

## Levels and Predictors of Exclusive Breast Feeding among Rural Mothers with Children Age 0-12 Months in Rural Kebeles of Chencha District, Snnpr, Gamo Gofa Zone, Ethio-pia, January 2016

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### Abstract

**Back ground:** Exclusive Breastfeeding has highest life-saving potential and about 13% of child deaths worldwide can be avoided with optimal breastfeeding. Worldwide 35% of infants breast-fed exclusively during the first four months of life even though 90% and above is recommended to benefit from the practice.

**Objective:** To assess Levels and predictors of exclusive breast feeding among mothers with children 0-12 months in rural Chencha district.

**Method and materials:** A community-based cross-sectional study was conducted. Data was collected by using designed well-structured questionnaire and entered into Epi-Data version 3.1 and analyzed by using SPSS window version 20. Bivariate logistic regression was performed to each independent variable with the outcome variable and variables with a p value < 0.05 were used for multivariate analysis. P-value less than 0.05 was considered statistically significant.

**Result:** Two hundred twenty six mothers with babies 0-12 months old were included in this study. The mean age of study participants was  $29.1 \pm (5.987)$  years. Mothers ANC follow-up experience was 130(57.5%). The prevalence of exclusive breast feeding was 92(40.7%) and 144 (63.7%) had good knowledge. Maternal Age 15-24 yrs [AOR=12.02 (1.153, 25.180)]; Family size of 3 were [AOR=2.027 (0.246, 1.715)], Non-Attendance to ANC service [AOR=0.037 (0.005, 0.256)]; Good knowledge [AOR=1.288 (0.038, 5.393)] and exposure to advice concerning breast feeding [AOR=1.277 (0.677, 2.410)] were independent predictors of exclusive breast feeding practice

**Conclusion and recommendation:** In this study Practice of exclusive breastfeeding was below the world health organization recommendation which is 90% or above. Hence it is important to focus interventions towards these factors in order to increase exclusive breastfeeding Practice.

**Keywords:** Exclusive breast feeding; antenatal care; Chencha district; Gamo Gofa; Ethiopia.

## 1. Back Ground

Breast milk is bio-dynamic and species specific. It is a natural, convenient, hygienic and inexpensive food for babies. Infants grow and develop at a very rapid rate in early life, yet many of the infants' anatomical systems are still immature. Human breast milk suits for this immaturity because nutrients contained in breast milk are easily absorbed and exist in bioavailable forms (1). Human milk contains several major protein components, which are easy for digestion and other unique proteins like lactoferrin and colostrum, which are protective for the baby (2).

Breastfeeding reduces the risk of physiological reflux; pyloric stenosis; gastrointestinal infections; respiratory illness; otitis media; urinary tract infections; bacterial meningitis; necrotising enterocolitis; atopic disease; some childhood cancers; type 1 and type 2 diabetes; coeliac disease; inflammatory bowel disease; cardiovascular disease risk factors; promotes bonding between mother and infant and keep the baby sufficiently hydrated (3-6).

To optimize growth, development and health, infants should be exclusively breastfed for the first six months of life and thereafter, they should receive adequate and safe complementary foods while breastfeeding continues up to two years of age and beyond. The coverage of EBF should reach to 90% to be benefited from the intervention. EBF is one of the most effective interventions for child survival (7-9).

Lack of exclusive breastfeeding attributes 45% of neonatal infectious deaths, 30% of diarrheal deaths and 18% of acute respiratory deaths. EBF can significantly reduce the burden of under-five death in Africa especially SSA where 41% of global under five death occur mainly due to inadequate breastfeeding practices and high levels of disease (10).

In Ethiopia nearly 321,000 under five children die each year from which malnutrition is the cause for about 57% of deaths primarily through the exacerbation of other major causes, such as diarrhea and pneumonia death from which can be significantly prevented by nutrition interventions such as exclusive breast feeding (11, 12).

Globally only 35% of infants breastfed exclusively during the first four months of life and complementary feeding begins either too early or too late with foods which are often

nutritionally inadequate and unsafe. Majority of mothers started to EBF their infants at birth and the rate declined greatly about two or more months even though optimal breastfeeding is intervention with the highest life-saving potential that can avoid 13% of child deaths worldwide (13-15).

Breastfeeding is common practice in Ethiopia owing to the enormous benefits of breast milk, however only 52% children exclusively breastfed and 24% of deaths among infants were attributed to poor and inappropriate breastfeeding practice. Twenty nine percent of newborns received pre-lacteal feed and 69.1% of them were put to breast within one hour (16-18).

Despite the many benefits of exclusive breast feeding (EBF), poor breastfeeding practices are still common, both in developing and developed countries. Especially in developing world like Ethiopia the practice is lagging behind from WHO target of EBF and the

practice also varies between regions and among countries (9, 20, 21).

Comparative cross-sectional study conducted in Belgium indicates that, only 65 (16.25%) urban and 58 (15.26%) rural mothers had practiced exclusive breast feeding till 6 months of age. Complementary feeds were initiated by 69.20% urban mothers before the infant was 6 months old and 42.11% rural mothers had initiated at recommended 6 months(22).

Cross study conducted in Chandigarh village showed that the rate of exclusive breast feeding among the lactating mothers is found to be 22.7% and 46% of the mothers have some prior knowledge of breastfeeding. About 55% of the lactating mothers gave Pre-lacteal feeds to their children and 56% discarded the colostrums. It was found that 71% of the respondents started complementary feeding at the age of 4-5 months(23).

Cross sectional study on the determinants of exclusive breast feeding in Lebanon indicates that the exclusive breastfeeding rate was 27.4% (24). Study achieved in rural eastern Uttar Pradesh India revealed that, 45% mothers initiated breast feeding within 24hrs of birth and exclusive breastfeeding for 6 months was only 21% (25).

Study conducted in Malaysia revealed that, prevalence of EBF among mothers with infants aged between one and six months was 43.1%. The prevalence of exclusive breastfeeding when stratified by infant age from one to six months ranged between 32.4% and 63.3% with the highest among one month old infants and lowest among six month old infants (26).

Cross sectional study conducted in rural area of Jimma zone indicated that 37% of mothers initiated breastfeeding later than one hour after delivery. The majority (67.02%) of mothers had no knowledge about exclusive breastfeeding (27).

Cohort study conducted in Brazil confirmed that the factors associated with EBF duration are Mother partner's appreciation for breastfeeding, limiting the number of night time feeds at the breast, presence of cracked nipples and prenatal care provided by public services were described as determinants of discontinuation of exclusive breastfeeding (28).

Comparative study in Pakistan showed that as compared to the not counseled group, the mothers who initiated breastfeeding immediately after birth were significantly higher in the counseled group and counseled mothers practiced EBF more than those not counseled. Antenatal counseling helps in motivating the mothers for initiation of breastfeeding immediately after birth and practicing exclusive breastfeeding for first six months of infant's life (29).

The study conducted in Bahir Dar revealed that, Being a housewife, a young infant age, having a prenatal EBF plan, delivering at a health institution, delivering vaginally, receiving counseling, belief of breast milk sufficiency and maternal age of 18-23 were independently predictors of exclusive breastfeeding among mothers (30).

Study conducted in North West Tigray, showed that 165(65.45%) had knowledge about EBF and 132(52.2%) mothers reported

frequency of breast feeding needed for <6 month of infant. This study also revealed that 160(66.8%) mothers start breast feeding with in the first four hours, but 84 (32.2%) started breast feeding after few hours (31).

Study conducted in Mecha district, North West Ethiopia showed the prevalence of exclusive breast feeding (EBF) was 47.13%. This study also revealed that mothers who reported having 3 and more antenatal visit during pregnancy, who got PNC counselling on infant feeding, who initiated breast feeding (BF) immediately after birth with in the first one hour and who have adequate knowledge on EBF were more likely to exclusively breastfeed than their counterparts (32).

Study conducted in North West Ethiopia showed that mothers whose age was  $\geq 30$  years; delivered at healthcare facility and those who had antenatal care exclusively breastfed their infants more than mothers who delivered at home and those who did not have antenatal care (33).

All mothers surveyed in Dubti town had ever breastfed their index infant. About 93 % of mothers had initiated breastfeeding within 1 h of birth. Exclusive breastfeeding under 6 months was practiced by 81.1 % of mothers of infants aged less than 6 months. Moreover, prelacteal feeding and colostrum avoidance were practiced by 16.8 and 15.6 % of mothers of infants aged less than 6 months, respectively (34).

Study conducted in Debre Markos town showed that overall prevalence of exclusive breastfeeding was 296 [61.3%] which was 89[55%] in Debre Markos town and 207[64%] in Gozamen district (rural). This study also revealed that getting counseling about exclusive breastfeeding during antenatal follow up was significant predictor of exclusive breast feeding practice (35).

Study conducted in Mizan Aman town among 314 breastfeeding mothers with their index child less than 2 years 93.6% of study participants had heard about EBF, only 34.7 % were knowledgeable about the recommended duration and only 59.3% believed that only EBF is enough for child up to six months and 26.4% of children were exclusively breastfed for six months (36).

Study conducted in Dilla Zuria District, Gedeo Zone revealed that mother belongs to family of 4 and less family size were 2.25 times ( $p = 0.01$ ) higher to practices EBF as compared to family size above 4 members and Those mothers followed ANC were 5.9 times (0.004) higher to practices EBF as compared to mother didn't visit ANC (37).

Different studies identified factors predicting EBF practice in Ethiopia. However these factors tend to vary between peoples with different socio-demographic and cultural factors and there is no study conducted with similar topic in study area. Owing to this alarming practice gap addressing socio-cultural and maternal factors predicting EBF practices has much importance especially in rural areas of developing countries. Therefore, this study was designed to identify levels and predictors of exclusive breastfeeding practices among mother-infant pairs in rural communities of chench district.

## 2. Method and material

### 2.1 Study area and period:

The study was conducted from September 15 to October 15, 2016 at Chench district, Gamo Gofa Zone, Southern Ethiopia. Chench district is one of 13 districts in Gamo Gofa Zone which is located at 250 Km South of Hawassa; and 480 km South East of the capital city of Ethiopia, Addis Ababa. According to the data obtained from the district health office, 2015/2016 projected population of the district is around 142,062 and the number of women in child bearing age is 27, 812. There are 1 district hospital, 7 health centers, 5 private clinics, two drug venders and 49 health posts with 2 health extension workers in each Kebeles. It has 50 Kebeles with estimated area of 445km<sup>2</sup> and divided into 45 rural kebeles and 5 urban dwellers associations (38).

### 2.2 Study design

A community based cross-sectional study design employing quantitative method was used.

### 2.3 Population

#### 2.3.1 Source populations

All mothers who lived in the woreda for at least 6 months prior to the survey.

#### 2.3.2 Study population

All mothers in selected kebeles who had a child aged 0-12 months at the time of the survey

### 2.4 Eligibility criteria

#### 2.4.1 Inclusion criteria

Mothers who had a child age 0-12 months and living in the study area for more than 6 months were included.

#### 2.4.2 Exclusion Criteria

Mothers who were not able to communicate due to serious illness at the time of data collection and unwilling to respond and HIV positive mothers were excluded.

### 2.5 Sample size and Sampling Technique

#### 2.5.1 Sample size determination:-

A sample of 226 mothers with children aged 0- 12 months, were selected from already registered Health extension workers' document.

To calculate sample size using the single proportion population formula was used. The proportion of exclusive breastfeeding was 81.1% from study conducted in Dubti town (34). The value of  $Z = 1.96$  at  $\alpha=0.05$  two sided confidence level of 95%. Finally, 5% of the sample size was added for non-respondents and a total of 248 samples were taken.

$$n = \frac{(Z\alpha)^2}{2} \frac{P(1-P)}{d^2}$$

$$n = \frac{[(1.96)^2(0.81)(1-0.81)]}{(0.05)^2} = 236.5$$

$$5\% \text{ non-response rate} = 236.5 + 11.8 = 248$$

#### Where

n= required sample size

p= estimate of prevalence rate of premarital sexual practice

$Z_{\alpha/2}$ = standard normal variable at 95% confidence level (95%=1.96 from table)

d= margin of sample error tolerated =0.05

### 2.5.2 Sampling techniques:

Five rural kebeles were randomly selected from 45 rural kebeles by lottery method. All mother infant pairs having children 0-12 months from health extension register in each kebele were enumerated. There are 893 eligible mothers-infant pairs in these selected kebeles and proportional to size allocation was done to get the required sample from each Kebele. During visit to houses, if there was no child of 0-12 months, next house satisfying this criterion was included. Verbal consent was obtained after the participants were informed about the study objectives.

## 2.6 Variables

**Dependent variable:** Exclusive Breastfeeding practices

### In dependent variables

Socio-demographic factors

Educational status; Income; Occupation; Age of mothers

Knowledge of mothers on?

ANC, PNC, Place of delivery; Family support; Mode of delivery; Sex of child; Age of child; Health worker support; Parity; Family size; Medical complication of mothers and Media or information

## 2.7 Data Collection Tool

Structured questionnaire adapted from the Ethiopian Health and Demographic Survey (EDHS), and from different literatures (12, 13). It was initially prepared in English and then translated into Amharic, by fluent speakers of both languages, and it was back translated into English to check for consistency. This questionnaire was pre-tested on 5% (12) of actual sample size among eligible mothers in nearby kebele in the district to test the precision of the questions and the time needed to conduct an interview. Then amendments were done based on findings. Mothers knowledge on exclusive breast feeding was assessed by using 6 questions designed for it and Data on breastfeeding practices was asked retrospectively; mothers were asked to report previous breastfeeding experience, and the initiation of breast-feeding after delivery, the frequency of breast-feeding in the 24 hours was also asked, duration of exclusive breastfeeding, reasons for stopping exclusive breastfeeding during the first 6 months following delivery. Breastfeeding support of husbands, other family members, and relatives was also assessed.

## 2.8 Data collection Technique and Quality Assurance

Five health extension workers working in the selected kebeles for data collection and two Nurses working in the district for supervision were selected and one day training was given on data collection tools and principles during data collection. Health extension workers were assigned to collect data from different

kebele (i.e. not their working kebele) to reduce desirability bias. The questionnaires were checked daily during data collection for completeness and consistencies by supervisor and data collectors. Then proper correction and adjustment was made.

## 2.9 Data processing and Analysis

The questionnaire was checked manually for completeness and consistencies, and the principal investigator and supervisors supervised the data collection regularly and checked for any inconsistency or data incompleteness. The complete data verified for field level quality were further entered, cleaned and edited by researcher using Epi data software version 3.1 and exported to SPSS for window version 20 for analysis. Prevalence of exclusive breastfeeding practice was determined. To identify factors associated with exclusive breastfeeding practice, binary logistic regression was performed to each independent variable with the outcome variable and variables with a p value <0.05 was included in the final model (multivariable logistic regression) to identify independent predictors of exclusive breast feeding practice. Su-group analysis was done to identify factors predicting EBF among mothers with ANC follow-up and those with no ANC follow-up. Strength of association was measured using odds ratio, and with 95% confidence intervals. A statistically significant level was considered when P-value was less than 0.05.

## 2.10 Operational Definition

Exclusive breastfeeding: Infant feeding only breast milk, and no other liquids or solids with the exception of oral rehydration solution, supplements or medicines to the child age before 6 month of age.

Good knowledge: mothers were labeled as having good knowledge on exclusive breast feeding if they respond greater than or equal to 80% of questions designed to determine knowledge and otherwise poor knowledge.

On-demand breastfeeding: mothers recognize when their babies are hungry and

feed their babies as often and for as long as the babies want or something similar.

Partial breastfeeding- an infant receives breast milk and any food or liquids including non-human milk and formula.

Pre-lacteal foods: non-breast milk feeds given before breastfeeding is initiated.

## 3. Results

### 3.1. Socio-demographic data

Two hundred twenty six mothers with babies 0-12 months old were participated in this study providing response rate of 92%. The mean age of study participants was 29.1± (5.987) years. Majority of study participants 155(68.6%) were orthodox followed by protestant 59(26.1%); most of them 210(92.9%) were Gamo by ethnicity and 205 (90.7%) were married. With regard to family monthly income 66 (29.2%) of families earned 1000-2000 ETB with mean income of 3054.69 ±(1656.51) Birr (Table 1).



**Table 1:** Socio-demographic characteristics of breast feeding mothers in Chencha district south-ern Ethiopia 2016 (n=226)

Socio-demographic characteristics		Frequency	Percent
Age	15-24 years	61	27.0
	25-34 years	115	50.9
	35-44 years	50	22.1
Religion	Orthodox	155	68.6
	Protestant	59	26.1
	Muslim	10	4.4
	Catholic	2	.9
Ethnicity	Gamo	210	92.9
	Gofa	6	2.7
	Amhara	7	3.1
	Wolayita	3	1.3
Marital status	Married	205	90.7
	Separated	16	7.1
	Divorced	2	.9
	Widowed	3	1.3
Educational status of mother	Illiterate	67	29.6
	Completed 1 <sup>o</sup> school	60	26.5
	Completed 2 <sup>ny</sup> school	38	16.8
	Above secondary school	61	27.0
Occupational status of mother	Housewife	106	46.9
	Farmer	36	15.9
	Merchant	46	20.4
	Gov't employee	23	10.2
	Daily laborer	2	0.8
	Private employee	13	5.8
Monthly income	1000-2000 birr	66	29.2
	2001-3000 birr	59	26.1
	3001-4000 birr	43	19.0
	4001-5000 birr	30	13.3
	Above 5000 birr	28	12.4
Family size	3	26	11.5
	4	74	32.7
	5	43	19.0
	6	83	36.7

### 3.2. Factors related to mothers Experience on Exclusive Breastfeeding

About three forth 171(75.7%) of mothers had two under five children and 178(78.8%) of children were in age group 0-6 months and majority 171(75.7%) were females. Mothers ANC follow-up experience was 130(57.5%); however only below one third 41(31.5%) had four times follow-up. Normal vaginal delivery accounted 145(64.2%) of all deliveries followed by assisted delivery 44 (19.5%); Institutional delivery was 165(73%) and PNC follow-up was 115(50.9%). The prevalence of exclusive breast feeding was 92(40.7%) even though 172 (86.0%) of mothers initiated breast feeding within one hour of delivery and the major

reason for delay were 15(53.6%) delayed milk production followed by 6(21.4%) cesarean section. Majority 190 (84.1%) of mothers reported that they breast feed colostrum to their baby (Table 2).

Concerning the major reasons for delaying breast feeding more than one hour were, delayed milk secretion 54%, Cesarean section delivery 21%; baby was sick 14% (Figure 3). The major reason for stopping breast feeding were weaning age 10 (38.5%), child was sick 6(23.1%) followed by heath condition of the mother 8(23.5%) (Figure 4).

### 3.3. Knowledge on exclusive breast feeding

Mothers were asked series of questions regarding breast feeding and majority 202(89.4%) reported that colostrum feeding protect against disease; 144(63.7%) said breast feeding alone is sufficient for 0-6 months; majority 151(66.8%) reported babies should breast feed on demand; with regard to appropriate to start complimentary feeding 106 (46.9%) of mothers reported 6 months. With respect to advantage of breast feeding for baby and mothers 110(48.7%) provides perfect nutrition and 102(45.1%) prevents pregnancy. The overall knowledge on exclusive breast feeding was 144 (63.7%) (Table 3).

### 3.4. Advice and Support of Breast Feeding Practice

About one half 122(54.0%) of mothers had exposure to advise on exclusive breast feeding and mothers were the major source of advice 34(27.9%) and influencer of breast feeding practice. Most 217(96.0%) reported that husbands support breast feeding practice and the reported role of husbands were giving advice 131(60.4%) and providing economic support 86 (39.6%) (Table 4).

### 3.4. Predictors of Exclusive breast feeding

Binary logistic regression showed that; Age of the mother, family size, attendance of ANC service, mode of delivery, knowledge on exclusive breast feeding, exposure to advise on breast feeding and source of advice were factors affecting exclusive breast feeding.

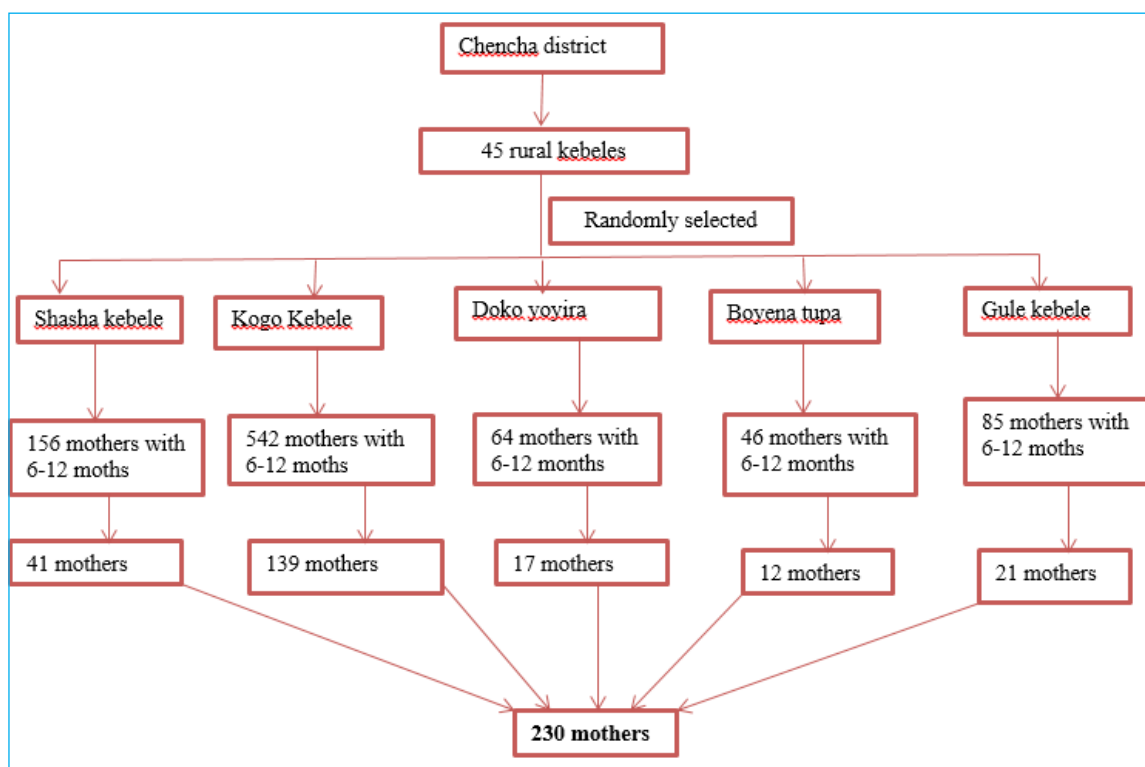
Multi variable logistic regression model was used to identify independent predictors of EBF practice. It showed that, Age of the mother 15-24 years were 12 times [AOR=12.02 (1.153, 25.180)] more likely to exclusively breast feed their baby than those in age range 35-44 years; family size of three were 2 times [AOR=2.027 (0.246, 1.715)] more likely to EBF than those having family size six, mothers not Attended ANC service were [AOR=0.037 (0.005, 0.256)] less likely to exclusively breast feed their baby than ANC attendants; mothers with good knowledge on breast feeding were 1.2 times [AOR=1.288 (0.038, 5.393)] more likely to exclusively breast feed their baby than those with poor knowledge and mothers who had exposure to advice concerning breast feeding were 1.2 times [AOR=1.277 (0.677, 2.410)] more likely to exclusively breast feed their baby than those who had no advice (Table 5).

## 4. Discussion

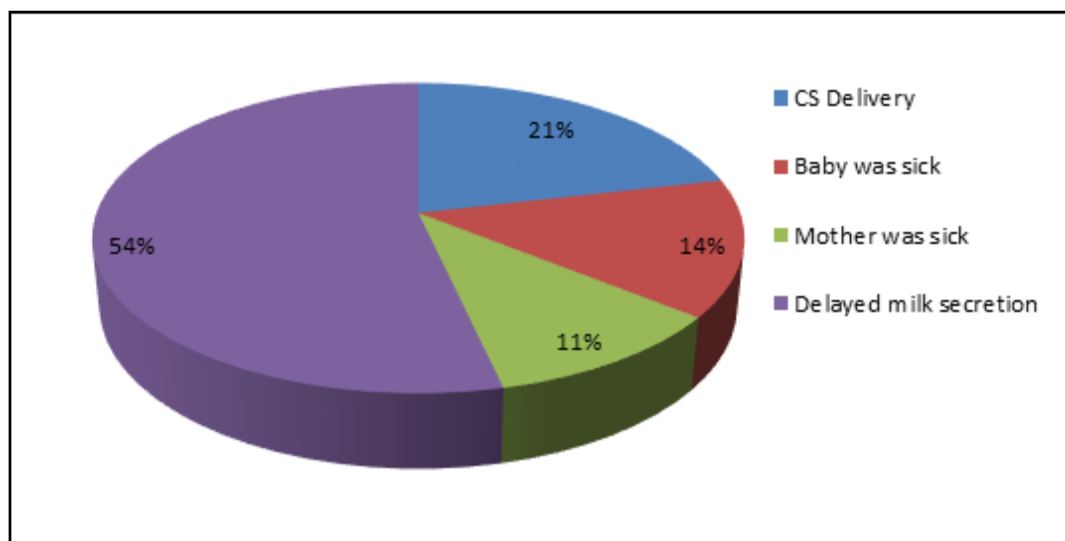
Two hundred twenty six mothers with children 0-12 months old were included in this study. The prevalence of exclusive breast feeding in this study was 92(40.7%). This is higher than findings from study conducted in Belgium 16.25% (22); study conducted in chandigahr village 22.7%(23); study conducted in Lebanon 27.4%

**Table 2:** Distribution of Mothers Experience on Breast feeding in Chencha district southern Ethi-opia 2016 (n=226)

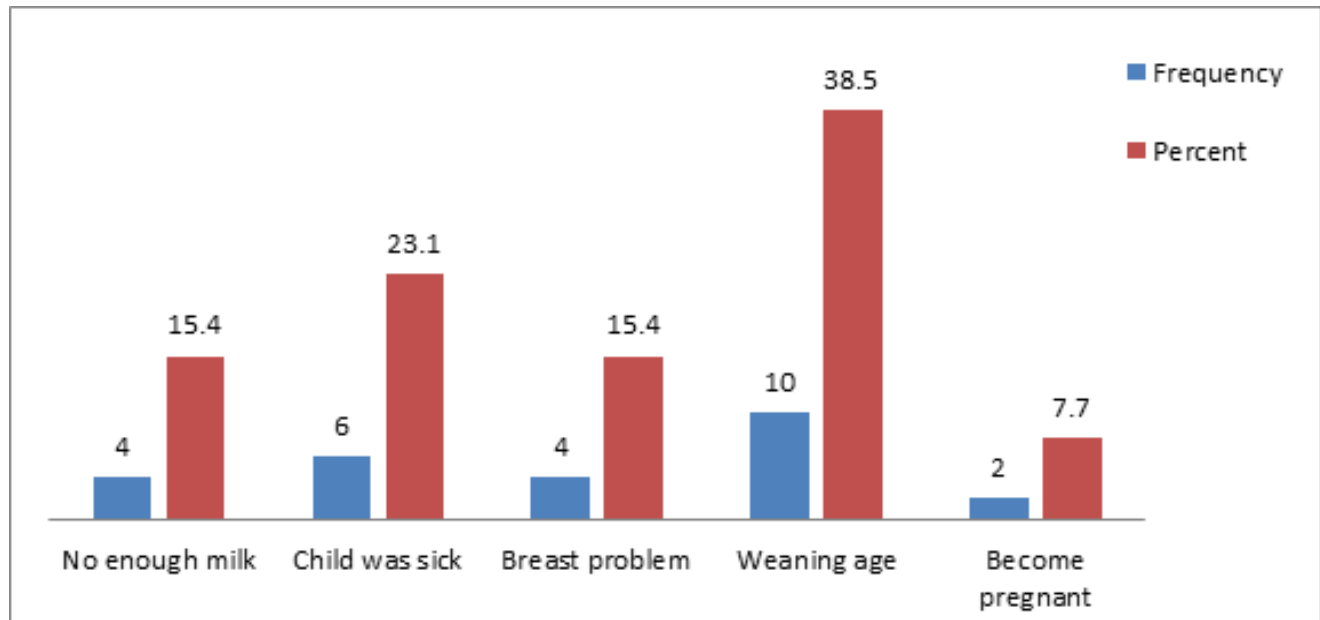
Mothers Experience Exclusive Breastfeeding		Frequency	Percent
Number of undue 5 children (n=226)	One	37	16.4
	Two	171	75.7
	Three	18	8.0
Age of the youngest child (n=226)	0-3 months	71	31.4
	4-5 months	80	35.4
	6 months	27	11.9
	6-12 months	48	21.2
Sex of child (n=226)	Male	55	24.3
	Female	171	75.7
Have you attended ANC (n=226)	Yes	130	57.5
	No	96	42.5
Frequency of ANC attendance (n=130)	One time	9	6.9
	Two times	35	26.9
	Three times	45	34.6
	Four times	41	31.5
Place of last delivery (n=226)	Health facility	165	73.0
	Home	61	27.0
Delivery assistants (n=226)	Health worker	159	70.4
	TBA	53	23.5
	Relatives	14	6.2
Mode of delivery (n=226)	Vaginal delivery	145	64.2
	Caesarean section	37	16.4
	Assisted delivery	44	19.5
Experience of PNC follow-up (n=226)	Yes		115
	No	111	49.1
Current breast feeding status (n=226)	Yes	200	88.5
	No	26	11.5
Time of initiation of breast feeding (n=200)	Within one hour	172	86.0
	2-3 hours	15	7.5
	One day later	10	5.0
	≥ 2 days later	3	1.5
Experience of feeding colostrum (n=226)	Yes	190	84.1
	No	27	11.9
	I don't know	9	4.0
Reason of not feeding colostrum (n=27)	It is useless	19	70.4
	Not good for child	8	29.6
Frequency of breast feeding per day (n=200)	Less than 6 times	87	43.5
	6-8 times	82	41.0
	Greater than 8 times	31	15.5
EBF experience of youngest child (n=226)	Yes	92	40.7
	No	134	59.3
Time extra food or fluid is started (n=200)	1-3 months	15	7.5
	4-5 months	58	29.0
	6 months	127	63.5
	Good knowledge	144	63.7
	Poor Knowledge	82	32.3



**Figure 1:** schematic presentation of sampling technique



**Figure 2:** Reason of delaying breast feeding for more than 1hr breastfeeding practice in Chencha district southern Ethiopia 2016 (n=28)



**Figure 3:** Reported Reason of stopping exclusive breastfeeding practice in Chencha district southern Ethiopia 2016 (n=26)

**Table 3:** Mothers Knowledge on exclusive breast feeding practice in Chencha district southern Ethiopia 2016 (n=226)

EBF knowledge test		Frequency	Percent
Importance of colostrum feeding (n=226)	Nutritious	19	8.4
	Protect against disease	202	89.4
	I don't know	5	2.2
Breast feeding alone is sufficient for 0-6 months (n=226)	Yes	144	63.7
	No	82	36.3
Number of times baby should breast feed per day (n=226)	3-6 times	15	6.6
	6-8 times	60	26.5
	on demand	151	66.8
Appropriate time to start complimentary feeding (n=226)	1-3 months	10	4.4
	4-5 months	110	48.7
	6 months	106	46.9
Reported advantage of breastfeeding for baby (n=226)	Grows best	24	10.6
	Prevent disease	77	34.1
	Provides perfect nutrition	110	48.7
	Enhances mother and child bondage	15	6.6
Reported Advantage of breast feeding to the mother (n=226)	Prevents disease	83	36.7
	Prevents pregnancy	102	45.1
	Saves money	22	9.7
	Enhances mother and child bond	19	8.4



**Table 4:** Advice and Support of BF Practice in Chencha district southern Ethiopia 2016 (n=226)

Advice and Support of Breast Feeding Practice		Frequency	Percent
Exposure to advise on breast feeding (n=226)	Yes	122	54.0
	No	104	46.0
Source of advice (n=122)	Health worker	25	20.5
	Husband	30	24.6
	Mother	34	27.9
	Friends and neighbors	33	27.0
Husband support exclusive breastfeeding (n=226)	Yes	217	96.0
	No	9	4.0
The role of husband in breast-feeding (n=217)	Can give advice	131	60.4
	Economic support	86	39.6
Families support exclusive breastfeeding (n=226)	Yes	193	85.4
	No	33	14.6
Who influenced your decision on breastfeeding (n=226)	Husband	4	1.8
	My mother	162	71.7
	Mother in law	6	2.7
	Health worker	45	19.9
	My decision	9	4.0

**Table 5:** Multivariable logistic regression of factors predicting the likelihood of exclusive breast feeding among mother having children 0-12 months old at rural Kebeles in Chncha district, Southern Ethiopia, September 2016, (n=226).

Exclusive breast feeding a		Exclusive breast feeding				COR	95% CI for COR		AOR	95% for AOR		P value b
		Yes(n=92)		No (n=134)			LB	UB		LB	UB	
		Frequency	Percent	Frequency	Percent							
Age	15-24 yrs	39	42.4	61	45.5	.063	.023	.170	12.015	1.153	25.180	.038*
	25-34 yrs	46	50.0	115	85.8	.241	.100	.581	1.118	.190	6.591	.902
	35-44 yrs (Ref.)	7	7.6	50	37.3	1	-	-				
Family size	3	14	15.2	12	9.0	.332	.130	.845	2.027	.0246	1.715	.048*
	4	37	40.2	37	27.6	.439	.228	.846	1.248	.206	7.567	.810
	5	15	16.3	28	20.9	.774	.351	1.707	5.248	.977	28.195	.053
	6	26	28.3	57	42.5	1	-	-	1	-	-	
ANC follow-up	Yes	64	69.6	66	49.3	1	-	-	1	-	-	
	No	28	30.4	68	50.7	3.196	1.824	5.599	.037	.005	.256	.001*
Mode of delivery	Normal delivery	58	63.0	87	64.9	.674	.328	1.387	3.106	.445	21.707	.253
	Caesarean section	20	21.7	17	12.7	.386	.155	.965	2.496	.320	19.458	.383
	Assisted delivery	14	15.2	30	22.4	1			1	-	-	
Knowledge	Good	66	71.7	78	58.2	.492	.277	.874	1.288	.308	5.393	0.029*
	Poor	26	28.3	56	41.8	1						
Exposure to advise on breast feeding	Yes	58	63.0	64	47.8	2.484	1.279	4.839	1.277	.677	2.410	0.002*
	No	34	37.0	70	52.2							
Source of advice	Health worker	10	17.2	15	23.4	1	-	-	1	-	-	
	Mother	16	27.6	14	21.9	7.312	1.804	29.636	.063	.009	.455	.060
	Friends & neighbors	5	8.6	29	45.3	52.200	11.368	239.701	.006	.001	.062	.002*
	Husband	27	46.6	6	9.4	10.800	2.512	46.432	.077	.011	.551	.011*

a 95% Confidence Interval for experience of exclusive breast feeding  
b P-value between groups significant at the 0.05 level

(24) and Study conducted rural eastern Uttar Pradesh India 21% (25). However this is lower than national EDHs data that is 52% of infants were exclusively breastfeed (18). Study conducted in Mecha district, the prevalence of exclusive breast feeding (EBF) was 47.13%. This variation could be explained by difference in socio-demographic characteristics of study population and study area.

This study showed that majority 182 (83.5%) of mothers reported that they breast feed colostrum to their baby. This is higher than study conducted in Chandigarh village 56% of mothers discarded the colostrum (23). This could be probably due socio-cultural support of breast feeding and presence of health extension workers in each kebeles working to improve maternal and child health of community.

Mothers 15-24 years old were 12 times [AOR=12.02 (1.153, 25.180)] more likely to exclusively breast feed their baby than those in age range 35-44 years. This is in line with study conducted in Bahir Dar maternal age of 18-23 was independently predictors of exclusive breastfeeding among mothers (31).

Mothers with family size 3 were 2 times [AOR=2.027 (.0246, 01.715)] more likely to exclusively breast feed their baby than those with family size of six. This could be explained by economic nature. This is similar with study conducted in Dilla Zuria which revealed that mother belongs to family of 4 and less family size were 2.25 times ( $p = 0.01$ ) higher to practices EBF as compared to family size above 4 members. This may be due to small family size associated improvement in maternal nutrition and health.

This study explored that mothers knowledge on exclusive breast feeding was 144 (63.7%) and mothers with good knowledge on breast feeding were 1.2 times [AOR=1.288 (0.038, 5.393)] more likely to exclusively breast feed their baby than those with poor knowledge. Similar with study conducted in Mecha district mothers who have adequate knowledge on BF (AOR=2.06; 95% CI: 1.47-2.88) were more likely to exclusively breastfeed than their counterparts (32).

One hundred thirty (57.5%) of mothers had ANC follow-up and mother with no ANC follow-up history were [AOR=0.037 (0.005, 0.256)] less likely to exclusively breast feed their baby than those ANC follow-up. This similar with study conducted in dilla zuria district which showed that mothers followed ANC were 5.9 times (0.004) higher to practices EBF as compared to mother didn't visit ANC (37); Study conducted in North West Ethiopia mothers who had three and more ANC visit were 1.7 time more likely to exclusively breast feed for 6 month as compared to those who have no ANC visit during pregnancy (32).

Mothers who were advised by their friends and neighbors about breast feeding were [AOR=0.006 (0.001, 0.062)] less likely to exclusively breast feed than those who were advised by health workers. This is in line with a comparative study in Pakistan on the effect of antenatal counseling on exclusive breastfeeding shows that as compared to the not counseled group, the mothers who initiated breastfeeding immediately after birth were statistically significantly higher ( $p < 0.046$ ) in the counseled group (84% and 96% respectively) (29). This could be due to health worker

ability to explain advantage of breast feeding practice to infants and mothers which could influence level of knowledge on breast feeding which is independent predictor is of exclusive breast feeding practice.

#### The limitations of this study are:

The findings of this study should be used in light of its limitations. Limitations were;-

The findings of this study cannot be generalized to urban population.

The recall bias was a concern since experiences with EBF practices were based on self-report

Desirability bias due to mothers intention to report what is right regarding EBF not their actual practice

#### Conclusion

Below two third of mothers had ANC follow-up experience and about one third had four times visited and less than half of mothers exclusively breast feed their babies for 6 months and majority had good knowledge. Level of EBF in this study is much lower than WHO recommendation. Age of the mother 15-24 years; family size three and four, ANC service follow-up; good knowledge on breast feeding and mothers who had exposure to advice concerning breast feeding were predictors of EBF practice.

#### Recommendation

Based on the results of the study, the following recommendations were made to different bodies;

Health institutions and families: should Counsel mothers specially those above 25 years of age on EBF practices

Health institutions: should Improve ANC follow-up which would improve the knowledge of EBF and hence EBF practice

Health extension workers and health institutions: should strengthen FP programs to limit family size that would enhance EBF practice

Woreda Health department and health institutions: should design educational strategies to improve Behavioural change so as to avoid pre-lacteal feeding.

#### Acronyms

ANC: Antenatal care

AOR: Adjusted Odds Ratio

BM: Breast milk

COR: Crude Odds Ratio

CS: Cesarean section

EBF: Exclusive Breast Feeding

EDHS: Ethiopian Health and Demographic Survey

HIV: Human immune virus

HSDG: Health Sector Development Goal

IYCF: Infant and Young Child Feeding

MDG: Millennium Development Goal

MOH: Ministry of Health

PNC: Post-natal care

SNNPR: Southern nations, nationalities and peoples region

SSA: Sub-Saharan Africa

UNICEF: United Nations Children's Fund

WHO: World Health Organization

### Ethical Approval and consent to participate

The ethical approval and clearance was obtained from Ethical clearance committee of Arba Minch College of health sciences. Permission was also obtained from the concerned bodies of Gamo Gofa Zonal Health Department and Chencha Woreda Health Office. Before each interview, clear explanation was given about the aim of the study which was neither to evaluate the performance of the individual nor to blame anyone for weakness but to gather information and opinions that may lead to eventual improvement in the situation. Interview was carried out only with full consent of the mother being interviewed.

### Availability of data

Data used for the article is available at author's data package and please do not hesitate to contact the author for data sharing.

### Contribution of researcher

Mende Mensa is senior researchers who conceived the study and prepared the proposal; analyzed the data and presented the work for responsible bodies analyzed and interpreted the findings of this study and he also prepared this document for publication.

### Conflicts of interest

I have no conflict of interest during conducting this study or developing the manuscript. All expenses regarding this paper were from out of pocket of the researcher.

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