



School of Public Health Graduate Study Program

Prevalence of bottle-feeding practice and its associated factors among mothers of infant less than six months in Addis Ababa health centers, Addis Ababa, Ethiopia: 2022, institution based cross sectional study

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This is to certify that the thesis prepared by Gedifew Birhan entitled: Thesis on the Prevalence of bottle-feeding practice and its associated factors among mothers of infant less than six months in Addis Ababa health centers, Addis Ababa, Ethiopia and submitted in partial fulfilment of the requirements for the Degree Masters of Public Health in Nutrition complies with the regulations of the collage and meets the accepted standards with respect to originality and quality.

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Declaration

I, the undersigned, declare that this study entitled “Thesis on the Prevalence of bottle-feeding practice and its associated factors among mothers of infant less than six months in Addis Ababa health centers, Addis Ababa, Ethiopia” is my own work. I have undertaken the research work independently with the guidance and support of the research advisor.

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Thesis summery

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List of Abbreviations and acronyms

AOR	Adjusted odds ratio.
ANC.....	Antenatal care.
BF.....	Bottle feeding.
CSA.....	Central statistics agency.
CI.....	Confidence interval.
COR.....	crud odds ratio
ETB.....	Ethiopian birr.
EC.....	Ethiopian calendar.
EDHS.....	Ethiopian demographic and healthy survey.
EPI.....	Expanded program of immunization
HR.....	Hazards ratio
HC.....	Health center
IYCF.....	Infant and young child feeding.
NGO.....	non-governmental organization.
RR.....	Relative risk
SRS.....	Simple random sampling.
SPSS.....	Statistical package for social science.
WHO.....	World health organization

Abstract

Introduction: Bottle-feeding is an infant feeding modality that a significant number of infants fed either breast milk or formula. Bottle feeding practice should be avoided due to its influence on optimal breast feeding and complementary feeding practice and its effect associated with morbidity and mortality resulted from diarrheal disease, infant and child illness and malnutrition. Today practice of bottle-feeding is increasing in developed countries and urban communities of developing countries including Ethiopia. Addis Ababa is one of urban city in Ethiopia that has limited evidence on bottle feeding practice.

Objective: To assess prevalence of bottle-feeding practice and its associated factors among mothers of infants less than six months in Addis Ababa, Ethiopia; 2022.

Methods: Institution based cross-sectional study was conducted in Addis Ababa public health facilities. A total of 456 mothers who had infants less than six months were included. Data was collected through face-to-face interview and entered using Epi info version 7.1 software and then analyzed using SPSS version 26. In Binary logistic regression analysis models, Variables with p-value < 0.2 in bivariable binary logistic regression analysis were entered to multivariable logistic regression analysis. Finally, variables with p-value < 0.05 in multivariable logistic regression were taken as significant factor. Adjusted odds ratio with 95% CI was used to show the strength of association between the dependent and independent variables.

Results: The overall prevalence of bottle-feeding practice in this study was 39 % with 95% uncertainty interval between 35-44%. Being male infant (AOR=0.589; 95%CI: 0.381, 0.911), being infant hospitalized (AOR=2.114; 95%CI: 1.246, 3.588), cesarean section mode of delivery (AOR=2.817; 95%CI: 1.764, 4.496) and late initiation of breast feeding (AOR=5.526; 95%CI: 3.121, 9.786) were statistically significant factors associated with bottle feeding practice.

Conclusion: The magnitude of bottle-feeding practice high in Addis Ababa as compared to national prevalence (22%). Being male infant, being infant hospitalized, cesarean section mode of delivery and late initiation of breast feeding were statistically significant factors associated with bottle feeding practice. Greater efforts to promote breastfeeding should be targeted towards women with sub optimal breast feed.

Key words: Associated factor, bottle feeding, Formula feed, prevalence, Ethiopia.

1. Introduction

1.1. Back ground of study

Adequate nutrition during the first two years of a child's life is essential to lower morbidity and mortality, reduce the risk of chronic diseases, normal development and future wellbeing of the child(1). The World Health Organization (WHO) recommends Optimal infant and young child feeding practices which includes early initiation of breast feeding within an hour of birth, exclusive breastfeeding up to six months of age, introduction of complementary feeding at six months and continuing breast-feeding up to 2 years or beyond and ensuring proper use of breast-milk substitutes(2). The primary infant feeding modalities for infants under six months of age are breastfeeding and bottle-feeding. The ideal feeding modality for mothers and infants is breastfeeding(3).

Breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants and an integral part of the reproductive process with important implications for the health of mothers(4).

Bottle-feeding is an infant feeding modality that has been in existence since ancient times and currently a significant number of infants are being fed via a bottle with either breast milk or breast milk substitutes (formula)(3). Breast milk substitutes are used commonly worldwide with bottle feeding which should be avoided due to its influence on optimal breastfeeding and appropriate complementary feeding. Moreover, feeding bottles are associated with diarrheal disease morbidity and mortality as it is difficult to keep it clean especially in developing countries where sanitation is poor(2).

Globally, 59% of infants and around 85% of infants within Australia by five months of age are being fed with either breast milk or formula using bottles(3). Even though, WHO recommends avoidance of bottle feeding, Rate of bottle feeding practices increasing in various countries 19.6% in Holeta Ethiopia(2), 15% in Nigeria(5), 25% in India(6) and 39.7% in Sudan(7). Today bottle-feeding has become a practice in developed countries and urban communities of developing countries. There is a current shift from traditional feeding practice towards shorter breast feeding and introduction of bottle-feeding (8).

Bottle-feeding is dangerous practice in developing countries because of low level of income, poor environmental and personal sanitation and limited parental education (6).

Several factors contribute to starting of bottle-feeding includes age of infants/children, age of mother, occupational status of mother, number of under five children, cesarean section mod of delivery, maternal work load maternal illness, ANC attendance and health education(2).

1.2. Statement problem

Breastfeeding is declining in almost all over the world despite its nutritional and immunological advantages. Improper breastfeeding practices may significantly compromise the health, development and survival of infants, children, and mothers. Worldwide it causes 820,000 children and 20,000 maternal deaths in a year (10). It has been found that non-exclusive breast-feeding (bottle feed) in the first 6 months of life results in 1.4 million deaths and 10% of the disease burden in children younger than 5 years(9).

Bottle feeding is one of suboptimal feeding practices in infancy and childhood that led to the high prevalence of malnutrition, increased morbidity and mortality in children in the developing world (9). Malnutrition accounts for around two-thirds of all deaths among children under the age of five worldwide. Each year more than 10 million children die as a result of malnutrition; 98% of these deaths occur in underdeveloped countries(10). Death rates in third world countries are lower among breastfed babies and breastfed babies have lower infections than formula fed babies(8).

In Ethiopia suboptimal breastfeeding practices are the most contributor around 70,000 infant deaths per year; 24% of the total infant death annually and that be significantly prevented by nutrition interventions such as exclusive breastfeeding(11).

Bottles are deleterious to the establishment of breastfeeding because of decrease in the prolactin response and infant refuse the breast completely once given a bottle. The mechanisms of suckling at the breast and sucking a bottle are completely different, and babies who are bottle fed refuse breast feeding because of nipple confusion(6). Bottle

feeding should be avoided, when possible, in infants under the age of two to improve health outcomes. The magnitude of bottle feeding practice is currently increasing in Ethiopia(12). Even though, some studies have examined practice of bottle feeding and associated factors in Ethiopia, practice of bottle feeding and associated factors are rarely addressed in urban community. So, this study aimed to fill this gap and assess the prevalence of bottle-feeding practice and associated factors among mothers of infants less than six month in Addis Ababa, Ethiopia.

1.3.Significance of study

The prevalence and determinant of bottle-feeding practice is not known in the study area even if bottle feeding practice is not recommended. Hence, there is a need to carry out research to come up with the magnitude and determinants of bottle-feeding practice in the study area in order to obtain the baseline data.

The finding of this study will also provide the district health office, regional health bureau, policy makers and NGOs (non-governmental organizations) with relevant information for future planning and interventions of appropriate strategies to promote and maintain exclusive breastfeeding practices for the first six months and complementary feeding after six months rather than bottle feeding. Thus, the study can be used as a reference for nurse educators, health care professionals especially pediatrics nurses and for others who are interested in carrying out further studies with this regard.

2. Literature Review

2.1. Prevalence of Bottle-feeding practice

Bottle feeding is the practice of feeding an infant a substitute for breast milk which should be avoided as much as possible due to the high risk of contamination. Since, feeding bottles are linked with diarrheal disease morbidity and mortality as it is challenging to keep it clean especially in developing countries where sanitation is poor(13,14). The prevalence and duration of breast-feeding is declining and being replaced by formula milk taken by bottle feeding(15).

According to study conducted in Pakistan to investigate determinants of child feeding practice using the data from the national Demographic and Health Survey of state, prevalence of bottle feeding practice was 62.7%(16). Whereas another Community based cross-sectional study conducted at Pakistan on the determinants of bottle use for infant feeding in a low-income peri urban community, tendency to use the bottle increased in relation to child's increasing age from 17% under the age of three months to 76% in infants from seven months to one year (17).

National survey analysis from nine east and southeast Asian countries infant and young child feeding indicators revealed that bottle-feeding practice rates are lower in democratic people of republic of Korea (3 %), Lao democratic people of republic (6 %) and Myanmar (6 %) and higher in the Philippines (49 %) and Mongolia (31 %)(9).

A other study conducted in Namibia to examine the prevalence of bottle feeding (BF) among children aged 0–23 months and associated factors using the data from the national Demographic and Health Survey, Prevalence of Bottle feeding practice is 35.7%(18) which is higher than study conducted in Nigeria 30.7%(19) and lower than a study conducted in Kassel, Eastern Sudan 39.7%(20).

A Multilevel Study conducted in East Africa on Pooled Prevalence and Determinants of Prelacteal Feeding Practice, the pooled prevalence of prelacteal feeding in eleven East African countries from 2010 to 2018 is 12%, with the highest prevalence of prelacteal feeding in the Comoros (39%) and the lowest in Malawi (3%)(21).

According to the 2019 Ethiopian Demographic and Health Survey (EDHS), Prevalence of bottle feeding practice in Ethiopian children under age of two years is 22%(22). However, the prevalence of bottle feeding practice in Ethiopia differs from place to place; as an example, a community based cross sectional study conducted in Agro town, Jimma zone, the overall prevalence of bottle feeding was 93.2%(14), which is higher than a study conducted in Mattu town, Jimma zone which have relatively same sociodemographic characteristics which is (28.4%)(8). Another community based cross sectional study conducted in Holeta, Ethiopia revealed that prevalence of bottle-feeding practice was 19.6%. These value is lower than study conducted in Debrelibanos district of north showa Oromia region, which is 77.6%(23). But a study conducted in woldia, Amhara region prevalence of bottle feeding practice was 42.7%(13) which is higher than study done in Holeta 19.6% (2) and lower than study conducted in Debrelibanos 77.6%(23). This variation may be due to different geographical location and sociodemographic characteristics of the study participant.

2.2. Factors associated with bottle feeding

Many studies found that bottle feeding is affected by different factors. From those factors some of them are discussed as follows;

2.2.1. Socio demographic factors

A study done in India, on deferments of bottle feeding revealed that being male sex is significant factor for bottle feed due to mothers belief of males high nutritional requirement construction of gender influence to increase bottle feeding(6). While, another study done in Woldia conclude that being infant age up five month and having 2 to 5 infant and young children in house hold are significant factors that increases risk of bottle feeding(12).

A study done on determinants of infant and young child feeding practices in Bangladesh and Nigeria from Secondary data analysis of Demographic and Health Survey, having higher educational level (OR = 2.17), mother and partner, older maternal age (OR for age ≥ 35 years = 2.32), and women from wealthier households including mothers who made frequent ANC visits are risk factors for bottle-feeding (24,25). Similarly, A study conducted in Pakistan(16), Namibia(18), East Africa(21) and Agaro town(14), High family

income (wealth quintile) that easiest access to expensive breast feeding alternatives is significantly associated with increased risk of Bottle feeding.

Higher Maternal educational status and urban residence are factors associated with Bottle Feeding practice in a study conducted in Namibia (18), East Africa(21) and Kassel, eastern Sudan(20). On other hand, community-based cross sectional survey done in Debrelibanos district and Agaro town shows that educational back ground illiterate and primary school and being government employee are associated factors for bottle feeding(14,23).

According to hospital-based cross-sectional study conducted in Woldia general hospital, being a mother age 35-50 years old is significantly association with bottle feeding practice(13). On converts, the study done at Holeta town revealed that lower maternal age is positively associated with bottle feeding practice. While, Being infant age of 0–5 months and being housewife are negatively associated with bottle feeding(2).

2.2.2. Obstetric and health service-related factors

Maternal and infant health service utilization has a positive or negative impact bottle feeding practice. A study conducted in Pakistan showed that mother who have delayed or lack of ANC and PNC follow up are risk factors for bottle-feeding. Since those mothers who have delayed ANC and PNC visit after onset of complication due to this mothers less likely to receive different nutritional other health related health education from health workers (16). This study result is similar with studies conducted in Kassel, eastern part of Sudan and Holeta central part of Ethiopia(2,20).

Another studies conducted in Namibia, revealed that institutional(health facility) delivery and delivery through Caesarean section(more likely to provide bottle feeding due to delayed initiation of breast feeding because of mothers take long time to recover from anesthesia and additional discomfort) are also another possible determinants of bottle feeding(18). This study have same finding with studies conducted in Pakistan(16), India, Namibia, Benghazi of Libya, Eastern Africa and Mattu, Ethiopia(6,8,16,18,21,26).

According to Community-based cross-sectional study conducted in Mattu town, Primi parity significantly associated with formula feeding(8). However, A Study conducted in

Pakistan indicates that increased parity(multiparty) is attribute associated with increased bottle use(17).

Birth order greater than five and improper birth spacing are factor that increases risk of bottle feeding in Pakistan(16). similarly, infant hospitalization and lack of counseling about benefits of breast feeding during antenatal and post-natal care are another factors that increases risk of bottle feeding in India, eastern Sudan and Ethiopia particularly Holeta and Agaro towns(2,6,20).

2.2.2. Maternal and infant feeding related factors.

A cross sectional study conducted at Pakistan shows tendency to use the bottle increased in relation to child's increasing age. Only 17% of the infants under the age of 3 months are offered bottle, it is 69% between 4 to 6 months and it increased to 76% in infants from 7 months to 1 year(17). Similarly, older infant age is significant factor to bottle fed in Namibia(18) and Holeta, Ethiopia(2).

Another study done at Atlanta and Jordia on bottle-feeding practices during early infancy and eating behaviors at 6 years of age concludes that bottle-feeding practices during infancy may have long- term effects on maternal feeding style and child eating behavior. Frequent bottle emptying encouraged by mothers and/or high bottle feeding intensity during early infancy increased the likelihood of mothers pressuring their 6-year-old child to eat and children's low satiety responsiveness(5)

Qualitative study carried out in four sub-districts of Sylhet and Jessore of rural Bangladesh revealed that, exclusive breastfeeding rate remains low and prelacy, formula and bottle feeding is increasing due to poor breastfeeding practices, lack of appropriate breastfeeding practices, superficial knowledge on harmful effect on infant formula; perceived insufficient breast milk production, the influence of family, society and authoritarian power of hospital staff are factors that initiate bottle feeding(1).

Availability breast-milk substitutes influences social norms by making formula use seem to be extensive, modern, and comparable to or better than breast milk. Clear evidence of a negative impact is found when breast-milk substitutes are given for free in maternity facilities and when they are promoted by health workers and in the media(27).

A survey-based study conducted in Mauritius and Benghazi, Libya on assessment of the breastfeeding practices and infant feeding pattern among mothers showed that short maternal leave (3 months) makes mothers prompted to resort to the supplementation of infant formula before 3 months so that their infants familiarize to bottle feeding during their absence, which means short maternal leave is risk factor for bottle feeding. In addition resumption of work, perception of breast milk insufficiency and infants sucking problem are factors that hinders breast feeding and facilitates for choosing bottle feeding in Mauritius Benghazi (26,28)

A Study done in Holeta indicated that, most Holeta town mothers (86.7%) feed their infants and young Child by using bottle because of convenience(easy to feed),maternal work load to outside work, perception of insufficient breast milk and good to promote healthy growth and availability of formula milk(2). In addition, another studies done in Pakistan, Namibia and Agro also concluded that maternal work load has high influence to mother to feed bottle due to insufficient maternity leave(14,16,18)

A prospective cohort study conducted in Wuhan, China, on delayed lacto genesis is associated with suboptimal breastfeeding practices which enrolled pregnant women at 8–16weeks of gestation and followed up to postpartum revealed that delayed lacto genesis was significantly associated with higher risk of inability to sustain full breastfeeding at 3 month postpartum (RR: 1.24, 95% CI: 1.10, 1.39) and 6 month postpartum (RR: 1.14, 95% CI: 1.04, 1.24) and also significantly associated with early termination of any breastfeeding (HR: 1.15, 95% CI: 1.01, 1.30)(29).

Another community based cross-sectional study conducted among 634 women with infants aged 6 to 12 months in Hula (sidama, Ethiopia) indicated that (49.4%) of the mothers delayed initiation of breast feeding, and 13.4% of infants were fed breast non-exclusively(30); similarly, Cross sectional study conducted at Debra Birhan town shows that delayed initiation and non-exclusive breastfeeding practices were major contributors to sub-optimal breast feeding(31).

2.2.3. Maternal information and knowledge on infant feeding

Access to information seems to affect a mother's decision on child feeding. In the Rufiji rural community of Tanzania, the majority of mothers (73%) made their own decision on how to feed their infants. Only a few mothers (23%) were influenced by health professionals and four percent relied on friends or family members (32).

In Vietnam, study done on Pre lacteal feeding practices and associated factors ,73.3% of newborns fed pre lacteals, 53.5% fed infants formula, and 44.1% were fed water due to inadequate breastfeeding knowledge(33).

Another study done in military barrack in southwest Nigeria on breastfeeding knowledge and practices among mothers of children under 2 years of age, maternal knowledge has significant association with the use of pre lacteal feeds, the practice of exclusive breastfeeding, and the use of a feeding bottle. A larger proportion of those who gave pre lacteal feeds and those using feeding bottles had fair breastfeeding knowledge and only 5.9% of those using feeding bottles had good knowledge of breastfeeding (19).

The literature review synthesized from the findings of 15 studies that examined the mothers' knowledge, attitudes, and practices about exclusive breastfeeding in East Africa concluded that most of the best answers on knowledge range from 40.1 to 97.6% in mothers regarding exclusive breastfeeding which means have understanding on effect of bottle feeding (34). Another study done on Factors affecting exclusive breast feeding practices in Benghazi, Libya also showed that 22% of mothers have no information about benefits of breastfeeding and risks followed after bottle feeding(26).

A study conducted in Guzman District, Northwest of Ethiopia on Barriers and facilitators of child feeding practice indicated that Children are suffered harmful child feeding practices such as pre-lacteal feeding like butter, discarding colostrum and bottle-feeding due to lack knowledge on optimal infant feeding practice (35). Late initiation of breast milk due to poor knowledge and positive attitude towards formula milk is another risk factor for bottle feeding a study done in Mattu town (8).

As strength, the findings from all the above studies gave important base line information for the interested researchers in the areas and also influence the regional and national policymakers to develop appropriate plan and intervention strategies in the promotion of exclusive breast feeding and help to reduce the mortality and morbidity rate of infants.

Despite their strengths, almost all of these studies share some limitations. The first and main limitation was that the studies were prone to recall bias because they are done on mothers of children less than 6 months of age, 12 months of age and 2 years of age who (the study participants) unable to remember what happened in early neonatal or postnatal period.

2.3. Conceptual Framework

Many studies have found that bottle feeding practice is affected by different factors. Factors which were found to increase risk of bottle-feeding practices are grouped in to four parts. These are Socio- demographic factors, obstetric and health factors, infant and infant feeding practice factors and maternal factors. The conceptual framework shown in figure below study variables adopted and modified from previous related studies(2,12,14,15). It helps to summarize the relationship between bottle feeding and its associated factors.

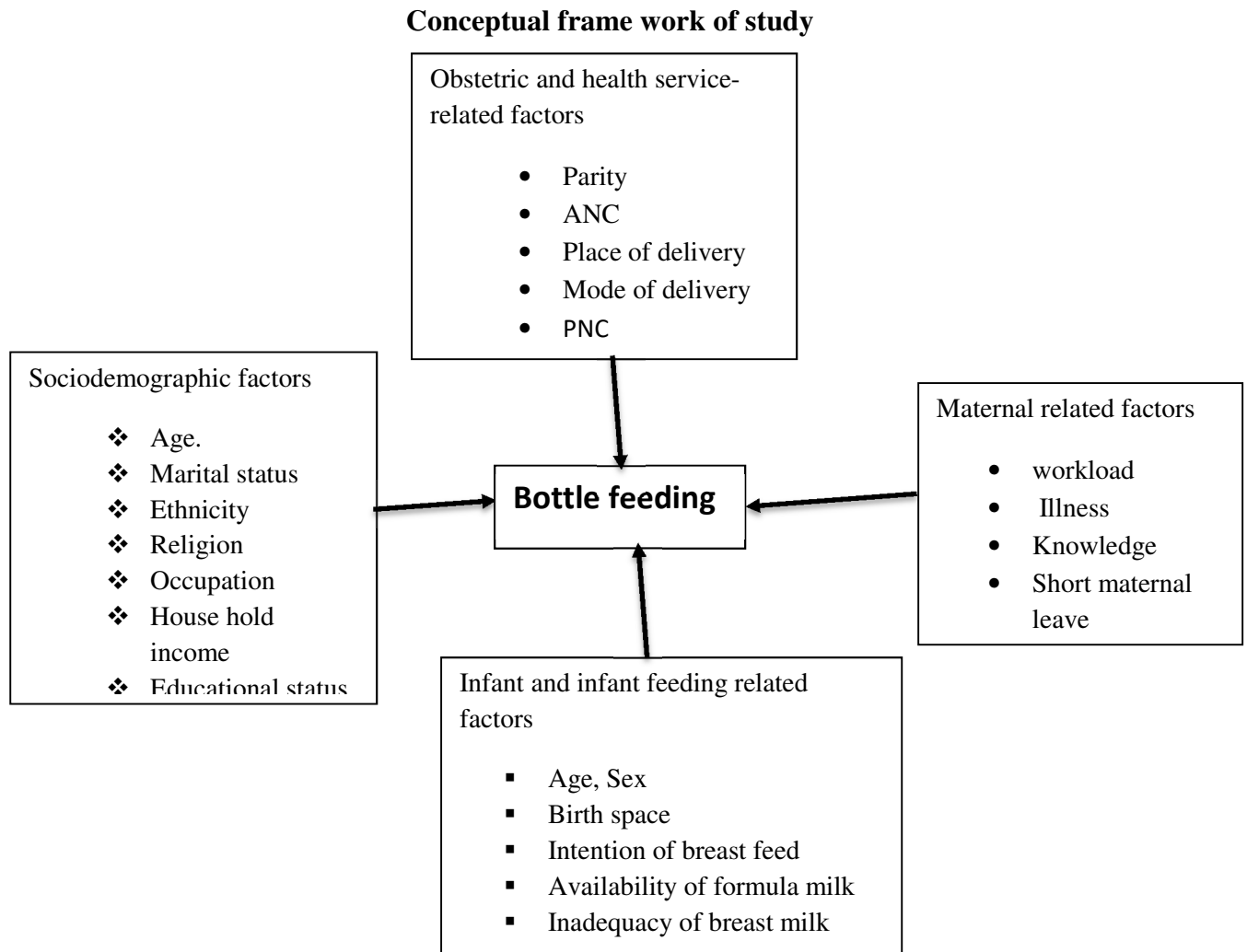


Figure 1: conceptual frame work for bottle feeding practice and associated factors among mothers having infants less than 6 month in Addis Ababa: 2022.

3. Objectives

3.1.General Objective

- ❖ To assess prevalence of bottle-feeding practice and its associated factors among mothers of infants less than six months in Addis Ababa, Ethiopia; 2022.

3.2.Specific Objectives

- ❖ To assess prevalence of bottle-feeding practice among mothers of infants less than six months in Addis Ababa.
- ❖ To identify factors associated with bottle feeding among mothers of infants less than six months Addis Ababa

4. Methods and Materials

4.1. Study setting

The study was conducted in public health centers of Addis Ababa on the mothers of infants less than six months. Addis Ababa has almost 4 per cent of the Ethiopian populations with 11 per cent of under five-year children. The total population of Addis Ababa is 3,602,000; 1,134,150 are under five children according to 2019 projection based on the 2007 census(36). In Addis Ababa there are around 116 health centers in eleven sub cites (37).

4.2. Study period

The study was conducted from July 1, 2022 to July 30, 2022 GC.

4.3. Study Design

Institution based cross sectional study design was conducted to assess prevalence of bottle-feeding practice and its associated factors among mothers of infants less than six months in Addis Ababa.

4.4. Population

4.4.1. Source population

All mother who has infant less than six months in Addis Ababa city.

4.4.2. Study population

All mothers who have infants less than six months in Addis Ababa who visited selected health centers and full fill the inclusion criteria.

4.4.3. Study unit

Selected mothers for interview who have infants less than six months at health center during the study period.

4.5. Eligibility Criteria

4.5.1. Inclusion Criteria

All mothers having infants less than six months visit health center for immunization and child growth monitoring services.

4.5.2. Exclusion criteria

- ❖ Mothers who have repeated visits during the study period will be excluded from the study.
- ❖ Mothers whose infant develop immunization related illness during data collection and or unable to give the required information during data collection period will be excluded from the study.
- ❖ Mothers age less than 18 years old present with her infant for immunization who are not emancipated minor.

4.6. Sample Size Determination

The sample size required for the study is calculated using epi info application or the formula of simple proportion estimation: $n = n = [(Z_{\alpha/2})^2 (p) (1-p)]/d^2$

Where; n- The minimum sample size required d- Margin of error.

P- Estimated proportion and associated factor of infants less 6 months old who are bottle feed

$Z_{\alpha/2}$ - Standard normal value at $(1 - \alpha)$ 100% confidence level, by considering the following assumptions:

Level of confidence = 95%, level of significance = 5%,

Margin of error (d) =5% and design effect (de)=1.5 is used,

P = proportion of bottle feeding practice and associated factor from previous studies(2)(11)(19)(25)as summarized with estimated sample size below.

Table 1: sample size estimation of the study

Variable	Proportion	Estimated sample size after addition design effect
Bottle feeding practice	19.6%	363
Being infant less than 5 month	21.6%	390
Being merchant mother	22.5%	402
Primary school maternal education	22.7%	405
Maternal between 35-50	23.5%	414

The sample size is the largest sample from both prevalence and associated factor of bottle feeding, “n” for prevalence = $(1.96)^2(0.196)(1-0.196)/(0.05)^2 = 242$ and “n” for associated factor of bottle feeding = $(1.96)^2(0.234)(1-0.234)/(0.05)^2 = 275$, since study uses multi stage sampling, 1.5 design effect was used than sample size would be 364 and 414 respectively. By comparing the sample size of the prevalence of the dependent variable 364 and sample size of associated factor (independent variable) 414, the largest sample size was selected from both sample size i.e., 414. The final sample size after addition of 10% non-response rate was 456.

4.7. Sampling technique

Multi stage sampling technique was employed to include study participants in to the research. First from a total of 11 sub cities three sub cities were selected using simple random sampling technique. Since 20-30% of the study population represents the total population, average 25% of sub cities (SC) was used to represent the population.

In the first stage of sampling, 25% of eleven sub cities (three sub cities) Areda, Kolife Karanio and Nifas silk lafito sub cities were selected by using simple random sampling technique. These three sub cities have a total of 27 health centers (Areda=7, Kolife Karanio=9 and Nifas silk lafito=11); 25% of 27 (seven) were used to allocate study participants in each selected sub cities. The seven health centers (HC) (Areda=2, Kolife Karanio=3, Nifas silk lafito=3) are allocated according to number of health centers in each sub cities.

In stage second sampling, Beta and Simegn Kebede health center from Areda sub city, woreda 1, 3 and 4 health center from Kolife Karanio sub city and woreda 2, 5 and 10 HC from Nifas silk lafito sub city were selected simple randomly method (lottery method).

The registration of mothers who have infant less than 6 months by health workers form expanded program of immunization register was used to get list of children from each Health centers. Sample from each health center was determined by using proportion allocation to the sample size.

Finally, systematic random sampling technique was used to select a representative population in the immunization unit. The sampling interval (K) was established by dividing the average number of women who visited the immunization unit in the previous two months before data collection (average $n=2660$) by the sample size, which produced $K=2660/456=6$. Women were recruited daily by simple random sampling technique using the lottery method, and the next respondent was selected by adding a sampling interval to the number of the selected women. The same procedure was done on subsequent days until the required sample size was reached.

4.7.1. Proportional allocation

In three selected sub cities there were 2660 children less than 6 months of age. Out of this 335 in Beta health center (HC), 277 in Simegn Kebede HC from Areda sub city, 360 in woreda 1 HC, 431 in woreda 3 HC and 245 from woreda 4 HC of Kolife Karanio sub city and 365 in woreda 2 HC, 347 woreda 10 HC and 300 from woreda 5 HC of Nifas silk lafito sub city.

Based on proportional allocation to size, 456 study subjects were distributed to each HC using the following formula.

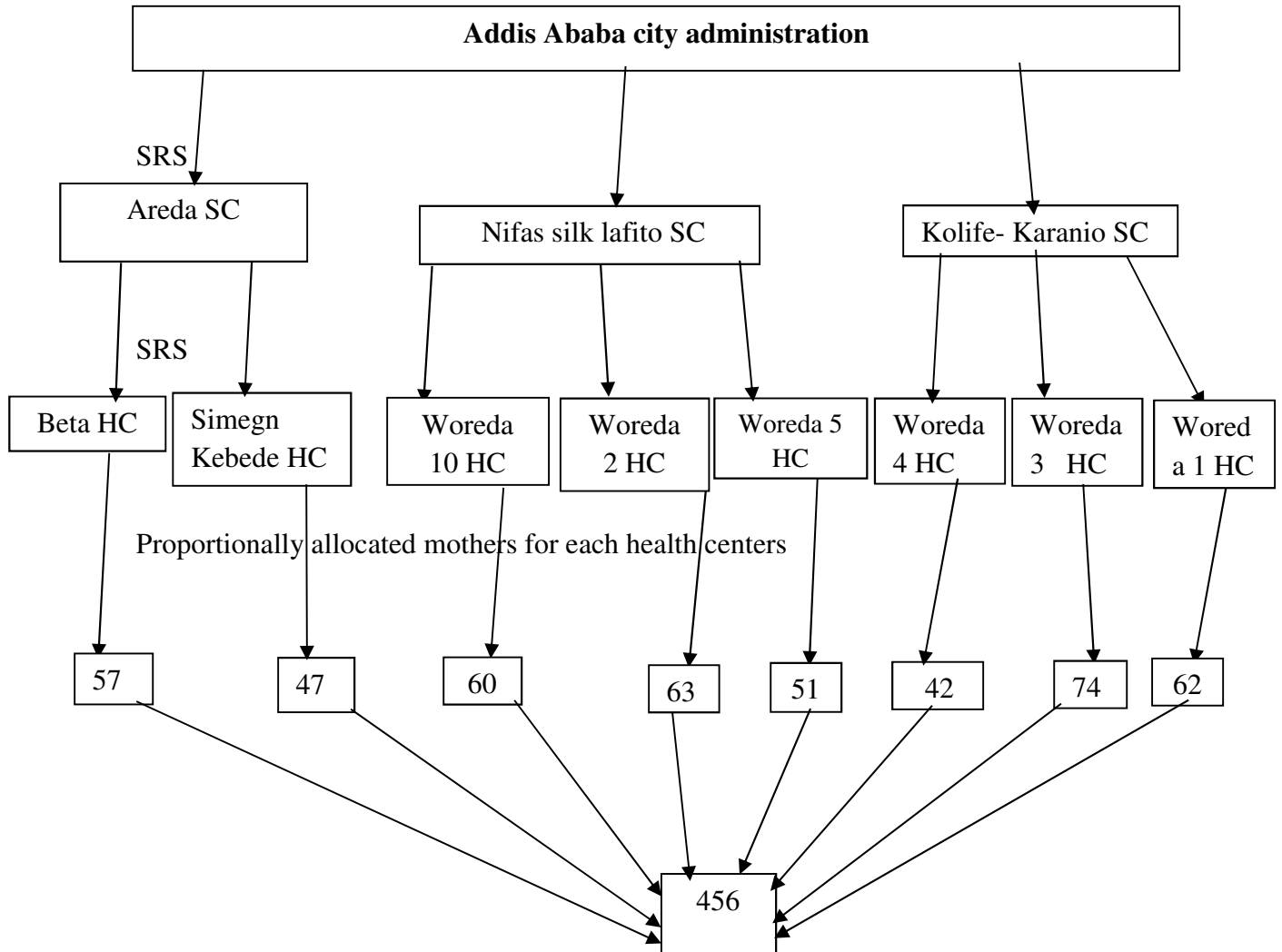
$$n_k = n \times N_k / N$$

Where;

- n_k =required sample size from each HC
- n =the total sample size=456
- N_k =total number of infants less than six month in each HC

- N =total number of infants less than six months in the in-sub cities =2660.

After that, the sample size will be allocated to each HC as Figure below shows



Source: Developed by researcher

Figure 2: Schematic presentation of the sampling procedure used in the study, Addis Ababa, Ethiopia, 2022.

Note: HC= Health center, SRS= Simple random sampling, SC= Sub city.

4.8.Data collection procedure

Data was collected by face-to-face interview using structured pretested questionnaire. The questionnaire was administered through face-to-face interview by five (5) trained data collectors (diploma nurse) and the data collection will be supervised by two BSC health worker.

A Two days training was given for data collectors and supervisors about the confidentiality of the information, respondent's rights, informed consent and technique of the data collection (interview) and purpose the study before starting the actual work.

The questionnaire was constructed by adopting and modifying from previous studies(2,12,14,15). First, the questionnaire was prepared in English then translated into Amharic (local language) and then back to English to check consistency.

The questionnaire has four parts; part one sociodemographic characteristics of participants, part two obstetric health service utilization related questions, part three infant and infant feeding practice related questions and part four: information and knowledge questions.

The quality of the data collection process was monitored, and clear uniform instructions were given to all data collectors. All data collected as a part of this study was checked by the principal investigator.

4.9. Study Variables

4.9.1. Dependent variables:

- Bottle feeding practice.

4.9.2. Independent variables:

Socio- demographic factors such as age, marital status, religion, ethnicity, occupation, educational status, family house hold income, obstetric and health factors (Parity, Place of delivery, Mode of delivery, ANC and PNC follow up), infant and infant feeding practice factors (age, sex, birth space, initiation of breast feeding, availability of formula milk, Inadequacy of breast milk) maternal factors of bottle feeding (maternal work load, short maternal leave, maternal knowledge and maternal illness) are independent variables.

4.10. Data Quality Control

The principal investigator undergoes quality assessment on ongoing supervision each day during data collection to ensure quality of data by checking filled format for their completeness's and consistency. Before actual data collection, the questionnaire was

pretested on 5% mothers having infant less than 6 months; there by possible adjustment or modification was made on questioner accordingly (leading questions were modified). The pretest was done at Abinet health center from mothers' infants visiting for immunization.

Data reliability was checked by considering the Cronbach alpha which is greater than or equal to 0.5 and multicollinearity between variables was also checked by considering variable inflation factor (VIF) which less than 10 considered as no multicollinearity. In this study VIF was less than 2 which indicates there is no correlation between independent variables.

4.11. Operational definitions

Exclusive breastfeeding: A mother gives to infant only breast milk (38).

Maternal illness: Mothers difficulty to breastfeed an infant due to illness(breast illness related problem) (38).

Mixed breastfeeding: if an infant took breast milk with addition of liquid foods like cow milk and formula milk and soft foods(38).

Adequate knowledge: If a mother answers half and above correctly from questions which are asked to measure bottle feeding knowledge (39).

Inadequate knowledge: If a mother answers below half correctly from questions which are asked to measure bottle feeding knowledge (39)

Pre-lacteal feeding: the administration of any food except mother's milk to a newborn before beginning breastfeeding within three days(21).

Late initiation of breastfeeding: initiation of breast milk after one hour after delivery(38).

Bottle feeding: Mother uses bottle for Brest milk and or breast milk substitutes (formula or others)(13).

4.12. Data management and analysis

Data obtained from institution-based survey was checked for completeness & inconsistencies, then coded, entered and cleaned in the Epi info version 7.1 and Microsoft excel and analyzed using Statistical package for Social Sciences (SPSS) version 26. After categorizing and defining variables, descriptive analysis was carried out for each of the

independent variables using frequencies, cross tabulation and percentages: then presented by text, tables and chart.

Binary logistic regression analysis model was used to assess the association between bottle feeding and associated factors. Variables with p-value < 0.2 in bivariable binary logistic regression analysis were entered to multivariable binary logistic regression analysis. Finally, variables with p-value < 0.05 in multivariable logistic regression were taken as significant factor. Adjusted odds ratio with 95% CI was used to show the strength of association between the dependent and independent variables.

4.13. Ethical considerations

The study was conducted after getting Ethical clearance from the Institutional Review Board of Saint Paul hospital millennium medical collage ethical review committee (reference number PML3/757, on 9/6/2022) and Addis Ababa health bureau public health research and emergency management department (reference number A/A/16172/227, on 23/6/2022). Official supportive letter of cooperation was also obtained from the health office of three selected sub cities and from selected health centers through a formal letter. The study participants included in the study were appropriately informed about the purpose and objectives of the study in their local language and provide their willingness by oral informed consent. The respondents were told that they have the right to refuse or terminate at any point of the interview. No personal identifiers of the study participants were taken hence all information obtained from the study participants were kept strictly confidential.

4.14. Dissemination of the result plan

First, the final research will be presented and submitted to the School of Public Health, St. Paul's Hospital Millennium Medical College. Then, the research report will be archived in the Saint Paul's Hospital Millennium Medical College's Library. The results will be disseminated to Addis Ababa health centers, Addis Ababa sub city health office, Addis Ababa health Bureau public health research and emergency management directorate, Federal Minister of Health and NGOs that are interesting in working in the area. Attempts will be made to present the findings in different scientific conferences and publish the findings of the research on peer reviewed reputable journal for better communication of the result.

5. Results

5.1.Socio-demographic characteristics

From the estimated sample size (456), 451 participants responded to survey, (98.9% response rate). Among the study participants, 444 (98.4%) were married, 202 (44.8%) were 24-29 years of age, 235 (52.1%) were orthodox by religion and 169(37.5%) mothers were educated up to secondary and preparatory school.

From total study participants, 202 (44.8%) of mothers were house wife, 141(31.3%) husbands were merchants and their average household income of was between 4501 to7500 ETB per month (**Table 2**).

Table 2: Socio-demographic characteristics mothers (respondents) who have infants less than six months old, in Addis Ababa: Ethiopia, 2022.

Variable	Categories(N=451)	frequency	Percent
Mothers age(years)	18-23	118	26.2
	24-29	202	44.8
	30-35	94	20.8
	above 35	37	8.2
Marital status	Married	444	98.4
	Unmarried	7	1.6
Religion	orthodox Christian	235	52.1
	Muslim	128	28.4
	Protestant	76	16.9
	Catholic	12	2.7
Maternal education	unable to read and write	31	6.9
	primary school	139	30.8
	secondary and preparatory	169	37.5
	higher education	112	24.8
Husbands' education	unable to read and write	8	1.8
	primary school	105	23.3
	secondary and preparatory	169	37.5
	higher education	169	37.5
Maternal occupation	Housewife	202	44.8
	government employ	69	15.3
	private organization employee	79	17.5
	Merchant	76	16.9
	daily labor	25	5.5
Husbands' occupation	government employ	101	22.4

	private organization employee	133	29.5
	Merchant	141	31.3
	daily labour	76	16.9
Monthly household income	1500-4500 birr	89	19.7
	4501-7500 birr	162	35.9
	7501-10000 birr	127	28.2
	above 10001birr	73	16.2
Unmarried=single and divorced		N=number	

5.2. Obstetric and health service utilization characteristics

In this study, 449 (99.6%) mothers had antenatal care in their previous pregnancy. During their antenatal care follow up, 87 (19.6%) of women did not receive counseling about infant feeding practice. The majority of the respondent 437(96.9%) were give birth at health institution and 14 (3.1%) were give birth at home. From 356(78.9%) of mothers received postnatal care, 289 (69.2%) had received counseling on infant feeding up to six months (**Table 3**).

Table 3: Obstetric and health service utilization characteristics of study participants in Addis Ababa, Ethiopia, 2022.

Variable	Response (N=451)	Frequency	percent
Infant age	0-3 month	332	73.6
	4-6 month	119	26.4
Infant sex	Male	268	59.4
	Female	183	40.6
Numbers of children	1	196	43.5
	2-5	254	56.3
	Six and above 6	1	0.2
Birth order	First	195	43.2
	Second	180	39.9
	Third	59	13.1
	fourth and above	17	3.8
Birth interval from preceding birth	1-2	94	36.4
	3-4	119	46.1
	above 4	45	17.4
ANC follow up	Yes	449	99.6
	No	2	0.6
Receive infant feeding counseling during ANC visit(N=449)	Yes	362	80.6
	No	87	19.4
Place of delivery	health institution	437	96.9
	Home	14	3.1
Mode of delivery	cesarean section	120	26.6
	spontaneous delivery	331	73.4
Infant hospitalization	Yes	87	19.3
	No	364	80.7
PNC follow up within 45 days of delivery	Yes	356	78.9
	No	95	21.1
receive infant feeding counseling during PNC visit(N=356)	Yes	289	79.2
	No	76	20.8

N =number

5.3. Prevalence of bottle-feeding practice

Prevalence of Bottle-feeding practice was 39% (95%CI 35, 44). The following figure shows the prevalence of bottle-feeding practice among mother who have infants less than six month (figure 3). Among respondents who used bottles for feeding, 103 (58.9%) used formula, 30(20.8%) used expressed breast milk and 5(3.5%) used caws milk. In this study influential bodies of mothers to start bottle fed were health professional 67(30.7%), husbands 40(18.3%) and mothers 17(7.8%) (Table 4).

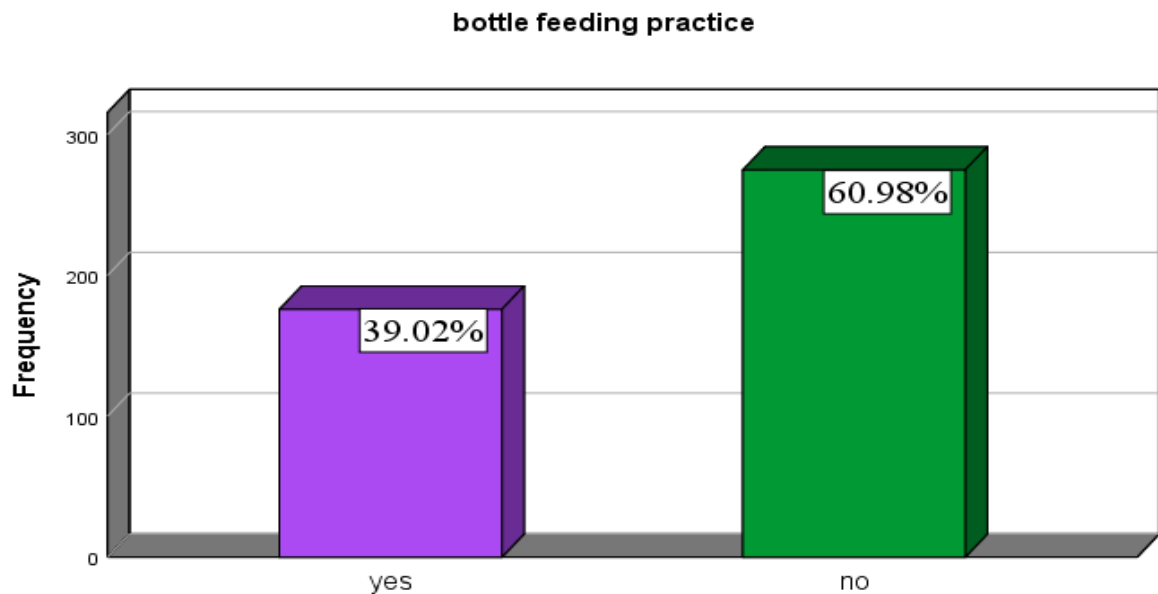


Figure 3: Percent distribution of prevalence bottle feeding practice' among mothers who have infant less than six months old in Addis Ababa, Ethiopia, 2022.

5.4. Bottle feeding related factors

All mothers have breastfed their current infant for a certain period of time. From total, 122 (27.1%) mothers-initiated breast milk to infant immediately within one hour of birth and 131(29%) mothers-initiated breast milk to infant after one hour of birth, where as 103(22.8%) initiates breast feeding after mother feels comfort after delivery. In this study, Influential bodies of mothers to start bottle feeding were health professional 67(30.7%), husbands 40(18.3%) and mothers 17(7.8%) (Table 4).

Table 4: Bottle feeding related practices of mothers who have infants less than six months old in Addis Ababa: Ethiopia, 2022.

Variable	Response	frequency	percent
Initiation of breast feeding	immediately after birth	122	27.1
	after one hour	131	29
	when mother feels comfort	103	22.8
	I did not feed breast milk	95	21.1
Kinds of fluid you feed if not breast feed(N=144)	caws milk	5	3.5
	formula milk	109	75.7
	expressed breast milk	30	20.8
Youngest infant currently feed	breast feeding	275	61.0
	bottle feeding	176	39.0
Bottle feeding(N=451)	Yes	176	39.0
	No	275	61.0
Duration of bottle feed(N=156)	0-3 month	134	76.1
	4-6 month	42	23.9
Influence to bottle feed (N=218)	own decision	92	42.2
	Mother	17	7.8
	Husband	40	18.3
	health professionals	67	30.7
	friends or family	2	0.9

The following diagram also shows the reason why mother who have infants less than six-month practice bottle feeding (n=209 (**figure 3**)).

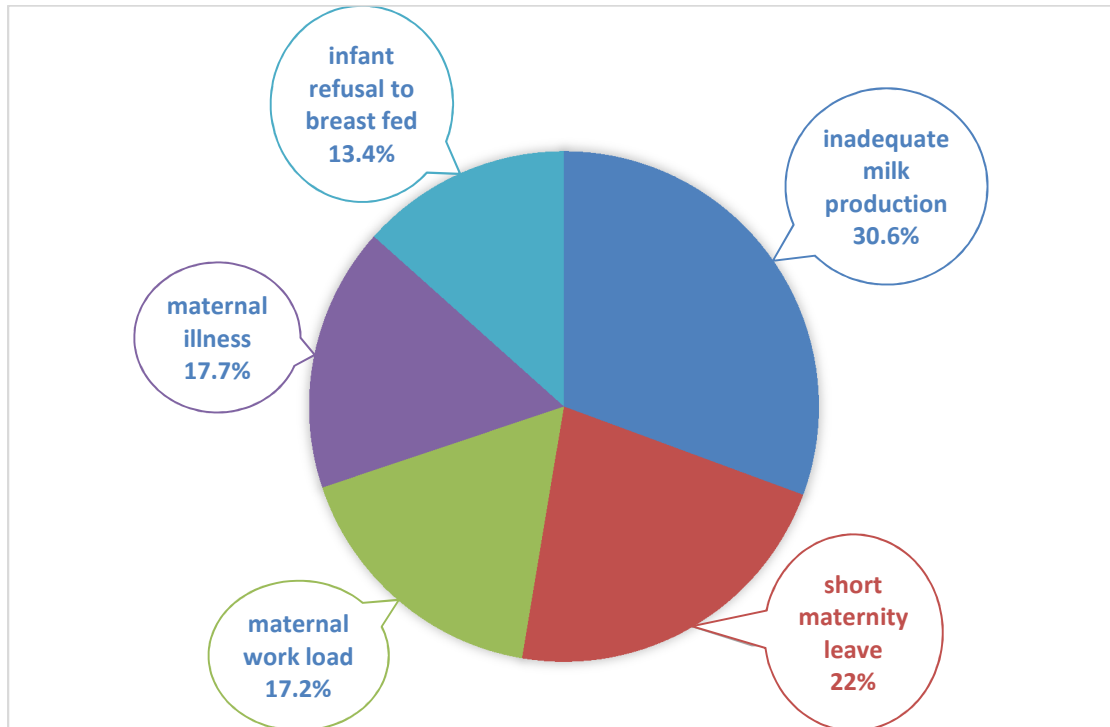


Figure 4: Percent distribution of reasons to practice' bottle feeding among mothers who have infant less than six months old in Addis Ababa, Ethiopia, 2022.

5.5. Mothers' knowledge and information source of bottle feeding

Around two third (61.4%) of mother's who have infant less than six month have adequate knowledge on bottle feeding, where as 38.6% of mother's who have infant less than six month have not adequate knowledge on bottle feeding.

Regarding to information about bottle feeding 352(78.3%) mothers were informed about bottle feeding from different sources (table 5).

Table 5: Information and source information on bottle feeding among mothers who have infants less than six months old in Addis Ababa: Ethiopia, 2022.

Variable	Response	Frequency	Percent
Have you ever heard bottle feeding	Yes(informed)	353	78.3
	No (not informed)	98	21.7
Source of information on bottle feeding(N=353)	mass media	66	18.7
	health facilities	136	38.5
	friends and family	149	42.2
	books and leaflets	2	0.6
Maternal knowledge on bottle feeding	inadequate knowledge	174	38.6
	adequate knowledge	277	61.4

N=number

5.6. Factors associated with bottle feeding practice

From total participants of this study, 39% of mothers practiced bottle feeding. To identify factors associated with bottle feeding practice, each variable was assessed independently whether they were predictor of bottle-feeding practice or not. First variables were tested using bivariate analysis. Variables which were associated with bottle feeding practice in the bivariate logistic regression analysis ($P < 0.2$) were; sex of infant, husbands' occupation, initiation of breast milk, mothers and husbands' education, place of delivery, mode of delivery, monthly household income, infant hospitalization, information herd about bottle feeding and mothers knowledge about bottle feeding (Table 6).

Table 6: Factors that affect bottle feeding practice among mothers having infant less than 6 months using bivariable logistic regression analysis model, Addis Ababa, Ethiopia, 2022.

Variable		bottle feeding			
		YES (N& %)	NO (N& %)	COR	P Value
Infant sex	Male	93(52.8%)	175(63.6%)	0.64(0.436, 0.941)	0.023
	female	83(47.2%)	100(36.4%)	1	
Maternal education	unable to read and write	10(5.7%)	21(7.6%)	0.476(0.206,1.102)	0.083
	primary school	43(24.4%)	96(34.9%)	0.448(0.267,0.751)	0.002
	secondary and preparatory	67(38.1%)	102(37.1%)	0.657(0.406,1.064)	0.087
	higher education	56(31.8%)	56(20.4%)	1	
Husbands' education	unable to read and write	1(0.6%)	7(2.5%)	0.155(0.019,1.289)	0.085
	primary school	34(19.3%)	71(25.8%)	0.520(0.314,0.865)	0.012
	secondary and preparatory	60(34.1%)	109(39.6%)	0.598(0.387,0.925)	0.021
	higher education	81(46%)	88(32%)	1	
Husbands' occupation	government employ	54(30.7%)	47(17.1%)	2.344(1.263,4.348)	0.007
	private organization employee	46(26.1%)	87(31.6%)	1.079(0.594,1.96)	0.804
	merchant	51(29%)	90(32.7%)	1.156(0.641,2.083)	0.630
	daily labor	25(14.2%)	51(18.5%)	1	
Monthly household income	1500-4500 birr	32(18.2%)	57(20.7%)	0.414(0.220,0.782)	0.007
	4501-7500 birr	49(27.8%)	113(41.1%)	0.320(0.181, 0.567)	<0.001
	7501-10000 birr	53(30.1)	74(26.9%)	0.528(0.295,0.947)	0.032
	above 10001	42(23.9%)	31(11.3%)	1	
Place of delivery	health institution	173(98.3%)	264(96%)	2.403(0.661,8.737)	0.183
	Home	3(1.7%)	11(4%)	1	
Mode of delivery	caesarean section	77(43.8%)	53(19.3%)	3.258(2.135,4.971)	<0.001
	spontaneous delivery	99(56.2%)	222(80.7%)	1	
Infant hospitalization	Yes	51(29%)	41(14.9%)	2.329(1.463,3.707)	<0.001
	No	125(71%)	234(85.1%)	1	

Time of initiation of breast feeding	after one hour(late)	157(89.2%)	172(62.5%)	4.948(2.898,8.449)	<0.001
	within one hour (early)	19(10.8%)	103(37.5%)	1	
Have ever heard about bottle feeding	No (not informed)	161(91.5%)	192(69.8%)	4.640(2.576, 8.357)	<0.001
	Yes(informed)	15(8.5%)	83(30.2%)	1	

1=reference N=number %=percent, variable inflation factor<2

Variables which were associated in bivariable binary logistic regression analysis were tested in the final multivariate analysis to see their significant association with bottle feeding practice.

By using backward likelihood ratio method multivariable logistic regression analysis; infant sex, infant hospitalization, mode of delivery, heard about bottle feeding and initiation of breast milk were remained significant in the final model. But mothers' education, husbands' education, husbands' occupation, place of delivery and household monthly income lost their significance.

Sex of the infant was significantly associated with bottle feeding practice. An infant who is male was 59% less likely to bottle feed than infants of female sex [AOR=0.589(95%CI: 0.381, 0.911)].

Mode of delivery was significantly associated with bottle feeding practice. mothers who gave birth through cesarean section were 2.8 times more likely to practice bottle feed than mothers give birth via spontaneous delivery [AOR=2.817 (95%CI: 1.764, 4.494)].

Infant hospitalization after delivery is significant for mothers to bottle feed an infant. Infants who were hospitalized after delivery were almost 2 times more likely to practice bottle feeding than infants who were not hospitalized [AOR= 2.114(95%CI: 1.246, 3.588)]. Time of initiation breast feed was significantly associated with bottle feeding practice. Mothers who initiate breast fed after one hour were 5.5 times more likely to practice bottle feeding than mothers who initiate breast feed immediately after birth (within one hour) [AOR= 5.526(95%CI: 3.121, 9.786)]. Similarly, mothers who have no information on bottle feeding was significantly associated with bottle feeding practice. Mothers not having

information about bottle feeding were 4 times more likely to practice than mothers not having information about bottle feeding [AOR= 4.131(95%CI: 2.208, 7.729)] (Table 7).

Table 7: Factors associated with bottle feeding practice among mothers having infant less than 6 months using multivariable logistic regression analysis model, Addis Ababa, Ethiopia, 2022.

Variables		bottle feeding		AOR 95%CL	P value
		Yes	No		
Infant sex	Male	93(52.8%)	175(63.6%)	0.589(0.381, 0.911)	0.017
	Female	83(47.2%)	100(36.4%)	1	
Mode of delivery	caesarean section	77(43.8%)	53(19.3%)	2.817(1.764, 4.496)	<0.001
	SVD	99(56.3%)	222(80.7%)	1	
Infant hospitalization	Yes	51(29%)	41(14.9%)	2.114(1.246, 3.588)	0.006
	No	125(71%)	234(85.1%)	1	
Time of initiation of breast feeding	after one hour(late)	157(89.2%)	172(62.5%)	5.526(3.121, 9.786)	<0.001
	within one hour (early)	19(10.8%)	103(37.5%)	1	
Have ever heard about bottle feeding	No (not informed)	161(91.5%)	192(69.8%)	4.131(2.208, 7.729)	<0.001
	Yes(informed)	15(8.5%)	83(30.2%)	1	

1=reference, SVD= Spontaneous vaginal delivery

6. Discussion

The aim of this study was to assess the prevalence of bottle-feeding practice and associated factors among infants less than six months in Addis Ababa public health centers. In this study, the prevalence of bottle-feeding practice was 39 % (95%CI: 35-44).

Infant sex, cesarean section mode of delivery, infant hospitalization, and late initiation of breast feeding and not having information about bottle feeding were found to be associated with bottle feeding practice.

The prevalence of bottle feeding in the current study was consistent with the studies done at East Africa, 11 East African countries from 2010 to 2018 in the Comoros (39%)(21), Kassel, Eastern Sudan 39.7%(20) and Woldia, Ethiopia 42.7%(13).

The prevalence of bottle feeding in this study was higher compared to the national prevalence reported in the 2019 EDHS 22%(22), studies conducted in Holeta town 19.6%(2), Mattu town 28.4%(8), east Africa particularly malawi13%(21), Nigeria 30.7%(19), Namibia 35.7%(18) and Nine east and south east Asian countries(Korea 3%,leo and Myanmar 6% and Mongolia 31%)(9). The possible reason for this difference might be attributed to study period variation, as there has been increasing advocacy for using formula in this region recently and urbanization.

The prevalence of bottle feeding in this study was also lower than studies conducted in Agaro 93.2%(14), Debrelibanos 77.6%(23), Pakistan 62.7%(16) and Nine east and south east Asian countries(Philippines 49%)(9). The difference might be due to methodological variations between studies, dissimilarities in infant and maternal socio-demographic characteristics and other differences in sociocultural, economical, health and health service utilization characteristics between respondents of the referenced areas and the study place.

The main reasons mentioned by mothers for bottle feeding were; insufficient breast milk production for infants 64(30.6%), short maternity leave 46(22%), maternal work load in house and outside house to breast feed 36(17.2%), maternal illness 35(16.7%) and infant refusal to breast feed due to childhood illness 28(13.40%). These results are consistent with other studies done in Holata (2), Agaro (14), Namibia(18), Benghazi Libya(28), Mauritius(26) and Pakistan(16). Short maternal leave (3 months) makes mothers prompted to resort to the supplementation of infant formula before 3 months so that their infants

familiarize to bottle feeding during their absence, resumption of work, perception of breast milk insufficiency and infants sucking problem are factors that hinders breast feeding and facilitates for choosing bottle feeding.

Sex of the infant was significantly associated with bottle feeding practice. An infant who is male was 59% less likely to bottle feed than infants of female sex. This result is similar with studies done in India(6), this is due to mothers belief of males high nutritional requirement construction of gender influence to increase bottle feeding.

Mothers who gave birth through cesarean section were 2.8 times more likely to practice bottle feed than mothers give birth via spontaneous delivery. this result is in line with studies conducted in Namibia(18), Benghazi Libya(28), Pakistan(16), India(6), Mattu town(8) and East Africa(21). This resulted due to delayed initiation of breast feeding because of mothers take long time to recover from anesthesia and additional discomfort.

Among the various obstetric and health service utilization factors assessed, infant hospitalization was significantly associated with bottle feeding practice. Infants who were hospitalized after delivery were almost 2 times more likely to practice bottle feeding than infants who were not hospitalized. This result is similar with studies done in India(6), Kassel, eastern Sudan(20) and Ethiopia particularly Holeta(2) and Agaro towns(14). This may result due infants sucking problem as result of childhood illness that makes them to admit to hospital.

Late initiation breast feed was significantly associated with bottle feeding practice. Mothers who initiate breast fed after one hour were 5.5 times more likely to practice bottle feeding than mothers who initiate breast feed immediately after birth (within one hour). This result is in line with studies done in Wuhan, China, (29), Hula (sidama Ethiopia)(30) and Debra Birhan, Ethiopia (31). This might be due maternal illness (pain full breast experience), delayed milk secretion, caesarean section mode of delivery, infant inability to suck breast and low counseling service during ANC and PNC.

Access to information seems to affect a mother's decision on infant and young child feeding. Mothers who have no information on bottle feeding was significantly associated with bottle feeding practice. Mothers who haven't information about risk of bottle feeding were 4 times more likely to practice bottle fed than mothers having information about bottle

feeding [AOR= 4.131(95%CI: 2.208, 7.729)]. This study supports study conducted in in Benghazi, Libya (26). This may be resulted due to lack of information about benefits of breastfeeding for mother and child and risks followed after bottle feeding like diarrhea and other botte sanitation related infections.

Strength and limitation of the study

The study with this thematic area will give important information about bottle feeding and related factors in the study area since there is no studies that assess bottle feeding practice and associated factors. Whereas, lack of indication on seasonal variation of bottle feeding, inclusion of only governmental health centers and qualitative method of study was limitation this study.

7. Conclusion

The prevalence of bottle-feeding practice high in the study area (39%) as compared to national prevalence (22%). Among different socio-demographic, health service, maternal, and infant related factors studied; being male sex, cesarean section mode of delivery, infant hospitalization and late initiation of breast feeding and not having information on bottle feeding were significant factors associated with bottle feeding practice.

8. Recommendations

Study participants: -Increase breast feeding practice and avoid bottle feeding practice.

Health centers: -Health workers better provide continuous breastfeeding education and counseling to mothers whenever they attend clinics for follow up with emphasis on exclusive breastfeeding.

To Addis Ababa health bureau

- ❖ Better to work on promoting behavior change communication on exclusive breastfeeding practice and take appropriate actions to avoid bottle feeding practice.
- ❖ Training of health professionals regarding to infant feeding practices & counseling should be strengthened
- ❖ Better to work to strengthen maternal and child health services.

To Federal Ministry of Health

- ❖ Influence the government to consider revising the legislation of the three-month postpartum maternity leave and launch of on-site or near-site child care centers in all working institutions.

To researchers

- ❖ For future researchers, conducting the studies with large sample size and incorporating factors such as media exposure and social media utilization, attitude and beliefs of the community related to bottle feeding, will help to identify other important predictors of bottle-feeding practices.

9. Reference

1. Id AR, Akter F. Reasons for formula feeding among rural Bangladeshi mothers : A qualitative exploration. 2019;1–21.
2. Kebebe T, Assaye H. Intention, magnitude and factors associated with bottle feeding among mothers of 0-23 months old children in Holeta town, Central Ethiopia: A cross sectional study. BMC Nutr. 2017;3(1):1–8.
3. Kotowski J, Fowler C, Hourigan C, Orr F. Bottle-feeding an infant feeding modality: An integrative literature review. Matern Child Nutr. 2020;16(2):1–20.
4. Kotowski J, Fowler C, Hourigan C, Orr F. Bottle-feeding an infant feeding modality : An integrative literature review. Matern Child Nutr. 2020;(December 2019):1–20.
5. Li R, Scanlon KS, May A, Rose C, Birch L. Bottle-feeding practices during early infancy and eating behaviors at 6 years of age. Pediatrics. 2014;134:S70–7.
6. Makwana DNK. Determinants of bottle feeding among 0-24 months children. Pediatr Rev Int J Pediatr Res. 2020;7(1):14–21.
7. Hassan AA, Taha Z, Abdulla MA, Ali AAA, Adam I. Assessment of bottle-feeding practices in kassala, eastern sudan: A community-based study. Open Access Maced J Med Sci. 2019;7(4):651–6.
8. License RF. Formula Feeding and Associated Factors among Mothers with Infants 0-6 Months Old in Mettu Town ., 2021;1–19.
9. Dibley MJ, Senarath U, Agho KE. Infant and young child feeding indicators across nine East and Southeast Asian countries : An analysis of National Survey Data 2000-2005 Infant and young child feeding indicators across nine East and Southeast Asian countries : an analysis of National Sur. 2010;(May).
10. Tewabe T, Mandesh A, Gualu T, Alem G, Mekuria G, Zeleke H. Exclusive breastfeeding practice and associated factors among mothers in Motta town, East Gojjam zone, Amhara Regional State, Ethiopia, 2015: A cross-sectional study. Int Breastfeed J. 2017;12(1):1–7.

11. Federal ministry of health FHD. National Strategy for Child Survival in Ethiopia 2015/16-2019/20 Maternal. Magzine Artic. 2016;(June 2015):1–74.
12. Mihret Y, Almaw H. Sociodemographic Factors Associated with Bottle Feeding Practices in Infants Under Two Years of Age : A hospital-based study in Woldia , Ethiopia with Bottle Feeding Practices in Infants. 9(1).
13. Mihret Y, Endalew F, Almaw H, Linger M. Sociodemographic Factors Associated with Bottle Feeding Practices in Infants Under Two Years of Age: A hospital-based study in Woldia, Ethiopia. Cent Asian J Glob Heal. 2020;9(1).
14. Moga TT, Haso TK, Shemsi S. Utilization of Bottle Feeding Practices and Associated Factors among Mothers Who Have Infant Less than 12months of Age in Agaro Twon iMedPub Journals Utilization of Bottle Feeding Practices and Associated Factors among Mothers Who Have Infant Less than 12. Heal Sci J. 2019;13(April).
15. Fikadu, A. Hailu N. C. Infant bottle feeding practice ,in Agaro: southwest Ethiopia. Ethiop J Heal science. 2013;13,1:51–8.
16. Science F. Determinants of Child Feeding Practices in Pakistan ; Secondary Data Analysis of Demographic and Health Survey. 2014;2:1–7.
17. Shamim S, Jamalvi Sw, Naz F. Determinants Of Bottle Use Amongst Economically Disadvantaged Mothers. 2006;(January).
18. Berde AS. Factors associated with bottle feeding in Namibia: Findings from Namibia 2013 demographic and health survey. J Trop Pediatr. 2018;64(6):460–7.
19. Akinyinka M. Breastfeeding Knowledge and Practices among Mothers of Children under 2 Years of Age Living in a Military Barrack in Southwest Nigeria. Int J MCH AIDS. 2016;5(1):1–13.
20. Hassan AA, Hassan AA, Taha Z, Abdulla MA, Ali AA, Adam I. Assessment of Bottle-Feeding Practices in Kassala , Eastern Sudan : A Community-Based Study Assessment of Bottle-Feeding Practices in Kassala , Eastern Sudan : A Community-Based Study. 2019;(January 2021).

21. Birhan NA, Alene M. Pooled Prevalence and Determinants of Prelacteal Feeding Practice in Eastern Africa Evidence from Demographic and Health Survey Data : A Multilevel Study. 2021;1085–1095:1085–95.
22. Ethiopian Public Health Institute (EPHI), ICF. Ethiopia Mini Demographic and Health Survey 2019: Final Report [Internet]. 2021. 1–207 p. Available from: <https://dhsprogram.com/pubs/pdf/FR363/FR363.pdf>
23. Id MM, Kinati T, Bekele K, Tesfa B, Hailu D. Infant and young child feeding practice among mothers of children age 6 to 23 months in Debrelibanos district , North Showa. 2021;1–14. Available from: <http://dx.doi.org/10.1371/journal.pone.0257758>
24. Miharshahi S, Kabir I, Roy SK, Agho KE, Senarath U, Dibley MJ, et al. Determinants of infant and young child feeding practices in Bangladesh: Secondary data analysis of Demographic and Health Survey 2004. Food Nutr Bull. 2010;31(2).
25. Ogbo FA, Agho KE, Page A. Determinants of suboptimal breastfeeding practices in Nigeria: Evidence from the 2008 demographic and health survey. BMC Public Health. 2015;15(1).
26. Abdulmalek LJ. Factors affecting exclusive breast feeding practices in Benghazi , Libya Factors affecting exclusive breast feeding practices in Benghazi , Libya. 2018;(March).
27. Piwoz EG, Huffman SL. The Impact of Marketing of Breast-Milk Substitutes on WHO-Recommended Breastfeeding Practices. 2015;36(4):373–86.
28. Motee A, Ramasawmy D, Pugo-Gunsam P, Jeewon R. An assessment of the breastfeeding practices and infant feeding pattern among mothers in mauritius. J Nutr Metab. 2013;2013.
29. Huang L, Xu S, Chen X, Li Q, Lin L, Zhang Y, et al. Delayed Lactogenesis Is Associated with Suboptimal Breastfeeding Practices : A Prospective Cohort Study. 2019;(13):1–7.
30. Breastfeeding S, Shibru H, Hoche S, Meshesha B, Wakgari N. Sub-Optimal

Breastfeeding and Its Associated Factors in Rural Communities of Hula District , Southern Ethiopia : A Cross-Sectional Study.

31. Gultie T, Sebsibie G. Determinants of suboptimal breastfeeding practice in Debre Berhan town, Ethiopia: a cross sectional study. *Int Breastfeed J* [Internet]. 2016;1–8. Available from: <http://dx.doi.org/10.1186/s13006-016-0063-z>
32. Elisaria E. A cohort study of feeding patterns and health outcomes of infants in the Rufiji district of Tanzania. 2015;(October).
33. Nguyen PH, Keithly SC, Nguyen NT, Nguyen TT, Tran LM, Hajeerbhoy N. Prelacteal feeding practices in Vietnam : challenges and associated factors. 2013;
34. Dukuzumuremyi JPC, Acheampong K, Abesig J, Luo J. Knowledge, attitude, and practice of exclusive breastfeeding among mothers in East Africa: A systematic review. *Int Breastfeed J*. 2020;15(1):1–17.
35. Mekonnen N, Asfaw S, Mamo A, Mulu Y, Fentahun N. Barriers and facilitators of child-feeding practice in a small sample of individuals from Gozamin District , Northwest of Ethiopia : a qualitative study. 2018;1–7.
36. Situation Analysis of Children and Women: Addis Ababa.
37. Hc W, Hc W, Hc W, Hc KT. SNNPR : Coverage of Health Facilities. 2013;
38. Meranti Dik. Assessment Of Exclusive Breast Feeding Practice And Associated Factors Among Mothers In Motta Town, East Gojjam Zone, Amhara Regional State, Ethiopia, 2015. 2015;li:1–15.
39. Ekubagewargies D, ... HM-I journal of, 2019 undefined. Assessment of Knowledge, Attitude, and Practice of HIV Positive Mothers on Antiretroviral Treatment towards Infant Feeding in Gondar Town Health Institutions, North. *HindawiCom* [Internet]. 2019;2019. Available from: <https://www.hindawi.com/journals/ijpedi/2019/9107989/abs/>

Annex I: participant information sheet and Consent form

Dear participant, good morning or afternoon?

My name is Gedifew Birhan, I am Master of Public health in Nutrition student at Saint Paul hospital millennium medical college, as part of requirement for the award of the master's degree, I am expected to undertake a research study on the magnitude and associated factors of bottle feeding on mothers of infant less than six months in Addis Ababa public health centers. Therefore, I am seeking your assistance to fill the questionnaire attached here with. Kindly complete all the questions. The research result will be used for academic purposes only and will be treated with confidentiality. The information obtained will be purely for the purpose of this research and the identity of the respondents will be treated as strictly confidential. The questionnaire will take around 15-20 minutes. Your participation is entirely voluntarily, and you can quit from the study any time you want. It is your full right to participate or refuse in the study. But your honest participation will have a great contribution. So please take a few minutes to answer this question. Do you wish to participate in the study?

☐ Yes, I want to participate in the study (please go to the next page)

☐ No, I don't want to participate.

Yours Sincerely,

Gedifew Birhan Abejehu

Phone no: 0918530728

Annex II: English version questionnaire

This questioner is designed to gather information on bottle feeding and related issues. The questioners have four parts; part one Socio- demographic characteristics of bottle-feeding, part two: obstetric and health service-related questions, part: three infant and infant feeding practice related questions and part four: maternal factors related questions. Please circle the number that contains your answer to one of your options listed. If your answer is not in, the lists and you are instructed to answer in writing put your answer on provided.

Section I: Socio- demographic characteristics of bottle-feeding questions.

S.no	Question for the respondent	Response and code	skip
101	Infants' sex?	1. Male 2. Female	
102	How old is your infant?	 month	
103	How old are you?	years	
104	What is your marital status?	1. Married 2. Single 3. Divorced 4. Windowed 5. Separated	
105	What is your religion?	Orthodox christen Muslim Protestant Catholic Other (specify)...	
106	What is your Ethnicity?	1. Amhara 2. Oromia 3. Tigray 4. Other (Specify)	
107	What is your Level of Education?	1. Unable to read and write 2. Primary school	

		3. Secondary school and preparatory 4. Higher education	
108	If married or separated what is your husbands' educational status?	1. Unable to read and write 2. Primary school 3. Secondary school and preparatory 4. Higher education	
109	What is your occupation?	1. House wife 2. Daily labor 3. Merchant 4. Government employ 5. Private organization employs 6. Other (specify).....	
110	If married or separated what is your husbands' occupation?	1. Daily labor 2. Merchant 3. Government employ 4. Private organization employs	
111	What is your house hold income in ETB?	ETB	

Section two: Obstetric and health service-related questions

S.no	Question for the respondent	Response and code	skip
201	How many children do you have?		
202	What is the birth order of this infant?	1. First 2. Second 3. Third 4. Forth and above	
203	If birth order of this infant is not first, how much is birth interval of from preceding birth?		

204	Did you get ANC follow up during your pregnancy?	1. Yes 2. No	If no skip to 206
205	Did you receive counseling concerning breast feeding during your ANC visit?	1. Yes 2. No	
206	Where did you get delivery service for this infant?	1. Home 2. Health facility	If answer is home skip 208
207	What was type of delivery?	1. Caesarean section 2. Spontaneous delivery	
208	Was the infant admitted to hospital after delivery?	1. Yes 2. No	
209	Did you receive PNC follow up after your last birth within 45 days?	1. Yes 2. No	
210	Did you receive counseling concerning breast feeding during your PNC visit?	1. Yes 2. No	

Section Three: Infant feeding practice related questions

S.no	Question for the respondent	Response and code	skip
301	When do you initiate breast feeding?	1. Immediately after birth 2. After 1 hour 3. When the mother feels comfortable 4. I didn't feed breast milk	
302	If you did not feed breast milk, what did you feed?	1. Cow's milk 2. Formula milk 3. butter	

		4. Expressed breast milk	
303	What do you feed your youngest infant currently?	1. breast feeding 2. bottle feeding	
304	Did you feed your infant with bottle?	1. Yes 2. No	If no go to 401
305	For how long did you feed?	1. 0-3Month. 2. 4-6 month 3. > 6 months	
306	Who influence you to start bottle feeding? (You can select more than one answer).	1. My own decision 2. My mother 3. My husband 4. Health workers 5. Other(specify)	
307	What do you think as a reason for mother bottle feeding? (You can select more than one answer).	1. Short duration maternal leave 2. Inadequate production of milk 3. Availability of formula milk 4. Maternal workload 5. Maternal illness 6. Maternal body posture (breast feeding leads change in breast shape) 7. Separation from infant for a long period of time (education) 8. Good to promote child health 9. Pregnancy 10. Infant refusal to breast feed	

Part four: Maternal knowledge and information on bottle feeding questions.

A) Information questions

s.no	Questions	Answers	skip
401	Have ever heard about bottle feeding?	1. Yes 2. No	
402	Where did you hear?	1. Mass media 2. Health institution 3. Books 4. friends/family	
403	For how long should an infant feed exclusively	1. Less than six months 2. Greater than six months 3. I do not know	
404	Do you know breast milk alone is enough for less than six months of life?	1. Yes 2. No	
405	Do you know Breast feeding is important for both maternal and child health?	1. Yes 2. No	
406	Is prelacteal feeding needed for infants before starting breast milk?	1. Yes 2. No	
407	Do you think bottle feeding has risk for infants	1. Yes 2. No	
408	What are risks of bottle feeding for mothers and infants	1. Increase risk of diarrhea and infection 2. Increase risk of childhood obesity 3. Interferes mother to child bond	
409	Do you think bottle feeding mother become pregnant sooner early?	1. Yes 2. No	
410	Do you know Bottle feeding affects future health status of baby?	1. Yes 2. No	

አባሪ III- የተሳታፊዎች ፈቃድና መልስ መስጫ

ውድ ተሳታፊዎች፤ እንደምን አደራችሁ ወይም አረፈዳችሁ?

እኔ ገድፋዉ ብርሃን እባላለሁ ። በቅዱስ ጳውሎስ ሆስፒታል ሜዲካል ኮሌጅ ህብረተሰብ ጤና ትምህርት ክፍል የስነምግብ ሁለተኛ ድግሪ ተመራቂ ተማሪ ነኝ ። በአሁኑ ሰዓት በአዲስ አበባ ከስድስት ወር በታች ልጅ ባላቸው እናቶች ላይ በጡጦ ማጥባት ትግበራና ተዛማጅ ችግሮችን በማጥናት ላይ ነኝ ። ስለዚህ የተወሰኑ ጥያቄዎችን ልጠይቅዎት እወዳለሁ ። ይህ ጥናት ለትምህርታዊ አላማ ብቻ የሚውል ነው ። የእርስዎ በእውነት ላይ የተመሰረተ መልስ ለዚህ ጥናት መሳካት አስተዋፅኦ ያደርጋል ። እርስዎ የሚሰጡትን መረጃ ከአጥኚውና ቃለ መጠይቅ አድራጊው በስተቀር በማንኛውም መልኩ ለሌላ 3ኛ ወገን ተላልፎ አይሰጥም ። በሙሉ ፈቃደኝነት እንዲሳተፉ እየጠየቅሁ ያለመሳተፍ ወይም በማንኛውም ጊዜ ራስዎን ከጥናቱ የማግለል ሙሉ መብት አለዎት ። ስለዚህም የእርሶን ቅን የሆነ ና ታማኝ ምላሽ ያስፈልገኛል ። ስለሆነም ከዚህ በታች ያሉትን ጥያቄዎች እንድትሞሉልኝ ስል በትህትና እየጠየቅሁ ጥያቄዎቼን ለመመለስ ከ 15-20 ደቂቃ ብቻ ወስዳል ። እርሶዎ ጥናቱ ለመሳተፍ ፈቃዳኝ ነዎት?

☐

አዎ እባክዎን መስማማትዎን በፊርማ አረጋግጠዉ ወደ ቀጣዩ ገፅይ ለፉ

የተሳታፊ ፊርማ _____ ቀን _____

የመጠይቁ ሰብሳቢ ፊርማ _____ ቀን _____

☐

አይደለሁም

ከሰላምታጋር

ገደፋው ብርሃን አበጀሁ

ስልክ- 0918530728

አባሪ IV: አማርኛ መጠይቅ

የመጠይቅ ቅፅ አጠቃላይ መመሪያ:

ይህ መጠይቅ የተዘጋጀው በጡጦ የማጥባት ትግበራንና ተዛማጅ ችግሮችን በተመለከተ መረጃ ለማሰባሰብ ነው። መጠይቁ 4 ክፍሎች የተከፈለ ሲሆን በክፍል አንድ፡- ሥነ- ህዝብ፣ ማህበራዊ እና ኢኮኖሚያዊ ጉዳዮችን በተመለከተ፣ ክፍል 2 የእናቶች ጤና አገልግሎትን በተመለከተ፣ ክፍል 3 የእናቶች እና ህፃናት አመጋገብ እና ክፍል 4 በጡጦ መጥባት ላይ የእናቶችን እውቀት ለመመዝን የተዘጋጁ መጠይቆች የተካተቱበት ነው። እባክዎን እያንዳንዱን መማሪያና ጥያቄ በሚገባ አንብበው መልስዎን እንዲያስቀምጡልን በአክብሮት እጠይቃለሁ።

መመሪያ: ከተዘረዘሩት አማራጮች መካከል መልስዎን የያዘውን ቁጥር ያክብቡ ። የእርስዎ ምላሽ

ከተዘረዘሩት መካከል ከሌለ እና መልስዎን በፀ-ሁ-ፍ እንዲያስቀምጡ የሚያዝ ከሆነ በተጠቀሰው ባይ ቦታ መልስዎን ያስቀምጡ።

ክፍል አንድ፡- ሥነ- ህዝብ፣ ማህበራዊ እና ኢኮኖሚያዊ ጉዳዮችን በተመለከተ የተዘጋጁ ጥያቄዎች

ተ.ቁ	ጥያቄዎች	አማራጭ መልሶች	ይለፉ
101	የህፃን የታ ምንድን ነው?	1. ወንድ 2. ሴት	
102	የህፃኑ/ኗ ዕድሜ ስንት ነው?(በወር) -	1. 0-3 2. 4-6	
103	የእርስዎ ዕድሜ ስንት ነው? (ዓመት)	1. 18-23 2. 24-29 3. 30-34 4. >35	
104	የትዳር ሁኔታዎ	1. ያገባች 2. .ያላገባች 3. ባሏ የሞተባት 4. የፈታች 5. ተለያይታ የምትኖር	
105	ሃይማኖትዎ ምንድን ነው	1. ኦርቶዶክስ ክርስቲያን 2. ሙስሊም 3. ካቶሊክ 4. ፕሮቴስታንት	
106	ብሔርዎ ምንድን ነው?	1. አማራ 2. ኦሮሞ 3. ትግራይ	

		4. ሌላ.....	
107	የትምህርት ደረጃዎ	1. ማንበብና መጻፍ አልችልም 2. አንደኛ ደረጃ (1-8) ያጠናቀቀች 3. ሁለተኛ ደረጃ ና መሰናዶ ያጠናቀቀች 4. ከፍተኛ የትምህርት ተቋም ያጠናቀቀች	
108	ያገቡ ወይም ተለያይተው የሚኖሩ ከሆነ፣ የባለቤትዎ የትምህርት ደረጃ?	1. ማንበብና መጻፍ አልችልም 2. አንደኛ ደረጃ(1-8) ያጠናቀቀ 3. ሁለተኛ ደረጃ ና መሰናዶ ያጠናቀቀ 4. ከፍተኛ የትምህርት ተቋም ያጠናቀቀ	
109	ስራዎት ምንድን ነው?	1. የቤት እመቤት 2. የመንግስት ሰራተኛ 3. የግል ድርጅት ሠራተኛ 4. ነጋዴ 5. የቀን ሰራተኛ 6. ሌላ (ይጠቀስ).....	
110	ያገቡ ወይም ተለያይተው የሚኖሩ ከሆነ ፣ የባለቤትዎ ሥራ ምንድን ነው?	1. የመንግስት ሰራተኛ 2. የግል ድርጅት ሠራተኛ 3. ነጋዴ 4. የቀን ሰራተኛ 5. ሌላ (ይጠቀስ).....	
111	የቤታችሁ አማካይ ወርሃዊ ገቢ ስንት ነው? (ብር)	1. <1,500 2. 1,500-4,500 3. 4501-7500 4. 7501-10,500 5. >10,501	

ክፍል 2- የህፃናትና የእናቶች የጤና አገልግሎትን በተመለከተ የተዘገጁ መጠይቆች

ተ. ቁ	ጥያቄዎች	አማራጭ መልሶች	ይለፉ
201	ሥነት ልጆች አለዎት?	1. 1 2. 2-5 3. 6-10	
202	ይህ/ች ህፃን ሥነተኛ ልጅዎ ነው/ ናት?	1. የመጀመሪያዋ ነው/ናት 2. 2ተኛ ልጅ ነው/ናት 3. 3ተኛ ልጅ ነው/ናት 4. 4ተኛ እና ከዚያ በላይ	የመጀመሪያ ከሆነ ወደ 204
203	የመጀመሪያ ልጅዎ ካልሆነ/ች ከዚህ በፊት ከነበረዎት ልጅ ጋር ምን ያህል ጊዜ የዕድሜ ልዩነት አላቸው? (ዓመት)	1. 1-3 2. 4-6 3. >6	
204	ይህን/ችን ህፃን ነፍሰጡር እያሉ በጤና ተቋም የቅድመ ወሊድ ክትትል አድርገው ነበር?	1. አዎ 2. የለም	
205	በቅድ መወለድ ክትትል ወቅትዎ ስለጡት ማጥባት የምክር አገልግሎት ተሰጥተዋል ነበር?	1. አዎ 2. የለም	
206	ይህን/ችን ህፃን የትክክር የወለዱ?	1. በጤና ተቋም 2. ቤት ውስጥ	
207	ህፃኑ/ኗ እንዴት ነበር የተወለደው/ችው?	1. በኦፕሬሽን (በቀዶ ጥገና) 2. በምጥ	ከቤት ከሆነ ወደ 208
208	ወሊዱ በጎላ ጨቅላዎት ሆስፒታል ተኝቶ ነበር?	1. አዎ 2. አይ	
209	ከወለዱ በጎላ በ45 ቀን ጊዜ ውስጥ የድህረ ወሊድ ክትትል አድርገው ነበር?	1. አዎ 2. የለም	

210	በዚያ የድህረ ወሊድ ክትትል ወቅትዎ ስለህፃኑ/ኗ የአመጋገብ ሁኔታ የምክር አገልግላት ተሰጥተዉ ነበር?	1. አዎ 2. የለም	
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ክፍል ሶስት፡- የእናቶች እና ህጻናት አመጋገብ ጋር የተያያዙ ጥያቄዎች

ተ. ቁ	ጥያቄዎች	አማራጭ መልሶች	ይለፉ
301	ጫቅላ ህጻኑን/ኗን ጡት መጥባት የስጃመሩት መቼ ነው?	1. ወዲያዉኖ እንዳተወላደ 2. ከአንድ ሰዓት በኋላ 3. እናትየው የምቾት ስሜት ሲሳማት 4. የጡት ወተት አልመጋብኩም	
302	ጡት የማያጠቡ ከሆነ ምንድንነው የሚመጡት?	1. የላም ወተት 2. የተቀነባበረ ወተት 3. ቅቤ 4. ከእናት ጡት የተወሰደ ወተት	
303	የእርሶን-ልጅ አሁን በምንድን ነው የሚመጡት?	1. የእናት ጡት ማጥባት 2. በጡጦ መመገብ 3. በብርጭቆ ና በማንኪያ መመገብ	
304	ህጻኑን/ኗን በጡጦ መግባው ያውቃሉ ?	1. አዎ 2. የለም	አይ ከሆና እዚህ ያቁሙ
305	በጡጦ መመገብ ከሆነ ለስንት ጊዜ አጥብተዋል? (በወር)	1. 0-3 2. 4-6 3. >6	
306	በጡጦ እንዲመጡ የመከሮት ማንነው? (ከአንድ በላይ መምረጥ ይችላሉ)።	1. በየራሴ ፍላጎት 2. እናቴ 3. ባለቤቴ 4. የጤና ባለሞያ 5. ሌላ (ይግለጽ)....	

307	ለምን በጡጦ መመገብ ፈለጉ? (ከአንድ በላይ መምረጥ ይችላሉ)።	1. የወሊድ ፈቃድ አጭር ስለነበረ 2. ጡቴ የወተት መጠኑ ትንሽ ስለነበረ 3. የተቀነባበረ ወተት በቀላሉ ስለሚያገኙ 4. የቤት ና የውጭ የስራ ጫና ስለሚበዛ 5. በህመም ምክንያት 6. ቅርፄ ይበላሻል ብለው ስለሚያስቡ(ጡቴ እንዳይወድቅ) 7. ከልጆቼ ብዙ ርቀው ስለሚቆዩ (በትምህርት ምክንያት) 8. የልጆች ጤናን በጥሩ ሁኔታ ስለሚረዳ 9. እርግዝና 10. የህጻኑ/ኗ ጡት ለመጥባት ፈቀኛ አለመሆን	
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ክፍል አራት፡ የእናቶችን እውቀት እና ስለጡጦ መጥባት የተዘጋጁ መጠይቆች

ተ. ቁ	ጥያቄዎች	አማራጭ መልሶች	
401	ስለጡጦ መጥባት (መመገብ) ሰምተው ያውቃሉ?	2. አዎ 3. አይ	
402	የት ነበር የሰሙት?	1. ከመገናኛ ብዙኀን 2. ከጤና ተቋም 3. ከጓዳኛ 4. ከበራሪ ወረቀቶች	
403	ጫቅላ ህጻኑን ለምን ያህል ጊዜነው የእናት ጡት ብቻ የሚያጠቡት?	1. ከ 6 ወር በታች 2. ከ 6 ወር በላይ 3. አይታወቅም	
404	የእናት ጡት ወተት ከ6 ወር በታች ላሉ ህጻናት በቂ ነው ብለው የስበሉ?	1. አዎ 2. አይደለም	
405	ጡት መጥባት ለእናቶችና ህጻናት ጤና ጠቃሚ እንዳሆነ ያውቃሉ ?	1. አዎ 2. አይደለም	
406	የጡት ወተት ከመጀመራቸው በፊት ለጫቅላ ህጻናት ሌላ ምግብ መመገብ ያስፈልጋል?	1. አዎ 2. አይደለም	
407	በጡጦ መመገብ ለጫቅላ ህጻናት አደጋ ያመጣል ብለው አስበው ያውቃሉ	1. አዎ	

	?	2. አይደለም	
408	በጡጦ መጥባት ህጻኑን ለምን አይነት አደጋ ሊያጋልጥ ይችላል ?	1. ለተቅማጥ እና ለተለየ በሽታዎች ያጋልጣል 2. ክልክ በለይ ውፍራትን በህጻንነት ያመጣል 3. በእናት በልጅ መካከል ያለውን ፍቅር ይቀንሳል	
409	በጡጦ የምታጠባ እናት ቶሎ እንዳምታረግዝ ያውቃሉ?	1. አዎ 2. አይደለም	
410	በጡጦ መመገብ የህጻኑን/ኗን የወደ ፊት የጤና ሁኔታ እንዳሟላ ያውቃሉ?	1. አዎ 2. አይደለም	

አመሰግናለሁ!!!