

WOLKITE UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH



COLOSTRUM DISCARDING PRACTICE AND ASSOCIATED FACTORS AMONG
MOTHERS OF CHILDREN AGED LESS THAN 1 YEAR IN WEST AZERNET
BERBERE DISTRICT, SILTE ZONE, SNNP ETHIOPIA, 2021

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This is to certify that the thesis entitled “COLOSTRUM DISCARDING PRACTICE AND ASSOCIATED FACTORS AMONG MOTHERS OF CHILDREN AGED LESS THAN 1 YEAR IN WEST AZERNET BERBERE WOREDA, SILTE ZONE, SNNP ETHIOPIA, 2021,” submitted in partial fulfillment of the requirements for the degree of **Master's** with specialization public health in human nutrition, the Graduate Program of the **Department/School of** public health, and has been carried out by **Abdlfeta Mohammed** Id. No 015/2012, under my/our supervision. Therefore I/we recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the department.

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Abbreviations and Acronyms

ANC	Antenatal care
AOR	Adjusted odd ratio
OR	odd ratio
CI	Confidence interval
CHIS	community health information system
EDHS	Ethiopian demographic health survey
FGDs	focused group discussions
IYCF	infant young and child feeding
PNC	Postnatal care
SNNP	Southern Nation Nationalities and People
SPSS	Statistical package for social sciences
UNICEF	United Nation International Children Fund
WHO	World Health Organization

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Abstract

Background: Globally Colostrum discarding practice had been reported across different countries, in varied places with trends. A wide range of harmful new born feeding practices were documented in Ethiopia even after the implementation of infant and young child feeding guideline. Even though few studies conducted on Colostrum feeding in Ethiopia; majority of previous research works used solely quantitative approach and there was no sufficient information in our study area. Therefore, the objective of this study was to assess the prevalence of colostrum discarding practices and associated factors among mothers of children aged less than 1 year in West azernet berbere woreda. **Methods:** A community based cross- sectional study was conducted in west azernet berbere woreda from March 26 up to April 30/2021. Total samples of 434 study subjects were involved in the study. The quantitative data were collected by using pretested structured questionnaire and qualitative data were collected by using Focused Group Discussions. The quantitative data were coded and entered into epi-Data version 3.1 and exported to SPSS version 21 for analysis. Descriptive analysis like frequency and mean were performed. Binary and multiple logistic regression analysis were employed to identify associated factors. Variables with p-value <0.05 with 95% confidence interval identified statistically significant. **Results:** The prevalence of colostrum discarding practices in this study was 64(14.75%). The mothers who didn't attend ANC services during pregnancy of index infant [AOR=19.024, 95% CI: (2.007-188.313)], home delivery[AOR= 5.599, 95% CI: (1.042-30.084)], breast feeding initiated after one day of birth[AOR= 58.187, 95% CI; (2.041-1658.987)] , poor knowledge [AOR= 15.016, 95% CI; (3.174-71.039)] and negative attitude toward colostrum feeding[AOR= 59.418, 95% CI; (8.571-411.894)] were positively associated factors with colostrum discarding practices. **Conclusion;** Colostrum discarding practice among mothers of children aged less than 12 months in west azernet berbere woreda was found to be high when compared to WHO recommendation. Lack of ANC follow up, home delivery of index child, delayed initiation of breast feeding, poor knowledge on colostrum- feeding practices and negative attitude towards colostrum- feeding practices were significant factors associated with colostrum discarding practices of mothers.

Key words; Colostrum discarding practice, silte zone, Ethiopia.

1. Introduction

1.1 Background

Breastfeeding is the biological norm for all mammals, including humans. Breastfeeding is critical for achieving global goals on nutrition, health and survival, economic growth and environmental sustainability(1). Globally, a minority of infants and children meet these recommendations: only 44% of infants initiate breastfeeding within the first hour after birth and 40% of all infants less than 6 months of age are exclusively breastfed (1).

Colostrum is the primary milk produced by the mammary glands in late pregnancy, the first few hours after delivery and in the first few days, It is thick, sticky or gluey, and clear to yellowish in color, and contains high amount of proteins, vitamin A and maternal antibodies, cytokines, growth factors, carbohydrates, and sodium chloride; however, it has fewer amounts of lipids and potassium, compared to normal milk (2, 3). Colostrum is recommended by WHO as the perfect food for the newborn and feeding should be initiated at the earliest after birth. Colostrum establishes important bacteria in the baby's gut. It also acts as 'paint', coating the infant's gastrointestinal tract. Therefore, colostrum provides natural immunity (baby's first immunization) against many bacteria and virus(4).As colostrum is an essential component of breast milk which has a significant effect on the reduction of immediate and future infant morbidity and mortality, as well as satisfactory growth and development, maturation and repair of several tissues of infants both in developed and developing countries. Antibodies that are found in colostrum help to fight against several disease-causing agents, bacterial infections, different cancers, allergies and autoimmune diseases. Furthermore, it is important in reducing the major contributors to neonatal and infant death, such as malnutrition, diarrhea and, acute respiratory infection (2, 4). Despite the recommendation of the World Health Organization (WHO) that early initiation of colostrum feeding and these advantages, colostrum is considered heavy, thick, dirty, toxic and harmful to children's health and therefore in some societies, a portion of colostrum is discarded, Because of these reasons many infants excluded from colostrum feeding in the early days of their life(4, 5).

Colostrum discarding includes: delayed initiation of breast-feeding; pumping and discarding colostrum; and/or wet nursing(6).

Globally Colostrum avoidance has been reported across different countries, in varied places with trends(4). Colostrum avoidance is a common practice in Ethiopia (2).According to Ethiopian demographic health survey (EDHS) 2019 report about 6% of infants under age 6 months are not breastfed at all and are exclusively breastfed practice in Ethiopia was estimated to be 59%(7).Contrary to the WHO recommendation that children under age 6 months should be exclusively breastfed, 14% of infants 0-5 months also consume plain water, 1% of them consume non-milk liquids, 8% consume other milk, and 13% consume complementary foods in addition to breast milk(7).

Different factors were noted to affect colostrum avoidance practice; it was mainly related to maternal characteristics. Home delivery, failure to attend ANC, lack of post-natal care, late breastfeeding initiation, and poor knowledge on optimal breast feeding and bad perceptions toward colostrum feeding were factors (8).

1.2 Statement of the problem

Globally, neonatal death has the lion share of (45%) among all under-five deaths in 2018(9). Similarly, every day, about 4,000 infants and young children die due to Colostrum avoidance and introduction of prelacteal feeds, worldwide(10). As a result, many infants suffer from insufficient breast milk, lactation failure and insufficient weight gain. Likewise, 45% of neonatal infectious deaths, 30% of diarrheal deaths and 18% of acute respiratory deaths among under-five children associated with inappropriate feeding practices (8-10).

In 2019, globally, around 5.6 million children deaths occurred among children under 5 years of age, of those, 2.65 million (47%) died in the first 30 days of life, 1.56 million (28 per cent) at age 1–11 months, and 1.3 million (25 per cent) at age 1–4 years. Approximately 7000 newborns died every day, most of which occurred within first 7 days after birth, with about 1 million dying on the first day and close to 1 million dying within the next 6 days in 2016. Most of the neonates died in Southern Asia (39%), followed by sub-Saharan Africa (38%)(11). Half of all newborn deaths occurred in the following five countries: India, Pakistan, Nigeria, the Democratic Republic of the Congo and Ethiopia(11). Globally, more than 4000 infants and young children die because they do not get colostrum within the first hour after birth, Most of the infants are given liquids other than their mother's milk in the first few days after birth, The rate of breastfeeding varies in communities from almost 70% to a low of 13% as this is culturally influenced (12).

Various factors can effectively reduce neonatal mortality to greater levels; early initiation of breastfeeding is one of them, early initiation of Colostrum feeding and exclusive breastfeeding for the first 6 months of life prevents around 20% newborn deaths and 13% under-five deaths, It can also reduce mortality due to neonatal infections (sepsis, pneumonia, tetanus, and diarrhea) which contribute 36% in neonatal deaths from all causes, and preterm birth an additional 27% (13). Every day, as many as 4,000 infants and young children die worldwide because they do not get colostrums within the first hour after birth UNICEF global databases in 2016 indicates the rates of early initiation of colostrum feeding are extremely low. It was about 17% in Eastern Europe and Central

Asian countries and 33% in Asia-Pacific. About 50% are in Latin America, the Caribbean, East and North Africa(14).

Ethiopia has one of the highest infant mortality rates in the world and inappropriate neonatal feeding is primary factor(12, 13). While Ethiopia has a strong experience in early initiation of colostrum feeding (73.3%), it does not always comply with WHO / UNICEF recommendations (4). WHO and UNICEF recommend that children should initiate colostrum within the first hour of birth; however in Ethiopia about 27% of infant had not started colostrum within one hour of birth(15). At the national level, one in four infants (25.29 per cent) received pre-lacteal feed during the first three days of life(16) and colostrum avoidance practices ranged from 6.3% up to 67.2% in Tigray Aksum and Meshenti, north west Ethiopia(9). As a result, 18% of infant deaths could be due to suboptimal breastfeeding practices (17). Since 2004, Ethiopia has adapted the Guideline for Infant and Young Child Feeding Practices (IYCF)(18) and the 2013 National Nutrition Policy to promote optimal breastfeeding practices through multi-sect oral integration (12). Studies conducted in Ethiopia have shown that there are multi-factorial determinants of early newborn feeding mal-practices such as: socio-demographic factors, home and caesarean section delivery, low level of breastfeeding information, lack of postnatal care and breast-feeding advice (19). A wide range of harmful new born feeding practices are documented in Ethiopia even after the implementation of infant and young child feeding guideline(20). In cognizance of the severity as well as the wide spreading practices of inappropriate breastfeeding, the Government of Ethiopia has been devising different strategies including generating of health extension program, and working in collaboration with Non-Governmental Organizations (NGOs) in the areas of IYCF(21, 22). Even though studies conducted on Colostrum feeding in Ethiopia; majority of previous research works use solely quantitative approach but individual's perception and community rituals towards colostrum are important factors which cannot be addressed in quantitative approach and there was no sufficient information in our study area. Therefore, this study was aimed to fill these gaps. This study was also needed because colostrum feeding play a vital role in preventing under five nutritional problem as well as neonatal death in relation to breast feeding.

1.3 Justification of the study

The finding of this study will add knowledge about the magnitude and the determinants of colostrum avoidance. The result of this study will be vital to augment interventions tailored to end childhood malnutrition related mortality and morbidity. It helps to make evidence based decision for woreda Health office and Zonal Health department, by providing relevant information for future planning and designing strategies, interventions to promote colostrum feeding and to refute colostrum discarding. The finding will also pinpoint sound recommendations on possible intervention for reducing colostrum avoidance practices in the study area. It will help health professionals, policy makers and nongovernmental organizations as a baseline data for interventions of appropriate strategies to promote and maintain improved colostrum feeding practice in the Community. The findings of this study will also provide relevant information for those who are interested in carrying out further research with this regard.

2. Literature review

2.1 Prevalence of colostrum discarding practice

Globally, colostrum discarding is practiced in many countries; According to worldwide review on colostrum feeding practices in 2016 was estimated between 15% - 65% of mothers studied in different regions of the world had not given colostrum to their babies(23). A cross sectional study was conducted among mothers of Khos tribal community in India, in 2018, 92% of children had not taken colostrum after delivery (24). In Nepal: a national study done in 2019 showed that the prevalence of colostrum discarding was 16.5% (25). A according to study conducted in Pakistan showed that 27.9% of mother avoid colostrum (26).

A according to study undertaken in rural areas of Nzega district in Tanzania in, 2015 the onset of breastfeeding by newborns was delayed for up to more than 24 hrs was 9.1% (27). In 2016 a study conducted in Cameroon shows that 11.2% mothers discard the colostrum(28). In 2018 a community based cross-sectional study done in South Sudan showed that discarding of colostrum was 43.9%(29).

In Ethiopia numerous studies were done at different division of the country concerning to colostrum discarding practices, Among them a facility based cross sectional study done in Addis Ababa Ethiopia the prevalence of colostrum discarding was 9.6%(30). In 2019 a community-based cross-sectional study conducted in Ambo Ethiopia among mothers of infants showed that the prevalence of colostrum discarding practices was 43.5%(16). In 2019 health facility based cross sectional study conducted in Harar Town the prevalence of colostrum avoidance was 8% (31). A community- based cross-sectional study carry in Bahir Dar Ethiopia 8.8% of mothers are discarded colostrum (32). In 2020 a study done in Gojjam zone Ethiopia the prevalence of colostrum discarding was 22.1% (33). where as in 2016 a community-based cross-sectional study conducted in afar regional state Ethiopia about 76.9% respondents avoided the first milk (34). The same study conducted in Somali regional state, in 2019; about 69% respondents avoided the first milk(35). In 2016 a Community-based Cross-sectional study, quantitative method supplemented by qualitative in depth interview studied at Dilla Ethiopia showed that among participated

mothers prevalence of colostrum discarding was 15.9%(36). In 2019 a study done in Wolaita Ethiopia the prevalence of colostrum avoidance was 12.6% (37).

2.2 Factors associated to colostrum discarding practice

2.2.1 Socio-demographic and economic factors

In 2019: a national study done in Nepal showed that the colostrum discarding was significantly lower in educated mothers by 14% with [AOR 1.05,95%CI (0.96–1.14)] for primary education and 10.3% [AOR 1.0495%CI(0.97–1.12)] for secondary education, and poorer household wealth was significantly associated with colostrum discarding, [AOR 1.09,95%CI (1.01–1.19(25)].A study conducted in Cameroon, in 2016 Showed that the potential factors for a colostrum avoiding were lower socioeconomic status, family monthly income less than 50,000 Cameroon money 3.9 times discard than 50,000-500,000, single women are 1.5 times more likely to practice colostrum discarding compared to Married women[AOR=1.5,95%CI (0.66-3.51)],Muslim religious followers 76% more malpractice than Christians religious followers [AOR= 0.24,95%CI(0.08-0.69)],multiparous 28% more avoided colostrum than Primipara mothers AOR=1.28,95%CI(0.58-2.84)] (28).

A cross-sectional study carried out in Bahir Dar showed that marital status, mother's occupational status, mother's educational status, father's educational status and house hold income were statistically associated with colostrum avoidance. Marital status [AOR 4.52, $p < 0.05$], maternal occupation (AOR=3.46, $p < 0.05$)were significantly associated with colostrum avoidance(32).

A study conducted in Ambo the factors such as:- completing preparatory & above schools[AOR= 0.4000,95%CI(0.139-1.147)], being house wife in occupation, being owner of the house [AOR=0.290,95%CI(0.109–0.774)] were found negative associated with colostrum discarding practice(16).

Another study performed in Debre Tabor Ethiopia mothers with non-formal educational status were discarding colostrum 3.1 times higher than those who had formal educational status [AOR=3.1, 95%CI(1.51-6.32)]. This study also indicated that rural residency was significantly associated with colostrum avoidance. Mothers from rural areas were

discarding colostrum 5.2 times higher than those who came from urban areas [AOR =5.2, 95%CI (2.60-10.40)](38).

According to a study undertaken in Mizan-Aman; mothers found in age group of 20–24 years old[AOR=0.626,95%CI(0.174,2.26)] and 25–29 years old[AOR=0.983,95%CI(0.237,4.071)] and not having home to home health education [AOR=5.4749,95%CI(2.876,10.419)] were statistically significantly associated with colostrum avoidance(4).

2.2.2. Maternal health service utilization related factors

A worldwide review in 2018, showed that the practice of colostrum discarding were associated with not succeed to attain ANC during pregnancy and delivery at home (23). In 2018 a study in India showed that the place of delivery associated with colostrum avoidance in this area where delivery at home is most prevalent (88.5%)whereas the delivery at Government Hospital is comparatively lower (7.3%) followed by 1.8% at Primary Health Centre (24).

A study in Ambo indicates that factors such as: attending ANC, counseling on importance of colostrum feeding, ANC attendance for two & above sessions, giving birth at health facilities and visit for PNC within the first two to three days are found negative associated with colostrum discarding practice. The mothers who are attending PNC within the first two to three postpartum days were 3 times (AOR 3.48, 95% CI: 1.23–9.85) less likely to not feed colostrum than mothers who didn't attend PNC services, The mothers who gave birth at home were 76.1% [AOR 0.239, 95% CI:(0.111–0.516)] more likely to discard colostrum than those mothers who gave birth at health institutions (16).

The study in Bahir Dar showed that home delivery (AOR=5.20, $p<0.05$) and delayed initiation of breastfeeding (AOR=2.79, $p=0.05$) are significantly associated with colostrum avoidance (32).

According to a study in Debre Tabor mothers who lack of counseling about breastfeeding during ANC was significantly associated with colostrum avoidance, had odds of discarding colostrum 2.6 times higher than those who were counseled about breastfeeding during ANC [AOR =2.6, 95%CI =1.32-5.47] (38).

Another study conducted in North Wollo zone showed that Mothers who initiated breastfeeding after one hour of delivery were 2 times more likely to discard colostrum than mothers who initiated breastfeeding within one hour after delivery [AOR2.03, 95%ci: 1.18-3.49]. Prelacteal feeding is positively associated with colostrum avoidance, mothers who practiced prelacteal feeding were 3.38 times more likely to throw away colostrum compared to their mothers who have not practiced prelacteal feeding [AOR=3.38,95%ci:1.83,6.24 p<0.001].This study also showed that mothers who delivered the index child at home are 2.9 times more likely to discard colostrum compared to mothers who gave birth at health institution(8).

A study in Aksum showed that a number of ANC visit, breastfeeding counseling during ANC visit, place of delivery, PNC follow up ,and mothers who have lower number of antenatal care visit are 4.45 higher to avoid their colostrum than those who had four or more ANC follow up [AOR 4.45, 95% CI (1.9, 10.5)] and mothers with lack of postnatal follow up are 2.98 times more to practice colostrum avoidance than their counterpart [AOR 2.98 (95% CI(1.22, 7)) (9).

According to study in Mizan-Aman mothers not having home to home health education, being multipara mothers and delivered through spontaneous vaginal delivery are statistically significantly associated with colostrum avoidance. The odds of colostrum avoidance among mothers who gave birth through spontaneous vaginal delivery are three times (AOR: 95% CI: 1.245, 7.750) higher than those mothers who gave birth through CS(4).

According to study in Wolaita Sodo City ANC follow up, number of ANC follow up, counseling on timely initiation of breastfeeding during ANC visit, early initiation of breastfeeding after delivery, place of delivery and birth order were statistically associated with colostrum feeding practice. Mothers delivered at health care facilities were 4.010 times more to practice colostrum feeding than their counterparts [AOR 4.010, 95% CI:(1.260-12.760)] and mothers attended by health care professionals have 3.119 times more likely to provide colostrum for their infants than those mothers assisted by non-health care workers[AOR 3.119, 95% CI:(1.263-7.706)](37).

A study in Jinka Town showed that the time of initiation of breast feeding, breast feeding counseling and place of delivery were significant factors associated with colostrum

avoidance practices. Mothers who delayed initiation of breast feeding were 9.08 times more likely to discard colostrum when compared to mothers who started breast feeding timely within one hour (AOR = 9.08, 95% CI; 4.16–19.83). Mothers who didn't get breast feeding counseling were 2.33 times more likely to discard colostrum when compared to those mother who get breast feeding counseling (AOR = 2.33, 95% CI; 1.11–4.87). Furthermore, colostrum avoidance practice were 4.55 times higher among mothers with poor knowledge on breast feeding practices when compared to their counterparts (AOR = 4.55, 95% CI; 1.95–10.63)(2).

2.2.1 Infant related factors

According to study in Mizan-Aman showed that infant birth order between 2 and 3 [AOR 2.568, 95% CI (0.696, 9.473) and having ≥ 4 numbers of children (AOR 5.197, 95% CI: 1.033, 26.141) are statistically significantly associated with colostrum avoidance(4).

A study in North Wollo zone showed that; the sex of index child was significantly associated with colostrum avoidance, mothers whose index child male were 34.8% more likely to discard colostrum than mothers whose index child is female [AOR=1.348, 95% CI:(1.81, 2.25) $p < 0.05$](34).

2.2.4, Knowledge and perception toward colostrum

According to the worldwide review in 2018 showed that the practice of colostrum discarding is associated with lack of family support, discussion of giving colostrum by traditional birth attendance, inadequate nutritional knowledge and adherence of cultural practice(23).

Another study conducted in North Wollo zone showed that Mothers that had no awareness on advantages of colostrum were 34% more likely to discard colostrum than their counterparts, [AOR 1.34, 95% CI:(0.81, 2.24)](8).

A study in Jinka showed that breast feeding counseling and knowledge on breast feeding practices are significant factors associated with colostrum avoidance practices. Mothers who didn't get breast feeding counseling were 2.33 times more likely to discard colostrum when compared to those mothers who get breast feeding counseling

[AOR 2.33, 95% CI;(1.11–4.87)]. The colostrum avoidance practice is 4.55 times higher among mothers with poor knowledge on breast feeding practices when compared to mothers with good knowledge on breast feeding practices [AOR 4.55, 95% CI;(1.95–10.63)] (2)

2.2.5 Conceptual framework

This study has used a conceptual frame work which was adapted and modified from different reviewed literatures

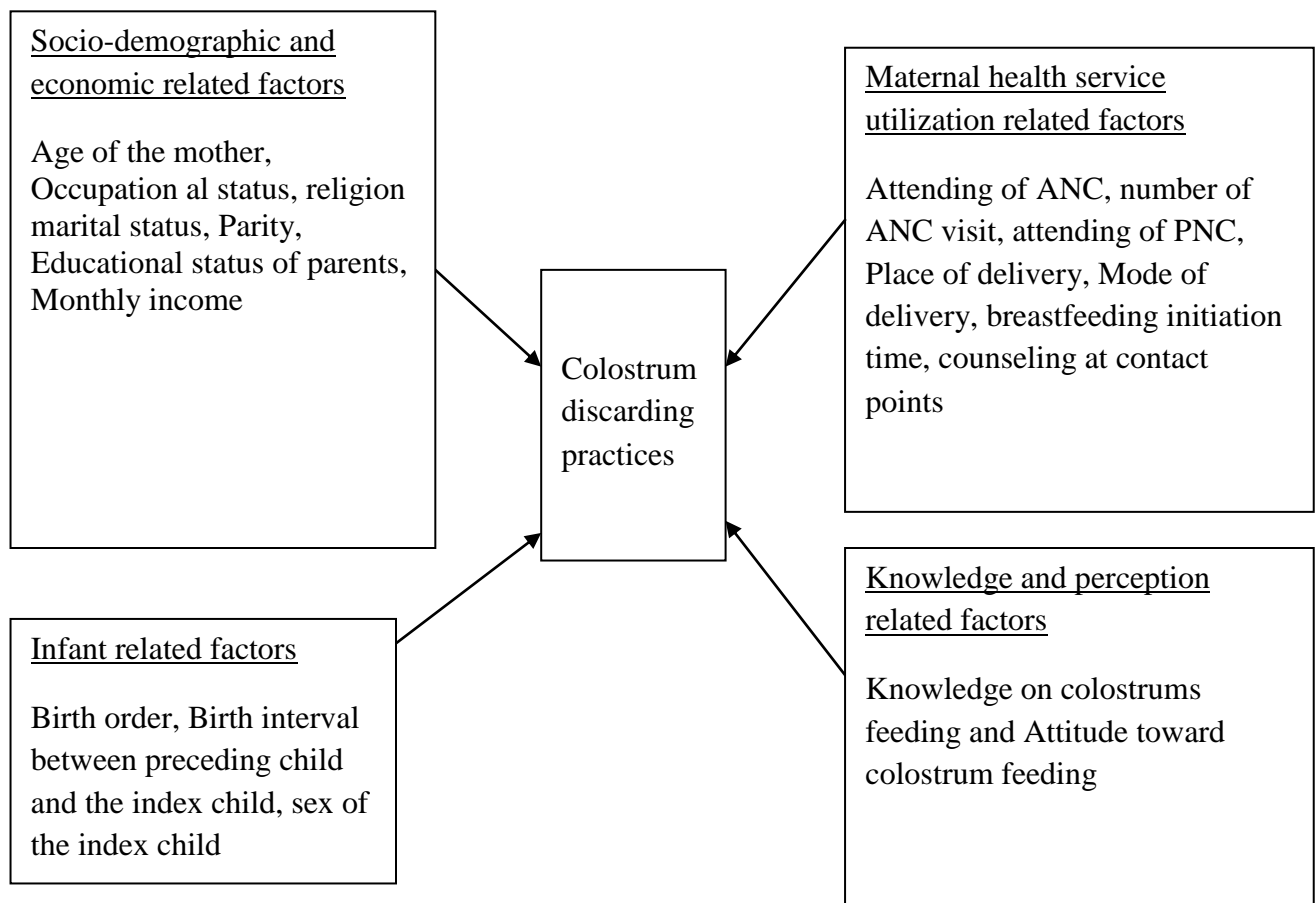


Figure 1 the conceptual frame work for Colostrum avoidance practices

3, Objectives

General objective

To assess the prevalence of colostrum discarding practices and its associated factors among mothers of children aged less than 1 year in West azernet berbere woreda, Silte Zone, Southern Ethiopia, 2021

3.2 Specific objectives

- To assess the prevalence of colostrum discarding practices among mothers of children aged less than 1 year
- To identify factors associated with colostrum discarding practices among mothers of children aged less than 1 years
- To explore perception of mothers toward colostrum feeding

4. Method and Materials

4.1 Study setting and period

This study was conducted in West azernet berbere woreda from March 26 to April 30, 2021. West azernet berbere woreda is found in silte zone, 267 Km away from Addis Ababa, the capital city of Ethiopia in south west direction, and 273 km from the capital city of SNNP region of Hawassa town. It is bordered on the South by hadiya zone, on the West and North by gurage zone and on the east by east azernet berbere woreda of silte zone. According to Woreda health office report in 2021, the Woreda has an estimated population size of 81,854 and 4011 households with in 21 kebeles (the smallest administration unit in Ethiopia). Out of total population are 40487(49.46%) males and 41367(50.54%) are females. About 19,072 are estimated to be 15-49 years' reproductive women and 2611 (3.20%) of the total population are children less than one years of age. The woreda has 4 health center and 19 health posts providing health services including maternal and child health care. The woreda also has 8 private clinic and 3 drug vendors.

4.2, Study design

A community- based cross- sectional study involving both quantitative and qualitative data collection methods was employed to determine the prevalence of colostrum discarding practice and associated factors among mothers of children aged less than 1 year in West azernet berbere woreda, Silte Zone, Ethiopia.

4.3 Population

4.3.1 Source population

All mothers of children aged less than 1 year and who live in the study area at list for six months were a source population.

4.3.2 Study population

All mothers of children aged less than 1 year in the selected kebeles of West azernet berbere woreda during data collection period.

4.3.3 Sampling unit

All randomly selected households that have children aged less than 1 year old in the West azernet berbere woreda.

4.3.4 Study unit

All randomly selected mothers who have children aged less than 1 year old in the West azernet berbere woreda.

4.4 Eligibility criteria

4.4.1 Inclusion criteria

All mothers of children aged less than 1 year old and who lived in the study area at least for 6 months were included in the study.

4.4.2 Exclusion criteria

-Mothers of infants who were mentally and physically ill to the level that unable to communicate properly with data collectors.

4.5 Sample size determination and procedure

4.5.1 Sample size determination

4.5.1.1 Sample size for the first objective

In this study, the sample size was determined by using single population proportion formula. Considering the prevalence of colostrum avoidance practices of 15.5% obtained from previous study conducted in Mizan-Aman(4), 95% certainty and maximum discrepancy of 5% between the sample size and the underlining population. The following single population formula: By using design effect of 2 and by adding 10% of non-response rate, total sample size was

$$n = (Z \alpha/2)^2 * P (1-P) / d^2 = (1.96)^2 * 0.155(1-0.155) / (0.05)^2 = 202$$

By using design effect of 2 and by adding 10% of non-response rate, total sample size was

202 *2+10%=445. Thus, the final sample size was n=445 mothers.

4.5.1.2 Sample size for the second objective

Sample size for second objective was calculated by using Epi Info version 7, and using factors associated with Colostrum avoidance practice among mothers of infants. The study found that No, of child >4, Infant birth order (2-3), mothers who did not get counseling about colostrum feeding mothers and multiparty are significantly associated with colostrum discarding practice of mothers of infants aged less than one year.

Table 1 Sample size calculation using two population proportion formula

Dependent variable	Independent variable	CI	Power	Ratio	Proportion among exposed	AOR	Sample size		Total sample size
							Unexposed	Exposed	
Colostrum discarding practice	No, of child >4	95	80	1	1.3	4.34	47	47	94
	Infant birth order(2-3)	95	80	1	41.3	0.211	45	45	90
	not counseled about colostrum feeding	95	80	1	30.7	5.48	85	85	170
	Multiparty	95	80	1	38.7	10.5	25	25	50

After these calculated sample size by using first objective and for associated factors were compared. Then the largest sample size was taken .Therefore, the maximum sample size of 445 was used for better representativeness and enough power to detect all associated factors.

Concerning about the qualitative data three focus group discussions were conducted. The one FGD from urban participants was conducted at lera health center including 8 mothers

of infants and the two FGDs from rural participants were conducted at Bilalo and Jiro health centers including 8 mothers of infants at each FGD. The purpose of FGDs was to get different perceptions toward colostrum discarding practices.

4.5.2 Sampling technique and procedure

Multi-stage sampling technique was employed to recruit study participants. In the first stage from total of 21 kebele in the woreda, ten kebeles were randomly selected by using a lottery method. The sample size was distributed to each kebele proportional to the size of their population. In the second stage, Systematic random sampling technique was employed to select study participants. The list of house-holds was obtained from family folder or community health information system (CHIS). After determining the sampling interval or Kth- value, the first household was selected using a lottery method. At the time of survey, from each household unit one eligible mother who had a child aged less than 1 year was selected. When more than one potential respondent were found in a household, one was selected randomly.

For qualitative study participants were assigned randomly for focused group discussions (FGDs). These participants were not take part on quantitative part.

The calculated sample size was proportionally allocated to ten randomly selected kebeles (Administrative unit) as follow.

$$R = n \times TE / N$$

Where:-

R = required number of respondents from each kebele.

TE=total eligible participants in each kebele.

N=sum total eligible participants of selected kebeles

n= total calculated sample size

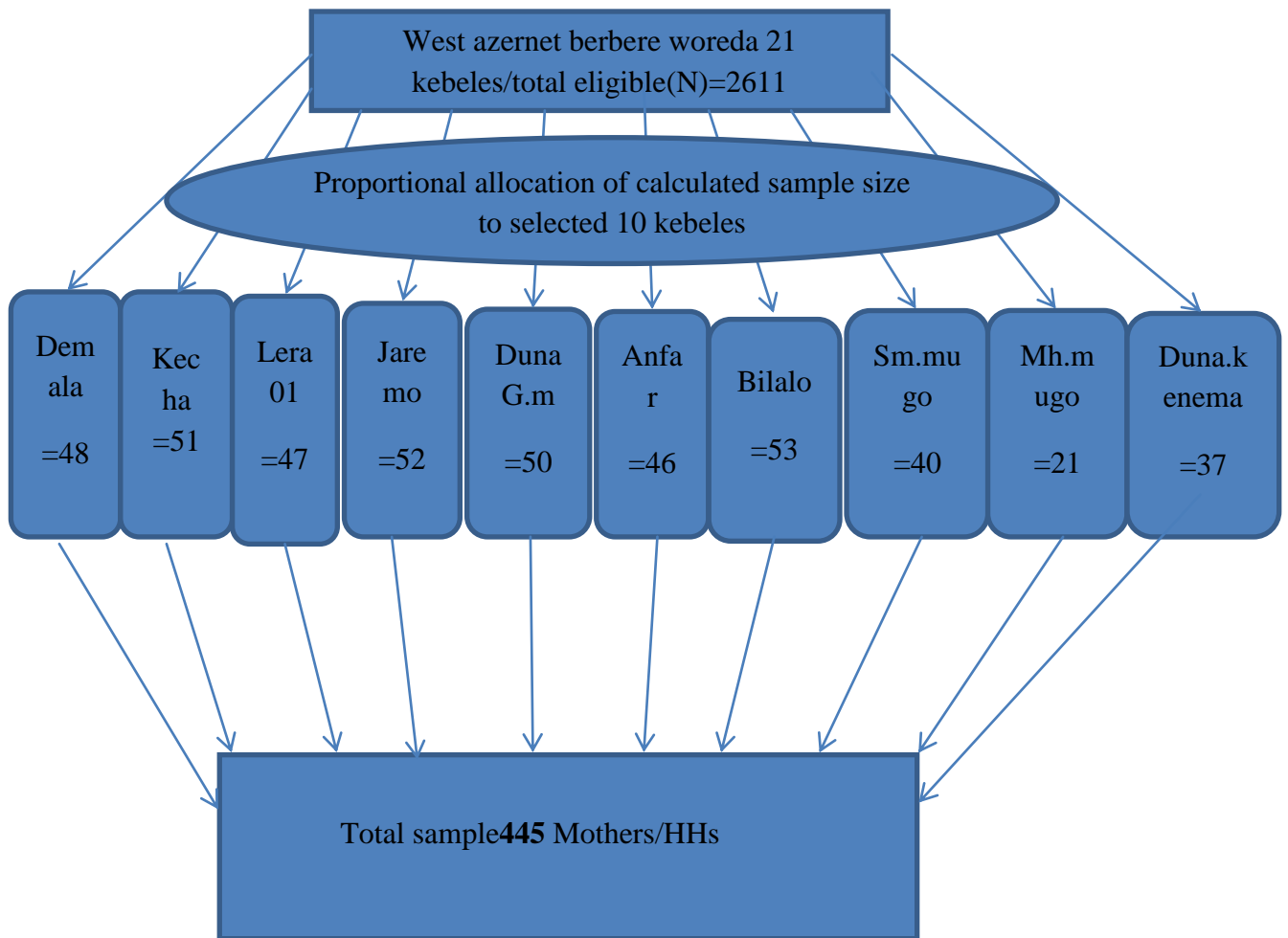


Figure 2 Schematic presentation of sampling procedure

4.6 Study variables

4.6.1 Dependent variable

Colostrum discarding practices

4.6.2 Independent variables

- Socio-demographic and economic related factors
 - sex of the index child
 - Birth order

- Birth interval between preceding child and the index child
- Age of the mother
- Marital status
- Occupational status
- Educational status of both mothers and fathers
- Monthly income
- Parity
- Religion

Maternal health service utilization related factors

- Attending of ANC
- number of ANC visit
- attending of PNC
- Place of delivery
- Mode of delivery
- breastfeeding initiation time
- Attendance of pregnant mothers' forum and
- counseling at contact points

Knowledge and perception related factors

- Knowledge on colostrums feeding
- perception toward colostrum feeding

4.7 Operational definitions

Colostrums discarding practice: is not feeding colostrum or the failure to feed infants the first, thick and yellowish milk that is produced in the first 3 days after birth (2).

Maternal colostrum feeding knowledge: There are five maternal knowledge related questions, if a mother could answer more than 60% questions correctly she was considered as having adequate knowledge and if she responds less than or equal to 60%, she was considered as having inadequate knowledge(42). The questions were adapted

from previous similar thesis reports as well as the Infant and Young Child Feeding Strategy of Ethiopia (18).

Attitude: The way that mothers of infants think towards colostrums feeding to their infants.

Maternal attitude towards colostrum feeding: There are five maternal attitude related questions, if a mother could answer more than 60% questions correctly she was considered as having positive attitude and if she responds less than or equal to 60%, she was considered as having negative attitude(42). The 5 point Likert scale questions were adapted from previous similar thesis reports as well as the Infant and Young Child Feeding Strategy of Ethiopia (18).

4.8 Data collection methods and procedure

An interviewer administered data collection technique was employed to collect data from mothers of an infant. The structured questionnaire was prepared after reviewing different literatures such as EDHS,2016 questionnaires and other published literatures on related topics(2, 4, 9, 16, 31, 32, 35, 39-41). First the questionnaires were prepared in English then it was translated to Amharic language then back to English by different individuals who were blind to the original version of the questionnaire in order to ensure its completeness and consistency. The questionnaire organized in five sections such as; socio-demographic and economic characteristics, infant related factors, maternal health service utilization, maternal knowledge and perception toward colostrums feeding, colostrum feeding practice related questions. In order to minimize bias the data was collected by four well trained degree teachers. When eligible mothers were not present at the time of data collection, the data collectors revisited their home three times to collect the data. When the woman was not available by third visit, she was reported as non-respondent.

Regarding to the qualitative data 3 focused group discussions (FGDs) at different health centers, lera, jiro, and bilalo, were conducted with mothers and care givers to explore their perception towards colostrum feeding. In each session a maximum of 8 focus group participants were involved. The discussions were facilitated and moderated by principal investigator and supervisors. In each discussion open ended questions were used as FGD

guide and probing was also used. To capture all important ideas of the discussions, audios were recorded after obtaining discussants permission. Audio records were transcribed and translated to English for thematic analysis. Quotations from the transcript were used along with my quantitative findings

4.9 Data quality management

To ensure quality of data, a two days training was provided to data collectors and supervisors. Data collection material was pretested a week before the actual data collection using 5% of the calculated sample size on similar population outside of study area (East azernet berbere woreda), to see the accuracy of responses and to estimate time needed. A necessary correction was made and the questionnaire was further modified after a pre-test. Regular supervision was made during data collection. The collected data was checked and rechecked for completeness, accuracy and clarity on daily basis by principal investigator, supervisors and data collectors throughout the data collection and analysis.

4.10 Data processing and analysis

After checking of the completeness, accuracy, and clarity of the questionnaire manually, the data was coded and entered into epi Data version 3.1 and exported to SPSS version 21 for analysis. It was analyzed by using bivariate and multivariate logistic regression to identify the effect of each explanatory variable on the outcome variables. Descriptive summary statistics was carried out to describe study participant's characteristics. Frequencies, Mean, median and proportions was computed to find out the prevalence of colostrum discarding practice and other indices and frequency table and graphs was used for descriptive result. A bivariate analysis was performed to determine the association of colostrum discarding practice and associated factors, statistical association was checked by 95% confidence interval, crude odd ratio with p value less than 0.05. The significant variables (P-values<0.2) observed in bivariate analysis was subsequently included in multivariable analysis. Model fitness was tested by using the Hosmer-Lemeshow goodness-of-fit and Omnibus tests of model coefficients tests with enter method. By using the Variance Inflation Factor (VIF) test, the Tolerance test, and values of the standard error; the explanatory variables were tested for multi-co linearity before entering

them into the multivariable model. Adjusted Odds Ratios with 95% CI and p – value of <0.05 in multivariable logistic regression models was used to declare significant association of variables with the dependent variable

For qualitative method the recordings from FGDs were transcribed into text and then translated into English. Key themes from transcript was summarized and analyzed following a thematic analysis framework. Result of qualitative was presented with triangulation to qualitative results.

4.11 Ethical considerations

Ethical clearance was obtained from the institutional ethical review board of Wolkite University and was submitted to West azernet berbere woreda health office. The health office wrote official letters for all respective kebeles. The data collectors inform the purpose of the study and collect data after obtaining verbal consent from each participant and their confidentiality to the care providers and mothers.

4.12 Dissemination of result

The result of this study will be presented on different meeting, conferences and publication. A copy of finding will be submitted to Wolkite University College of medicine and health sciences, West azernet berbere woreda health office and other concerned bodies and they can use the result of this study for planning and implementation purpose of colostrums feeding practice. Ultimately, an attempt will be made to publicize the paper in local and international journals.

5. Results

5.1. Socio-demographic and economic characteristics

Four hundred thirty four mothers having children less than 12 months of age were interviewed in this study, with a response rate of 97.5%. From the total respondents, 161 + (37.1%) were aged from 25 to 29 years old. The mean (\pm Standard deviation) age of mothers were 27.78 (\pm 4.967) years and their age ranging from 18 to 42 years. The mean (\pm Standard deviation) age of infants 5.04(\pm 2.995) months and their age were ranging from 1 to 11 months. Almost all, 413 (95.2%) and 394 (90.8%) of the respondents were Muslim religion followers and from silte ethnic group respectively. Majority 166 (38.2%) of mothers were educated primary school level. Most of the mothers 405 (93.3%) were in marital union. Majority of the respondents; 353(81.3%) were housewife in occupation. Regarding to economic status 142 (32.7%) of mothers' monthly household income was less than 1000 ETB. Around half of the infants 229(52.8%) were females. Moreover, about 180(41.5%) of infants were fourth and above-order for their family as shown in table 2.

Table 2 Socio-demographic characteristics of mothers who have infants less than 12 months, in West azernet berbere woreda, 2021

Variables	Category	Frequency (n)	Percentage (%)
sex of the index child (N=434)	Male	205	47.2
	Female	229	52.8
Birth order (N=434)	First	68	15.7
	Second	96	22.1
	Third	90	20.7
	Fourth	180	41.5
Maternal age (year) (N=434)	15-19	25	5.8
	20-24	76	17.5
	25-29	161	37.1
	=>30	172	39.6
	House wife	353	81.3

Maternal occupation (N=434)	Government employed	28	6.5
	Merchant	38	8.8
	Daily laborer	9	2.1
	Other	6	1.4
Ethnicity of mother (N=434)	Silte	394	90.8
	Gurage	13	3
	Amhara	2	0.5
	Hadiya	22	5.1
	Others	3	0.7
Religion of mother (N=434)	Muslim	413	95.2
	Orthodox Christian	9	2.1
	Protestant	11	2.5
	Others	1	0.2
Marital status (N=434)	Single	9	2.1
	Married	405	93.3
	Widowed	5	1.2
	Divorced	15	3.5
Monthly household income in ETB (N=434)	0-1000	142	32.7
	1001-2000	160	36.9
	2001-3000	93	21.4
	3001-4000	209	6.7
	=>4001	10	2.3

Footnote: N=Number

Regarding to educational status 166 (38.2%) of mothers learned primary school and followed by secondary school as shown in figure 2 below

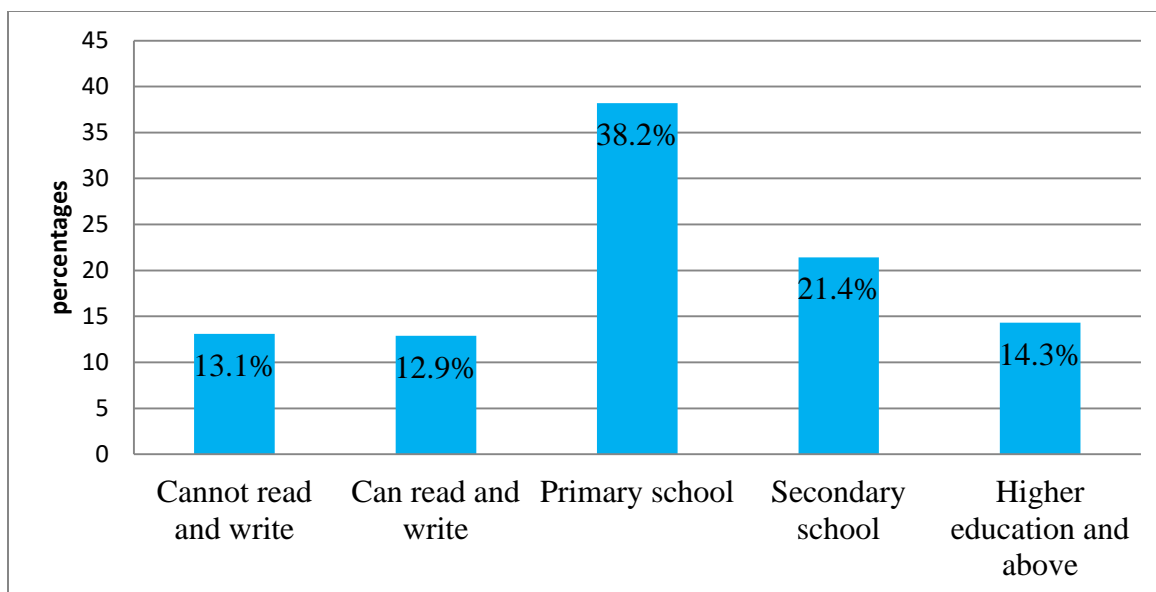


Figure 3: Educational status of mothers of children less than one years of age, in West azernet berbere woreda, 2021

As shown in table 3 below, majority of fathers of index child were farmers 179(42.2%) in occupation and attended primary education (160(37.8%).

Table 3: Distribution of paternal educational and occupational status of study participants in West azernet berbere woreda, 2021

Variables	Category	Frequency (n) (%)	Percentage
educational status of fathers of index infant	Can't read and write	54	12.8
	Can read and write	103	24.3
	Primary school	160	37.8
(N=423)	Secondary school	55	13
	Higher education and above	51	12.1
occupation status of fathers of index infant	Government employed	41	9.7
	Farmer	179	42.3
	Merchant	134	31.7

(N=423)	Daily laborer	46	10.9
	Other	23	5.4

Footnote: N=Number

5.2 Maternal health service and related characteristics

The majority of the study participants 390 (88.3%) had a history of at least one ANC service follow up at health facility throughout her pregnancy period. From mothers who had utilized ANC services 241(59.8%) had visited four and above and 221(54.8%) had not got colostrum feeding Counseling. This study also showed that majority 338 (77.9%) of study participants delivered at health facility and 418 (96.3%) of mothers gave birth through spontaneous vaginal delivery, but almost half 229 (52.8%) of study subjects had post-natal care service (Table 4).

Table 4 Health service utilization among mothers of children less than one years of age, in West azernet berbere woreda, 2021

Variables	Category	Frequency(n)	Percentage (%)
ANC	Yes	390	88.2
	No	44	11.8
Number of ANC visits	Once	32	7.9
	Two times	33	8.2
	Three times	97	24.1
	Four times and above	241	59.8
	Total	390	100
Colostrum feeding counseling during ANC visit	Yes	182	45.2
	No	221	54.8
	Total	403	100
Place of delivery	Health facility	338	77.8
	Home	96	22.1

	Total	434	100
Mode of delivery	Vaginal	418	96.3
	Caesarian Section	16	3.7
	Total	434	100
PNC service	Yes	253	58.3
	No	181	41.7
	Total	434	100

5.2.1 Maternal knowledge and Attitude toward colostrum-feeding practices

5.2.1.1 Maternal knowledge on colostrum-feeding practices

About 310 (71.4%) mothers had adequate knowledge on colostrum-feeding practices. Of the participants of the study, 231 (54.2%) responded that colostrum is yellow in color. While majority of respondents 350 (81.6%) responded that colostrum prevents diseases (Table 5).

Table 5: Knowledge of colostrum breast milk among mothers of infants in West azernet berbere woreda, 2021

Knowledge questions	Responses	Frequency (n)	Percentage (%)
Have you Ever heard about colostrum?	Yes	357	82.3
	No	77	17.7
What is the color of colostrum?	Yellow	231	53.2
	Others	203	46.8
Is colostrum important for growth and development of baby?	Yes	324	74.7
	No	110	25.3
Do you know the Contents of colostrum?	Yes	238	54.8
	No	196	45.2
Does colostrum protect your babies from	Yes	350	80.6

disease	No	84	19.4
Does colostrum use as first immunization	Yes	297	68.4
	No	137	31.6

5.2.1.2 Attitude of study participants towards colostrum feeding

According to the response of study participants to questions to assess attitude, 254 (58.5%) of them had favorable attitude toward colostrum breast milk but, One hundred eighty one mothers (41.5%) of them had negative perception toward colostrum, 126(29.1%) of them perceived colostrum breast milk as dirty and looks like pus. In contrast to this, 131(30.2%) and 145(33.4%) of them disagree with that colostrum causes diarrhea and makes the baby sick respectively. 189(43.5%) of them had not idea with that colostrum is difficult to digest and needs to be discarded (Table 6).

Table 6 Attitude of mothers of infants towards colostrum-feeding in West azernet berbere woreda, 2021

Variable Category	Strongly agree N (%)	Agree N (%)	Neutral N (%)	Disagree N (%)	Strongly disagree N (%)
Colostrum breast milk is dirty looks like pus	45(10.4%)	81(18.7%)	131(30.2%)	126(19%)	51(11.8%)
Colostrum breast milk Causes diarrhea	28(6.5%)	61(14.1%)	166(38.2%)	131(30.2%)	48(11.1%)
Colostrum makes the baby sick	23(5.3%)	42(9.7%)	187(43.1%)	145(33.4%)	37(8.5%)

Colostrum should not be given to the baby	21(4.8%)	62(14.3%)	178(41%)	123(28.3%)	50(11.5%)
Colostrum is difficult to digest and needs to be discarded.	34(7.8%)	42(9.7%)	189(43.5%)	102(23.5%)	67(15.4%)

5.3 The prevalence of colostrum discarding practices among Mothers

The prevalence of colostrum discarding practices in this study was 64(14.75%) [95% CI (11.3 - 18.4)] figures 4.

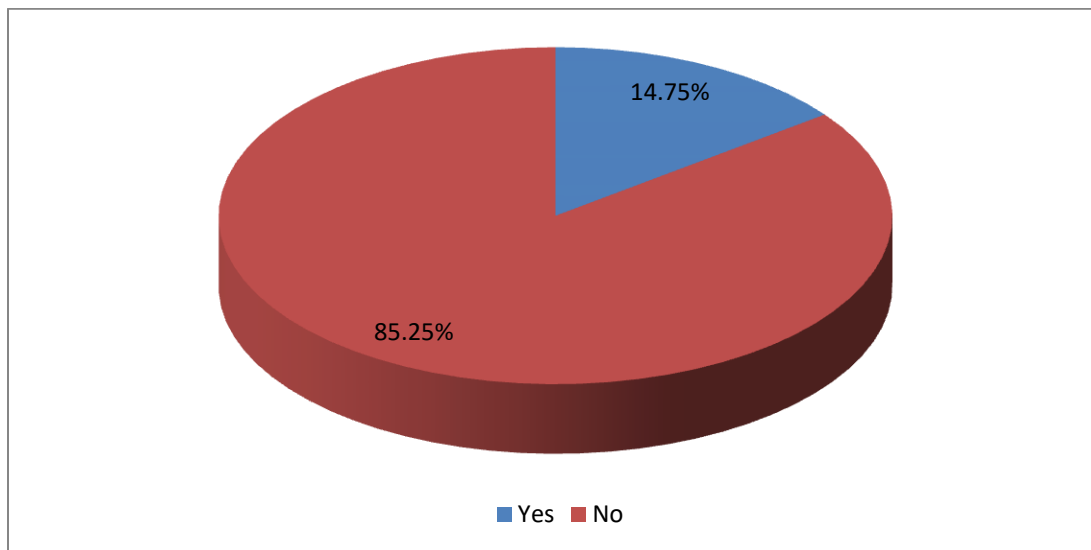


Figure 4: Colostrum avoidance practices status among mothers of children less than one years of age, in West azernet berbere woreda, 2021

Regarding to the reasons given for discarding, the main reported reason for colostrum avoidance is that it is believed not good for infant health 26(40.6%) followed by it is the tradition and culture 12(18.8%) as shown in figures 5.

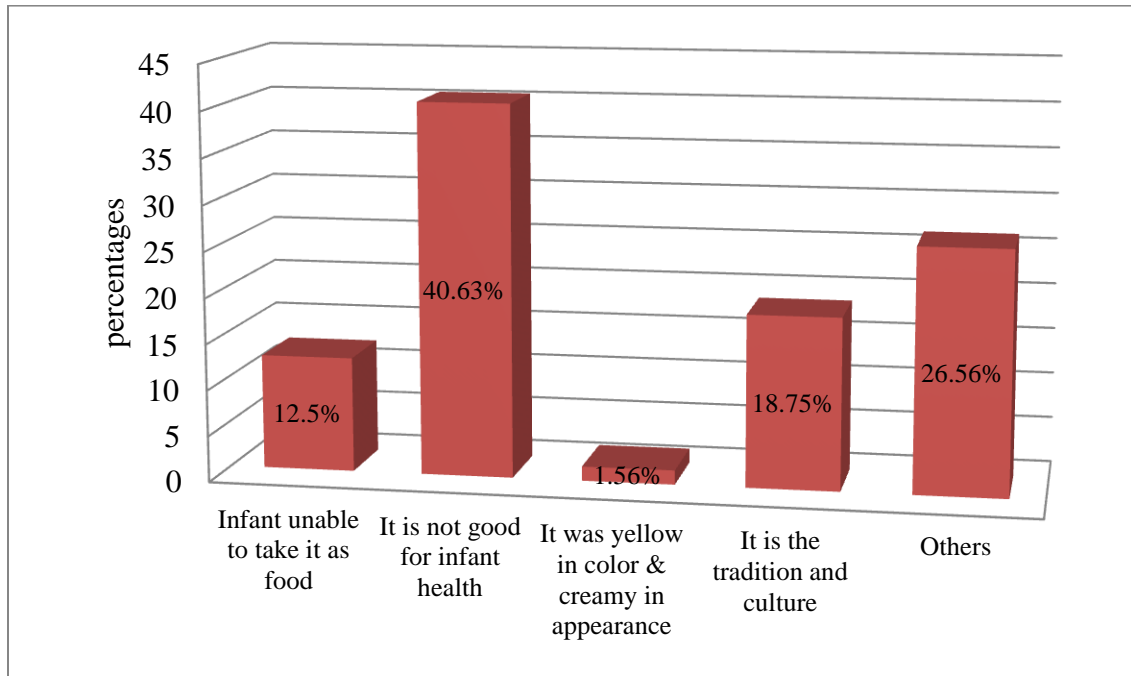


Figure 5: Reasons for colostrum avoidance practices of mothers of children less than one year of age, in West azernet berbere woreda, 2021

Regarding prelacteal feeding; of the total respondents; 52(11.98%) were practicing prelacteal feeding and majority of them 29(55.77%) gave water. The reasons for prelacteal feeding were; illness of the child 9(17.3%) and delayed milk secretion 9(17.3%), but majority of them 29(55.77%) had not specific reason (Table 7).

Table 7: the prelacteal feeding practices among mothers of infants in West azernet berbere woreda, 2021

Variables	Category	Frequency (n)	Percentage (%)
Pre-lacteal feeding	Yes	51	11.8
	No	383	88.2
	Total	434	100

Foods most time they used	Water	29	55.8
	Butter	8	15.4
	Caw milk	10	19.2
	Others	5	9.6
Reason for providing pre-lacteal feeding	Delayed milk secretion	9	17.3
	Illness of the child	9	17.3
	Illness of the mother	5	9.6
	Other	29	55.8
	Total	52	100

Among study participants two hundred eighty two (65%) of mothers-initiated breast feeding within one hour, while the remaining 152(35%) initiated breast feeding more than one hour as shown bellow in figure 6 blow

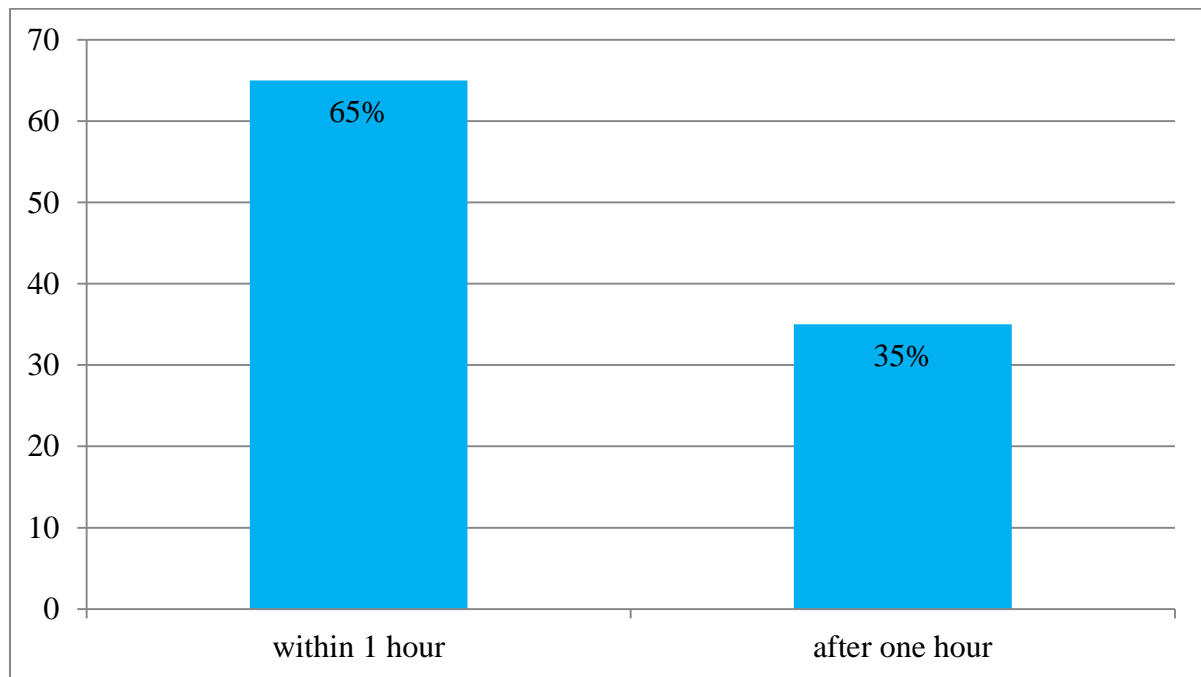


Figure 6 Time to initiate breastfeeding after birth among mothers of children less than one years of age, in West azernet berbere woreda, 2021

According to the study, the reported reasons for delay in breastfeeding initiation were Maternal illness 57(39.6%) followed by Infant illness 48(33.3%)(Figure7).

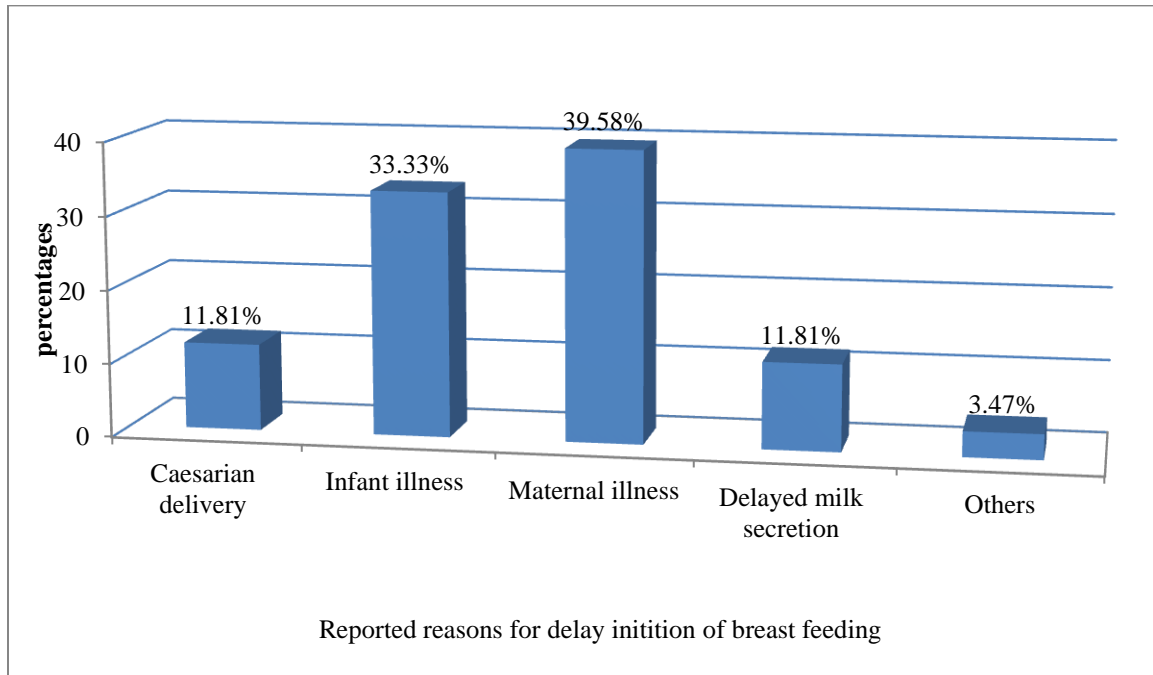


Figure 7, the reasons for delay in breastfeeding initiation among mothers of children less than one years of age, in West azernet berbere woreda, 2021

The qualitative data were also supporting the practices of colostrum feeding to baby within one hour to three days, the verbal transcription of participants’ audio record thematically analyzed in to three main themes.

Theme one

The majority of the focus group discussants stated that *“colostrum is useful to build the baby and helps to grow, prevents hunger and diseases, and colostrum should be the first tested of the neonate because we haven’t seen any problem on our children related to colostrum feeding”*. A 26 years old participant said that, *“I fed my first milk to my child because health workers ordered me to feed it and she adds that children who fed colostrum are so strong and active”*. Another 26 years old mother said that, *“I fed my colostrum to my baby, until now I have not seen any problem on my baby related to*

colostrum, it is useful even if for animals". Similarly a 25 years old mother said that, "my family ordered me to discard your first breast milk, they said that it is stored for long time and causes disease to the baby', but I fed it to my child because if it has such disadvantages, during my ANC follow up time health workers told me, she adds contrast to their view colostrum feeding is better than avoiding it. A 22 years old mother said that, "my husband's mother ordered me by saying 'do not feed your colostrum to this kid, it causes abdominal cramp, diarrhea and not good for baby', but I did not accept her idea and I fed it to my baby, she adds colostrum is so useful, example it prevents disease".

Theme two

In contrast to this, some participants their age range from 20 up to 30-year-old mothers who have experience of expressing and discarding their colostrum, said that "*colostrum is dirty, stored for long time during pregnancy, cause abdominal cramp and diarrhea, hence to prevent such problem as mother of children both said that 'we recommend to express the colostrum first then feed breast milk'*". A 30 years old mother said that, "*I had discarded at my three children delivery time, because it is new for the baby, it may causes sickness, she adds it is also the cultural practice of our neighbors ,so it should be avoided*". Similarly a 28 years old mother firmly said that, "*I discarded my first breast milk and discarding is better than feeding because it causes baby sick, it is dirty, stored for long time during our pregnancy*".

Theme three

The rest participants, whose age range from 22 to 30-year-old mothers who have experience of expressing and discarding their colostrum, they expressed and discarded their colostrum because of influencing from grandmothers/other relatives and neighbors as result of culture in their community. And some of them did not know the advantage and disadvantages of colostrum feeding. A 24 years old mother said that, "*I avoided my first breast milk because I delivered at my husband's mother home, so she ordered me to discard it then I did it, discarding is culture in our community. But I do not know that colostrum is harmful or useful*". Another 25 years old mother said that, "*I discarded my first breast milk after I washed my breast. Because my mother ordered me to do like this,*

I did not ask her the reason, and I do not know about colostrum weather it is useful or not”.

5.4 The factors associated with colostrum avoidance practices

According to the bivariate logistic regression analysis, the following study variables; sex of infant, ANC follow up, place of delivery, Mode of delivery, breastfeeding initiation time, PNC visit, role of father of index infant on breast feeding, prelactal feeding, knowledge on colostrum feedings and mothers attitude towards colostrum feeding were variables significantly associated with colostrum discarding practice at p-value of ≤ 0.2 in the bi-variable analysis and included for multivariable analysis.

In the multivariable analysis; mothers who had not ANC follow up, mothers who gave birth at home, delayed breast feeding initiation time, poor knowledge of mothers on colostrum- feeding practices and mothers who had negative attitude toward colostrum-feeding practices were significantly associated with colostrum discarding practices at p-value of <0.05 . The mothers who didn't attend ANC services during pregnancy of index infant 3 times [AOR= 3.037, 95% CI: (1.457-6.331)] more likely to discard colostrum than mothers who attended ANC. The mothers who gave birth at home were 2.77 times [AOR= 2.766, 95% CI: (1.389-5.510)] more likely to practice colostrum discarding than those mothers who gave birth at health institutions. Mothers who initiated breastfeeding after one hour of birth were 2.6 times [AOR=2.586, 95% CI (1.420-4.710)] more likely to discard colostrum compared to mothers who started breast feeding within one hour. Colostrum discarding practice was 2.33 times higher among mothers with poor knowledge [AOR=2.328, 95% CI; (1.428-4.228)] on colostrum feeding practices compared to their counterparts. Furthermore, colostrum discarding practice was 2.5 times more likely among mothers who had negative attitude [AOR=2.456, 95% CI; (1.339-4.507)] toward colostrum compared to mothers who had negative attitude toward colostrum feeding practices (Table 8).

Table 8 Bi-variable and multivariable analysis of factors associated with colostrum avoidance practices among mothers of children aged less than 12 months in West azernet berbere woreda, 2021

Variables	Category	Colostrum discarding Practice		Crude OR with 95% CI	Adjusted OR with 95% CI	P-value
		yes N (%)	No N (%)			
Sex of infant	male	25(39.06%)	180(48.65%)	1	1	0.173
	female	39(60.94%)	190(51.35%)	1.48(0.860-2.541)	1.513(0.834-2.747)	
ANC follow up status	Yes	47(73.45%)	336(90.81%)	1	1	0.003
	No	17(26.55%)	34(9.19%)	3.57(1.852-6.898)	3.037(1.457-6.331)	
Place of delivery	Health Facility	43(67.19%)	320(86.49%)	1	1	0.004
	Home	21(32.81%)	50(13.51%)	3.13(1.714-5.7)	2.766(1.389-5.510)	
Mode of delivery	Vaginal	59(92.19%)	359(97.03%)	1	1	0.137
	C/S	5(7.81%)	11(2.97%)	2.77(0.928-8.246)	2.506(0.706-3.496)	
Prelactal feeding	yes	12(18.75%)	40(10.8%)	1.90(0.938-3.866)	1.57(0.706-3.496)	0.268
	no	52(81.25%)	330(89.2%)	1	1	
Time of breast feeding initiation	Within one hour	27(42.19%)	254(68.65%)	1	1	0.002
	After 1 hour	37(57.81%)	116(31.35%)	3.001(1.744-5.162)	2.586(1.420-4.710)	

PNC service	Yes	35(54.69%)	222(60%)	1	1	0.347
	no	29(45.31%)	148(40%)	1.243(0.728-2.121)	1.33(1.457-6.331)	
knowledge on colostrum feeding practices	Good	33(51.56%)	282(76.22%)	1	1	0.006
	Poor	31(48.44%)	88(23.88%)	3.01(1.745-5.194)	2.328(14.282-4.228)	
Attitude towards colostrum-feeding practices	Negative	35(54.69%)	134(36.22%)	2.13(1.244-3.633)	2.456(1.339-4.507)	0.004
	Positive	29(45.31%)	236(63.88%)	1	1	
Role of father of infant on breastfeeding	Yes	33(51.56%)	229(61.89%)	1	1	0.268
	No	31(48.44%)	141(38.11%)	1.53(0.895-2.6)	1.446(0.804-2.747)	

Footnote; Method is enter

Hosmer-Lemeshow goodness-of-fit=1.000, Omnibus tests of model coefficient = <0.001,

Cox & Snell R square=0.443 and Nagelkerke R square=0.782

1= indicated the reference category

6. Discussion

This study was aimed to assess the prevalence of colostrum discarding practices and associated factors among mothers of children aged less than 12 months in west azernet berbere woreda. In this study the prevalence of colostrum discarding practice was 14.75%. This makes breastfeeding practices sub-optimal in the woreda due to the mothers who were not attend ANC services, delayed initiation of breast feeding, had poor knowledge on colostrum feeding and had negative attitude toward the colostrum feeding. This result is consistent with the studies conducted in Nepal 16.5% (25), Dilla Ethiopia 15.9% (36), Mizan Aman 15.5% (4), Raya Kobo District 13.5% (43). This might be due to similarity of cultural and socio-demographic characteristics of study populations.

However, the finding of this study was higher than the studies done in Tanzania 9.1% (27), Cameroon shows that 10.2% (28), Addis Ababa Ethiopia 9.6% (30), Bahir Dar Ethiopia 8.8% (32), Aksum 6.3% (9). The difference between these studies might be due to the difference in community attitude towards colostrum feeding among ethnic groups. The other possible reason for this inconsistency of the finding might be socio-demographic difference, variations in culture among study participants.

The finding of this study is also lower than studies done in India 92% (24), Pakistan 27.9% (26), South Sudan 43.9% (29), afar regional state Ethiopia 76.9% (34), Somali regional state 69% (35) and Ambo Ethiopia 43.5% (16), Gozamen district Northwestern Ethiopian 22.1% (45). This difference could be due to the difference in infant feeding styles and socio-cultural practices across the communities, maternal health service utilization and the time of the studies done.

This study showed that mothers who didn't attend ANC services during pregnancy of index infant were 3 times more likely to discard colostrum compared to the mothers who get ANC services. The finding of this study is congruent with study finding of Mizan Aman (4), Ambo Ethiopia (16), Debre Tabor Ethiopia (34) and in Gurage zone (46), in the Lawra district of Ghana (47). This might be due to the fact that ANC visit helps mothers to increase the awareness of the advantage of colostrum feeding. In most women, ANC visit may offer a good educational channel. Participation in a discussion at ANC may increase awareness mothers on the importance of colostrum to the neonate. So that; this

counseling is the tool to change the behaviors of mothers to reduce harmful nutritional malpractice during the time of pregnancy.

In this study, Mothers who delivered their index infants at home were 2.77 times more likely to engage in colostrum discarding practices compared with those who delivered in health facility. This finding was consistent with study conducted in India(24), North West Nigeria(48), in Gurage zone(46), Gunchire Town(49), in East Africa (51), Wolaita Sodo City (37), Ambo Ethiopia (16) and Dilla (36).This indicates that strengthening maternal health service improves optimal breast feeding practices. This could be due to the fact that mothers, who gave birth at home, were more likely to be exposed to the traditional beliefs that favor colostrum discarding. The FGDs findings also support this, a 24 years old mother said that, *“I avoided my first breast milk because I delivered at my husband’s mother home, so she ordered me to discard it then I did it, discarding is culture in our community”*. In contrast, utilizing an institutional delivery would have an added benefit to receive immediate obstetric care, such as early initiation of breastfeeding which reduces the likelihood of practicing colostrum avoidance.

The finding of this study showed that, Mothers who started breast feeding after one hour of birth were 2.6 times more likely to discard colostrum compared to mothers who initiate breast feeding within one hour. This result is consistent with the study done in Gunchire Town(49), Debre Berhan town(50),North Wollo(8), Mizan Aman (4), Bahir Dar Ethiopia (32) and Wolaita Sodo City (37).This could be because of the fact that those mothers who discarded the colostrum might take more time to discard it and initiate breastfeeding later. The reverse might be also correct. When mothers tend to initiate breastfeeding later, they would have more time for infant feeding malpractices like colostrum avoidance. This might be also due to the fact that when mother delay initiation of breast feeding infants suckling activity decreases and which in turn affects or decreases maternal milk secretion due to decreased breast stimulation, which finally made the mother to give other food to the infant and discard colostrum.

In this study, colostrum discarding practice was 2.33 times higher among mothers with poor knowledge on colostrum feeding practices when compared to their counterparts. This finding was supported by other studies carried out in the Lawra district of Ghana (47), in East Africa (51), Mizan aman(4), North Wollo(8), and Wolaita Sodo City (37).

These supporting evidences revealed that improving the mother's awareness of optimal infant feeding practices reduces the likelihood of colostrum discarding. This might be due to knowledge gap about the importance of colostrum. The other possible reason might be due to lack of awareness of mothers about breast feeding practices and the nutritional value of colostrum increased the likelihood of colostrum discarding. The findings from qualitative data also support this; a 25 years old mother said that, *"I discarded my first breast milk after I washed my breast. Because my mother ordered me to do like this, I did not ask her the reason, and I do not know about colostrum whether it is useful or not"*.

Furthermore, colostrum discarding practice was 2.5 times more likely among mothers who had negative attitude. This finding was supported by other studies carried out in the Lawra district of Ghana (47), in East Africa (51), North Wollo(8), and Wolaita Sodo City (37).

This might be due to influence from culture of community especially grandmothers and elder peoples. The other possible reason might be due to mother's belief by considering colostrum as unclean, stored for long time and bad for the infant's health. The findings from qualitative data also support this; A 30 years old mother said that, *"I had discarded at my three children delivery time, because it is new for the baby, it may causes sickness, she adds it is also the cultural practice of our neighbors ,so it should be avoided"*.

Moreover, for this sub-optimal breast feeding, the FGDs finding showed that; some mothers thought colostrum as dirty, stored for long time during pregnancy, cause abdominal cramp and diarrhea in infants. Similarly, grandmothers tend to have strong influence, on mothers of index infant, not to feed colostrum to their infants. Therefore; they influence mothers to avoid colostrum. This is supported by studies done in Bangladesh (44) and Ambo Ethiopia (16).This might be due to some grandmothers who have knowledge gap about the benefits of colostrum may influence mothers of index infant to discard colostrum and giving birth at home may create a favorable environment for different socio-cultural malpractices like colostrum avoidance. Home delivery may create opportunity for grandmothers to influence mothers to discard their colostrum. Alternatively, mothers who gave birth in health institutions might be counseled by health professionals about the advantages of colostrum.

7. Strength and Limitation of the study

7.1 Strength

The strength of this study was that it included both quantitative and qualitative methods. The study had high response rate. It also provides recent updated information related to colostrum discarding.

7.2 Limitation

The evidence obtained from mothers might be exposed to recall bias since the data were gathered grounded on self report of the mothers of infants aged less than 12 months age. Bias related to social desirability might be also occurred. The study also shares some constraints of cross-sectional study design.

8. Conclusion and Recommendation

8.1 Conclusion

Colostrum discarding practice among mothers of children aged less than 12 months in west azernet berbere woreda was found to be high when compared to WHO recommendation. Lack of ANC follow up, home delivery of index child, delayed initiation of breast feeding, poor knowledge on colostrum- feeding practices and negative attitude towards colostrum- feeding practices were significant factors associated with colostrum discarding practices of mothers.

Considerable amount of mothers thought colostrum as dirty, stored for long time during pregnancy, cause abdominal cramp and diarrhea in infants. And some mothers influenced by grandmothers to avoid colostrum.

8.2 Recommendation

For health care workers should enhance ANC follow up with counseling and advices on the nutritional value of colostrum and colostrum-feeding practice. It is also advised that health professionals shall further work on promotion of institutional delivery and improving timely initiation of breastfeeding of mothers. Specifically for health Extensions worker: Provide community based education in order to initiate colostrum feeding immediately after delivery and don't accept tradition myths about colostrum feeding

For Mass Media: Disseminate health information for the families and mothers about colostrum feeding benefits as well as time of feeding to babies

For west azernet berbere woreda heath office should enhance inter-sectorial collaboration with stake-holders such as women and children, educational and adolescent sectaries in working on benefit of colostrum feeding to communities such as mothers, adolescents, and other influential.

The community and intended organizations should provide support for health professionals by doing as ordered

The policy makers can/need to initiate additional indicators that address colostrum as other components of optimal breast feeding in health information management system. Taking the associated factors towards colostrum feeding into account, community-oriented, targeted, and specific, interventions shall be designed by counseling on colostrum feeding to make routine health service by service providers

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Annexes

I. Informed consent agreement form

WOLKITE UNIVERSITY COLLEGE OF MEDICINE AND HEALTH SCIENCES
DEPARTMENT OF PUBLIC HEALTH NUTRITION POSTGRADUATE PROGRAM

Hello. My name is _____ from Wolkite University College of medicine and health sciences, and now I am conducting a survey on colostrum discarding practices and associated factors among mothers of children aged less than 1 year in West azernet berbere woreda, Silte Zone, Southern Ethiopia. You have been selected by chance among other participants. During the participation of the study, you may waste about 20 minutes. Otherwise, there will no injections, drawing of blood or anybody fluid involved. In general, participating in this study has no potential risks. Participating in this study had no direct financial benefits are there related the study, but you will acquire or increase knowledge related to the colostrum feeding practices. Participation in this survey is voluntary and you can choose not to take part. All information you give will be confidential and will be used to make a general report. No names will be included in the report and there will be no way to identify you as one of the people who gave information. If you have any questions about the survey, feel free to ask me.

For detail information you can contact the investigator through;

Address of the principal investigator /Abdlfeta Mohammed Ali

Cell phone: +251911149546

E-mail: abdlfetamohammed39@gmail.com

Declaration of informed consent: I have read the participant information sheet. I have clearly understood the purpose of the research, the procedures, the risks and benefits, issues of confidentiality, the rights of participating and the contact address for any queries. I have been given the opportunity to ask questions for things that may have been unclear. I was informed that I have the right to withdraw from the study at any time or not to answer any question that I do not want. Therefore, I declare my voluntary consent to participate in this study with my initials (signature).

Signature of respondent's _____ Date: _____

Interviewer name----- signature -----

Supervisors name -----signature-----

Checked on date-----

The outcome is (thick one) Complete_____ Incomplete_____

II. Part I Structured questionnaire in English

ID Number_____

Note: - Encircle form the given option and write it only other idea or answer is given.

SECTION I. Socio-demographic and economic characteristics of mothers/care givers related questions			
S.no	Questions	Response categories	Skips
101	What is the sex of your infant	1 Male 2 Female	
102	How old is the age of your child	_____ in month	
103	How many children do you have?	_____	
104	Birth order of the child	1 First 2 Second 3 Third 4 Fourth and above	
105	How many year differences are there between the last two of your children?	1 less than 24 months 2 within 24-48 months 3 Greater than 48 months.	

106	How old are you?	_____in Years	
107	What is your occupation	1 House wife 2 Government employed 3 Merchant 4 Daily laborer 5 Other	
108	What is your ethnicity?	1 Silte 2 Gurage 3 Amhara 4 Hadiya 5 Others	
109	What is your religion?	1 Muslim 2 Orthodox Christian 3 Protestant 4 Others	
110	What is your level of education?	1 Cannot read and write 2 Can read and write 3 Primary school 4 Secondary school 5 Higher education and above	

111	What is your marital status?	1 Single 2 Married 3 Widowed 4 Divorced	
112	If you are married/separated what is your husband occupation?	1. Government employed 2. farmer 3. Merchant 4. Daily laborer 5. Other (specify)-----	
113	If you are married, what is your husband level of education?	1. Can't read and write 2. Can read and write 3. Primary school 4. Secondary school 5. Higher education and above	
114	How much is your household average monthly income?	_____Birr	
SECTION II. Maternal health service utilization related questions			
201	Did you get ANC service during your	1 Yes	If No go to Q.

	last pregnancy?	2 No n	no,204
202	How often did you get ANC service?	1 Once 2 Two times 3 Three times 4 Four times and above	
203	Did you receive counseling concerning colostrumfeeding during your ANC visits for the index child?	1. Yes 2. No	
204	Where did you give birth of this infant?	1 Health facility 2 Home	
205	What was your mode of delivery?	1 vaginal 2 Caesarian Section	
206	Did you get PNC after your last birth within 45 days?	1. Yes 2. No	
SECTION III: knowledge and perception related questions			
301	Do you heard about	1.yes	If No go to Q.

	colostrums?	2. no	no,303
302	What is the color of colostrums?	1 Yellow 2 white	
303	Is colostrum important for growth and development of baby?	1. Yes 2. No	
304	Do you know the Contents of colostrums	1. Yes 2. No	If No go to Q. no,508
305	Does colostrum protect your babies from disease	1. Yes 2. No	
306	Does colostrum use as first immunization	1. Yes 2. No	
307	From where you heard about colostrums?	1 Family 2 Health institution 3 Mass media 4 Friends and others	
308	What contents do you know?	1 Proteins 2 vitamins	

		<p>3 Carbohydrates</p> <p>4 Fats</p> <p>5 Minerals</p>	
309	Colostrums breast milk is dirty looks like pus	<p>1 Strongly agree</p> <p>2 Agree</p> <p>3 Neutral</p> <p>4 Disagree</p> <p>5 Strongly disagree</p>	
310	Colostrums breast milk Causes diarrhea	<p>1 Strongly agree</p> <p>2 Agree</p> <p>3 Neutral</p> <p>4 Disagree</p> <p>5 Strongly disagree</p>	
311	Colostrums makes the baby sick	<p>1 Strongly agree</p> <p>2 Agree</p> <p>3 Neutral</p> <p>4 Disagree</p> <p>5 Strongly disagree</p>	
312	If your family says it should not to be	<p>1 Strongly agree</p> <p>2 Agree</p>	

	given	3 Neutral 4 Disagree 5 Strongly disagree	
313	Colostrums is difficult to digest and needs to be discarded.	1 Strongly agree 2 Agree 3 Neutral 4 Disagree 5 Strongly disagree	
SECTION IV: colostrums feeding related questions			
401	Did you discard the colostrums (the first milk) to your infant?	1. Yes 2. No	
402	Did you feed the colostrums (the first milk) to your infant?	1. Yes 2. No	If No go to Q. no,406
403	If you did not feed the colostrums to your infant, what is the reason?	1 Infant unable to take it as food. 2 It is not good for infant health. 3 It was yellow in color & creamy in appearance 4 It is the tradition and culture	

		5 Others _____	
404	Who influenced your decision on your colostrums feeding practice?	1 My husband 2 My mother 3 Health worker 4 Religious leader 5 Others	
405	Role of husband in breast feeding practice?	1 Advice on breast feeding 2 Has no role	
406	How soon after birth did you put your index infant for the first time to breastfeed?	1 within 1 hour 2 After 1 hour	If No go to Q. no,408
407	If delayed more than one hour, what were reasons that made you delay in breastfeeding initiation?	1 Caesarian delivery 2 Infant illness 3 Maternal illness 4 Delayed milk secretion 5 Others	
408	Did you give the child pre lactation food/fluid?	1.Yes 2.No	If No go to Q. no,411
409	What was given for your infant before the colostrums or breast feeding with in the first 3 days after birth	1 Water 2 Butter 3 Caw milk	

		4 Sugar solution 5 Others	
410	What were the reasons for introducing such food before starting colostrums or breastfeeding?	1 Delayed milk secretion 2 Illness of the child 3 Illness of the mother 4 Other	
411	What was your infant feeding during six months?	1 Breast milk only 2 Mainly breast milk but additionally other complementary food	
412	If the answer to the above question is not breast milk only, what is the reason?	1 Decreased milk secretion 2 Breast milk only not sufficient 3 Illness of mother 4 Others	

III. የስምምነት መግለጫ ፎርም - በአማርኛ

ወለቂጤ ዩኒቨርሲቲ ህክምናና ጤና ሳይንስ ኮሌጅ የሰርዓተ-ምግብ ትምህርት ክፍል የድህረ-ምረቃ ፕሮግራም

እንደምን

ዋላቸ!

ስሜ _____ እባላለው። በአሁኑሰኣት የእንጋር ማጥባትን በተመለከተ እድሜ አቸው እስከ 1 አመት ድረስ ባላቸው የህፃናት እናቶች ላይ ጥናት እያካሄድኩ ነው። እርስዎ ከሌሎች የጥናቱ ተሳታፊዎች ውስጥ በእድል ነው የተመረጡት ፤ ስለዚህ ከጥናቱ ጋር የተያያዙ ይያቁዎችን እጠይቀዎታልሁ። በጥናቱ ለመሳተፍ የእርስዎ ፈቃደኝነት ነው፤ ካለ ተመቻቸውን መጠይቁን ማቋረጥ ይችላሉ። በዚህ ጥናት መሳተፍ ምንም አይነት ገንዘብ አያስገኝም። ነገር ግን በዚህ ጥናት መሳተፍ ስለ እንጋር አመጋገብ እውቀት ያገኛሉ ወይም ያለዎትን እውቀት ያዳብራሉ። በዚህ ጥናት መርፌ መውጋት የለም፤ ደምም፤ ምንም ሆነ ማንኛውም የሰውነት ፈሳሽ አይወሰድም። ከርስዎ የሚወሰደው ማንኛውም መረጃ ምስጢራዊ እና ለሌሎች ማህበረሰብም ማጠቃለያ ሪፖርት ነው። ሪፖርት ሲደረግም ስም አይፃፍም ፤ እንዲሁም እርስዎ መረጃውን እንደሰጡ አይገለፅም። ጥያቄ ካለዎት ያለምንም ፍርሃት በግልፅኝነት መጠየቅ ይችላሉ።

ለተጨማሪ መረጃ በዚህ ማግኘት ይችላሉ።

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ብቀጥል ምን ይመስለዎታል?

- 1. ይቻላል.
- 2. አይቻልም

IV. መጠይቅ - አማርኛ ቅጽ

የመጠይቅ - መለያ ቁጥር _____

ተ.ቁ	ጥያቄዎች	አማራጭ መልሶች	ይለፉ
<p>ክፍል አንድ :- ሥነ- ህዝብ፤ ማህበራዊ እና ኢኮኖሚያዊ ጉዳዮችን በተመለከተ የተዘጋጁ ጥያቄዎች</p>			
101	የህፃኑ/ኗ ያታ	1. ወንድ 2. ሴት	
102	የህፃኑ/ኗ ዕድሜ (በ ወር)	----- ወር	
103	ሥንት ልጆች አለዎት?	-----	
104	ይህ/ች ህፃን ሥንተኛ ልጅዎ ነው/ ናት?	1. የመጀመሪያ ነው/ናት 2. 2ተኛ ልጅ ነው/ናት 3. 3ተኛ ልጅ ነው/ናት 4. 4ተኛ እና ከዚያ በላይ	
105	የመጀመሪያ ልጅዎ ካልሆነ/ች ከዚህ በፊት ከነበረዎት ልጅ ጋር ምን ያህል ጊዜ የዕድሜ ልዩነት አላቸዉ?	1. 0-24 ወር 2. 24-48 ወር 3. >48 ወር	
106	የእርስዎ ዕድሜ ስንት ነው?	_____ ዓመት	
107	የእርስዎ የሥራ ሁኔታ	1. የቤት እመቤት 2. የመንግስት ሰራተኛ 2. የግል ድርጅት ሠራተኛ	

		3. ነጋዴ 4. የቀን ሰራተኛ 5. ሌላ(ይጠቀስ).....	
108	ብሔርዎ ምንድን ነው?	1. ስልጤ 2. ጉራጌ 3. አማራ 4. ሃድያ 5. ሌላ (ይጠቀስ) -----	
109	ሀይማኖትዎ ምንድን ነው?	1. ሙስሊም 2. ኦርቶዶክስክርስቲያን 3. ፕሮቴስታንት 4. ሌላ (ይጠቀስ) -----	
110	የትምህርት ደረጃዎ?	1. ማንበብ ና መፃፍ የማትችል 2. ማንበብ ና መፃፍ የምትችል 3. አንደኛ ደረጃ (1 — 8ኛክፍል) 4. ሁለተኛ ደረጃና ከዚያ በላይ	
111	የጋብቻ ሁኔታዎ?	1. ያላገባች 2. ያገባች 3. ባሏ የሞተባት 4. የፈታች 5. ተለያይታ የምትኖር	
112	ያገቡ ወይም ተለያይተው የሚኖሩ ከሆነ፣ የባለቤትዎ ሥራ ምንድን	1. የመንግስት ሰራተኛ 2. የግል ድርጅት ሰራተኛ	

	ነገሩ?	3. ነጋዴ 4. የቀን ሰራተኛ 5. ሌላ	
113	ያገቡ ወይም ተለያይተው የሚኖሩ ከሆነ፣ የባለቤትነት የትምህርት ደረጃ?	1. ማንበብ ና መጻፍ የማትችል 2. ማንበብ ና መጻፍ የምትችል 3. አንደኛ ደረጃ (1 — 8ኛክፍል) 4. ሁለተኛ ደረጃ ና ከዚያ በላይ	
114	የቤታችሁ አማካይ የወር ገቢ ስንት ነገሩ?	-----ብር	
ክፍል ሁለት፡- እናቶች የጤና አገልግሎት መጠቀምን በተመለከተ የተዘጋጁ ጥያቄዎች			
201	ይህን/ችን ህፃን ነፍሰጡር እያሉ በጤና ተቋም የቅድመ ወሊድ ክትትል አድርገው ነበር?	1. አዎ 2. የለም	መልሱ የለም ከሆነ ወደ ጥያቄ 204
202	ምን ያህል ጊዜ የቅድመ ወሊድ ክትትል አድርገው ነበር?	1. አንድ ጊዜ 2. ሁለት ጊዜ 3. ሶስት ጊዜ 4. አራት ጊዜ እና ከዚያ በላይ	
203	በቅድመ ወሊድ ክትትል ወቅት	1. አዎ	

	ስለእንጋር ማጥባት የምክር አገልግሎት ተሰጥተዋል ነበር?	2. የለም	
204	ይህን/ችን ህፃን ሲወልዱ የት ነበር የወለዱት?	1. በጤና ተቋም 2. ቤት ውስጥ	
205	ህፃኑ/ኗ እንዴት ነበር የተወለደው/ችው	1. በብልት በኩል 2. በቀዶ ጥገና	
206	ከወለዱ በኋላ በ45 ቀን ጊዜ ውስጥ የድህረ ወሊድ ክትትል አድርገው ነበር?	1. አዎ 2. የለም	
ክፍል ሶስት:-ሥለ እንጋር ማጥባት ዕውቀትን እና አመለካከትን በተመለከተ የተዘጋጁ ጥያቄዎች			
301	ስለ ጡት ማጥባት ሰምተዋል ያውቃሉ?	1. አዎ 2. የለም	መልሱ የለም ከሆነ ወደ ጥያቄ 303
302	የእንጋር መልክ ምን ይመስላል	1. ብጫ 2. ነጭ	
303	እንጋር ማጥባትን ለህፃኑ/ኗ ጤንነት ይጠቅማል?	1. አዎ 2. አላውቅም	
304	እንጋር በውስጡ ምን እንደያዘ ያውቃሉ?	1. አዎ 2. አላውቅም	
305	እንጋር ልጅን ከበሽታ ይከላከላል	1. አዎ 2. የለም	
306	እንጋር እንደ መጀመሪያ ክትባት ያገለግላል	1. አዎ 2. የለም	

307	ሠምተዉ የሚያወቁ ከሆነ ከየት ነዉ የሰሙት?	<ol style="list-style-type: none"> 1. ከቤተሰብ 2. ከጤና ከባለሙያዎች 3. ማህበራዊ ሚዲያዎች 4. ንደኛናሌላ (ይጠቀስ) - ----- 	
308	መልሶ አዎ ከሆነ ምን ምን ያውቃሉ	<ol style="list-style-type: none"> 1.ፐሮቲን 2.ቪታሚን 3.እምኖግሎብሎን 4.ካርቦህይድሬት 5.ፋት 6.ሚንራል 	
309	እንገር ቆሻሻ ነው እናም መግል ይመስላል	<ol style="list-style-type: none"> 1.በጣም እስማማለሁ 2. እስማማለሁ 3.አልስማማም 4.በጣም አልስማማም 5.ሀሳብየለኝም 	
310	እንገር ማጥባት ተቅማጥ ያመጣል	<ol style="list-style-type: none"> 1.በጣም እስማማለሁ 2. እስማማለሁ 3.አልስማማም 4.በጣም አልስማማም 5.ሀሳብየለኝም 	
311	እንገር ህፃኑን ያሳምማል	<ol style="list-style-type: none"> 1.በጣም እስማማለሁ 2. እስማማለሁ 3.አልስማማም 4.በጣም አልስማማም 5.ሀሳብየለኝም 	
312	ቤተሰብ እንገርን ማጥባት ዩለቦትም ቢሎት ምን ይላሉ	<ol style="list-style-type: none"> 1.በጣም እስማማለሁ 2. እስማማለሁ 	

		3.አልስማማም 4.በጣም አልስማማም 5.ሀሳብየለኝም	
313	እንገር ለህፃኑ ስለ ማይፈጭለት መወገድ አለበት	1.በጣም እስማማለሁ 2. እስማማለሁ 3.አልስማማም 4.በጣም አልስማማም 5.ሀሳብየለኝም	
ክፍል አራት:- የእንጋር ማጥባትን በተመለከተ የተዘጋጁ ጥያቄዎች			
401	የመጀመሪያዎን የጡት ወተት (እንገር) ለህፃኑ/ኗ ከማጥባት በፊት አፍስሰሽ ነበር?	1. አዎ 2. የለም	
402	የመጀመሪያዎን የጡት ወተት (እንገር) ለህፃኑ/ኗ አጥብቶብኩኝ ነበር?	1. አዎ አጥብቻለሁ 2. የለም፣ አላጠባሁም	መልሱ የለም ከሆነ ወደ ጥያቄ 406
403	የመጀመሪያዎን የጡት ወተት (እንገር) ለህፃኑ/ኗ ካላጠቡ ምክንያቱ ምንድን ነው?	1. ህፃን ሊጠባው ስለማይችል 2. ለህፃን ጥሩ ስላልሆነ ወይም ስለሚጎዳ 3. መልኩ በጫ ስለሆነ እና ዝልግልግ ስለሆነ 4. ልማድ/ባህል ስለሆነ 5. ሌላ (ይጠቀስ).....	
404	ይህን ውሳኔ ስትወስኝ ማንን	1. ባለቤቴን	

	አማክርሽ ነበር	2. እናቴን 3. የጤና ባለሙያዎችን 4. የሀይማኖት አባቴን 5. ሌላ ካለይጠቀስ-----	
405	የመጀመሪያዎን የጡት ወተት (እንገር) ብቻ ማጥባት ባለቤትሽ ምን አስተዋፆ አደረገልሽ	1. በምክር ይደግፈኛል 2. ምንም አይረዳኝም	
406	እንደ ወለዱ ጡት ማጥባት የጀመሩት በስንት ሰዓት ወስጥ ነበር?	1. ወዲያውኑ 2. ከአንድ ሰዓት በኋላ	
407	እንደ ተወለደ በአንድ ሰዓት ወስጥ ያላ ጠባሽበት ምክንያት ምንድን ነው	1. በቀዶ ጥገና ስለወለድኩት 2. ልጄ ስለታመመ 3. ተምሜስለነበር 4 ሌላ ካለይጠቀስ-----	
408	ጡት ከመስጠት ሽቦፊት ሌላ ነገር ተሰጥቶት/ቷት ነበር?	1. አዎ 2. የለም	መልሱ የለም ከሆነ ወደ ጥያቄ 411
409	ህፃኑ/ኗ በተወለደ/ች በሶስት ቀን ጊዜ ወስጥ ምን ሌላ ነገር ተሰጥቶት/ቷት ነበር?	1. ውሃ 2. ቅቤ 3. የላም ወተት 4. የጂጂ ስኳር 5. ሌላ (ይጠቀስ).....	
410	ጡት ከመስጠትሽ በፊት ሌላ ነገር ተሰጥቶት/ቷት ከነበር ; ለምን ነበር የሰጠሽው	1. ጡቴን አሞኝ ስለነበር 2. ልጄ ስለታመመ 3. ታምሜ ስለነበር 4. ሌላካለይጠቀስ	

411	ህፃኑን በስድስት ወር ውስጥ ምን ነበር የመገብሻው	<ol style="list-style-type: none"> 1. የእናትጡት-ወተት-ብቻ 2. ከእናት ጡት ወተት ሌላተጨማሪ ምግብ 	
412	የእናት ጡት ወተት ብቻ ካልሆነ ምክንያቱ ምንድን ነው?	<ol style="list-style-type: none"> 1. ጡቴ ስለደረቀብኝ 2. ጡት ብቻ መስጠት በቂ ስላልሆነ 3. ስለሚያመኝ 4. ሌላ (ይጠቀስ)..... 	