<0.001**
No	0 (0%)	7(100%)		3(42.9%)	
No. of Visits					
0	0(0%)	7(100%)	x^2=2.41, p=0.12	3 (42.9%)	**x^2 14.9 p=0.005**
1	0(0%)	3 (100%)		0 (0%)	
2	0(0%)	7(100%)		2 (28.6%)	
3	17 (22.4%)	59(77.6%)		8 (10.5%)	
4+	81(27.5%)	211(72.5%)		21 (7.2%)	
Aware of how soon to initiate breastfeeding					
Yes	42 (23.3%)	138 (76.7%)	x^2=0.67, p=0.41	15 (7.9%)	x^2=0.49, p=0.49
no	56 (27.0 %)	149 (73.0%)		20 (9.8%)	
CS type					
Emergency CS	82(25.0%	243 (75.0%)	x^2=0.08, p=0.79	28 (8.5%)	x^2=0.12, p=0.73
Elective CS	16 (26.7%)	44 (73.3%)		6 (10.0%)	
Time to initiation of breastfeeding					
Initiated within 1hr	-	-	--------	0 (0%)	**x^2=10.6, p<0.001**
Initiated after 1hr	-	-		34 (11.8%)	

5.5 Reasons for delay in initiating breastfeeding

From the questionnaire during mothers interview possible reasons as to why breastfeeding initiation was sub optimal is grouped into hospital factors and maternal reasons.

Maternal reasons.

Half of the mothers who never initiated breastfeeding on time reported they were waiting to be taken to the postnatal ward from theatre and be united with their newborn. Sixty-four (22%) further reported that they were waiting to be told by the nurse to breastfeed. The various maternal reasons are outlined in table 5.

Table 5: Maternal reasons for delay in initiating breastfeeding.

Maternal reasons for delay in initiating breastfeeding	**KNH.** **N=115(100%)**	**PMH.** **N=172(100%)**	**Total** **N=287(100%)**
Waiting to be united with the baby in postnatal ward while awaiting bed.	64 (55.7%)	94 (54.7%)	158(55.0%)
Waiting to be told by nurse to breastfeed	22 (19.1%)	42 (24.4%)	64 (22.3%)
Mother Feeling too tired	16 (13.9%)	20 (11.6%)	36(12.5%)
Baby asleep	13 (11.3%)	16 (9.3%)	29 (10.2%)

Hospital factors

Universally it was found that none of the two study facilities initiated breastfeeding in theatre. No mother was found to have initiated breastfeeding in theatre. Apart from this, no baby was with the mother in the recovery room while awaiting transfer to the ward. All the mothers first held their babies in the postnatal ward. The time it took to complete the caesarean sections and bring the mother back to

the ward was uniformly identified as the major reason why initiating breastfeeding within one hour as per BFHI was sub-optimal. One hundred and fifty eight mothers (55%) took more than one hour to be transferred to the ward, 64 from KNH and 94 from PMH. At PMH ,the mothers having to wait at recovery room while a postnatal bed was been prepared further aggravated this. From background review of study site it had been noted that at PMH caesarean section mothers could only be admitted to specific wards and not in the same wards as mothers who had delivered via spontaneous vaginal delivery (SVD). Therefore, even if a bed in the SVD postnatal wards was available, the mother would still have to wait for space in the caesarean section specific wards before been released from the recovery room. In contrast, at KNH, there is no specific caesarean section ward and mothers could be given any available postnatal bed in admitting ward, reducing delay at recovery room and leading to faster initiation of breastfeeding in the ward as depicted in fig 2.

5.6 Factors independently associated with giving PLF

We combined all the variables that appeared to be significant in univariate analysis (education p=0.03. ANC attendance p=0.001, ANC no.of visits P=0.005, Time to initiate breastfeeding P=0.001) into a regression model in STATA using the 'binreg' command specifying the 'OR'option for (odds ratio) to identify which factor(s) that were independently associated with giving PLF. From this, we found that delaying in initiating breast-feeding after CS was the sole independent factor associated with giving PLF as shown in table 6.

Table 6: Factors independently associated with giving PLF. (Logistic regression model)

PLF	Odds Ratio	P	[95% Confidence Interval]
ANC attendance	0.14	0.083	0.012-1.30
No.of ANC visits	0.74	0.34	0.40-1.37
Time to initiation (contributed by hospital and maternal factors)	**2.83**	**<0.001**	**1.82- 4.42**
Education	0.75	0.11	0.52-1.072

6.0 DISCUSSION

Initiation of breastfeeding within the first hour ensures the newborn does not miss on the colostrum, which is immunologically beneficial to the baby. Importantly, delays in initiation of breastfeeding interfere with the appearance of mature milk, putting the baby at risk for dehydration or excessive weight loss after birth. Furthermore, such delays may lead to giving PLF, which have no immunological value, are nutritionally deficient, and maybe contaminated with aquatic gram-negative organisms that can cause life threatening neonatal sepsis [33].

Studies elsewhere have shown caesarean delivery to be a barrier to implementation of step 4 of BFHI [2, 29, 32]. In our study, conducted in two baby friendly hospitals in Kenya, only 25% of mothers delivered via CS initiated breastfeeding within an hour. Of greater concern, a quarter of the babies initiated breastfeeding more than six hours after delivery. A small proportion (17.9%) of mothers reported to have delayed initiating breastfeeding due to factors such as feeling tired or the baby been asleep. A dissertation study done by Ojigo looking at compliance of KNH to BFHI found that 68 % of babies initiated breastfeeding in 1 hour although this was a population of SVD mothers, and overall compliance rate to BFHI policy 40% .This shows that even baby friendly hospitals may not be fully compliant to BFHI policy. This also compares to a study by Rowe –Murray et al that looked at baby friendly hospital practices showed that women who had a caesarean section had significant delay in initiating breastfeeding ($p < 0.001$). From that study, an effect due to mode of delivery alone was demonstrated that could not be abolished by differences in hospital practices ($p = 0.231$) i.e. whether baby friendly or not [2]. Similarly, a systematic review study on breastfeeding after caesarean delivery had findings comparing with this although studies were not in baby friendly hospitals. From the systematic review,

rates of early breastfeeding (any initiation or at hospital discharge) were lower after CS compared with after SVD (pooled OR: 0.57; 95% CI: 0.50, 0.64; P, 0.00001).

From our study the delay in initiating breastfeeding was mainly due to hospital factors (not initiating breastfeeding in theatre or at receiving/recovery room, and delay in taking mother to postnatal ward because they were awaiting a bed), leading to considerable lag time in uniting the newborn with the mother. The hospital barriers were even more prominent at PMH where only 20 (10.4%) of mothers were able to initiate breastfeeding within one hour compared to 78 (40.4%) at KNH. The difference between the two hospitals could be attributed to the situation in PMH where mothers have to wait for an admission bed in a specific post caesarean ward. BFHI recommends that babies be placed in skin-to-skin contact with their mothers immediately following birth for at least an hour and mothers should be encouraged to recognize when their babies are ready to breastfeed and be offered help if needed. If this recommendation was to be implemented the rate of mothers who initiate breastfeeding within the recommended one hour would significantly increase.

With most of the mothers initiating breast-feeding late, it is plausible that the rate of PLF (8.9%) that we reported is a gross under estimate. A study in 5 major hospitals in Nairobi by Lakati found the prevalence of PLF was 26.8% (95% CI 23.5%-30.1%) [14]. However, the study included non baby friendly hospitals so that may probably explain the higher rate.

Only one factor (delay in initiating breastfeeding) was found to be independently associated with increased risk of giving PLF in our study. This compares to a study by Kurunij et al where it was found hospital practices lead to delay in initiation of breastfeeding hence promoting use of formula [5]. Similarly a study in Uganda found key pro-prelacteal factors were, delay in initiating breastfeeding beyond the

day of delivery (LR = 6.1, p<0.0005) and in mothers who had delivered via caesarean section. Further this study reported that low level of information about breastfeeding among the mother was also significant (LR = 0.6, p<0.0005). This however contrasts with our study in which we found that ANC information on initiation was not significantly associated with time to initiation of breastfeeding or increased risk of giving PLF. Other contrasting studies have shown antenatal counselling helps to motivate the mothers for initiation of breastfeeding after birth (AOR : 2.7(1.86-3.94) [40], though these studies were carried out in mixed population of CS and SVD [34,40]. But findings from our study suggest that most mothers who deliver via CS usually do not participate in decision making on whether to give PLF. Overall, the decision on giving PLF appears to be made at the discretion of the medical staff. This may explain why counselling on initiating breastfeeding within one hour of birth was not a significant factor. Nevertheless, it is concerning that only 47% of the mothers in our study knew that their baby should be put to breast within 1 hour despite high ANC attendance. The risk of giving PLF decreased with increased frequency of ANC visits. This suggests that a single visit is not adequate to cover the full package of ANC care and hence reinforces the need to continue encouraging completion of the recommended four ANC visits.

The main cause of delay in initiation of breastfeeding in the two hospitals was attributed to hospital factors. These hospital factors were mainly; Lack of initiating breastfeeding in theatre, Lack of bringing the baby to mother in the waiting/recovery room, and specifically for PMH constraint of finding a free postnatal bed for mothers due to segregation of CS mothers form SVD ones. Overall, the low breastfeeding initiation rate within one hour from our study shows that breastfeeding initiation in CS delivery is still a challenge even in hospitals that have been trained and adopted BFHI guidelines. Importantly our findings further demonstrates that although guidelines are an important starting point to

improving care, simply training healthcare workers on any set of guidelines may raise their knowledge but not markedly improve practice [35, 36, 37]. This 'paradox' is now well described as the '*know do gap*' [38]. Bridging this gap between knowledge and practice is more about 'organizing processes of care' within health facilities in order to optimize adherence to set standards/guidelines and ensure consistency in care delivery. Some of the promising concepts to address these issues have been the deliberate application of improvement principles/approaches in healthcare settings [39, 37]. It is therefore paramount that beyond trainings on new guidelines, concerted efforts are made to enable healthcare managers and frontline practitioners build effective care delivery Microsystems to improve quality of care. These entails re-organising them into care delivery teams, enshrining a culture of continuously measuring current performance and its variance from intended performance (performance gap), equipping them with skills on developing and testing Small Test of Changes (STOCS) to close identified gaps, monitoring performance and finally making Microsystems changes to institutionalise working ideas [39].Use of assessment tools e.g. the BFHI self appraisal tool should be used regularly so as to evaluate and monitor if the hospitals are keeping up to the required standards in regards to the ten steps. For any trainings carried out there should be follow up as recommended by WHO .KNH has regular training of its healthcare workers covering BFHI and Infant and Young Child Feeding (IYCF) but is constrained in the WHO recommendation of follow up after the training. In summary, to achieve greater and sustained impact at care Microsystems, there is need to integrate components of how to '*organise processes*' of care in any trainings aimed at rolling out care guidelines and or standards.

It's further notable, that in univariate analysis, the risk of giving PLF decreased with increasing education level. This compares with other studies that have shown having formal education to be a predictor of timely initiation of breastfeeding ($p < 0.05$) [40]. However, in our study, higher level of

education was not independently associated with reduced risk of giving PLF. It is possible that similar explanations as outlined under level of information on initiating breastfeeding hold; given that mothers were not involved in the decision to give PLF, hence any maternal factors would not be expected to be significant.

We did not find any difference between either elective or emergency CS in initiation of breastfeeding; this is in contrast to other studies that have found significant difference between elective and emergency CS on PLF [30].In most cases elective CS tend to be performed under spinal anaesthesia, whilst emergency CS have a higher preponderance of general anaesthesia. This may explain some of the difference reported in other study. In our study all the cases were uniformly performed under spinal anaesthesia, hence no comparisons could be done.

In summary this study clearly demonstrates that the practice of initiating breastfeeding in theatre especially where spinal anaesthesia is used is hardly practiced. This one area requires urgent action even among hospital implementing BFHI. Concerted efforts are also needed to re-educate health workers on the dangers of PLF given our finding that all babies who were given prelacteal feed it was suggested and given by nurse.

6.1 Utility of study

The study has provided valuable information on initiation of breastfeeding in CS mothers in two major baby friendly hospitals in Kenya and given ways in which improvement can be addressed in this area. To our knowledge no similar local studies have been found looking at this group of mothers in a baby friendly hospital and so the study has identified important knowledge gap.

6.2 limitations of study

The study was based on reported practices. There was therefore a risk that mothers may report what was expected but the actual practices could have been different. Possibly, they could also have given wrong information. As the study was carried out among postnatal mothers in KNH and PMH which are referral hospitals, findings may not be generalised as these are confined to single geographical region. This may therefore not apply to the whole country.

6.3 conclusions

1. Only 25% of mothers had initiated breastfeeding within an hour while 24% initiated after 6 hours. The median time to initiation of breastfeeding at KNH was 1.5 hours; IQR(1-2hours) compared to 6 hours IQR (4-9 hours) at PMH.
2. PLF prevalence was 8.9%. The rate was 13.6% in PMH and 4.2% in KNH.
3. The main reason for delay in initiation of breastfeeding was hospital factors- delays from transfer from theatre to recovery room to the ward and not initiating breastfeeding in theatre.
4. The delay in initiation of breastfeeding is the major risk factor for giving PLF.

6.4 Recommendation

Aggresive efforts and measures to initiate breastfeeding in theatre while arrangements are being done to transfer mother and baby to postnatal ward.

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8.0 ANNEXURE

Annex 1: Time frame

Time frame

The study was conducted over a period of six months as shown below.

Study months	1	2	3	4	5
Data collection	■	■	■		
Data entry			■		
Data analysis and report writing				■	■

Annex 2: study budget

Study Budget (Kenya shillings)

Item/activity	**Cost in Kenya shillings**
four research assistants	40,000
Printing/photocopy	15,000
Stationary	2,000
Transport	3,000
Statistician services	10,000
Publishing	0
Miscellaneous	5000
TOTAL	**75,000**

Annex 3: Mothers Questionnaire

Questionnaire for initiation of breastfeeding and prelacteal feeding assessment in post natal mothers who have delivered via caesarean section

A i) Code of hospital_____

ii) Date _____

iii) No. of interviewee_____

iv) Age_____

v) Residential

a)Urban

b)Rural

vi) Level of education

a] Some primary

b] Completed primary

c] Some secondary

d] Completed secondary

e] More than secondary

f] No formal education

vii) Employment/Occupation

a) Self employed ----------

b) Employed----------

c) No employment

viii)Marital status.....

a) married

b) Single

c) Divorced

x) Religion----------

a)Christian

b)muslim

xi) Parity_____

B)ANC information

I)Did you attend ANC? Yes_____ no_____

ii) If Yes where a} Health centre b} PMH c} KNH

iii) If so how many times?_____

iv) Was breastfeeding discussed during the clinics? Yes_____ no_____

v) If yes to above what details were discussed?

a) How soon to breast feed and its importance? Yes_____ no_____

b) Risks of giving water, formula or other supplements to the baby in the first six months if breastfeeding? Yes _____ no_____

C)Birth period

i)Gestation at delivery----------

ii)Indication of caesarean section_ ----------

iii)Type of CS a] elective b] emergency

iii)Type of anaesthesia administered during caesarean section delivery

a) spinal

b) General anaesthesia

iv) Time of delivery----------

v) How old is your baby today? _____

vi) Birth weight of baby----------

vii) Sex of baby M ☐ F ☐

viii) How are you feeding your baby?

a) Breastfeeding only_____

b) Breastfeeding and formula_____

c) Formula only_____

ix) How long after birth did you breastfeed your baby?

☐ Immediately

☐ Within an hour

☐ As soon as I was able to respond after General anaesthesia which was ---------?

☐ Other----------

x) Where did you start breastfeeding a) in theatre?

b) In postnatal ward

xi)If it took more than an hour after birth to hold your baby what was the reason?

☐ My baby needed help/observation

☐ had been given anaesthesia and wasn't yet awake

☐ didn't have the energy

☐ I wasn't given my baby this soon and I don't know why

☐ Other----------

xii)Has your baby been given anything other than breast milk since he/she was born?

Yes ☐

No ☐

Don't know ☐

xiii)If yes what was given?

- Infant formula ☐
- Water or sugar water ☐
- Other fluid ☐
- Don't know ☐

xiv)If your baby was given supplements who requested it?

☐ I requested

☐ A relative requested it

☐ My doctor or other staff requested

xv)What was the reason for giving the supplements?.....

.....

xvi) How many days did your baby receive the supplements? ----------

xvii) Where was your baby while you were in the maternity services after giving birth?

☐ y baby was always with me day and night

☐ My baby was not with me was----------

xviii) If you have other children,

a)what was mode of delivery SVD ☐ CS ☐

b) did you breastfeed them? Yes------ No-------

c) how soon after birth did you start breastfeeding ?.....

c)did you give them PLF? Yes..... No.....

d) for how long did you exclusively breastfeed?----------

Annex 5: Consent form for mothers

Initiation of breastfeeding among the postnatal mothers in Kenyatta National Hospital and Pumwani Maternity Hospital

I, being a parent of _____ (name of child), have had the research explained to me. I have understood this is a study to determine time to initiate breastfeeding and whether babies are fed anything before initial breastfeed .I have had my questions answered satisfactorily. I understand that this is voluntary and that I can change my mind at any stage and it will not affect the care am receiving in the hospital

Parent signature: _____ **Date** _____

Parent name: _____ **Time** _____

I certify that I have followed all the study specific procedures for obtaining informed consent.

Designee/investigator's signature: _____ **Date** _____

Designee/investigator's name : _____ **Time** _____

Only necessary if the parent/guardian cannot read:

I *attest that the information concerning this research was accurately explained to and apparently understood by the parent and that informed consent was freely given by the parent

Witness' signature: _____ **Date** _____

Witness' name: _____ **Time** _____

*A witness is a person who is independent from the trial or a member of staff who was not involved in gaining the consent.

Thumbprint of the parent as named above if they cannot write: _____

THE PARENT/GUARDIAN SHOULD NOW BE GIVEN A SIGNED COPY TO KEEP.

Annex 5b.Kukubali kushiriki utafiti.

<u>Kubainisha muda unaochukua kabla kuanza kunyonyeshwa anapozaliwa na kama anapewa vinywaji au vyakula vyovyote kabla katika kina mama waliojifungua kwa njia ya upasuaji katika Hospitali ya KNH na PMH</u>

Mimi mzazi wa.....(jina la motto)

nimefahamishwa na kuelezwa kuhusu utafiti huu.Nimeelewa ya kwamba utafiti huu unataka kubainisha muda unaochukuwa kabla mtoto aliyezaliwa aanze kunyonya na vilevile kama kuna chakula ama kinywaji chochote anapewa kabla kuanza kunyonya kwa mara ya kwanza. Maswali yangu yamejibiwa nikaridhika na kuelewa. Nafahamu si lazima nishiriki bali nikujitolea na naweza kujitoa wakati wowote na haitadhuru au kukatisha huduma ninayopata katika hospitali hii.

Sahihi ya mzazi ama

alama ya kidole: _____ **Tarehe** _____

Jina la mzazi: _____ **Saa** _____

Sahihi ya mtafiti: _____ **Tarehe** _____

Jina la mtafiti : _____ **Saa** _____

Sahihi ya shahidi: _____ **Tarehe** _____

Jina la shahidi: _____ **Saa** _____

MZAZI APEWE NAKALA AWEKE.