

# BREASTFEEDING PRACTICES OF MOTHERS OF UNDER FIVE YEARS OLD CHILDREN IN BAHIR DAR CITY, ETHIOPIA: A DESCRIPTIVE CROSS SECTIONAL COMMUNITY BASED SURVEY

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## ABSTRACT

**Background:** Improved breastfeeding practices can help in preventing diarrheal diseases and malnutrition. In Ethiopia, children are still suffering from diarrheal diseases and malnutrition.

**Aims & Objective:** This study was aimed at assessing mothers' breastfeeding practices in Bahir Dar, Ethiopia.

**Materials and Methods:** A cross sectional survey was conducted by involving of 415 mothers. The study was conducted from April 15 to May 15, 2011. Three kebeles (the smallest administrative level) from Bahir Dar city were selected randomly. The sample was determined by using single population proportion formula and proportionally distributed to the selected kebeles according to population size. To be eligible to participate in the study, mothers had to live in households that had children under five years of age. Households were selected by systematic sampling method. Mothers were interviewed in their homes using a structured questionnaire that had been pre-tested. The data were analyzed using SPSS version 16.0. Odds ratio was calculated with 95% confidence intervals; P-values less than 0.05 were considered as statistically significant.

**Results:** Data were collected from 415 mothers. Breast-feeding was practiced by 400(96.4%) of all respondents. Two hundred seventy eight (69.5%) mothers reported initiating breast-feeding within one hour of delivery. One hundred thirty four (33.5%) of mothers reported feeding colostrum to their infants. The main reasons for not giving colostrum included the belief that colostrum is unclean was reported by 30 (22.4%) mothers, colostrum makes the newborn sick by 58 (43.3%) mothers and that withholding colostrum initiates breast milk production by 46 (34.3%) mothers. One hundred and nine (26.3%) of mothers reported giving pre lacteal feeds to their infants. About 325 (78.3%) of mothers reported that they had heard information about exclusive breastfeeding but only 172(41.4%) had appropriate knowledge. One hundred and thirty three (38.1%) mothers substituted breast milk before the child reaching six months of age. Mothers' educational status, Antenatal care (ANC) follow up during pregnancy, availability of television in the household and place of delivery were significantly associated with feeding colostrum to the infant ( $P < 0.05$ ).

**Conclusion:** This study showed that the prevalence of ever breastfeeding was almost universal but still mothers had gaps about early initiation of breastfeeding, giving the first milk for their newborns and exclusive breastfeeding. Therefore information regarding optimal breastfeeding practices should be provided for mothers and local health extension workers. An effort should also be made to increase community awareness about the importance of optimal breastfeeding for the child growth and development.

**Key Words:** Breastfeeding; Mothers of Under Five Years Old Children; Ethiopia

## Introduction

In Ethiopia, even though there are great achievements in decreasing infant and child mortality from year 2000 to 2011, still a large proportions of Ethiopian children are suffering from diarrheal diseases, respiratory problems and malnutrition.<sup>[1-3]</sup> Improved breastfeeding practices, such as timely initiation of breastfeeding, exclusive breastfeeding of infants for the first six months of life, introducing adequate complementary foods at six months of age, and continuing to breastfeed up to two years or longer can help in preventing malnutrition and could potentially prevent 1.30-1.45 million child deaths.<sup>[4,5]</sup>

Previous studies showed that breastfeeding practices of mothers differ from localities to localities. A study conducted in southern India showed that about 92% of the mothers knew that breastfeeding should be initiated within one hour but only 36% of the mothers initiated

breastfeeding within one hour after delivery.<sup>[6]</sup> In Sri Lankan about 62.2% were exclusively breastfed up to 6 months, (85.6%) children had received infant formula before the age of 6. Sugar was added to infant formula for 80.4% children. Complementary foods were started before 4 months in 7% children.<sup>[7]</sup> In Bhaktapur, Nepal, Three quarters of all mothers reported that they did not receive any information on breastfeeding during the antenatal visit. Ninety one percent of mothers gave colostrum and 185 (57%) initiated breastfeeding within one hour of delivery.<sup>[8]</sup>

According to Ethiopian demographic and health survey, 98 % of children were breastfed for some period of time, 52% started breastfeeding within one hour of birth and 80% within the first day.<sup>[3]</sup> A study done in rural communities of Jimma Arjo District, Southwest Ethiopia showed that 75.4 %of mothers breastfeed their infants sub-optimally and 37.4% of mothers initiated breastfeeding later than one

hour after delivery.<sup>[9]</sup> In Goba District, South East Ethiopia, the prevalence of timely initiation of breastfeeding was 52.4%; mothers from urban area and getting postnatal counseling were independent predictors of timely initiation of breastfeeding.<sup>[10]</sup> There were variation between regions; initiation of breastfeeding within 1 hour after birth was 1.7 times more common in Tigray as compared to Gondar, Ethiopia.<sup>[11]</sup> Another study in the rural Communities of Jimma Arjo, Ethiopia 42.9% of mothers introduced complementary food before 6 months.<sup>[12]</sup> A research done in the rural communities of Arba Minch Zuria, showed that More than half of mothers (57.2%) initiated breastfeeding within the first hour of delivery and 213 (55.6%) were exclusively breastfed their children for 6 months. Three-hundred forty one (89%) mothers gave colostrum though a small number of mothers considered colostrum as an expired breast milk and discarded it. Three-hundred forty one (89%) mothers gave colostrum though a small number of mothers considered colostrum as an expired breast milk and discarded it.<sup>[13]</sup> In Ethiopia, ever breastfeeding is almost universal; however there are variations from localities to localities in time of initiation, colostrum, exclusive breastfeeding practices. The objective of this study was to assess breastfeeding practices in Bahir Dar with the future aim of establishing a baseline to design a strategy for improving breastfeeding practices in the study community.

## Materials and Methods

**Study Area:** This cross sectional survey was conducted In Bahir Dar city, Amhara Regional State, Ethiopia; there are 9 urban kebele and three satellite kebeles (the smallest administrative unit in Ethiopia).

**Study Design:** Descriptive cross sectional community based survey was conducted from April 15 to May 15 2011.

**Study Population:** All mothers of under five years old children in Bahir Dar City.

**Sampling Method:** Three kebeles (Two from urban and 1 from satellite kebeles unit in Ethiopia) from Bahir Dar were selected randomly for the study. The sample was proportionally distributed to the selected kebeles according to their population size. These households were selected by systematic sampling method. Mothers were interviewed in their homes using a structured questionnaire that had been pre-tested. When there was more than one child under five in the household, mothers were asked about the last child. Respondents were not included in the survey if there were not at home up to

three times when the interviewers went to the house.

**Inclusion Criteria:** To be eligible to participate in the study, mothers had to live in households that had children under five years of age.

**Exclusion Criteria:** Mothers who were severely sick at the time of data collection and those who were not willing to give informed consents were excluded.

**Sample Size Determination:** The sample size was determined by using single proportion formula, the following assumption were made, the population proportion (P=50%) for which represents the optimal feeding practices ,5% marginal error that will be tolerated in ether sides of the true proportion and using 95 % confidence level which gives 384. Then ten percent of the sample size was added to compensate for non-responses, bringing the final sample size to 422.

**Research Instrument for Data Collections:** A structure d questionnaire was prepared according to the study objectives and the local situation of the study area with English language. The questionnaire was translated to Amharic and back translated to English. Discrepancies in the translation were resolved through mutual agreement in the research team. Pre-testing was conducted on 5% of sample size prior to the actual data collection process. Then a pre tested structured questionnaire was used to collect data on socio demographic, characteristics and breastfeeding practices of mothers the under five years of age by face to face interviews.

**Data Management:** The collected data were checked for completeness and consistency of the information. Data were coded, entered and analyzed using SPSS version 16. Bivariate analysis was conducted using binary logistic regression. Odds ratio (OR) and 95% Confidence Interval (CI) were calculated to test the strength of association and level of significance, respectively. P-Values less than or equal to 5% were considered statistically significant

**Ethical Consideration:** The research topic and methodology was approved by ethical clearance committee of college of medicine and health sciences, Bahir Dar University. A written letter of cooperation was sought from the Zonal Health Office of Bahir Dar city administrations. At each level the aim of the study was explained for community leader. Additionally, during the data collection at each household the aim of the study was clearly explained for both the head of the household and for mothers of children under five children years of age. Respondents were assured about the confidentiality of the

information they provided as well as their right to withdraw at any time during data collection. Oral consent was obtained from all the study participants prior to data collection. After data collections, the data collectors and supervisors were informed the respondents about proper child feeding mainly focusing on the observed problem with regard to optimal child feeding.

## Results

### Socio-Demographic Characteristics of Respondents

Four hundred and fifteen mothers were interviewed after fulfilling the inclusion criteria, resulting in an overall response rate of 98.34%. The majority of study participants 383 (92.3%) were biological mothers of the selected child, 403(97.1%) were from the Amhara ethnic groups and 346 (83.4%) were Orthodox Christians by religion. One hundred and eighty (43.4%) were unable to read and write, 342 (82.4%) were married, 275 (66.3%) were from households having family less than or equal to five. With regard to the socio demographic characteristics of the youngest under five years of children, 218 (52.5%) were female, 166 (40.0%) were first by their birth orders, 365 (88.0%) of the mothers were followed ANC services during the pregnancy of the selected child, of these 169 (46.3%) had only one ANC Visits. (Table 1)

### Breastfeeding Practices

Four hundred (96.4%) of the study subjects had ‘ever breastfed’ their children and 278 (69.5%) mothers initiated breast-feeding within one hour hours after delivery. One hundred and thirty four (33.5%) mother did not give the first milk (colostrum) to their new born; rather they discarded it before breastfeeding. The main reasons for not giving colostrum included the belief that colostrum is unclean 30 (22.4%), that colostrum makes the newborn sick 58 (43.3%) and that withholding colostrum initiates breast milk production 46 (34.3%).109 (26.3%) of mothers reported giving pre lacteal feeds to their infants. One hundred and nine (26.3%) children were given food items during the first three days after delivery. As to the given items, 53 (48.6%), 38 (34.9%), 14 (12.8%) and 4 (3.6%) children were given plain water, butter, animal milk and the commercially produced infant formula or tea and coffee respectively. (Table 2)

Three hundred and twenty five (78.3%) study participants responded that they heard information about exclusive breastfeeding but only 172 (41.4%) had appropriate knowledge (Breastfeeding only up to six months) the remaining explained as; 56 (13.5%) giving breast milk & water for first 6 months, 41 (9.9%) breastfeeding

regularly, 121 (29.2%) don’t know and 25 (6.0%) other unrelated definition of exclusive breastfeeding. One hundred and three (38.1%) study participants responded that the child was given other food items as substitute of breast milk before the child reaching six months of age. They were also asked the main reason for substituting breast milk with other food items; 123 (35.2%) of mothers were responded that they gave as a complementary food, 102 (29.2%) mothers didn’t have enough milk, 54 (15.5%) mothers were working and due to other reasons. (Table 2)

**Table-1: Socio-demographic characteristic of mothers**

Variables	N	%	
Primary care giver for the youngest child	Mother	383	92.3
	Father	11	2.7
	Sister	8	1.9
	Others	13	3.1
Ethnicity	Amhara	403	97.1
	Ormo	7	1.7
	Tigre	4	1.0
Religion	Orthodox	346	83.4
	Catholic	1	0.2
	Protestants	5	1.2
Literacy status	Muslim	63	15.2
	Unable to read & write	180	43.4
	Literate	235	56.6
Current occupational status	House wife	278	67.0
	Merchant	33	8.0
	Government employee	17	4.1
	Housemaid	15	3.6
Marital Status	Others	72	17.3
	Married	342	82.4
	Single	18	4.3
	Divorced	43	10.4
Family Size	Widowed	12	2.9
	≤5	275	66.3
	>5	140	33.7
Number of under five children in the Household	1	363	87.5
	2	48	11.6
	≥3	4	1.0
Sex of the youngest child	Male	197	47.5
	Female	218	52.5
Age of the youngest child	≥6 month	60	14.5
	6 month to ≤ 1 year	65	15.7
	1 to ≤2 year	103	24.8
	2 to ≤3 years	82	19.8
	3 to ≤4 years	73	17.6
Birth Order	4 to ≤5 years	32	7.7
	1st	166	40.0
	2nd	103	24.8
	3rd	72	17.3
ANC (Antenatal care) follow up	4th and above	74	17.8
	Yes	365	88.0
Number of ANC Visits	No	50	12.0
	Once	169	46.3
Place of delivery	Twice and above	196	53.7
	Home	149	35.9
	Health institutions	266	64.1

Binary logistic regression analysis was carried out to examine the associated factors for colostrum squeezing (The practice of not giving or discarding of first milk for their newborns as reported mothers of under five years old children) practices.

**Table-2: Breastfeeding practices of mothers**

Variables		N	%
Ever breastfeed (n=415)	Yes	400	96.4
	No	15	3.6
Time of initiation (n=400)	Within one hour	278	69.5
	After one hours	122	30.5
Squeezing colostrum (n=400)	Yes	134	33.5
	No	266	66.5
Reason for squeezing colostrum (n=134)	It is not clean	30	22.4
	Make the child sick	58	43.3
	To initiate Milk production	46	34.3
Anything given for the child in the first three days after delivery (n=415)	Yes	109	26.3
	No	306	73.7
Types of food item given (n=109)	Plain water	53	48.6
	Infant formula	2	1.8
	Fresh animal milk	14	12.8
	Tea or coffee	2	1.8
	Butter	38	34.9
Do you heard about exclusive breastfeeding (n=415)	Yes	325	78.3
	No	90	21.7
Knowledge about exclusive breastfeeding (n=415)	Appropriate	172	41.4
	Inappropriate	243	58.6
Have you ever provided any food item for the child as a substitute for breast milk (n=415)	No	66	15.9
	yes	349	84.1
Age at which breast milk substituted (n=349)	less than six month	133	38.1
	six month to 1 Years	190	54.4
	above one year	26	7.4
Reason for substituting (n=349)	Mother didn't have enough milk	102	29.2
	Mother was sick	26	7.4
	Mother was working	54	15.5
	Mother was pregnant	2	0.6
	Age of child was greater than four months	25	7.2
	Don't know	6	1.7
	Other	11	3.2
Complementary food	123	35.2	

**Table-3: Factors associated with colostrum squeezing**

Variables	Colostrum Squeezing		OR (95%CI)	P-Value
	Yes	No		
Age (Years)	< 20	15 25	1.154 (0.515,2.582)	0.728
	20 to 35	92 202	1.520 (0.878,2.632)	0.135
	> 35	27 39	1	
Literacy status	Illiterate	82 93	2.933 (1.910, 4.506)	< 0.001
	Literate	52 173	1	
ANC follow	Yes	109 244	0.393(0.212,0.728)	0.004
	No	25 22	1	
Place of delivery	Home	74 71	3.387 (2.191, 5.236)	< 0.001
	Institutions	60 195	1	
Availability of Television in HH	Yes	35 144	0.300 (0.190, 0.472)	< 0.001
	No	99 122	1	
Birth order of the selected child	1st	53 105	1.216 (0.679, 2.175)	0.511
	2nd	34 67	1.209 (0.642, 2.276)	0.556
	3rd	20 50	1.534 (0.757, 3.108)	0.235
	4th	27 44	1	

The results showed that mothers who were not able to read and write were 2.93 times more likely to discard colostrum (OR, 2.933; 95% CI, 1.910–4.506) than those mother who were able to read and write. Mothers who had ANC follow up during the pregnancy of the youngest child were 0 .393 times less likely to discard colostrum (OR, 0.393; 95%CI, 0.212, 0.728) than mothers without ANC follow ups. Moreover, mothers who gave birth at home were about 3.387 times more likely to discard colostrum (OR, 3.387; 95% CI, 2.191–5.236) than mothers who delivered in health institutions. The results showed that

there was a statistically significant association between feeding the infant colostrum and the availability of television in the home (OR, 0.300; 95% CI, 0.190, 0.472). However, both the age of the mothers and the birth order of the youngest child were not significantly associated with discarding colostrum (p-value greater than 0.05) (Table 3).

**Discussion**

About 96.4% of the study subjects had ever breastfed their infants, which was similar with the Ethiopian demographic survey of 2011.<sup>[3]</sup> And a study done in Goba District, South East Ethiopia.<sup>[10]</sup> About (69.5%) of mothers initiated breast-feeding within one hour after delivery. And (33.5%) mothers did not give the first milk (colostrum) to their new born but rather expressed it and discarded it before putting the child to the breastfeeding. The proportion of Bahir Dar mothers who fed colostrum to their infants was lower than the proportion reported in a study from Nepal in which (91%) mothers gave colostrum and (57%) initiated breastfeeding within one hour of delivery.<sup>[8]</sup> This difference might be difference in socio cultural aspects of the study participants. However, the results are comparable with study findings in rural communities of Jimma Arjo District in the Southwest Ethiopia in which 37% of mothers initiated breastfeeding later than one hour after delivery.<sup>[9]</sup> The main reasons for not giving colostrum as explained by mothers were the belief that giving colostrum to a newborn makes the newborn sick, discarding colostrum helps to initiate milk production and that colostrum is unclean. This indicates that mothers were having inappropriate information about the importance of first milk.

Discarding colostrum was significantly associated with literacy status, ANC follow up, place of delivery and the availability of television in the home. All the above variables could be indicators of better socio-economic status. It is possible that mothers who had better educational status had a better chance to get information and to reading materials about optimal breastfeeding practices. These mothers may also have received information and an advice from health professionals during the ANC follow up and after delivery. As well, these mothers could have obtained information about the importance of colostrum from the mass media (television). About 26.3% children were given food items during the first three days after delivery which was against WHO recommendation about exclusive breastfeeding.<sup>[4,5]</sup> The items included plain water, butter, and animal milk and commercially produced infant formula or tea and coffee. About 78.3% of mothers /caregivers heard information

about exclusive breastfeeding but only 41.4% had Knowledge about exclusive. More over 38.1% of the respondent mentioned that they gave another food items as a breast milk substitute before the child reaching six months, which is comparable with the study findings showed that about 49.0% were exclusively breastfeeds according to EDHS 2005.<sup>[5]</sup>

## Conclusion

This study showed that the prevalence of ever breastfeeding was almost universal but mothers had gaps about early initiation of breastfeeding, giving colostrums to newborns and exclusive breastfeeding. These results suggest the importance of improving breastfeeding practices in Bahir Dar. Breastfeeding practices could be improved by developing informational materials for mothers about optimal breastfeeding practices and training local health extension workers about the importance of optimal breastfeeding for preventing child morbidity and mortality, thus helping to achieve the 4th millennium development goal of reducing child mortality.

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