

## **Optimal Breast Feeding Practice and Associated Factors among Mothers of Children aged 6-23 months in Dandi District, West Shewa, Ethiopia.**

**Kefyalew Taye\* and Gutu Belay**

*Department of Public Health, College of Medicine and Health Science, Ambo University, Ambo Ethiopia P.O.BOX 19*

*\*Corresponding Author: Email: [kefyalewtaye24@gmail.com](mailto:kefyalewtaye24@gmail.com)*

### **Abstract**

*Optimal feeding of infants and young children means exclusive breastfeeding from birth to about six months, followed by an introduction of complementary foods drawn from the local diet at about six months. However, the status of optimum breastfeeding practice in low-income countries like Ethiopia varies from place to place. The aim of this study was to assess optimum breastfeeding practice and associated factors among mothers of children aged 6-23 months in the study area. The study was conducted at Ginchi Town, Dandi District, West Shoa Zone Ethiopia. A community-based cross-sectional study was conducted from June 1-10, 2018 G.C. Systematic random sampling followed by a Simple random sampling technique was used to reach a study subject. A structured questionnaire was used to collect the data. Data were coded and entered into Epi-data version 3.1 and exported to SPSS version 21 for further analyses. Binary logistic regression was used to check the association between dependent and independent variables. In multivariate logistic regression, those variables with a p-value of less than 0.05 were selected as factors associated with optimal breastfeeding. A total of 216 mothers of children aged 6-23 months were voluntarily responded, making a response rate of 100%. This study found that 81.9% of mothers have practiced optimum breastfeeding practice. There was a significant association between monthly income and optimum breastfeeding. Mothers who had a monthly income of greater than >1000birr were less likely to practice optimum breastfeeding as compared to mothers who had a monthly income of <500birr (AOR = 0.332, 95% CI: 0.122 - 0.901, p-value < 0.05). Optimum breastfeeding practice among the study subjects in the study area was below widely accepted "Universal coverage" of 90%. Therefore the town and district Health office should work to enhance optimum breastfeeding practice.*

**Keywords:** Breastfeeding, Child, Infant, Ethiopia

### **Introduction**

Breast milk is safe, feasible, and unique food for infants that has no equivalent substituent. It is well known that natural breast milk has many health benefits for the child, like protection against infectious disease (Gartner, 2005), neurocognitive development of the child (Gomez et al., 2004), protection of chronic disease in later life (Arenz et al., 2004) and protection of inflammatory bowel disease (Linda et al., 2005; Klement, et al., 2004).

Different studies revealed that there was scientific evidence that highlights the importance of the first 2–3 years of life for later success in school. Studies in high as well as low and middle-income countries (LMICs) show that growth in the first 2 years of life predicts years of schooling and income in adulthood (Adair et al., 2010; De Vries et al., 2007; Gertler et al., 2014).

Worldwide about 823,000 children's life will be saved, if appropriate breastfeeding is practiced

(Walters et al., 2016). In developing countries, suboptimal breastfeeding contributes to 45% of neonatal infectious deaths, 30% of diarrheal deaths and 18% of acute respiratory deaths among under five years of age children (Öberg et al., 2011). Similarly, studies have documented the long term beneficial effects of breastfeeding on chronic diseases like Overweight, diabetes mellitus, and cancer prevention (Kelishadi & Farajian, 2014). Longer breastfeeding duration was associated with a 13 percent reduction in the likelihood of overweight and/or obesity prevalence and a 35 percent reduction in type-2 diabetes incidence (Victora et al., 2016). Even in developed countries, none breastfed children had increased incidence of ear infection, gastroenteritis, pneumonia, obesity, type I and type II diabetes and leukemia as compared to the breastfed child (Stuebe, 2009). Similarly, Systematic reviews by World Health Organization (WHO) confirmed the long term effects of breast milk in controlling blood pressure, type-2 diabetes, serum cholesterol, overweight and obesity, and intellectual performance (Horta & Victora, 2013).

Optimal feeding of infants and young children means exclusive breastfeeding from birth to about six months, followed by the introduction of complementary foods drawn from the local diet at about six months (WHO, 2014). World health organization recommends all infants should be breastfed within one hour after birth and exclusively breastfed from birth until 6 months of life and thereafter, infants should be introduced to nutritionally adequate and safe complementary foods with continued breastfeeding for up to 2 years or beyond (WHO, 2014). However, no more than 35% of infants worldwide are exclusively breastfeeding during the first four months of life (UNICEF, 2010). Recent studies showed that less than 40% of children less than six months of age are exclusively breastfed and about 70% of infants are sub-optimally breastfed in developing countries, which is a major contributor to infant mortality rate (Cai et al., 2012).

There were many factors that affect optimal breastfeeding practice. Mothers' knowledge, attitude, and skills towards breastfeeding were

commonly depicted by scholars (Hector et al., 2005). Besides, Economical and familial factors and insufficient maternity leave were also indicated (Mkhize et al., 2017). Similarly, the job condition of the mother, insufficient breast milk, health condition of the nipple of the breast, and stress was among factors that affect optimal breastfeeding practice (Al-Shoshan et al., 2007; Ella et al., 2016).

In Ethiopia currently, only 58% of children are exclusively breastfed, whereas 17% of infants 0-5 months consume plain water, 5% consume non-milk liquids or other milk, and 11% consume complementary foods in addition to breast milk. Five percent of infants under age 6 months are not breastfed at all (EDHS, 2016). Meanwhile, 24% of infant death in Ethiopia is due to poor breastfeeding practices (Ministry of Health Ethiopia, 2011). Therefore, this study will have significant input in the formulation of appropriate strategies to promote optimal breastfeeding practice in the study area and the region at large.

## **Methods and materials**

### **The Study Area and Period**

The study was conducted at Ginchi Town, Dandi District, West Shoa Zone Ethiopia. Ginchi town is found at 80 km to the west of Addis Ababa, capital of Ethiopia. The total population of Ginchi Town is 26,294 among which 13,492 were male and 12,802 were females and 1499 were children aged 6-23 months. Administratively, Ginchi town is structured as two urban Kebeles. The study was conducted from June 1-10, 2018 G.C.

### **Study design, study population and sample size determination**

A community-based cross-sectional study design was utilized in this study. Randomly selected mothers of children aged 6- 23 months in the randomly selected households of the town were study subjects. Sample size (n) was determined by using single population proportional formulae ( $n = (Z\alpha/2)^2 pq/d^2$ ), using a prevalence rate of 82.2% from the

previous study (Zenebu et al., 2015) at 95% confidence interval, considering non-response rate of 10% and correction formula, the minimum required sample size was estimated to be 216.

## **Sampling procedure and Data collection**

Systematic random sampling followed by a Simple random sampling technique was used to reach a study subject. First households with children aged 6-23 months were identified from the family folder of the health extension workers found in each Kebele. In kebele 01 and 02 there were 896 and 603 children aged 6-23 months respectively. Using proportional allocation 128 and 87 study subjects were selected every 7th interval ( $k=7$ ) from each kebele respectively. Then a simple random sampling technique was used to select the first household. Data were collected by trained data-collectors using well-structured questionnaires that address the objective of the study.

## **Operational definitions**

**Optimal breastfeeding:** exclusive breastfeeding up to six months and starting complementary feeding at six months.

## **Data Quality Control**

Data quality was ensured during data collection, coding, entry, and analysis. Originally the questionnaire was prepared in the English language and then translated to Afan Oromo language for easy management, then translated back to English to maintain the quality of data and consistent information. The translated version was pre-tested on 10% of the study sample in nearby towns through trained data collectors and supervisors. Completeness of the questionnaire was checked to ascertain whether all questions are properly filled or not on spot.

## **Data processing and analysis**

Data were coded and entered into Epi-data version 3.1 and exported to SPSS version 21 for analyses. Frequency, mean and standard

deviations from descriptive statistics and analytic statistics such as bivariate and multivariable logistic regression analysis were computed to determine the effect of various factors on the outcome variable. Variables having a p-value of less than or equal to 0.3 on binary logistic regression was the candidate for multiple logistic regressions. Statistical significance was declared at  $p<0.05$ . The strength of the association between independent and dependent variables was assessed using the adjusted odds ratio at a 95% confidence interval.

## **Results**

A total of 216 mothers of children aged 6-23 months had responded, making a response rate of 100%.

## **Socio-demographic characteristics of respondents**

The mean age of the mothers was 26 +4.7 years. The age range of children considered in this study was 6-23 months, which is an optimal recommended age range for breastfeeding. The mean age of the children was 12.23 + 6.22 months. Half of the respondents were orthodox (Table 1.)

## **Maternal health service utilization**

Majority of the respondents 207(95.8%) have visited health institution for ANC and about 183 (84.7%) mothers delivered their youngest child at a health institution while only 33(15.3%) delivered at home. About 208 (96%) of the respondents had at least one ANC follow up for the current child whereas 168 (78%) had postnatal care service utilization.

## **Breastfeeding practice**

According to this study, the majority of mothers 169 (78.2%) started the initiation of breastfeeding within an hour of delivery and 89% of mothers were exclusively breastfed their children for six months. In general, this study found that 81.9% of mothers have practiced optimum breastfeeding while 18.1% apply non-optimum breastfeeding practice.

**Table 1.** Socio-demographic characteristics of respondents, Ginchi town, Ethiopia.2018

<b>Variables(n=216)</b>	<b>Category</b>	<b>Number</b>	<b>Percent</b>
<b>Age of mothers</b>	<20	12	5.6
	20 – 29	147	68.1
	30 – 39	57	26.4
	<b>Total</b>	216	100
<b>Age of child (months)</b>	6 -12 month	100	46.3
	13-24 month	116	53.7
	<b>Total</b>	216	100
<b>Marital status</b>	married	216	100
	<b>Total</b>	216	100
<b>Religion</b>	Orthodox	108	50.0
	Muslim	16	7.4
	protestant	87	40.3
	other	5	2.3
	<b>Total</b>	216	100
<b>Ethnicity</b>	Oromo	197	91.2
	Amhara	12	5.6
	others	7	3.2
	<b>Total</b>	216	100
<b>Maternal Occupation</b>	Employed	43	19.9
	unemployed	173	80.1
	<b>Total</b>	216	100
<b>Monthly house hold income(ETB)</b>	< 500	30	13.9
	500 – 1000	48	22.2
	>1000	138	63.9
	<b>Total</b>	216	100
<b>Educational status of a mother</b>	Illiterate	36	16.7
	Read and write	38	17.6
	Up to secondary school	102	47.2
	College and University	40	18.5
	<b>Total</b>	216	100

**Table 2.** Distribution of respondents by their breastfeeding practice, Ginchi town, Ethiopia, 2018

Variables (n=216)	Category	Number	Percent
Initiation of breast feeding	Within 1hr	169	78.2
	After one hour	47	21.8
Currently breastfeeding	Yes	205	94.9
	No	11	5.1
Frequency of breast Feeding	<8 times	70	32.4
	8-12	128	59.3
	>12	15	6.9
Exclusive breastfeeding	<6month	20	9.3
	Up to 6months	192	89
	>6month	4	1.7
Start complementary Feeding	<6 month	24	11.1
	=6 month	177	81.9
	>6month	15	7
Optimal Breast-Feeding practice	Not optimum	39	18.1
	optimum	177	81.9

### Factors associated with optimal breastfeeding practice

There was a significant association between monthly income and optimum breastfeeding. Mothers who had a monthly income of greater

than >1000birr were less likely to practice optimum breastfeeding as compared to mothers who had a monthly income of <500birr (AOR = 0.332, 95% CI: 0.122 - 0.901, p-value < 0.05 (See table 3).

**Table 3.** Bivariate and multivariate logistic regression analysis factors associated with optimal breastfeeding practice, 2018

Variable(N=216)	Optimum	Not optimum	COR(95% CI)	AOR(95% C.I)
<b>Religion</b>				
Orthodox	89(82%)	19(18%)	1	1
Muslim	11(69%)	5(31%)	0.32(0.05,2.050)	2.357(0.484,11.481)
protestant	73(84%)	14(16%)	0.682(0.085,5.448)	1.121(0.479,2.619)
Others	3(60%)	2(40%)	0.288(0.44,1.882)	9.279(0.887,97.025)
<b>Ethnicity</b>				
Oromo	163(83%)	34(17%)	1	1
Amhara	7(58%)	5(42%)	3.422(1.026,11.434)	3.247(0.749,14.072)
Other	6(86%)	1(14%)	0.799(0.093,6.853)	0.371(0.026,5.268)
<b>Monthly income</b>				
<500	19(63%)	11(37%)	1	1
500-1000	44(92%)	4(8%)	0.157(0.44,0.556)	0.115(0.30,0.447)*
>1,000	113(82%)	25(18%)	0.382(0.162,0.903)	0.332(0.122,0.901)*
<b>Place of Delivery</b>				
Home	23(70%)	10(30%)	1	1
HI	153(84%)	30(16%)	0.451(0.195,1.044)	0.483(0.179,1.306)

<b>Postnatal Care</b>				
Yes	133(80%)	34(20%)	1	1
No	43(88%)	6(12%)	0.546(0.215,1.388)	0.545(0.184,1.609)
<b>Initiation of Breast feeding</b>				
Immediately	142(84%)	27(16%)	1	1
After 1hr	34(72%)	13(28%)	2.011(0.94,4.3)	2.215(0.916,5.359)
<b>Start Complimentary feeding</b>				
Nothing	72(77%)	22(23%)	1	1
Water/ tea	27(84%)	5(16%)	0.606(0.209,1.762)	0.466(0.104,2.084)
Cow milk	62(89%)	8(11%)	0.422(0.176,1.016)	0.293(0.073,1.178)
Adult food	11(69%)	5(31%)	1.488(0.466,4.745)	1.474(0.259,8.372)

## Discussion

The analysis of this study found that majorities of the respondents 177 (81.9%) have optimum breastfeeding practice. This finding is comparable with the previous study conducted at Ambo woreda which revealed 82% exclusive breastfeeding practice (Zenebu et al., 2015). However, the finding of this study is higher than the study conducted at Goba District (71.3%) Southeastern part of the country (Setegn et al., 2012) and Kamba District (40.6%) Southern part of the country (Getahun et al., 2017). The discrepancy of the finding may be due to socio-demographic differences in the area and the length of the study period.

It is known that early initiation of breastfeeding after birth is one among interventions practiced to reduce neonatal morbidity and mortality (Edmond et al., 2006; Jones et al., 2003). Meanwhile, the finding of this study shows that early initiation of breastfeeding was about 78.2%, which is slightly higher than previous studies conducted in Southern and Northern parts of Ethiopia. The study conducted in the Southern Nation Nationalities Region of Ethiopia revealed that 50% of mothers reported that they had initiated breastfeeding in the first one hour. Whereas study from the Northern part of the country shows that 60% of mothers had reported early initiation of breastfeeding within one hour after delivery (Horii et al., 2011; Tekla et al., 2015).

As to the level of exclusive breastfeeding in the area, this study found that about 89.4% of mothers were exclusively breastfeeding their children for the first six months. This figure is higher than the national report which shows only about 58% exclusive breastfeeding practice (EDHS, 2016). The discrepancies may be due to study design, sample size, and other socio-demographic factors. The national study includes the study subjects from all parts of the country and it uses different sampling techniques, whereas this study relies only on a specific area, Ginchi town. Similarly, this study found that about 88.9% of mothers had started complementary feeding at six months of age. This report is also higher than the studies reported somewhere else (Horii et al., 2011).

According to the results of this study, household income was associated with optimal breastfeeding practice. Mothers whose monthly income range from 500-1000 Ethiopian birr (AOR=0.11 (0.30, 0.45)) was less likely to breastfeed their children compared to those who get <500 Ethiopian birrs. Similarly, mothers who earn >1000 Ethiopian birr (AOR = 0.33(0.12, 0.90)) monthly income were less likely to breastfeed their children compared to those who get <500 Ethiopian birr. Similar to this finding, a study conducted in Ethiopia East Gojjam revealed that mothers whose average monthly household income is lower were more likely to practice exclusive breastfeeding than mothers whose average monthly household

income was higher (Tewabe et al., 2016). This can be explained by the fact that the higher the income the mother earns the higher the probability of finding other feeding options like mixed feeding and formula.

Place of delivery is another factor that is found to be associated with breastfeeding practice. The study conducted in Bahir Dar (Northern Ethiopia) revealed that the place of delivery was significantly associated with optimum breastfeeding practice (Demilew et al., 2017). However, in our study, the place of delivery has no significant effect on optimal breastfeeding. This may be due to the absence of difference in either providing counseling or health education on the benefits of breastfeeding for mothers who delivered at home or health institutions. Similarly, maternal occupation is also reported somewhere else as factors that have an association with optimal breastfeeding (Tewabe et al., 2016; Weber et al., 2011). According to those studies mothers who were working at the government office were less likely to breastfeed their infants as compared to mothers who were not employed by the government. Conversely, our study found no association between maternal occupation and optimal breastfeeding practice. This may be due to the majority of our study subjects were unemployed.

## Conclusion

Optimum breastfeeding practice among the study subjects in the study area was below widely accepted "Universal coverage" of 90% coverage. Therefore the town and district Health office should work to enhance optimum breastfeeding practice.

## Declaration

### Ethics approval and consent to participate

The study was reviewed and approved by Ambo University College of Medicine and Health Sciences Department of Public Health. Public health department issued Ethical approval on May 25, 2018. Consent was obtained from mothers of children, before collecting any information. Finally, information

collected from each study participant was kept confidential.

## Consent to publish

Both authors have read the content of the manuscript and had a common understanding regarding the finding of the study. They also have an agreement to publish it under this journal.

## Availability of data and materials

All data regarding this study is available and it can be sent upon request from Corresponding Author.

## Competing interests

The authors also declare that there are no other financial or non- financial competing interests.

## Author's contribution

KT and GB conceptualized the research question, analyzed and interpreted the findings, conduct final report writing, and prepare the manuscript.

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