ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

DEPARTMENT OF NURSING AND MID WIFERY

ASSESSMENT OF COLOSTRUM FEEDING PRACTICE AND ASSOCIATED FACTORS AMONG POSTNATAL MOTHERS IN SELECTED HEALTH FACILITIES IN ADDIS ABABA ETHIOPIA, 2020.

PREPARED BY ASTER TEKETEL (BSC)

A THESIS TO BE SUBMITTED TO POSTGRADUATE STUDIES ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, SCHOOL OF NURSING AND MIDWIFERY, DEPARTMENT OF NURSING, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR MASTER'SDEGREE IN NEONATAL NURSING.

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This thesis by Aster Teketel is accepted in its present form by the board of examiners as satisfying the thesis requirement for the degree of masters in neonatal nurses.

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DECLARATION

I the undersigned declare that this MSc. Thesis is my original work and it has not been presented for a degree in any other university. All source materials used for the thesis have been duly acknowledged.

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ABBREVIATIONS AND ACRONYMS

ANC---------- Antenatal Care

EDHS---------- Ethiopia Mini Demographic and Health Survey

HIV----------Human Immune Deficiency Virus

HM---------- Human Milk

HPN----------Hypertension

IYCF---------- Infant and young child feeding

IRB---------- Institutional Review Board

PNC----------Postnatal Care

SDG---------- Sustainable Development Goals

SPHMMC-------St, Paul's Hospital Millennium Medical College

SPSS----------Statistical Package for Social Science

TB----------Tuberculosis

UNICEF------United Nation International Child

USA----------United States of America

WHO----------World Health Organization

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ABSTRACT

BACKGROUND: Colostrum helps to prevent bacterial infections that are a danger to newborn babies. The antibodies probably help to prevent a baby from developing allergies. From around the world statistics reveal that colostrum is frequently discarded. Lack of knowledge regarding colostrum feeding is the major cause for infant morbidity and mortality rates. There are diverse factors that affect colostrum feeding in Ethiopia; socio-demographic factors, obstetric factors and health service-related factors, and traditional beliefs.

OBJECTIVE: To assess colostrum feeding practice and associated factors among postnatal mothers in selected health facilities, in Addis Ababa Ethiopia.

METHODS: Facility-based cross-sectional quantitative study was conducted since March 27, to April 30, 2020.Totally ten health centers selected. The Sample size was calculated by using a single proportion formula and the total 427sampled post-natal mothers were participated in this study and allocated to each selected health centers proportion to size. The data was collected using self-administered questioners. The analysis was done by SPSS version 26 for data entry and analysis. Both bivariate and multivariate logistic regression analyses were used to identify factors associated with colostrum feeding.

RESULT: The prevalence of colostrum feeding practice was 88.8%, which was higher than the country recommendation level. Mothers who had ANC visiting more fed colostrum than mothers who had not ANC visiting (AOR=5.241(95%CI.1.797, 15.286).Mothers who had a good perception of colostrum more fed their babies than those who had poor perception (AOR=7.433 95% CI3.021, 18.289).

CONCLUSION AND RECOMMENDATION

The prevalence of colostrum feeding practice was 88.8%, grater majority of mothers practiced colostrum feeding, which was higher than the country recommendation level

Maternal perception, sources of information, ANC visiting, associated factors for colostrum feeding practice. Health education programs should be given for on ANC follow-up regarding the importance of colostrum feeding.

Mass media should also take a step to educate the families and mothers about colostrum. Ministry of health to take action increasing the promotion of breast-feeding practice especially benefits of colostrum feeding.

Keywords: Colostrum feeding, Prevalence, Associated factors

1. INTRODUCTION

1.1. Background

Colostrum, the yellowish, sticky breast milk produced at the end of pregnancy, is recommended by WHO as the perfect food for the newborn, and feeding should be begun within the first hour later birth(1). Primary initiation of breastfeeding may be anticipated to aid neonatal survival through several potential pathways, including prevention of dehydration and hypoglycaemia1 improving later breastfeeding practices, improved resistance to and recovery from infection, and maternal warmth limiting hypothermia risk. In particular, the content of first breast milk colostrum – suggests that early initiation is protective against infection. During the first two days postpartum a minimal amount of milk is produced, with volumes increasing after two to three days in the second stage of lacto genesis (2).

It is the initial milk produced by the mother soon after delivery. Colostrum is the thick, yellowish or clear milk that women produce in the first few days after delivery Denser than mature milk, it is rich in protein and immune globulins The transition from colostrum to mature HM begins by day 3–5 (2). It contains more antibodies and other anti-infective proteins than mature milk. This due to colostrum contains more protein than mature milk and extra white blood cells than mature milk (2).

These anti-infective proteins and white cells provide the first immunization against the diseases that a baby meets after delivery. Colostrum helps to prevent bacterial infections that are a danger to newborn babies. The antibodies probably help to prevent a baby from developing allergies(2).

Colostrum has a mild laxative effect, which helps to clear the baby's gut of meconium (the first rather dark stools) which clears bilirubin from the gut and helps to prevent jaundice. It contains growth factors that helps newborn baby's intestine to develop. This helps to prevent the baby from developing allergies and intolerance to other foods. Colostrum is richer and thicker than mature milk in some vitamins – especially vitamin A. Vitamin A helps to reduce the severity of any infections the baby might have(2).

Colostrum, also referred to as 'liquid gold', it can potentially even be life-saving when it comes to babies born prematurely or with health complications and provides not only perfect nutrition

tailored to the exact needs of a newborn, also contains high concentrations of antibodies which can destroy disease-causing bacteria and viruses (2).

Globally, less than half of all newborns are put to the breast within an hour of birth that leaves 77 million newborns waiting too long for this first serious contact with their mother outside of the womb. Five regions have early initiation rates below 50 percent. The highest rates of early initiation are in Eastern and

Southern Africa. However, even in this region, which has one of the highest rates of infant mortality in the world, just three out of five newborns are gaining the benefits of early initiation on survival (3).

When colostrum feedings are replaced by less nutritious and often high-calorie alternatives like cow's milk, infant formula or sugar water, it creates a vicious cycle. These liquids can satisfy the infant's hunger in the first days of life, causing neonate breastfed less frequently; and the reduced demand for breastfeeding makes breast milk supply more difficult to establish and maintain. In this way, feeding foods and liquids other than breast milk in the earliest days often mark 'the beginning of the end' of exclusive breastfeeding (3).

From around the world statistics reveal that colostrum is frequently discarded. Lack of knowledge regarding colostrum feeding is the major Couse for infant morbidity and mortality rates(4).

There are diverse factors that affect colostrum feeding in Ethiopia; socio-demographic factors, obstetric factors, and health service-related factors, and traditional beliefs (5).

In Ethiopia, colostrum and breast milk were seen as different substances. Colostrum was said to cause abdominal problems, but the removal of a portion was enough to mitigate this effect. Research done in Northern Ethiopia about Colostrum avoidance, prelacteal feeding and late breast-feeding initiation shows that the majority of respondents reported discarding colostrum and breastfeeding within 24 hours of birth (6).

1.2 Statement of problems

In low-resource, high mortality settings where infection causes a large proportion of newborn deaths, early initiation of breastfeeding can substantially reduce child mortality(7). A history of breastfeeding is related to a reduced risk of many diseases in infants and mothers from developed countries(8).According to different studies, children who didn't feed colostrum more likely develop many infections, stunting, underweight, and wasting(4). The risk of morbidity and hospitalization is much higher among infants who are not breastfed and this is true also in industrialized countries (2).

Colostrum avoidance among mothers of newborn globally, and between 15% - 65% of mothers in different regions of the world had not given colostrum to their babies (9).Because it looks so different from mature breast milk, some cultures have traditionally perceived colostrum as "dirty," "unhealthy," or even "infectious"(7). As a result, they may discard it and delay breastfeeding during the production of colostrum, waiting until the colostrum feeding, thus preventing their infants from colostrum feeding In many developing countries, mothers discard colostrum for their traditional beliefs such as viewing it as having no nutritional value, "to dilute to be useful" or seeing it as "bad luck" for the family (9).

Neonatal mortality declined globally, but more slowly than mortality among children aged 1–59 months. The global neonatal mortality rate fell from 37 deaths per 1,000 live births in 1990 to 19 death in 2016. However, the relative decline in neonatal mortality was slower in sub-Saharan Africa than in the other regions. Significant disparities in neonatal mortality exist across regions and countries. Among the Sustainable Development Goals regions, neonatal mortality was highest in sub-Saharan Africa and Southern Asia, which each reported 28 deaths per 1,000 live births. A child in sub-Saharan Africa or Southern Asia is nine times more likely to die in the first month than a child in a high-income country (10).

In fact, delaying the colostrum of breastfeeding has been associated with 1 in 4 neonatal deaths in the developing world. While neonatal mortality and morbidity among all live births and low-birth-weight babies, and specifically, infection-related mortality, associated with the primary start of breastfeeding(11). Bacterial, viral, and fungal and protozoa infection of the newborn baby can be reduced by feeding colostrum (5).

Cultural and social factors also impact the feeding practices of newborns. Often the first milk, colostrum, is not fed to the baby because of fears that the yellow milk will give the baby jaundice. On the other hand, some cultural practices promote healthy behaviors (12).

Ethiopia has one of the highest infant mortality rates in the world (6).According to EDHS 2019 report The neonatal mortality rate was 30 deaths per 1,000 live births, and the post-neonatal mortality rate was 13 deaths per 1,000 live births.it decreased from 39 to 29 between the 2005 and 2016 EDHS but has remained stable since the 2016 EDHS(13) The feeding of newborn infants has important implications for immediate and future health, especially in developing countries such as Ethiopia that have high rates of malnutrition, infectious diseases and mortality for children.(6)There is no doubt that infants are prone to infection due to their not fully developed immune system opposite foods and nutrition during infancy are very essential for immediate and future health, physical growth, mental development a healthy immune system (9).Study done in Western Ethiopia, the majority of (71%) neonatal deaths occurred during the first week of life and the three major causes of neonatal mortality are prematurity, asphyxia, and neonatal sepsis. But this problem can be reduced by early initiation of breastfeeding and colostrum feeding(14).

Attention to feeding practices is important because inadequate knowledge and inappropriate neonatal feeding is a primary factor of neonatal morbidity (15). There is limited literature on the title and most of the results are focused on exclusive breastfeeding practices. As a result, the roles of various factors in determining colostrum feeding practice particularly among postnatal mothers have not been widely studied in Ethiopia.

Therefore, the purpose of these studies is Assessment of colostrum feeding practice of colostrum feeding among mothers in the postnatal of selected government health institutes, Addis Ababa Ethiopia.

1. 3. Significance of the study

The feeding of newborn infants has important implications for immediate and future health, especially in developing countries such as Ethiopia that have high rates of malnutrition, infectious diseases, and mortality for neonates. Primary initiation of breastfeeding may be

expected to aid neonatal survival through several potential pathways, including prevention of dehydration and hypoglycaemia1 improving later breastfeeding practices, improved resistance to and recovery from infection colostrum is the earliest and most immunologically protective secretion of the mammary glands, colostrum acts as a natural vaccine against various health-related threats, therefore study about the assessment of colostrum feeding and associated factors among postnatal mothers may decrease hospital stay of the neonates and save unnecessary hospital expense. Since neonatal nursing is a newly innovated program in our country, this research could contribute to the development of both the knowledge and practice of neonatal nursing. From the findings, professionals will understand the gap that exists on colostrum feeding practice and counsel the community based on the identified gaps. A better understanding of colostrum feeding practice and associated factors among postnatal mothers will have a great input for clinician's program managers and health institutions to improve neonatal health and reduce neonatal morbidity and mortality in post-natal age.

2: LITERATURE REVIEW

Colostrum, the yellowish, sticky breast milk produced at the end of pregnancy, is recommended by WHO as the perfect food for the newborn, and feeding should be initiated within the first hour after birth(1). More than a quarter of mothers don't know about the health benefits of colostrum and offered pre-lacteal feeding to babies(15).

2.1. The Magnitude of colostrum feeding

There are millions of children in the world die each year before reaching the age of five due to malnutrition and infectious diseases and they are very often from the developing countries like Somalia, Uganda, Bangladesh, Nepal, Tanzania, Ghana, India, Sudan, Pakistan Nigeria, etc.(9)There was a marked dose response of increasing risk of neonatal mortality with increasing delay in initiation of breastfeeding from 1 hour to day 7; overall late initiation (after day 1) was associated with a 2.4-fold increase in risk (16) .

According to the 2019 EMDHS data on infant and young child feeding (IYCF) practices for all children born in the 2 years preceding, the percentage breastfed decreases sharply with age from 73% of infants age 0-1 months to 68% of those aged 2-3 months and further, to 40% of infants age 4-5 months (17)

According to Nepal study, Forty-four percentages of the respondents had previous children out of which 80% fed their previous children with colostrum and 90% of those children have not suffered from any serious illness(14). Another study in Bangladesh showed 63% of the participant gave colostrum to their baby reported. In the meantime, the use of pre-lacteal feeds rather than colostrum has been reported to higher at the community level in Bangladesh especially in infants born at home (18).

study in India revealed out of 200 mothers in urban areas, 21% had discarded colostrum whereas, in rural areas, 29.5% of mothers had discarded colostrum and association were found to be significant. (19)Other study conduct in India showed 61.3% of mothers had given the colostrum to their babies while 37.9% discarded colostrum because of advice given by their relatives and

elders. (20)study in Tanzania reported feeding colostrum wasinitiatedwithin6 hours of delivery by 84%of rural mothers and 93% of urban mothers ($p < 0.001$) (21).

Study conducted in Ethiopia revealed that the practice of participants towards colostrum breast milk from the total study participants, 293 (77.51%) have good practices of colostrum feeding. While 299(79.10%) feed colostrum for their babies, 281(74.34%) feed colostrum immediately after, within 1-hour contrary, 79(20.9) did not feed their babies colostrum but other prelacteal. (15) Another study conducted in Dembecha district North West Ethiopia more than two thirds, 563 (76.2 %) of mothers fed their colostrum for their newborn.

Another study conducts in Debre Tabor reported for a total of 297 participant mothers; early initiation of breastfeeding was practiced by 76.8% of mothers. Forty-four mothers (14.8%) initiated breastfeeding 1 to 3 hour after delivery and one mother-initiated breastfeeding after 24 hours. Mothers who didn't feed their breast milk within 1 hour asked the reason for not and 46.4% of contributors of them said due to fatigue. Around three-fourths (74.4%) of mothers gave colostrum to their index child (4).Another study in Amhara region shows, from 293 mothers, 96 (32.8%) mothers avoided colostrum (22).

2.2 Factors associated with colostrum feeding.

In many sub-Saharan settings early infant feeding practices have been influenced by a variety of unfavorable habits, both cultural and propagated by health facilities, such as separation from the mother, before initiation of breastfeeding and routine feeding. And, traditional practices such as expressing and discarding of colostrum due to a belief it contains dirt, giving feeds as part of religious ceremonies and other rituals have also disturbed the vulnerable early feeding period. (23)

Knowledge of colostrum

A study conducted in tertiary care hospitals of Karachi, Pakistan revealed that 90% of the mother offered colostrum as first feed to the baby whereas another study in Lahore showed only 35% infants (15).

The study done in Nepal showed about 74% women have heard about colostrum among which 30 % received information through various media, followed by family and friends comprising 16%, antenatal visits (12%) and other sources (16%)(14).

2.2.1. Sources of Knowledge

The study done in Nepal showed about 74% women have heard about colostrum among which 30 % received information through various media, followed by family and friends comprising 16%, antenatal visits (12%) and other sources (16%) Study conducted in Pakistan showed about 90% women have heard about colostrum among which 15% received information through media. 30% got to know about it from family and friends. Antenatal visits helped 35% of them, and 10% of women got to know about it from other sources and 10% of them did not know about colostrum feeding (24).

Study indicated in Egypt as regards the meaning of colostrum and its initiation time 65%, 52.5% of the studied mothers' "gave correct answer respectively, while 30%, 32.5% of them gave incorrect answers respectively. Concerning the duration of colostrum production after delivery, it was illustrated that less than one- half of the studied mothers 47.5% gave the correct answer while about half of the 40% gave an incorrect answer. Considering the component of colostrum,20% of the studied mothers gave the correct answer, while 30% of them gave the partial correct answer, and 50% of them gave an incorrect answer. Concerning the Importance of colostrum for the baby, 55%and 60% Of the studied mother reported that colostrum gives the baby important nutrients and it protects the baby from infection respectively while 27.5% and 32.5% of them gave partial correct answer and17.5%,7.5% of them gave an incorrect answer. On the other hand, it was found that 40%of the study subjects mentioned that colostrum easily digests while 25% of them gave partial correct and 35%of them gave an incorrect answer. Lastly, 5%of the study subject reported that colostrum decreases the chance of occurrence of neonatal jaundice while 22.5%of them gave partial correct and 27.5%of them gave an incorrect answer (25).

A study in India reveals that 68.7% of mothers knew that colostrum is the first milk for the baby and had sufficient knowledge regarding its characteristics (86.7%). Only 8.3% of mothers knew about the contents of the colostrum (20).A study conducted in Pakistan shows that among total

participants, 72% (n=277) nursing mothers stated breast leaking (colostrum) as a kind of milk that is beneficial for child health. Among the total participants, around 70% (n=269) of nursing mothers knew the health benefits of colostrum on child health. Nearly 68% (n=262) mothers replied that they received guidance about the benefits of colostrum feeding from the healthcare professionals (60%) and family (8%). The participants of this study were also questioned on the initiation of breastfeeding (15).

A study was done in Debre Markos town, East Gojjam Zone, Amhara regional state, Ethiopia shows, majority of the mothers 290(76.72%) have good knowledge about colostrum breast milk. About 299(79.10 %) women heard about colostrum from various sources. Majority of mothers heard about colostrum and its importance from health institutions (15). Out of 299 respondents who have ever heard about colostrum, 263 (87.96%) replied as colostrum is yellowish milk and 177(59.2%) as colostrum is thick, sticky and yellowish in color. About 243(81.27%), 172(57.53%), and 286(95.65%) of the women know that colostrum is the best milk for babies, the first milk given to the baby and protects baby's health and high in protein respectively (15).

As the study showed in Addis Ababa (97.7%) of mothers knew that colostrum should be given to their newborns. 139 (27.1%) of the mothers did not know that prelacteal feeds should not be given to neonates. Among those newborns that were given other foods, the most common food reported by mothers was cow’s milk 332(64.8%), plain water 100 (19.5%), packed milk 61(11.9%), sugarwater17 (3.3%), and others 2 (0.4%) (26).

A study in Mizan Aman town showed regarding the source indicates that health professionals were main sources 95 (70.37%) followed by relatives 19 (14.07%), television 14 (10.37%), while rest 7 (5.18%) were from the radio (27).

2.2.2 Mothers Cultural and traditional beliefs of colostrum

According to (WHO) report, many women choose to bottle feed their babies. Reasons include personal and social biases against breastfeeding such as attitudes of family and close friends, attitudes to breastfeeding in public, and employment practices (28).

A study done in Nepal around 69% of pregnant women in this study knew about the role and importance of colostrum for newborn babies. Concerning the role of colostrum to child's health,

41 % women answered that it assists for proper growth of child and fights against infection, 27% felt it adds to good health but were not able to specify whereas 31 % didn't know and 1 woman thought it has bad effect to the child's health (14).

Another study conducted in Egypt showed mothers' "belief" that their positive and negative effect toward colostrum on pre, post, and follow-up. Concerning positive beliefs, it was illustrated that the study mothers were more likely to agree with believes that colostrum is a gift from God87.5% pre-intervention. The following percentage was the result obtained after intervention 95% and 95% follow-up(25).

Study in India reveals64.3% of mothers believed that colostrum is difficult to digest and 40.7% had a myth that it is deleterious to the baby.(20)A study done in Pakistan described out of 28% (n=107) nursing mothers who discarded colostrum believed that colostrum as non-milk and non-nutritious (84%) and causing diarrhea (13%). However, there were practices of different pre-lacteal feeding to babies (9).

As a study shows in the East Gojjam region, among 378 mothers who participated in the study 298 (78.84) had a favorable attitude towards colostrum breast milk. About 169(44.71%) perceived colostrum breast milk as dirty and looks like pus. And 50(13.23%), 65(17.20%), 72(19.05%) believed that colostrum causes intestinal obstruction, diarrhea and it is difficult to digest which needs to be discarded respectively. About 74(19.58%), 65(17.20%), 61(16.14%), 75(19.84%) and 80(21.16) believed that babies do not like colostrum (29).

Colostrum makes babies sick, babies unable to suck colostrum it is given to child and mothers had no colostrum breast milk respectively (15).

A study done in Pakistan as describe Out of total participants 28% (109/384) initiated breastfeeding within an hour. On asking for the reason for the delay of initiation of breastfeeding, nursing mothers responded that it was due to family (22%) followed by advice of healthcare professional (6%)(15)

study conduct in Nigeria shows,310 of mothers in Community one hundred and sixty –six (53.55%) mothers did not feed their children colostrum .those who didn't give colostrum claimed

it is bad and of no advantage to the baby 104/144(72.2) did not have any reason for giving colostrum while 6/144(4.2%) could mention two advantages of colostrum(30)

A cross sectional study done on early initiation of breastfeeding and colostrum feeding among mothers of children aged less than 24 months in Debre Tabor, Ethiopia shows, early initiation of breastfeeding was practiced by 76.8% of mothers. Among them, forty-four mothers (14.8%) initiated breastfeeding 1hour to 3 hours after delivery and one mother-initiated breastfeeding after 24 h. Mothers who didn't feed their breast milk within 1 hour were asked the reason for not feeding and they said it is due to fatigue. In general, nearly three-fourths (74.4%) of mothers gave colostrum to their child(4)

Another study was done in Bench magi zone, Southwest Ethiopia colostrum feeding attitude, this study indicated that the majority of 144 (69.4%) of mothers have a positive attitude towards colostrum feeding. But the remaining 63 (30.6%) have a negative attitude. Almost all mothers (72.46%) agree that colostrum is important for growth and mental development(27).

2.2.3 Obstetrics and health-related factors

A study conducted in Axum town showed6.3% (95% CI 4.2%, 8.6%) of mothers were avoiding their colostrum in the first 5 days and 13 (43.3%) of them were due to maternal medical illness. Regarding the breastfeeding initiation, 271 (56.8%) mothers have initiated breastfeeding within 1 h and 48 (10.1%) were providing pre-lacteal feeding within 3 days before giving breastfeeding to their child. In this study, 461 (96.6%) mothers were attended ANC visits, and 341 (71.5%) of them were utilized four times and above (which is internationally recommended) and 467 (97.9%) of them have been gotten breastfeeding counseling at ANC clinic. About 412 (86.4%) mothers had at least one visit to the PNC and all of them have been gotten breastfeeding counseling in the post-natal clinic. Regarding the maternal level of information on colostrum feeding, 447 (93.7%) mothers had information on the advantage of giving colostrum to their child. About 434 (91%) mothers were at a good level of information by which they could mention two or more components of breastfeeding counseling during their ANC visit(31).

Study in Mizan Aman town reviled most mothers 172 (83%) had ANC follow up for previous pregnancy but the remaining 35 (17%) had not. Among those mothers 101 (58.72%) visit four

times and 66 (38.37%) visit three times. Among 207 mothers 58 (28.01%) were delivered at home, 34 (16.42%) at the health center, 112 (69.55%) at the hospital, and 3 (1.44%) were at a private clinic. At the time of delivery, most mothers 149 (71.98%) were attended by health professionals but others were attended by relatives 24 (11.59%) and traditional birth attendant 29 (14%). During delivery of baby 149 (71.98%) were counseled about colostrum feeding in addition to breastfeeding but the remaining 58 (28.01 %,) did not. About 116 (56%) had post-natal follow up but the remaining 91(44%) did not(27).

A study conducted in west Go jam shows Most, 710 (96.1 %) of the mothers attended an antenatal visit during their last pregnancy and 514 (69.6 %) of the mothers have a history of three and above pregnancies. Eighty-three percent of mothers gave birth to their precious baby at the health institution. More than 2/3 of mothers had received postnatal care after their last delivery and 432 (58.5 %) of mothers received information about breastfeeding during antenatal visits(32).

2.2.4 Socio-demographic factors:

Low income mothers in the USA, typically low breastfeeding rates, showed breastfeeding education had a significant effect on increasing initiation rates compared to standard care (risk ratio (RR) 1.57, 95% confidence interval (CI) 1.15 to 2.15, P = 0.005) (28)

Another study in India shows that most of the mothers (51.7%) in this study belonged to the age group of 21 to 25 years and 81% belonged to rural areas.72.7% of mothers lived in joint family and the majority of them (97%) were unemployed. 35% Literacy rate was noted and 78% belonged to the group of the above poverty line. As the study reveals that 68.7% of mothers knew that colostrum is the first milk for the baby and had enough knowledge regarding its characteristics (86.7%). Only 8.3% of mothers knew about the contents of the colostrum. 64.3% of mothers believed that colostrum is difficult to digest and 40.7%had myth that it is deleterious to the baby 61.3% of mothers had given the colostrum to their babies (20).

A study in Ethiopia shows from 297 mothers, the majority (94.6%) of them had antenatal care (ANC) visits for their index child. Among these mothers who had ANC visits, only 160 mothers (53.9%) had four and more ANC visits. Approximately three-fourth (73%) and more than half

(58.9%) of mothers were counseled regarding breastfeeding during ANC visit and postnatal period respectively. As this study revealed most (96.6%) of mothers delivered their index child at health institution.

A study done in India 270 mothers of infants were interviewed about colostrum feeding the overall mean age of respondents was found to be 25.4 ± 4.01 years. Most the respondents (55.5%) belonged to the age group 19-25 years; they were mostly Hindus (81.1%) belonging to low socioeconomic status (74.8%). Out of the total respondents, 132 (48.9%) were either illiterates or just literate who could read and write but had no formal education. In 142 (52.6%) cases deliveries were conducted at home but only 26 (9.6%) by untrained birth attendants. (30) Most of the mothers studied (142 [52.6%]) initiated breastfeeding within 1-6 h of birth and only 17 (6.3%) could initiate colostrum feeding within 1 h of birth. There were 88 (32.6%) mothers who reported starting breastfeeding after 24 h of birth (33).

2.3. Conceptual Framework

Studies and reports in different parts of the world reviewed different factors associated with colostrum feeding practice for this study according to the literature review; the main factors identified are socio-demographic factors, culture, and traditional belief, obstetric and maternal health-related factors, maternal knowledge the investigator from the literature adopted this conceptual framework (27, 29).

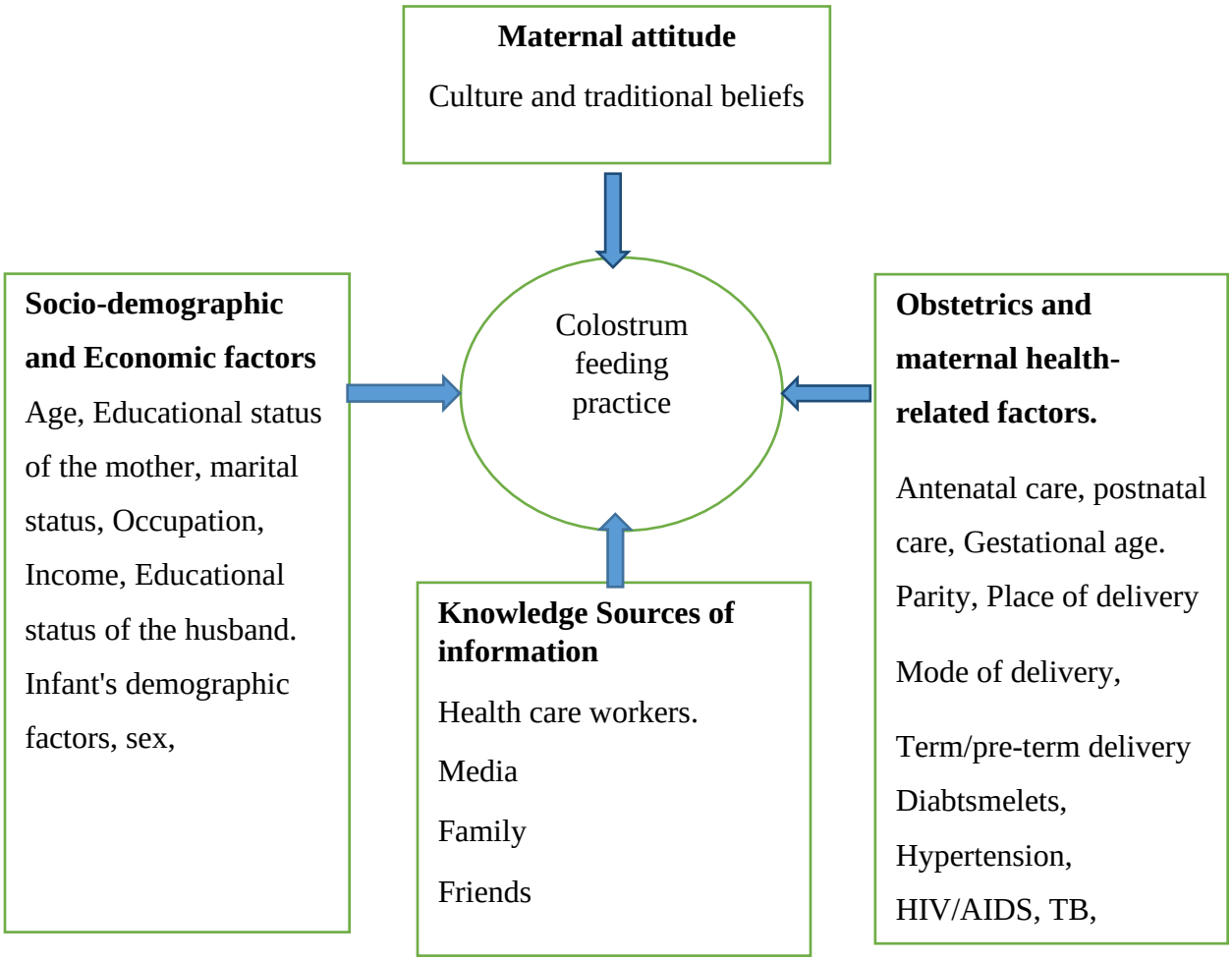

Figure 1: Conceptual framework for the assessment of colostrum feeding practice and associated factor

3. OBJECTIVES

3.1. General Objective

The general objective of this study is to assess the colostrum feeding practice and associated factors among postnatal mothers with their neonate in selected health facilities, Addis Ababa Ethiopia.2020.

3.2 Specific Objectives

1. To assess colostrum feeding practice among post-natal mothers with their neonates in selected health facilities, Addis Ababa Ethiopia 2020

2. To identify associated factors of colostrum feeding practice among post-natal mothers with their neonates in selected health facilities, Addis Ababa Ethiopia.2020.

4. METHOD

4.1. Study area and study period

The study was conducted at ten health facilities selected from ten sub city which are founds in Addis Ababa the capital city of Ethiopia. with an estimated area of 540 square kilometers, lies between 2326-3000 meters above sea level with lowest and highest annual temperature about 10°C and 32°C respectively, and annual rainfall around 1200mm. Addis Ababa is the largest city with a total population of 3,384,569 according to the 2007 census. This city has shown a robust annual growth rate, and population counts as of 2017 are growing closer to 4 million, and holds 527 square kilometers of area in Ethiopia, with a density of about 5,165 individuals per square kilometer available. Per the population recorded at the last census, women's reproductive age is from 15-49. The city of Addis Ababa has a higher population of female residents than males. (34) Almost one-quarter of all people in Ethiopia that live in urban areas live in the capital city. There are 10 sub-city health departments which are directly accountable to their respective sub-city administrations. In the city, there are 101 public health centers, averagely eight health centers in one sub-city. The was conducted from March 27-April 30, 2020.

4.2 study design

A health facility cross-sectional quantitative study design was used to assess postnatal mother's colostrum feeding practice among post-natal mothers in selected health facilities in Addis Ababa from March 27 - April 30, 2020.

4.3. Source of Populations

All postnatal mothers attending postnatal follow-up and EPI clinics in Addis Ababa health centers.

4.3.1 Study populations

All postnatal mothers attending postnatal visit within six weeks after delivery in selected health centers during data collection time.

4.3.2 Study unit

All postnatal mothers who came to their postnatal visit within six weeks selected ten health centers from March 27, 2020 to April 30, 2020 and meet the inclusion criteria.

4.4 Inclusion and exclusion criteria

4.4.1. Inclusion criteria: -

- Postnatal mothers attending post-natal follow up clinic and immunization clinic.

-Postnatal mothers who were giving breastfeeding and prelacteal feeding.

4.4.2. Exclusion criteria

- All post-natal mothers with sick neonate
- Post-natal mothers seriously ill were excluded from the study.

4.5. Sample size determination and sampling procedure

4.5.1. Sample size determination

The sample size was calculated using a single population proportion formula by considering the following rules:

P = 77 75% proportion of colostrum feeding practice which was the prevalence Of Practice of Colostrum feeding in Debre Markos Town East Gojjam Zone, Ethiopia (29).

Level of confidence = 95%

Level of significance = 5%

Margin of error (d) =5%

DEFF-design effect = 1.5

n= where; Initial sample size

Z- Standard normal distribution curve value for 95% CI which is 1.96 (where α = 0.05)/

n= (1.96)2 X0.7775 (1-0.7775) = 265.82=266

0.05x0. 05

266x1.5=399none response=10%=40 Total=439

4.6. Sampling procedure/techniques

Addis Ababa has ten sub-cities and in this all sub-cities there are 101 health centers. Which are giving post-natal service. From those 10 health centers were selected by using simple random (lottery) method and the calculated sample size distributed to each health center by proportion to size then random sampling was used to select study participants.

Proportionate to population size (PPS) is calculated as

ni=Ni X no/N

Table 1:Proportional allocation of participants from ten health centers (Addis ketema H.C)

(Akaki H.C) (Churchill H.C,) (Woreda17H.C,) (Kirkos H.C,) (Alembank H.C),(Beletshachew H.C) (Slam H.C) (, Nifassilk H.C) (Kotebe H.C) in ten sub-cities Addis Ababa 2020.

Heath centers	Twelve months case flow	Average monthly cash flow	The proportion of study participants
Addis Ketema H.C	852	71	71x439/544 =57
Akaki H.C	780	65	65x439/544 =52
Churchill H.C	336	28	28x439/544 =22
Wereda 17 H.C	252	21	21x439/544 =17

Kirkos H.C	276	23	23x439/544 =19
AlemBank H.C	1,932	161	161x439/544 =130
Beletsachew H.C	168	14	14x439/544 =11
Selam H.C	372	31	31x439/544 =25
Nifassilk H.C	612	51	51x439/544 =41
Kotebe H.C	948	79	79x439/544 =64
TOTAL	6,528	544	439

4.7. Data Collection procedure and Instrument

A semi-structured questionnaire adapted and modified from different literature (28, 29) to assess colostrum feeding Practice and associated factors among postnatal mothers. It consists ofpart1Socio demographic characteristics: Age, Marital status, Religion, Place of the origin, Educational status, Occupation, Ethnicity, Income, educational status of husband Infants sex.

Part 2: Maternal obstetrics and health-related conditions: ANC visiting, place of ANC visiting, Rate of ANC visiting, Counseling during ANC visiting, Mode of delivery, Term/pre-term delivery, maternal illness, Reason of maternal illness during pregnancy. Part 3: sources of information and knowledge. Part4: Maternal Attitude: traditional and cultural beliefs.part:5 the maternal practice of colostrum feeding.

It was prepared originally in English and was translated into the local language, Amharic for the purpose of data collection and then it was translated back to English again for consistency of the variables under question. For data collection, 8 nurses, four diploma nurses, and four BSC nurses were recruited to conduct an interview with tow BSc midwifes supervisors. The training was given for two days. The data were daily checked manually for completeness and accuracy.

4.8. Data Quality Control

The data was collected by, 8 nurses, four diploma and four BSc nurses**.** The data collection tool was pre-tested among 5% of the total sample size to assess, its clarity, length, completeness, consistency. All collected data was checked for completeness by supervisors and principal investigator every day. Coding and data cleaning were done (checked frequencies and crosstab for each item).

4.9. Study Variables

4.9.1 Dependent variables:

Colostrum feeding practice

4.9.2 Independent variables

Socio-demographic characteristics: Age, Marital status, Religion, Place of the origin, Educational status, Occupation, Ethnicity, Income, educational status of husband Infants sex, infants gestational age.

Maternal obstetrics and health-related conditions: ANC, counseling during ANC follow up, Mode of delivery, place of delivery, Term/pre-term delivery, maternal illness during pregnancy.

Maternal Attitude: traditional and cultural.

Maternal knowledge: sources of information

4.10 Operational Definition of colostrum feeding practice and associated factors.

Postnatal visit-Appointment of post-natal mothers to check up their health status
Colostrum: The yellowish, sticky first breast milk produced at the end of pregnancy

Prelacteal feeding-is the practice of giving liquids other than breast milk to a child during the period before the mother's colostrum gives.

Maternal illness: if the mother got difficulty to breastfeed for neonate due to illness like active

Tuberculosis, HIV/AIDS

Knowledge: In this study refers to awareness about colostrum feedings of post-natal mothers during the breastfeeding period

Good knowledge: Those who answered greater than 75% of knowledge related questions. (34)

Poor knowledge: Those answers less than 75% of total knowledge related questions.

Attitude: The way that you think, feel, and assessed by attitude-based questionnaire.

Positive attitude: Those who answer positively above 60% of attitude related questions.(27).

Negative attitude: Indicates those who answer positively to less than 60% of attitude related questions.

Practice: The overt behavior habit or custom of post-natal mothers(27).

Good practice: Score greater than 60% of the overall practice questions.

Poor practice: Those who answer less than 60% of practice related questions

4.11. Data Analysis Procedure

The data was cleaned, coded, and entered in Epi data version 3.1 and transferred to SPSS version 26.0 for analysis. All variables with p-value ≤ 0.25 in bivariable analysis were taken into the multivariable model to control for all possible confounders. Multi-co linearity was also checked to see the linear correlation among the independent variables. Odds ratio along with 95% CI was estimated to identify factors associated of colostrum feeding practice using multivariate analysis in the binary logistic regression. The level of statistical significance was declared at p-value < 0.05in the final multivariable model was concluded as factors associated with colostrum feeding practice.

4.12. Ethical Consideration

Ethical clearance was obtained from the Institutional Review Board (IRB) of the Department of Nursing, college of health sciences, School of Nursing and Midwifery, and Addis Ababa public

health research and emergency management directorate. Each study participant was adequately informed about the objective of the study and anticipates the benefit and risk of the study by their data collector. Verbal consent was obtained from study participants for protecting autonomy and ensuring confidentiality**.** The data collectors were informed about the rights of respondents to refused participation in the study**.**

4.13. Dissemination and Utilization of the Result

The result of the study will be disseminated to Addis Ababa University College of Health Sciences, Addis Ababa public health research, and emergency management directorate; it will also get shared with selected health centers**.**

5. RESULT

5.1. Socio-demographic characteristics of mothers

In this study, a total of 427(97.3%) post-natal mothers whose less than forty-five days after delivery were interviewed. The mean age of mothers was 26.43 years (standard deviation, SD+ 4.7). 44.0% of mothers were between 25-29 years with regarded to educational status 382 (89.5%) of the mothers attended formal education and 406(95.1%) of their husbands attended formal education .from those who attended formal education, 182 (42.6%) of mothers joined primary education 45 (10.5%) were not educated at all .42 (9.8%) degree/above and 152 (35.6%) of their husbands attended secondary school (9-12). More than half 269 (63%) of mothers were housewives. Regard to marital status 405(94.8%) of mothers was married. Out of the total, 356(83.4%) of mothers were earning an average monthly income of >=1500 ETB. Concerning the neonate characteristics, more than half 225 (52.7%) were male (see table 2).

Table 2:Socio-demographic and economic characteristics of post-natal mothers in selected health facilities in Addis Ababa, Ethiopia in June 2020.

Variable	Category n= (427)	Frequency	Percent
Mothers age	<24	140	32.8%
	25-29	188	44.0%
	30-34	74	17.3%
	>=35	25	5.9%
Sex of neonate	Male	225	52.7%
	Female	202	47.3%
Level of education of Mother	Can't read and write	45	10.5%
	primary school	182	42.6%
	Grade 9-12	123	28.8%
	Certificate/diploma	35	8.2%
	Degree and above	42	9.8%
	Housewife	269	63%
	Government Employed	46	10.8%
Mothers occupation	Private organization	72	16.9%
	Merchant	20	4.70%

	Daily laborer	20	4.70%
	Single	11	2.6%
Marital status	Married	405	94.8%
	Widowed	1	0.2%
	Divorce	1	0.2%
	Separated	9	2.1%
	Can't read and writ	21	4.9%
	Primary (1-8)	141	33.0%
Husband's level of education	9-12	152	35.6%
	Certificate/diploma	44	10.3%
	Degree and above	69	16.2%
	Government employed	69	16.2%
	Private organization	141	33.0%
Husband's occupation	Merchant	88	20.6%
	Daily laborer	76	17.8%
	Other	53	12.4%
	0-500	15	3.55%
Household average monthly	501-1000	15	3.5%
income	1001-1500	41	9.6%
	>1500	356	83.4%

5.2 Obstetrics and maternal medical characteristics

From total participants above one-third of 156 (36.5%) of mothers were primipara. The majority (95.6%) of mothers received ANC care from total 359 (84.1%) of mothers attended ANC follow up in local health centers and 314 (82.9%) had four and above ANC visits during the period of pregnancy more than half of 243(56.9%) were not counseled advantage of colostrum feeding. Regarding's place of delivery, most (98.35%) of mothers delivered in health institutions. Related to the mode of delivery 345(80.6%) of mothers delivered by normal (vagainal) and 400(93.7%) of mothers their neonates had a term.

From total respondents most 414 (97.00%) of mothers healthy not admitted to the hospital during pregnancy (Table 3).

Table 3: Obstetrics and maternal medical characteristics of post-natal mothers selected health facilities Addis Ababa, Ethiopia in June 2020.

Variable	Category	Frequency	Percent
Parity	One	156	36.50%
	Tow	147	34.5
	Three	76	17.8
	Four and above	48	12.5
ANC service during pregnancy	Yes	408	95.6
	No	19	4.40%
Place of ANC visit.	Hospital	37	8.70%
	Health center	359	84.10%
	private clinic	25	5.90%
Frequency of ANC visit	None	6	1.40%
	Once	3	0.70%
	Tow	16	3.70%
	Three	51	11.90%
	four and above	314	82.90%
Restive counseling during ANC	None	3	0.70%
	Yes	184	43.10%
	No	243	56.90%
Place of delivery.	Hospital	149	37.20%
	Health center	258	58.15%
	private clinic	13	3%
	Home	7	1.60%
Mode of delivery	Viginal	345	80.60%
	Cesarean section (C/S)	75	17.60%
	Instrumental	7	1.60%
Term/pre-term delivery?	Term	400	93.70%
	pre-term	27	6.30%
Admitted to hospital during pregnancy	Yes	19	4.40%
	No	408	95.60%
maternal illness during pregnancy	None	414	97.00%
	Hypertension	11	2.60%
	Cardiac	2	0.40%

5.3 Sources of information on colostrum feeding and knowledge

From all respondents, 276 (64.6%) of mothers know about colostrum feeding, 182(42.6%) post-natal mothers got information from health professionals, 83(19.4%) of information from their relatives/neighbors and friends, 10(2.3%) got information from media and 152(35.60%) of post-natal mothers did not get any information about colostrum.

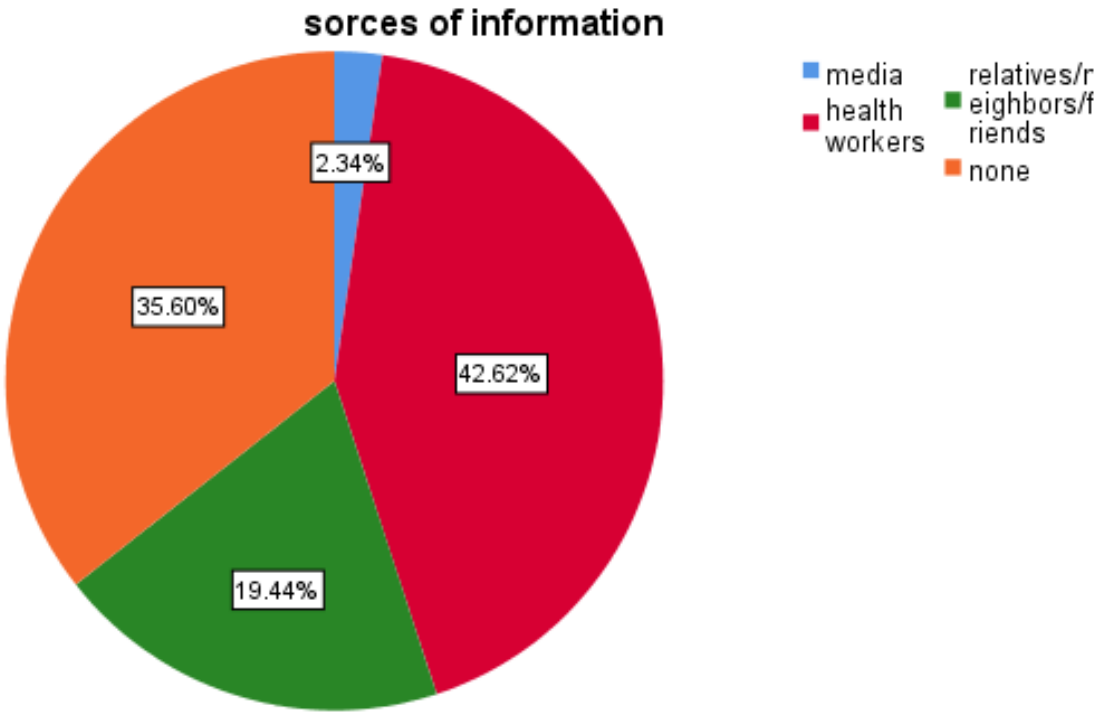

Figure 2: Sources of information on colostrum feeding practice among post-natal mothers in health facilities in Addis Ababa

5.4 Cultural and traditional beliefs of colostrum feeding

Most of 384(89.9%) of mothers had a good attitude towards colostrum feeding but the remaining 43(10.1%) had a poor attitude. In this study, about 296(69.4%) believed that colostrum in breast milk 101(30.70%) perceived colostrum is not breast milk but some other discharges come out from their breast before breast milk. And 372(87.2%) believed colostrum best milk for the baby55(12.9%) did not believe colostrum best milk for the baby. 283(66.2%) mothers agreed colostrum is a thick, sticky, and yellowish in color, 144(33.7%) mothers not agree.381(89.2%) of post-natal mothers believed it is the first milk given to the baby,46(10,8) not

believed.369(86.5%)of mothers believed it protects diseases and high in protein, 58(13.6%) not believed. While 396(92.8%) of mothers do not believe that colostrum makes the baby sick,31(7.2%) mothers believe. And 400(93.7%) of mothers did not believe colostrum must be squeeze out and throw away, 27(6.3%) of mothers believed. About 401(93.9%) mothers did not believe that baby did not like colostrum, 26(6.1%) of mothers believed that they like colostrum and 400(93.7%) of mothers did not believe colostrum causes diarrhea, 27(6.3%) of mothers believed. 25 mothers (5,8%) believed that colostrum is difficult to digest and needs to be discarded while 402 mothers (94.2%) did not believe like that. Data obtained from 399 mothers (93.4%) indicated that their culture did not forbid the use of colostrum while 28 mothers (6.5%) indicated that their culture does forbid. In relation to family experience, 403 mothers (94.4%) said that their family did not prohibit the use of colostrum while 24 mothers (5.6%) indicated that family prohibited the practice of giving colostrum to a new baby 393(93.1%) mothers believed feed colostrum for their babies is useful, 34(7.9%) mothers did not believe in it.340 (79.6%) of mothers did not believe colostrum is dirty looks pus 87(20.4%) mothers believed. (See Table 4)

Table 4: Cultural and traditional believes of mothers about colostrum feeding selected health facilities in Addis Ababa, Ethiopia in June 2020.

Variable	Category	Frequency	Percent
	Strongly disagree	66	22.50%
	Disagree	35	8.20%
	Agree	113	26.50%
Is colostrum breast milk	Strongly agree	183	42.90%
	Strongly disagree	21	4.90%
	Disagree	34	8.00%
	Agree	110	25.8%37
Colostrum is the best milk for the baby	Strongly agree	262	61.40%
	Strongly disagree	105	24.60%
colostrum is a thick, sticky, and			

yellowish in color	Disagree	39	9.10%
	Agree	95	22.20%
	Strongly agree	188	44.00%
	Strongly disagree	21	4.90%
	Disagree	25	5.90%
It is first milk given to the baby	Agree	100	23.40%
	Strongly agree	281	65.80%
	Strongly disagree	25	5.90%
	Disagree	33	7.70%
	Agree	110	25.80%
It protects diseases and high in protein	Strongly agree	259	60.70%
	Strongly disagree	266	62.30%
	Disagree	130	30.40%
Colostrum makes the baby	Agree	16	3.70%
Sick	Strongly agree	15	3.50%
	Strongly disagree	274	64.20%
	Disagree	131	30.70%
	Agree	12	2.80%
Baby unable to suck colostrum	Strongly agree	10	2.30%
	Strongly disagree	274	64.20%
	Disagree	126	29.50%
	Agree	16	3.70%
Colostrum must be squeeze out and throw away	Strongly agree	11	2.60%

	Strongly disagree	273	63.9
	Disagree	128	30.00%
The baby did not like colostrum	Agree	14	3.30%
breast milk	Strongly agree	12	2.80%
	Strongly disagree	278	65.10%
	Disagree	122	28.60%
Colostrum breast milk causes	Agree	16	3.70%
diarrhea	Strongly agree	11	2.60%
	Strongly disagree	275	64.40%
	Disagree	127	29.70%
It is difficult to digest and needs to	Agree	12	2.80%
be discarded	Strongly agree	13	3.00%
	Strongly disagree	276	64.60%
	Disagree	123	28.80%
Colostrum is forbidden in our culture	Agree	16	3.70%
	Strongly agree	12	2.80%
	Strongly disagree	280	65.60%
My family says it should not be	Disagree	123	28.80%
given	Agree	13	3.00%
	Strongly agree	11	2.60%
I feed colostrum for my child since it	Strongly disagree	15	3.50%
is useful	Disagree	19	4.40%
	Agree	75	17.60%

	Strongly agree	318	74.50%
	Strongly disagree	272	63.70%
Colostrum breast milk is dirty, looks pus	Disagree	68	15.90%
	Agree	65	15.20%
	Strongly agree	22	5.20%

5.5: Colostrum feeding practice

From the total respondents, 379 (88.8%) of mothers feed colostrum for their neonates, and 48(11.2%) of mothers didn't feed their babies by different risen.

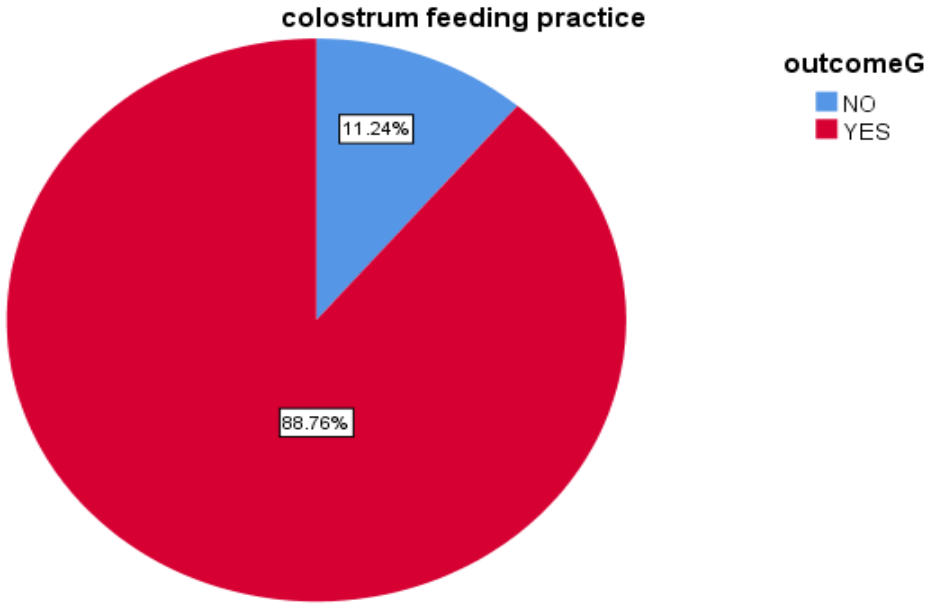

Figure 3: Colostrum feeding practice among post-natal mothers in -health facilities in Addis Ababa.

The following diagram shows mothers reason for not feeding colostrum

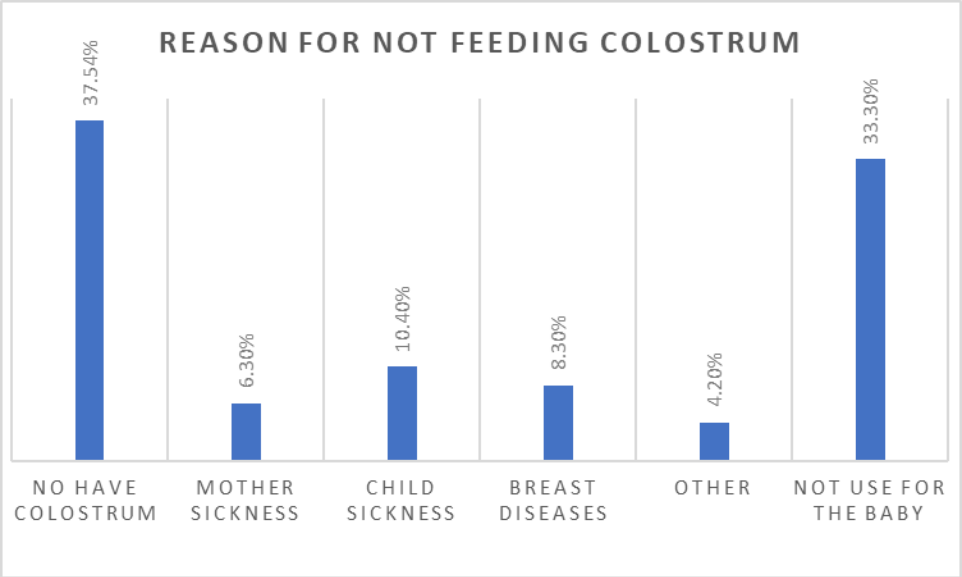

Figure 4: Reason for not feeding colostrum practice among post-natal mothers in -health facilities in Addis Ababa.

5.6. Factors associated with colostrum feeding practice

From the total participants of this study 88.8% (95%CI 85.5, 91.6) of mothers feed colostrum for their neonates. Each variable was assessed independently to identify factors associated with colostrum feeding practice. First variables were tested using bivariate analysis, in this study variables were associated in bivariate analysis ($p<0.05$) were; mothers age, mothers' occupation, getting ANC to follow up, numbers of ANC follow up, counseling during ANC, numbers of ANC follow-up, parity, place of getting counseling, place of delivery, mode of delivery, maternal illness, maternal knowledge, sources of information and quotations regarding mothers' perception were statistically associated with colostrum feeding.

From the category of age,30-34 years of mothers were four times feed colostrum than those mothers whose age<24 years (COR= 4.176,95%CI:1.203,14.503). Mothers were working private significantly associated (P value<0.05). Mothers who multi para four times more feeding colostrum than those who were primipara mothers (COR=4,672, 95%CI: 1.364, 15.998).Mothers who had ANC follow up during current pregnancy more likely feed colostrum than those who had not ANC follow-up (COR=6.691(95%CI: 2.543, 17.605).Mothers who had three and more

ANC visits significantly associated (P value=<0.05), mothers who got counseling during ANC visits significantly associated (P value=<0.05). Mothers who did not admit in the hospital during pregnancy significantly associated (P value=<0.05).

Mothers who had knowledge about colostrum more feed colostrum than those who did not have the knowledge,(COR=4.370,95% CI:2.308,8.272).Mothers who got information about colostrum from health professionals more likely to feed colostrum than those who had information from other sources (COR=4.585,95%:2.172,9.684).mothers who had a good perception of colostrum feeding more likely to feed colostrum than those who had poor perception (COR=8.496 95%CI:4.172,17.304).

Multivariate analysis

In a multivariable analysis, ANC visiting and maternal perception about colostrum feeding remained significant.

But mothers age, Mathers occupation, parity, frequency of ANC visit, restive counseling during ANC, mode of delivery, place of delivery, maternal illness during pregnancy, information about colostrum and sources of information lost their significance.

Mothers who had ANC visiting more fed colostrum than mothers who had not ANC visiting (AOR=5.241(95%CI.1.797, 15.286).Mothers who had a good perception of colostrum more fed their babies than those who had poor perception (AOR=7.433 95% CI3.021, 18.289) see Table:5

Table 5: Bivariate and Multivariate analysis of factors that effects of colostrum feeding practice among post-natal mothers selected health facilities in Addis Ababa Ethiopia.

Variables	Colostrum feeding practice			
	Yes N%	No N%	COR (95%CI)	AOR (95%CI)
Mothers age				
<24	21(43.8%)	119(31.4%)	1	
25-29	168(44.3%)	20(41.7%)	1.482 (.769,2.856)	
30-34	71(18.7%)	3(6.3%)	4.176 (1.203,14.503) *	
>=35	21(5.5)	4(8.3%)	.926 (.289,2.972)	
Mothers occupation				
Housewife	246(64.9%)	23(47.9%)	1	
Government employee	39(10.3%)	7(14.6%)	.521(.209,1.295)	
Private organization	60(15.8%)	12(25.0%)	.467(.220,.992) *	
Merchant	17(4.3%)	3(6.3%)	.530(.144,1.943)	
Daily laborer	17(4.5%)	3(6.3%)	.530(.144,1.943)	
Parity				
Para-I	132(34.8%)	25(52.1%)	1	
Para II	130(34.3%)	15(31.3%)	1.64 (.828,3.2541.65	
Para III	74(19.5%)	3(6.3%)	4.672(1.364,15.998) *	
Multi para	43(11.3%	5(10.4%)	1.629 (.587,4.517)	
Get ANC serves				
Yes	368(97.1%)	40(83.3%)	6.691(2.543,17.605) *	5.241(1.797,15.286)*
No	11(2.9%)	8(16.7%)	1	
Did get counselling about colostrum during ANC follow up?				
No	206(54.4%)	37(77.1%)	1	
Yes	173(45.6%)	11(22.9%)	0.313 (.152,.647) *	
Where did you give birth?	138 (36.4%)	21 (43.8%)	4.929 (1.030,23.590) *	
Hospital	226(59.6%)	22(45.8%)	7.705(1.620,36.650) *	
Health center	11(2.9%)	2(4.2%)	4.125 (.493,34.499)	
Private clinic	4(1.1%)	3(6.3%)	1	
Home				
Admitted any illness during pregnancy				
Yes	14(3.7%)	5(10.4%)	1	
No	365(96.3%)	43(89.6%)	3.032(1.041,8.828) *	
Did you hear about Colostrum				
Yes	260(68.6%)	16(33.3%)	4.370 2.308,8.272) *	
No	119(31.4%)	32(66.7%)	1	
From where you got information				
Media	8(2.1)	2(4.2%)	1.067 (.216,5.272)	
Health professional	172(45.4%)	10(20.8%)	4.587 (2.172,9.684) *	
Relatives/friends	79(20.8%)	4(8.3%)	5.267(1.793,15.470) *	
None	120(31.7%)	32(66.7%)	1	
Mothers perception				
Poor	25(6.6%)	18(37.5%)	1	1
Good	354(93.4%)	30(62.5%)	8.496(4.172,17.304)*	7.433(3.021,18.289)*

1=reference *P=value<0.05 N=number %= percent

6. DISCUSSION

This study assessed colostrum feeding practices and its associated factors among postnatal mothers in health facilities Addis Ababa.

The prevalence of colostrum feeding practice in Addis Ababa was (88.8%). This finding is higher when compared with a study done by Ethiopia Demographic and Health Survey (EMDHS)(35)The finding is also higher than studies done in different countries; in Nepal, (80%)(36) Bangladesh (63%)(18) India (61%)(19).this is due to Indian mothers' low educational awareness about the use of colostrum for baby.

In contrast, the result of this study is less than a study done in Tanzania which shows that (93%)(21) Of the urban mothers gave colostrum the newborn babies. As the research indicates, the reason for this was linked to the Tanzanian mothers' awareness about the importance of colostrum.

Similarly, this finding was higher when compared to study done in Mekele (80.5%) and Debre tabor (74.4%)(22), Debre Markos(77.5%)(29).This study also higher than Dembecha (76.25)(32) This may be due to the study area conducted in rural areas when compared with this study. This encouraging result could possibly be due to a higher proportion of mothers who had a history of institutional delivery and who got breastfeeding counseling after delivery.

In this study, two factors were identified as predictors for colostrum feeding: getting ANC follow up and maternal perception.

In this study (97.1%) of mothers who had ANC visiting fed colostrum than those who had not ANC vesting this result greater than study done in Mizan Aman (83%)(27)And this result comparable to the study conducted in Axum town (93.7%)(37), West Gogam (96.1%)(29).This result may be the same health policy in the country. This result also greater than Bangladesh (69.4%) this might be due to socio-cultural differences among countries.

Another related factor for colostrum feeding in this study was mothers' perception,(89.9%) of mothers had good perception towards colostrum feeding and mothers who had good perception nine times feed colostrum (AOR=8.71,95%ci 3.439,22.074).This result greater than study

conduct in Nepal (69%)(36), India (64.3%)(20) This might be the socio-cultural difference. A less likely study done in Egypt (85.5%)(25) May be a different study design. This study also greater than the Gojjam region (78.84%)(29), Mizan Tapi (69.4%)(27), Mekele (67.2%). This result same likely with Denbecha (89.4%)(32).

7. STRENGTH AND LIMITATION

7.1. Strength

The research covers all sub-cities of Addis Ababa, which increase its representativeness.

The result of this research will help health care workers to educate neonates' mothers about the importance of colostrum feeding.

7.2. Limitation

The limitation of this study is related to using only quantitative study. Using mixed methods, quantitative and qualitative methods, might have helped to include the narrative report of respondents' beliefs and perceptions about colostrum feeding.

8. CONCLUSIONAND RECOMMENDATIONS.

8.1. Conclusion

The prevalence of colostrum feeding practice was 88.8%. (95 %CI 85.5-91.6), which was higher than the country recommendation level. Maternal perception, and ANC visiting, where associated factors for the chance of colostrum feeding practice.

8.2. Recommendations

- The researcher recommends that ANC follow-up clinics give health education to neonate mothers about the importance of colostrum feeding.
- Ministry of health give more emphasis on increasing promotion of breastfeeding practice especially benefits of colostrum feeding.
- Anti-natal and post-natal care visits are one of the key intervention areas of counseling to feeding colostrum so the health workers should focus and promote benefits of colostrum feeding during anti-natal and post-natal visits.

- Mass medias also take a step-in order to educate the families and the mothers about colostrum.
- Furthermore, research is needed to identify if economic factor could be a reason for colostrum feeding practices.

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ANNEX

I: English Version Participant information sheet

My name is ---------- (interviewer).I am working with a graduate student researcher from Addis Ababa University, College of health sciences, department of nursing, and midwifery. This is a study to be conducted with the objective of assessing colostrum feeding practice and its associated factors among postnatal mothers. You are one of the women who have been selected to participate in this study. The purpose of this study is to assess post-natal mothers towards colostrum feeding practice and associated factors. The result of this study may be used as information for developing strategies to promote colostrum practice feeding. It will make beneficial those post-natal mothers are participating in this research in order to change their practice. The questionnaire will take around 15-20 minutes. Your participation is entirely voluntary, and you can quit the study any time you want. I would like to assure you that privacy will be strictly be maintained throughout the interview. There is no need to put your name. No individual response will be reported. It is your full right to participate or refuse in the study. But your honest participation will have a great contribution. So please take a few minutes to answer this question.

Do you wish to participate in the study?

II: Informed consent

Addis Ababa University

College of Health Sciences Department of Nursing and Midwifery

I herewith declare that:

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

Interviewer signature

_____

Date _____.

Persons to contact: If you have any question to ask, please contact

Name Aster Teketel Tel: +251-911983591

Email = asterteketel2019@gmail.com

III: Questionnaire on assessment of colostrum feeding practices and associated factors administered to mothers

Questionnaire Code No_____ Name of the interviewer_____ Code No_____ Date of interview...../…../…… Start time_____ End time_____ Date of delivery: _____/_____/_____ Time: _____:____am/pm)

(Complete the questionnaire by writing the responses in the spaces provided or placing the appropriate number in the last column.)

PART I. SOCIO-DEMOGRAPHIC AND ECONOMIC CHARACTERISTICS

	Question for the respondent	Response and code	Skip
101	What is the sex of your infant?	1. Male 2. Female	
102	How old is your infant?	_____days/weeks	
103	How old are you?	_____-year	
104	What is your level of education?	1. Can't read and write 2. Primary school (1-8) 3. Grade 9 -12 4. Certificate/Diploma 5. Degree and above	
105	What is your occupation	1. Housewife 2. Government employed 3. Private organization employed 4. Merchant 5. Daily laborer	
106	Marital status	1. Single 2. Married 3. Widowed 4. Divorced 5. Separated	
107	If you are married what is your	1. Can't read and write	

	husband's level of education?	2. Primary school (1-8) 3. Grade 9 -12 4. Certificate/Diploma 5. Degree and above	
108	If you are married what is your husband's occupation?	1. Government employed 2. Private organization employed 3. Merchant 4. Daily laborer 5. Other (specify)	
109	How much is your household average monthly income	1.0-500 2.501-1000 3.1001-1500 4.above1500 5.Other specified	

PART II QUESTIONS TO ASSESS' OBSTETRICS AND MATERNAL MEDICAL FACTORS

201	How many children do you have currently?		
202	What is the birth order of this infant?	1. First 2. Second 3. Third 4. Fourth and above	
203	Did you get ANC service during your pregnancy?	1.yes 2.no	
204	If you get ANC service, from where did you get the service?	1. Hospital 2. Health center 3. Private clinic	
205	How often did you get ANC service	1.Once	

		2. Two times 3 Three times 4. Four times and above	
206	Did you receive counseling concerning colostrum feeding during your ANC visits?	1.Yes 2.No	
207	Where did you give birth of this infant?	1. Hospital 2. Health center 3. Private clinic 4. Home	
208	What was your mode of delivery	1. Normal/vaginal 2. C/S 3.forceps 4.vacume assisted	
209	Is the baby term/pre-term delivery?	1.yes 2.No	
210	Have you been admitted to hospital during pregnancy time?	1yes 2.No	
211	What was the reason for the illness?	_____	

PART III SOURCE OF INFORMATION COLOSTRUM FEEDING AND KNOWLEDGE

301	Have you ever heard about colostrum feeding**?**	1.yes 2.No	
302	If the answer for question 301 is yes, from where did you get it mainly?	1. radio 2. television 3. health professional 5. volunteer community	

		health workers 6.relatives/neighbors/friends	

PART IV CULTURAL AND TRANITONAL BELIEFS OF COLOSTRUM FEEDING

No	Statement	0 Strongly disagree	1 Disagree	2 Agree	3 Strongly agree
401	Is colostrum breast milk				
402	Colostrum is the best milk for the baby				
403	It is a thick, sticky, and yellowish in color				
404	It is first milk given to the baby				
405	It protects diseases and high in protein				
406	Colostrum makes the baby sick				
407	Baby unable to suck colostrum				
408	Colostrum must be squeeze out and throw away				
409	The baby did not like colostrum breast milk				
410	Colostrum breast milk causes diarrhea				
411	It is difficult to digest and needs to be discarded				
412	Colostrum is forbidden in our culture				
413	My family says it should not be given				
414	I feed colostrum for my child				

	since it is useful for my baby health				
415	Colostrum breast milk is dirty, looks pus				

SECTION V COLOSTRUM FEEDING PRACTICE

501	Did you feed colostrum for your child after birth?	1.Yes 2.No	
502	When do you start feeding colostrum breast milk after delivery?	1. within an hour 2. After4hour 3. After white milk appear 4. after discarded first milk	
503	Did you feed your last child the first milk (colostrum)?	1.Yes 2.No	
504	If no What was your reason forever feed colostrum your last baby?	1.No have colostrum 2.Mother sickness 3.Child sickness 4.Breast disease 5.Other, specify_____	

IV፡ የተሳታፊዎች መረጃ መስጫ ቅጽ በአማርኛ

እንደምን አደሩ/ዋሉ ይባላል በአዲስ አበባ ዩኒቨርስቲ ጤና ሳይንስ ኮሌጅ ነርሲንግና ሚድዋይፈሪ ትምህርት ክፍል በጨቅላ ህጻናት ጤና ተመራቂ ተማሪ ጋር አብሬ የምሰራ ነኝ ።

የጥናቱም አላማ እንገር ከማጥባት ትግበራ እና ተዛማጅ ችግሮች ጋር ተያይዞ ከአራስ እናቶች ወይም ከወለዱ እስከ 45 ቀናት ከሆናቸው እናቶች ላይ የሚደረግ ጥናት ሲሆን እርሶም የዚህ ጥናት ተካፋይ እንዲሆኑ መርጠርጉዎታል ።የጥናቱ ውጤት እርስዎ ከሚሰጡኝ መረጃ ተነስተን የእናቶችን የአጠባብ ልምዳቸውን ለማሻሻልና ለማጎልበት ይረዳል ።

ጥያቄዎቹ 20-30 ደቂቃ ይወስዳሉ በመሆኑም የሚፈልጉትን ጥያቄ መመለስ ወይም አለመመለስ ይችላሉ። እርስዎ የሚሰጡን መረጃ ከአጥኚውና ቃለመጠየቅ ከሚያደርግዎ ሰው በስተቀር ለማንኛውም ሰው ተላልፎ አይሰጥም።

በጥናቱ ላይመካፈልና አለመካፈል መብትዎ መሆኑን እየገለፅን፤ ነገርግን የእርሶ በጎ ምላሽ ለጥናቱ ትልቅ አስተዋፅኦ እንዳለው ልገልጽልዎት እወዳለሁ ። ስለዚህ እባክዎትን ጊዜ ይውሰዱና ጥያቄዎችን መልስሉኝ?

በዚህ ጥናት ላይ ለመካፈልፍ ቃደኛነዎት?

V፡ በአዲስ አበባ ዩንቨርሲቲ ጤና ሳይንስ ኮሌጅ ነርሲግና ሚድ ዋይፈሪ ዲፓርትመንት

እኔ ስሜ ከዚህ በታች የተገለፀው የዚህ ጥናት አላማ የተብራራልኝ ሲሆን የጥናቱንም አላማ የተረዳሁ ሲሆን በማንኛውም ጊዜ ከጥናቱ እራሴን የማግለል መብት እንዳለኝ አውቄአለሁ። ስለሆንም የምሰጠው መረጃ እስከተጠበቀ ድረስ በዚህ ጥናት ለመሳተፍተ ስማምቻለሁ። በዚሁ ጥናት ለመሳተፍ ስምምነቴን ስገልፅ ለምጠየቀው ጥያቄ በእውነት ላይ የተመሰረተ መልስ ለመስጠት የተስማማሁ መሆኔን አረጋግጣለሁ።

የተሳታፊ ፊርማ ----------

ቀን ----------

የጠያቂው ፊርማ ----------

ቀን ----------

ማንኛውንም ጥያቄ በሚከተለው አድራሻ መጠየቅ ይችላሉ

አስቴር ተከተል

ስ.ቁ. 0911983591

ኢሜል asterteketel2019@gmail.com

VI: እንገር የማጥባት ትግበራና እናቶች እንገር እንዳያጠቡ የማያደርጉዋቸውን ችግሮችን ማወቅ ቃለ መጠይቅ

የጥያቄው መለያ ቁጥር ---------- የጠያቂው ስም ---------- መለያ ቁጥር-----

ቃለ መጠይቅ የተደረገበት ቀን ---------- የተጀመረበት ሰዓት ---------- ያለቀበትሰ ዓት----

የውልደት ቀን ---------- ሰዓት ----------

(በተሰጠው ክፍት ቦታ የቃለ መጠይቁን ምላሽ ይፃፉ ወይም ትክክለኛውን ቁጥር ይሙሉ)

ክፍልአንድ፡ ስነ ህዝብ፣ ማህበራዊ እና ኢኮኖሚያዊ ሁኔታ

	ጥያቄ	መልስና መለያ ቁጥር	
101	የልጆዎት ፆታ ምንድን ነው›	1.ወንድ 2. ሴት	
102	የልጁ እድሜ ስንት ሳምንት ነው›	---------- ቀን/ሳምንት	
103	ስንት አመትዎ ነው›	----------	
104	የትምህርት ደረጃ	1. ማንበብና መፃፍ የማይችሉ 2. አንደኛ ደረጃ (1-8) 3. ሁለተኛ ደረጃ 9-12) 4. ሰርተፊኬት/ዲፕሎማ 5. ዲግሪ እና ከዚያ በላይ	
105	የስራ ሁኔታ	1. የቤት እመቤት 2. የመንግስት ሰራተኛ 3. የግል ድርጅት 4. ነጋዴ 5. የቀን ሰራተኛ	
106	የጋብቻ ሁኔታ	1. ያላገባ 2. ያገባ 3. ባሏ የሞተ 4. የተፋታች 5. የተላያየች	
107	የባለቤትዎ የትምህርት ደረጃ (ያገባች ከሆነ)	1. ማንበብና መፃፍ የማይችሉ 2. አንደኛ ደረጃ (1-8) 3. ሁለተኛ ደረጃ 9-12) 4. ሰርተፊኬት/ዲፕሎማ 5. ዲግሪ እና ከዚያ በላይ	
108	የባለቤትዎ የስራ ሁኔታ	1. የመንግስት ሰራተኛ 2. የግል ድርጅት 3. ነጋዴ 4. የቀን ሰራተኛ 5. ሌላ (ካለይጠቀስ)	

109	በአማካይ ወርሃዊ ገቢዎ ምን ያህል ነው	1. 0-500 2. 501 - 1000 3. 1001 - 1500 4. 1500 ብር በላይ 5. ሌላ (ካለ ይጠቀስ)	

ክፍልሁለት ፡ የአራስ እናቶች የስነተዋልዶ ና የጤና ሁኔታ

201		ስንት ልጆች አሉዎት ?		
202		ይህ ስንተኛ ልጅዎ ነው?	1. አንደኛ 2. ሁለተኛ 3.ሶሶስተኛ 4. አራተኛናከዚያበላይ	
203		ይህንን ህጻን እርጉዝ ሆነው ሳለ አስፈላጊው ክትትል ተደርግዎለታል ?	1. አዎ 2. አልተደረገልኝም	
204		የተራቁጥር 203 መልስአዎከሆነአስፈላጊውክትትልየ ተደረገልዎትየትቦታነው?	1. ሆስፒታል 2. ጤና ጣቢያ 3. የግል ክሊንክ	
205		ምን ያህል ጊዜ የእርግዝና ክትትል አድርገዋል?	1. እነድጊዜ 2.ሁለትጊዜ 3.ሶስትጊዜ 4.አራት ጊዜና ከዚያ በላይ	
206		የእርግዝና ክትትል በሚያደርጉ ወቅት ስለ እንገር ወተት ጥቅም ምክር አግኝተዋል?	1.አዎ 2. አልተሰጠኝም	
207		ይህንን ህጻን የት ቦታ ነው የወለዱት?	1.ሆስፒታል 2.ጤናጣቢያ 3.የግልክሊንክ 4.ቤት	
208		በምን አይነት ሁኔታ ነው የወለዱት?	1.በማህፀን 2.በኦፐራሲዮን 3.በመሳሪያተጎትቶ	
209		ይህ ህፃን ወሩ ሞልቶ ወይስ ሳይደርስ ነው የተወለደው?	1.አዎ 2.አይደለም	
210		በእርግዝናዎ ወቅት ሆስፒታል ተኝተው ያውቃሉ?	1.አዎ 2.አልተኛሁም	
211		በተራ ቁጥር 210 ምላሽ አዎ ከሆነ የታመሙት በምን ምክንያት ነበር?		

ክፍልሶስት ፡ ስለ እንገር ማጥባት መረጃና እውቀትን አስመልክቶ የተዘጋጀ

301	ስለ እንገር (የመጀመሪያ ወተት) ሰምተው ያውቃሉ?	1.አዎ 2.አልሰማሁም	
302	በተራ ቁጥር 301 ምላሽ አዎ ከሆነ ከማንና ከየት ሰሙ?	----------	

ክፍልአራት ፡ ስለ እንገር ወተት ማጥባት ባህላዊና ልማዳዊ አስተሳሰብ

		0	1	2	3
ተ.ቁ	**ሃሳብ**	ፈፅሞ አልስማማም	አልስማማም	እስማማለሁ	በጣም እስማማለሁ
401	እንገር የጡት ወተት ነው				
402	እንገር የጡት ወተት ለህጻናት ጠቃሚ ነው				
403	በጣም ጠቃሚና ቢጫ ቀለም ነው ያለው				
404	በመጀመሪያ ለህፃናት መሰጠት ያለበት ነው				
405	ከበሽታ የሚከላከልና ለህጻኑ ገንቢ ምግብ ነው				
406	የእንገር ወተት ህፃኑን ያሳምመዋል				
407	ህፃኑ እንገር መጥባ ትአይችልም				
408	እንገር ታልቦ መደፋት አለበት				
409	ህፃናት እንገር ወተት አይወዱም				
410	እንገር ወተት ህፃኑን ለተቅማጥ ይዳርጋል				
411	ለህጻኑ አንጀት ጥሩ አይደለም				

412	እንገር ወተት በባህላችን የተከለከለ ነው				
413	ቤተሰባችን የእንገር ወተት እንዳይሰጥ ይከለክላሉ				
414	እንገር ወተት ለልጄ አጠባዋለሁ ምክንያቱም በጣም ስለሚጠቅመው				
415	እንገር ወትት ቆሻሻና መግል የሚመስል ነው				

ክፍል አምስት ፡ የእንገር ወተት ማጥባት ልምምድ

501	ልጅዎ ከተወለደ በኋላ እንገር ወተት አጥብተውታል?	1.አዎ 2.አላጠባሁም	
502	የእንገር ወተት ማጥባት መቼ ጀመሩ?	1.በአንድ ሰዓት ውስጥ 2.ከ 4 ሰዓትበኋላ 3.ነጩ ወተት ከመጣ በኋላ 4.የመጀመሪያውን ወተት ካስወገድኩት በኋላ	
503	የመጨረሻ ልጅዎን እንገር ወተት አጥብተውታል?	1.አዎ 2.አላጠባሁም	
504	በተራ ቁጥር 503 መልስ አላጠባሁም ከሆነ ያላጠቡበትን ምክንያት ተናገሩ?		