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Infant Feeding Practice and Associated Factors of HIV Positive Mothers Attending Prevention of Mother to Child Transmission and Antiretroviral Therapy Clinics in Shashemene Referal Hospital

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Abstract
Background: - HIV/AIDS remains one of the greatest burdens in the world today. In Sub-Saharan Africa, with a prevalence of HIV infection were 5.0%, still accounts for over two thirds (68%) of infections. Without intervention to prevent mother-to-child transmission, 30-45% of infants born to HIV-positive mothers in developing countries become infected during pregnancy, delivery and breastfeeding.**Objective:-**To assess infant feeding practice and associated factors of HIV positive mothers attending prevention of mother to child transmission and antiretroviral therapy clinics in Shashemene Referral Hospital.**Methods:** Facility based cross-sectional study was conducted from March 2016 to April 2016, in Shashemene Referral Hospital. *The study participants were selected by using simple random sampling computer generated technique. Both bivariate and multivariate logistic regressions were used to identify associated factors.***Result**: - The mean age the respondents were 29.73 years, of which 79.5% were from urban residence.The proportion of infant feeding practice among population was determined which revealed that 96.6% were EBF followed by ERF 4(2.7%) with independent predictors of favorable attitude (AOR = 22.173 (95%CI = 1.643-299.194), good NVP adherence for baby (AOR = 26.917 (95%CI = 2.102-344.69) were independent predictors of recommended way of infant feeding practice (EBF) for the first six months.Out of total study respondents about 56.8% with 95% CI of (49.3- 64.4%) had good knowledge towards infant feeding practice with identified factors of favorable attitude (AOR = 10.95 (95%CI = 3.855-31.118), duration of stay with partner (AOR = 7.078 (95%CI = 2.140-23.46), educational status of the mother (AOR= 14.421 (95%CI = 2.515-82.708) and primary source of information on infant feeding from Health care provider (AOR= 63.69(95%CI = 4.194-967.37) and mass media (AOR= 5.811 (1.348-25.091) were identified factors demonstrated greater likelihoods of had good knowledge among the study participants. This determined that the rate of HIV exposed infants positivity was 6(4.1%) at six weeks and 8(5.5%) at 18 months by rapid antibody test.**Conclusion and recommendation: -** The proportion of exclusive breast feeding, good knowledge and favorable attitude among HIV positive mothers revealed that 96.3%, 56.8% and 75% respectively in the study area.The rate HIV positive of HIV exposed infants were 6(4.1%) at six weeks by dry blood spot (DBS) and 8(5.5%) at 18 months by rapid antibody test. This study identified that different factors contributed for having good knowledge and practice of exclusive breast feeding among the study population. Therefore, these factors would be emphatically considered during development of infants feeding program by policy makers and health planners.
Keywords: Infant feeding practice, HIV-positive mothers, PMTCT, ART Shashemene Referral Hospital

Introduction

Background

Human Immunodeficiency Virus Acquired Immune Deficiency Syndrome remains one of the greatest burdens in the world today. Infant feeding practices recommended to mothers known to be HIV-infected should support the greatest likelihood of HIV-free survival of their children and not harm the health of mothers [1]. To achieve this, prioritization of prevention of HIV transmission needs to be balanced with meeting the nutritional requirements and protection of infants against non-HIV morbidity and mortality [1]. World Health Organization recommends that HIV-infected mothers should breastfeed exclusively for 6 months unless replacement feeding is Acceptable, Feasible, Affordable, Sustainable, and Safe (AFASS), in which case avoidance of all breastfeeding is recommended[1,2]. At six months, if replacement feeding is still not AFASS, continuation of breastfeeding with additional complementary foods is recommended, while the mother and baby continue to be regularly assessed. All breastfeeding should stop once a nutritionally adequate and safe diet without breast- milk can be provided [3]. The Ministry of Health (MOH) of Ethiopia has been adopting these recommendations and promoting their implementation in the health institutions throughout the country and strengthening of hospitals at various level and other complementary services [4]. Without intervention to prevent mother-to-child transmission, 30-45% of infants born to HIV-positive mothers in developing countries become infected during pregnancy, delivery and breastfeeding. The availability of anti-retroviral therapy (ART) during the last trimester

of pregnancy and delivery through prevention of mother to child transmission (PMTCT) program reduces transmission of HIV during pregnancy, labor and delivery from 10% to 20%, but it does not solve the problem of infant feeding which is responsible for as much as 5-20% of infections [5]. When and how to wean breastfed infants exposed to HIV infection has provoked extensive debate, particularly in low-income countries where safe alternatives to breastfeeding are rarely available. Although there is global consensus on optimal infant feeding practices in the form of guidelines, practices are sub-optimal in much of sub-Saharan Africa[1,5].The studies according to University of Cape Town, in South Africa Breastfeeding is beneficial for both mother and child.

Exclusive breastfeeding rate and early initiation of breastfeeding has no reached desirable level in many countries. Understanding the factors that influence infant feeding will help in promotion, protecting and supporting breast feeding [6]. Health workers found it particularly difficult to advise women to continue breastfeeding after six months. They worried that they would lose the trust of the PMTCT clients and the population at large, and they feared that continued breastfeeding was unsafe. Optimal support for HIV-infected women was noted in programmes where health workers were multi-skilled; coordinated their efforts and had functional, multidisciplinary task forces and engaged communities. Besides promoting maternal health and providing protection against HIV infection in children, the new Rapid Advice has the potential to resolve the difficulties and confusion experienced by health workers in Malawi [7].

Mother to Child Transmission of HIV can occur during pregnancy, delivery, and breastfeeding and it accounts for more than 90% of pediatric AIDS. Various studies indicate that the rate of Mother to Child Transmission of HIV is high among infants who were on mixed feeding. However, numerous contextual factors can influence mothers in their choices and decisions related to what and how they feed their infants. An understanding of factors that influence women's adherence to the recommended infant feeding is critical in identifying ductile point's intervention [5,8]. As prevention programs of new pediatrics HIV infection is an important public health problem, to over this problem preventive program have an immense job. To reduce the magnitude of new pediatrics HIV infection, malnutrition and child mortality; identifying contributing factors is the crucial thing which makes things easy for health personnel to address the infant feeding problems; and coordinate, harmonize, scale up and sustain current recommended infant feeding with a greater focus on community based interventions through prevention and control strategies. Even though in Ethiopia the past progress to prevent mixing feeding practice has been substantial, there were a few studies conducted to identify contributing factors of infant feeding practice among HIV positive mothers. The extent of recommended ways of infant feeding in Shashemene Referral Hospital is not studied specifically and also may vary by individual, social and demographic characteristics are not well understood. Therefore conducting of this study on infant feeding practice and associated factors of HIV positive mothers attending prevention of mother to child transmission and antiretroviral therapy clinics in Shashemene Referral Hospital is mandatory**.**

METHODS AND MATERIALS

Study setting

The study will be conducted in Shashemene referral hospital ART clinic from January to April 2016. Shashemene Referral Hospital is found in Shashemene town (Kuyera) situated 238 km away from Addis Ababa to the South in West Arsi Zone, Oromia, Ethiopia.

The hospital was established in 1952 as center for Leprosy control by SIM (Sudan Interior Mission) and gradually extended to be a referral hospital at present. It has 165 beds and provides outpatient and inpatient services for 2.4 million population of west Arsi Zone and neighboring zones. From the catchment population 1,271,895 are male and 1,251,707 are female. Children under one year of age are 78,231, under five year of age are 368,445, women 15-49 years of age are 557,716 and number of pregnant women are estimated to be 20,635 (Shashemene Referral Hospital, 2014). Anti Retroviral therapy (ART) services was launched in the Hospital in 2006. Currently serving 2207 people, from them are 902 males and 1305 are females. There are 1227 reproductive age group women who are attending ART clinic of which 414 and 156 women a gave birth at least once and are pregnant currently respectively (Shashemene Referral Hospital, 2014). The PMTCT was launched in hospital with the same time with ART and there are 177 mothers attending PMTCT had infants (Shashemene Referral Hospital, 2014/15).

Study Design

A facility based cross-sectional study design with quantitative data collection methods was employed. - The study inclusion criteria were all HIV positive mothers at least had gave birth to one child whose age is less than two years old and who had followed up at PMTCT and ART clinics in Shashemene Referral Hospital for at least 6 months prior to data collection and willingness to consent for participation in the study.

Sampling procedure and sample size determination:

Sample size was determined by using single population proportion formula with 90.40% of proportion (P) of

exclusive breastfeeding under six months of age among HIV positive mothers study conducted in 2014 in central zone, Tigray Region, Northern Ethiopia [10]. By considering 10% non-response rate, the final sample size will be 146. A List of all mothers on PMTCT/ HIV exposed infants enrolment less than two years will be prepared and entered into SPSS window version 20 by using their Pre –ART number /HEIs numbers from HMIS data base. Simple random sampling technique by computer generated Pre –ART number will be utilized to select the study subjects.

Data collection tools and procedures

The questions included in the questionnaire were adapted and prepared by reviewing of different related literatures and variables identified to be measured. The questionnaires for data collection were initially prepared in English, and translated to Afan Oromo and back to English to checked for its consistency by language expert and researchers. Finally the corrected Afan Oromo version was used to collect the data. Data were collected through an exit interview by using pre tested structured Afan Oromo version questionnaire.

Data collectors were cross checked Pre-ART card numbers of women living with HIV who came to PMTCT/ART clinic with sampled card numbers daily.

The filled questionnaires were collected and checked for consistencies and completeness daily by supervisors and principal investigators. Five BSc nurses students were collected the data and one BSc Nurse Student was conducted supervision during data collection period.

Data Processing and Analysis

The returned questionnaires were checked for completeness, cleaned manually and entered in to SPSS windows version 20.0 statistical software for further analysis. Frequencies mean and standard deviation was used to summarize descriptive statistics of the data and text, tables and graphs was used for data presentation. Bivariate analysis was used primarily to check which variables have association with the dependent variable individually. Variables which are found to have association with the dependent variables was then entered in to Multiple Logistic regression for controlling the possible effect of confounders and finally the variables which have significant association was identified on the basis of AOR, with 95%CI and p-value to fit into the final regression model.

OPERATIONAL DEFINITIONS

Exclusive breastfeeding means an infant receives no other food or drink, not even water, other than breast milk (which can include expressed breast milk), with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines up to six months[5].

Formula feeding involves the use of commercial infant formula that is formulated industrially in accordance with applicable standards to satisfy the nutritional requirements of infants during the first months of life up to the introduction of complementary foods [5].

Ethical consideration

Ethical clearance letter is initially obtained from Ambo University research Ethical Committee. Then written consent was secured from Shashemene Referral Hospital administration office to get permission. Verbal informed consent for participation was obtained from each participant and the collected data were stored in a file, without the name of study participant and password protection of soft data and use of key and lock for hard copy data was employed to guarantee confidentiality.

Result

Out of total sampled (146) HIV positive mothers who had less than two years HIV exposed children were interviewed, with complete response rate of 100 % (146/146).

Socio-demographic characteristics of the study population

The mean age the respondents were 29.73±5.21standard deviation in years which ranges from 18 to 47 years old. Out of total study participants about 116(79.5%) were from urban residence, with regarding to their ethnic group 66(45.2%) were Oromo, of which 53 (36.3%) were Muslims in religion. In addition, near half of the respondents, 70(47.95%) were attended from 1- 10th grade and 13(8.9%) were had education status of diploma and above while regards to their partner 52(35.6) were attended 1-8 grade and 34(23.3%) were had diploma and above.

Out of the total study participants about 86 (58.9%) were housewives and consider to their partners' occupation revealed that 40(27.4%) were farmers (see Table 1)

Table 1: Socio demographic characteristics of the study participants attending PMTCT and ART clinics in Shashemene referral hospital from March to April, 2016

S.no	Variables	Characteristics	Frequency(n)	Percent(%)
1	Age Mean 29.73±5.21standard deviation	<25 yrs	38	26
		25-30 yrs	49	33.6
		30 yrs	59	40.4
2	Ethnicity	Oromo	66	45.2
		Amhara	32	21.9
		Tigre	14	9.6
		Wolayita	17	11.6
		Gurage	13	8.9
		Other	4	2.7
3	Religion	Orthodox	61	41.8
		Protestant	28	19.2
		Muslim	53	36.3
		Others	4	2.7
4	Duration of stay with partner	0-5 yrs	34	23.3
		>5 yrs	112	76.7
5	Educational status of wife	Illiterate	45	30.8
		Read and write	18	12.3
		1-8 Grade	49	33.6
		9-10 Grade and above	21	14.4
		Diploma and above	13	8.9
6	Educational status of husband	Illiterate	14	9.6
		Read and write	25	17.1
		1-8 Grade	52	35.6
		9-10 Grade and above	21	14.4
		Diploma and above	34	23.3
7	Occupational status of wife	Housewife	86	58.9
		Government employee	12	8.2
		Merchant	24	16.4
		Private work	17	11.7
		Other	7	4.8
8	Occupational status of husband	Farmer	40	27.4
		Government employee	35	24
		Driver	18	12.3
		Merchant	31	21.2
		Private work	16	11.0
		Other	6	4.1
9	Monthly income	<1ooo	39	26.7
		1001-2000	46	31.5
		>2001	61	41.8
10	Residence	Urban	116	79.5
		Rural	30	20.5

Sources of information on Infant feeding practice

From total respondents reported that their primary sources of information regarding to infant feeding practice of HIV exposed infants 130(89.0%), 9(6.2%) and 7(4.8%) were from health care provider, Mass media and friends/peers respectively.

Knowledge of women living with HIV toward HIV exposed infant feeding practice

This study determined that level of Knowledge distribution among study participants regarding to HEIs infant feeding almost more than halve which 83(56.8%) with 95% CI of (49.3- 64.4%) had good knowledge towards infant feeding practice(see Figure 1).

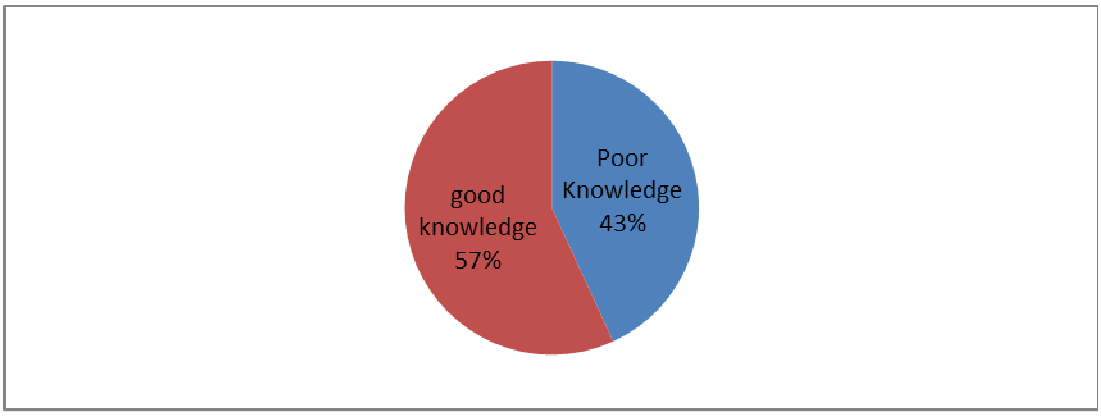

Figure 1: knowledge distribution of HIV positive mothers towards HIV exposed infant feeding practice among mothers' attending ART and PMTCT clinics in Shashemene referral hospital 2016

Attitude of mother toward HIV exposed infant feeding practice

Out of total study participants more than 1/3rd 109(75%) of the HIV infected mothers had favorable/ positive attitude towards infant feeding practice with 95%CI (67.1- to 83.1).

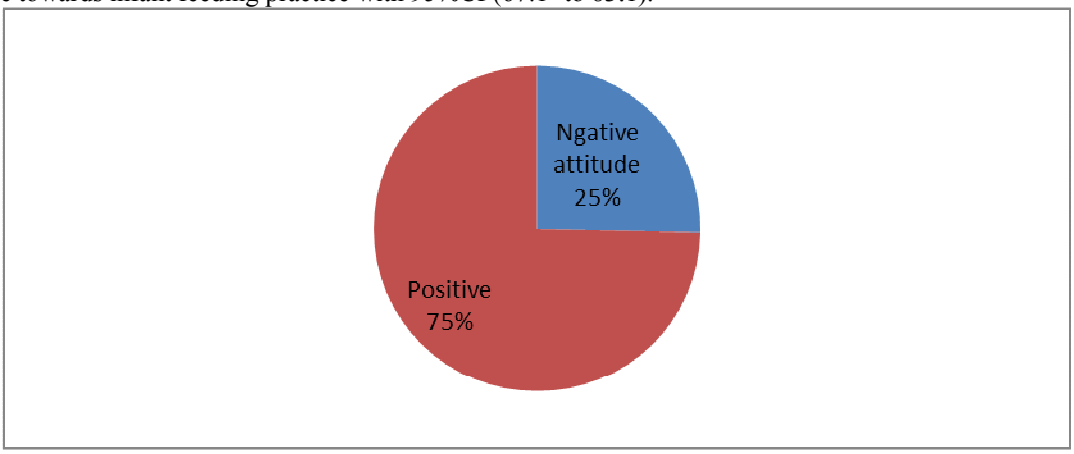

Figure 2: Attitude of mothers toward HIV exposed infant feeding practice among mothers attending ART and PMTCT clinics in Shashemene referral hospital from March to April 2016

Maternal HIV status and health related factors

From the total of 146 mothers, 138(94.5%) of them had antenatal follow up, of whom 70(47.9%) attended ANC for 4 times and more in their last pregnancy, of which (92.46%) mothers were Institutional delivered (at governmental Hospitals and health centers), while only 7(4,8%) were home delivery among these population. This study revealed that the disclosure status of mothers their HIV test result with her partner and family were 134(91.8%) and 97(66%) respectively. More than half (61%) of them were on WHO stage 1, and the remaining were on WHO stage 2 and 3 before initiation of HAART, while after initiated of HAART revealed that all mothers were on treatment stage one.

Majority, 144 (98.6%) of the mothers were received counseling on infant feeding options, of these, 94(64.4%) were received during pregnancy and the remaining after delivery. At initial CD4 count those 97(66.4%) were <350, but the recent CD4 count those 56(38.3%) were >500. See (table 2.)

Table 2: Maternal HIV status and health related factors of mothers toward HIV exposed infant feeding practice among mothers attending ART and PMTCT clinics in Shashemene referral hospital from March to April 2016

S.no	Variable	Categories	Frequency(n)	Percent(%)
1	Maternal breast condition	Normal	145	99.3
		Diseased	1	0.7
2	Duration of time since diagnosis	<=2 yrs	47	32.2
		>2yrs	99	67.8
3	Did you starting HAART	Yes	143	97.9
		No	3	2.1
4	Did your partner starting HAART	Yes	135	92.5
		No	11	7.5
5	Recent CD4count	<350	35	24
		350-500	55	37.7
		>500	56	38.3
6	Initial CD4 count	<350	97	66.4
		350-500	26	17.8
		>500	23	15.8
7	WHO clinical stage	1	89	61.0
		2	41	28.0
		3	16	11.0
8	Treatment stage T	T1	146	100.0
9	Disclosure to her partner	Yes	134	91.8
		No	12	8.2
10	Disclosure to her family	Yes	97	66.4
		No	49	33.6
11	Maternal PMTCT intervention	Yes	144	98.6
		No	2	1.4
12	Type of maternal PMTCT regiment	TDF+3TC+EVF	74	50.7
		AZT+3TC+NVP	32	21.9
		TDF+3TC+NVP	26	17.8
		AZT+3TC+EVF	14	9.6
13	Eligibility criteria for HAART	Pregnancy	76	52.1
		TB/HBV	27	18.5
		CD4 count	34	23.3
		WHO stage	9	6.2
14	Maternal ART adherence	Good	135	92.5
		Fair	11	7.5
15	MUAC of mother	<22	28	19.2
		22-24.5	82	56.2
		25-30	31	21.2
		>31	5	3.4
16	Number of live births	<= 4 children	124	84.9
		>= 5 children	22	15.1
17	ANC follow in their last pregnancy	Yes	138	94.5
		No	8	5.5
18	Number of ANC visit	None visit	6	4.1
		One visit	5	3.4
		Two visit	18	12.8
		Three visit	47	32.2
		Four visit	70	47.9
19	Place of delivery	Home	7	4.8
		Government hospital	109	74.7
		Governmental health center	26	17.8
		Private health facility	4	2.7
j20	Birth attendants	TBA	2	1.4
		Health extension worker	3	2.1
		Health professional	139	95.2
		Relatives	2	1.4
21	Mode of delivery	Vaginal	125	85.6
		Caesarean section	19	13.0
		Vacuum/Forceps	2	1.4
22	Attend PNC	Yes	146	100.0
		No		
23	Counseled on infant feeding	Yes	144	98.6
		No	2	1.4
	When did counseled infant feeding	during pregnancy/ANC	94	64.4
		after delivery /PNC	52	64.4

HIV exposed infants related health status and prophylaxis

Regarding to infant developmental stage for age almost all 140(95.9%) was appropriate, while 5(3.4%)

were delayed development for age.

This study identified HIV status of infants outcome by dry blood spot (DBS) test at six weeks revealed that about 140(95.9%) were HIV negative for DBS test while about 6(4.1%) were HIV positive. Out of total HIV exposed infants about 74(50.7%) were tested by rapid antibody test at 18 months of age, of which the outcome of rapid antibody test at 18 months 66(45.2%) were HIV negative, but the remaining 8(5.5%) were HIV positive (See Table3).

Table 3: HIV exposed infants health status and prophylaxis outcome of less than two years on PMTCT treatment and care in Shashemene referral hospital March to April,2016

S.no	Variables	Characteristics	Frequency (n)	Percent (%)
1	Infants age at enrollment	At delivery	40	27.4
		<6wks	81	55.5
		>6wks	25	17.1
2	Sex of infant	Male	82	56.2
		Female	64	43.8
3	Infant received NVP	Yes	146	100
		No	0	00.0
4	Adherence to NVP for Baby	Good	137	93.8
		Fair	8	5.5
		Poor	1	0.7
5	Development of infant for age	Appropriate	140	95.9
		Delay	5	3.4
		Regret	1	0.7
6	Outcome at 6 weeks DBS test	HIV negative	140	95.9
		HIV positive	6	4.1
7	Rapid HIV antibody at or within 18 months	Yes	74	50.7
		No	72	49.3
8	Outcomes of infants at 18 month by Rapid test	HIV negative	66	45.2
		HIV positive	8	5.5
		Not determine	72	49.3
9	Infant stop breast feeding at	<12 months	40	27.4
		12-18months	74	50.7
		>18months	32	21.9

Infant feeding practice within first 6 months

This study determine that the proportion of HIV exposed feeding practice which showed that the majority 141(96.6%) were Exclusive Breast Feeding (EBF) with 95% CI of (92.5 to 99.3%) where as 4(2.7 %) were Exclusive Replacement Feeding (ERF) and the rest only 1(3.7%) were mixed feeding (Fig 3).

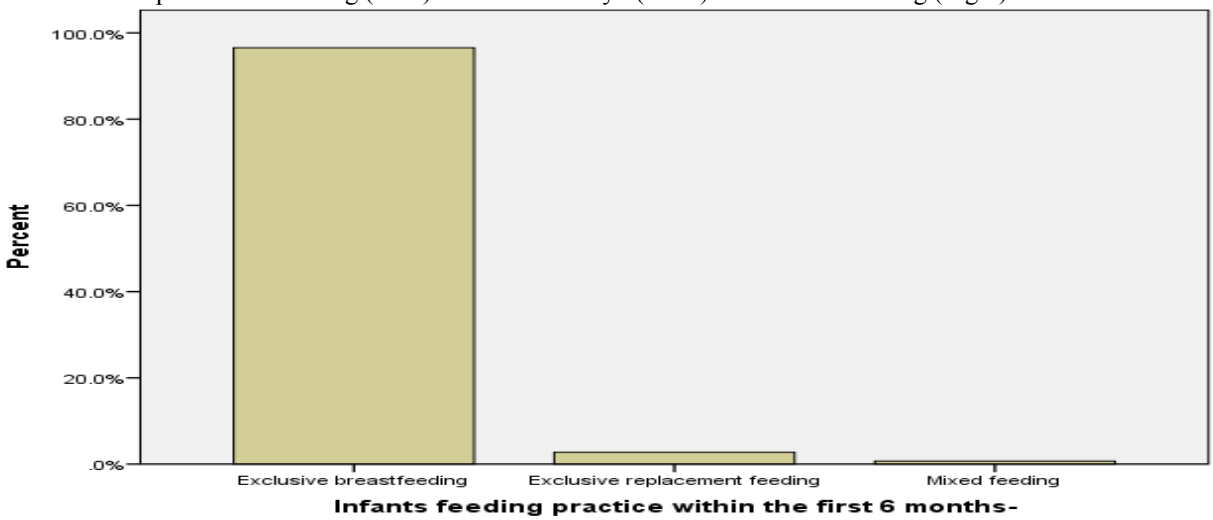

Figure 3:- Proportion of HIV exposed infants feeding practice for the first 6 months among mothers' attending PMTCT/ART clinics in Shashemene referral hospital, March to April, 2016.

Reason for Exclusive breast feeding

This study result identified that the main reason reported Exclusive Breast Feeding (EBF were advised by health workers (89.7%, nutritional importance, easily availability of breast milk and wide community acceptability breast feeding practice were among their reasons (figure 4).

Sixty eight (46.6%), 66(45.2%) were faced influence/pressure from their families and community respectively. In contrarily those were not faced influence from their families and community were 78(53.4%), and 80(54.8%) respectively.

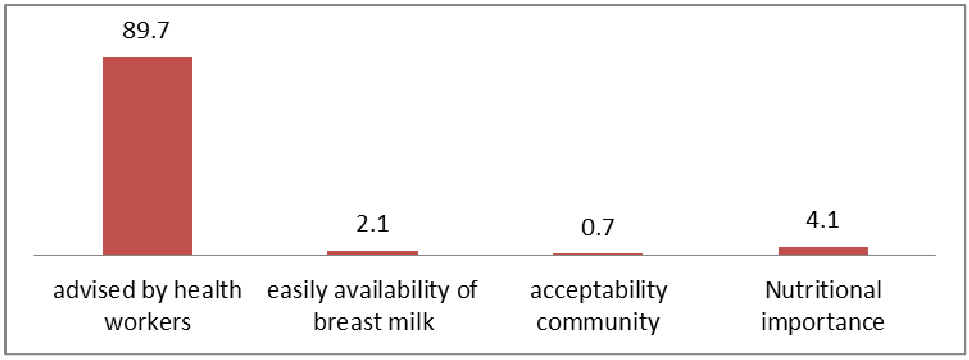

Figure 4:- Reason toward exclusive breast feeding practice of HIV positive mothers attending PMTCT and ART clinics in Shashemene referral ho from March to April, 2016.

Factors associated with knowledge mothers towards infant feeding at multivariable logistic regression. Associations found to be statistically significant in the bivariate analysis at a p-value <0.05 were included in the multivariable analysis to determine which factors best explained or predicted the knowledge mothers towards infant feeding. Multiple regression analysis (Table:5 below), factors significantly predictive of good knowledge mothers towards infant feeding in multivariate analysis were favorable attitude (AOR = 10.95 (95%CI = 3.855-31.118), duration of stay with partner (AOR = 7.078 (95%CI = 2.140-23.46), educational status of the mother (AOR= 14.421 (95%CI = 2.515-82.708) and primary source of information on infant feeding from Health care provider (AOR= 63.69(95%CI = 4.194-967.37) and mass media (AOR= 5.811 (1.348-25.091) were identified factors demonstrated greater likelihoods of had good knowledge among the study participants.

This study identified that those mothers had positive attitude towards HIV exposed infant feeding were 11 times 95%CI (AOR= 11, 3.86- 31.12) more likely to have good knowledge as compared to women had negative towards HIV exposed infant feeding (See (Table5).

Table 4: Factors associated with knowledge mothers towards infant feeding at multivariable logistic regression analysis in PMTCT/ ART clinics of Shashemene referral hospital, 2016

Variable		Characteristics/categories		p-value	AOR	95%CI
		Good knowledge	Poor knowledge			
Attitude	Positive	74(50.7%)	35(24.0%)	0.00	10.953	3.855-31.118***
	Negative	9(6.2%)	28(19.2%)	1:00		
Duration of stay with partner	0-5 years	14(9.6%)	20(13.7%)			
	>5years	69(47.3%)	43(29.5%)	0.001	7.078	2.140-23.46**
Occupational status of the study participants	Housewife	49(33.6%)	38(26.0%)	1:00		
	Government employee	11(7.5%)	1(0.7%)	0.019	3.926	1.248-12.351*
	Daily labor	1(0.7%)	5(3.4%)	0.023	27.713	1.577-486.891*
	Merchant	10(6.8%)	14(9.6%)	0.673	1.789	0.120-26.689
	Private worker	12(8.2%)	5(3.4%)	0.003	14.421	2.515-82.708**
Sources of information on PMTCT	Health care provider	77(52.7%)	53(36.3)	0.003	63.693	4.194-967.374**
	Mass media	5(3.4%)	4(2.7%)	0.006	98.00	3.805-2524.32**
	From peers/friends	1((0.7%)	6(4.1%)	1:00		
Educational status of study participants	Illiterate	22(15.1%)	23(15.8)	1:00		
	Read and write	7(4.8%)	11(7.5%)	0.587	0.685	0.176-2.675
	1-8 grade	26(17.8%)	26(17.8%)	0.166	2.194	0.721-6.671
	9-10 grade	14(9.6%)	7(4.8%)	0.669	1.550	0.207-11.589
	Diploma and above	27(18.5%)	7(4.8%)	0.018	5.811	1.346-25.091*

Note: ***p<0.001, **p<0.01, *P<0.05

Factors association with infant feeding Practice at multivariable logistic regression

In multivariate analysis (see table 7), favorable attitude (AOR = 22.173 (95%CI = 1.643-299.194), good NVP adherence for baby (AOR = 26.917 (95%CI = 2.102-344.69) were found to be independent predictors of recommended way of infant feeding practice (EBF) for the first six months.

Table 5: Factors association (multivariate regression) with infant feeding practice within the first six months of infant age among HIV positive mothers attending ART and PMTCT clinics at Shashemene referral hospital 2016

Variable	Characteristics/categories	Infant feeding practice within the first 6 months		p-value	AOR	95%CI
Attitude		EBF practice	Not EBF practice			
	Positive attitude	108(74.0%)	1(0.7%)	0.020	22.173	1.643-299.194*
	Negative attitude	33(22.6%)	4(2.7%)	1:00		
NVP adherence for baby	Good	134(91.8%)	3(2.1%)	0.011	26.917	2.102-344.699*
	Fair	7(4.8%)	2(1.4%)	1:00		

Note:-*P<0.05:- significant

Discussion

The aim of this study to assess infant feeding practice and associated factors of HIV positive mothers that were attending in Shashemene referral Hospital , West Arsi Zone Oromia, region, southern Ethiopia. This study revealed that the prevalence of HIV positive mothers practicing exclusive breast feeding(EBF) for the first six months is 96.6% higher than Nigeria(91.7%), South Africa(35.6%),Kenya(26.7%) ,Tigray(90.4%) and Gondar (83.8%)[2,5,10,11,12]. This is may be due to recentness of the study and implementation of health extension workers in case of Ethiopia which may be increase awareness of breast feeding practice in this context of HIV exposed infants.

The prevalence of HIV positive mothers practicing exclusive replacement feeding(ERF) for the first six month was 2.7% which is in line with study done in Nigeria(0.7%),Tigray(3.7%), Gondar(5.7%) ,but lower than studies done in South Africa(50%) and Kenya(8.2%), [2,5,10,11,12]. This may be due to the majority of respondents were practiced national recommended types of breast feeding among this population as compared to

previous studies.

The prevalence of HIV positive mothers practicing mixed feeding practice (MF) was 0.7% lower than Nigeria (7.6%), South Africa (12.4%), Kenya (29.3%), Tigray (5.9%) and Gondar (10.5%)[2,5,10,11,12]. This may be due to reasons that the majority of the respondents' were attended breast feeding counseling and of which their primary sources were health professionals this may be increase probability of discussions that about mixed feeding which increase the risk of HIV transmission to the child during breast feeding.

This study determined that level of Knowledge distribution among study participants regarding to HEIs infant feeding almost more than halve which 56.8% with 95% CI of (49.3- 64.4%) had good knowledge towards infant feeding practice with independent predictors of mothers who had positive attitude towards HIV exposed infant feeding were 11 times 95%CI (AOR= 11, 3.86- 31.12) more likely to have good knowledge as compared to women had negative towards HIV exposed infant feeding which is supported by study done Addis Ababa parental infant feeding attitude [13]. This may be due to having favorable attitude for this program may increase their interest to know and practice as recommended.

Literate women were (AOR= 14.421 (95%CI = 2.515-82.708) more likely to had good knowledge towards Exclusive breast feeding as compared to illiterate. This finding was similar with other previous study done in Jimma [14]. This may be due to the literate have ability to read and understand easily.

This study revealed that health professional were the main source information about PMTCT of HIV that was 64 times 95%CI(AOR=64 , 4.194-967.374) more likely to had good knowledge women who received from peers/friends. This finding was similar with study conducted at Jimma [14].

Maternal occupational status of government employed, daily labor and private workers were more likely to have good knowledge towards infant feeding practice as compared to house wife. This finding was similar with study conducted at Jimma in case of daily labor[14] but not in line with study conducted in Mekelle (Daily laborers were 93% times less likely to have recommended way of infant feeding practice than housewife mothers[10]. This may be due to the probability of daily labor and privately employed women were exposure to different mass Medias and peer groups of had information and skill in this area was very high as compared to housewife.

Duration of stay with partner for 5 and above years were 7 times 95%CI (AOR = 7.078 (95%CI = 2.140-23.46) have knowledge than those stay with their partner less than 5 years. This may be due to living together with their spouse have disclosure clearly about HIV/AIDS status.

This study showed that have positive attitude of HIV positive mothers were 22times (AOR = 22.173 (95%CI = 1.643-299.194) morelikely practiced recommended way of infant feeding practice (EBF) within the first six months of infant as compared to negative attitude.

Human Immune deficiency virus infants who had good adherence of Nevirap were 27 times (AOR = 26.917 (95%CI = 2.102-344.699) more likely to practiced recommended way of infant feeding practice (EBF) within the first six months of infant as compared to fair adherence to NVP prophylaxis therapy .

This determined that the rate of HIV exposed infants positivity was 6(4.1%) at six weeks and 8(5.5%) at 18 months by rapid antibody test were higher than national target of PMTCT, so it would be better to reconsidered by health planners real practice with proposed target.

On this research by considering the main strength of this research lies on its computer generated simple random sampling methods for data collection and all associated factors were taken after indication of significance in the Variable "goodness of fit" for the models. And also this study had a few limitations: This study was cross-sectional study design, so cause and effect relation was not assured because of cross-section study design.

Conclusions

The proportion of infant feeding practice among population was determined which revealed that 96.6% were EBF followed by ERF 4(2.7%) with independent predictors of favorable attitude (AOR = 22.173 (95%CI = 1.643-299.194), good NVP adherence for baby (AOR = 26.917 (95%CI = 2.102-344.69) were independent predictors of recommended way of infant feeding practice (EBF) for the first six months.

Out of total study respondents about 56.8% with 95% CI of (49.3- 64.4%) had good knowledge towards infant feeding practice with identified factors of favorable attitude (AOR = 10.95 (95%CI = 3.855-31.118), duration of stay with partner (AOR = 7.078 (95%CI = 2.140-23.46), educational status of the mother (AOR= 14.421 (95%CI = 2.515-82.708) and primary source of information on infant feeding from Health care provider (AOR= 63.69(95%CI = 4.194-967.37) and mass media (AOR= 5.811 (1.348-25.091) were identified factors demonstrated greater likelihoods of had good knowledge among the study participants. This determined that the rate of HIV exposed infants positivity was 6(4.1%) at six weeks and 8(5.5%) at 18 months by rapid antibody test. This determined that the rate of HIV exposed infants positivity which was 6(4.1%) at six weeks and 8(5.5%) at 18 months by rapid antibody test. The prevalence of pediatrics HIV new infection among the study respondent s were higher as compared to national PMTCT and EMTCT target which were less than two percent and zero

pediatrics HIV infections respectively.

Recommendation

Based on the findings, the following recommendations were forwarded:-

Policy makers and health planers would be better to design programs and plans to increase the knowledge and practice of exclusive breast feeding among positive mothers by incorporated Information Education and Communication material which considering HIV exposed infants recommended way of feeding.

Health profession working at PMTCT/MNCH and ART in collaboration with mother to mother supporting group, would be better give greater emphases to address infant feeding practice options by using mass media , community mobilization and health education in more comprehensive manner to increase and to sustaining the recommended way of infant feeding practice among HIV infected women.

Shashemene Referral Hospital would be better to strengthen the works on creating the awareness towards exclusive breast feeding among HIV positive mothers during Antenatal care, ART follow up postnatal care by including distributions of different IEC materials which focuses on infant feeding practice among HIV infected women.

Health professionals would be better to counsel infant feeding options based on national breast feeding guidelines for better outcome for HEIs and also to increase their level of knowledge and to decrease misconception towards infant feeding practice among HIV exposed infants.

The prevalence of pediatrics HIV new infection among the study respondents were higher as compared to national PMTCT and Elimination of mother to child transmission (EMTCT) target which were less than two percent and zero pediatrics HIV infections, so it would be better to reconsidered by health planners real practice with proposed target.

Therefore, these factors would be emphatically considered during development of infants feeding program by policy makers and health planners.

Further prospective study methods on large scale of different study facilities by including health centers and Hospital were recommended for researchers

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

Dereje Bayissa Demissie , Fikadu Tadesse, Bezawit Bezabih, Assefa Chala , Yirgalem Kebede, Gemmechu Obsa, Jemal Negewo are principal investigators, participated in Conceptualized the study, designed the study instrument and conducted the data analysis, in addition to the above mentioned contribution Mr.**Dereje Bayissa Demissie** wrote the first draft and final draft of the manuscript and involve in critical review of the manuscript. All authors read and approved the final manuscript.

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