ADDISABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

DEPARTMENT OF NURSING

POST GRADUATE STUDIES

TIMELY INITIATION OF BREAST FEEDING OF NEWBORNS AND ASSOCIATED FACTORS AMONG MOTHERS DELIVERD WITH CAESAREAN SECTION IN GOVERNMENTAL HOSPITALS IN ADDIS ABABA, ETHIOPIA, 2020.

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Full title of the research project	**Timely Initiation of Breast Feeding of Newborns and Associated Factors among Mothers delivered with Caesarean Section in Governmental Hospitals in Addis Ababa, Ethiopia, 2020.**
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APPROVAL SHEET

I, the undersigned MSc student, declare that I have submitted my original work on timely initiation of breast feeding of newborns and associated factors among mothers delivered with caesarean section in governmental hospitals in Addis Ababa.

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This thesis work has been submitted for examination with my approval as an advisor.

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DECLARATION

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in this or another university and that all sources of materials used for this thesis have been fully acknowledged.

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This thesis by Muluye Dejen (BSc) is accepted in its present form by the board of examiners as satisfying thesis requirement for the degree of masters of Science in neonatal nursing.

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ACRONYMS

AAU	Addis Ababa University
ANC	Antenatal care
APGAR	Activity, Pulse, Grimace, Appearance, Respiration
BF	Breast Feeding
CI	Confidence Interval
C/S	Caesarean Section
EBF	Exclusive Breast Feeding
EDHS	Ethiopian Demographic and Health Survey
GMH	Gandhi Memorial Hospital
HIV	Human immune Virus
HSDP	Health Sector Development Plan
IQ	Intelligence Quotient
NMR	Neonatal Mortality Rate
NFHS	National Family Health Survey
SRS	Simple Random Sampling
SVD	Spontaneous Vaginal Delivery
WHO	World Health Organization
TASH	Tikur Anbessa Specialized Hospital
TIBF	Timely Initiation of breastfeeding
ZMH	Zewditu Memorial Hospital

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ABSTRACT

Background: Timely Initiation of breastfeeding is defined as putting the new born to breast within one hour of birth and skin-to-skin contacts along with suckling at the breast stimulate the mother's production of breast milk, including colostrum. Overall, caesarean section delivery may be negatively associated with successful implementation of timely initiation of breast feeding.

Objective: The main aim of this study is to assess timely initiation of breast feeding of newborn and associated factors among mothers had caesarean section in Governmental Hospitals in Addis Ababa, Ethiopia, 2020.

Methods: Institution based cross-sectional study was conducted from March 25th -April 30th among 413 mothers who delivered with caesarean section. Three governmental hospitals and study participants attended delivery in Addis Ababa. Each study participants were selected by using consecutive sampling technique was utilized to select individual respondents. The data was coded, entered and cleaned using EPI Data version 4.6 and then exported into SPSS statistical software version 26 for analysed. Variables have P-value ≤0.25 was entered in to multivariable logistic regression model to control for confounder. The degree of association between dependent & independent variables was assessed using odds ratio with 95% confidence interval and statistical significance was declared at p-value ≤0.05.

Results: All the required 413 study participants were interviewed with the response rate of 100%. From the total respondents 199(48.2%) of them had good practice of timely initiation of breast feeding. In Multivariable analysis results showed that, there was statistically significance association between timely initiation of breast feeding and parameters such as Educational status of the mother (AOR= 0.18, 95% CI: 0.64-0.50), ante natal care follow up (AOR=0.45, 95% CI: 0.26-0.79), Delivery time (AOR=2.06, 95% CI: 1.28-3.32). Maternal medical complication (AOR=0.58, 95% CI: 0.35-0.97), mothers feeding for the newborn rather than breast feeding (AOR= 0.22, 95% CI: 0.13-0.38) and maternal breast problem (AOR=9.13, 95% CI: 1.92-43.33).

Conclusion and Recommendation: The prevalence timely initiation of breast feeding mothers delivered by caesarean section was 48.2%. Health care providers, especially those working in labour and delivery wards, must give high attention to caesarean section delivery mothers to initiate breast feeding timely after delivery.

Keywords: Timely Initiation, Breast feeding, Caesarean delivery, Newborns, mothers

1. INTRODUCTION

1.1. Background

World Health Organization (WHO) recommend that newborns initiate breastfeeding within the first hour immediately after birth and exclusively breastfed for the first six months of life this means no other foods or liquids are given, including water. From the age of six months, children should begin eating safe and adequate complementary foods while continuing to breastfeed for up to two years and further than(1). The first hour of life is a sensitive period and is often referred to the "golden hour," or "sacred hour, "or "magic hour" (2).

Breastfeeding, (natural first food of babies) is the most effective ways to ensure child health and survival. Early or within the first hour initiation of breast milk to newly-born children immediately after delivery have numerous beneficial health effects on mothers and newborns (3).

Timely Initiation of breastfeeding is defined as putting the new born to breast within one hour of birth and skin-to-skin contacts along with suckling at the breast stimulate the mother's production of breast milk, including colostrum. Colostrum is often considered as the baby's first immunization .which is extremely rich in nutrients and also antibodies. Therefore, feeding of colostrum should be stimulated and prelacteal feeds discouraged. Colostrum is 3 times richer in vitamin A and 10 times richer in beta-carotene than mature milk. Because of its high levels of vitamin A, antibodies, and other protective factors, breast milk completely sufficient and useful new-born's nutritional and fluid needs for the first six months(4).

Colostrum is the first breast milk which has thick, sticky and clear yellowish colour, highly nutritious, digestible and it is the most immunologic protective secretion of the mammary gland during lacto genesis and Therefore, it must feeding of colostrum to the new-born within one hour immediately after delivery (5).

Breastfeeding helps to increase bonding between mother and newborn reduce infections like pneumonia and diarrhoea, enhance growth and development of newborn's and decrease the risk for obesity in future life(6).

Timely initiation of breastfeeding can help to prevent neonatal deaths caused by infections such as sepsis, pneumonia, and diarrhoea. The studies showed that when breastfeeding was initiated within the first hour, around 22% of neonatal mortality could be prevented(7).

Breast milk is the preferred food for all newborns including premature and sick babies. And it is cost effective, fresh, and easily available and also it contains essential fatty acids needed for the newborn's growing brain, eyes, and blood vessels and these are not available in other milks. Breastfeed on demand, that is, as often as the newborn wants, day and night, at least 8 times in 24 hours will provide more milk as suckling stimulates milk production. It provides nutritional, immunological, developmental and psychological advantages to the newborn and to the mother and economic benefits to the family and the community(8).

Breastfeeding immediately after delivery will also has advantage to the mother through facilitate placental expulsion and uterine contraction, reducing the risk of postpartum haemorrhage , prevent breast engorgement ,and reduces the likelihood of maternal breast and ovarian cancer later in life(9).

Breastfeeding also leads to higher IQ and earning capacity later in life as proved in a recent research showing increasing IQ, educational attainment and monthly income with increasing breastfeeding duration(6). Delayed initiation of breastfeeding is defined as the failure of the mother to timely initiate breastfeeding within one hour of delivery or within one hour of recovery of post-operative consciousness in case of those who delivered after caesarean section (10).

1.2. Statement of problem

Globally, nearly 3 million babies die every year in their first month of life; from this up to one and half of all deaths occur within the first 24 hours of life which almost all are due to preventable causes, attributed to infections, like sepsis, meningitis and pneumonia. In 2017, 78 million newborns had to wait more than one hour to be put to the breast after birth (11). This means that only about two in five children (42%), the majority born in low and middle-income countries, were put to the breast within the first hour of life. While this is a slight improvement from 37% in 2005, progress is slow. When breastfeeding is delayed after birth, the consequences can be life-threatening and the longer newborns are left waiting, the greater risk(12).

A worldwide a systematic review and meta-analysis study showed caesarean section delivery (CSD) has increased rapidly. It is the most common surgical procedure carried out in the United States, where it accounts rate for 31.8%,in China 40% and South America 50% of all births, and it is even more widespread and figures showed far in excess of the WHO recommended rate of 15% because many women prefer CS even in the absence of medical indications, including a one third (1/3) of female obstetricians (13).

In worldwide suboptimal newborn feeding is responsible for 45% of neonatal infectious deaths, 30% of diarrhea deaths and 18% of acute respiratory deaths in children under five years. Breastfeeding as a determinant of babies' health and nutrition saves up to 1.5 million babies lives annually. Though breastfeeding is mostly universal in sub-Saharan Africa, timely or early initiation of breastfeeding is rarely practiced. National Family Health Survey (NFHS-4), revealed that only 41.6% of newborn in India were breastfed timely within one hour of birth, which is an improvement from its last round (NFHS-3; 23.4%) but is far from ideal(14).

In India studies demonstrated that prelacteal feeding of newborns had a statistically significant association with delayed initiation of breastfeeding(10). Some study also found the newborns who were delivered by caesarean section were also at risk of not being or start breastfed within the few hours of birth and also found that effect of anaesthesia, caesarean procedure, reduced maternal alertness and inadequate maternal skills to timely initiate breastfeeding are some of the reasons for delayed breastfeeding among caesarean births(15).

In Bangladesh a case-observation study was conducted is being made by national and international stakeholders to encourage mothers to initiate breastfeeding early. Yet, only 45% of world' s newborn and 42% of newborns in South-Asia are put to breast within one hour of birth(16). Different studies indicated that late initiation of breastfeeding leads to high neonatal morbidity and mortality. According to a systematic review study, newborns who initiated breastfeeding after 1 h were 33% more risk to neonatal mortality(17).

Sub-Saharan Africa has one of the highest neonatal mortality rates in the world at 28/1000 live births with Uganda at 27/1000 live births. Over 800,000 neonatal deaths annually could be prevented if breastfeeding practices were scaled up. One of the important practices in scaling up breastfeeding is initiating breastfeeding within the first hour after birth, failure of which is termed/ defined as delayed initiation of breastfeeding(18).

Research proven that having a delivery by caesarean section is associated with non-initiation or delayed initiation of breastfeeding as well as with discontinuation of exclusive breastfeeding or total stopping of the process Caesarean section has also been significantly related to a higher rate of use of formula supplementation.(19, 20).

WHO recommends that breastfeeding should be initiated in all newborns within one hour of life and according to Ethiopian Demographic and Health Survey (EDHS) 2016 report, around 73%mother's started breastfeeding within 1 hour of birth. The magnitude and determinant factors for the practice of timely initiation of breast feeding were not well known in the study area even if initiation breast feeding practice is a vital component of primary health Care unit.

1.3. Significance of the study

Breast feeding after the first one hour of birth doubles risk for neonatal morbidity and mortality. So, this study was a baseline data for counselling, health education session to minimize the delayed timely initiation of breast feeding practice and support to increase the rate of timely initiation of breast feeding practices.

The finding of this study will provide relevant information for future planning and interventions of appropriate strategies of the hospital, Health Bureau, policy makers and ministry of health. In addition, contribute to understand about initiation of breast feeding and related factors associated with timely initiation of breastfeeding in the study area. So, the study used as a reference for health professionals especially working at delivery wards to educate mothers, and who are interested in carrying out further studies with this regard.

Overall, caesarean section delivery may be negatively associated with successful implementation of timely initiation of breast feeding. Therefore, important to know the timely initiation of breastfeeding among mothers delivered by caesarean section, so that to find out areas that may need improvement and how to improve them.

2. LITERATURE REVIEW

2.1.Over view of timely initiation of breast feeding

Timely Initiation of Breast Feeding (TIBF) is the proportion of newborn who were put to their mothers' breast within one hour immediately after delivery(21). Immediately after birth mothers applied skin to skin contact helps the newborn's skin colonization by the mother's micro biota, facilitates the regulation of body temperature, maintains the blood glucose levels stable, and contributes to cardio-respiratory stability are more satisfactory in newborns who had timely initiate breastfeeding; both are important contributors to newborn deaths and in the 20-30 minutes after birth, the newborn is more alert, and the newborns suckling reflex is strongest, so that this is the best time to start breastfeeding.(22).

Timely initiation of breastfeeding within one hour of birth protects the newborn from sepsis, Otitis media, gastroenteritis, respiratory illness, sudden infant death syndrome, necrotizing enter colitis, obesity, hypertension, pneumonia in later life and reduces newborn mortality. The risk of mortality due to diarrhea and other infections can increase in newborns who are either incompletely breastfed or late initiation of breastfeeding, after one day to associated with a 2.6-fold increased risk of infection-specific and neonatal mortality(12)

According to a study done in Bangladesh, mothers after caesarean section delivered around a half of the mothers start breastfeeding within one hour of birth (23). Another study done in Canada, fewer women who had planned caesarean birth reported the practice of timely initiation of breastfeeding when compared with women who did not have planned caesarean birth(24).

A one case-observation study shows that, newborns who were put to breast within one hour of birth had 29% less chance of dying within the first 28 days of their lives than those who were breastfed 2–23 hours of birth (24).Child survival is an on-going public health priority in the South Asia region, which includes eight countries: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri-Lanka(25).

Meta-analysis and a systematic review was involving 53 studies from 33 low income, middle income and high income countries with no country from Africa, it was found that timely initiation of breastfeeding was lower among newborn delivered by caesarean section (pooled OR, 0.57; 95% CI 0.50 to 0.64) compared with newborn vaginally(26).

Meta-analysis study conducted over 63 developing countries, shows that timely initiation of breastfeeding to prevents newborn death due to sepsis, pneumonia, diarrhoea and hypothermia, and facilitates sustained breastfeeding (27).

According to a study which was conducted in Nepal systematic review and meta-analysis shows that breastfeeding initiation after the first hour of birth doubles the risk of neonatal mortality. Therefore, timely initiation of breast feeding within the first day approximately to reduced 16% of deaths. Initiation of breastfeeding within the first hour and first day of life could be avoided 19.1% and 7.7% of all neonatal deaths respectively(21). Another study conducted in rural Ghana showed that early initiation within the first hours of birth could prevent 22% of neonatal deaths (28).

In Ethiopia, study show that low rate of timely initiation of breastfeeding was reported, where the Odds Ratio of initiation after caesarean section was 0.11 compared to after vaginal delivery. Factors associated with delayed initiation of breastfeeding include maternal-newborn factors such as absence of breast milk, HIV status of the parent and perinatal morbidity, cultural factors such as colostrum discarding, and social factors such as rural residence and place of delivery (29).

According to a study which was conducted in Ethiopia, Amhara region, Eastern Gojjam zone, Motta town shows that timely initiation of breastfeeding within one hour mothers delivered by caesarean section was 42.1%, (30).

2.2. Factors associated with of breast feeding initiation

2.2.1. Maternal Socio-demographic factors:

According to a study done in Minia University a lower level of mother education status shows that a positive predictor of to initiate breastfeeding specially CS delivery mothers (31). Another study done in great Baltimore Medical Centre in USA shows that maternal education was found to be associated initiation of breastfeeding i.e. mothers with less education than a college degree had twice less likely not initiating breast feeding compared to mothers who had a college degree(32).

Several South Asian countries have some of the worst timely initiation of breastfeeding practices in the world; the rates around in South Asia 41%, Pakistan29%, India41%,

Bangladesh 47% and Nepal45%of newborns are breastfed within 1 hour of birth respectively(33).

According to cross-sectional study conducted in India timely initiation breastfeeding significantly associated with antenatal counselling on breastfeeding received(47.8%) and did not receive counselling 25.3%, delivered by vaginal route (52%) and caesarean section (5.9%). Delayed initiation of breastfeeding was a significant association with prelacteal feeding(34).

A cohort study was conducted in western Nepal,with 735 mother-new pairs and it was found that mothers who were assisted by traditional attendants during childbirth, delivered by Caesarean section, from ethnically disadvantaged families were less likely to initiate breastfeeding early whereas the mothers from the poor families and did not introduce prelacteal feeds to their newborn were more likely to initiate breastfeeding within the first hour which is consistent with results from some study as well (35).

According to Kenya study showed a negative impact of marital status (non-union), ethnicity and lower educational attainment on breastfeeding practice(36).Much of the available evidence concerning the impact of caesarean section on breastfeeding is generated from high-income countries, low-income and middle-income countries, even though the Caesarean section rate is increasing, there is a substantial inequality which may suggest inadequate access among the poorest women and over use of Caesarean section for non-medical indications among the richest population subgroups (37).

2.2.2. Knowledge's about of Breastfeeding Initiation

According to a study done in Nepal, Caesarean section has been reported to be a major risk factor of lower duration of exclusive breastfeeding, delayed initiation of breastfeeding and also increased risk of prelacteal feeding (38). Another study conducted in Nepal shows that mother who had information about timely initiation of breastfeeding immediately after delivery were 4 times more likely to start timely initiation breastfeeding than those mother who did not receive information(AOR=3.78, 95% CI: 1.53, 9.33).

According to a study done in Minia University, newborns after delivered by CS also demonstrated a negative influence; of giving the newborn glucose or sugar in water on the immediate start of breastfeeding. This incorrect practice could lead to delay in mother's

decision to start feeding her newborn given that he/she had already taken the needed nutrition temporarily(31).

According to a study in south Sudan, the experience of Caesarean birth can be stressful to a mother who is unable to watch her baby enter the world. Birth by caesarean section, discarding of colostrum, unmarried mothers, exposure to infant formula announcement and no house ownership were independent factors associated with delay in initiation of breastfeeding(39).

In Ethiopia nationwide demographic and health survey 2011, report showed that mothers had employed or working at any institutions were 23% less likely to timely initiate breastfeeding(40).

2.2.3. Obstetric and Health service Related Factors

Caesarean sections are the biggest problem to timely initiation of breast feeding in hospital born babies. Moreover, studies conducted based on WHO global surveys completed in 24 countries in Africa, Latin America and Asia found that Caesarean delivery was negatively associated with the rate of timely initiation of breastfeeding(41).

According to a study done in Bangladesh, a case-observation report shows during postpartum period, a skilled birth attendant can play the first role to establish the mother-newborn connection through skin-to-skin contact and therefore facilitate the mothers to breastfeed early(42). According to a study done in Minia University, after caesarean section (CS) delivery mothers complicated with postpartum depression, slightly more than two-fifth of the women had a high risk of postpartum depression. As regards the factors influencing postpartum depression, the findings show the number of initiation of breastfeeding problems as a main positive predictor(31).

According to a study done in India, the observational study was conducted in a tertiary care centre so Pain post-delivery was not found to have significant impact on initiation of breast feeding but anaesthesia in form of spinal, epidural or general anaesthesia or sedation given in normal delivery or Caesarean section was significantly associated increased time of initiation of breast feeding in present study(43).

In sub-Saharan Africa country adjusted analyses and random-effects meta-analysis of 33 countries revealed that the prevalence of initiation of breastfeeding was lesser among infants delivered by Caesarean section compared with infants born vaginally(44).

A cohort study was conducted in Kenya , the intensity of mother's perception of breast engorgement from one up to three days after birth was, significantly more pronounced in multi-parous mothers compared to primiparous mothers, breastfeeding initiation was later in primiparous mothers than multiparous mothers and Parity of mother was significantly associated with increased time of initiation of breast feeding (45).

In Ethiopia study done in Axum, Motta, Raya Kobo and community based cross-sectional study shows, mothers who were counseled during antenatal visits were 5.6 times more likely to initiate timely breastfeeding than those who were not counseled during antenatal visits(8).

2.2.4. Newborn related factors

In Saudi Arabia previous studies was conducted gestational age and infant birth weight as possible influencing factors, and found them to be potentially detrimental to breastfeeding initiation and APGAR score < 7 at 5 min (46)

According to a study done in Minia University having a newborn in good health status was identified as the main factor positively influencing the immediate start of breastfeeding after Caesarean Section delivered (CS). Thus, a good newborn health status increases the chance of immediate breastfeeding by ten-folds(31).

In 2011 nationwide Demographic and Health Survey in Ethiopia showed that female infants had a 20 % higher chance of timely breastfeeding initiation (AOR 1.2; 95 %CI: 1.05-1.30) compared to male infants (40). According to cross sectional study was conducted in Axum Town showed that Mothers with female child had a positive association with timely initiation of breastfeeding with AOR of 2.09 (95% CI: 1.37, 3.17)(47).

2.2.5. Family and Socio-cultural related factors

In Egypt 228(35.2%) and (6.4%) in Nigeria respectively give prelacteal feeding the reason was traditional/cultural belief and India showed that Colostrum was discarded by 66% of the respondents and78% of them gave PLF to neonates because of it was believed to be impure and causes obstruction in the intestines of the neonates(22)

According to 2011 study conducted, 35.0% of mothers pumped and discarded the colostrum for believing that dirty, it would endanger the newborn and cause cramps, and that it is hard to digest on the basis of traditional or cultural beliefs seeing it as harmful to the newborn's health (5).

In Ethiopia the northern Gondar Kossoye traditional/cultural belief that colostrum may cause abdominal discomfort and diarrhoea, therefore, 60% of people belief that providing prelacteal feeding will clean the stomach, 79% of the respondents were discard colostrum. Mothers who started breast feeding a few hours after birth were 5.3 times more likely give prelacteal liquids for their newborn compared to those who started breast feeding immediately after birth(48). Giving prelacteal feeding practices were challenges to delay the initiation of breastfeeding and prelacteal feeding may also affect neonatal health by disrupting the priming of the gastro-intestinal tract, In addition, prelacteal feeding can be a direct cause of illness by exposing newborn to contaminated feeds, apparatuses, water, and hands (49).

CONCEPTUAL FRAME WORK

This conceptual framework is adapted from different literature. This framework conceptualizes timely initiation of breast feeding for newborns with caesarean section mothers as the interaction between various factors.

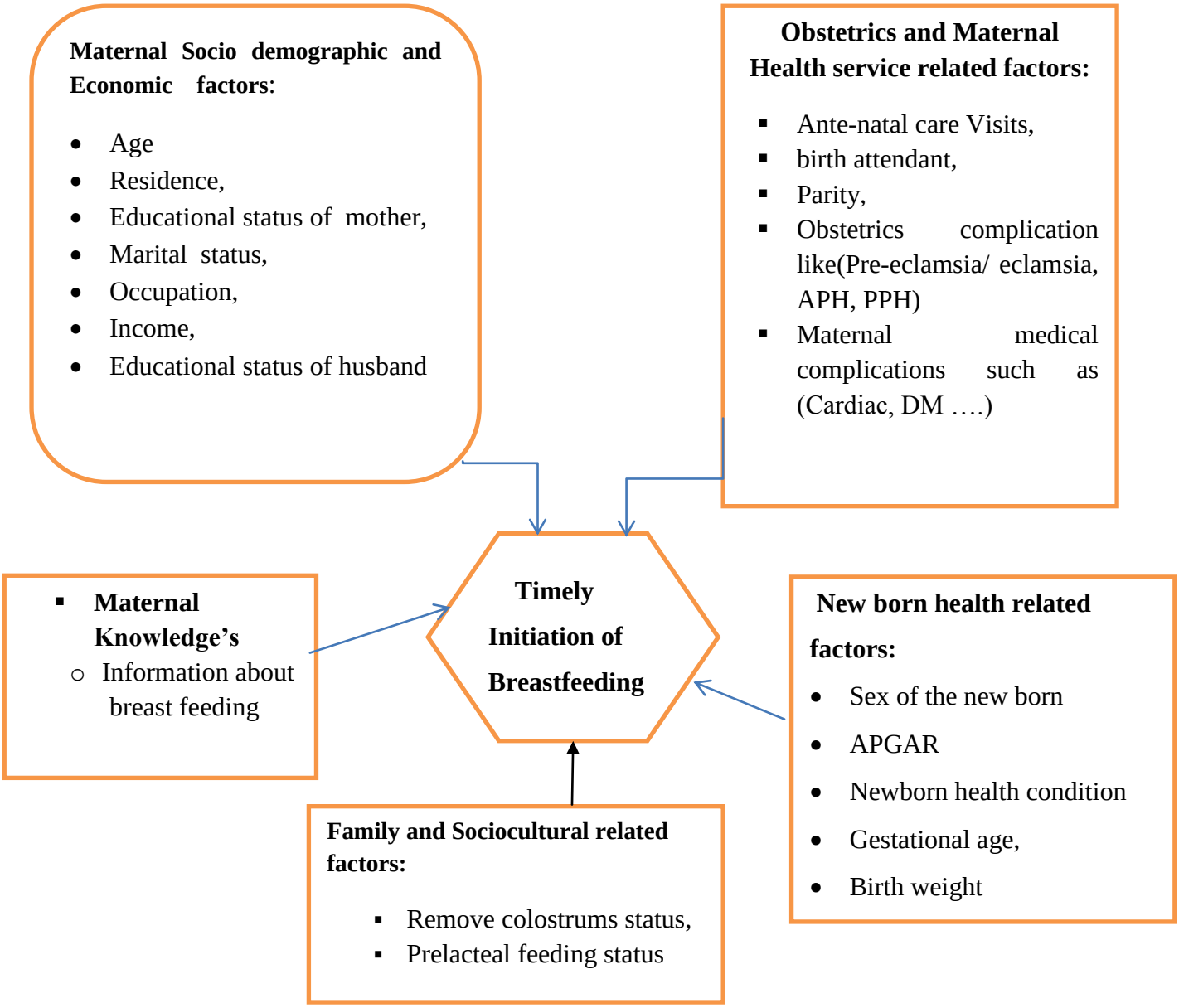

Figure 1: Conceptual framework on timely initiation of breastfeeding of newborns and associated factors among mothers delivered by Caesarean section in governmental hospitals Addis Ababaa, Ethiopia 2020. Sources: (8, 38, 50-52)

3. OBJECTIVES

3.1. General objective

- To assess timely initiation of breast feeding of new born and associated factors among mothers with caesarean section in governmental hospitals in Addis Ababa, Ethiopia, 2020.

3.2. Specific objectives

- To determine timely initiation of breast feeding of newborns among mothers delivered with caesarean section in governmental hospitals in Addis Ababa, Ethiopia, 2020.
- To identify associated factors of timely initiation of breastfeeding of newborns among mothers delivered with caesarean section in governmental hospitals in Addis Ababa, Ethiopia, 2020.

4. METHODS AND MATERIALS

4.1. Study area and Study period

The study was conduct in the governmental hospital which has labour and delivery ward in Addis Ababa, Ethiopia. Addis Ababa is the capital city of Ethiopia and Seat of African Union and the United Nations World Economic Commission for Africa. It covers an area of 527 square kilometers and has 10 sub cities with a total population of 3,384,569 according to the 2007 census(53). The city has 11 public Hospitals among these all hospitals have labour and delivery ward. The study was conducted in Gandhi Memorial hospital, and Tikur Anbessa hospital, Zewditu Memorial hospital.

Gandhi memorial hospital (GMH): was one of the governmental hospitals in Addis Ababa city administration health bureau and gives maternal and neonatal service. Gandhi Memorial hospital is a governmental hospital which specializes in maternity services. The hospital was established in 1951E.c. The hospital daily manages 30 -40 delivery cases of pregnant mothers who come from various corners of Addis Ababa and nearby towns. In the past twelve months about ten thousand delivery service and from those per monthly averagely 350 mothers delivered by caesarean section. In Gandhi a total of 58 obstetrics and gynaecology beds are available.

Tikur Anbessa Specialized Hospital (TASH):was established in 1966 and one of the largest referral and oldest teaching hospital in the country at a tertiary level under Addis Ababa University and 45 beds are available in Obstetrics and Gynaecology rooms from those per monthly averagely 200 women delivered by caesarean section.

Zewditu memorial hospital (ZMH): is one of the governmental hospitals in central Addis Ababa. Zewditu Hospital is operated under Addis Ababa health bureau and it is Ethiopian leading hospital in the treatment of ART patients and currently became the largest HIV clinic in Ethiopia. And a total of 28 beds are available in Obstetrics and Gynaecology beds from this 2 bed are septic and 3 beds are chemotherapy. And also per month average 130 mothers delivered by caesarean section.

The study was conducted from March 25th -April 30th, 2020.

4.2 Study design:

Institutional based cross-sectional study design was conducted.

4.3. Populations

4.3.1. Source population

All postnatal mothers delivered with CS in governmental hospitals of Addis Ababa city, Ethiopia.

4.3.2. Study Population

All selected postnatal mothers delivered with caesarean section of Selected Hospital in Addis Ababa, Ethiopia during the data collection period.

4.4. Inclusion and exclusion criteria

4.4.1. Inclusion criteria

Postnatal Mothers with newborns who delivered via emergency or elective caesarean section in selected hospitals during data collection period.

4.4.2. Exclusion criteria

Mothers with unstable newborns due to respiratory distress, congenital anomaly, MAS, preterm less than 34 wks, asphyxia in whom feeding was risky –was excluded.
Mothers who are critically and psychiatrically ill were excluded.

4.5. Sample size and sampling procedure

4.5.1. Sample Size Determination

Sample size is determined using single population proportion formula.

Single proportion formula n= $\frac{Z^{\alpha}/_{2}2p(1-p)}{d^2}$was used to:

Where; **Z** = standard normal distribution value at 95% confidence level of $\frac{\alpha}{2}$= 1.96,

n= sample size,

p= Prevalence of the previously study show in Motta town, East Gojjam zone, Amhara regional State, Ethiopia, 2015 the timely initiation of breast feeding by CS delivery was 42.1%(54).

d= margin of error=5%=0.05

Using the above formula the sample size calculated as:

z= 1.96 at 95% confidence

p= 42.1 %=0.421

So, $\mathbf{n} = \frac{Z^{\alpha}/_{2}{}^{2}\, p(1-p)}{d^2}$

$n = \frac{1.96^2 \times 0.421 \times 0.579}{0.05^2}$ =**375**

N.B: Then, by adding 10% of non-respondent rate, final desired sample size is 375+ 10% non-response rate, n=**413**.

- Then, the final sample size is **413**.

4.5.2. Sampling methods / procedures/:

The study was conducted in Addis Ababa governmental hospitals. Among the hospitals, 30% are selected by using simple random sampling technique. Then allocation of the study subjects to each hospital is made based on the proportion of number of delivery of the one month proceeding to the study. The reason of selecting only governmental health facilities clients CS delivery mothers are both rich and poor but in private health facilities clients are majority of rich persons, so the major problem are at governmental health facilities since the service is given free of charge. By taking one month data government hospitals average 680 mothers delivered by CS each hospital logs book reports. Overall sample was taken proportionally from all governmental hospitals. Monthly those selected three hospitals are Gandhi Memorial hospital (GMH) 350, Tikur Anbessa Specialized Hospital (TASH) 200 and Zewditu memorial hospital (ZMH) 130 numbers of mothers delivered by caesarean section per monthly. The first participant was selected randomly by default during starting the data collection time. Each study participants were selected using consecutive sampling technique was utilized to select individual respondents. Data collection method was face to face interview.

4.5.3. Proportional allocation

Based on proportional allocation to size this 413 study subjects was distributed to each governmental hospital using the following Formula:

$$ns = \frac{n \times Ns}{N}$$

Where;

ns =required sample size from each governmental hospital

n=the total sample size=413

NS=total number of women's delivered by CS in each governmental hospitals.

N=total number of women's delivered by CS in hospital.

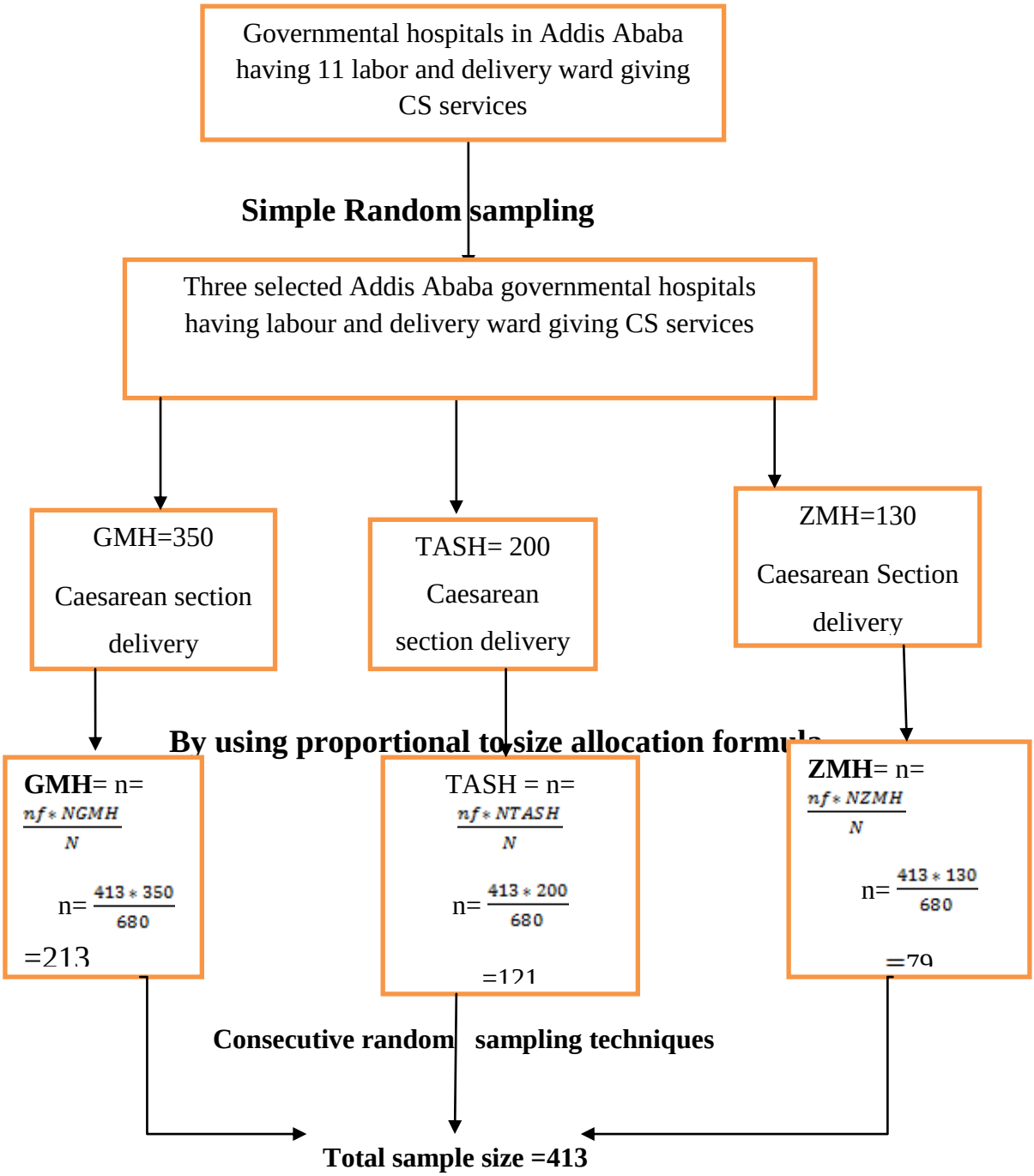

Figure 2: Schematic presentation of sampling procedure on timely initiation of breastfeeding of newborns and associated factors among mothers delivered by caesarean section in governmental hospitals Addis Ababaa, Ethiopia 2020.

4.6. Operational definitions:

- ☐ **Timely initiation of breastfeeding:** If newborns within one hour of birth is put on the mother‘s breast to feed.
- ☐ **Prelacteal feeding**: is any food except mother’s milk provided to a newborn before initiating breast feeding.
- ☐ **Caesarean section delivery mother**: A mother who gives birth newborns by caesarean section.
- ☐ **Newborns:** a new born from birth up to 72 hrs or three days.
- ☐ **Colostrum feeding:** Giving the first breast milk which has thick, sticky and clear yellowish appearance to their new-born within one hour of delivery.
- ☐ **Sick Mother:** Defines as any mother who after delivery not able to initiate breast feeding because of health reason e.g. Eclamptic mother or comatose but excludes post natal spinal aesthesia headache.
- ☐ **Sick Newborn:** newborn who immediately after delivery cannot able to initiate breast feeding.
- ☐ **APGAR score:** consists of five physical signs such as activity, pulse, grimace, appearance, respiratory effort, so, the low Apgar score was <6 at 5^{th} minute of life.

4.7. Variables of the study

4.7.1. Dependent variable

- Timely Initiation of breastfeeding

4.7.2. Independent variables

Maternal socio-demographic characteristics

- Age, Marital status, Educational status, Occupation, Husband educational status Income, Mother’s knowledge on breastfeeding, Exposure to information about breastfeeding and maternal illness.

Obstetric & Health service related

- Antenatal care, delivery care

New -born related

- APGAR, newborns health status (prematurity gestational age less than 34 wks, respiratory distress, birth asphyxia…)

Family and Socio-cultural related factors

- Colostrum feeding status, Prelacteal feeding status, Cultural beliefs and practice

Maternal Knowledge's

- Information about breast feeding

4.8. Data collection Instrument and measurement

The questionnaire consists of five parts.

Part I: Mothers Socio-demographic information such as Age, Marital status, Educational status, Occupation

Part II: Obstetrics and health care service related factors,

Part III: Newborns related factors and

Part IV: Maternal Knowledge's: Information about breast feeding

Part V: Family and sociocultural related factors

Interview based structured questionnaire was used to collect the data from mother with newborn. Some data was collected from the mother's chart such as APGAR score, birth weight and Gestational age& tools adapted from different literature(38, 55-57).

Before the data collection the questionnaire was translated to English and then translated back to Amharic to check for consistency of the flow of the questionnaires. Data collectors and supervisor recruited from the hospital two BSc midwives and they were supervised by one BSc Midwives. All the necessary trainings were provided by the principal investigator. Data was collected in the day and night shift after obtained consent from each participant prior to data collection in the hospitals after delivery before discharged to their home. Then data was collected from mothers delivered with caesarean section until the required sample size fulfilled.

4.9. Data quality control

Training of data collectors; Two-day training was given for data collectors and supervisors by principal investigator on how to collect the data. Tool was given to expertise to check content validity and accuracy.

Supervision; during data collection, data collectors was closely monitored and guided by two BSC midwives supervisors.

Pretested or pilot on 5% of the total sample size (n=21) of similar mothers in Yekatit 12 hospital medical college outside the study are -adjust two weeks prior to the actual data collection time- to assess for its completeness, clarity, length, skip patterns and correctness of

filled questioners. After the pre-test, based on the response the questionnaire was modified. Data collection was carried out by trained nurses from other units of the health facilities. In addition, check for completeness and quality of data collection was make on daily bias by the supervisors and detailed feedback was provided to data collectors.

4.10. Data processing and analysis

The data was coded, entered and cleaned using EPI Data version 4.6 and then exported into SPSS statistical software version 26 for analysis. Descriptive statistical analysis such as simple frequencies, measures of central tendency and measures of variability will have used to describe the characteristics of participants. Then the information was presented using frequencies, summary measures, tables and figures.

Bi-variable and multivariable analysis was used to see the association between each independent variable and the outcome variable using multiple logistic regressions. All variables with p-value ≤ 0.25 were taken into the multivariable model to control for all possible confounders. Odds ratio along with 95% CI was estimated to identify factors associated delayed initiation of breast feeding using multivariable analysis in the binary logistic regression model. Level of statistical significance was declared at p-value ≤ 0.05.

4.11. Ethical Considerations

Ethical clearance was obtained from institutional review board of Department of Nursing, School of Nursing and Midwifery College of Health Sciences. After the ethical clearance the letter obtain from the department of Nursing to Addis Ababa health bureau for the permission for the study, then Addis Ababa health bureau has sent the letter to concern hospital for data collection.Each study participant was informed about the objective of the study and anticipated benefit and risk of the study by before data collector. The data is collected and stored anonymously will have included in the instrument. Informed written consent was obtained from study participants for protecting autonomy and ensuring confidentiality. The respondents were notified that they have the right to refuse or terminate at any time of the interview.

4.12. Dissemination and Utilization of results

The thesis was presented to Addis Ababa University, College of Health Sciences, School of Nursing and Midwifery and Department of Nursing as partial fulfillment of master's degree in neonatal nursing. The result of the study will also be disseminated to Federal Minister of Health, Addis Ababa public health research and emergency management core process and Addis Ababa town governmental hospitals. Hard and soft copy was available in the library of Addis Ababa University for graduate students as well as for other concerned readers.

The finding was presented in different seminars and meetings. And finally I was prepare for manuscript and try to publish the research in internationally recognized journals; the abstract of this thesis was submitted to national or international peer reviewed publishers.

5. RESULTS

5.1. Socio-demographic characteristics

In this study, a total of 413 mothers who delivered via caesarean section interviewed, making 100% response rate. The mean (± SD) age of mothers was 27.7±4.8 years. Out of 413 study participants 408 (98.8%) of were married. Most 135(32.7%) had primary level of education (1-8 grade), and educational level of the husband have secondary education.

A total of 413 study participant interviewed were house wife in occupation**,** 174 (42.1 %) while 83(20.1%) were on some form private organizational employment. Almost all the participants (90.6%) were residents of urban this means in Addis Ababa and others live out of Addis Ababa (**Table 1).**

Table 1: Socio-demographic characteristics of the study participants in governmental hospitals, Addis Ababa, Ethiopia, 2020 (n=413)

Demographic variable	Frequency	Percentage (%)
Age of mothers		
≤24	109	26.4
25-29	165	40.0
30-34	93	22.5
35+	46	11.1
Maternal educational level		
No formal education	38	9.2
Primary education	136	32.9
Secondary education	114	27.6
Diploma and above	125	30.3
Maternal marital status		
Married	408	98.8
Single	1	2
Divorced	4	1.0

Maternal occupation		
Government employed	80	19.4
Private organization	83	20.1
Merchant	57	13.8
Daily labor	19	4.6
House wife	174	42.1
Husband educational level		
No formal education	31	7.5
Primary education	70	16.9
Secondary education	117	28.3
Diploma and above	105	47.2
Residential of the mother		
Urban	374	90.6
Rural	39	9.4
House hold monthly income level		
≤2900	72	7.5
2901-4800	125	16.9
4801-7800	92	28.3
≥7801	124	47.2

5.2 Obstetrics and neonatal related variables

Study subjects were asked about their history of Antenatal Care (ANC), visit 387 (93.7%) of mothers received antenatal care during the current pregnancy and around 242 (58.6%) of them got breast feeding Counselling during antenatal visit. 239(57.9 %) of mothers were primi-para. Mothers were information's received during ANC visit from health facility more than half, 285 (69.0%) were informed to breastfeed. More of study participants 253 (61.3%) was delivered at the day time. A total of 413 study participant 126 (30.5%) had medical complication. Three hundred ninety one (92.5%) new born birth weights had garter than 2500 gram **(Table2)**.

Table 2: Obstetric, new-born and health care related factors in governmental hospitals, Addis Ababa, Ethiopia, 2020 (n=413)

Variable	Frequency	Percentage (%)
ANC follow up		
Yes	385	93.2
No	28	6.8
Number of antenatal care visit (n=385)		
1-3 times	97	25.2
≥4 times	288	74.8
Place of ANC (n=385)		
Hospital	96	25.0
Health centre	285	74.0
Private clinics	4	1.0
Breast feeding Counselling during ANC		
Yes	242	58.6
No	171	41.4
Parity		
primi-para	239	57.9
multi-Para	174	42.1
Number of children		
1-3 times	146	35.4
≥4 times	34	8.2
Types of C/S		
Elective	76	18.4
Emergency	337	81.6
Types of anaesthesia		
Spinal anaesthesia	391	94.7
General anaesthesia	22	5.3
Time of delivery		
Day	253	61.3
Night	160	38.7
Attended the delivery		
Senior obstetrician	12	2.9

Obstetric Resident	400	96.9
General practitioner	1	0.2
Maternal medical complication		
Yes	126	30.5
No	287	69.5
Age of the new born		
≤24 hrs	352	85.2
>24 hrs	61	14.8
Sex	223	54.0
Male	190	46.0
Female		
Gestational age		
<37 wks	17	4.1
37-42 wks	373	90.3
>42 wks	23	5.6
Birth weight of the newborn		
<2500g	31	7.5
≥2500g	381	92.5

5.3. Indication of caesarean section

Majority 114 (27.6%) of mother were had caesarean section with indication of fetal Brady/tachycardia, 89(21.5%0 were previous CS scar,65(15.7%) were meconium stained, 70(16.9%) were prolonged labour and the rest 75(18.2%) were other maternal problems such as CPD, twin pregnancy, GDM, APH, fetal mal presentation and others(figure 3).

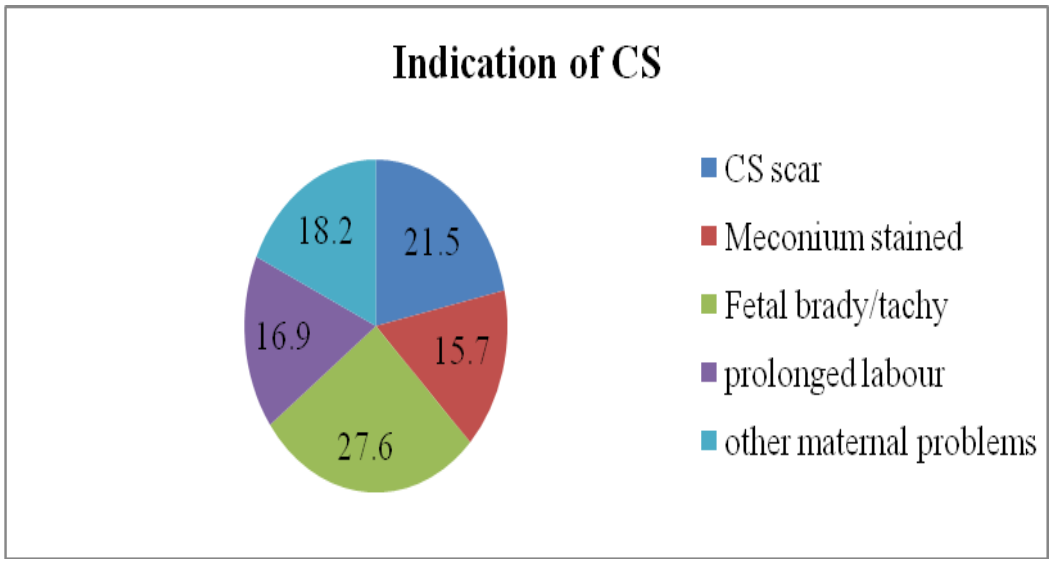

Figure 3: Distribution of indication of caesarean section among mothers initiation of breast feeding within one hour in governmental hospitals, Addis Ababa, Ethiopia, 2020**.**

5.4. Maternal knowledge of breastfeeding

This study revealed that from the total 413 respondents, 85.5% of mothers heard information about breastfeeding. Among mothers ever breast feed to newborn were 376(91.0%). (**Table 3**)

Table 3: knowledge's of mothers about breastfeeding in selected governmental hospitals, Addis Ababa, Ethiopia, 2020. (n=413)

Variable	Frequency	Percentage (%)
Heard about breast feeding		
Yes	353	85.5
No	60	14.5
Ever breast feeding to newborn		
Yes	376	91.0
No	37	9.0

5.5. Initiation of breastfeeding

Of the total 413 study participant were asked whether they have ever breastfed or not and for those who had ever breastfed they were also asked the time of initiation of breastfeeding to their newborn. The result showed that 199 (48.2%) initiated breastfeeding within one hour

(including one hour) after delivery214 (51.8%) of them initiated breastfeeding in the period of more than 1 hour to 72 hrs. (**Figure 4).**

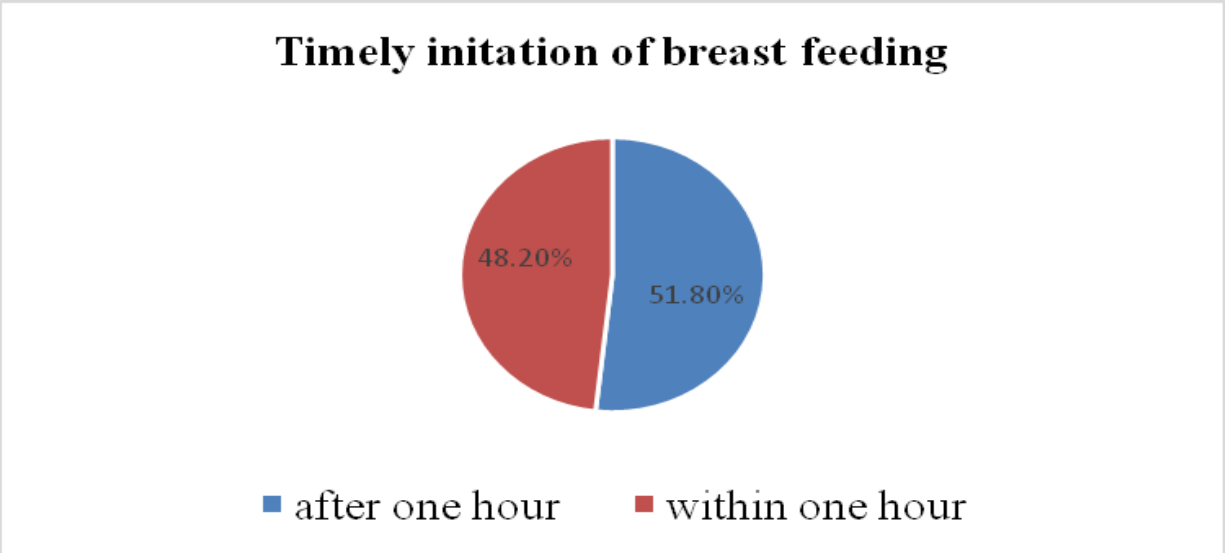

Figure 4: Distribution of initiate of breast feeding within one hour in governmental hospitals, Addis Ababa, Ethiopia, 2020. (n=413)

5.6. Reason for delayed initiating breast feeding

Mothers were asked reasons for delayed initiation of breast feeding after delivery. Majority, 92(35.8%) of mother's not initiating breast feeding within one hour due to pain, 60(23.3%) of the reason of delayed breast milk secretion, 56(21.8% were due to caesarean section, 18(7.0%) were mothers was sick and the rest 31(12.1%) of due to other maternal reasons.(Figure 5).

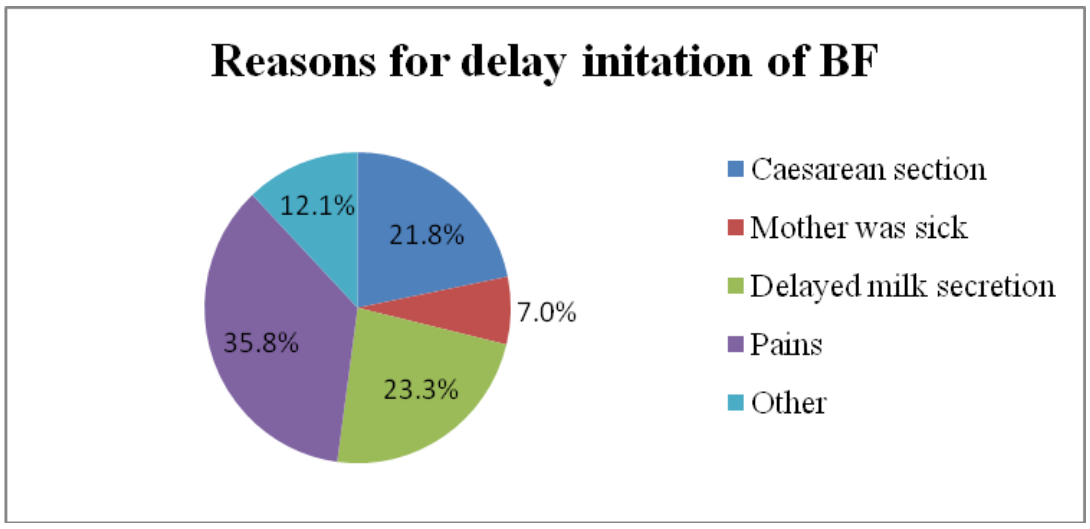

Figure 5: Distribution of reasons for mothers delaying to initiate breast feeding within one hour in governmental hospitals, Addis Ababa, Ethiopia, 2020.

5.7. Colostrum and prelacteal feeding

Study subjects were asked about the practiced ever colostrum feeding, 342(82.8%) of mothers feed the first colostrum to newborn. About 125 (31.0%) of mothers practice prelacteal feeding give to the newborn, among these almost all, 121(96.8%) of mother given formula milk (**Table 4**).

Table 4: Colostrum, and prelacteal feeding in governmental hospitals in Addis Ababa, Ethiopia, 2020 (n=413)

Variable	Frequency	Percentage (%)
Colostrum feeding		
Yes	342	82.8
No	71	17.2
Prelacteal feeding		
Yes	125	31.0
No	285	69.0
Newborn feed rather than breast milk since he/she was born (n=125)		
Nothing other than breast milk	1	0.8
Water	2	1.6
Cow milk	1	0.8
Formula milk	121	96.8

Mothers were asked for what do you think about the reasons for mothers not initiating breastfeeding immediately after delivery. majority of were 49.2% reasons lack of information for mothers not initiating breast feeding within one hour (figure.6).

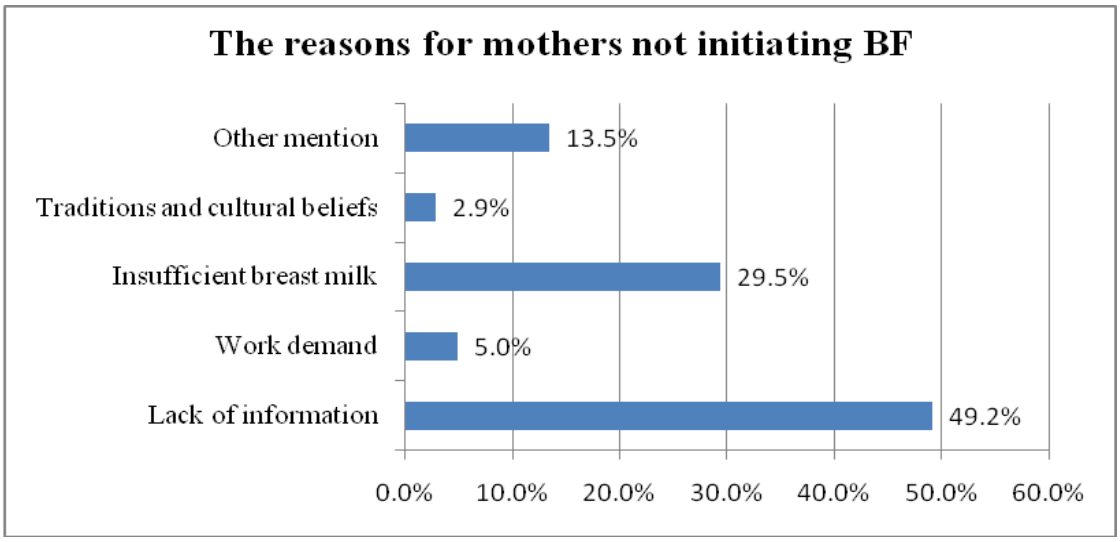

Figure 6: Distribution of reasons for mothers not initiating breast feeding within one hour in governmental hospitals, Addis Ababa, Ethiopia, 2020.

5.8. Reasons for didn't feed colostrum milk to new-borns among mothers

Mothers were asked for the reasons of expressed colostrum or did not feed the colostrum (27.4%) of them reported different reasons such as fear of anaesthesia effect, delayed milk secretion, mother had HIV exposed and hepatitis B virus exposed (Figure 7).

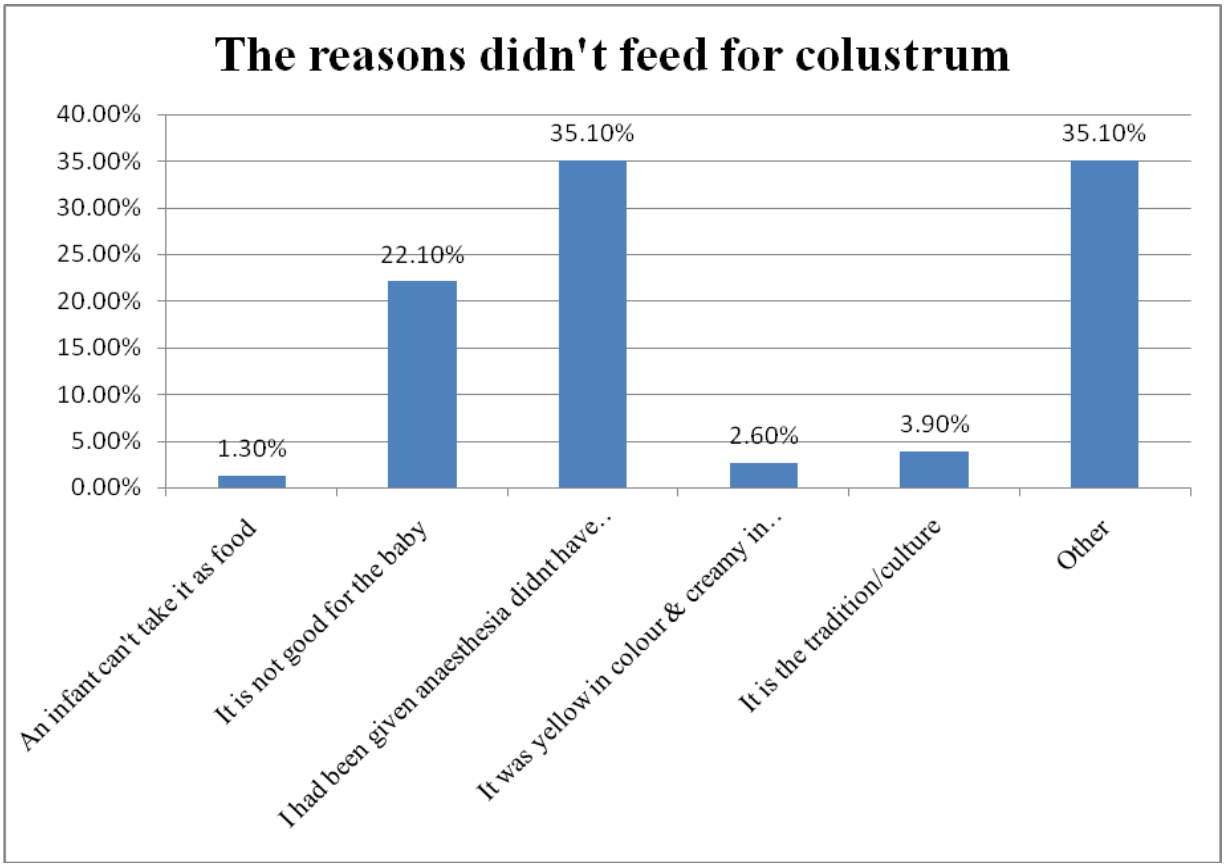

Figure 7: Distribution of reasons for didn't feed colostrum milk to new-borns among mother's in governmental hospitals, Addis Ababa, Ethiopia, 2020.

5.9. Factors associated with timely initiation of breastfeeding

The association of the independent and dependent variable were first tested by using bi-variable analysis variable which were associated (P- value ≤0.25) were tested in the final multivariate analysis to see their significant association with initiation of breast feeding within one hour. Accordingly, as shown in Table 5 below those bi-variable regression associated with the crude odds ratios (COR) for timely initiation of breast feeding within one hour mothers delivered by caesarean section such as age of the mothers, educational status of the mother, residential of the mother, ante natal care follow up, parity, delivery time, Maternal medical complication**,** birth weight of the new-born, mothers getting information about breast feeding, mothers feeding for the new-born rather than breast feeding and maternal breast problem.

In Multivariable analysis results showed that, there was statistically significance association found between timely initiation of breast feeding, parameters which showed p-value of below

0.05 were educational status of the mother, ante natal care follow up, delivery time, Maternal medical complication**,** mothers feeding for the new-born rather than breast feeding and maternal breast problem.

The odds of timely initiation of breast feeding of mothers completed primary education were 82% (AOR= 0.18, 95% CI: 0.64-0.50) less than mothers without formal education.

The odds of timely initiation of breast feeding (TIBF) among mothers who had ≥ 4 ANC visits were 55% (AOR=0.45, 95% CI: 0.26-0.79) less than those who had 1-3 ANC visits.

Mothers were delivered at day time 2 times more likely to initiate breastfeeding within one hour than those mothers delivered at night time (AOR=2.06, 95% CI: 1.28-3.32).

The odds of timely initiation of breast feeding of mothers without medical complications were 42% (AOR=0.58, 95% CI: 0.35-0.97) less than with medical complication.

The odds of timely initiation of breast feeding of mothers who did not give pre-lacteal feeding to neonates were 78% (AOR= 0.22, 95% CI: 0.13-0.38) less than who feed pre-lacteals.

Mothers who didn't have breast problem 9.1 times more likely to initiate breast feeding within one hour when compare those mothers who had breast problem (AOR= 9.13, 95% CI: 1.92-43.33) (Table 5).

Table 5: Bi-variable and multi-variable logistic regression analysis of timely initiation of breastfeeding among mothers delivered with caesarean section in governmental hospitals, Addis Ababa, Ethiopia, 2020 (n=413).

Variables	Timely Initiation of BF within 1hrs		COR (95% CI)	AOR (95% CI)
	Yes	No		
Mother's age				
<24	45(43.7%)	58(56.3%)	1	1
25-29	82(49.7%)	83(50.3%)	1.49(0.92-2.44)	0.94(0.20-1.19)
30-34	43(44.3%)	54(55.7%)	1.27(0.73-2.22)*	0.85(0.38-187)
35+	29(60.4%)	19(39.6%)	**2.52(1.24-5.13)***	0.51(022-117)
Mothers Educational level				
No formal education	7(18.4%)	31(81.4%)	1	1
Primary education	62(45.6%)	74(54.4%)	**3.71(1.53-9.01)***	**0.18(0.64-0.50)****
Secondary education	62(54.4%)	52(45.6%)	**5.28(2.15-12.48)***	085(0.48-151)
Diploma and above	68(54.4%)	57(45.6%)	**5.28(2.16-12.89)***	1.25(0.68-2.29)
Residential				
Rural	13(32.5%)	27(67.5%)	1	1
Urban	168(49.9%)	187(50.1%)	2.06(1.03-4.13)*	2.22(0.85-5.78)
ANC Visit				
1-3 times	38(38.8%)	60(61.2%)	1	1
≥4 times	160(55.6%)	128(44.4%)	**1.97(1.23-3.15)***	**0.45(0.26-0.79)****
Parity				
Primi-Para	105(43.9%)	134(56.1%)	**1**	1
Multi-Para	94(54.0%)	80(46.0%)	**1.50(1.01-2.22)***	1.04(0.62-1.74)
Time of delivery				
Night	62(38.8%)	98(61.3%)	**1**	**1**
Day	137(54.2%)	116(45.8%)	**1.87(1.25-2.79)***	**2.06(1.28-3.32)****
Maternal medical complication				
Yes	49(38.9%)	77(61.1%)	1	1
No	150(52.3%)	137(47.7%)	**1.72(1.12-2.64)***	**0.58(0.35-0.97)****

BW group				
<2500gm	19(61.3%)	12(38.7%)	1	1
≥2500gm	180(47.1%)	202(52.9%)	0.56(0.27-1.19)*	0.59(0.25-1.39)
Information about breastfeeding?				
No	18(30.0%)	42(70.0%)	1	1
Yes	181(55.6%)	172(48.7%)	**2.46(1.36-4.43)***	0.99(0.45-2.18)
Mothers feeding for the newborn rather than breast milk				
Yes	31(24.4%)	96(75.6%)	1	1
No	168(58.7%)	118(41.3%)	**4.41(2.76-7.04)***	**0.22(0.13-0.38)****
Problems of breast				
Yes	2(7.7%)	24(92.3%)	1	1
No	197(50.9%)	190(49.1%)	**12.44(2.90-53.37)**	**9.13(1.92-43.33)****

Key **1**: reference

*P<0.25 significantly by Bi-variable analysis

**P<0.05 significantly by Multivariable analysis

6. DISCUSSION

Timely initiation of breast feeding is important to new-born cares which promotes giving of breast milk within an hour of birth for neonate. Timely Initiation of Breastfeeding has medical and economical advantage both for the new-born and mother. Limited data was available on prevalence of timely initiation of breastfeeding in the study area.

Timely initiation of breastfeeding mothers who delivered by caesarean section was mainly due to hospital factors such as 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 and mothers feels pain. Baby friendly hospital initiative (BFHI) recommends that newborns to 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 newborns 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.

In this study the prevalence of timely initiation of breast feeding among mothers who were delivered by caesarean in Addis Ababa town were 48.2% with 95% CI (43.6-53.0). This finding is higher compared to a study which was conducted in Goba Woreda, South East Ethiopia (33.3%) and in Kenya (25.4%). This may have due to the variations of socio-cultural difference. This finding is lower compared to a study which was conducted in Canada (92.1%). This may be due to higher education statues of the mother, and mothers have more awareness about breast feeding and this study done in developed country with proper follow up care and health education facilities. This result is relatively the same study has done Motta town, Ethiopia the prevalence was (42.1%) nearly similar, the possible reason might be study done in similar method, same population and ethnicity.

In this study maternal education is one of the factors associated with timely initiation of breast feeding within one hour. The odds of timely initiation of breast feeding of mothers completed primary education were 82% less than mothers without formal education.

This finding was similar with the studies conducted in Bale Goba, Ethiopia (58) and India(15). According to this finding the odds of timely initiation of breast feeding (TIBF) among mothers who had ≥ 4 ANC visits were 55% less than those who had 1-3 ANC visits.

This may be due to the fact that when ante natal cares follow up is frequent and completed; the mother will have adequate and sufficient knowledge about timely initiation of breast feeding for newborns.

In this study, mothers who delivered at day time 2 times more likely to initiate breastfeeding within one hour when compared with those mothers delivered at night time. This may due to lack of health professionals and work load during night time.

In this study the odds of timely initiation of breast feeding of mothers without medical complications were 42% less than with medical complication such as preeclampsia, Ante-partum haemorrhage, cardiac disease and others when compared to mother who did have medical complication. This may be due to the fact that free from maternal complication decrease stabilization period of the mother from their problem and subsequently made the mothers to start breast feeding.

In this study the odds of timely initiation of breast feeding of mothers who did not give pre-lacteal feeding to newborns were 78% less than who feed pre-lacteals. This finding is similar with the study which was conducted in Raya kobo Ethiopia(52), western Nepal(35), Saudi Arabia (59). The starter of prelacteal feeds may decrease newborns suckling activity which in turn can affect or decrease maternal milk production due to decreased breast stimulation. The use of prelacteal feeding appears to be a constraint in the promotion of timely breast feeding. This may have due to delayed milk secretion, breast problems, mother illness and culture practices such as the belief that giving liquid will clean the baby's throat. This habit harms the newborn and exposes him/her to different morbidities and therefore; the practice needs to be discouraged. Another explanation the fact that giving prelacteal feeding practices were challenges to delay the initiation of breastfeeding and prelacteal feeding may also affect newborns health by disrupting the priming of the gastro- intestinal tract, In addition, prelacteal feeding can be a direct cause of illness by exposing newborn to contaminated feeds, apparatuses, water, or hands(49).

Among the mothers who didn't have breast problem 9.1 times more likely to initiate breast feeding within one hour when compare those mothers who had breast problem. This may due to the fact that breast problem such as abscess, mastitis and sore/cracked nipple the causes to delay timely initiation of breast feeding.

7. STRENGTH AND LIMITATION OF THE STUDY

7.1. Strength

- The previous studies were not conducted variables such as time of delivery (night time) and maternal breast problem but in this study address those variables.

7.2. Limitation

- The limitation of this study is that, samples were collected at facility based governmental hospitals which may not truly represent newborns delivered at home, health centers and private institution. This may under estimate or overestimate the prevalence of the study
- One of the limitations of this study was that because it was cross sectional, the cause–effect relationship of different variables with timely initiation could not be assessed.

8. CONCLUSIONS

Nearly half 48.2 % newborns were timely initiation of breastfeeding within one hour of birth after delivered by caesarean section among mothers with newborns attending governmental health institutions in Addis Ababa town. Educational status of the mother, ante natal care follow up, delivery time, maternal medical complication**,** mothers feeding for the new born rather than breast feeding and maternal breast problem were statistically significant associated factors for timely initiation of breast feeding among caesarean section mothers.

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9. RECOMMENDATIONS

The following recommendations are given based on the findings of the study for stakeholders in the field.

9.1. For government and stakeholders

- Government bodies urged to commit the promotion and education about enhanced during antenatal care services and their utilization among the community
- Minister of health should appropriately balance health professional and client's ratio especially in the duty time.
- The government should include permanent educational program by mass media about the advantages of timely initiation of breast feeding both to the mother and the newborn.

9.2. For the health care providers

- Health care providers, especially those working in labour and delivery wards and postnatal ward health care professionals must give high attention to caesarean section delivery mothers to initiate breast feeding.
- Give breastfeeding education about timely initiation of breastfeeding to pregnant women, encouraging all mothers to give birth in health facilities, counselling mothers to initiate breastfeeding timely at the time of caesarean sections and providing breastfeeding counselling during antenatal visits are recommended to increase timely initiation of breastfeeding.
- Additionally, health services must establish practices that enable timely breastfeeding whenever possible, particularly after caesarean section and structures need to be set up to enable skin-to-skin and timely breastfeeding.

9.3. For the researchers:

- Further analytical studies supplemented by qualitative methods are recommended to establish further barriers, perception and challenges.
- Further study that mainly addresses all areas of associated factors individual level, group Level and societal level factors that may affect timely initiation of breast feeding are needed.

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11. ANNEXES

Annex I: English version Participant Information Sheet

Good morning/ afternoon?

My name is----------. Currently I am a graduate student at Addis Ababa University, College of Health Sciences, School of Health Sciences, Department Of Nursing and Midwifery. And now I am conducting a research to assess initiation of breastfeeding and associated factors in caesarean section delivery mothers in governmental hospital. Title of the research: Timely Initiation of breast feeding of newborns and associated factors among mothers delivered by caesarean section in governmental hospitals in Addis Ababa, Ethiopia, 2020.

Objective: To assess timely initiation of breastfeeding of newborns and associated factors among mothers with caesareans section in governmental hospitals Addis Ababa Ethiopia 2020.

Participants: mothers delivered with caesarean section in selected hospital in Addis Ababa, Ethiopia.

Potential Risks: There is no foreseen risk by being participating in this study.

Benefits: No financial benefits are related with this study. But by participating in this study, you will acquire or increase knowledge related to the practice of initiation breastfeeding.

I would like to ask you few questions. Your honest response to the questions can make the study to achieve its objective. All the information that you give was kept Confidential and private. Only the principal investigator and interviewer will have access to the information. You are kindly requested to respond voluntarily. You can also choose not to participate in this study or if you become uncomfortable during the study, you will allowed to leave the study at any time. At any time if you have Questions, you can contact me by using the following addresses.

- **Muluye Dejen**
- **Mobile No:**0920346709
- **E-mail:**muluyied2018@gmail.com

Annex II: Informed voluntary consent form

I herewith declare that:

The objectives of this study are explained to me and are clear.

The contents of the consent are verified to me to participate in the study.

I understand that participation in this study is completely voluntary and that I may withdraw at any time without supplying reasons. I agree to participate in this study to be interviewed, provided my privacy is guaranteed. When signing this consent form to participate in the study, I promise to answer honestly to all reasonable questions and not provide any false information or in any other way purposely mislead the researcher.

Signature of the participant_____ date _____

Signature of the investigator_____ date _____

Annex III: English Questionnaire

Questionnaires for timely initiation of breastfeeding and factors affecting among post natal mothers who have delivered by caesarean section.

i) Code of hospital_____

ii) Date _____

iii) No of interviewee_____

Part I. Socio-demographic and economic characteristics in governmental hospitals, Addis Ababa, Ethiopia, 2020.

No	Questions	Response	Skip to
101	Age	_____Yrs.	
102	What is your level of education?	1. No formal education 2. Primary school (1-8) 3. Grade 9-12 4. Certificate/Diploma 5. Degree and above	
103	Employment/Occupation?	1.Government employed 2.Private organization employed 3. Merchant 4. Daily labourer 5. Others (specify) _____	
104	Marital status?	1. Married 2. Single 3. Divorced 4. Widowed	
105	Educational status of husband	1. no formal education 2. Primary school (1-8) 3. Grade 9-12 4. Certificate/Diploma 5. Degree and above	
106	Residential	1. Urban 2. Rural	

107	How much is your household average monthly income?	----------birr	

Part II: Obstetrical and maternal Health related factors in governmental hospitals, Addis Ababa, 2020.

No	Questions	Response	Skip
201.	Did you get ANC service during your pregnancy**?**	1. Yes **2.** No →	**204**
202	If you get ANC service, from where did you get the service?	1. Hospital 2. Health Centre 3. Private clinic 4. Others	
203.	How many times did you get ANC service?	.....	
204	Did you receive counselling concerning breastfeeding during your ANC visits?	1. Yes 2. No	
205	Parity?	1. Primi-para 2. Multi-para	
206	If your answer is multi-gravida, how many children's do you have?	----------	
207	Type of caesarean section (CS)?	1. Elective 2. Emergency	
208	Indication of caesarean section	----------	
209	Type of anaesthesia administered during caesarean section delivery?	1. Spinal anaesthesia 2. General anaesthesia.	
210	Time of delivery	1. Day 2. Night	
211	Who attended the delivery	1. Senior obstetrician 2. Obstetrics Residents	

		3. General practitioner 4. Others……	
212	Has any maternal and medical complication?	1.yes 2. No →	301
213	If yes Q 212, circle more than one answer	1. Preeclampsia 2. Eclamsia 3. APH 4. PPH 5. Cardiac disease 6. DM 7. Others_____	

Part III: New born related factors in governmental hospitals, Addis Ababa, Ethiopia, 2020.

No	**Questions**	**Response**	**Skip**
301	Age of the new-born	_____hours	
302	Sex of newborn?	1. Male 2. Female	
303	Gestational age	**----------wks.**	
304	Birth weight of newborn	----------gram	
305	Apgar score of the baby within the first 1minutes and 5 minutes after birth?	1st ---------- and 5th---------- minus	

Part IV. Maternal knowledge of breastfeeding related questions in governmental hospitals, Addis Ababa, Ethiopia, 2020.

No	**Questions**	**Response**	**Skip**
401	Have you ever heard about breastfeeding?	1. Yes 2. No →	**501**
402	If yes question 401, from where did you get	1. Radio	

	it information?	2. Television 3. Health Workers 4. Other health workers 5. Volunteer community health workers 6. Relatives/neighbours/ friends 7. Other (specify)	
403	Have you ever breastfeed your newborns?	1. Yes 2. No →	501
404	How soon after birth did you try to breastfeed your newborns for the first time?	_____	
405	If delayed more than one hour, what was reasons that made you to delay in breastfeeding initiation? (circle more than one)	1. Caesarean section 2. Mother was sick 3. Delayed milk secretion 4. Pains 5. Others (mention) ----------	
406	Did you feed the first milk/colostrum to your baby?	1. Yes I feed 2. No I didn‘t feed	
407	If you didn‘t feed the colostrum to your infant, what is the reason? (circle more than one)	1. An infant can‘t take it as food 2. It‘s not good for the baby 3. I had been given anaesthesia didn’t have the energy 4. It was yellow in colour &creamy in appearance 5. It is the tradition/culture 6. Others (list) ----------	
408	Have you given any feeding rather than breast milk since he/she was born?	1. Yes 2.No 3.don’t know	

409	If yes what was given? (circle more than one)	1. Nothing other than breast milk 2. Water 3. Butter 4. Caw milk 5. Sugar solution 6. Others (list out) ----------	

Part V: Barriers to Timely Initiating of Breast feeding in governmental hospitals, Addis Ababa, Ethiopia, 2020.

No	Questions	Response	Skip
501.	Did you have any problems of breastfeeding?	1. Yes 2. No	
502.	If yes, what was the problem? (circle more than one)	1. Abscess 2. Mastitis 3. Sore/cracked nipples 4. Others (mention)	
503	How did you manage the problem?	Express breast milk . Went to hospital for advice 3. Rub local herbs on it 4. Others_____	
504	What do you think about the reasons for mothers not initiating breastfeeding immediately after delivery? (circle more than one)	1) Lack of information 2) Work demand 3) Insufficient breast milk 4) Traditions and cultural beliefs 5) Other (mention)	

Annex IV: Amharic version participant information sheet

በአዲስ አበባ ዩኒቨርሲቲ

ጤና ሳይንስ ኮሌጅ፣

የነርሲንግና ሚዴዋይፍሪ ትምህርት ክፍል

የነርሲንግ ትምህርት ክፍል

እንደምንአደሩ /ዋሉ ? ----------እባላለው፡

በጨቅላህፃናትጤናየ2ኛዓመትየማስትሬትዲግሪተመራቂተማሪነኝ፡፡

በአሁኑሰዓትበአዲስአበባሆስፒታሎችአዲስየተወለዱልጅባሉአቸውእናቶችላይህፃኑ/ህፃና/በተወለ ደ/ደችበአንድሰአትዉስጥጡትየማጥባትትግበራናተዛማጅችግሮችንበማጥናትላይነኝ፡፡

የጥናቱርዕስ፡ህፃናትእንደተወለዱጡትየማጥባትተግበራናተዛማጅችግሮች፣በአዲስአበባሆስፒታሎ ች፣ኢትዮጵያ፣2019/2020 ዓ.ም፡፡

የጥናቱዓላማ፡ -

ህፃናትእንደተወለዱጡትየማጥባትተግባራትናበእናቶችህፃናትአንደተወለዱጡትእንዳያጠቡየሚያ ደርጋቸውንችግሮችማወቅ፡፡

ተሳታፉዎች፡ - አዲስበቀዶጥገናየተወለዱልጅባሉአቸውእናቶች፡፡

የጎንዮሽጉዳት፡ - በዚህ ጥናት መሳተፍ ምንም አይነት ጉዳት የለውም፡፡

ጥቅማጥቅም፡ -

በዚህጥናትመሳተፍምንምአይነትገንዘብአያስገኝም፡፡ነገርግንበዚህጥናትመሳተፍስለጡትብቻማጥ ባትእውቀትያገኛሉወይምያለዎትንእውቀትያዳብራሉ፡፡

ስለዚህየተወሰኑጥያቄዎችንልጠይቅዎትእወዳለሁ፡፡የእርስዎበእውነትላይየተመሰረተመልስለዚህ ጥናትመሳካትአስተዋፅኦያደርጋል፡፡እርስዎየሚሰጡትመረጃከአጥኚውናቃለመጠይቅአድራጊውበ ስተቀርበማንኛውምመልኩለሌላ3ኛወገንተላልፎአይሰጥም፡፡በመሉፈቃደኝነትእንዲሳተፉእየጠየ ቅሁያለመሳተፍወይምበማንኛውምጊዜራስዎንከጥናቱየማግለልመሉመብትአለዎት፡፡ማንኛውም ጥያቄካለዎትበሚከተለውአድራሻዬማግኘትይችላሉ፡፡

ሙሉዬደጀን

ስ.ቁ .+251-920-346709

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Annex V: Amharic version voluntary consent form

2: የስምምነት መግለጫ ፎርም - በአማርኛ

እኔ ስሜ ከዚህ በታች የተገለፀው፤ የዚህ ጥናት ዓላማ በደንብ የተብራራልኝ ሲሆን የጥናቱንም ዓላማ ተረድቻለሁ፡፡

በዚህጥናትላይመሳተፍበሙሉፈቃደኝነትላይየተመሰረተመሆኑንበሚገባየተረዳሁሲሆንበማ ንኛውምጊዜከጥናቱራሴንየማግለልመብትእንዳለኝአውቄአለሁ፡፡ስለሆነምየምሰጠውመረጃእ ስከተጠበቀድረስበዚህጥናትለመሳተፍተስማምቻለሁ፡፡

በዚህጥናትለመሳተፍስምምነቴንስገልፅለምጠየቀውጥያቄበእውነትላይየመሰረተመልስለመስ ጠትየተስማማሁመሆኔንአረጋግጣለሁ፡፡

የመረጃሰጭውፉርማ _____ ቀን _____

የአጥኚውፊርማ _____ቀን _____

Annex VI: Amharic Questionnaires

አዲስአበባዩንቨርሲቲየነርሲንግእናየሚዲዋይፈሪዲፓርትመንትይህመጠይቅየተዘጋጀውጡትብቻ የማጥባትትግበራንናተዛማጅችግሮችንበተመለከተመረጃለማሰባሰብነው፡፡

የሆስፒታሉ ኮድ፡_____

ቀን፡ _____

ቁጥር_____

ክፍል-አንድ፡-ሥነ -ህዝብ፤ማህበራዊ እናኢኮኖሚያዊ ጉዳዮችን በተመለከተ የተዘጋጁ ጥያቄዎች ላይ አ.አ (2012ዓ.ም)

ተ.ቁ	ጥያቄዎች	አማራጭ መልሶች	
101.	የእርስዎ ዕድሜ ስንት ነዉ?	----------ዓመት	
102.	የትምህርትደረጃዎ?	1. ማንበብና መፃፍ የማትችል 2. አንደኛደረጃ (1 — 8ኛ ክፍል) 3. ከዘጠነኛ እስከ አስራ ሁለተኛ ክፍል 4. ሰርተፍኬት /ዲፕሎማ 5. ዲግሪ እና ከዚያ በላይ	
103	ሥራዎ ምንድን ነዉ?	1. የቤት እመቤት 2. የመንግስት ሰራ 3. የግል ድርጅት ሠራተኛ 4. ነጋዴ 5. የቀን ሰራተኛ 6. ሌላ (ይጠቀስ)----------	
104.	የጋብቻሁኔታዎ?	1. ያላገባች 2. ያገባች 3. ባሏየሞተባት	

		4. የፊታች	
105	የባለቤትዎ የትምህርት ደረጃ?	1. ማንበብናመፃፍየማይችል 2. አንደኛደረጃ (1 — 8ኛክፍል) 3. ሁለተኛደረጃ (9 — 12ኛክፍል) 4. ሰርተፍኬት /ዲፕሎማ 5. ዲግሪ እና ከዚያበላይ	
106	መኖሪያ ቦታ	1. ከተማ 2. ገጠር	
107	አማካይ የወር ገቢያችሁ ስንት ነዉ?	----------ብር	

ክፍልሁለት፡- የእናቶች ጤና በተመለከተ የተዘጋጁ ጥያቄዎች፡ አ.አ፣ 2012 ዓ.ም.

ተ፣ቁ	ጥያቄዎች	አማራጭመልሶች	ወደሚቀጥለውሂድ
201.	በእርግዝናወቅትየቅድመወሊድክትትል አድርገዉነበር?	1. አዎ 2. የለም ⟶	205
202.	ጥያቄቁጥር 201 መለስዎ አዎከሆነ፣አገሌግልቱንያገኙትየትነበር?	1. ሆስፒታል 2. ጤናጣቢያ 3. የግልክሊኒክ 4. ላላካለ……	
203	ምንያህልጊዜየቅድመወሊድክትትልአድርገውነበር?	…….	
204	በቅድመወሊድክትትልወቅትስለጡትማጥባትየምክርአገልግሎትተሠጥተዉነበር?	1. አዎ 2. የለም	
205	ከዚህበፊትልጅወልደሽታውቂያለሽ?	1. አዎ 2. የለም ⟶	207

206	ጥያቄቁጥር 205 መልስዎአዎከሆነስንትወልደሽ/ውነበር?	----------	
207	በቀዶጥገናየወለዱትበምንአይነትነበር?	1. በድንገተኛ 2. በዕቅድ	
208	በምንምክንያትነውበቀዶጥገናየወለዱት?	----------	
209	በቀዶጥገናበሚወልዱነትጊዜየተሰጠዎት ማደንዘዣምንአይነትነበር?	1. ግማሽ/የጀርባማደንዘዣ 2. አጠቃላይማደንዘዣ	
210	የወለዲበትስዓት?	1. ቀን 2. ማታ	
211	ማንአዋለደዎት	1. የማህፀንእናዕንስእስፔሻሊስት 2. የማህፀንእናዕንስእስፔሻሊስትተማሪ 3. ጠቅላላሐኪም 4. በሌሎች	
212	በእርግዝናወቅት / ከወሊድበኋላያጋጠሙሽችግሮችነበሩ?	1.አዎ 2.የለም ⟶	301
213	ጥያቄቁጥር 2012መልስዎአዎከሆነምንነበር? ከአንድበላይመምረጥይችላሉ	1. የደምግፊት 2.እራስንመሳት 3. ከወሊድበፊትየደምመፍሰስ 4. ከወሊድበኋላየደምመፍሰስ 5.የልብ በሽታ 6.የስካር በሽታ 7.ሌላካለይጠቀስ----------	

<u>ክፍል-ሰስት</u>:የህፃኑሁኔታናዓይነትወይምፀባይበተመረጡትየመንግስትሆስፒታሎችላይአ.አ፣ ኢትዬጲያ, 2012ዓ.ም.

301	የህፃኑ/ኗዕድሜ?		

		----------ስዓት	
302	የህፃኑ/ያታ?	1. ወንድ 2. ሴት	
303	ይህን/ችንህፃንሲወልዱስንትሳምንት/ወርሞላይነበር?	----------	
304	የህፃኑ/ኗሲወለድ/ስትወለድስንትግራምነበር?	----------ግራም	
305	የህፃኑ /ኗከተወለድ /ች በኋላየነበራት/ው እንቅስቃሴ ፣የልብምት፣ ማሳል ወይም ማስነጠስ፣የሰውነት ቀለም፣የአተነፋፈስ ሁኔታ በተወለደ በአንድ እና በአምስት ደቂቃ ውስጥ ስንትነበር?	በ 1 ---------- እና በ 5 ----------ደቂቃ	

ክፍል-አራት፡ የእናቶችንስለጠትማጥባትያላቸውንግንዛቤበተመለከተበተመረጡትየመንግስት ሆስፒታሎችላይአ.አ (2012 ዓ.ም)

ተ.ቁ	ጥያቄዎች	አማራጭመልሶች	ወደሚቀጥለውሂድ
401	ሥለጡትማጥባትሰምተዉያዉቃለ?	1. አዎ 2. የለም	
402	ሠምተዉየሚያዉቁከሆነከየትነዉየሰሙት?	1. ከሬዲዮ 2. ከቴቪዥን 3. ከጤናኤክስቴንሽንባለሙያ 4. ከሌሎችየጤናባለሙያዎች 5. ከማህበረሰብ 6. ከቤተሰብ /ጓደኛ /ጎረቤ 7. .ሌላካለ (ይጠቀስ) ------	
403	ልጅዎንጡትአጥብተዉያዉቃሉ?	1. አዎ 2. አላዉቅም ⟶	501
404	እንደወለዱጡትለማጥባትሙከራያደረጉትበ ስንትጊዜዉስጥነበር?	----------	

405	እንደተወለደበአንድሰዓታትውስጥያላጠባሸበ ትምክንያትምንድንነው?	1. በቀዶጥገናስለሆንኩኝ 2. ታምሜስለነበር 3. የጡትወተትቶሎስላልመጣ ል 4. ሌላካለይጠቀስ----------	
406	የመጀመሪያዉንየጡትወተት (እንገር) ለህፃኑ /ኗአጥብተሸነበር?	1. አዎ 2. አጥብቻለሁ	
407	የመጀመሪያዉንየጡትወተት (እንገር) ለህፃኑ /ኗካላጠቡምክንያቱምንድንነው?	1. ህፃንሊጠባውወይምሊመገ በውስለማይችል 2. ለህፃንጥሩስላልሆነወይምስ ለሚጎዳ 3. ማደንዘዣየወሰጀስለነበርየ ህመምስላለኝ 4. መልኩጣቢያስለሆነእናዝለ ግልግስለሆነ 5. ልማድ /ባህልስለሆነ 6. ሌላ (ይጠቀስ).....	
408	ህፃኑ/ኗ በተወለደ/ች በዚህቀን/ጊዜዉስጥየጡትወተትምበአግባቡ መፍሰስእስኪጀምርሌላነገርሰጥቶት/ቷትነበ ር?	1. አዎ 2. አጥብቻለሁ 3. አይታወቅም	
409	ለጥያቄቁጥር407መለስዎአዎከሆነምንድንነ በርየተሰጠው;	1. ከእናት ጡት ወተት ውጭ ሌላ ምንም ነገር አልሰጠወም 2. ውሃ 3. ቅቤ 4. የላምወተት 5. የሚሚስኳር 6. ሌላ (ይጠቀስ).....	

ክፍልአምስት፡ህፃናትእንደተወለዱጡትለማጥባትመሰናክልየሚሆኑችግሮችንበተመለከተበአ.አበ ተመረጡየመንግስትሆስፒታሎችላይየተደረገጥናት 2012 ዓ.ም.

501.	የጡትችግርወይምህመምገጥሞሽያውቃል?	1. አዎ 2. የለም	
502.	መልስዎአዎከሆነ፣ከተጠቀሱትየትኛውሊሆ ንይችላል?	1. የመቁሰል 2. እብጠት 3. የመሰነጠቅ /መድረቅ 4. ሌላካለይጠቀስ ----------	
503	ችግርሲገጥምዎምንያደርጋሉ?	1. ተቱንአፈሰዋለሁ 2. ደጤናተቋምእሄዳለ 3. ባህልመድሃኒትአሸዋለሁ 4. ላካለይጠቀስ----------	
504	እናቶችዎዲያዉእንደዎለዱጡትእንዲያጠቡ የሚያደርጋቸዉምክንያቶችምንድንናቸዉይ ላሉ?	1. መረጃስሌላቸው 2. ስራስለሚበዛባቸው 3. የጡትወተቱበቂስላልሆነ 4. ባህልናተለምዶስለሆነ 5. ሌላካለይጠቀስ_____	