

# Effect of Being Housewife and Counseling During Antenatal Care on Exclusive Breastfeeding Practice Among Mothers with Less than Two Years of Age in Northeast Ethiopia, 2019

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## Research

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# Abstract

**Background** Exclusive breastfeeding is the practice of a woman feeding an infant for six months, which has an irreplaceable benefit. However, the practice is still low with salient factors in a different place. Therefore, this study was aimed to assess exclusive breastfeeding practice and associated factors among mothers of having children less than two-years of age in Northeastern Ethiopia, 2019.

**Methods** A community-based cross-sectional study was conducted with a sample size of 423 in Northeast Ethiopia from March 12 to December 18, 2019. An interviewer-administered questionnaire was used to collect the data. The binary logistic regression model was used to determine the association between dependent and independent variables.

**Result** The prevalence of exclusive breastfeeding practice was 75.5%(95%CI:73.5,81.5%). Married mothers 2.57(1.688, 5.654), mothers with antenatal care follow up 4.11(2.662,11.172), mothers delivered at health institution 4.07(2.992,10.722), and mothers counseled during antenatal care 1.96(1.124,4.732) had a positive association, while mothers with unable to read and write educational status 0.11(0.068,0.992) and employed mothers 0.22(0.169,0.561) were the variable that had a negative association with exclusive breastfeeding practice.

**Conclusion** The prevalence of exclusive breastfeeding practice was relatively good. Marital status, educational status, occupation, antenatal care service, place of birth, and counseling of mothers during ANC were the independent predictors of exclusive breastfeeding practice.

## Background

Breastfeeding is the practice of a woman feeding an infant & young child(1), which has extreme product given to a baby, natural food, and uniquely adapted to baby's needs(2).

Breast milk contains all the essential nutrients that a healthy child needs(3). World Health Organization (WHO) infant-feeding guidelines recommend that all infants should be breastfed within one hour of birth and exclusively breastfed until six months of life. Optimal feeding of infants and children means exclusive breastfeeding from birth to six months. It is followed by the introduction of complementary foods drawn from the local diet at about six months(4). Currently it is only 39% of all infants who are exclusively breastfed worldwide. The prevalence is about 30% in most developing world countries. Globally, because of inadequate breastfeeding practice in combination with high levels of diseases, more than 10 million under five-years of children die each year. Of this figure, 41% occur in sub-Saharan Africa and 34% in South Asia region(5). A cohort study carried out in Ghana revealed that 22% of neonatal deaths could be prevented if all infants were breastfed within the first hour of birth(6). It has also been reported that exclusive breastfeeding from birth and until 6 months of age has the potential to prevent 13% of all deaths among children, aged less than 5 years, annually in developing countries (7). Study in Addis Ababa showed that 60.0% of mothers gave pre-lacteal fluids and 32.0% infants less than four months were exclusively breastfed(8). There is a wide range of variation in the practice of exclusive

breastfeeding among developing countries, with the rates documented being: Brazil (58%), Bangalore (40%), Iran (69%), Beruwala (15.5%), Lebanon (10.1%), Nigeria (20%), Bangladesh (34.5%), and Jordan (77%). In Ethiopia, 49% of infants for the first six months, and 56.9% were exclusively breastfed for the first four months(9). According to 2016 EDHS, Ethiopia, 58% (10), in Jimma 64.4% (11), in Bishoftu town, Ethiopia 67.2% (12), in Dabat 18.0%(13), 99.1% started breastfeeding within the first hour after birth and 41.8% prevalence of EBF(14). Similarly, a study in Debre Tabor, Ethiopia, 70.8%(15), Enderta, Ethiopia, 70.2% (16), and Motta, Amhara Region, Ethiopia, 50.1%(17), Guba town, Oromia Region, Ethiopia, 71.3% (18) and in Gondar town 35.9% (19) practiced EBF for six months.

The salient factors associated with exclusive breastfeeding are maternal age, maternal level of education, maternal employment status, maternal knowledge, place of delivery, residence, culture, and household wealth status (11, 12, 15, 17, 19).

## Methods

### Study area and participants

A community-based cross-sectional study was conducted from March 12 to December 18 2019 in six districts of Northeastern Ethiopia. The study was among mothers who had less than two years of age child. The districts were selected using simple random sampling lottery method among 21 districts.

The sample size was calculated using a single population proportion formula by considering the following assumptions; proportion (50.1%) of excessive breastfeeding from the study in Motta town, Ethiopia(17). The level of confidence 95%, margin of error (d) = 5% and 10% non-response rate. Using a simple random sampling technique 423 mothers participated in the study. To select study participants from each district, first the sample size was proportionally allocated to size and finally a lottery method was used to select each study participant. The actual age of the infant was determined by asking the mothers and reviewing the birth certificate.

## Data collection procedure

An interviewer-administered structured questionnaire was applied for data collection. The questionnaire was designed originally in English and translated to local (Amharic) language for the purpose of data collection and then the results were entered by the English version. It was constructed by adopting from Ethiopian Demographic and Health Survey (EDHS) 2016 (10) and from the previous research done on similar topics(17, 20, 21) and modified accordingly. The mothers recall method on an infant's diet was used for assessing excessive breastfeeding.

## Operational definition

Exclusive breast-feeding: Exclusive breast-feeding means breast feed a baby duration of 6th months and a frequency of 8–12 times per day(1, 22).

Complementary feeding: Means the provision of other foods or liquids along with breast milk after six month of life(23).

## **Data processing and Analysis**

The collected data were checked and cleaned manually for completeness, and then it was coded and entered in Epi Info version 3.5.3 and exported to SPSS version 23 for advanced analysis. Descriptive statistics of socio-demographic characteristics and the prevalence of exclusive breastfeeding were used. Binary logistic regression was carried out to identify factors associated with exclusive breastfeeding practice. First bivariable logistic regression was performed to each independent variable with the outcome variable, and those variables with a p-value < 0.2, were fitted in the final (multivariate analysis) model. The strength of association was measured using odds ratio, and 95% confidence intervals. Statistical significance was declared at a p-value < 0.05.

## **Result**

### **Socio-demographic characteristics**

A total of 423 mothers with a child less than two years of age participated with a response rate of 96.4%. More than half (52%) of mothers were between 25–34 years of age. From the study, participants were most (89.2%) married 62.7% housewives and 65% Muslim religious followers. Regarding educational status more than half were either unable to read and write (15.4%) or able to read and write but did not have formal educations (43,8%). Smallest (7.3%) and highest (47.7%) proportion of mothers had less than 1000 and greater than 2500 Ethiopian birr monthly income at household level respectively (Table 1).

Table 1  
Socio-demographic characteristics of mothers and children (n = 408) in Northeast Ethiopia, 2019

<b>Variable</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Age of mother	15–24	115	28
	25–34	212	52
	35–44	81	20
Marital status of mother	Married	364	89.2
	Single	9	2.3
	Divorced	11	2.6
	Separated	15	3.8
	Widowed	9	1.9
Religion of mother	Orthodox	132	32.3
	Muslim	265	65
	Protestant*	11	2.7
Occupational status of mother	House wife	256	62.7
	Employee	150	36.9
	Merchant	2	0.4
Occupational status of husband	Farmer	158	38.8
	Government employer	226	54.6
	Merchant	24	5.8
Educational status of mother	Unable to read/write	63	15.4
	Able to read and write	179	43.8
	Primary education	96	23.5
	Secondary education	70	17.3
Monthly income	< 1000	19	7.3
	1001–2500	117	45
	> 2500	124	47.7
Sex of child	Male	225	55.1
	Female	183	44.9

Variable	Category	Frequency	Percentage (%)
Age of child(month)	< 6	80	19.8
	≥ 6	328	80.2

## Maternal Health Services Utilization and related characteristics

A majority 342(83.8%) of 408 eligible mothers had an antenatal visit in this study, of whom more than half 212(61.9%) had four and above visiting. Similarly, more than four-fifth 298 (87.1%) of the mothers who had antenatal service, were counseled about the importance and practice of exclusive breastfeeding (Table 2).

Table 2

Maternal and child health service utilization characteristics of study participants in Northeast Ethiopia, 2019

Variable	Category	Frequency	Percentage
ANC visit	Yes	342	83.8
	No	66	16.2
ANC visit category(N = 342)	One	10	2.7
	Two or three	120	35.2
	Four and above	212	61.9
PNC follow up	Yes	312	76.5
	No	96	23.5
Place of delivery	Home	74	18.2
	Health facility	334	81.8
Breastfeeding counsel during ANC	Yes	298	87.1
	No	46	12.9
Culture(ingest butter at birth, make child to test foods what mother take, etc.) before six months age	Yes	218	53.4
	No	190	46.6

## Breastfeeding practice of mothers with less than two years of age children

Two hundred sixty-eight (65.8%) of 408 mothers put their newborns to breastfeed within one hour of birth. But, only 30(7.3%) of mothers initiated breastfeed let after one day. Three hundred and fifty-one (86%)of 408 mothers did not give food other than breast milk within the first three days of birth. The prevalence of exclusive breastfeeding practice in this study was 77.5%(95%CI: 73.5, 81.5%). This was computed from mothers who have six and above years of age child during data collection.

Among mothers who still breastfeeding during the survey, 147(36.2%) were nursing their child less than 8 times per day, but the highest 227(55.8%) of mothers were breastfeeding 8 – 12 times per day. One hundred one (24.7%) of 408 mothers were breastfeeding while their child is crying (Table 3).

Table 3  
Breast feeding practice of mother having child less than 2 years, Northeast Ethiopia, 2019.

Practice of mother for child feed	Category	Frequency	Percentage
Breastfeeding initiation	Immediately	268	65.8
	After 1 hour	110	26.9
	After day	30	7.3
Gave food other than breast milk in first 3 days of birth	Yes	57	14
	No	351	86
Types of food given	plain water	27	47.2
	sugar solution	19	33.3
	cow milk	11	19.4
No food given other than breast milk before six month(N = 328)?	Yes	255	77.5
	No	73	22.5
When do you usually feed the child?	Child likes to have	307	75.3
	When child cries	101	24.7
No of breast milk feed per day	< 8	147	36.2
	8–12	227	55.8
	> 12	34	8.1
Age child in month when they stop breast feed	≤ 16	119	29.2
	17–23	185	45.3
	> 23	104	25.5
Start complimentary feeding practice at six month (N = 209)	Yes	185	88.6
	No	24	11.4

## Factors associated with breastfeeding practice

After adjusting in multivariable analysis, marital status, educational status, occupation, ANC follow up, birthplace and breastfeeding counseling of mothers were the independent predictors of exclusive breastfeeding practice. Mothers who were in married marital status were 2.57(1.688, 5.654) times more likely to breastfeed their child exclusively. Likewise, mothers who had antenatal care 4.11(2.662,11.172), institutional delivery 4.07(2.992,10.722), and mothers who got breastfeeding counseling during their ANC

follow up 1.96(1.124,4.732) more odds of exclusive breastfeeding practice compared to their counterparts.

On the other hand, employed mothers were around 78% less likely to practice exclusive breastfeeding than unemployed housewife mothers. Concerning education, unable to read and write mothers were 89% less likely to practice exclusive breastfeeding than mothers with secondary and above educational status (Table 4).

Table 4

Factors associated with exclusive breastfeeding practice among mothers with children age less than two years in Northeast Ethiopia, 2019

Variables		EBF practice			
		Yes	No	COR (95%CI)	AOR (95%CI)
Marital status	Married	238	116	3.01(1.567, 5.808)	<b>2.57(1.688, 5.654)</b>
	Not married	17	25	1	
Educational Status	Unable to read/write	17	46	0.72(0.342,0.1.270)	<b>0.11(0.068,0.992)</b>
	Able to read and write	89	90	0.48(0.271,0.863)	
	Primary education	50	46	0.53(0.280, 1.008)	
	Secondary education	47	23	1	1
Occupation	House wife	200	67	1	1
	Employee	55	86	0.21(0.138,0.331)	<b>0.22(0.169,0.561)</b>
ANC follow up	Yes	238	99	6.92(3.805,12.618)	<b>4.11(2.662,11.172)</b>
	No	17	49	1	1
Birth place	Health institution*	232	102	5.04(2.925,8.694)	<b>4.07(2.992,10.722)</b>
	Home	23	51	1	1
PNC follow up	Yes	227	85	6.48(3.911,10.821)	
	No	28	68	1	
Breastfeeding counsel during ANC	Yes	230	63	2.77(1.436,5.359)	<b>1.96(1.124,4.732)</b>
	No	25	19	1	1
Culture	Yes	54	164	0.35(0.235,0.544)	<b>0.23(0.142,0.462)</b>
	No	91	99	1	1

## Discussion

Breast milk is the very irreplaceable food to a newborn baby; it uses the baby to grow properly, protect the newborn from infection because it has antibodies. This study revealed that the prevalence of exclusive breastfeeding was 77.5%(95%CI:73.5,81.5%). Despite its need, the prevalence of exclusive breastfeeding

in this study was not as satisfactory. However, it was higher compared to the Ethiopian demographic health survey (EDHS) 16 data (58%) (10), the global EBF estimate 35%, and in developing countries such as; Motta town, Ethiopia (17), Nigeria (20%), Brazil (58%), Bangladesh (34.5%)(1, 4, 11, 19). In contrast, this result was comparable with the study in Addis Ababa (81%)(24), Ethiopian HSDP IV target level of 70% (25), and Debre Markos, Ethiopia 60.8% (21).

Initiation of EBF during an hour after delivery is recommended to prevent 13% of child death(7), protect infants from otitis media for at least four months (26). In this study, the higher prevalence (65.8%) of mothers was initiated breastfeeding within one hour after delivery. This result was congruent with the studies in Amhara (60%), Oromia (77%), and Southern Ethiopia (50%)(27). Whereas, it was higher compared to a study in Dabat, Gondar (23.2%)(13), and lower from a study in Tigray (99.1%)(16). These variations might be due to incomparable sample size, study designs used and study setting (community based and institutional) difference of the study areas.

Concerning factors associated with breastfeeding practices like mother's level of education, marital status, occupation, ANC, place of delivery, and counseling about breastfeeding practice during ANC visit were the variables that significantly associated with exclusive breastfeeding practice.

The study showed that the odds of exclusive breastfeeding among mothers having an educational level unable to read and write 89% less likely than mothers who have secondary and above educational levels. This is a discordant result when compared to study determinants of exclusive breastfeeding in Ethiopia(28).

After controlling the confounding variables, unemployed(housewife) mothers practiced EBF better than employed mothers. Employed mothers were about 78% less practiced exclusive breastfeeding than housewife mothers. This result is similar to studies in Malaysia (29, 30), Cameroon (31), Ghana (32, 33), Awi Zone, Ethiopia (34), Northwest Ethiopia(35), and Debre Markos, Ethiopia(21). This might because women spent their time at home are more frequently in contact with their child.

This study revealed that mothers who had antenatal care had four times more likely of practicing exclusive breastfeeding practice. This is supported by a nested case-control study in Northwest, Ethiopia(36), Jima, Ethiopia (37), and breastfeeding guidelines(38, 39). However, it has no association with EBF practice according to a study in Motta town, Ethiopia(17). This might be attributed to the study year (the former is conducted five years back), and the study population included.

Mothers who gave birth in a health institution were more likely to practice exclusive breastfeeding compared with those who gave birth at home. This finding had in agreement with the studies done at Bahir Dar, Ethiopia(33) and Ghana(32). This could be due to the fact that mothers who give birth in institution have more opportunities to be counseled about the benefit of breastfeeding by health care providers. In contrast to this, study done in Motta, Ethiopia indicated that birth place do not associate with exclusive breast feeding practice. This discrepancy might be due to the study period, study populations and sociocultural difference.

In this study breastfeeding counseling during antenatal care service was found to facilitate exclusive breastfeeding practice. This is parallel with studies done with low income Latinos in United states (40), Nigeria(41), and Debre Markos, Ethiopia(21). This could be health education and counseling increases mothers' knowledge about the need and benefits of EBF.

Culture was one of the independent predictor of exclusive breastfeeding in this study. The study showed that mothers who had a culture of giving different prelacteal foods (like; water, coffee, fresh butter, etc.) were around 80% less likely practicing of exclusive breastfeeding. This was in line with studies in Afar, Ethiopia(42), avoidance of prelacteal practice in rural Ethiopia(43), and a study exclusive breast feeding measurements and indicators in Israel (44). This might be the fact that, most Ethiopian mothers believe that their child will be affected by the devil if they did not make their child test a portion of food that the mothers tested (*visual witness from elders*).

Although a cross-sectional study design was used, this study had a strength of inclusion of large study areas. However, the limitations of this study were unable to assess qualitative aspects; like the attitude of both parents towards exclusive breastfeeding, factors related to health institutions, and detailed cultural factors like ingesting fresh butter to the infant at birth. Likewise, since this study included mothers with up to two years of a child, recall bias might under/overestimate the prevalence of exclusive breastfeeding.

## Conclusion

This study revealed an appreciable prevalence of breastfeeding. Being married, having antenatal follow up, institutional delivery, and counseling about breastfeeding during antenatal service were the variables that increase exclusive breastfeeding practice. While, unable to read and write educational status and being employed were the negative factors for exclusive breastfeeding.

## Abbreviations

### ANC

Antenatal Care, **AOR**:Adjusted Odds Ratio, **EBF**:Exclusive Breast Feeding, **HSDP**:Health Sector Development Plan, **OR**:Odds Ratio, **PNC**:Postnatal Care

## Declarations

## Ethical approval and consent to participate

Ethical clearance was insured from Wollo University, College of Medicine and Health Sciences ethical review committee. Verbal consent was obtained from each study participants after clarifying of the objective of the study. They were also told their rights in discontinuing or not responding of the interview. Data collection was taken Confidentiality of information collected is kept anonymously.

## Consent for publication

Not applicable

## Availability of data and materials

All the necessary data are included in the manuscript.

## Competing Interests

The author declared that there is no competing interest

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## Authors' contributions

**WMA is the author involved in the design, implementation, data cleaning, and analysis and draft the manuscript. The author has read and approved the manuscript.**

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