WOLKITE UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCE

DEPARTEMENT OF NURSING

ASSESSMENT OF BOTTLE-FEEDING PRACTICE AND ASSOCIATED FACTORS AMONG MOTHERS OF UNDER TWO YEARS CHILDREN IN CHEHA WOREDA, GURAGE ZONE, ETHIOPIA 2023

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A RESEARCH THESIS TO BE SUBMITTED TO DEPARTEMENT OF NURSING, COLLEGE OF MEDICINE AND HEALTH SCIENCE, WOLKITE UNIVERSTY IN THE PARTIAL FULLFILMENT OF BACHELOR OF SCIENCE DEGEREE IN NURSING

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TITLE: BOTTLE FEEDING PRACTICES AND ASSOCIATED FACTORS AMONG MOTHERS OF UNDER TWO YEARS CHILDREN IN CHEHA WOREDA GURAGE ZONE, ETHIOPIA 2023.

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ABSTRACT

Background: breast milk substitute is used commonly worldwide with bottle feeding which should be avoided due to its impact on optimal breastfeeding and appropriate complementary feeding. Moreover, feeding bottle are associated with diarrheal disease morbidity and mortality as it is difficult to keep it clean especially in developing countries where sanitation is poor.

Objective: to assess bottle feeding practice and factors associated among mothers of under two years' children in cheha woreda, Ethiopia 2023.

Method and material: An institution based cross-sectional study was conducted among systematically selected 266 mothers who have children less than 24 months in selected health facilities. The study subjects were selected using systematic random sampling technique from May 25 to June 25, 2023. The data were entered in Epi data version 4.6 and analyzed on SPSS V 27. Logistic regression analysis was conducted to identify factor associated with outcome variable. the level of significance was declared at a p-value of <0.05.

RESULT: The prevalence of bottle-feeding practice was 60.5%. Mothers who were delivered by caesarean section [AOR=3.308;95%CI:(1.424-7.685)], mother who had breast complication [AOR=3.117;95%CI:(1.133-8.573)] and mothers who did not receive health education/counseling on infant [AOR = 2.621; 95% CI: (1.469-4.678)] were associated with bottle feeding practice.

Conclusion: The magnitude of bottle-feeding practices was high in the study when compared with the national prevalence therefore mother who delivered by cesarean section, mother who had breast complication, mother who had not got counseling were found factors associated with bottle feeding practices

Recommendation: health education on infant and child health feeding needs to be emphasized by professional and concerned

LIST OF ACRONYMS

ANC	Antenatal care
AOR	Adjusted odd ratio
CI	Confidence interval
COR	Crude odd ratio
EB	Ethiopian Birr
EB	Exclusive breast feeding
EC	Ethiopian calendar
EDHS	Ethiopian Demographic and Health Survey
IYCF	Infant and young child feeding
MCH	Maternal and Child Health
PNC	post-natal care

CHAPTER ONE; INTRODUCTION

1.1 BACKGROUND

Breast milk is a special type of nourishment for infants since it provides all the nutrients required for the infant's health, development, and growth. Breast milk is the only food source that can adequately nourish a baby since it contains a large number of antioxidants that guard against infections' negative effects. Antioxidants from breastfeeding, like vitamin C and vitamin E, help to prevent or lessen oxidative damage to numerous human tissues. Breast milk contains a number of anti-inflammatory substances that shield children against the negative effects of inflammation [1].

The World Health Organization (WHO) recommends exclusive breastfeeding (EBF), which should begin within an hour of birth and last for the first six months of life. In addition, an infant should continue to receive breast milk for the first two years of life or longer, with the addition of complementary foods that are properly fed beginning at the age of six months and that are nutritionally adequate and safe [2].

Just 36% of infants younger than six months are nursed exclusively in numerous nations and around the world, falling below the international standard. Both the mother and the child can benefit from exclusive breastfeeding in the short and long-term. By lowering the direct and indirect costs associated with healthcare and newborn feeding, it also has a positive economic impact. Non-exclusive breastfeeding is linked to subpar academic performance as well as higher rates of morbidity and mortality from disease [3].

The most current Ethiopian Demographic and Health Survey (EDHS) report states that, in addition to breast milk, 17%, 5%, and 11% of infants aged 0 to 5 months received plain water, non-milk liquids, other milk, and complementary foods. In Ethiopia, where breastfeeding was formerly commonplace, it is currently only 76% at 23 months old. Just 58% of infants less than six months are nursed exclusively. The proportion of newborns exclusively breastfed dropped dramatically with age, from 74% at 0-1 month to 36% at 4-5 month [4].

Bottle feeding is not a recommended type of feeding system for children as it can lead to an increased incidence of excessive weight gain, malnutrition, iron depletion, and decreased birth spacing. Even the expressed breast milk could increase infant weight gain if it is fed by the

bottle. Escaping pacifiers or artificial teats is a crucial strategy to promote universal breastfeeding [7].

Poor breastfeeding conditions have been substantially linked to newborn exposure to bottle feeding. When newborns are exposed to both bottle feeding and nursing techniques, confusion of the nipple may occur, which leads to the infant rejecting to breastfeed. Furthermore, because feeding bottles are difficult to keep clean, particularly in poorer nations with low sanitation, they have been associated with diarrheal illness morbidity and mortality. Children are more likely to get dental caries while using bottles with a nipple since they are notably more susceptible to contamination [8].

Depending on the nation, bottle-feeding rates might range from 15% in Nigeria to 64% in Iraq [11]. Mothers gave a variety of reasons for using bottles to feed their babies, including their own illnesses, problems with their breasts, and imagined problems (such as the belief that their milk supply is inadequate). Notwithstanding the reason for choosing bottle feeding, all moms, including those who are HIV positive (positive for the human immunodeficiency virus), can breastfeed their children if they follow the WHO standards. Even though the WHO adopted the International Code of Marketing of Breast-Milk Substitutes, there is still a lackluster level of compliance [7].

1.2 STATEMENT OF THE PROBLEM

Bottle feeding is the practice of feeding an infant any substitute for breast milk with a bottle. Based on World Health Organization (WHO) classification, a prevalence of exclusive breastfeeding below 50% is considered poor [9].

The WHO recommends that 95% of infants younger than one month and 90% of those younger than six months should be exclusively breastfed, while 90% of those aged 6–23 months should be partly breastfed. However, in low and middle-income countries, only 37% of infants younger than six months of age are exclusively breastfed [10].

In Ethiopia, about 77% of infants scored low or medium on the breastfeeding performance index during the first six months of life [11]. and only 58% of infants under age six months are exclusively breastfed [12].

The period between birth up to two years of the child's life is a "critical window period" because during this period, infants are vulnerable to malnutrition or any other illness. Feeding exclusively breast milk within the first six months is considered a first vaccine for the infant. Despite breastfeeding recommendations, the prevalence and duration of breastfeeding is declining rapidly and is being replaced by bottle feeding, particularly among urban residents in developing countries. Bottle feeding is generally not recommended as it can lead to an increased incidence of excessive weight gain, diarrhea, infection, malnutrition, increased mortality, iron depletion, and decreased birth spacing. Even the expressed breast milk could increase infant weight gain if it is fed by the bottle [13].

Today bottle-feeding has become a practice in developed countries and urban communities of developing countries. Several factors contribute to the starting of bottle-feeding such as rapid urbanization and changing social value, but by far the most common cause are the extensive advertising and aggressive sale practice of manufactured infant formulas, workload of mothers, short duration of maternity leave, educational status of mother and family income are also important factors contributing to bottle- feeding [14].

The widely used infant formulas are manufactured in developed countries and importing them can represent a considerable drain on the financial resources of the developing countries. Clearly

any large-scale replacement of breast-feeding thereby by bottle-feeding would put a very considerable [15].

In recent year a surge of research has shown that, as well as being nutritious and hygienic, breast milk "communizes" the child and helps to fight against infection. Milk powder in contrast, can be diluted and served with un sterile bottle, which is left in the tropical heat. The result is the babies who are bottle-fed are more likely to both malnutrition and to contract infection [16].

Bottle feeding can lead to increased incidence of excessive weight gain, diarrhea infection, malnutrition, increase mortality and decrease birth spacing especially in developing country where sanitation is poor and it is not generally recommended [17].

1.3 SIGNIFICANCY OF THE STUDY

The importance of this study is to know about the mothers understanding towards Bottle-feeding Practices and associated Factors that affecting the health of under two years and to bring change in trend of feeding practice therefore health worker who work, in clinics and in the community, setting will use the result from this research as a base line in their counseling or health education session about infant and child feeding and to minimize the practices of bottle feeding and risk associated with it. The finding of this study will provide policy makers, researcher and others the basic information about the factors associated with bottle feeding and the mother will be able to have awareness about bottle feeding and related factor that affecting their infant health through being counseled and educated

CHAPTER TWO: LITERATURE REVIEW

2.1 Prevalence of Bottle-Feeding Practice

Bottle-feeding plays a significant role in infant nutrition. Globally, 59% of infants and around 85% of infants within Australia by 5 months of age are being fed with either breastmilk or formula using bottles [18].

A cross sectional study conducted in 2020 in Indonesia on factors associated with bottle feeding among 0–23 month children's (n=6763) showed that the prevalence of bottle feeding in Indonesia was 37.9% [19].

Moreover, in the cross sectional study conducted in Namibia on factor associated with bottle feeding among 0-23 month children indicated that out of 1926 mother to child pair participants the prevalence of bottle feeding is 37.5% [20].

In addition, the study done in 2020 in Pakistan Lahore on assessment of the utilization of bottle-feeding practice and related factors showed that out of 110 participant the prevalence of bottle-feeding practices was 108 (98.2%) [21].

Another community based cross section study done in 2019 in Kassala eastern Sudan on assessment of bottle feeding practices revealed that out of 242 participants the usage of bottle feeding was 39.7% among all studied children [7].

A study conducted in 2022 in Ethiopia on spatial distribution and determinant of bottle feeding the overall prevalence of bottle-feeding practice among children less than two years was 13.05% [8].

Another similar study conducted in Woldia Ethiopia in 2019 on socio demographic factor associated with bottle feeding practices in under two years showed that the prevalence of bottle-feeding practice was 42.7% [13].

Related research done in 2018 in Agaro on utilization of bottle-feeding practices and associated factor among mothers who have children less than 12 months. The overall prevalence of bottle feeding was 207 (93.2%) [6].

Another study done in holeta Oromia region in 2017 on intention, magnitude and factors associated with bottle feeding among 0-23 months children's the prevalence of bottle-feeding practices was 19.6% and the prevalence was 8.1, 22.1 and 24.6% when disaggregated into age categories; 0–5 month, 6–11-month and12–23 months respectively [22].

2.2 Factors Associated with Bottle Feeding Practice

2.2.1 Sociodemographic factors that influence bottle feeding practice

A study conducted in Namibia showed that place of residence (greater percentage of mothers resided in rural area (56.4%)), marital status, mothers' education, mothers' occupation (Working mothers were more likely to bottle feed as compared with their non-working counterpart), mothers age (the highest proportion of mothers belong to the age 20-34 years (69.9%)) are sociodemographic factors for bottle feeding practice [20].

Moreover, a study conducted in Ethiopia showed that age of women educational attainment of women, occupation of mothers, marital status of women, household family size, media exposure, Residence are the sociodemographic factors related to bottle feeding practices [8].

Another similar study conducted in woldia showed that age of mother, residence, marital status, mothers' occupation, educational status of mothers, religion, occupation of husband, educational status of husband is the factors associated with bottle feeding practices [13].

Another study conducted in agaro showed that age of mothers, marital status, ethnicity, educational back ground of mothers, occupational status of mothers, educational status of husband, occupational status of husband, monthly family income is the socio demographic factors related with bottle feeding practices [14].

2.2.2 Obstetric related factors that influence bottle feeding practice

A study conducted in woldia showed that gravidity of mothers, number of children, sex of infants, ANC follow up, PNC follow up, place of delivery and counselling about bottle feeding is the obstetric related factors for bottle feeding practice [13].

Another study conducted in agaro showed that number of children, age of youngest child, ANC follow up, advice in ANC follow up, place of delivery, mode of delivery, PNC follow up, assistance during delivery is the obstetric related factors for bottle feeding practices [6].

Another study in holeta showed that place of delivery, ANC follow up, not taking counseling on IYCF is the obstetric related factors for bottle feeding practices [22].

Conceptual frame work

A conceptual frame work represents understanding on how specific variable related to each other, This helps to understand the relationship between independent variables and dependent variable. The independent variable includes socio demographic, obstetric factors. The dependent variable is bottle feeding practices and this conceptual frame work was developed after reviewing different literature [12,14,18].

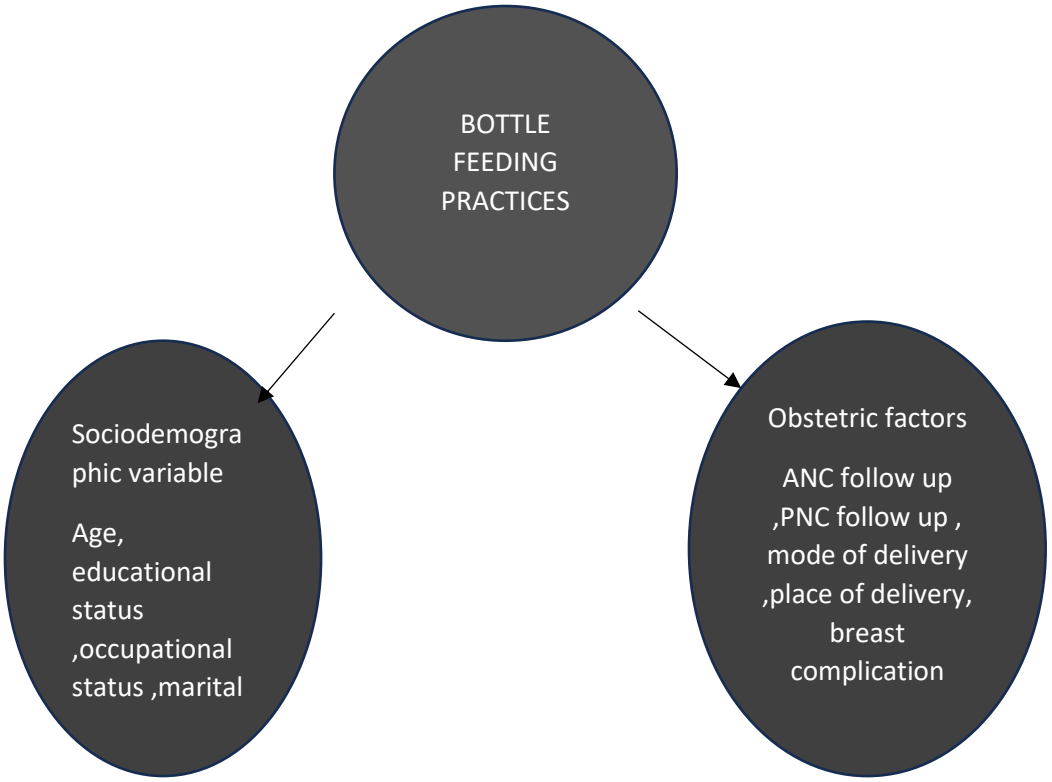


Figure 1; Conceptual frame work on the study of bottle-feeding practices and its associated factors among mothers of under two years in Cheha Woreda, Gurage zone, Ethiopia 2023.

CHAPTER THREE; OBJECTIVE

3.1 GENERAL OBJECTIVE

- To assess magnitude of bottle-feeding practice and associated factors among mothers of less than two years old children in cheha woreda Gurage zone, southern Ethiopia 2023.

3.2 SPECIFIC OBJECTIVE

- To determine magnitude of bottle-feeding practice of mothers of less than two children in cheha woreda Gurage zone, Southern Ethiopia, 2023.
- To identify associated factors of bottle feeding practices for less than two years' children in cheha woreda Gurage Zone, Southern Ethiopia, 2023.

CHAPTER FOUR; METHOD AND MATERIALS

4.1 Study area and Period

Cheha is one of the woredas in the southern nations, nationalities and people's region of Ethiopia. This woreda is named after one of the sub groups of the Sebat bet Gurage, the cheha part of the Gurage zone, Cheha is bordered on the south by enemorina eaner, on the west by the Oromia region, on the north by wabe river which separate it from kebena and abeshge, on the east by ezha, on the south east by gumer and geta the administrative center for cheha is emdiber

In cheha woreda there is one primary hospital and five health center those are Emdiber health center, wurerber health center, aftir health center, yejoka health center, yesheri health center, attat primary hospital among those Attat primary hospital and Emdiber health center was the selected site for our study attat hospital is found, about 187 km south west of Addis Ababa along the jimma road in the southern region of Ethiopia the hospital has serving the community since its establishment 1969 E.C the hospital has both inpatient and outpatient service and Emdiber health center also found about 187 km south west of Addis Ababa and the health center has out patient service .

4.2 Study period

The study was conducted from May 25 – June 25 2023 Ec.

4.3 study design

A facility based-cross-sectional study was employed

4.4 population

4.4.1 source population

All mothers who have children less than two years old and who are coming to selected health institution

4.4.2 study population

Mothers who have children under two years old and who attend MCH service during data collection period and who were selected for the study

4.4.3 study unit

Mothers with 0-23-month age child and who fulfilled the inclusion criteria.

4.4.4 Inclusion criteria

All mothers coming with less than two age children

4.4.5 Exclusion criteria

Mothers who have severely ill children,

Mothers who have adopted child,

Infants who come with other than they mothers

4.5 Sample size and sampling technique

4.5.1 sample size

Sample size is determined using single population proportion formula with assumption of 95% CI, margin of error 5% and p=19.6% of the proportion of bottle-feeding practice (according to research done in holeta Oromia region)[22]. with adding 10% for non-response rate.

$n= [(Z\alpha_{/2})^2 \times p\ (1-p)]/d^2$

$n= [(1.96)^2 \times 0.196(1-0.196)]/ (0.05)^2 = 0.6053746944/0.0025 = 242.14987778 \approx 242$

n = 242, adding 10% non-response rate, the final sample size is 266

Where, n= sample size

$Z\alpha_{/2}$= critical value at 95% confidence interval which is 1.96

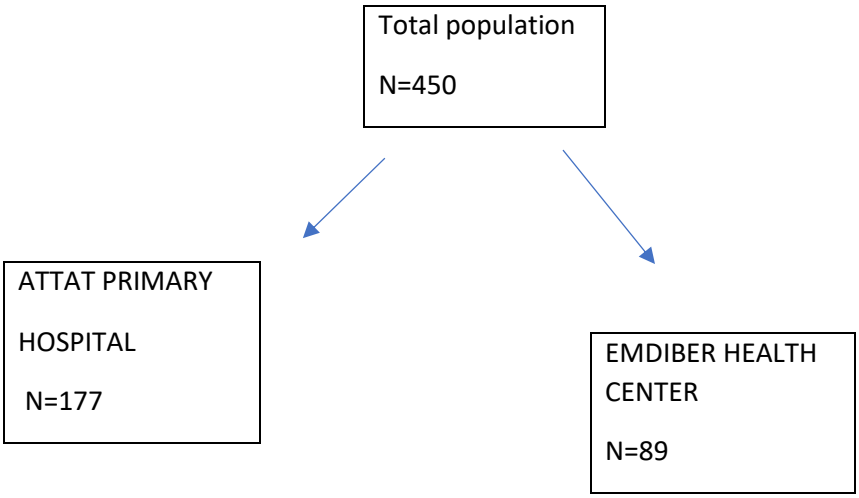
p = proportion of problem in the community which is 19.6%

d=marginal error which is 5%

4.5.2 Sampling technique

A random sampling technique was done for selecting the participant health institution from six health institutions (Emdebir health center, wurerber health center, aftir health center, yejoka health center, yesheri health center, attat primary hospital) in cheha woreda which is from one primary hospital attat primary private hospital is selected and from the five-health center Emdbir health center is selected. Study subject were selected by using systemic random sampling method. based on inclusion criteria and a list of women who were taken from MCH service follow up program of the health institution was taken from registry book of the last year count

(from june-july). From this the number of mother who will come to health center for MCH activity during the data collection period (1 months) was estimated and use sampling fraction was determined as follow: N/n which is 2.



Total sample size n=266

4.6 Study variable

4.6.1. Dependent Variable

Practices of bottle feeding

4.6.2. Independent Variable

Socio demographic characters

- Age of mothers
- Residence
- Religion
- Age of child
- Sex of child
- Educational status
- Family income
- Occupation of the mother
- Marital status
- Occupation of husband
- Education status of husband

- Media exposure
- No of children in family

Obstetric related factors

- Mode of delivery
- Place of delivery
- ANC follow up
- PNC follow up
- Bottle feeding counselling
- Not taking counselling on IYCF

4.7 Operational definition

Bottle feeding practice: is defined as drinking anything from a bottle with a nipple once or more time [23].

4.8 Data collection tools and procedure

The data was collected by using the standardized Structured questionnaires which were adapted from reviewing different literature [23,6] containing a variable of bottle-feeding practice and associated factors was used to collect data from subjects. Accordingly, redundancy, vagueness and logical flow of the questions were corrected. after extensive revision, the final version of the English questionaries' will be translated to Amharic version, then back to English to ensure understandability and message consistency and then was pretested on some mothers of children's who aren't included in the study. Data was collected by 03 students who can speak Amharic under a supervision of researcher

4.9 Data process and analysis

Data were cleaned, coded and entered into EPI-data 3.1, and exported to SPSS version 25 statistical package for further analysis. Descriptive statistics such as frequency, percentage, was computed. Bivariable binary logistic regression model was employed to check explanatory variables having associated with the dependent variables. Variables found to have a p-value less than 0.25 in the bivariate analysis was candidate to the multi-variable binary logistic regression model. Odds ratio with its 95% confidence interval and p-values were used to measure strength

of association and identify statistically significant result. Variables having P-value <0.05 were considered as statistically significant.

4.10 Data quality control

First, the data was checked again manually for its completeness and the missing or incomplete data was excluded to assure quality control. The questionnaire was prepared in English and it was being translated into Amharic for the understanding of study subject and for data quality improvement. The questionnaires were revised by senior researchers and advisors' then the comments were being incorporated. In addition, data collection instrument was pretested on Wolkite university specialized hospital to check effectiveness and reliable correction and change was done as necessary on some variable we added additional choice answers which was majority of our respondents.

4.11 Ethical consideration

Permission letters was obtained from Wolkite university, college of health science and medicine. After permission is obtained support letters written by the university was submitted to all concerned bodies in the study site. Then equitable selection of study subjects was carried out. A verbal consent was also obtained from each respondent before any activities of the study. The objective of the study was explained to the study subjects. Confidentiality was kept throughout data collection and the mother has a right to refuse or discontinue the interview.

4.13 Result Dissemination plan.

The result of the study will be submitted and presented to Wolkite university college of health science, Department of Nursing The copy of the end result will be disseminated to different stakeholders attat health office and hospital in the form of soft copy and Wolkite university library through hard and soft copy the finding of this study would be published in a scientific peer reviewed journal

2 Chapter five: Result

Sociodemographic characteristics

From the estimated sample size, 266 participants responded to survey, (100% response rate). Among the study participants, 238(89.5%) were married, 150(56.4) were 25-34 years of age with mean 28.7+5.5, 77(28,9%) were orthodox by religion, and 183(68.8%) of mothers were rural residents (Table 1).

Table 1 ;sociodemographic characteristics mothers with infant less than 24 months of age in attat primary hospital and Emdiber health centers 2023 (n=266).

Variable	Category	Frequency	Percentage
Age of mothers	15-24	63	23.7
	25-34	150	56.4
	>35	53	19.9
Residence	Rural	183	68.8
	Urban	83	31.2
Marital status	Married	238	89.5
	Widowed	10	3.8
	Divorced	15	5.8
Religion	Catholic	55	20.7
	Muslim	64	24.1
	Protestant	70	26.3
	Orthodox	77	28.9
	Others	3	4.1
Average monthly income	Low	180	67.7
	Medium	78	29.3
	Satisfactory	8	3.0
Education of mothers	Unable to read and write	41	15.4
	Read and write only	29	10.9
	Primary	80	30.1
	Secondary	106	39.8
	Diploma and above	10	3.8
Occupation of mother	Government employed	8	3
	Private employed	11	4
	Merchant	76	28
	Daily labor	6	2
	House wife	159	60
Education of husband	Unable to read and write	33	12.7
	Read and write only	31	12.0
	Primary	77	29.7

	Secondary	95	36.7
	Diploma and above	23	8.9
Occupation of husband	Government employed	18	6
	Private employed	19	7
	Merchant	116	43
	Daily labor	15	5
	Retired	9	3.4
	Farmers	89	33

2.1 Obstetric related factors

In this study, 247(92.9%) mothers had antenatal care in their recent pregnancy. 60(22.5%) of women did not receive counseling about infant and child feeding practices. From the total study participants, 249(93.6%) received postnatal health care services for the current child (Table 2).

Table 2; obstetric related factors of mother with children less than 24 months of age in attat primary hospital and Emdebr health center 2023 (n=266).

Variables	Category	Frequency	Percentage
No of total children	1	40	15.0
	2-5	266	85.0
Age of child in months	0-5	54	20.3
	6-11	125	47.0
	12-24	87	32.7
Sex of child	Male	159	59.8
	Female	107	40.2
ANC follow up	Yes	247	92.9
	No	19	7.1
Place of delivery	Home	17	6.4
	Health institution	249	93.6
Mode of delivery	Vaginally	219	82.7
	Cesarean section	47	17.3
PNC follow up	Yes	249	93.6
	No	17	6.4
Breast complication	Yes	25	14.7
	No	241	85.3
Counselling on infant and child feeding	Yes	206	77.4
	No	60	22.5

2.2 Bottle feeding practice

The magnitude of bottle-feeding practice was 161(60.5%) and 28(26.7%),36(34.3%),41(39.0%) when disaggregated into age categories of 0-5 months, 6-11 months and 12-24 months, respectively. Among the respondents who were asked about the reason why they practiced bottle feeding, around 52(19.5%) respondents reported that they practiced bottle feeding as additional for child growth and 55(20.7%) anticipated practicing bottles feeding up to two years. Among respondents who used bottles for feeding, 127 (47.7%) used cows' milk, 35 (13.2%) of the mothers cleaned the bottle once daily, 43 (16.2%) of the children had history of recurrent diarrhea in the past one month, and only 60 (22.8%) of the mothers cleaned the bottle through boiling (Table 4).

Table 3; Bottle feeding practices of mother who have under two year age in cheha woreda Ethiopia 2023 (n=266).

Variables	Category	Frequency	Percentage
Dou you bottle feed	Yes	161	60.5
	No	105	39.5
Reason to bottle feed	Breast dry	41	15.4
	Back to work	36	13.5
	As additional to breast milk	52	19.5
	Others	31	11.7
Information about bottle feeding practices	Radio and Tv	16	6.0
	Health institutions	36	13.5
	Community	86	32.3
	others	22	8.3
How child bottle feed	On demand	99	37.2
	Programmed	29	10.9
	Both	33	12.5
How long did you offer bottle feed	Up to 6 months	4	1.5
	Up to 1 year	37	13
	Up to 2 years	55	20.7
	Until baby discontinuous	62	23.3
How long did the child bottle feed per day	2-3 times	39	14.7
	4-5 times	55	20.7
	6-7 times	36	13.5
	More than 8 times	31	11.5
kind of fluid you offering to the baby	Cow's milk	127	47.7
	Formula milk	19	9.1

with bottle feeding	Others	3	1.2
At what age the child started bottle feeding	1-2	18	6.8
	3-4	31	11.7
	5-6	100	41.4
	>=7	12	4.8
DO you keep the bottle clean	Yes	161	60.5
	No	105	39.5
How many times do you have to clean the bottle per day	After every feed	27	10.2
	before every feed	39	14.7
	two times per day	60	22.6
	Once daily	35	13.2
What are your techniques of cleaning the bottle	Boiling	60	22.8
	Rinsing with water and soap	82	30.6
	Only rinsing with water	19	7.1
Additional food with bottle feeding	Yes	114	42.9
	No	47	17.7
Number of bottles	One	124	46.6
	>=two	37	14
Complication history with bottle feeding	Yes	77	28.9
	No	84	31.6
Problem of bottle feeding	Diarrhea	43	16.2
	Vomiting	8	3.0
	Weight loss	10	4.1
	Others	12	4.5

2.3 Factors associated with bottle feeding

Both bivariate and multivariate analyses were done to identify factors associated with bottle feeding practice (Table 4). The bivariate logistic regression analysis showed that there were significant associations between bottle feeding practice and residence, educational status of mothers, mode of delivery of child, place of delivery of child, PNC follow up, breast complication and not counsel on infant and child feeding practices (Table 4).

The multivariate analysis showed significant associations between bottle feeding practices and mode of delivery, breast complication and advice/counseling on infant and child feeding practices.

Regarding mode of delivery mother who were delivered by caesarean section were 3.3 times more likely practices bottle feeding than those who were delivered vaginally [AOR=3.308;95% CI:(1.424-7.685)]. moreover, among mother who had breast complication were 3 times more likely practices bottle feeding than those who had no breast complication [AOR=3.117;95%CI:(1.133-8.573)]. Furthermore, mothers who did not receive health education/counseling on infant and child feeding were 2.6 times more likely practice bottle feeding than those who had received health education/ counseling [AOR = 2.621; 95% CI: (1.469-4.678)].

Table 4;factors associated with bottle feeding practice among mothers of under two year in cheha woreda Ethiopia 2023.

Variable	Category	Bottle feeding		COR (95%CI)	AOR (95%CI)	P-value
		Yes	No			
Residence	Urban	57(68.7%)	26(31.3%)	0.600 (0.347-1.039)	0.528 (0.277-1.008)	0.053
	Rural	104(56.8%)	79(43.2%)	1	1	
Place of delivery	Home	5(29.4%)	12(70.6%)	0.248 (0.085-0.727)	0.550 (0.099-3.049)	0.550
	Health institution	156(62.7%)	93(37.3%)	1	1	
Mode of delivery	Vaginally	123(56.2%)	96(43.8%)	1	1	
	Caesarean section	38(80.9%)	9(19.1%)	3.295 (1.520-7.146)	**3.308 (1.424-7.685)**	**0.005***
Educational status of mothers	Unable to read and write	32(78.0%)	9(22.0%)	0.889 (0.160-4.949)	0.843 (0.148-4.800)	1.216
	Read and write	24(82.8%)	5(17.2%)	1.200 (0.194-7.441)	1.064 (0.167-6.767)	1.812
	Primary	41(55.4%)	33(44.6%)	0.356 (0.071-1.785)	0.302 (0.059-1.553)	0.535
	Secondary	50(47.2%)	56(52.8%)	0.223 (0.045-1.101)	0.187 (0.037-0.946)	0.263
	Diploma and above	14(87.5%)	2(12.5%)	1	1	
Breast complication	Yes	28(82.4%)	6(17.6%)	3.474 (1.385-8.710)	**3.117 (1.133-8.573)**	**0.028***
	No	138(57.3%)	103(42.7%)	1	1	
Counsell	Yes	44(44.4%)	55(55.6%)	1	1	

ing on infant and child feeding	No	117(70,1%)	50(29.9%)	2.925 (1.745-4.903)	**2.621 (1.469-4.678)**	**0.001***

***Including p-value <0.05**

3 CHAPTER SIX: DISCUSSION

The aim of this study was to assess the prevalence of bottle-feeding practice and associated factors among children less than 24 months in Cheha Woreda Gurage Zone. In this study, the prevalence of bottle-feeding practice was 60.5% (95%CI: (54.4-66.4). the result of this study is higher compared to the national prevalence reported in the 2019 Ethiopian mini demographic health survey 22%[24], studies conducted at Holeta 19.6%, [22] Kassal 37.9%[7], Namibia37.5 [20] and Indonesia 37.9%[19]. 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. In contrast, the prevalence of bottle feeding in this study is lower than studies conducted at Pakistan98.2% and Agaro93.2%[6]. The difference might be due to 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.

According to this study, mothers who gave birth through caesarean section were 3.3 times more likely to practice bottle feed than mothers give birth via spontaneous delivery (AOR=3.308;95%CI:(1.424-7.686)). This result is in line with studies conducted at Addis Abeba (AOR:2.817(95%CI:1.764-4.494))[3], the result also related with study conducted in Namibia [20] and, Pakistan . This resulted due to delayed initiation of breast feeding because of mothers take long time to recover from an aesthesia and additional discomfort.

Similarly, breast complication of the mother was significantly associated with bottle feeding practice. Mothers who had breast complication were 3 times more likely practices bottle feeding than those who had no breast complication. this might be due maternal illness (pain full breast experience) and discomfort.

Access to information 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. According to this study mothers who did not receive health education/counselling on infant and child feeding were 2.6 times more likely practice bottle feeding than those who had no receive health education/counselling. This result is on line with study conducted in Addis Abeba in which mothers who had no information about bottle feeding were 4 times more likely practice bottle fed than mothers having information about bottle feeding (AOR=4.131(95%CI:2.208-7.729)),[3] similarly a study conducted in Kassala showed mother who did not receive health education or counselling on risk of bottle feeding were 2 times more likely practices bottle feeding for their child (AOR=1.92(95%CI:(1.07-3.45)) [7].

4 The limitation of study

Instrument used for this study was self-administered questionnaire which could be subject to personal bias.

5 CHAPTER SEVEN: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study finding showed that the magnitude of bottle-feeding practices was higher in the study when compared with the national prevalence. The main reason for starting bottle feeding for their child was as additional for child growth follow by insufficient breast milk mother who delivered by cesarean section, mother who had breast complication, mother who had not got counseling were found significantly associated with bottle feeding practices

5.2 Recommendation

Based on the finding, the following recommendation were forwarded

-Health offices and health center in cheha woreda would strengthen health professionals to counsel mothers during ANC and PNC about feeding practices.

-Giving training for key community leaders, religious leaders on infant and child health practices for better practice.

- Health care providers to give health education during ANC, PNC, and delivery about risk of bottle feeding.

- Increase awareness about the risk of bottle feeding still also about reason for bottle feeding could not be encouraged since the practice is potentially risk for the health of the children.

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ANNEX 1: Questionnaire

ENGLISH VERSION QUESTIONNAIRE

WOLKITE UNIVERISTY, COLLEGE OF MEDICINE HEALTH SCIENCE, DEPARTMENT OF NURSING

Questionnaire prepared for the assessment of bottle-feeding practice and associated factors for under 2 years children living in Attat Primary Hospital.

Informed consent

Dear respondent:

Good morning/afternoon!

My name is _____ I am working as data collector in a study conducted by a BSc graduate student in the field of Nursing from Wolkite University. This questionnaire is prepared to conduct a study on **assessment of bottle-feeding practice for under 2 years children and associated factors contributed to it.** You are selected and included in the study as part of the sample population to complete the questionnaire designed by the researcher. The data you will provide is very helpful to give important comments that will help to strengthen and improve practice of bottle feeding. The information obtained in this study will be used only for research purposes. Your name will not be put in the format. Any information obtained will be kept strictly confidential and will not be exposed to any other body in connection to your name. Your participation is voluntary and you are not obliged to answer any questions you don't want. But your honest participation will contribute a lot to generate information to come up with important findings.

Do I have your permission to continue?

Yes ____

No ____

Interviewer: Name_____ signature: _____date: _____

Name of health center……

Part 1- socio-demographic characteristics of respondents

No	Question	Answers
1	What is the age of mother?	……..
2	What is the Residence of mother?	1.Rural 2. Urban
3	What is the Sex of child?	1. Male 2. Female
4	What is the Age of child?	…….
5	What is the mother religion?	1. Catholic 2. Orthodox 3. Protestant 4. Muslim 5. Other……
6	What is the mother educational status?	1. unable to read and write 2. Read and write 3.primary 4. secondary 5.diploma school and above
7	What is the mother marital status?	1. separated 2. Married 3. Divorced 4. Widowed

8	What is mother occupation?	1. Government employed 2. Private employed 3. Merchant 4. Daily labor 5. Retired 6. House wife 7. Farmer Others …….
9	What is the average monthly income?	1. Low 2. medium 3. High
10	What is your husband occupation?	1 Government employed 2 Private employed 3 Merchant 4 Daily labor 5 Retired 6 Farmer 7Others……
11	What is your husband educational status?	1.unable to read and write 2. Read and write 3. primary 4. secondary 5. diploma and above

PART 2 OBSTETRIC HISTORY OF THE RESPONDANTS

NO	QUESTION	ANSWERS
1	What is your total number of children's?	……
2	What is the number of children who are under 2 years?	……
3	Have you attended ANC for your current pregnancy?	1.yes 2.no
4	If yes. how often did you attend ANC follow up in your current pregnancy?	_____
5	Where was your current child delivered?	1 home 2 health institution
6	What is the Mode of delivery?	1 vaginally 2 cesarean sections
7	Do you attend postnatal care for current delivery?	1. yes 2. No
8	Is there Breast complication during breast feeding?	1.yes 2. no
9	Have you got counselling about Infant and young child feeding practices?	1. yes 2 .no

PART 5: PRACTICES OF BOTTLE FEEDING

No	QUESTION	ANSWERS
1	Do you bottle feed your current child?	1.Yes 2. No
2	If yes. what was your reason to start bottle feeding?	1.Breast dry 2. Back to work 3.Short duration of maternity leave 4.Breast feeding changes shape of breast 5.As additional to breast milk 6 easy to use 7.Other…….
3	Where do you get information about the practice of bottle feeding?	1. radio and TV 2. health institution 3. health extension workers 4. books 5. newspaper and magazine

		6.community 7. Others _____
4	How is the child bottle feed?	1.On demand 2. Programmed 3.Both
5	How long did you offer bottle feeding?	1.up to 6 months 2.up to 1 year 3.up to 2 year 4.until the baby discontinuous 5.Others……...
6	How long did the child bottle feed per day?	1.2-3 times 2.4-5 times 3.6-7 times 4. more than 8 times
7	What kind of fluid are you offering to the baby with bottle feeding?	1.Cow's milk 2. Formula milk 3.Fruit juice 4. expressed breast milk Other…….
8	At what age the child started bottle feeding?	……
9	DO you keep the bottle clean?	1.yes 2.no
10	If yes. How many times do you have to clean the bottle per day?	1.after every feed 2. before every feed 3.two times per day 4. Once daily
12	What are your techniques of cleaning the bottle?	1.Boiling 2. Rinsing with water and soap 3. Only rinsing with water 4.others…….
12	Is there Additional food with bottle feeding?	1 yes 2 no
13	Number of bottles	1.One 2. Two 3 more than two
14	Is there any complication history with bottle feeding	1.Yes 2. no
14	If yes. What is the complication of bottle feeding?	1 diarrhea 2 vomiting 3 respiratory infection 4 weight lose 5 others ……...