Exercise-Based and Associated Factors Breastfeeding on HIV-Infected Mothers for Children Age 1-24 Months in Central Zone, Tigray, North Ethiopia, 2019.

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Research

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Abstract

Background: Breastfeeding exposed to HIV is a major factor in the spread of HIV, but breastfeeding alone poses a significant risk to the baby's health because breastfeeding can reduce the impact of many infections and support some chronic diseases. Therefore, this study was aimed to assess exercise-based and associated factors breastfeeding on HIV-infected mothers for children age 1-24 months in the central zone, Tigray, north Ethiopia.

Methods: A Facility-based Cross-Sectional study was conducted from March to April 2019. A systematic random sampling method was used to select study participants. Information was collected using a structured, pre-tested questionnaire. The data is coded, cleaned, copied and entered EPI-info 7 and finally export to SPSS version 22.00 for analysis. Association between independent and dependent variables was first analyzed using binary logistic regression analyses. An alternative bivariate logistic regression analyzes of less than 0.2 were entered in multivariable logistic regression analysis. The statistical association between variance dependent and independent variables was measured using an OR, AOR, 95% CI, and a p-value less than 0.05.

Result: 239 HIV-positive mothers participated in this study. Approximately 204(85.4) are favorable attitude in the practice of exclusive breastfeeding. The majority of mothers 206 (86.7%) experienced good breastfeeding. Mothers with Information while exclusive breastfeeding (AOR, 2.57, 95%CI: 1.03- 6.4) and age at first birth (AOR: .247, 95%: (.106- .578) had a significant collaboration on exclusive breastfeeding practice among HIV-infected mothers. Several ANC visits have had a significant collaboration on exclusive breastfeeding practice among HIV-infected mothers (AOR; 3.726 95%CI; 1 .055-13.154).

Conclusion: The study found that HIV positive mothers attending health care facilities had a favorable attitude but practiced on EBF is still low. Therefore, train health professionals especially health extension workers to raise awareness education, enhance information, regarding EBF and strength counseling in ANC service is better to improve the HIV positive mother level of attitude and practice to EBF.

Background

Breastfeeding exposed to HIV is a major factor in the spread of HIV, but breastfeeding alone poses a significant risk to the baby's health because breastfeeding can reduce the impact of many infections and support some chronic diseases and breastfeeding. Diet exercise is generally the best baby diet choice for all women(1).

Globally, over 10 million children under five die each year and 40% of diseases under the age of two are associated with inappropriate breastfeeding, 34% of which occur in South Asia and 41% in sub-Saharan Africa (2).In addition to breastfeeding, 300,000 HIV infections occur annually, while at the same time the United Nation Children Emergency Fund (UNICEF) is not responsible for the deaths of 1.5 million children in one year, and the biggest burden of this infection, Sub-Saharan Africa (3).

In the first year of the world, two-thirds of all deaths in the world often follow appropriate nutritional practices, especially due to unspecified breastfeeding activities(4). In the developing world, including Ethiopia, 3000-4000 infants per day die from diarrhea and respiratory infections associated with high levels of disease(5).

In Ethiopia, 321,000 children under five years of age die from malnutrition, with 57% of death each being primarily prevented by breastfeedings, such as diarrhea and pneumonia. (6).

About 40% of the world population, 47% in Africa, and 58% in Ethiopia, according to Ethiopian demographic and health survey (EDHS) 2016, have increased the number of children under 0-6 months. (7, 8).

Study show's in India 30.6% (9) southern Ethiopia, Mekelle and central zone Tigray show that attitude towards exclusive breastfeeding about 56.7%, 81.6% and 82.6% of HIV mothers had favorable attitudes towards EBF (10-12).

Study in Botswana 20%(13), southwestern Nigeria 61%(14), Burkina Faso52.5% (15), Kenya40.6%(16), Southern Ethiopia 82.8%(17), in Bahir Dar75.2% (18), Gondar 89.5%(19) and west oromia72%(20) and central zone, Tigray about 90% (21) shows that mothers who are HIV positive breastfed were practiced exclusively breastfeeding for the first 6 months respectively.

Recent study identified that predictor for attitude and practice exclusives breastfeeding among mothers living with HIV/AIDS were mother's occupation, residence, knowledge on EBF practice, ANC service, counseling on EBF practice during ANC visit, insufficient breast milk, husband imposition, mother's illness and both mother's and infant's illness, income, maternal choice of maternal-infant feeding practice and cultural (10-21) Therefore, this study was aimed at assessing attitude, practice and determinant factors affecting exclusives breastfeeding among mothers living with HIV/AIDS have children age 0-24 months in central zone Tigray.

Methods

A facility-based cross-sectional study was conducted from March to April 2019, at Central zone Tigray regional state of Ethiopia. The central zone is 1024km from Ethio -capital, Addis Ababa, 240 km from the capital city of Tigray. The central zone was divided into 12weredas, of which 631,972 were female and 613,251 were males. The total number of people living with HIV was 4841, the reproductive-age women who are HIV positive were 2028 and HIV positive mothers who have an infant less than or equal to 24 months were 485. There were 72 health centers (20 of them have ART service), 6 primary hospitals, 3general hospitals, and 1 referral hospital.

All HIV positive mothers with children younger than or equal 24 months were recruited as a study group within the designated public health facility's central zone. All HIV-positive mothers who gave birth within

24 months before the study were included, excluded, had no mental illness or had several mental illnesses during data collection.

Considering 82% of exclusive breastfeeding rate for children under six months of age (21), 95% confidence level, 5% tolerable margin of error, 5% unresponsive, a total sample of 239 were considered. To test the consistency of sample size, Epi-info was considered to be the only breastfeeding practice considering the relevant aspect of the observation. It was larger than the Epi-info by comparing a sample size based on a population. Therefore, the largest sample size of 239 was determined.

Considering all public health institutions in the Tigray region of the Central Zone, the sample size visited all public health institutions based on the number of children under or equal the age of 24 months who were HIV positive mother, round up. Participants in the study were selected for each of the 2 HIV-infected mothers of a randomized random sampling method, equal to 24 months.

Attitude and practice Exclusive Breast feeding was considered as the dependent variable. Socio-demographic and Reproductive characteristics, knowledge exclusive breastfeeding, Institutional and source of information related factors were considered as the independent variable.

The attitude of exclusive breastfeeding – Good (Positive) attitude (scores >60%) on the overall attitude question (17).

Good practice of exclusive breastfeeding – mothers answer (score > 60%) on the overall practice question (17).

Kebele: A small administrative unit consisting of 20,000 population.

The information was collected using the questionnaire and a structured questionnaire from a variety of similar research (15, 17, 19) if there was a change in the context of the study. Face-to-face breastfeeding alone was tested during a panel discussion with 12 women and one of the women in questionnaire accuracy and translation quality questionnaire. A few questions for language transparency and information were reviewed and the questionnaire was completed for the study. The applicant includes a source of social and demographic, reproductive history, institutional and informational sources.

Five health care professionals and two supervisors were recruited from the health center and trained for one day. Supervisors follow a daily data collection process and communicate with investigators every day to check the consistency of the data.

The data is coded, cleaned, copied and entered Epi-info 7 and finally export to SPSS version 22.00 for analysis. A simple descriptive summary was made. Table, diagrams, descriptions, charts, and graphs were used to produce the result of the analyzed data. After that, you can combine the filters into the corresponding catalogs using a chi-square test variable with small cell size. An alternative bivariate logistic regression analyzes of less than 0.2 were entered in multivariable logistic regression analysis. Appropriate fitness testing done well more than 0.2 predicted variants and a multiple-choice test between

Hosmer and Lemeshow test P-value to assess model performance. The statistical association between various independent variables was measured using an OR, AOR, 95% CI, and a p-value less than 0.05.

Results

Socio-demographic characteristics of mothers

A total of 239 HIV positive mothers participated in a response rate of 100%. Out of the total participated mothers, 175(73.5%) were with an age range of 25-35 years. The majority of the participants 177(73.8%) were married (Table 1).

Health institutions related factors and source of information

Three fourth of the respondents (75.8%) reported that they had to get information about EBF from health professionals. Among them, 97.9% of these respondents had availability of health care facilities in your area. (Table 2).

Reproductive characteristics of mothers

The majority of the respondent's 74.4% mother's age at marriage was 18-24 years. Among them, 54.2% of mothers their child age from 6 months up to 12 months. From total respondents, about 95.8 % attended ANC follow and about 76.6 % were from 3-4 ANC follow up (Table 3).

Knowledge of EBF among HIV positive mothers

In our study majority respondents, 93.7% heard about exclusive breastfeeding, among this 92.4% knew the importance of exclusive breastfeeding for child health. About knowledge on EBF HIV positive mother, 88.2% of the respondents know HIV seropositive mother can breastfeed, 90.8% know foods or fluids recommended to under 6-month child is only breast milk and about 35.6% know times baby breastfeeding per day were from 8-10 times (Table 4).

The attitude of EBF among HIV positive mothers

In our study more than three fourth respondents, 78.6% believed that breast milk was free from any contamination; among this 86.6% believe that EBF is better than artificial feeding.80.9% of HIV seropositive mothers strongly recommended breastfeeding, and 10% of participants believe that is important to eat food six months ago. Of the total respondent, 83.6% had a positive attitude about EBF for up to six months. (Table 5).

EBF practice among HIV-positive mothers

Most, 214(89.5%) of mothers feed their last baby on the mother's breast. The majority of the participants reported that 194(90.6%) of mothers started breastfeeding immediately within one hour after birth. 102(42.5%) of all breastfeeding was 8-10 times a day. Most mothers reported 74.6% of explicit breastfeeding exercises for your baby up to six months, 20.8% of respondents had 6 to 12 months and 1.3% of mothers over 12 months. It was 86.2% of all positive experiences. (Table 6).

Factors associated with the attitude of EBF among HIV positive mothers

In bivariate analysis, maternal educational status, mothers who had Information on the term of EBF, types of health care facility available, age at first birth and numbers of postnatal care visits were significant association with exclusive breastfeeding attitude among HIV positive mothers. In multivariate analysis, mothers who had information on the term of EBF and age at first birth had significantly associated with an attitude of HIV positive mothers on EBF (AOR: $p < 0.05$). HIV positive mothers who had Information on the term of EBF 2.57 more likely favorable attitude than mothers who had no information on the term of EBF (AOR, 2.57, 95% CI: 1.03- 6.4). HIV positive mothers whose age at first birth 24 and above were 0.247 times less likely had favorable attitude than HIV positive mothers whose age at first birth were 18-24 years (AOR, 0.247, 95% : (.106- .578)). (Table 7)

Factors associated with the practice of EBF among HIV positive mothers

In bivariate analysis, maternal educational level, number of gravidities, number of ANC visits, types of health care facility available and Income had a significant association with exclusive breastfeeding practice among HIV positive mothers and those candidate variables for multivariate logistic regression. In a multivariate analytical number of ANC visit only had a significant association with exclusive breastfeeding practice among HIV positive mothers, mothers were 3-4 numbers of ANC visit had 3 times more likely practice on exclusive breastfeeding than mothers were ANC visits' less than or equal 2 (AOR; 2.981, 95% CI; 1.113-7.983). (Table 8).

Discussions

This study was a case study of cognitive functioning and corresponding breastfeeding status among HIV-infected mothers who participated in PMTCT and ART services in selected health education of the central zone, Tigray, Ethiopia. In this study, two hundred five (85.4) of the HIV infected mother reported the mother had a positive attitude towards the EBF experience. This source study conduct in Botswana 56.3% (13), is higher than a study. This may be the single most effective and effective treatment for children

under six months of age. This finding is higher than another study conducted in southern Ethiopia (56.7%) and central zone Tigray 82.6% respectively. This difference may be due to health services and health education(17,21).

In this study, the mother, who had information about EBF status and age at first birth, had played a significant role in the attitudes toward EBF on the HIV positive mothers. HIV positive mothers who have had information on the term of EBF three times more likely favorable attitude than mothers who had no information on the term of EBF. This may be due to poor information or poor advice on dietary options for children under six months. HIV positive mothers whose age at first birth 24 and above was 24% times less likely had favorable attitude than HIV positive mothers whose age at first birth were 18-24 years. This may be due to poor advice on the risk of HIV transmission to your baby and breastfeeding alone.

In this study, two hundred six (86.2) of HIV positive mothers had good practice towards EBF practice. This finding is higher than the study conducted in India 30.6% (9), Tanzania ilala municipality dares salaam 46% (22), Botswana 20% (13), western Nigeria 61% (14) and in Burkina Faso, 52.5%(15) of HIV positive mothers were practice exclusively breastfed to their children. This discrepancy might be due to socio-demographic characteristics and the availability of health services.

In this study, about 85 % of HIV positive mothers initiated breastfeeding within the recommended first hour of birth. this result was higher than the study conducted in Oromia regional 69.3% and Southern Ethiopia shows that 51.5% initiated breastfeeding within the recommended first hour of birth(20,17).

In this study, HIV positive mothers practiced complementary feeding at 6 months of life were 53.3 % .this finding is lower than the study done in Southern Ethiopia that 77.2 % mothers practiced complementary feeding at 6 months of life (17).

This study also found out that 86.7 % of HIV positive mothers were practiced exclusive breastfeeding This finding was higher than from a study done in Bahir Dar 75.2% and

west Oromia 72% practiced exclusive breastfeeding(17, 20). However, this study finding is lower the study done Gondar town 89.5% and Mekelle town, 90 % of HIV positive mothers had practiced exclusive breastfeeding (11, 18). In this finding number of ANC visits had a significant association with exclusive breastfeeding practice among HIV positive mothers, mothers were 3-4 numbers of ANC visits had 37% more likely practice on exclusive breastfeeding than mothers were ANC visits' less than or equal 2. This may be to increasing contact with the health care provider and to provide information on breastfeeding practices, particularly in EBF practice.

Conclusion

The study found that HIV positive mothers attending health care facilities in the central zone, the Tigray region had a favorable attitude but practiced on EBF is still low. Factor such as Information on the term of EBF and age at first birth was associated with attitude toward EBF and the Number of ANC visits was

associated with practice on EBF. Therefore, train health professionals especially health extension workers to raise awareness education, enhance information, regarding EBF and strength counseling in ANC service is better to improve the HIV positive mother level of attitude and practice to EBF.

Declarations

Ethics approval and consent to participant

Ethical clearance was obtained from the Institutional Review Committee (IRC), College of Medicine and Health Sciences, University of Aksum. Permission letter was received from those administrative bodies of the Central Tigray Health Department and each health facility's verbal and written consent was obtained from all participants after they informed on the purpose of the study.

Consent for publication

Not applicable

Availability of data and materials

All relevant data are within the manuscript and its Supporting Information files.

Computing interest

The authors declare that they have no competing interests.

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Authors' contributions

HM and TG designed the study, performed the statistical analysis, drafted the paper, data analysis and read and approved the final paper.

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Tables

Table 1: Socio-demographic characteristics of HIV positive mothers on EBF in a public health facility central zone, Tigray, Ethiopia, 2019.

Variables	Response	Frequency	percent
Maternal age	From 15-24 year	6	2.5
	From 25-35 year	175	73.5
	Above 35 year	58	24.2
	Total	239	100
Ethnicity	Tigray	230	96.2
	Amhara	8	3.3
	Oromo	1	0.4
Religion	Orthodox	217	90.8
	Protestant	2	0.8
	Muslim	20	8.4
Residence	urban	205	85.5
	rural	34	14.2
Education states of mothers	Illiterate	95	39.7
	Literate	144	60.3
	Total	239	100
mothers occupation	Nonemployee	119	49.8
	Employed	120	50.2
	Total	239	100
marital status	Married	177	73.8
	never married	21	8.8
	Divorced	34	14.2
	Widowed	8	3.3
husband's educational level	Illiterate	72	30.1
	Literate	116	48.5
	Total	188	78.7
husband's occupation	Nonemployee	80	33.5
	Employed	108	45.2
	Total	188	78.7
average monthly income of your family	Lessthan1000birr	39	16.3
	From 1000-1500	54	22.6
	Above1500	146	61.1

Table2: Health Institutions related factors and source of information on EBF among HIV positive mothers in public health facility central zone, Tigray, Ethiopia 2019.

Variables	Response	Frequency	
			percent
heard of any those EBF	Yes	194	81.2
	No	45	18.2
Sources of information about EBF?	Health professionals	182	75.8
	Media	28	11.7
	Reading books	2	0.8
	Family/ Friend	3	1.3
	Magazines	1	0.4
type of media use	Television	156	65
	Radio	50	20.8
	Newspaper	2	0.8
	Magazine	10	4.2
Availability of health care facility in your area	Yes	234	97.9
	No	5	2.1
Type of health facilities in your area	Health post	19	7.9
	health center	105	43.8
	hospital	116	48.3
	private clinic		
The distance of health facilities from your home on foot.	Less than 30 minute	129	53.8
	30 minute to one hour	93	38.8
	One hour to two hour	14	5.8
	More than two hour	4	1.7
Cost of care influence your services	yes	31	13
	no	208	87
Healthcare staffs have a good approach for you where you have utilized healthcare services	Yes	226	94.6
	No	13	5.4

Table 3 Reproductive characteristics of HIV positive mothers on EBF in public health facility central zone, Tigray, Ethiopia 2019.

Variables	Response	Frequency	percent
age at marriage	From 18-24 years	221	92.5
	Greater than 24 year	18	7.5
age at first birth	From 18-24 years	191	79.9
	Greater than 24 year	48	20.1
Age of the child in the month	Less than 6 month	38	15.8
	6-12 month	130	54.2
	Greater than 12 month	72	30
Sex of the child	male	127	52.9
	female	113	47.1
Gravidity	Primi gravida	141	59
	multigravida	77	32.2
	grand multigravida	21	8.8
Parity	Primi Para	188	78.7
	multi Para	42	17.6
	grand multi Para	9	3.8
ANC service pregnancy	Yes	229	95.8
	No	10	4.2
Numbers of ANC follow up	1-2	32	13.4
	3-4	184	76.6
	Above 4	23	10
given HE on BF during the ANC	Yes	214	89.2
	No	25	10.2
Place of birth to this child	HC	58	24.2
	Hospital	179	74.6
	Home	3	1.3
PNC service	Yes	192	80.4
	No	47	19.6
Numbers of PNC	One visit	204	85.4
	2-3 visit	28	11.4
	>3 visit	7	2.9
HE on BF during PNC	HC	53	22.1
	Hospital	142	59.2
	Home	1	0.4

Table 4: Knowledge of HIV positive mothers on EBF in public health facility central zone, Tigray, Ethiopia 2019

Variables	Response	Frequency	percent
Ever heard the term EBF	Yes	224	93.7
	no	15	6.3
infant feeding per day	As needed	103	42.9
	From 8-10	85	35.6
	Above10	11	4.8
	Less than 8	40	16.9
The right time to give breast milk to the child after birth	After giving some better	8	3.3
	Within one hour	205	85.6
	After one hour	23	9.8
	After 24 hours	3	1.3
breastfeeding important for child health	Yes	221	92.4
	No	18	7.6
Importance of breastfeeding	Prevent diarrhea	96	40
	Minimize cost	18	7.5
	Sterile	14	5.8
	Growth and development	89	37.1
	Increases bonding	4	1.7
Duration of newborns be fed breast milk only	Less than 6 month	169	70.4
	6-12 month	49	20.4
	Above 12 month	18	7.5
Age of complementary feeding be initiated	At 6month	137	57.3
	Less than 6 month	34	14.2
	6-12 month	95	39.6
	Above 12 month	7	2.9
Duration of breastfeeding be continued	Less than 6 month	15	6.3
	6-12 month	45	18.5
	Above 12 month	179	75.2
Foods or fluids recommended to under 6-month child	Only breast milk	217	90.5
	Breast milk and /or water or sugar formula	11	4.7
	Others	10	4.3
		1	0.5
pre-lacteal feeding needed for an infant before starting breast milk	Yes	14	5.8
	No	189	78.8
	I do not know	36	15.4
Is BM alone is enough for an infant< 6 month of life	Yes	216	90.1
	No	11	4.6
	I do not know	12	5.3
EBF for the first 6 months used to prevent diarrhea and Respiratory disease for the infant	Yes	199	82.9
	No	7	2.9
	I do not know	33	14.2
HIV seropositive mother breastfeed	Yes	211	88.2
	No	28	11.8
HIV positive mother knowledge of EBF	Good Knowledge	211	88.4
	Poor Knowledge	28	11.6

Table 5: Attitude of HIV positive mothers on EBF in public health facility central zone, Tigray, Ethiopia 2019

Variables	Response	Frequency	percent
Breast milk is free from any contamination.	strong	75	31.3
	Agree	113	47.4
	Agree	41	17.1
	Disagree	1	0.4
	strong	9	3.8
	disagree		
	Not sure		
Giving breast milk for a baby immediately within an hour after birth is important	strong	77	32.5
	Agree	151	62.9
	Agree	4	1.7
	Disagree	7	2.9
	strong		
	disagree		
EBF is better than artificial feeding	strong	62	25.8
	Agree	152	63.7
	Agree	12	5
	Disagree	3	1.2
	strong	10	4.1
	disagree		
	Not sure		
Discarding colostrums is important before giving breast milk to a newborn	strong	4	1.7
	Agree	36	15
	Agree	139	58.3
	Disagree	28	11.7
	strong	32	13.3
	disagree		
	Not sure		
Giving a child of three months only breast milk may not be sufficient and a child needs water and other fluids to prevent thirst	strong	2	0.8
	Agree	13	5.4
	Agree	182	75.9
	Disagree	25	10.4
	strong	17	7.5
	disagree		
	Not sure		
Starting complementary foods to a child before six months is important	strong	4	1.7
	Agree	20	8.3
	Agree	195	81.7
	Disagree	12	5
	strong	8	3.3
	disagree		
	Not sure		
Only breastfeeding is enough for the baby for up to six months.	strong	62	25.8
	Agree	141	58.8
	Agree	25	10.4
	Disagree	1	0.4
	strong	10	4.6
	disagree		
	Not sure		
Breast milk contains all the nutrients necessary for the infant for up to 6 months.	strong	52	21.7
	Agree	155	64.6
	Agree	13	5.4
	Disagree	3	1.3
	strong	16	7
	disagree		
	Not		

	sure		
Breast milk provides the infant with the immunity to disease.	strong	67	27.6
	Agree	151	63
	Agree	8	3.3
	Disagree	1	0.4
	strong	12	5.7
	disagree Not		
	sure		
Mixed feeding is always necessary for infants	strong	8	3.3
	Agree	26	10.8
	Agree	157	65.5
	Disagree	32	13.3
	strong	16	7.1
	disagree Not		
	sure		
Dealing with breastfeeding is always time-consuming.	strong	3	1.3
	Agree	34	14.2
	Agree	181	75.8
	Disagree	19	7.9
	strong	2	0.8
	disagree Not		
	sure		
Breastfeeding affects the health of the mother negatively.	strong	5	2.1
	Agree	20	8.3
	Agree	171	73.8
	Disagree	31	12.9
	strong	7	2.9
	disagree Not		
	sure		
HIV seropositive mother recommend breastfeeding	strong	58	24.5
	Agree	135	56.3
	Agree	32	13.3
	Disagree	3	1.3
	strong	11	4.6
	disagree Not		
	sure		
	Favorable	204	85.4
	Attitude		
		35	14.6
	Unfavorable		
	Attitude		

Table 6: Practice of HIV positive mothers on EBF in public health facility central zone, Tigray, Ethiopia 2019.

Variables	Response	Frequency	
			percent
Breastfeed your last-child	Yes	214	89.5
	No	25	10.5
Initiation of breastfeeding for your last child after delivery	Immediately within 1 hour	194	90.6
	Between 2 and 24 hrs	17	8
	After 24 hr	3	1.4
Mothers colostrum feed	Yes	224	93.5
	No	15	6.5
Giving anything within 3days Other than breast milk feeding	Yes	24	10.1
	No	215	89.9
what was given	Cow and breast milk	7	2.9
	Breast milk only	2	0.8
	Formula	15	6.3
Reasons for pre-lacteal feeding	Milk did not come in ye	9	6.4
	I was ill	12	5
	Baby was ill	3	1.25
Dose Still breastfeeding	Yes	200	83.7
	No	39	16.3
Frequency of breastfeeding	Less than 8 times	38	16.2
	8-10 times	102	42.5
	Frequent and on-demand	81	33.8
	Greater than 10 times	18	7.5
Exclusive breastfeeding practice to your child	0-6 months	162	67.5
	6-12 months	50	20.8
	Above 12 months	3	1.3
	Not yet started	24	10.4
Type of complimentary food started	Fluid	47	19.6
	Simi fluid	91	37.9
	family food	52	21.7
	Not yet started	6	2.5
	Other	44	18.3
Starting age of complementary feeding	At 6 months	128	53.6
	After 5 months	7	2.9
	2-4 months	27	11.3
	After 6 month	68	28.5
	Underage	8	3.3
	Not yet started	1	.4
Who supports you during breastfeeding?	Husband	88	36.7
	Another family member	78	32.7
		73	30.6
	No one		
	Good practice	206	86.2
	Poor practice	33	13.8

Table 7: Factors associated attitude of HIV positive mothers on EBF in a public health facility in the central zone, Tigray, Ethiopia 2019.

Variables		Knowledge		COR (95%CI)	AOR(95 %CI)
		Good	Poor		
Place of residence	Rural	27(12.9)	7(25)	1	1
	Urban	183(87.1)	21(75)	2.259(.877-5.819)	2.96(.948-9.29)
Educational level	Illiterate	80(38.1)	15(51.7)	1	1
	Literate	130(61.9)	14(48.7)	1.74 (0.736-3.586)	1.37(.564- 3.34)
Monthly income	≥1500birr	126(60)	19(67.9)	1	1
	1000-1500birr	51(24.3)	3(10.7)	2.56(.72-9.041)	5.57(1.176-26.38)*
	< 1000birr	33(15.7)	6(21.4)	0.829(.307-2.242)	1.48(.439-4.48)
Age at first birth	18-24	172(81.9)	18(64.3)	1	1
	24 and above	38(18.1)	10(35.7)	.398(.170-.930)	.339(.133-.863)*
Number of postnatal visits	1 visit	180(85.2)	25(89.3)	1	1
	2-3 visit	26(12.4)	1(3.6)	3.63(.472-27.9)	5.2(.559-49.4)
	Above 3 visit	5(2.4)	2(7.1)	.349(.064-1.89)	.312(.046-2.11)
Type of health facility available	Health post	14(6.7)	5(17.9)	1	1
	Health center	93(44.3)	10(35.7)	3.32 (.98-11.15)	2.77(.712-10.7)
	Hospital	104(49)	13(46.4)	2.8(0.87- 9.14)	1.84(.485-6.9)

Note: *-significant results, 1-reference category **p-value<0.001, *p-value≤0.05

Table 8: Factors associated practice of HIV positive mothers on EBF in a public health facility in the central zone, Tigray, Ethiopia 2019.

Variables		practice		COR (95%CI)	AOR(95 %CI)
		Poor practice %	Good practise %		
Maternal educational statues	Illiterate	38(39.6)	38(26.4)	1	1
	Literate	58(60.4)	105(73.6)	1.828(1.052- 3.174)	1.351(.626- 2.916)
Income	<1000	22(22.9)	17(11.8)	1.744(.759- 4.006)	.625(.235- 1.66)
	1000-1500	23(24)	31(21.5)	2.436(1.88- 4.996)	1.322(.530- 3.294)
	>1500	51(53.1)	96(66.7)	1	1
Types of health care facility	Health post	5(5.2)	14(9.7)	1	1
	Health center	44(45.8)	61(42.4)	.495(0.166- 1.476)	.499(.141- 1.766)
	Hospital	47(49)	69(47.8)	.524(0.177- 1.554)	.427(.12- 1.527)
No of gravidity	Primi gravid	71(74)	117(81.9)	1	1
	Multi gravid	20(20.8)	22(15.3)	..0667(.290- 1.056)	.619(.289- 1.328)
	Grandmultigravia	5(5.2)	4(2.8)	.4854(0.161- 2.068)	1.055(.246- 4.519)
No of ANC visit	1-2	71(74)	21(14.6)	1	1
	3-4	20(20.8)	111(77.1)	2.176(.971- 4.8981)	2.981(1.113- 7.983)*
	>4	5(5.2)	12(8.3)	2.543(.895- 7.239)	3.726(1.055- 13.154)

*Note: *-significant results, 1-reference category **p-value<0.001, *p-value≤0.05*