



The Prevalence of Exclusive Breast Feeding and Associated Factors Among Mothers of Less than Two Years Children in Kurkur Kebele, Dessie Town

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Abstract: Breast milk is the one and only natural, complete and complex nutrition for human infants. It is superior to any product given to a baby. It is immediately available, fresh, constant, and economical. It provides all infants nutritional and fluid needs in the first six months and is a perfect combination of proteins, fats, carbohydrate and fluids. Nutrients such as vitamins A and C, iron, zinc and vitamin D are more easily absorbed from breast milk than from other milk. And it contains essential fatty acids needed for the infant's growing brain, eyes, and blood vessels and these are not available in other milks. The aim of the this study is to assess prevalence of exclusive breast feeding and factors associated with it among mothers with children of less than 2 years old in Dessie town, South Wollo, Ethiopia, 2016. The community based quantitative cross-sectional study was carried out. From the total mothers who had ever breastfed their infant 332, about 326 (98.2%) of them were breastfeeding at the time of the survey. The prevalence of exclusive breastfeeding for the children in the study area was 49.7%. From the study subjects 296(89.2%) had previous experience of breast feeding practice, among them 78 (26.4%) had exclusive breast feeding practice. 236 (72.4) children were given food items. As to the given items, 236(100 %), 82 (34.7%), 34 (14.4%), 158 (66.9%), 209 (88.6) and 142 (60.2%) children were given plain water, juice, infant formula, animal milk, solid foods and other fluids respectively. From the total respondents 1(0.3%) had given water before initiation of breast feeding and 6 (1.8%) had stopped breast feeding at the time of survey and all stopped after one year of age of the child. In this study, the duration of exclusive breastfeeding was below the World Health Organization and national infant and young child feeding recommendations.

Keywords: Exclusive Breast Feeding, Less Than Two Years, Kurkur Kebele, Dessie Town

1. Introduction

Breast milk is the one and only natural, complete and complex nutrition for human infants. It is superior to any product given to a baby and it is immediately available, fresh, temperature always correct and constant, economical [1].

It provides all infants nutritional and fluid needs in the first six months and is a perfect combination of proteins, fats, carbohydrate and fluids [2]. Nutrients such as vitamins A and C, iron, zinc and vitamin D are more easily absorbed from breast milk than from other milk. And it contains essential fatty acids needed for the infant's growing brain, eyes, and blood vessels and these are not available in other milks [1, 3].

Breast milk contains antibodies that can protect infants from bacterial and viral infections and it helps the child to fight germs and reduces the risk of developing infections [1]. Breastfed babies have fewer infections in their early life, less diarrhea and vomiting, chest and ear infections because breast milk help a baby's own immune system work best [2].

Exclusive breastfeeding means babies are given only breast milk and nothing else-no other milk, food, drink, even no water for the first six months of life since it provides best and complete nourishment for the baby during the first six months of life [3, 4, 5].

Exclusive breastfeeding is recommended because breast milk is uncontaminated and contains all the nutrients

necessary in the first six months of life. In addition, the mother's antibodies in breast milk provide the infant with immunity to disease [6].

Exclusively breastfed children are at a much lower risk of infection from diarrhea, acute respiratory infections, pneumonia, meningitis, ear infections, lower rates of childhood cancers including leukemia and lymphoma than infants who receive other foods [3, 4, 5].

Early supplementation is discouraged for several reasons. First, it exposes infants to pathogens and thus increases their risk of infection, especially diarrheal disease. Second, it decreases infant's intake of breast milk and therefore suckling, which in turn reduces breast milk production. Third, in low resource settings, supplementary food is often nutritionally inferior [6].

Breastfeeding provides numerous benefits to infants, women, and society. It creates a special bond between mother and infant, enhances dental development, reduces risk for allergies, aids in cognitive development, and decreases the risk for obesity in later life. It also helps the uterus return to pre-pregnancy size faster; reduces risk of breast, ovarian, and uterine cancers; decreases risk for osteoporosis; enhances emotional health, and saves money [7].

Poor feeding practices – particularly sub-optimal breastfeeding and complementary feeding practices for infants and young children - are the major cause of child malnutrition along with other common illnesses [2]. Chronic malnutrition due to poor breast feeding practice causes diminished cognitive and physical development of children and it limits to attain their potential to learn and earn throughout their lives [8].

Despite of what is known about the benefits of exclusive breast feeding for children, mothers, families and society practice of exclusive breastfeeding is unsatisfactory in many parts of the world. Only 35% of infants worldwide are exclusively breastfed during the first four months of life [9] and 38% of children less than 6 months of age are exclusively breastfed in the developing countries and 31% in SSA [10] while in Ethiopia 52% of children exclusively breastfed for six months [6].

Many factors have found to affect EBF practice such as; Societal beliefs favoring mixed feeding, lack of adequate support in health facilities and in the community, Aggressive promotion of infant formula through medias, inadequate maternity leave legislation, lack of knowledge on the dangers of not EBF among women, their partners, and families [9].

2. Methods and Materials

2.1. Study Design

Community based quantitative cross-sectional study was carried out.

2.2. Study Area and Period

A cross-sectional study was conducted in Dessie city Administration, rural kebele known as kurkur Dessie is

located 401Km away from the capital city in the Northeast and about 480Km from the Amhara Regional City Bahir Dar. It is 2500 high above sea level with 16,000 hectares area. The total Population of the City is estimated to be 188,519 among this 97,661 are females and the rest are males. Recently the city is reorganized in ten sub-city administrations and six rural kebeles. There are two public and three private hospitals, six public health centers, and more than 24 private clinics [28]. The study was conducted from July 1-30, 2016.

2.3. Source Population

All mothers of children in Dessie town, kurkur Kebele.

2.4. Study Population

All mothers with less than two years old children in Dessie town, kurkur Kebele.

2.4.1. Inclusion Criteria

- To be eligible to participate in the study, mothers had to live in households that had children less than two years of age.
- Mothers' resident at Dessie town, Kurkur Kebele.

2.4.2. Exclusion Criteria

- Mothers who were not willing and mentally capable to be interviewed and those who were acutely and seriously ill.

2.5. Sample Size Determination and Sampling Procedure

The sample size for this study was determined using single population proportion formula, considering the following assumptions; prevalence for exclusive breastfeeding of 71.3%, 95% confidence level, 5% margin of error.

$$n = z^2 (PQ) / d^2. \quad (1)$$

Where

n=sample size

Z=Reliability Coefficient with 95%confidence interval

P= prevalence of excusive breast feeding in Goba district south east Ethiopia

d= Standard error allowed $n = z^2 (p*q)/d^2$.

Then, $n = [(1.96)^2 (0.713 * 0.287)] / (0.05)^2$

$n = 316 + 5\% \text{ non-respondent rate} = 316 + 15.8 = 331.8 = 332$

Sampling procedure: - There are three ketenas in the kebele which were selected for the study. The group members were spread to these ketenes to code the households and collect the information. A systematic sampling method was then used to select the households to be studied. The sampling interval of the households in kebele was determined by dividing the total number of households into the allocated sample size. The initial interviewed household was randomly selected by a lottery method from eachketena and the sampling frame using a number 1 and the sampling interval. By adding the sampling interval to the previous number, the data was collected. If more than one eligible woman was identified in the household, a lottery method was used to

select the woman for interview. In the case where no eligible woman is identified in the selected household, the next household was visited and that next woman will be interviewed if she is eligible.

3. Result

3.1. Socio Demographic Characteristics of the Respondents

Table 1. Socio demographic characteristics of respondents in Dessie town, kurkur kebele, July2016.

Variable	Frequency	Percentage	
Age	15-19	24	7.23
	20-24	105	31.63
	25-29	134	40.4
	30-34	52	15.7
	35-39	13	3.92
	40-44	4	1.2
Ethnicity	Amhara	306	92.2
	Afar	5	1.5
	Oromia	10	3
	Tigray	10	3
	Others	1	0.3
Religion	Orthodox	83	25
	Protestant	28	8.43
	Muslim	213	64.2
	Others	8	2.4
Marital status	Single	6	1.8
	Married	317	95.5
	Widowed	9	2.7
Educational status of the mother	Illiterate	105	31.6
	Can read and write only	26	7.8
	Primary school	144	43.4
	Secondary school and above	57	17.2
Educational status of the father	Illiterate	82	25.9
	Can read and write only	30	9.5
	Primary school	129	40.7
Maternal occupation Status	Secondary school and above	76	24
	House wife	181	54.5
	Government employed	7	2.1
	Private	8	2.4
	Merchant	61	18.4
Paternal occupation status	Farmer	75	22.6
	Farmer	162	51.1
	Government employed	19	6
	Private	28	8.8
Family income	Merchant	61	19.2
	Other	47	14.8
	<500	128	38.6
	500-1000	104	31.3
	1000-1500	46	13.9
	≥1500	54	16.3

Three hundred thirty two mothers were interviewed after fulfilling the inclusion criteria, resulting in an overall response rate of 100 %. The mean age of mothers was 26.1 years with $SD \pm 5.02$ the range being from 15 to 40 years. The majority of study participants 306 (92.2%) were from the Amhara ethnic groups followed by Tigray and Oromiya 10 (3%) and 213 (64.2%) were protestant Christians by religion. Pertaining educational status of the mothers majority of the respondents 144 (43.4%) were attend primary school. The majorities, 317 (95.5%) were married. All of the respondents live rural area.

3.2. Breast Feeding Characteristics of the Respondents

From the total mothers who had ever breastfed their infant 332, about 326 (98.2%) of them were breastfeeding at the time of the survey. The prevalence of exclusive breastfeeding for the children in the study area was 49.7%.

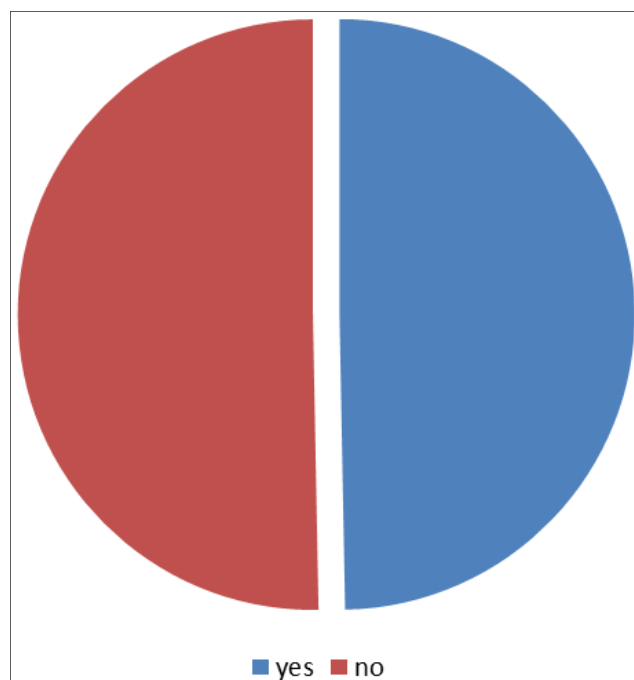


Figure 1. Exclusive breast feeding practice of mothers in Dessie town, kurkur kebele, July2016.

From the study subjects 296(89.2%) had previous experience of breast feeding practice, among them 78 (26.4%) had exclusive breast feeding practice. 236 (72.4) children were given food items. As to the given items, 236(100 %), 82 (34.7%), 34 (14.4%), 158 (66.9%), 209 (88.6) and 142 (60.2 %) children were given plain water, juice, infant formula, animal milk, solid foods and other fluids respectively.

From the total respondents 1(0.3%) had given water before initiation of breast feeding due to mothers didn't have enough milk.

From the respondents 6 (1.8%) had stopped breast feeding at the time of survey and all stopped after one age of the child?

Table 2. Breast feeding practices of mothers in Dessie town, kurkur kebele, July 2016.

Variable		Frequency	Percentage
Ever exclusive breast feed	For 6 month	78	26.4
	<6 month	218	73.6
Time of initiation of breast feeding	Within one hour	258	77.7
	After one hour	74	22.3
Any breast feeding information received	Yes	175	52.7
	No	157	47.3
Information about positioning during breast feeding	Yes	166	50
	No	166	50
Anything given for a child before breast feeding	Yes	1	0.3
	No	331	99.7
Current breast feeding status	Yes	326	98.2
	No	6	1.8
Reasons for weaning	Education and working status		
	Mothers didn't have enough milk		
	Infant illness		
	Mothers illness	3	50
Additional food given	Right age of weaning	3	50
	Yes	236	72.4
	No	90	27.6
What	Item	Yes (%)	No (%)
	Water	236(100)	
	Juice	82(34.7)	154(65.3)
	Infant formula	34(14.4)	202(85.6)
	Animal milk	158(66.9)	78(33.1)
	Solid food	209(88.6)	27(11.4)
EBF enough for six month	Other fluids	142(60.2)	94(39.8)
	Yes	287	86.4
Frequency of breast feeding	No	45	13.6
	<8	146	44.8
Age at which breast milk substituted	≥8	180	55.2
	Less than six month	167	69
Reasons for this specific age	At six month	75	31
	Education and working status	3	1.2
	Mothers didn't have enough milk	5	2.1
	Infant illness	4	1.7
	Mothers illness	1	0.4
	Need of additional feeding	184	76
Breast problem	Right age of weaning	7	2.9
	To teach the child feeding	38	16
Intervention done	Yes	12	3.6
	No	320	96.4
	Modern medicine	5	41.7
	Traditional medicine	6	50
	Others	1	8.3

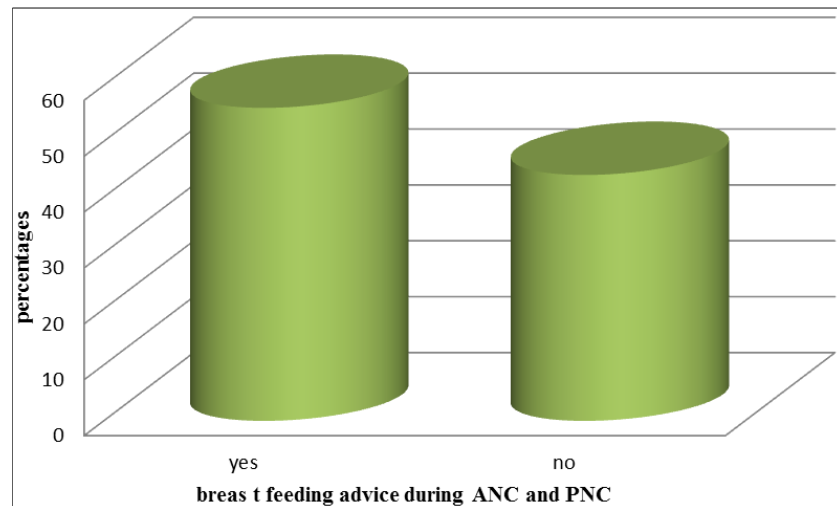


Figure 2. Breast feeding advice during ANC and PNC among mothers, in Dessie town, kurkur kebele, July 2016.

3.3. Obstetrics Characteristics of the Respondents

One hundred forty seven (44.3) mothers have one to two children. 228(77%) deliver a child with an interval of two and greater than 2 hours. 313(94.3%) mothers have ANC follow up. Most of the participants 243 (73.2) deliver in health and 310(93.4) deliver vaginally.

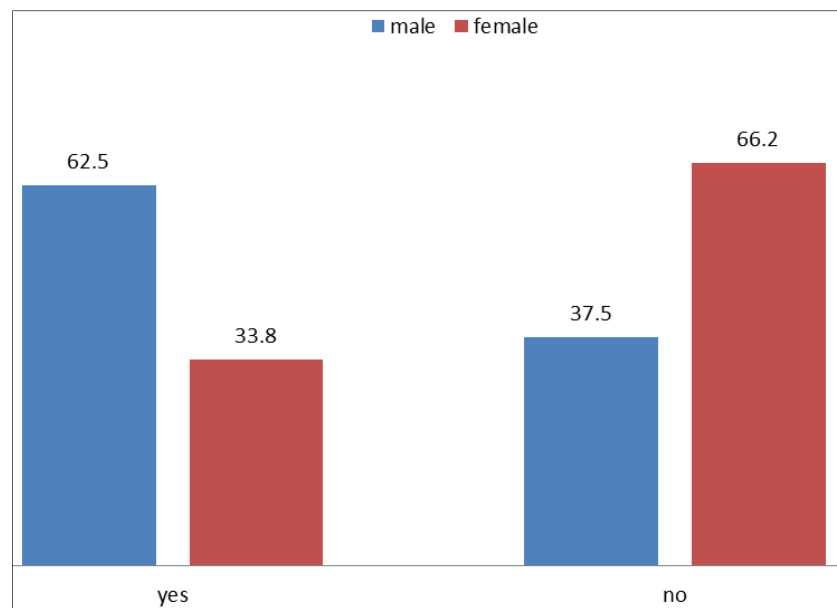


Figure 3. Sex of the children in Dessie town, kurkur kebele, July 2016.

Table 3. Obstetric characteristics of mothers in Dessie town, kurkur kebele, July 2016.

Variable		Frequency	Percentage
No of children	1-2	147	44.3
	3-4	129	38.9
	≥5	56	16.9
Birth interval	< 2	68	23
	≥2	228	77
ANC follow up	Yes	313	94.3
	No	19	5.7
Age of the child	Less than six month	105	31.6
	Six month-one year	95	28.6
	One-two year	132	39.8
Sex of the child	Male	184	55.4
	Female	148	44.6

Variable		Frequency	Percentage
Birth weight	1000-1500	13	3.9
	1500-2500	123	37
	2500-4000	19	5.7
	Greater than 4000	177	53.3
Place of delivery	Hospital	26	7.8
	Health center	243	73.2
	House	63	19
	Others		
Mode of delivery	Cs	17	5.1
	Vaginal	310	93.4
	Instrumental	5	1.5
EPI	Yes	314	94.6
	No	18	5.4

Factors Associated With Exclusive Breast Feeding

The chi-square test showed that women's previous EBF experience, breast feeding information, ANC visit, breast feeding information during ANC and PNC, birth weight, and sex of the child were significantly associated with exclusive breastfeeding (Tables 5 and 6). women's who had previously exclusive breast feed were about 0.9 less likely to breastfeed exclusively as compared to those that have no exclusive breast feeding experience previously (OR: 0.9; 95% CI: 1.09, 3.32). women's who had ANC visit were 3 times more likely

to breastfeed exclusively as compared to those mothers who had no ANC visit (OR: 3; 95%CI: 0.96, 9.56). Mothers who have breast feeding information were about 1.9 times more likely to breastfeed exclusively as compared to those mothers who have no breast feeding information (OR: 1.9; 95%CI: 1.19, 2.99). mothers who had breast feeding advice during ANC and PNC were about 4.6 more likely to breast feed exclusively as compared to those that do not have the advice (OR: 4.6; 95%CI: 2.79, 7.49).

Table 4. Association of EBF by selected socio demographic variables among mothers Dessie town, kurkur kebele, July 2016.

Variable	EBF		X ²	OR (95% CI)Crude	P value	
	Yes	No				
Age	15-19	12	12	1	0.678	
	20-24	55	50	1.1		
	25-29	68	66	0.172		1.03
	30-34	19	33	0.58		1.6
	35-39	8	5	1.6		3
	40-44	3	1	3		1
Marital status	Single	2	4	1	0.068	
	Married	161	156	3.316		2.06
	Divorced	2	7	0.57		1.00
Occupational status of the mother	House wife	98	83	1.00	0.18807	
	Government employed	4	3	1.13		
	Private	5	3	1.733		1.41
	Merchant	32	29	0.93		0.45
Maternal educational status	Farmer	26	49	0.45	0.608	
	Illiterate	51	54	1		
	Read and write only	12	14	0.263		0.91
	Primary	74	70	1.12		1.02
Paternal occupational status	Secondary and above	28	29	1.02	0.6096	
	Farmer	81	81	1		
	Government employed	8	11	0.03		
	Private	13	15	0.261		0.87
Paternal educational status	Merchant	35	26	1.35	0.249	
	Other	19	28	0.68		
	Illiterate	30	52	1		
	Read and write only	10	20	1.325		0.87
Family income	Primary	67	62	1.87	0.088	
	Secondary and above	50	26	3.33		
	<500	78	50	1		
	500-1000	40	64	2.904		0.4
	1000-1500	20	26	0.49		
	≥1500	27	27	0.64		

Table 5. Association of EBF by selected breast feeding practices among mothers of Dessie town, kurkur kebele, July 2016.

Variable	EBF		X ²	OR(95%CI)Crude	P value
	Yes	No			
Women's previous EBF experience	Yes	45	5.88	0.90(1.09,3.32)	0.0152*
	No	91			
Time of initiation of breast feeding	≤ 1hr	138	6.65	2.00 (1.44,3.55)	0.009918*
	>1 hr	27			
Information about breast feeding	Yes	100	8.20	1.89(1.19,2.99)	0.00418*
	No	65			
Breast feeding advice during ANC and PNC	Yes	122	42.73	4.57(2.79,7.49)	0.000*
	No	43			

Table 6. Association of EBF by selected obstetric history of kurkur mothers, July 2016.

Variable	EBF		X ²	OR(95%CI)	P value
	Yes	No			
ANC visit	Yes	160	4.41	2.93(0.96,9.56)	0.03577*
	No	5			
Inter delivery interval	<2	38	0.12	1.10(0.62,1.97)	0.7303
	≥2	122			
Mode of delivery	Vaginal	157	1.708	0.68	0.19119
	Cs	7			
	instrumental	1			
Place of delivery	Hospital	14	0.213	0.82	0.64409
	Health center	119			
	House	32			
Birth weight	1500-2500	6	11.166	1.30	0.00083*
	2500-4000	88			
	>4000	10			
	Not known	61			
Sex of the child	Male	115	27.06	3.27(2.03,5.28)	0.000*
	Female	50			

*significant association

4. Discussion

Infant feeding affects both the mother and the child. Feeding practices affect the child's nutritional status, which in turn affects the risk of death [26]. The superiority of breast milk (BM) over any other milk nourishment of the human newborn and infant can hardly be challenged, and over the years it has become more and more apparent that it is the most ideal, safe and complete food that a mother can provide for her newborn. Despite the enormous benefits of breast milk, the decline of EBF persists in many developing countries [22].

The duration and intensity of breastfeeding affect the mother's period of postpartum infertility, and hence the length of the birth interval and fertility levels. UNICEF and WHO recommend that children be exclusively breastfed during the first 6 months of life and that children be given solid or semi-solid complementary food in addition to continued breastfeeding from age 6 months until 24 months or more [26].

Like in many other developing countries, the practice of mother giving water or tea to their children in addition to the breast milk was common. Most of the mothers provided their children water because they thought that the milk was insufficient, breast milk seen primarily as food and water is required to satisfy the needs of the child which was probably

due to misconception of mothers. It is evident that early introduction of liquids and solid is unnecessary, and reduces the duration and frequency of breast feeding and increases risk of infant morbidity and mortality and therefore such unhealthy behavior needs to be corrected [22].

This study aimed to determine the prevalence of exclusive breastfeeding, including associated factors. 98.2% of mothers had ever practiced breastfeeding which is almost similar to the national breastfeeding rate (96%) [17].

This study revealed that the prevalence of exclusive breastfeeding practice for infants less than six months old was 49.7%. This finding is lower to the national exclusive breastfeeding prevalence in Ethiopia (52%) and the WHO recommendation [26]. This finding is also lower than other countries such as Jordan (77%), Madagascar, (70%), Zambia, (74%), Ghana, (79%) and Bolivia (65%). This is also lower with findings in Amhara Region (81%), Oromia Region, (62%) and South Nations and Nationalities Peoples Region (64%). But this finding is higher than the findings in Lebanon (10%), Bangladesh (36%) [17].

Generally, socio-demographic variables are not very likely to be relevant to the breastfeeding pattern. The present study showed women's previous experience of breast feeding, information about breast feeding, ANC visit, breast feeding advice during ANC and PNC, time of initiation of breast feeding, birth weight and sex of the child have significant association with exclusive breast feeding pattern.

Authors have reported positive association for early maternal age and lower socio-economic status in their previous study in contrast to our study, Some researchers have reported influence of paternal education and maternal employment in their study, and no association was found for variables like, low birth weight, type of family and maternal education. In contrast, others have reported low birth weight and illiteracy or lower maternal education as high risk factor for early weaning in their study similar to our study [27].

The chi square Table 4 &6 shows the lack of association between exclusive breastfeeding and variables classically considered as supportive of breastfeeding like, educational and occupational status of mother and father, family income, inter delivery interval, mode of delivery, and place of delivery.

Breastfeeding is a maternal option that involves a complex interaction of socioeconomic, cultural and psychological factors and many more. However, as a socially recreated habit, the role of reproductive and child health services in promoting of breastfeeding should by no means be disregarded. The main reasons presented by mothers as difficulties in initiating breastfeeding were milk was absent (100%) for first few days after delivery.

Some authors have reported that main reasons for difficulties in initiating breastfeeding were belief that just mother's milk was not sufficient, excessive crying, little milk and thinned milk [27].

The current situation in Ethiopia may correspond with the period of decline found in Western countries in the middle of the 20th century when the general rise in living standard and wide availability of breast milk substitutes meant that women of higher status chose not to breastfeed. However, strategies need to be developed to avoid repetition of the long period of decline experienced in Western countries, prior to the renaissance in breastfeeding in the 1980s [27].

Factors that interact with the protective effect of breastfeeding include environmental, cultural and economic characteristics. The protective effect of breastfeeding is most important in populations with high infant mortality, high illiteracy, poor sanitation facilities, poor nutritional status, and generally low economic status, which fulfill the Ethiopian situation. So in Ethiopia, if optimal breastfeeding is going to be practiced, considerable changes could be achieved in the child morbidity and mortality [27].

5. Conclusion and Recommendation

5.1. Conclusion

This study showed that the prevalence of ever breastfeeding was almost universal but the prevalence of exclusive breastfeeding was suboptimal. In this study, the duration of exclusive breastfeeding was below the World Health Organization and national infant and young child feeding recommendations.

From the factors women's previous experience of EBF, information about breast feeding, ANC service, breast feeding advice during ANC and PNC, time of initiation of

breast feeding, birth weight and sex of the child have significant association with EBF.

5.2. Recommendation

- The health center and the health posts should work with all concerned bodies to increase awareness about exclusive breast feeding and timely initiation of complementary feeding.
- Health extension workers should be strengthened in their breast feeding advice during ANC, PNC and other services.
- The health center, health post and other concerned bodies should collaborate to encourage mothers for ANC visit. And to increase awareness to have early initiation of breast feeding.
- Further studies in the kebele are recommended to investigate further factors associated with breast feeding and to intervene accordingly.
- 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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