

Exclusive Breast Feeding Practice and Associated Factors in Kemba Woreda, Southern Ethiopia, a Community Based Cross-Sectional Study

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To cite this article:

Eskezyiaw Agedew Getahun, Desta Haftu Hayelom, Genet Gedamu Kassie. Exclusive Breast Feeding Practice and Associated Factors in Kemba Woreda, Southern Ethiopia, a Community Based Cross-Sectional Study. *International Journal of Science, Technology and Society*. Vol. 5, No. 4, 2017, pp. 55-61. doi: 10.11648/j.ijsts.20170504.11

Received: April 4, 2017; Accepted: April 13, 2017; Published: June 1, 2017

Abstract: Exclusive breastfeeding is defined as feeding infants only breast milk with no addition of any liquid or solids. Evidence shows that sixty percent of under-five mortality caused by malnutrition and more than two-thirds of those are associated with inappropriate breast feeding practices during infancy. The objective of this paper was to assess exclusive breast feeding practice and associated factors among 6-24 months young child in Kemba Woreda. Community based cross sectional study was conducted among 562 mothers who have young children. Univariate, binary and Multivariate analysis was conducted by SPSS version 20. Significant factors were identified based on P-value less than 0.05. From all respondent 40.6% exclusive breast feed for six months and the rest 59.4% started additional complementary food before six months. Age of mothers those who are in age group ≥ 30 years, Education level those who have no formal education AOR 2.76(1.63-4.69), occupational of mothers those who work as daily workers AOR 3.06(1.03-9.12) and Private work activity (merchant, farmers) AOR 2.39(1.61-3.53), mothers who have no post natal follow up and who did not have Growth monitoring follow up for their child in Health service AOR(1.64(1.05-2.55), 1.95(1.19-3.17)) respectively were significantly associated factors for starting additional complementary food before six months in the study area. A significant proportion of mothers were started additional complementary food before six months. Extending maternal leave, practical support of mothers on adapting breast milk expression feeding and organizing baby center in government institution and continuous health education on importance of exclusive breast feeding should be considered for improving exclusive breast feeding practice to optimal level.

Keywords: Southern Ethiopia, Exclusive Breast Feeding, Kemba District, Cross-Sectional Study

1. Introduction

As World Health Organization (WHO) definition optimal infant feeding practices is initiation of breastfeeding within 1 hour of birth; exclusive breastfeeding for first 6 months of life, introduction of complementary food from locally available food and hygienically prepared around 6 months, increased breastfeeding during illness and recovery and also continued breastfeeding for up to 2 years of age [1].

Poor breastfeeding and complementary feeding practices have been widely documented in the developing countries. Only about 39% of infants in the developing countries, 25% in Africa are exclusively breastfed for the first six months.

Additionally, 6% of infants in developing countries are never breastfed [5].

Evidence shows that sixty percent of under-five mortality caused by malnutrition (directly or indirectly), more than two-thirds of those are associated with inappropriate breastfeeding practices during infancy. Not more than 35% of infants worldwide are exclusively breastfed during their first four months of life [6, 8, 10]. There is a wide range of variation in the practice of exclusive breastfeeding among developing countries, with the rates documented in Brazil (58%), Bangalore (40%), Iran (28%), Lebanon (10.1%),

Nigeria (20%), Bangladesh (34.5%) and Jordan (77%) [9]. In Ethiopia context, 52 % of infants were exclusively breastfed for the first six months, while 56.9% were exclusively breastfed for the first four months [14, 21, 22].

The early introduction of complementary feeds before the age of six months can lead to displacement of breast milk and increased risk of infections such as diarrhea, which further contributes to weight loss and malnutrition [12, 13].

Due to the high prevalence of inappropriate child feeding practices and the importance of exclusive breastfeeding the Ethiopian government developed the Infant and Young Child Feeding (IYCF) guideline in 2004 [15]. Since then, varying levels of interventions, giving due emphasis to key messages on exclusive breast feeding both at health institution and community level to meet the Millennium Development Goals' (MDGs). Nonetheless, these efforts were not based on organized evidence on the level of existing practices, which might be due to lack of studies which explored the factors predicting the exclusive feeding practice. Therefore this study was conducted to fill this research gap and to come up with local context based recommendation.

2. Methods and Materials

2.1. Study Setting and Source Population

This community based cross sectional study was conducted mothers who has young child from 6 months to 2 years age in kemba Woreda which is located in Southern parts of Ethiopia. The Southern Nations Nationalities and People's Regional State (SNNPRS) consists of 13 Zones and 104 Wordas. The region has an estimated 15,042,531 (20.4% of the national estimate) people. Close to 90% of the population are estimated to be rural inhabitants, while 1,545,710 or 10.3% are urban. Kamba Woreda is one of the administrative Woreda in GamoGofa Zone, South Ethiopia 100 kms away from Zonal town Arba Minch. From the total population around 44,000 are women in reproductive age group. The Health institution distribution in the Woreda is 39 health posts and 9 health centers providing health services including maternal and child health care.

2.2. Inclusion and Exclusion Criteria

Mothers/care givers who have young children from 6 months to 2 years old who live in the selected Keblle for at list 6 months were included in the study and those who had mental illnesses interfering the interview were not considered in study.

2.3. Sample Size Determination and Sampling Technique

2.3.1. Sample Size Determination

The sample size was determined by using single population proportion formula by considering the following assumption for prevalence of exclusive breast feeding practice eat six months (P)- 57.1% which the prevalence of exclusive breast feeding for six months In Jimma Arejo 2013

[24], desired precision (d) =0.05 and 95% confidence level.

The final sample size was calculated by taking 1.5 design effect and 5% none response rate which is 567.

2.3.2. Sampling Technique

From all small Keble in the Woreda eight Keble was selected by using lottery method. Then the number of study participant was allocated for each Keble based on proportional to population size allocation methods by using community based demographic and Health related information registration prepared by Health Extension workers as the sampling frame. Rapid census were conducted first to identify the target house hold. Finally illegible households with young child were selected from each Keble by using simple random sampling methods after giving code for each House Hold which has young child from six months to 24 months.

2.4. Data Collection Procedure and Quality Control

Data was collected from Mothers/care givers who have one child in age 6 months 2 years from each household by direct interviewing. Pre-tested structured questionnaire adapted from different literature was used to collect socio demographic and others variables. The questioners were arranged and grouped according to the issue addressed. First the questioners was prepared in English and translated to Amharic and pre tested on 5% of mothers before actual data collection outside the selected kebeles; correction and modification was done based on the gap identified during interview. Six grade 12 completed students were recruited as data collectors and supervised by 3 Nurses. Three day training was given on the aim of the research, content of the questionnaire, and how to conduct interview for data collectors and supervisors to increase their performance in field activities. The Collected data were checked every day by supervisors and principal investigators for its completeness and consistency.

2.5. Data Analysis and Management

Data was coded and entered in to epi info version 3.5.1 and exported to SPSS Version 20 for analysis. Missing values and outliers was checked by conducting simple frequency analysis. Descriptive Frequencies were calculated to describe the study population in relation to relevant variables. Bivariate logistic regression analysis was calculated to assess the crude association between dependent and independent variables. Finally Variables which shows association in Bivariat logistic regression analysis and have P-value less than 0.25 entered in to Multivariate logistic regression model, to identify significant factors associated with outcome variables. Finally significant factors were identified based on AOR include with 95% Confidence level which did not include none value and P-value less than 0.05. Data keep in the form of file in secure place where no one don't access it except the investigator, confidentiality was insured by avoiding record names or any personal identifiers.

2.6. Operational Definition and Definition of Terms

Exclusive breast feeding practice -it is measured when mothers were initiate additional supplementary food for young child at six months along with continued breast feeding [1, 23].

None Exclusive breast feeding practice -it is incitation of complementary feeding before six months [1, 23].

Complementary feeding: is the period (between 6 – 2 years) during which foods or liquids are provided along with continued breastfeeding [1, 6].

2.7. Ethical Consideration

The proposal was submitted to the Research ethics committee (REC) of Addis continental institute of Public Health. Ethical clearance was obtained from Addis continental institute of Public Health. Permission letter was obtained from kemeba woreda health office. Verbal informed consent from each study participant was obtained after clear explanation about the purpose of the study. All the study participants were reassured that they would be anonymous. Names or any personal identifiers were not recorded.

Respondents were clearly told about the study and the variety of information needed from them. They were given the chance to ask anything about the study and made free to refuse or stop the interview at any moment they want if that was their choice.

3. Result

3.1. Socio-demographic Characteristics of the Mothers and Young Child

A total of 562 women having young child aged 6 months to 2 years were interviewed in the study from 567 sampled mothers with 99.11% response rate. The overall mean age of young child 13.82 months \pm 5.85 (SD), 53% were in age range from 6 months to 1 years and 273 (48.6) were male and 289 (51.4) were female with sex ratio of 0.94. Almost half of the mothers, 271 (48.2%) were in age range 25-29 years. One third of respondents were have no formal educational and half of them were farmers and daily workers in there occupational statues. Two third of the respondent mothers 348 (60.9%) were protestant followers and rest were orthodox and Muslims (Table 1).

Table 1. Socio-demographic Characteristics of mothers who had infant aged from 6 months to 2 year, who live in Kemba Woreda, in 2014/15.

Variables	Frequency	Percent (%)
Age of child		
6-8 months	125	22.2
9-12 months	172	30.6
13-17 months	119	21.2
18-24 months	146	26.0
Sex of child		
Male	273	48.6
Female	289	51.4
Residence of mother		
Rural	205	36.5
Urban	357	63.5
Age of mother		
15-19	88	15.7
20-24	151	26.9
25-29	271	48.2
\geq 30	52	9.3
Religion statues		
Orthodox	197	35.1
Protestant	348	61.9
Muslim	17	3.0
Education		
No education	173	30.8
Primary Education	202	35.9
Secondary & above	187	33.3
Occupational statues		
Daily laborer	20	3.6
Private(merchant, farmers)	259	46.0
Government worker	27	4.8
Housewife	256	45.6
Ethnicity		
Gamo&Gofa	491	87.4
Wollayta	58	10.3
Amehara	11	2.0
Others	2	

3.2. Prevalence of Exclusive Breast Feeding Practice

From 562 interviewed mothers 228 (40.6%) CL (40.36-40.44) were practiced exclusive breast feeding for six months and the rest 334 (59.4%) CL (59.56-59.64) started additional supplementary food before six months (figure 1). Barriers of respondent who start additional supplementary food before six months were perception of mother’ stowards breast milk

is not sufficient to satisfy the child's water demand, working outside home and lack of information of the real time of initiation of additional complementary feeding (figure 2).

Majority (92%) of mothers started complementary feeding by liquid (milk and water) and semi solid (Porridge) diet for their child and the rest fed bottled, special prepared diet for child only and family diet.

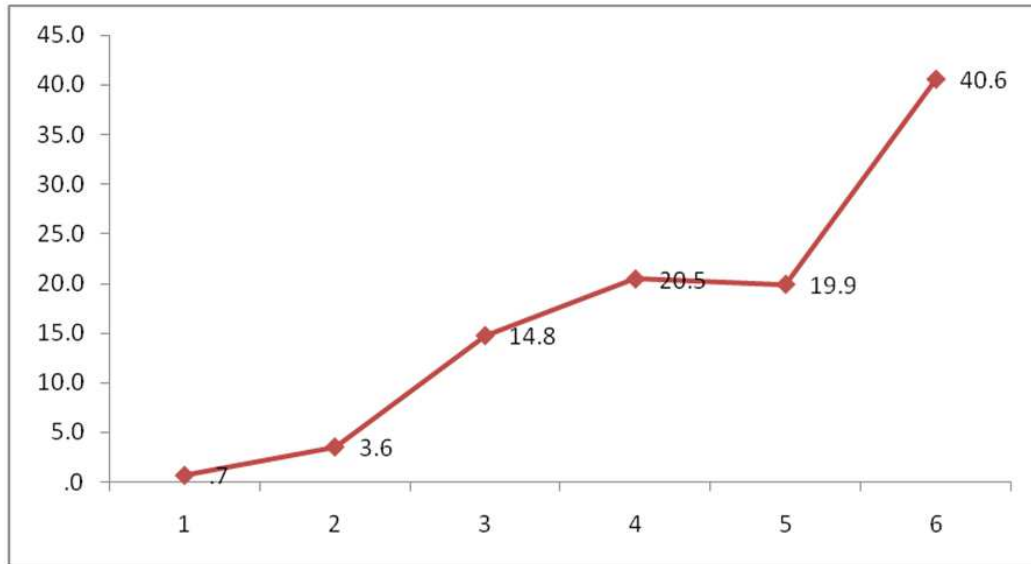


Figure 1. Time duration of exclusive breast feeding practiced among mothers who have 6 months-2 year’s young child in Kemba Woreda, 2014/5.

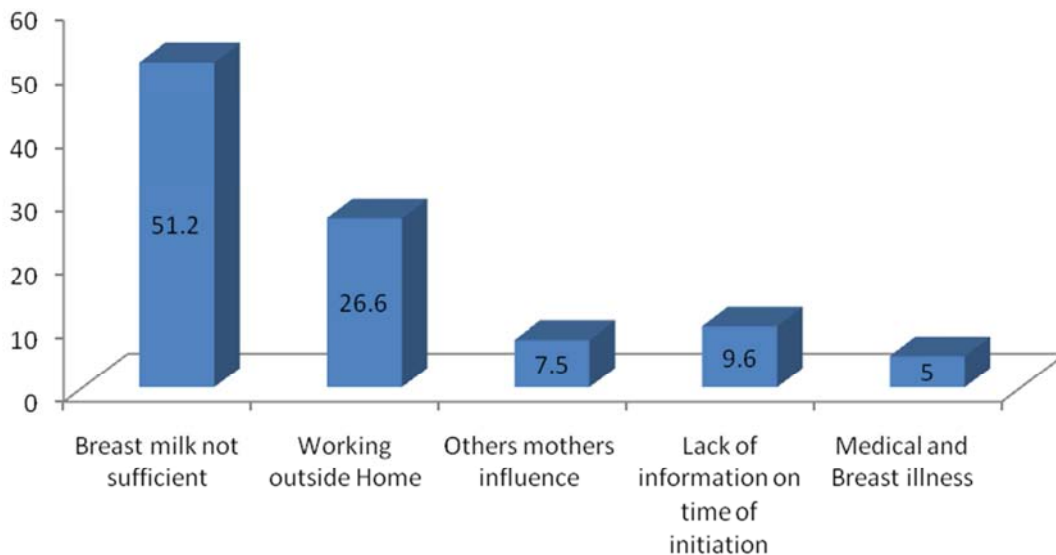


Figure 2. Barriers of mother’s starting additional supplementary food before six months, among mothers who have 6-2 year’s young child in Kemba Woreda, 2014/5.

3.3. Factors Associated with Exclusive Breast Feeding Practice

After conducting Multivariate logistic regression analysis age of mothers those in age group ≥ 30 years Adjusted odd ratio (AOR) 2.60(1.07-6.35), education level those who have no formal education AOR 2.76(1.63-4.69), occupational of mothers those who work as daily workers AOR 3.06(1.03-

9.12) and Private work activity (merchant, farmers) AOR 2.39(1.61-3.53), mothers who have no post natal follow up for their child in Health service AOR(1.64(1.05-2.55), and maternal illness encountered after delivery AOR 1.56(1.05-2.32) were significantly factors for starting additional supplementary feeding before six months in the study area (table 2).

Table 2. Factors associated with exclusive breast feeding practice among mothers who have 6 months-2 year's young child in Kemba Woreda, 2014/15.

Explanatory Variable	Duration of Exclusive breast Feeding practice		Crude OR (95% CI)	Adjusted OR (95% CI)	P-value
	<6 mo(1)	for 6 mo(0)			
Residence					
Rural	147(44)	58(25.4)	2.30(1.59-3.33)	1.34(0.82-2.19)	0.24
Urban	187(56)	170(74.6)	1	1	
Age					
<=19	39(11.7)	49(21.5)	1	1	
20-24	66(19.8)	85(37.3)	1.03(0.60-1.74)	1.15(0.647-2.08)	0.620
25-30	108(32.3)	163(71.5)	1.20(0.74-1.95)	0.97(0.54-1.75)	0.924
>=31	15(36.2)	37(130.3)	1.96(0.94-4.09)	**2.60(1.07-6.35)	0.035
Education level					
No formal Education	126(37.7)	47(20.6)	3.08(1.98-4.79)	**2.76(1.63-4.69)	0.001
Primary education	121(36.2)	81(35.5)	1.72(1.15-2.57)	1.42(0.89-2.25)	
Secondary & above	87(26.1)	100(43.9)	1	1	
Occupational statuses					
Daily laborer	15(4.5)	5(2.2)	3.55(1.40-9.09)	**3.06(1.03-9.12)	0.045
Private(merchant, farmers,)	184(55)	75(32.9)	0.41(0.28-0.59)	2.39(1.61-3.53)	0.001
Government worker	6(1.8)	21(9.2)	0.34(0.12-0.96)	0.44(0.16-1.18)	0.103
Housewife	129(38.7)	127(55.7)	1	1	
Media Exposure					
Yes	158(47.3)	144(63.2)	1	1	
No	176(57.7)	84(67.8)	1.91(1.35-2.69)	0.86(0.53-1.39)	0.54
Place of delivery					
Home	125(37.4)	74(32.4)	1.25(0.87-1.78)	1.41(0.89-2.24)	0.14
Health facility	209(62.6)	154(67.6)	1	1	
ANC follow up					
Yes	288(86.2)	208(91.2)	1	1	
No	46(13.8)	20(8.8)	1.66(0.95-2.89)	0.82(0.44-1.57)	0.55
PNC follow up					
Yes	70(20.9)	83(36.4)	1	**1.64(1.05-2.55)	
No	264(79.1)	145(63.6)	2.16(1.48-3.2)	1.64(1.05-2.55)	0.029
maternal illness					
Yes	167(55.9)	95(41.7)	1.40(0.99-1.96)	**1.56(1.05-2.32)	.027
No	167(44.1)	133(58.3)	1	1	

**Significant factors, P-value < 0.05

4. Discussion

Result of this study shows that exclusive breast feeding practice is 40.4 % CL (40.36-40.44) and none exclusive breast feeding practice is 59.6 % CL (59.56-59.64). The prevalence of exclusive breast feeding practice is relatively lower in this study setting as compared to study done in Sri Lanka which is 85% (19), Ethiopia (National prevalence 51%) [22], North Ethiopia Mekelle town (62.8%), Oromia Region Jima Arejo (57.1%) and Goba District (71.3%) [23, 24, 25] and consistent west Bengal India (44.9%) [20]. This relatively lower prevalence of exclusive breast feeding practice for six month duration can be due to the present study was conducted in area where one fourth mothers(26.6%) involved in outside work activity and stay long time away from home for work purpose. This enforce mothers to give fluid based liquid including water and others semi-solid locally prepared food before six months due to fear of breast milk alone is not sufficient to satisfied water demand of the child due to lack of time to fed breast frequently [16, 18, 25]. Wide variations in the prevalence of exclusive breast feeding practice have been observed and direct comparisons is difficult because of differences in methodologies like

sampling, data collection methods and setting, nature of study population, timing of the study, and related environmental and socioeconomic factors. For example one study is conducted as institutional based with relatively small sample size in urban setting [23].

Mothers in age group greater than 30 years 2.6(1.07-6.35) times more likely start additional complementary food before six months as compared to others age groups this is consistent with study conducted in Oromia region Jimma Arejo [24]. These age group of mothers were influenced by different traditional and cultural misconception like in many other developing countries mothers as most of them provided their children water because they believe that the breast milk was insufficient [21, 25].

Mothers with have no formal education (lower educational level) 2.76 times (1.63-4.69) start additional complementary food before six month as compared to with mothers who have higher education. This finding is consistent with finding [4, 17, 23, 24], it shows that improved maternal education enhances mothers knowledge, attitudes and practice towards benefits of exclusive breast feeding practice, and empowers them to involved in better economic statues than there counterpart and these empowers them to resist external

interferences and pressures from traditional belief and misconception.

Mothers who work as daily workers, farmers, and merchant and government employed were more likely start additional complementary food before six as compared to with house wife. This finding is consistent with others research findings [17, 23, 24, 25]. The possible explanation for this association might be majority (98.22%) of mother shad no breast milk expression feeding practice to fed their child at home when they move away from home for work purpose. In addition, they believed that the child is exposed with hunger and water thrust due to lack of time to breast feed frequently. So that they initiate early feeding of their child with solid and semi-solid food. But house wife mothers are more likely practice exclusive breast feeding for six months since they stay in home with their child and have sufficient time for frequent breast feeding.

Mothers who have no post natal care and child growth monitoring follow up in health institution were 1.64(1.05-2.55) more likely start additional complementary food before six month as compared to mothers who have follow up and this is in line with others studies [26, 27, 28]. Mothers who get advice and health education on child feeding during post natal and growth monitoring have favorable impact on the promotion of exclusive breast feeding practice.

5. Conclusion

A large proportion of young child start additional complementary food before six months. Key factors identified for starting additional complementary food before six months were perception of mothers on breast milk is not sufficient to satisfy the Childs water demand and followed by working outside home were the major reasons. Mothers who work outside home, those who have no formal education, work as daily workers and private work activity (merchant, farmers) have no post natal follow up and who did not have growth monitoring follow up for their child in health service were significantly identified factors to start additional food before six months.

6. Recommendations

6.1. For Mothers and Care Givers

Mothers who work outside home adopt workplace breastfeeding practices and breast milk expression in cup and adapt feed their child at home when mother move outside home.

6.2. For Health Extension Workers and Health Professional

- (1) Special emphasis should be given for mothers with low educational statues and age above 30 years by giving continues Health education to change their wrong attitude and perception
- (2) Health extension workers should motivate mothers to

have PNC follow up and give Health education for mothers at house hold level about exclusive breast feeding and it's important.

- (3) Give advice and technical support to develop and practice breast milk expression in cup and to feed the child at home when mother move away from home
- (4) Health professional should give focus to advice and counsel mothers on exclusive breast feeding for six months during prenatal, delivery and post natal period.

6.3. For Government (Policy Makers)

- (1) Developing motivational factors for mothers like prize in mass media who start complementary feeding at six months as promotion (advertizing) of timely initiation of complementary feeding
- (2) Mothers who work outside home less likely to practice exclusive breast feeding for six months, implying the need for promoting workplace breastfeeding practices and creating an enabling environment for exclusive breastfeeding.
- (3) In government institution establishing baby center is an alternative solution to improve optimal exclusive breast feeding for government employed mothers.
- (4) At last it is better to extend maternal leave from 5-6 months to achieve optimal complementary feeding

6.4. For Researchers

Further research should be conducted by using qualitative study design to understand deeply socio-cultural and behavioral related factors towards complementary feeding to develop and implement better strategy to improve complementary feeding.

Abbreviation

AOR-Adjusted odd ratio, CI-confidence interval, SD-standard deviation,

EDHS -Ethiopia Demographic and Health Survey, IYCF - Infant and Young Child Feeding,

SNNPR -Southern Nations, Nationalities, and People's Region, WHO- World Health Organization.

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