

EXCLUSIVE BREASTFEEDING PRACTICE AND ITS ASSOCIATED
FACTORS AMONG MOTHERS HAVING LESS THAN SIX MONTH
INFANTS IN SEKA CHEKORSA, SOUTHWEST ETHIOPIA.



BY
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Abstract

Background: Exclusive breastfeeding is defined as feeding breast milk only, for the first six months. In Ethiopia, more than half of infants do not receive exclusive breastfeeding. Understanding the socio-demographic, health related, behavioral and economic factors is crucial to promote the practice of exclusive breastfeeding in Ethiopia. Therefore, the aim of this study was to assess the extent of exclusive breastfeeding practice and associated factors among lactating mothers in Seka chekorsa, southwest Ethiopia, 2021.

Objectives: To assess magnitude and factors of exclusive breastfeeding among mothers having less than six month infants in Seka chekorsa, Southwest Ethiopia 2021.

Methods: A community-based cross-sectional study using quantitative method was conducted from June 1-30, 2021 in Seka chekorsa among 392 lactating mothers. Simple random sampling technique was used. Data was entered into EPI-Data exported and analyzed using SPSS software. Bivariate and multivariate logistic regression analyses were done to examine the relationship between Exclusive breastfeeding and selected exposure factors with p-value 0.25. Also used 95% CI and adjusted odds ratio.

Result: A total of 392 mothers who had children aged less than 6 months were interviewed. The exclusive breastfeeding practice in this study was found to be 75.8% and infants who are born in health facility were about 2.90 times more likely to be exclusively breastfed than those who are born at home [AOR= 2.90, 95% CI (1.37 - 6.16)]. Similarly, the odds of EBF for mothers who give antenatal care was 3.44 times higher as compared to mothers who didn't attend antenatal care [AOR= 3.44, 95% CI (1.57-7.55)]. An infant whose age is 0-1 month was 5.81 times more likely exclusively breastfed than infant aged 4-6 months [AOR= 5.81, 95% CI (1.90-17.69)].

Conclusion and recommendation: Overall practice of exclusive breast-feeding among mothers having less than six month infants was 75.8% and majority of mothers fed their child 6 to 10 times per day. Educational status, birth interval, place of delivery, age of infant, antenatal care, and attitude about breastfeeding after delivery were found to be statistically significantly associated with exclusive breast-feeding. It is recommended that healthcare workers, health task force, and concerned bodies give due attention and work on the encouragement of pregnant women to attend antenatal care follow up to get nutritional counseling and education about infant feeding including exclusive breastfeeding to increase the practice. Moreover, a special breastfeeding place for working mothers or daycare facilities should be established and organized.

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I am deeply grateful to my advisors Mrs. Meseret Tamrat and Mr Beakal Zinab for their guidance, continued support, constructive comments and suggestions throughout the course of this work proposal development. In addition, I would like to extend my appreciation to the Jimma University Library and Internet Centre for allowing me to use the Internet to search the necessary literatures for developing this proposal. The last but not the list I would like to thanks Seka Town H/Office and respected kebeles for their provision of all related data that helps me in developing this proposal.

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Acronyms and Abbreviations

JU	Jimma University
ANC	Antenatal care
AOR	Adjusted odds ratio
BF	Breastfeeding
CI	Confidence interval
PI	Principal Investigation
CSA	Central statistics agency
EBF	Exclusive breastfeeding
EDHS	Ethiopian demographic and health survey
FP	Family planning
OBF	Optimum Breastfeeding
PNC	Postnatal Care
WHO	World health organization
UNICEF	United Nations International Children's Emergency Fund
ECOWAS	Economic Community of West African States

1. INTRODUCTION

1.1. Background

The World Health Organization and United Nations Children's Fund (WHO/UNICEF) recommends that nursing mothers should practice EBF, defined as providing the infant human breast milk only, and oral rehydration solution, or drops/syrups of vitamins, minerals, or medicines, when required (1).

Breastfeeding is the cornerstone of child survival, nutrition and development and maternal health. The World Health Organization (WHO) recommends exclusive breastfeeding for the first 6 months of life, followed by continued breastfeeding with appropriate complementary foods for up to 2 years or beyond. Focused and optimal immediate support to initiate and establish breastfeeding in the first hours and days of life have positive effects far beyond the stay at the facilities providing maternity and newborn services. Early initiation of breastfeeding has been shown to have positive effects when done within the first hour after delivery. Among healthy term infants, feeding cues from the infant may be apparent within the first 15–20 minutes after birth, or may not be apparent until later (2).

Appropriate feeding practices are of fundamental importance for the survival, growth, development, health and nutrition of infants and children everywhere. In this light, the optimal duration of exclusive breastfeeding is one of the crucial public health issues that WHO keeps under continual review. There has long been consensus on the need for exclusive breastfeeding; however, there has been considerable debate on its optimal duration (3).

Breast milk provides all of the nutrients, vitamins and minerals an infant need for growth for the first six months, and no other liquids or food are needed. Breast milk carries antibodies from the mother that help combat disease, which breast milk substitutes cannot contain. In addition, breast milk contains digestive enzymes which breast milk substitutes do not contain, and therefore the infant easily digests and efficiently uses the breast milk. the breast milk women produce in the first few days after birth, is very important for the infant, as it is rich in antibodies and white cells to protect against infection; it helps prevent jaundice, has growth factors which help the intestine to mature and is rich in Vitamin A (4).

1.2. Statement of the problem

There is sufficient evidence that a significant number of under-5 month deaths in resource poor countries could be prevented through achievement of 90% coverage with exclusive breastfeeding for 6 months (5).

Currently only 37% of infants less than six months in low-and middle- income countries are exclusively breastfed even lower in high-income countries. In Chile, according to data from the Department of Statistics and Health Information (DEIS), in 2005 the exclusive BF (EBF) rate at six months of life in the Public System was 46%, and in 2008 it reached 50%; however, the latest data for 2014 reports only 44.5%. By the year 2020, the goal is to reach 60% EBF at six months (6).

There is a need for further improvement in order to gain the full benefits of EBF as 10 out of the 13 ECOWAS countries had EBF rates between 13% and 47% (1). According to EDHS 2016 Overall, 58% of children under age 6 months are exclusively breastfed, and the percentage of exclusive breastfeeding declines with age from 74% in 0-1 months to 36% in 4-5 months. Contrary to the recommendation that children under the age of 6 months be exclusively breastfed, many infants are also fed with other liquids such as water (17%), non-milk liquids (5%), and other milks (5%) before reaching age 6 months (0-5 months). Moreover, 11% of infants begin complementary foods before 6 months of age, with more than one-fifth of children (21%) consuming complementary foods by age 4-5 months (7).

There are many studies that investigated the factors associated with exclusive breastfeeding practices in Ethiopia. Most of them document the presence of differences in place of residence, education, knowledge about good breastfeeding practices and socio-cultural aspects. However, there is lack data on improvement of EBF is low presumably due to the short maternity leave and absence of onsite child care at work place for working mothers.

The workplace poses serious impediments to continued breastfeeding by mothers who return to work postpartum Options to maximize the benefit of the new federal law include informing eligible mothers and employers about it and advocating for resources needed to implement and enforce it and the improvement on EBF is low presumably due to the short maternity leave and absence of onsite child care at work place for working mothers. Therefore, this study aimed at

providing the evidence for policy makers to plan and implement an approach for solving the problem.(8).

Researches was not available that can show magnitude of gaps and specific factors affecting breast feeding practice in this Woreda. Understanding the magnitude of mother's knowledge, attitude, and practice and associated factors to develop area appropriate intervention strategies is important. By identifying these gaps, this study was documented and provides relevant information for Government policy makers and NGOs to develop relevant interventional strategies. This was also help health care providers to understand gaps associated with breastfeeding awareness and behavior so that they are more focused to these gaps during their breastfeeding counseling.

1.3. Significance of the study

The low prevalence of EBF in most developing countries including Ethiopia is attributed to various maternal and child factors such as place of residence, age of the child, mother working outside home, maternal age and educational level, access to mass media and economic status by several researchers. So, achieving optimal infant and young child feeding requires an integrated, comprehensive strategy that includes community-based interventions as well as policy, health services and it is more of the challenge of mothers to attempt combined role as a worker and mothers.

The government of Ethiopia has recognized the problem of low exclusive breastfeeding practice in the country and has declared the annual “exclusive breastfeeding week” at national level, which is celebrated from 1st August annually Ethiopia recognizes this breastfeeding week for 13th time 2021.

Understanding the magnitude of mother’s practice and associated factors to develop area appropriate intervention strategies are important. By identifying these gaps, this study will be documented and provide relevant information for Government policy makers and NGOs to develop relevant interventional strategies. This will also help health care providers to understand gaps associated with breastfeeding awareness and behavior so that they are more focused to these gaps during their breastfeeding counseling and interventions.

2. LITERATURE REVIEW

2.1. Exclusive breastfeeding practice and its benefit

Breastfeeding, initiated within the first hour of birth, provided exclusively for six months, and continued up to two years or beyond with the provision of safe and appropriate complementary foods, is one of the most powerful practices for promoting child survival and wellbeing. Improving breastfeeding rates around the world could save the lives of more than 820,000 children under age 5 every year, the majority (87 per cent) under 6 months of age. In addition to improving child survival and protecting against life-threatening and chronic illnesses, breastfeeding promotes healthy growth and boosts early child development. Breastfeeding supports healthy brain development, and is associated with higher performance in intelligence tests among children and adolescents across all income levels (9).

EBF is known to be most effective preventive intervention to reduce early-childhood mortality. Optimum breastfeeding practices—exclusive breastfeeding for the first six months and continued breastfeeding to 12 months—tops the list of preventive interventions that would most reduce the number of deaths of children less than five years old from all causes. Optimum breastfeeding practices have the potential to prevent 1.4 million deaths every year among children under five years. In the first six months of life, breastfed infants are six times less likely to die from diarrhea and 2.5 times less likely to die from acute respiratory infection. Breastfeeding protects infants against diarrhea through two mechanisms: 1. reduced risk of bacteria from contaminated formula, other liquids and complementary foods and 2. the transfer of maternal antibodies through breast milk (10).

Immediate and uninterrupted skin-to-skin contact and initiation of breastfeeding within the first hour after birth are important for the establishment of breastfeeding, and for neonatal and child survival and development. The risk of dying in the first 28 days of life is 33% higher for newborns who initiated breastfeeding 2–23 hours after birth, and more than twice as high for those who initiated 1 day or longer after birth, compared to newborns who were put to the breast within the first hour after birth. Initiation of breastfeeding immediately after delivery has also an advantage for mothers it helps to contract the uterus, expel the placenta and reduce bleeding. Breastfeeding may lead to a more rapid return to pre-pregnancy weight. Exclusive breastfeeding in the first six months may delay the return of fertility, thus reducing exposure to the maternal

health risks associated with short birth intervals. In the longer term, mothers who breastfeed tend to be at lower risk of pre-menopausal breast cancer and ovarian cancer (11).

2.2. Prevalence of EBF

In Bahir Dar EBF Practice was reported to be 49.1%. Nearly two third of mothers reported that they breastfeed their children 8 or more times per day (14). In Goba district the prevalence of exclusive breastfeeding for infants aged less than six months in the study area was 71.3%. The median duration of exclusive breastfeeding for infants less than six months was 3 months. The median frequency of exclusive breastfeeding for infants less than six months per day was 6 times. About 88.8% of infants were breastfed exclusively for 2 months, while 84.4% of infants were breastfed exclusively to 2 to 3 months of age (12)

The study done in Bangladesh showed that prevalence of exclusive breastfeeding (EBF) was 35.90% (13). And a study done in Jimma indicates that the prevalence of exclusive breastfeeding is 60.1% (14).

The study done in Norway showed that more than 90 % of the infants were exclusively breastfed at 1 week of age, and the level of exclusive breast-feeding was high during the first 3 months of life, but then declined to 10 % at 6 months(15). We found a higher prevalence of EBF practice among mothers aged 20–34 years (62%)

The study done in Bangladesh showed that higher use of EBF practice were found among the mothers' used 1–3 and 4 ANC visits than mothers' who did not use ANC visit. The likelihoods of EBF practice for the children aged 0–2 months and 3–4 months than children aged 4–6 months. Around 31% (AOR, 0.698, 95% CI, 0.482–0.989, $p < 0.05$) lower likelihood EBF practice was found among mothers' engaged in any form of formal work compared to mothers' who were not involved in any formal work (16).

2.2.1. Associated factors of Exclusive breastfeeding

Along with different promotional campaigns such as the celebration of the World Breastfeeding week and intensive mass media programs contributed significantly to increase EBF practice among mothers in Bangladesh. However, it seems that such promotional campaigns do not contributing adequately to increase of EBF in Bangladesh in recent years as this study found a slight declined rate of EBF than the previous years (16).

2.2.2. Work related factors

A study which was done in Australia among 207 employing organizations shows that mothers who return to work at six months or earlier introduced formula two months earlier and discontinued breastfeeding around two months earlier than those returning to work in the second half of the first year. On the other hand, employee intentions to breastfeed were mainly hindered by time pressures and mother–infant separation arising from returning to work. Many experienced difficulties were expressing sufficient milk and maintaining their milk supply, with problems maintaining breastfeeding reported to arise from separation during the work day and the need for flexibility in working hours and timing of breaks so that employed mothers express milk or breastfeed their children (17).

A study done in America shows that during a hospital stay the practice of breastfeeding is similar (55%) for both employed and unemployed mothers. However, when employed mothers return to their work the practice of breastfeeding significantly declines to 10%. In this regard, the practice of EBF is significantly associated with short maternity leave, working full-time rather than part-time postpartum and lack of onsite child care. In addition, access to formula feed and maternal educational status were factors which are related to practice of EBF indirectly. On the other hand, creating a supportive environment at work place resulted in an increase of 5.7 months on duration of EBF (18).

2.2.3. Obstetric related factors

All pregnant women must have basic information about breastfeeding, in order to make informed decisions. A review of 18 qualitative studies over 300 participants in the 2016 Baby-friendly Hospital Initiative (BFHI) Congress, representing 130 countries indicated that mothers generally feel that infant feeding is not discussed enough in the antenatal period and that there is not enough discussion of what to expect with breastfeeding (11).

The study done in west Shoa showed that more than 58% of women have at least one ANC visit in their most recent pregnancy. 36.2% the respondents are primiparous. Majority of the women have given birth in health institutions while 644 (90.7%) women gave birth vaginally. Among the respondents, 275 (38.7%) women reported that their most recent pregnancy was unintended. Among them, 128 (46.5%) women said that their pregnancy was mistimed and the rest 147 (53.5%) have had completely unwanted pregnancy (19).

In the study done in Canada, the place of delivery was associated with the 6 month duration of exclusive breastfeeding. Mothers giving birth at home were 5 times more likely to exclusively breastfeed than mothers giving birth at hospitals. This relationship can be attributed to the negative influence of formula supplementation in the hospital (20).

2.2.4. Knowledge and attitude related factors

Cross-sectional study was conducted among Nigerian mothers from a semi-urban community to assess knowledge, attitude and technique of breastfeeding in Nigeria, 2013. Data were collected from 383 mothers who have breastfed for 6 months and up to two years. This study showed that based on cumulative breastfeeding knowledge and attitude scores 71.3% of the respondents had good knowledge while 54.0 % had positive attitude. Seventy one point three percent practiced advisable breastfeeding posture. Sitting on a chair to breastfeeding was common (64.2 %); and comfort of mother/baby (60.8 %) and convenience (29.5 %) were the main reasons for adopting advisable breastfeeding positions. This study showed that Nigerian mothers demonstrated good knowledge and positive attitude towards breastfeeding. Breastfeeding was mostly believed to promote mother –baby bonding. Increasing length of time for maternity leave and providing designated area at work places is believed to facilitated breastfeeding (21).

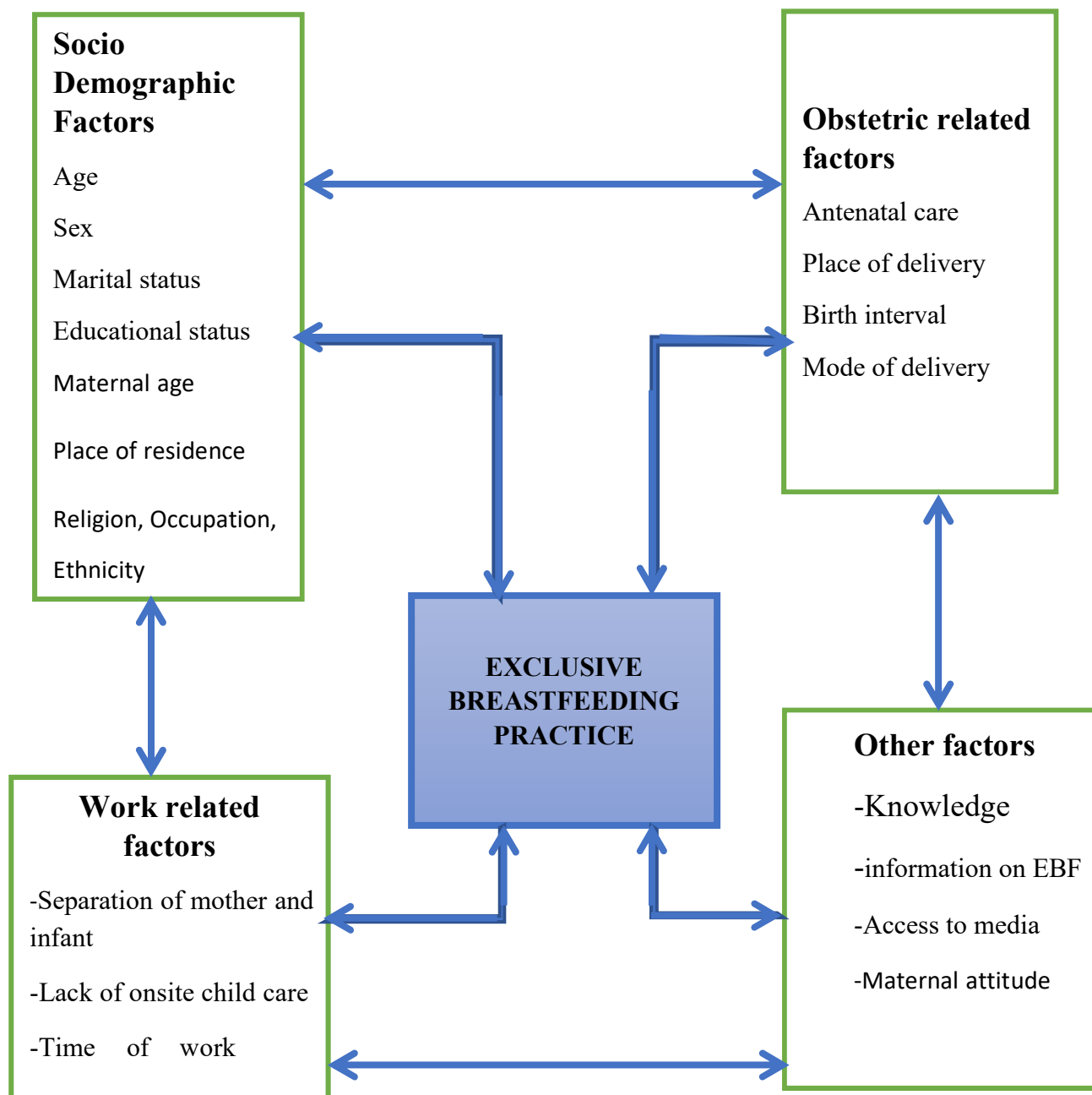


Figure 1. Proposed Conceptual Frame Work of the study (adapted from different literatures.)

3. OBJECTIVES

3.1. General objective

- To assess the magnitude and factors of exclusive breastfeeding practice among mothers having less than six month infants in Seka Chekorsa, Southwest Ethiopia from May to June, 2021.

3.2. Specific objectives

- To assess the magnitude of exclusive breastfeeding practices among mothers having less than six month infants in Seka chekorsa, Southwest Ethiopia from June 1-30, 2021.
- To identify factors associated with exclusive breastfeeding practices among mothers having less than six month infants in Seka Chekorsa Southwest Ethiopia from June 1-30, 2021.

4. METHOD AND MATERIAL

4.1. Study area

The study was conducted from April 01-30, 2021 at Seka chekorsa which is located in South West Ethiopia in Jimma Zone, Oromia region some 364km from Addis Ababa. The estimated numbers of population are 294,440 out of this 49.1 % (144,570) are male and 51.9% (149,870) are female. Of whom infant constitutes 1% (2944). There are 1 primary hospital, 9 health centers, 37 health posts, 2 medium clinic and 8 primary clinics, 3 private drug stores. Different obstetric services such as FP, ANC, Delivery service, PNC and Counseling services was delivered at those health facilities. The climate condition is weynadega and Khat, Coffee, peppers, fruits and Teff are important cash crops for this woreda. Regarding to occupation, the majority of the people in urban area are merchant and farmers dominate in rural areas.

4.2. Study design

A community-based cross-sectional study using quantitative method was conducted in Seka Chekorsa from May to June 2021.

4.3. Population

4.3.1. Source population

Source population for this study was all mothers that have infants aged less than six month residing in Seka Chekorsa.

4.3.2. Study population

The study participants were those selected mothers having infants aged less than six month residing in the study area during the study period in Seka Chekorsa.

4.4. Inclusion and exclusion criteria

Inclusion criteria

- All mothers who had eligible infant (aged less than six months) and who had been residents of the study areas for more than six months.

Exclusion criteria

- Children with evidence of chronic health problems.
- Mothers who are unable to communicate or chronically ill.

4.5. Sample size and sampling procedure

4.5.1. Sample size

To determine the sample size for this study single population proportion was used. Since the specific objectives are two the sample size was calculated for each in order to take a large sample size.

1. Sample size determination for objective one

The sample size (n) required for the study was calculated using single population proportion with the following assumptions

$$n = \frac{(Z_{\alpha/2})^2 * p(1-p)}{d^2}$$

Where: -

n= sample size

p= proportion of EBF 60.4% from previous study (22).

Z_{α/2}= 1.96 (Z=score corresponds to 95% confidence level)

d= 0.05 (Margin of error)

n=357

The minimum sample size considered to undertake the study was **392** after considering a non-response rate of 10%.

2. Sample size determination for objective two

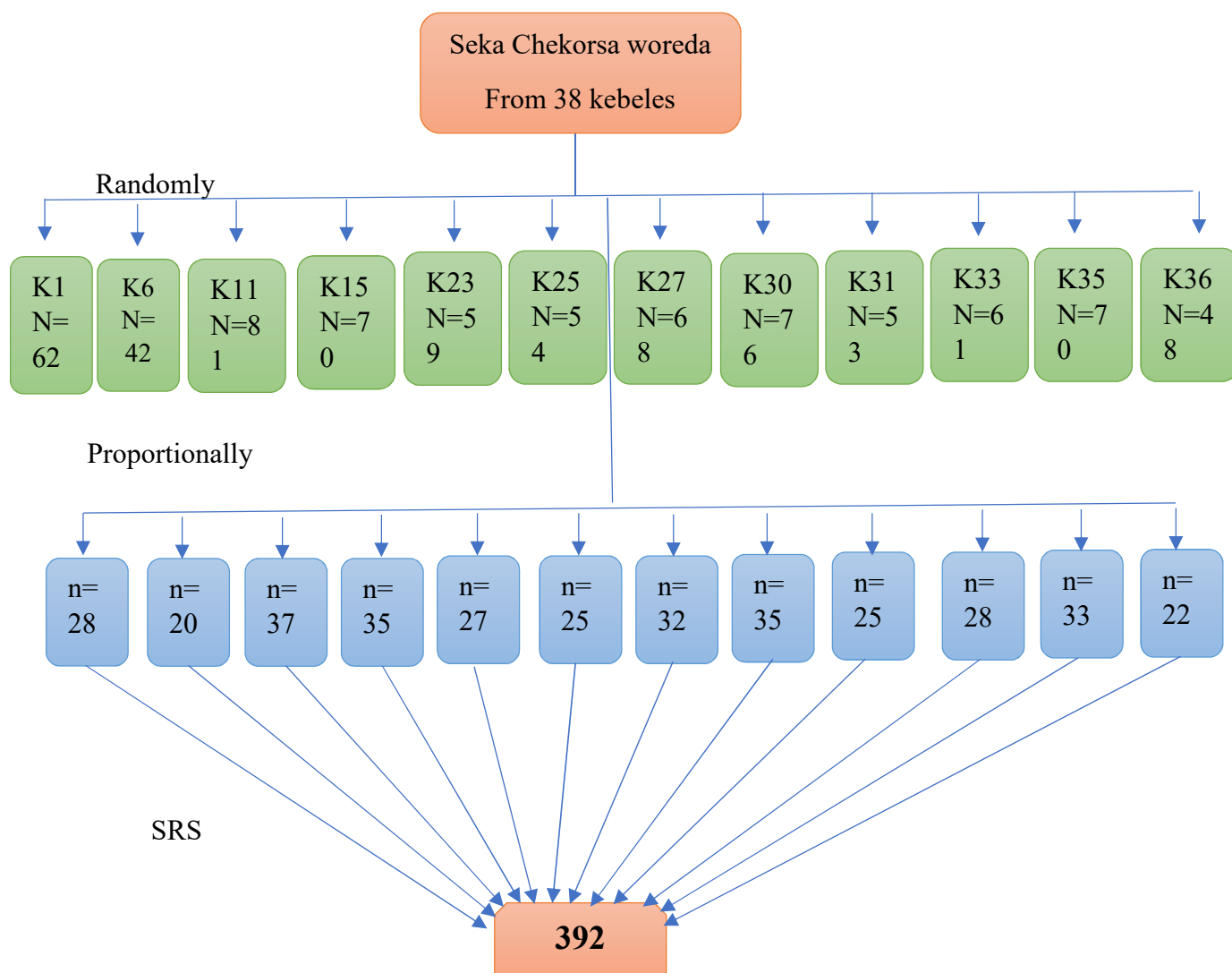
Table 3.1. Sample size for factors associated with EBF

Variables	EBF P (%)	CI	Power	Allocation ratio	OR	Reference	Total sample size
Infant age	63.8	95%	80%	1:1	2.3	Getachew Arage et al.,2016	258
Place of delivery	10.2	95%	80%	1:1	8.8	Adugna et al.,2017	50
Mode of delivery	22.7	95%	80%	1:1	2.8	Adugna et al.,2017	156
Antenatal care	73	95%	80%	1:1	2.4	Mulusew et al.,2016	340

Sample size for objective two was calculated using Epi-info statistical software by assuming: infant age prevalence=63.8%, place of delivery=10.2%, mode of delivery=22.7% and antenatal care=73% CI=95%, power=80% and allocation ratio 1:1.

4.5.2. Sampling technique

The study populations were mothers having children aged less than six months in data collection period. Mothers who lived in the area at least for six months and those who gave consent to participate in the study were eligible. Seka woreda was selected purposively. The woreda has 38 kebeles 12 kebeles was selected using simple random sampling. The number of participants was obtained from each kebeles office. From the chosen 12 kebeles, study participants were drawn proportionally. Finally, from each kebeles sampling frame was obtain from health extension workers then using simple random sampling eligible households which fulfill the inclusion criteria was selected (Figure 2).



Key: SRS – Simple random sampling

Figure 2. Schematic presentation of sample size determination

4.6. Data collection tool and techniques

Structured questionnaire was used to collect the data which is adapted from EDHS 2016(7) and previous study (23). The questionnaire includes:-socio-demographic characteristics, exclusive breastfeeding practice of mothers, work related, obstetric related, knowledge and attitude factors related to EBF practice of lactating mothers to assess mother's knowledge and attitude. The questionnaire was originally prepared in English and translated into Afan Oromo by a language expert and back into English to ensure its consistency. The questionnaires were administered to mothers currently breastfeeding from the selected source population by trained data collectors through a face-to-face interview. It was administered by two BSc Nutritionist and two BSc Nurse

4.7. Study variables

Dependent variable

Exclusive breastfeeding practice

Independent variables

Socio demographic factors

Educational status of mothers

Maternal age, Sex of the infant, Age of infant

Work related

Lack of onsite child care

Time of work

Obstetric factors

Place of delivery, Antenatal care, Birth interval, Mode of delivery

Others

Access to media

Knowledge

Attitude

4.8. Operational definition

Exclusive breastfeeding: The infant should receive only breast milk from his/her mother or a wet nurse, or expressed breast milk, and no other liquids or solids, except medicines or vitamins, mineral supplements up to six month.

Infant: A person from birth to 12 months of age; and in this study child aged less than six months were considered as infants.

Duration of EBF: Breast milk only for the first 6 months.

Mixed breastfeeding: Is the practice of feeding breast milk along with fed formula and animal milk.

Knowledge of mother: An average of responses on knowledge items will be done by computing variables. Mothers who scored less than the mean score were labeled to have poor knowledge and those who scored above the mean score as having good knowledge

Attitude of mothers: An average of responses on attitude items will be done by computing variables. Mothers who scored less than the mean score were labeled to have Negative attitude and those who scored above the mean score as having Positive attitude.

4.9. Data analysis procedure

Each filled questionnaire was coded and checked manually for completeness and consistency. Then, the data entered into Epi-data version 3.1 and exported to Statistical Package for Social Sciences (SPSS) version 25 for further statistical analysis. First descriptive analysis was carried out to examine the distribution of each individual variable. Bivariate analysis was carried out to describe association between pairs of variables. Finally, factors which was significant for bivariate association was observed with p-value 0.25 and retained for subsequent multivariate analyses using multiple logistic regression to control for possible confounders. Odds ratio was used to measure the strength of the association between dependent and independent variables. And 95%CI was used to determine the significance of the associations.

Multicollinearity among independent variables was checked by considering standard error and variance inflation factors. An elevated standard error of above 2 and the variance inflation factor (VIF) >10 was taken as the risk of multi collinearity among the independent variables.

The goodness of model fit for this study was checked by Hosmer and Lemeshow's goodness of fit test since the dependent variables of the study is categorical and logistic regression was used for the analysis.

4.10. Data quality management

Data collectors and supervisor were trained for two days on the study objectives, tools and ethical procedures. The questionnaire was pre-tested on 5% mothers having infants aged less than six months in the households located outside of the selected kebeles. Supervision was made by the principal investigator, by observing how data collectors were conducting the interview. At the end of each day interviewers submitted all completed questionnaire and each completed questionnaire was checked by the principal investigator for completeness and consistencies.

4.11. Ethical consideration

Ethical clearance was obtained from Jimma University Ethical review board. An official letter was written from department of Nutrition and Dietetics to jimma zone Health office and then to Seka Chekorsa woreda health office to get permission and support letter to each respected kebeles. The purpose of the study was explained to the study participants and a written consent was taken from participants to confirm whether they are willing to participate. Confidentiality of

responses was also ensured throughout the research process. All incomplete questionnaires were considered as non-response rate.

4.12. Dissemination of finding

The findings of this study was disseminated to Jimma University, college of public health, the woreda administration, health bureau, kebeles, different organizations that will have a contribution to improve the status of EBF in the woreda. The finding will be presented at various seminars and workshops. Publication will also be consider

5. RESULTS

5.1. Socio-demographic Characteristics of Participants

Out of 392 eligible mothers, 381 were participated in this study, which made a response rate of 97.2%. Out of 381 mothers, 340(89.2%) of them were married. The age of the mothers included in this study ranged between 18 and 50 years with mean age of 27.75(SD=±6.78) years. The mean age of the child was 4.78(SD±2.61) months. Nearly one third of infants 37.8% were female. With regard to educational status, 162(42.5%) mothers achieved elementary educated while 26.8% of mothers were illiterate. Majority of the infants' age found between 4 and 6 (50.1%) months followed by 2-3 months. More than half 206(54.1%) of study participants ethnicity were Oromo. With regarding to religion 227(59.6%) of them were Muslim (Table 5.1).

Table 5.1: Distribution of Socio-demographic characteristics of the study participant

Variables	Category	Frequency	Percentage
Current marital status	Single	7	1.8
	Married	340	89.2
	Divorce	10	2.6
	Windowed	24	6.3
Age	Less and equal to 24	108	28.3
	25-29	137	36.0
	30-34	88	23.1
	>35	48	12.6
Educational status	Illiterate	102	26.8
	Elementary	162	42.5
	Secondary	40	10.5
	Diploma/certificate	48	12.6
	1 st Degree and above	29	7.6
Sex	Male	237	62.2
	Female	144	37.8
Age of infant	1 month	74	19.4
	2-3 month	116	30.4
	4-6 month	191	50.1
Ethnicity	Oromo	206	54.1
	Amhara	73	19.2
	Kafa	33	8.7
	Tigray	41	10.8
	Gurage	28	7.3

Religion	Muslim	227	59.6
	Orthodox	79	20.7
	Protestant	47	12.3
	Wakefeta	28	7.3

5.2. Obstetric related factors

Almost more than half (60.9%) mothers had a birth interval of less than two years. Most (85.6%) of the mothers were delivered their child at health facility and more than three fourth (87.9%) mothers were delivered normally. Of all the study participants, 317(83.2%) of the mothers attended antenatal care (Table 5.2).

Table 5.2 Obstetric related factors

Variables	Category	Frequency	Percentage
Birth interval	≤2 years	232	60.9
	>2 years	149	39.1
Place of delivery	At health facility	326	85.6
	At home	55	14.4
Mode of delivery	Normal/Vaginal	335	87.9
	Cesarean section	46	12.1
Antenatal care	Yes	317	83.2
	No	64	16.8

5.3 Work related and other factors

Of all the study participants, 274(71.9%) of the mothers have their own work, among these 81(27.4%) of them petty trader, 128 (46.7%) permanent employee and 50(18.3%) daily laborer. Out of 274 working mothers, 170(62%) them were lacked onsite child care, regarding the time to works, majority 200(73%) of them were working more than 6 hours per day. Of the total mothers minority 39(10.2%) of the mothers have no access for media to gain information. Three hundred nineteen (83.7%) of mothers had Positive attitude about exclusive breastfeeding practice. And about half (50.7%) of the respondents had a good knowledge on exclusive breastfeeding practice. (Table 5.3).

Table 5.3 Work related and other factors

Variables	Category	Frequency	Percentage
Work related factors			
Do you have work?	Yes	274	71.9
	No	107	28.1
Type of employee	Petty trader	81	27.4
	Permanent employee	128	46.7
	Daily laborer	50	18.3
	Other (specify)	14	7.6
Lack of onsite child care	Yes	104	38
	No	170	62
Time to work	< 3 hours	4	1.4
	3-5 hours	70	25.6
	≥ 6 hours	200	73
Other factors			
Access to media	Not at all	39	10.2
	Newspaper/Magazines	32	8.4
	Radio	120	31.5
	TV	190	49.9
Knowledge	Good knowledge	193	50.7
	Poor knowledge	188	49.3
Attitude	Positive attitude	319	83.7
	Negative attitude	62	16.3

5.4 Magnitudes of exclusive breastfeeding practices among lactating mothers

Among all mothers who participated in the study, more than three-fourths (75.85%) breastfed their infants exclusively during the first six months of age (95% CI 70.1, 81.8). Many of the study participants (73.2%) initiated breastfeeding immediately after delivery. Regarding the frequency of breast-feeding, 60.1% of the mothers fed 6–10 times/day, 26.2% less than 5 times /day and 13.6% more than 10 times. The reason for giving additional food to infant was due to insufficient breast milk (40.2%) and decreased milk secretion (31.5%) (Table 5.4).

Table 5.4.Exclusive breastfeeding practices among lactating mothers

		Frequency	Percentage
Extra liquid/solid food given for their child in the previous 24 hours	Yes	92	24.15
	No	289	75.85
Early initiation of breast-feeding	Yes	279	73.2
	No	102	26.8
Frequency of breastfed in 24 hours?	≤5 times	100	26.2
	6-10 times	229	60.1
	>10 times	52	13.6
The reason of giving additional food to infant	Decreased milk secretion	29	31.5
	Breast milk only not sufficient	37	40.2
	Infant is thirsty	11	11.9
	Workload	15	16.4

5.5 Factors associated with exclusive breastfeeding practices among lactating mothers

To identify factors associated with exclusive breastfeeding practices among lactating mothers, bivariate and multivariate logistic regression model was used. Before analyzing the bivariate and multivariate logistic regression was checked. Multicollinearity among independent variables and goodness of model fit was fitted to check the assumption. Accordingly, the Chi-square value of 10.724 and p-value of 0.218 implies that the model is a good fit. Higher p-values indicate that the null hypothesis stating, the model best fits the data“ shouldn’t be rejected. Hence, it is possible to conclude that the model fits the data well, since the p-value of the Hosmer and Lemeshow’s Test is much higher than 5% level of significance. Multicollinearity among independent variables was checked by considering variance inflation factors (VIF). The result in the appendix shows there is no Multicollinearity problem, since the VIF value for each independent variable is less than ten.

Table 4.2 Hosmer and Lemeshow’s Test

Chi-square	df	Sig.
10.724	8	.218

Then, the bivariate logistic regression was done for each variable, then to limit the number of variables and unstable estimates in the subsequent models, only variables with P-value <0.25 were taken to a multivariate regression model hierarchically.

In the bivariate logistic regression, current marital status, age of mothers, ethnicity, religion, lack of onsite child care, time of work, access to media and awareness about breastfeeding during antenatal care were not found to have statistically significant association with EBF at p- value of 0.25. However, variables including educational status, birth interval, place of delivery, sex of the infant, age of infant, antenatal care, and knowledge about breastfeeding after delivery were included in the multivariable logistic regression model (Table 5.6).

Table 5.6: Bivariate analysis of factors associated with exclusive breastfeeding practices among mothers who gave birth in the last 6 months

Variables	Category	Exclusive breast-feeding		COR(95%CI)	P-value
		Yes	No		
Current marital status	Single	5(71.4)	2(28.6)	1	
	Married	278(81.8)	62(18.2)	1.79(.340,9.46)	.491
	Divorce	9(90.0)	1(10.0)	3.60(.26,50.33)	.341
	Windowed	18(75.0)	6(25.0)	1.20(.18,7.88)	.849
Educational status	Illiterate	71(69.6)	31(30.4)	1	
	Elementary	135(83.3)	27(16.7)	2.18(1.21,3.94)	.010*
	Secondary	34(85.0)	6(15.0)	2.47(.94,6.49)	.066
	Diploma/certificate	43(89.6)	5(10.4)	3.75(1.36,10.39)	.011*
	1 st degree and above	27(93.1)	2(6.9)	5.89(1.32,26.34)	.020*
Age of mother	≤ 24	93(86.1)	15(13.9)	1	
	25-29	103(75.2)	34(24.8)	.489(.250,.954)	.036*
	30-34	71(80.7)	17(19.3)	.674(.315,1.44)	.308
	≥35	43(89.6)	5(10.4)	1.38(.474,4.06)	.551
Sex of the infant	Boy	202(85.2)	35(14.8)	1.94(1.14, 3.24)	.014*
	Girl	108(75.0)	36(25.0)		
Age of infant	1 month	70(94.6)	4(5.4)	7.07(2.46,20.33)	.000**
	2-3 month	104(89.7)	12(10.3)	3.50(1.78,6.88)	.000**
	4-6 month	136(71.2)	55(28.8)	1	
Ethnicity	Oromo	163(79.1)	43(20.9)	1	

Religion	Amhara	60(82.2)	13(17.8)	1.22(.612,2.42)	.575
	Kafa	29(87.9)	4(12.1)	1.91(.64,5.73)	.247
	Tigray	36(87.8)	5(12.2)	1.89(.703,5.13)	.236
	Gurage	22(78.6)	6(21.4)	.96(.369,2.53)	.946
	Muslim	179(78.9)	48(21.1)	1	
	Orthodox	63(79.7)	16(20.3)	1.05(.56,1.99)	.867
	Protestant	43(91.5)	4(8.5)	2.88(.98,8.43)	.353
	Wake feta	25(89.3)	3(10.7)	2.23(.64,7.71)	.233
Birth interval	<2 years	200(86.2)	32(13.8)	2.22(1.32,3.73)	.003*
	≥2 years	110(73.8)	39(26.2)	1	
Place of delivery	At health facility	280(85.9)	46(14.1)	5.07(2.74,9.38)	.000**
	At home	30(54.5)	25(45.5)	1	
Mode of delivery	Normal/Vaginal	271(80.9)	64(19.1)	1.31(.563,3.08)	.527
	Cesarean section	39(84.8)	7(15.2)		
Antenatal care	Yes	270(85.2)	47(14.8)	3.44(1.90,6.239)	.000**
	No	40(62.5)	24(37.5)	1	
Access to media	Not at all	31(79.5)	8(20.5)		
	Newspaper/Magazines	26(81.3)	6(18.8)	1.12(.344,3.64)	.853
	Radio	92(76.7)	28(23.3)	.84(.350,2.054)	.715
	TV	161(84.7)	29(15.3)	1.43(.599,3.427)	.419
Time of work	< 3 hours	8(88.9)	1(11.1)	1	
	3-5 hours	111(84.7)	20(15.3)	2.09(.256,17.17)	.491
	≥ 6 hours	191(79.3)	50(20.7)	1.45(.823,2.566)	.298
Lack of onsite child care	Yes	114(82.0)	25(18.0)	.934(.545,1.60)	.805
	No	196(81.0)	46(19.0)	1	
Knowledge	Good knowledge	270(84.6)	49(15.4)	3.03(1.66,5.53)	.000**
	Poor knowledge	40(64.5)	22(35.5)	1	
Attitude	Positive attitude	160(82.9)	33(17.1)	1.23(.733, 2.06)	.436
	Negative attitude	150(79.8)	38(20.2)		

** Highly significance * significance; 1 reference category, COR: Crude odd ratio,

CI: Confidence interval

When each independent variable was adjusted for other variables, educational status, birth interval, place of delivery, age of infant, antenatal care, and knowledge about breastfeeding

were found to be statistically significantly associated with exclusive breast-feeding at a 95% confidence level and a p- value of 0.05 (Table 5.6).

Table 5.6: Multivariate analysis of factors associated with exclusive breastfeeding practices among mothers who gave birth in the last 6 months

Variables	Category	Exclusive breast-feeding		COR(95%CI)	AOR(95%CI)	P-value
		Yes	No			
Educationa l status	Illiterate	71(69.6)	31(30.4)		1	
	Elementary	135(83.3)	27(16.7)	2.18(1.21,3.94)	3.83(.730,20.07)	.080
	Secondary	34(85.0)	6(15.0)	2.47(.94,6.49)	1.98(.662,5.95)	.221
	Diploma/certificate	43(89.6)	5(10.4)	3.75(1.36,10.39)	3.94(1.27,12.18)	.017*
	1 st degree and above	27(93.1)	2(6.9)	5.89(1.32,26.34)	2.33(1.155,4.70)	.018*
Sex of the infant	Male	202(85.2)	35(14.8)	1.94(1.14, 3.24)	1.75(.952,3.22)	.072
	Female	108(75.0)	36(25.0)	.	1	
Age of infant	1 month	70(94.6)	4(5.4)	7.07(2.46,20.33)	5.81(1.90,17.69)	.002*
	2-3 month	104(89.7)	12(10.3)	3.50(1.78,6.88)	3.71(1.74,7.90)	.001**
	4-6 month	136(71.2)	55(28.8)		1	
Antenatal care	Yes	270(85.2)	47(14.8)	3.44(1.90,6.239)	2.96(1.392,6.31)	.005*
	No	40(62.5)	24(37.5)		1	
Birth interval	<3 years	200(86.2)	32(13.8)	2.22(1.32,3.73)	2.87(1.492,5.53)	.002*
	≥3 years	110(73.8)	39(26.2)		1	
Place of delivery	At health facility	280(85.9)	46(14.1)	5.07(2.74,9.38)	2.84(1.359,5.97)	.006*
	At home	30(54.5)	25(45.5)		1	
Knowledg e	Good knowledge	270(84.6)	49(15.4)	3.03(1.66,5.53)	2.29(1.025,5.14)	.043*
	Poor knowledge	40(64.5)	22(35.5)	5940		

** Highly significance * significance; 1 reference category COR: Crude odd ratio
AOR: Adjusted odd ratio CI: Confidence interval

Among the socio-demographic variable educational status of mothers and age of infants were statistically significance. As table 5.6 shows that Diploma educated mothers were 3.94 times more likely to practice EBF than illiterate mothers [AOR= 3.94, 95% CI (1.27-12.18)]. Likewise, first degree and above educated mothers were 2.33 times more likely to practice EBF

than illiterate mothers [AOR= 2.33, 95% CI (1.15-4.70)]. An infant whose age is 0-1 month was 5.81 times more likely to exclusively breastfed than infant aged 4-6 months [AOR= 5.81, 95% CI (1.90-17.69)]. Similarly infants aged 2-3 months were 3.71 times more likely to feed exclusively on breast milk than 4-6 month old infants [AOR= 3.71, 95% CI (1.74-7.90)].

Mothers who had less than 3 years of birth interval were about 2.87 times more likely to be exclusively breastfed than those who are birth interval of greater than 3 years [AOR= 2.87, 95% CI (1.492-5.53)]. Infants who are born in health facility were about 2.84 times more likely to be exclusively breastfed than those who are born at home [AOR= 2.84, 95% CI (1.359 - 5.97)]. Similarly, the odds of EBF for mothers who give antenatal care was 2.96 times higher as compared to mothers who didn't had antenatal care [AOR= 2.96, 95% CI (1.392 -6.31)].

Mothers who had knowledge of breastfeeding practice during antenatal care were 2.29 times more likely to practice exclusive breastfeeding than mothers who hadn't knowledge on breastfeeding practice [AOR= 2.29, 95% CI (1.1025-5.14)].

6. DISCUSSION

This study has attempted to assess the magnitude of exclusive breastfeeding practice and associated factors during the first six months of infant life among mother-infant pairs in in Seka Chekorsa, Southwest Ethiopia from April to May, 2021. The current study found that the overall practice of exclusive breast-feeding among the mothers was 75.8% (95% CI 70.1, 81.8). The result is comparable with studies done in Goba district (73.3%) (24), Jimma town (74.2%) (25), and Madagascar (78%)(26), however its higher than study done in Harere Town (45.8%) (27), and Boditi Town (64.8%) (28), and lower than studies done in Dire Dawa (81.1%) (29)(30) in Ghana (79%) (31) and Eastern Uganda (82%) (32). The difference might be due to methodological variations between studies and differences in sociocultural, economical, health and health service utilization characteristics between respondents of the referenced areas and the study place.

The study revealed that 73.2% initiated breastfeeding immediately after delivery and the frequency of breast-feeding, 60.1% of the mothers fed 6–10 times/day, 26.2% less than 5 times /day and 13.6% more than 10 times. The finding is consistent with the study which was conducted at Harar Town (27), Eastern Ethiopia, which reported that 69.3% initiated breastfeeding immediately after delivery and the frequency of breast-feeding, 59.4% of the mothers fed 2–3 times/day, and 37.2% 4–7 times/day.

Regarding factors that could affect EBF, educational status, birth interval, place of delivery, age of infant, antenatal care, and knowledge about breastfeeding were found to be statistically significantly with EBF practice. Accordingly, mothers' education or having diploma or degree was associated with exclusive breastfeeding which is in line with findings from Bahir Dar (33). This may happen because the mothers can have a good knowledge with their babies and give breast milk.

In addition the present study showed that the age of the infant 0-1 month old was 5.81 times more likely to exclusively breastfed than infant aged 4-6 months. Studies conducted in Bale Goba (24) and Jimma town(25) showed similar findings. This is due to the fact that when the age of the baby increases, the mothers may return to work.

The findings also showed that those infants who are born in health institutions were about 2.84 times more likely to be exclusively breastfed than those who are born at home. This finding is

supported by a study conducted at Bahir Dar (33). This may be because mothers get counseling and advice when they give birth at the health facility and understand the rationale behind exclusive breastfeeding.

In this study, antenatal care was positively associated with exclusive breastfeeding practice. The result is consistent with studies done in Nigeria (34) and Malawi (28). This suggests that antenatal care has a significant impact on exclusive breastfeeding and mothers who attend antenatal care follow up could have a good opportunity to get nutritional counseling and education about infant feeding including exclusive breastfeeding. Previous studies demonstrated that health care professional support, breastfeeding education programs, breastfeeding promotion programs, and good access to health care in the antenatal period were reported as facilitator of exclusive breastfeeding (35).

Mothers who had knowledge of breastfeeding practice during antenatal care were 2.29 times more likely to practice exclusive breastfeeding than mothers who had a poor knowledge on breastfeeding practice. The finding is consistent with the study which was conducted at Dabat, Northwest Ethiopia, which reported that knowledge of breastfeeding practice during antenatal care were more likely to practice exclusive breastfeeding than mothers who had poor knowledge on breastfeeding practice (33).

7. CONCLUSION AND RECOMMENDATION

7.1 CONCLUSION

Overall practice of exclusive breast-feeding among the mothers was 75.8% and majority of mothers fed their child 6 to 10 times per day. The majority of the study participants provide animal milk as additional liquid. Educational status, birth interval, place of delivery, age of infant, antenatal care, and knowledge about breastfeeding after delivery were found to be statistically significantly associated with exclusive breast-feeding. Higher school educated mothers were more likely to be exclusive breastfeeding than illiterate mothers. Infants who are born in health institutions were more likely to be exclusively breastfed than those who are born at home. Antenatal care has a significant impact on exclusive breastfeeding and mothers who attend antenatal care follow up could have a good opportunity to get education about exclusive breastfeeding.

7.2 RECOMMENDATION

Based upon the findings the following recommendations are made:

Healthcare workers

- Should give due attention and work on the encouragement of pregnant women to attend antenatal care follow up to get nutritional counseling and education about infant feeding including exclusive breastfeeding to increase the practice, and reach the WHO recommended levels.

Health institutions

- Better to encourage and give counseling for women to born in health facility. Child births should be attended by health care personnel in order to intensify efforts at informing women about the importance of breastfeeding, especially EBF.

Health care program planners

- Must work towards increasing antenatal care coverage.

- A special breastfeeding place for working mothers, daycare facilities, and at least six-month maternity leave should be provided to improve EBF practice, as well as maternal and neonatal health.

Further researcher

- Finally, further interventional and longitudinal studies are needed to improve EBF among first time mothers' population. Further, women should be educated on what to do and where to seek care if breast problem arise.

Reference

1. African W, Agho KE, Ezech OK, Ghimire PR, Uchechukwu OL, Stevens GJ, et al. Exclusive Breastfeeding Rates and Associated Factors in 13 “Economic Community of West African States” (ECOWAS) Countries. 2019; <https://europepmc.org/article/med/31818035>. Accessed on May 15, 2021
2. WHO. GUIDELINE :Protecting, promoting and supporting BREASTFEEDING IN FACILITIES providing maternity and newborn services. 2017. <https://apps.who.int/iris/handle/10665/259386>. Accessed on May 15, 2021.
3. Assembly FWH. Global strategy for infant and young child feeding The optimal duration of exclusive breastfeeding. WHO. 2001;4(May):1–5. <https://apps.who.int/iris/handle/10665/78801>. Accessed on May 15, 2021. Accessed on May 17, 2021.
4. Series LN. Scientific Rationale: Benefits of Breastfeeding . 2012. 2012;1–7. https://www.who.int/elena/titles/exclusive_breastfeeding/en/ Accessed on May 17, 2021.
5. Dadhich JP. 10,965. 2017;(September).
6. Brahm P. Benefits of breastfeeding and risks associated with not breastfeeding Beneficios de la lactancia materna y riesgos de no amamantar. 2020;88(1):15–21. <https://pubmed.ncbi.nlm.nih.gov/28288222/> Accessed on May 17, 2021.
7. CSA. 2016 Ethiopia Demographic and Health Survey, Central Statistical Authority A.A, Ethiopia. ICF International, Calverton, Maryland, USA. 2016. http://poshukach.com/redir?user_type=1a&type=sr&redir=eJzLKCKpKLbS10_JKC4oyk8vSszVS87P1S8oTSrWL0hJ03cLMjaygJB6QD4Dg6GZkYWxuZmxmTmD3mGRTr-Wi4_tQxL-NYaWmgIA1fIZiA&src=1a1652&via_page=1 Accessed on May 17, 2021.
8. Murtagh L, Moulton AD. Strategies to Protect Vulnerable Populations: working mothers breastfeeding and the law. 2011;101(2):217–23.
9. UNICEF. BREASTFEEDING A Mother ’ s Gift , for Every Child. For every child. 2018;1. <https://data.unicef.org/resources/breastfeeding-a-mothers-gift-for-every-child/>

Accessed on May 18, 2021.

10. Child Y, Programmes F. Improving Exclusive Breastfeeding Practices by using Communication for Development in Infant and Young Child Feeding Programmes. 2011;(June 2010). <https://resourcecentre.savethechildren.net/node/12984/pdf/3.2>. Accessed on May 25, 2021.
11. WHO U. Implementation guidance: Protecting, promoting and supporting Breastfeeding in facilities providing maternity and newborn services: the revised BABY-FRIENDLY HOSPITAL INITIATIVE. 2018. 8 p.
<https://apps.who.int/iris/handle/10665/272943> Accessed on May 25, 2021.
12. Setegn T, Belachew T, Gerbaba M, Deribe K, Deribew A, Biadgilign S. Factors associated with exclusive breastfeeding practices among mothers in Goba district , south east Ethiopia : a cross-sectional study. 2012;1–8. <https://internationalbreastfeedingjournal.biomedcentral.com/articles/10.1186/1746-4358-7-17> Accessed on June 2, 2021.
13. Hossain M, Islam A, Kamarul T, Hossain G. Exclusive breastfeeding practice during first six months of an infant ’ s life in Bangladesh : a country based cross-sectional study. BMC Pediatr. 2018;1–9. <https://bmcpediatr.biomedcentral.com/articles/10.1186/s12887-018-1076-0> Accessed on June 17, 2021.
14. Seifu W, Assefa G EG. Prevalence of Exclusive Breast Feeding and its Predictors Among Infants Aged Six Months in Jimma. Pediatr neonatal care. 2014;1(3):1–6. <https://medcraveonline.com/JPNC/prevalence-of-exclusive-breast-feeding-and-its-predictors-among-infants-aged-six-months-in-jimma-town-southwest-ethiopia-2013.html> Accessed on June 17, 2021.
15. Kristiansen AL, Lande B, Øverby NC, Andersen LF. Factors associated with exclusive breast-feeding and breast- feeding in Norway. Public Health Nutr. 2010;13(12):2087–96. <https://pubmed.ncbi.nlm.nih.gov/20707948/> Accessed on June 18, 2021.
16. Rahman A, Id NK, Id SA, Rahman A. Determinants of exclusive breastfeeding practice in

Bangladesh : Evidence from nationally representative survey data. 2020;1–14. Available from: <http://dx.doi.org/10.1371/journal.pone.0236080> Accessed on June 18, 2021.

17. Smith JP, McIntyre E, Craig L, Javanparast S, Smith JP, McIntyre E, et al. Workplace support , breastfeeding and health. 2012;93. <https://search.informit.org/doi/abs/10.3316/informit.768761683720030> Accessed on June 18, 2021.
18. Christrup SM. Breastfeeding in the American Workplace. *Gend Soc policy law*. 2001;9(3):471–503. <https://digitalcommons.wcl.american.edu/cgi/viewcontent.cgi?article=1357&context=jgsp1> Accessed on June 18, 2021.
19. Mamo K, Dengia T, Abubeker A, Girmaye E. Assessment of Exclusive Breastfeeding Practice and Associated Factors among Mothers in West Shoa Zone , Oromia , Ethiopia. 2020;2020. <https://www.hindawi.com/journals/ogi/2020/3965873/> Accessed on June 18, 2021.
20. Al-Sahab B, Lanes A, Feldman M, Tamim H. Prevalence and predictors of 6-month exclusive breastfeeding among Canadian women: A national survey. *BMC Pediatr*. 2010;10. <https://bmcpediatr.biomedcentral.com/articles/10.1186/1471-2431-10-20> Accessed on June 18, 2021.
21. Mbada CE, Olowookere AE, Faronbi JO, Oyinlola-Aromolaran FC, Faremi FA, Ogundele AO, et al. Knowledge, attitude and techniques of breastfeeding among Nigerian mothers from a semi-urban community. *BMC Res Notes* [Internet]. 2013;6(1):552. Available from: <https://doi.org/10.1186/1756-0500-6-552> Accessed on June 18, 2021.
22. Wake GE. Prevalence of Exclusive Breastfeeding Practice and its Association with Maternal Employment in Ethiopia : A Systematic Review and Meta- Analysis , 2020. 2020;1–19. <https://www.researchsquare.com/article/rs-33572/v1> Accessed on June 18, 2021.
23. Worku F. Assessment of Factors Associated with Exclusive Breastfeeding Practice of Employed and Unemployed Mother : A Community Based Comparative Cross Sectional

- Study Woldiya , Ethiopia 2014 / 15 A Thesis Submitt. 2015; <http://etd.aau.edu.et/handle/123456789/11290> Accessed on July 15, 2021.
24. Setegn T, Belachew T, Gerbaba M, Deribe K, Deribew A, Biadgilign S. Factors associated with exclusive breastfeeding practices among mothers in Goba district, south east Ethiopia: a cross-sectional study. *Int Breastfeed J* [Internet]. 2012;7(1):17. Available from: <https://doi.org/10.1186/1746-4358-7-17> Accessed on July 15, 2021.
 25. Seifu W, Assefa G, Egata G. Prevalence of exclusive breast feeding and its predictors among infants aged six months in Jimma Town, Southwest Ethiopia, 2013. *J Pediatr Neonatal Care*. 2014;1(3):17. <https://medcraveonline.com/JPNC/prevalence-of-exclusive-breast-feeding-and-its-predictors-among-infants-aged-six-months-in-jimma-town-southwest-ethiopia-2013.html> Accessed on July 15, 2021.
 26. Quinn VJ, Guyon AB, Schubert JW, Stone-Jiménez M, Hainsworth MD, Martin LH. Improving breastfeeding practices on a broad scale at the community level: success stories from Africa and Latin America. *J Hum Lact*. 2005;21(3):345–54. <https://pubmed.ncbi.nlm.nih.gov/16113023/> Accessed on July 21, 2021.
 27. Dibisa TM, Sintayehu Y. Exclusive breast feeding and its associated factors among mothers of < 12 months old child in Harar town, eastern Ethiopia: a cross-sectional study. *Pediatr Heal Med Ther*. 2020;11:145. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7229802/> Accessed on July 21, 2021.
 28. Azeze GA, Gelaw KA, Gebeyehu NA, Gesese MM, Mokonnen TM. Exclusive breastfeeding practice and associated factors among mothers in Boditi Town, Wolaita Zone, Southern Ethiopia, 2018: a community-based cross-sectional study. *Int J Pediatr*. 2019;2019. <https://www.hindawi.com/journals/ijpedi/2019/1483024/> Accessed on July 15, 2021.
 29. Hunegnaw MT, Gezie LD, Teferra AS. Exclusive breastfeeding and associated factors among mothers in Gozamin district, northwest Ethiopia: a community based cross-sectional study. *Int Breastfeed J*. 2017;12(1):1–8. <https://internationalbreastfeedingjournal.biomedcentral.com/articles/10.1186/s13006-017->

0121-1 Accessed on July 15, 2021.

30. Earsido A, Abebe W, Dereje N. Prevalence and Determinants of Exclusive Breastfeeding Practices among Infants in Hossana Town, Southern Ethiopia: A Community Based Cross-Sectional Study. In 2017. Accessed on July 22, 2021.
31. Aidam BA, Perez-Escamilla R, Lartey A, Aidam J. Factors associated with exclusive breastfeeding in Accra, Ghana. *Eur J Clin Nutr.* 2005;59(6):789–96. <https://pubmed.ncbi.nlm.nih.gov/15870819/> Accessed on July 22, 2021.
32. Engebretsen IMS, Wamani H, Karamagi C, Semiyaga N, Tumwine J, Tylleskär T. Low adherence to exclusive breastfeeding in Eastern Uganda: A community-based cross-sectional study comparing dietary recall since birth with 24-hour recall. *BMC Pediatr* [Internet]. 2007;7(1):10. Available from: <https://doi.org/10.1186/1471-2431-7-10> Accessed on July 28, 2021.
33. Sefene A, Birhanu D, Awoke W, Taye T. Determinants of exclusive breastfeeding practice among mothers of children age less than 6 month in Bahir Dar city administration, Northwest Ethiopia; a community based cross-sectional survey. *Sci J Clin Med.* 2013;2(6):153–9. <http://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=159&doi=10.11648/j.sjcm.20130206.12> Accessed on July 28, 2021.
34. Agho KE, Dibley MJ, Odiase JI, Ogbonmwan SM. Determinants of exclusive breastfeeding in Nigeria. *BMC Pregnancy Childbirth* [Internet]. 2011;11(1):2. Available from: <https://doi.org/10.1186/1471-2393-11-2> Accessed on July 30, 2021.
35. Biks GA, Tariku A, Tessema GA. Effects of antenatal care and institutional delivery on exclusive breastfeeding practice in northwest Ethiopia: a nested case–control study. *Int Breastfeed J* [Internet]. 2015;10(1):30. Available from: <https://doi.org/10.1186/s13006-015-0055-4> Accessed on July 30, 2021.

ANNEX – I

English Version Questionnaire
JIMMA UNIVERSITY
SCHOOL OF PUBLIC HEALTH

Information sheet

Hello, my name is ----- I am working with Teshome Shita, who is completing his master's Degree in Human Nutrition in school of public health. This study is, therefore, part of the requirements for the fulfillment of the MPH program he is enrolled in.

The study focuses on the identification of the factors that are responsible for mothers to exercise Exclusive Breastfeeding practice among employed and unemployed mothers. Mothers are selected from the households, based on lottery method. Hence, you are now part of the selected mothers for interview.

Hence, I hereby assure you that the responses will be kept strictly confidential for all matters and it will only be used for the purpose of the study mentioned above. Your name will not be mentioned to protect your confidentiality. You have a right to answer or not for questions which might be inconvenient for you. The study may require 20-30 Minute. So please give me only some minutes to complete my questions. If you have any questions about the study, you may raise. For detail information you can contact the investigator through cell phone 0919133760 and e-mail teshome.88@gmail.com.

I thank you in advance for your cooperation in the study!!

Consent form for study participants

I have been informed about the purpose and use of this particular research project. The information I am going to give will be used only for the purpose of this study and my identity as well as the information I will be providing will be kept confidential. After all these I understood and:

1. I agree to participate in this research voluntarily -----
2. I didn't agree to participate in this research -----

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

Result of interview questionnaire – encircle from the given

option

1. Completed
2. Refused
3. Partially completed
4. Other specify

Date of visit: [__/__/__]

CODE:

DD/MM/YYYY

Site in which the interview is being conducted

Number	Socio Demographic characteristics		
101.	How old are you	Age in years.....	
102.	Are you able to read or write a simple sentence?	1. Yes 2. No	
103.	Did you ever attend formal school?	1. Yes 2. No	→ Skip to 106
104.	If yes, what is the highest grade you completed?	1. Illiterate 2. Primary 3. Secondary 4. Diploma/Certificate 5. 1 st degree and above	
105.	Are you employed?	1. Yes 2. No	
106	What is your ethnic group	1. Oromo 2. Amhara 3. Tigray 4. Kafa 5. Gurage	
107	What is your religion?	1. Muslim 2. Orthodox 3. Protestant 4. Wakefeta	
108	What is your current marital	1. Single 2. Married	

	status?	3. Divorced/Separated 4. Widowed	
109	How many children have you born Alive?	No of children born alive.....	
110	How many children do you have now alive?	Number of children.....	
111	What is the age range between your youngest child and his/her bigger brother/sister?	Age difference in number If she have 1 child	→ 113
112.	When you were pregnant, did you go to a health facility for antenatal care?	1. Yes 2. No	

113	Where did you give birth your youngest baby?	1. At health facility 2. At home 3. Other specify																			
Background of the Child																					
114	Sex of Child	1. Boy 2. Girl																			
115	What is the age of your child?	[____ ____] MONTHS																			
Basic questions about Exclusive breastfeeding																					
116	Which sources do you have access to hear/read about Exclusive Breastfeeding practice?	1. Not at all 2. Newspaper/Magazines/Fliers 3. Radio 4. TV																			
117	Did you receive any advice about EBF during your antenatal care or anywhere?	1. Yes.....1 2. No.....2																			
118	What did you give (feed) your baby within the first one hour after delivery? READ OUT LIST (Circle 1 if mentioned 2 if not mentioned) “More than one answer is possible”	<table border="0"> <tr> <td></td> <td>Yes</td> <td>no</td> </tr> <tr> <td>The fluid that came from the breast</td> <td>1</td> <td>2</td> </tr> <tr> <td>Butter</td> <td>1</td> <td>2</td> </tr> <tr> <td>Water & Sugar</td> <td>1</td> <td>2</td> </tr> <tr> <td>Nothing fed</td> <td>1</td> <td>2</td> </tr> <tr> <td>Other (specify)</td> <td>1</td> <td>2</td> </tr> </table>		Yes	no	The fluid that came from the breast	1	2	Butter	1	2	Water & Sugar	1	2	Nothing fed	1	2	Other (specify)	1	2	
	Yes	no																			
The fluid that came from the breast	1	2																			
Butter	1	2																			
Water & Sugar	1	2																			
Nothing fed	1	2																			
Other (specify)	1	2																			
119	Are you still breastfeeding the child?	1. Yes																			

		2. No →	Skip to 119
120	Did the infant drink/eat anything with a bottle/spoon yesterday?	1. Yes 2. No	
121	Did you think that breastfeeding only is enough for a child of age 0-6 months?	1. Yes 2. No	
122	At what age do you think breast milk alone would no longer be enough to feed infant?	1. Two months 2. Three months 3. Four months 4. Five months 5. Six months 6. Another specify-----	
123	If you think that breast milk alone will not be enough/it you are not breast feed for the infant during the first six month what kind of food or liquid did you give? “More than one answer is possible”	1. Milk (other than breast milk) 2. Plain water 3. Sugar or glucose water 4. Sugar-salt-water solution 5. Fruit juice 6. Infant formula 7. Tea/infusions 8. Honey 9. Fresh butter	
124	What conditions did affect you not	1. Working condition	

	to practice Exclusive breastfeed?	Fear of producing not enough milk 2	
--	-----------------------------------	-------------------------------------	--

	“More than one answer is possible”	2. Due to maternity leave 3. Lack of onsite child care 4. Time of work 5. age of the child 6. your marital status 7. Other specify																						
125	How many times did you breastfed in 24 hours?																						
126	When do you usually breastfeed the child? (Read choice Circle 1 if applied 2 if not applied)	<table><tr><td></td><td>Yes</td><td>1</td></tr><tr><td>When the child wants</td><td>1</td><td>2</td></tr><tr><td>When the child cries</td><td>1</td><td>2</td></tr><tr><td>On schedule</td><td>1</td><td>2</td></tr><tr><td>On convenience</td><td>1</td><td>2</td></tr><tr><td>When breast engorged</td><td>1</td><td>2</td></tr><tr><td>Other (specify).....</td><td></td><td>2</td></tr></table>		Yes	1	When the child wants	1	2	When the child cries	1	2	On schedule	1	2	On convenience	1	2	When breast engorged	1	2	Other (specify).....		2	
	Yes	1																						
When the child wants	1	2																						
When the child cries	1	2																						
On schedule	1	2																						
On convenience	1	2																						
When breast engorged	1	2																						
Other (specify).....		2																						
For employed mothers only																								
127	What type of work did you do?	1. Petty trader 2. Permanent employee 3. Daily laborer 4. Other (specify).....																						

128	How long did you stay at work?	
129	Is there onsite child care at your work place?	1. Yes.....1 2. No.....2	
130	What did the infant feed when you are at work place?	1. Expressed breast milk 2. Infant formula	
Knowledge about exclusive breastfeeding (interviewer please don't read the options on the columns to the right)			
201	Have you ever heard about breast feeding?	1. Yes I agree 2. No I don't agree	
202	ANC follow up is good source of information about exclusive breast feeding	1. Yes I agree 2. No I don't agree	
203	Breast feeding is important for child health.	1. 1. Yes I agree 2. No I don't agree	

204	Breast feeding is important for mother health.	1. Yes I agree 2. No I don't agree	
205	An infant should be put to breast immediately after birth	1. Yes I agree 2. No I don't agree	
206	Pre-lacteal feeding is needed for an infant before starting breast milk.	1. Yes I agree 2. No I don't agree	
207	The first milk(colostrum) should be given to an infant	1. Yes I agree 2. No I don't agree	
208	Breast milk alone without water and other liquids is enough for an infant during the first 6 months of life	1. Yes I agree 2. No I don't agree	
209	Starting from 6 month a child should start complementary feeding and continued breast feeding up to 2 years and beyond	1. Yes I agree 2. No I don't agree	
210	Vitamins, minerals and medicines are allowed while breastfeeding only	1. Yes I agree 2. No I don't agree	
Attitude towards exclusive breast feedings			
301	Breastfeeding is good for my baby	1. Agree	

	because breast milk is the best food for the child.	2. Neutral 3. Don't agree 4. Don't know	
302	Breastfeeding is not good because cosmetically affects the mother's shape.	1. Agree 2. Neutral 3. Don't agree 4. Don't know	
303	Maternity leave of three months is enough to successful breastfeeding.	1. Agree 2. Neutral 3. Don't agree 4. Don't know	
304	The household economic capacity determines the mother breastfeeding practice.	1. Agree 2. Neutral 3. Don't agree 4. Don't know	
305	Breast feeding has an advantage to the mother because it prevents pregnancy.	1. Agree 2. Neutral 3. Don't agree 4. Don't know	
306	Breast feeding the baby helps the child to grow well.	1. Agree 2. Neutral 3. Don't agree	

		4.Don't know	
307	Your husband support is needed for you to breastfeed your child?	1.Agree 2.Neutral 3.Don't agree 4.Don't know	
308	Your family members support is needed for you to breastfeed your child?	1.Agree 2.Neutral 3.Don't agree 4.Don't know	

THANK YOU FOR YOUR GENIUNE RESPONSE TO MY QUESTIONS!

ANNEX-III
Afan Oromo version Questionnaire
YUNIVARSITII JIMMAA
KOLLEJII FAYYAA HAWAASAA

Fuula Odeeffannoo

Kabajamoo hirmaattotaa Maqaan koo _____ jedhama. Ani kanan hojjedhu raga a funaanuu dha. Kunis qorannoo (Riiserchii) Obbo Tashoomaa Shittaa barnoota isaanii digirii lammaffaaf Yuunivarsitii Jimmaa, Kolleejii Fayyaa Hawaasaa irraa gaggeessaniif ulaagaa isa guddaa fi isa barbaachisaa dha. Dursee kanan isin gaafadhu waa'ee qorannichaa waanan isiniif ibsuuf yaadaan akka na dhaggeeffattanii fi irratti hirmaattan isinin jedha.

Matadureen qorannoo kanaa haadholii daa'imman isaanii ji'a ja'aa gadi ta'an akkaataa harma haadhaa qofa itti hoosisanii fi rakkoolee Kanaan wal qabatan xiinxaluu fi adda baasuu. Kaayyoon isaas bu'aa qorannichaa haadhoo dabalatee qaamni dhimmi isa ilaallatu hundi furmaata akka itti laatu gochuudha.

Qoorannoon kun haadhoo harma hoosisan gara fuulduraatti jiraaniif galtee yookin furmaata ta'uu waan dandaa'uuf gaafannoo kana guutummaasaa akka itti hirmaattan kabajaan yoo isiin beeksifnus yeroo barbaaddanitti keessaa bahuu yookin immoo hirmaachuu diduuf mirga guutuu ta'ee qabdu. Iccitiin keessanis ana nama isin gaafachaa jiruu fi qoraticha qofa biratti kan hafu malee qaama 3^{ffaa} dabarfamee hin kennamu. Wanti waadaa isiniif gallu inni biraan qoorannoo kana irratti hirmaachuun keessan yaalii ykn tajaajila isin argattan kamiyyuu irratti dhiibbaa fidu tokkollee hin qabu. Gaafannoo keenya xumururuuf daqiiqaa 20-25 fuudhachuu danda'a.

Yoo gaaffiis ta'ee komii tokkollee qabaattan yeroo barbaaddanitti lakkoofsa bilbilaa armaan gadiin qunnamuu dandeessu. Lakk bil. 0932444052 /E-mail. teshome.88@gmail.com

Walii galtee hirmaattota qorannichaa waliin gaggeeffamu

Ani waraqaa ragaa hirmaattotaa dubbisee/ naaf dubbifamee jira. Ifatti kaayyoo qorannichaa, adeemsa, miidhaa fi bu'aa, iccitii, mirgaa fi lakkoofsa yeroo rakkoon uumamee fi gaaffiin jiraate ittiin qunnamu argadheen jira. Carraa gaaffii naaf hin galle yeroo kamittuu gaafachuu danda'uu fi yeroon barbadetti qorannicha keessaa itti bahuu danda'u naaf kennamee jira. Kanaaf, ani walii galtee qorannicha keessatti ittiin hirmaadhu mallattoo kootiin akka armaan gadiitti nan mirkaneessa.

1. Heeyyama kootiin qorannoo kana irratti nan hirmaadha.....
2. Qorannicha irratti hirmaachuu hin barbaadu.....

Maqaa nama odeeffannoo guutee..... Mallattoo

Waliigala haala gaafannoo

1. Guutumatti Guutameera
2. Hin guutamne
3. Walakkaan guutameera
4. Kan biroo

Guyyaa gaafannoo [____/____/____]

GG/JJ/WWWW

Lakkoofsa hirmaattotaa

Koodii hirmaattotaa

Iddoo gaafannoon itti gaggeeffame

Godina: Jimmaa **Aanaa:** Saqqaa Coqorsaa

Gaaffilee Hawaasummaa, Diinagdee fi Maatii waliin walqabatan			
T.Lakk.	Gaaffilee gaafataman	Deebii	Gara itti aanutti darbi
101	Umrii	Waggaa	
102	Hima salphaa dubbisuu yookin barreessuu ni dandeessaa?	1. Eeyyee 2. Lakkii	
103	Barnoota idilee hordoftettaa?	1. Eeyyee 2. Lakkii	→ 106
104	Eeyyee yoo ta'e hangam baratte?	Sadarkaa barumsaa	
105	Qacaramtee hojjataa jirtaa?	1. Eeyyee 2. Lakkii	
106	Haala gaa'elaa	1. Kan heerumte 2. Qobaa kan jiraattu 3. Adda kan baate 4. A/Manaa kan jalaa du'e	
107	Ijoollee meeqa lubbuudhaan deesse?	Lakk. Ijoollee lubbuudhaan dhalatani.....	
108	Amma ijoollee meeqa qabda?	Baay'ina ijoollee lubbuun jirani.....	
109	Garaagarummaan umrii mucaa/intala kee angafaaf quxisuu gidduu jiru meeqa?	Garaagarummaa waggaa lakkoofsaan.....	
110	Yeroo ulfa turtetti hordoffii ulfaaf gara dhaabbata fayyaa deemtettaa?	1. Eeyyee 2. Lakkii	
111	Mucaa kee isa dhumaa eessatti deesse?	1. Dhaabbata fayyaatti 2. Manatti	

		99. Kan biro yoo jiraate ibsi.....	
Gaaffii daa'ima waliin wal qabatu			
112	Saala daa'ima	1. Dhiira 2. Durba	
113	Umrii daa'ima	Ji'a	
Gaaffilee bu'uuraa daa'ima aannan harmaa qofa kennuu wajjiin walqabate			
114	Odeeffannoo waa'ee daa'ima ji'a ja'aa gadii aannan harmaa qofa hoosisuu eessaa dhageessu/dubbistu.	1. Guutumatti odeeffannoo hinqabnu 2. Gaazexaa/barreeffamoota adda addaa 3. Raadiyoo 4. TV	
115	Hordoffii kee irraatti gorsa waa'ee aannan harmaa qofa hoosisuu argatteetaa?	1. Eeyyee 2. Lakkii	
116	Erga deessee sa'aatii tokko keessatti daa'ima keetiif maal kennite? FILANNOO ITTI AANU KEESSAA (yoo jiraate 1 filadhu) "tokkoo ol filachuun ni danda'ama"	Eyyee miti Aannan harmaa isa jalqaba harma keessaa ba'u 1 2 Dhadhaa 1 2 Bishaanii fi shukkaara 1 2 Homaa hin kennine 1 2 Kan biro yoo jiraate (ibsi)	
117	Hanga ammaatti daa'ima kee harma hoosisaa jirtaa?	1. Eeyyee 2. Lakkii	→ 119
118	Daa'imni kee saa'tii 24 darbe keessatti xuuxxoo hodheeraa/fal'aanaan nyaata nyaateraa?	1. Eeyyee 2. Lakkii	
119	Daa'ima ji'a ja'aa gadiif aannan harmaa qofti gahaadha jettee yaaddaa?	1. Eeyyee 2. Lakkii	
120	Umrii kamitti aannan harmaa qofti daa'immaniif gahaa miti jettee yaadda?	1. Ji'a lama 2. Ji'a sadi 3. Ji'a afur	

		4. Ji'a shan 5. Ji'a ja'a 99. Kan biro (ibsi)	
121	Wantoonni daa'ima kee akka aannan harmaa qofa hin kennine si dhorkan maal fa'i? “deebii tokkoo ol deebisuun ni danda'ama”	1. Haala hojii 2. Harmi kee aannan gahaa waan hin qabneef 3. Heeyyama da'umsaa waan hin arganneef 4. Sa'aatii hojii 5. Umrii daa'imaa 6. Haala gaa'elaa 99. Kan biro	
122	Sa'aatii 24 keessatti al meeqa harma hoosifta?	
123	Yeroo baay'ee sa'aatii kam daa'ima harma hoosifta?	<div style="text-align: right;">Eeyyee miti</div> Yeroo daa'imni barbaadutti 1 2 Yoo daa'imni boo'e 1 2 Sagantaadhaan 1 2 Yeroon itti amanetti 1 2 Yeroo harmi koo naqabetti 1 2 Kan biro..... 1 2	
Haadholee qacaramanii hojjataniif			
124	Hojii akkamii hojjetta?	1. Daldala xixiqqoo 2. Qacarrii dhaabbataa 3. Guyyaan kan kaffalamu 99. Kan biro.....	
125	Hojiirra yeroo hangamiif turta?	
126	Iddoo hojii keetti iddoon tursiisa daa'immanii ni jiraa?	1. Eeyyee 2. Lakkii	
127	Yeroo iddoo hojii jirtutti daa'ima keetiif	1. Aannan harmaa elmuun	

	maal kennita?	2. Aannan warshaa 99. Kan biro	
Gaaffilee hubannoo (beekumsa) waa'ee harma haadhaa qofa hoosisuu (maaloo deebiiwwan gara harka mirgaatiin tarreeffaman gaafatamtootaaf hin dubbisinaa)			
201	Waa'ee harma hoosisuu dhageessee beektaa?	1. Eeyyee 2. Lakkii	
202	Hordoffiin yeroo ulfaa odeeffannoo waa'ee harma qofa hoosisuu	1. Eeyyee 2. Lakkii	
203	Daa'ima harma hoosisuun daa'imaaf faayidaa guddaa qaba	1. Eeyyee 2. Lakkii	
204	Daa'ima harma hoosisuun haadhaaf faayidaa guddaa qaba	1. Eeyyee 2. Lakkii	
205	Daa'imni battala dhalatetti harma hodhuu qaba.	1. Eeyyee 2. Lakkii	
206	Daa'imni harma hodhuun dura waan harma dura kennamu fudhachuu qabdi.	1. Eeyyee 2. Lakkii	
207	Aannan jalqaba harma keessaa bahu daa'imaaf kennamuu qaba.	1. Eeyyee 2. Lakkii	
208	Aannan harmaa qofti waan dabalataa tokko malee daa'ima tokkoof hanga ji'a jahaatti gahaa dha.	1. Eeyyee 2. Lakkii	
209	Daa'imni ji'a ja'a booddee nyaata dabalataa argachuu qaba/di dabalataan aannan harmaas hanga waggaa lamaatti itti fufuu qaba?	1. Eeyyee 2. Lakkii	
210	Vaayitaaminiin, albuudnii fi qorichoonni adda addaa yeroo daa'imni harma qofa hodhutti kennamuu ni danda'a.	1. Eeyyee 2. Lakkii	

Ilaalcha waa'ee harma haadhaa qofa hoosisuu (waan isinitti dhagahame filannoowwan tarreeffaman keessaa filchuun yaada keessan ibsaa)

301	Harma hodhuun mucaa kootiif gaariidha sababni isaas aannan harmaa soorata baay'ee barbaachisaa waan ta'eef.	1. Nan waliigala 2. Giddugaleessa 3. Waliihingalu 4. Hin beeku	
302	Harma hoosisuun gaarii miti sababni isaas akkaataa dhaabbii qaama haadhaa irratti dhiibbaa waan qabuuf.	1. Nan waliigala 2. Giddugaleessa 3. Waliihingalu 4. Hin beeku	
303	Boqonnaan guyyaa 120 dahumsa booda haadholee dahaniif kennamu haala milkaa'een harma hoosisuuf gahaadha.	1. Nan waliigala 2. Giddugaleessa 3. Waliihingalu 4. Hin beeku	
304	Haalli qabeenya maatii tokkoo harma hoosisuu irratti dhiibbaa qaba.	1. Nan waliigala 2. Giddugaleessa 3. Waliihingalu 4. Hin beeku	
305	Harma haadhaa qofa hoosisuun faayidaa haadhaaf qabu keessaa ulfa ittisuun isa tokko.	1. Nan waliigala 2. Giddugaleessa 3. Waliihingalu 4. Hin beeku	
306	Harma hoosisuun guddina daai'immaniif baay'ee barbaachisaa dha.	1. Nan waliigala 2. Giddugaleessa 3. Waliihingalu 4. Hin beeku	
307	Abbaan manaa kee daa'ima kee harma akka hoosistu si gargaaruu qaba?	1. Nan waliigala 2. Giddugaleessa 3. Waliihingalu 4. Hin beeku	

308	Miseensonni maatii kan biroon harma akka hoosistuuf si gargaaruu qabu?	<ol style="list-style-type: none"> 1. Nan waliigala 2. Giddugaleessa 3. Waliihingalu 4. Hin beeku 	
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APPENDIX 1

Multicollinearity test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Sex of the infant	.988	1.013
	Place of delivery	.926	1.080
	Antenatal care	.926	1.080
	Knowledge	.882	1.134
	Age infant	.945	1.059
	Education	.961	1.041
	Birth interval	.920	1.087