American Journal of Public Health Research, 2015, Vol. 3, No. 5A, 72-79
Available online at http://pubs.sciepub.com/ajphr/3/5A/16

DOI:10.12691/ajphr-3-5A-16

Factors Influencing Infant Feeding Choices of HIV Positive Mothers in Southwestern, Nigeria

Usman Aishat[1,3,*], Fawole Olufunmilayo[2,3], Dairo David[2,3], Saheed Gidado[3]

[1]Department of Community Medicine, LAUTECH Teaching Hospital, Osogbo, Osun State, Nigeria
[2]Department of Epidemiology and Medical Statistics, University of Ibadan, Nigeria
[3]Nigeria Field Epidemiology and Laboratory Training Programme, Abuja, Nigeria
*Corresponding author: labukol@yahoo.com

Abstract Breastfeeding is a socio-culturally acceptable, universal way of feeding infant during the first year of life and a key determinant of child survival and development. Semi-structured interviewer-administered questionnaire was used in the cross-sectional survey to obtain data from 600 HIV positive mothers to assess practices regarding infant feeding choices and factors influencing these choice(s) by mothers enrolled in Prevention of Mother -to -Child Transmission (PMTCT) of HIV clinics in Oyo State, Southwestern, Nigeria. Majority of the mothers (86.0%) was married and aged 31.0 ± 5.7 years. Slightly above half (53.0%) had ≤ 2 children and more than two-third had disclosed their HIV status to their spouses. About two-third (61.0%) were traders with 75.0% earning monthly income ≤ ₦18,000.00k. Half of the mothers had ≥ 3 antenatal care visits and 85.0% had infant feeding counselling. Infant feeding choices among the mothers were Exclusive Breast Feeding (EBF) (61.0%), Exclusive Replacement Feeding (ERF) (26.0%) and Mixed Feeding (MF) (13.0%). The choice of EBF, ERF and MF were influenced by fear of stigmatisation (55.0%), disclosure of HIV status to spouse (67.0%) and neighbours' advice (66.0%) respectively. Predictors of EBF were; monthly income [AOR = 2.6, C.I. =1.45-4.59], infant feeding counselling [AOR = 2.7, C.I. = 1.62-6.94)] and fear of stigmatisation [AOR = 7. 2, C.I. = 2.11-23.60]. Predictors of ERF were; being a civil servant [AOR = 5.7, C.I. = 2.51-16.42], desire to reduce the risk of transmission of HIV [AOR = 2.5, C.I. =1.03-11.83] and disclosure of HIV status to spouses [AOR=5.0, C.I. =3.81-23.01]. Predictors of MF were; parity < 3 [AOR = 3.4, C.I. =1.72-6.96], receiving neighbours' advice [AOR = 4.6, C.I. = 3.72-56.21] and infant illness [AOR = 6.8, C.I. = 4.0 -35.10]. Although a high proportion of mothers practiced exclusive breastfeeding for fear of stigmatization, mixed feeding is still being practiced due to neighbours' advice. Family members' education on safer infant feeding practices and behavioural change programmes in the context of HIV is advocated.

Keywords: *mother-to-child transmission, infant feeding choices, HIV clinics*

Cite This Article: Usman Aishat, Fawole Olufunmilayo, Dairo David, and Saheed Gidado, "Factors Influencing Infant Feeding Choices of HIV Positive Mothers in Southwestern, Nigeria." *American Journal of Public Health Research* vol. 3, no. 5A (2015): 72-79. doi: 10.12691/ajphr-3-5A-16.

1. Introduction

Infant feeding is essential in the first year of life and a key determinant of child survival and development. Breastfeeding is a universal socio-culturally acceptable, nutritious way to feed an infant and enhances child's immunity [1]. However, research indicates that breast milk contributes about 15% of the risk of HIV transmission from an infected mother to the child, especially when mixed feeding is practiced before weaning [2]. HIV prevalence in Oyo State is 5.6 % [3]. According to Oyo State Ministry of Health (2010), 3.4% of women attending antenatal care in the State were diagnosed as HIV positive [4]. In 2000, about 10% of the reported HIV and AIDS cases in Oyo State were in children under the age of five [5]. Globally, it is estimated that 35% of under-five mortality is due to HIV and AIDS [1].

Prevention of mother-to-child transmission (PMTCT) of HIV is an important intervention in the prevention and control of HIV and AIDS to reduce child mortality and increase the rate of child survival [1].

A culturally acceptable, low cost approach to infant feeding is essential to prevent HIV transmission through breast milk [6]. In countries not affected by HIV, improving infant feeding can reduce mortality by up to 19%. The impact could be greater in HIV affected populations if interventions that reduce HIV transmission through breastfeeding could be successfully linked to strategies that improve infant feeding practices [6]. However, this is confounded by the complexity of identifying the most appropriate infant feeding practices that fit household and social circumstances of mothers. The World Health Organization recommends that in light of the effectiveness of Anti-retrovirals (ARVs), HIV infected mothers should continue breast feeding their infant until twelve months of age [7]. This capitalizes on the maximum benefit of breast feeding to improve the

infant's chances of survival while reducing the risk of HIV transmission. The Nigerian national HIV guidelines states that avoidance of all breastfeeding by HIV-infected mothers is recommended "when replacement feeding is acceptable, feasible, affordable, sustainable and safe (AFASS). Otherwise, exclusive breastfeeding is recommended during the first months of life" [8]. This calls on governments and donors to increase commitment to and resources for improving infant feeding practices in HIV affected populations. The investment should be targeted to effectively prevent infants from becoming infected with HIV through breastfeeding, improve HIV free-survival of infants and achieve international developments goals, such as Millennium Development Goals (MDGs) and those set by United Nations General Assembly Special Session on HIV and AIDS (UNGASS) [7].

The risk of HIV transmission increases (25-45%) with the age of infant and maternal practice of mixed feeding before 6 months of life [8]. Supporting optimal infant feeding practices was a challenge for health systems [7]. In Nigeria, this was influenced by limited number of health facilities, health workers, competing demands on time, inadequate capacity, illiteracy among mothers and poor information sharing. There are limited comprehensive intervention package available to postpartum mothers in most health facilities in Oyo State. Interventions on PMTCT were offered in some facilities in Oyo State through the AIDS Prevention Initiative in Nigeria (APIN) project funded by President's Emergency Plan for AIDS Relief (PEPFAR). Feeding of the HIV-exposed infant in settings where a high premium is placed on breastfeeding is therefore a major challenge. There is paucity of data on factors influencing infant feeding choice of HIV positive mothers in Oyo State. This study therefore determined factors influencing infant feeding choices of HIV positive mothers enrolled in PMTCT clinics in Oyo State.

2. Materials and Methods

A cross-sectional design was used for the study.

2.1. Setting

The study was conducted in six PMTCT clinics in Oyo State. These clinics were selected because they provide access to universal Highly Active Anti-retroviral Therapy (HAART) prophylaxis to the population of interest (eligible HIV positive mothers) and thus constitutes a reliable sampling frame from which participants were recruited.

2.2. Study Period

This study was conducted for two years from July 2012 to June 2014

2.3. Study Population

The study population included all HIV positive mothers attending the selected PMTCT clinics in Oyo State for universal HAART programme services during the study period using a two stage sampling technique. The respondents who were eligible to participate in the study included: HIV positive mothers who participated in the PMTCT programme in the 6 facilities and HIV positive mothers with babies between the ages of 6 weeks and 12 months.

2.4. Data Collection

The questionnaires were pre-tested .The pre-tested questionnaires were analyzed and neccesary modifications were effected before the actual data collection.Data was collected from the selected PMTCT clinics over a period of four weeks with the assistance of four research assistants. Data from the respondents were collected using an interviewer administered semi-structured questionnaire. The questionnaire consisted of 3 sections namely: Socio-demographics, infant feeding practices and factors influencing choice of the infant feeding practice. In order to ensure respondents understood the questionnaire, the protocol was translated to Yoruba language, the predominant language in the study area and translated back to English after the interview. Research assistants who can write and speak Yoruba fluently were used during the interview to ensure good communication. Data collection instrument was identified only from participant's number and not by name. Interviews were done in private areas usually the consulting rooms in the clinics.

2.5. Ethical Considerations

Approval for the study was obtained from the Ethical Research and Review Committee of Oyo State Ministry of Health. Written informed consent was obtained from the mothers. In order to ensure confidentiality of any information provided, the data collection procedure was anonymous (no name was obtained). The research presented no harm to the respondents, as no new procedure was tested.

2.6. Data Analysis

The filled questionnaires were checked for completeness daily and data was entered into the computer. The fields were checked and validated before analysis. Descriptive statistics were computed using Epi-info Version 7.0 to generate summary statistics [9]. Frequency tables, charts, proportions and means were used to describe the data.

Bivariate analyses was done to measure association between independent variables and infant feeding options using Crude odd's ratio(COR). The $p < 0.05$ was used to determine level of statistical significance. Logistic regression model was fitted to identify factors influencing choice of infant feeding practice by HIV positive mothers.

3. Results

3.1. Socio - Demographic Characteristics of HIV Positive Mothers

The mean age of the mothers was 31.0 ± 5.7 years. Majority (86.0%) were married and (80.0%) had babies less than six months of age. Two hundred and fifty-three mothers (42.2%) completed secondary school education

and their main occupation was trading. Three hundred and forty-three (57.0%) were Christians. Four hundred and ninety-eight (93.0%) of the mothers had monthly income less than ₦18,000.00k.

3.2. Infant Feeding Practices

From 600 HIV positive mothers, 480 (80.0%) HIV positive mothers had children with age less than 7 months. Of the 480 (80.0%) HIV positive mothers, 293 (61.0%) exclusively breastfed their children, 62 (12.9%) practiced mixed feeding and 125 (26.0%) practiced exclusive replacement feeding. Influencing factors for exclusive breast feeding practice is given in Table 1.

Table 1. Factors influencing Exclusive breast feeding practice

Variables	Exclusive Breast Feeding (293)	Crude Odd's Ratio (COR)	Adjusted Odd's Ratio (AOR)
Age(years)			
≤35	215(73.4)	1	1
>35	78(26.6)	0.9(0.23-2.39)	1.2(0.22-13.21)
Parity			
< 3	246(84.0)	2.6(0.58-4.21)	1.6(0.58-4.21)
≥3	47(16.0)	1	1
Educational status			
None/Primary	95(32.3)	1	1
≥ Secondary	198(67.7)	1.2(0.11-3.52)	0.9(0.02-5.31)
Marital status			
Married	280(95.7)	2.3(0.55-9.81)	1.2(0.92-7.81)
Never married	13(4.3)	1	1
Occupation			
Civil servant	66(22.6)	2.1(0.11-15.32)	2.1(0.11-15.32)
Trader	196(67.2)	0.4(0.14-13.21)	0.4(0.14-13.21)
Unemployed	31(10.2)	1	1
Monthly income(Naira)			
≤18000	245(94.3)	4.6(2.45-41.19)*	2.6(1.45-4.59)*
>18000	17(5.7)	1	1
Disclosure of status to spouse			
Yes	172(67.9)	1.5(0.89-11.53)	3.5(0.80-10.53)
No	81(32.1)	1	1
Number of ANC attendance			
< 3times	48(19.7)	1	1
≥ 3times	196(80.3)	4.6(0.66-32.2)	4.2(0.21-14.92)
Infant feeding counselling			
Yes	195(80.0)	5.2(2.69-61.94)*	2.7(1.62-6.94)*
No	49(20.0)	1	1
Fear of stigmatization			
Yes	185(63.1)	5.2(2.13-13.00)*	7.2(2.11-23.60)*
No	108(36.9)	1	1
Neigbour's advice			
Yes	176(60.1)	1.4(0.05-6.00)	1.4(0.03-5.00)
No	117(39.9)	1	1
Infant illness			
Yes	33(11.3)	0.1(0.06-1.85)	1.2(0.06-1.35)
No	260(88.7)	1	1
Desire to reduce the risk of transmission			
Yes	206(70.3)	0.9(0.31-8.71)	0.6(0.11-2.71)
No	87(29.7)	1	1
Family influence			
Yes	237(81.0)	0.8(0.03-4.21)	1.8(0.84-4.21)
No	56(19.0)	1	1
Health worker's Influence			
Yes	193(65.9)	2.8(0.84-4.90	0.3(0.34-3.26)
No	100(34.1)	1	1

Exclusive replacement feeding practice was influenced by the factors given in Table 2.

Factors which influenced mixed feeding practice are given in the following Table 3.

Table 2. Factors influencing Exclusive Replacement Feeding practice

Variables	ERF(n=125)	COR	AOR
Age(years)			
<35	85(68.0)	1	1
>35	40(32.0)	2.2(0.82-6.53)	1.9(0.01-3.21)
Parity			
<3	118(95.2)	0.5(0.18-1.49)	1.8(0.91-1.49)
>3	7(4.8)	1	1
Educational status			
None/Primary	50(40.0)	1	1
> Secondary	75(60.0)	0.7(0.39-1.54)	1.6(0.50-9.43)
Marital status			
Mamed	116(92.8)	0.5(0.15-2.18)	0.8(0.35-2.18)
Never married	9(7.2)	1	1
Occupation			
Civil servant	30(24.0)	3.7(2.50-10.12)*	5.7(2.51-16.42)
Trader	85(68.0)	0.9(0.02-1.34)	0.4(0.14-13.21)
Unemployed	10(8.0)	1	1
Monthly income (Naira)			
<18000	85(73.9)	0.2(0.10-1.74)	0.5(0.03-1.90)
>18000	30(26.1)	1	1
Disclosure of status to spouse			
Yes	90(78.2)	2.5(1.18-23.10)+	5.0(3.81-23.01)
No	25(21.8)	1	1
Number of ANC attendance			
< 3times	20(22.2)	1	1
> 3times	70(77.8)	1.4(0.75-3.36)	1.4(0.55-2.89)
Infant feeding counselling			
Yes	64(71.1)	3.2(0.49-19.02)	3.9(0.99-16.02)
No	26(28.9)	1	1
Fear of stigmatization			
Yes	32(25.6)	2.3(0.73-9.21)	0.3(0.13-1.21)
No	93(74.4)	1	1
Neigbour’s advice			
Yes	32(17.6)	2.2(0.45-6.32)	4.2(0.45-9.02)
No	103(83.4)	1	1
Infant illness			
Yes	69(55.2)	1.3(0.42-5.04)	3.3(0.42-9.04)
No	56(44.8)	1	1
Desire to reduce the risk of transmission			
Yes	89(71.2)	6.5(1.03-17.23)*	2.5(1.03-11.83)*
No	36(28.8)	1	1
Family influence			
Yes	37(29.7)	0.2(0.32-4.20)	0.8(0.54-9 21)
No	88(70.3)	1	1
Health worker's Influence			
Yes	30(23.9)	3.1(0.72-8.21)	1.3(0.34-8.76)
No	95(76.1)	1	1

Table 3. Factors influencing Mixed Feeding practice

Variables	MF(n = 62)	COR	AOR
Age(years)			
≤35	57(91.9)	1	1
>35	5(8.1)	0.3(0.01-1.14)	4.9(0.01-9.91)
Parity			
< 3	42(67.7)	2.6(1.49-4.57)*	3.4(1.72-6.96)*
≥3	20(32.3)	1	1
Educational status			
None/Primary	37(59.6)	1	1
≥ Secondary	25(40.4)	1.6(1.23-4.59)	7.6(0.23-14.50)
Marital status			
Married	35(56.5)	0.2(0.01-1.71)	0.6(0.01-2.70)
Never married	27(43.5)	1	1
Occupation			
Civil servant	5(8.1)	2.3(0.91-9.72)	0.5(0.05-1.42)
Trader	42(67.8)	1.8(0.92-7.20)	2.2(0.04-3.62)
Unemployed	15(24.1)	1	1
Monthly income(Naira)			
≤18000	39(82.9)	0.9(0.34-2.31)	0.4(0.24-2.81)
>18000	8(17.1)	1	1
Disclosure of status to spouse			
Yes	35(56.5)	2.8(0.43-9.52)	1.8(0.43-6.52)
No	27(43.5)	1	1
Number of ANC attendance			
< 3times	42(22.2)	1	1
≥ 3times	20(77.8)	3.8(0.56-3.19)	0.2(0.03-5.11)
Infant feeding counselling			
Yes	46(74.1)	2.2(0.56-8.65)	4.2(0.56-12.65)
No	16(25.9)	1	1
Fear of stigmatization			
Yes	55(88.7)	1.4(0.83-5.32)	2.4(0.33-5.92)
No	7(11.3)	1	1
Neigbour's advice			
Yes	55(82.3)	8.2(3.72-56.21)*	4.6(3.72-56.21)*
No	11(17.7)	1	1
Infant illness			
Yes	57(92.8)	3.5(1.90-31.10)*	6.8(4.00-35.10)*
No	5(7.2)	1	1
Desire to reduce the risk of transmission			
Yes	32(51.6)	1.4(0.07-9.41)	2.4(0.03-7.41)
No	30(48.4)	1	1
Family influence			
Yes	58(93.5)	1.3(0.80-18.32)	0.1(0.04-2.21)
No	4(6.5)	1	1
Health worker's Influence			
Yes	7(11.3)	1.2(0.07-3.25)	1.9(0.34-4.76)
No	55(88.7)	1	1

4. Discussions

In the present study, most of mothers practiced exclusive breastfeeding. This is in line with 68.3% in Ile-ife, Southwestern, Nigeria [9] and this may be because the studies were from the same region of the country. The practice of exclusive breast feeding from the present study is lower than the rate of 83.7% from Ethiopia [10] and also comparatively higher than 10% reported in Ibadan

[11] and 13% reported in Lagos [12]. One possible explanation may be that not breast feeding at all is against the cultural norm in Oyo State; so many mothers will not want to go against the culture.

Doherty *et al.* noted that exclusive breastfeeding is the single most important strategy for reducing child morbidity and mortality associated with infectious disease in both resource rich and resource poor settings particularly in the first months of life [13]. Therefore the fact that 61.0% of mothers in this study practiced exclusive breastfeeding is a positive finding.

The proportion of mothers who practiced exclusive replacement feeding was less than one- third of the studied population. The ERF practice was lower than 73.5% reported from Lagos [12] and 93.5% in Ibadan [11]. The difference in the proportion of ERF practice may be as a result of difference in the study settings from that of Oladokun and Olatona where study settings were mainly tertiary health care facilities. Patients in tertiary health facilities are generally better educated and of high socio-economic status who can afford to practice exclusive replacement feeding by satisfying the AFASS criteria. Also finding of ERF practice from South Africa was 50.0% [14] were also higher than the findings of the present study. This may be due to feeding culture in Nigeria where breastfeeding a child is a norm as well as the availability of resources to practice exclusive replacement feeding which may not be feasible.

The proportion of mothers who practiced mixed feeding (13.0%), an undesirable practice within the first six months was lower than what was reported in Ibadan [11]. This may be due to the setting where Oladokun *et al.* carried out their study which is a federal health institution may not really be representative of Oyo State. The findings from the present study is also similar to studies from Addis Ababa in Ethiopia 15.3% [15] and also in South Africa 12.4% was reported [15] but also higher than 8.0% reported from Lagos [12]. Majority of those who practiced mixed feeding did so because they yielded to pressure from neighbors, family and friends.

In the Nigerian tradition especially in Southwestern region, many mother's feel breast milk is not enough for child growth and intend to mix feed even though they have been informed by health workers that breast milk is sufficient in the first 6 months of life. Evidence has shown that some traditional beliefs, practices and rites encourage the use of prelacteal feeds as well as giving extra water, herbs and teas to breastfeeding babies [16]. Also, feeding the infant with water is regarded as cultural gesture to welcome the child to the world [17].

Mixed feeding has been shown to damage intestinal lining of the guts of infants, leading to an increased risk of HIV transmission through breast milk [6]. Understanding and addressing local beliefs and customs can help counselor's to provide more culturally appropriate counseling about exclusive breastfeeding.

4.1. Factors Influencing Exclusive Breast Feeding

Income is a factor that influences purchasing power at household level. It affects affordability and access to infants feed [18]. Majority of the mothers interviewed had low monthly income of < ₦18,000k.Variations in level of income exposed mothers to different levels of purchasing power. There was a statistical significant association between monthly income and practicing EBF. This is similar to findings from Kenya where 68.7% of mothers had low annual income of less than Ksh 12,000(₦ 24,000) practiced EBF [19].

Another factor that influenced the choice of EBF was the exposure to counseling on infant feeding options during ANC visits. Mothers who were counseled on infant feeding options recommended for HIV positive mothers chose exclusive breastfeeding as an option to feed their children. This finding is similar to that demonstrated by Ndubuka *et al.* where receiving infant feeding counseling was significantly associated with decision to exclusively breastfeed [18]. This shows that the counseling had good impact on the mother's choice of infant feeding. Strengthening the counseling being provided during antenatal clinic visits of mothers in health institutions in the study areas and reinforcing counseling of the HIV positive mothers delivered in the maternity ward as part of the PMTCT program in Oyo state is recommended in the PMTCT of HIV in the areas.

Practicing exclusive breastfeeding was associated with fear of stigmatization. Mothers who did not want to be stigmatized were seven times more likely to practice exclusive breastfeeding. This finding is similar to findings of Muhammed *et al.* and Aswa where mothers who practiced exclusive breastfeeding did so for fear of stigmatization [22,23]. Stigmatization within the community makes HIV mothers prone to the practice of mixed feeding which increases childhood morbidity and mortality [24].

4.2. Factors Influencing Exclusive Replacement Feeding

Mothers who practiced exclusive replacement feeding in this study were Civil servants. This is similar to findings from Ethiopia mothers who were daily laborers were fifteen times less likely to practice ERF than the government workers who may have to put their babies in day care centers during the official hours [10]. Muko *et al.* also reported that 12.5% of mothers did not breastfeed their babies because of their job demand [25]. This finding implies that civil servants mothers may not have enough time to look after the feeding processes of their babies once they are in office and this may pose a risk to infections and diarrhoea diseases which may also increase childhood mortality.

The findings from this study revealed that mothers who disclosed their HIV status to their spouse were five times more likely to practice exclusive replacement feeding than mothers who did not disclose their HIV status to their spouse (Table 2). This is similar to the findings from Muluye *et al.* where he found that mothers who disclose their HIV status to spouse were eight times more likely to practice recommended infant feeding options [10]. The disclosure rate in the present study is higher than what was reported from Ile-ife Nigeria where 50.0% of the mothers disclosed their status to their spouse [9]. Disclosure of HIV status might have psychological benefits as mothers who disclosed their status do not have to hide formula milk from their spouse. Such mothers are likely to receive comfort and support from their husbands and feel relieved.

The high disclosure rate among HIV positive mothers in this study corroborate the practice of the mothers. With this, mothers were free to practice their chosen feeding choice without fear, thereby reducing the risk of mixed feeding among mothers. Also this reduces the spread of HIV infection from mother to child and childhood mortality as a whole [24].

The desire to reduce the risk of transmission of HIV to their babies made some mothers practice exclusive replacement feeding. This is similar to findings from Ibadan and Lagos where most of the mothers chose not to breastfeed because they were worried about transmitting the virus to their babies [10,11]. Similarly, a qualitative study that assessed the acceptability, feasibility, affordability, safety and sustainability of replacement feeding options for HIV-infected mothers in Ile-Ife, in South-west Nigeria, reported that for infants of HIV-exposed mothers, the majority of the respondents perceived infant formula to be preferable to exclusive breastfeeding because of the risk of contracting HIV through breastfeeding [26]. Goosen reported that not breastfeeding an infant is associated with fear of transmitting HIV virus to babies [27].

4.3. Factors influencing mixed feeding

Mixed feeding practice was influenced by having two children or less. This may be as a result of their inexperience in child rearing /parenting or influences from family members. This is also supported by a report that social influence has effect on younger women especially young adolescents who may be uncertain when it comes to decision making [28]. Families insisted on their own decisions or less frequently, implement their preferred feeding practice without mother's consent. Accommodating the family wishes was an adaptive mechanism coping strategy as adolescent mothers have enormous challenges of parenting [19].

Another factor that influenced the choice of mixed feeding was infant illness. Mothers whose infant were ill were seven times more likely to practice mixed feeding. This is also in line with a study from Ethiopia where mothers whose infant were ill were two times likely to practice mixed feeding than those whose infant were not ill [15]. This may be so because many mothers will want their babies alive and healthy and will not hesitate to give their babies anything so far they have the assurance that such substances or fluids will make the baby well.

Practices are sometimes a product of influence from people who live around you [29]. Mixed feeding among the mothers was five times higher among mothers who listened to neighbor's advice. Majority explained that it was difficult for them to practice exclusive breast feeding especially in extended family relationships.

5. Conclusions

Infant feeding is critical in early life and a key determinant to child survival and development. This is more challenging in the context of HIV due to vertical transmission from mother to child. In general, infant feeding practices observed in this study fall short of the WHO recommendations.

The choice of maternal infant feeding practices was to a greater degree influenced by social and economic factors within the mothers living environment. These factors included mother's income, occupation, disclosure of HIV status to spouse, neigbour's influence, parity and fear of stigmatization. These findings are important in targeting interventions towards improving prevention of mother to child transmission of HIV/AIDS, thus ensuring that all HIV positive mothers practice the recommended infant feeding options. The relevance of these findings lies in the reinforcement of collaborative roles of community members, health workers, and government in the fight against HIV/AIDS. These are vital towards reducing childhood mortality thus achieving the fourth and sixth Millennium Development Goals.

6. Limitations of the Study

Responses of mothers on infant feeding practice could not be validated because they were self reported however, mothers might have given socially desirable responses.

Conflict of Interest

Authors declare no conflict of interest.

Acknowledgement

Authors wish to acknowledge Nigeria Field Epidemiology and Laboratory Training Programme and African Field Epidemiology Network (AFENET) for funding this research.

List of Abbreviations

AOR: Adjusted Odd's ratio
ANC: Antenatal Care
COR: Crude Odd's ratio
EBF: Exclusive Breast Feeding
ERF: Exclusive Replacement Feeding
HAART: Highly Active Anti-retroviral Therapy
MF: Mixed Feeding

References

[1] UNAIDS. (2010). Report on the Global AIDS Epidemic. Preventing Mother-to- Child Transmission of HIV (PMTCT)

[2] Nduati, R. Richardson, B.A and John, G., Effect of breastfeeding on mortality amongHIV infected women: Randomised trial. *Lancet*.2001;*357*, pp.1651-1655

[3] Federal Ministry Of Health. 2012. *National HIV/AIDS and Reproductive Health Survey* (NARHS) in Nigeria,2012

[4] Ministry of Health. 2010. DHMIS data quarter 3,HIV/AIDS unit,Oyo State, 2010.

[5] Federal Ministry of Health. 2008. .*National HIV/AIDS and Reproductive Health Survey* (NARHS) in Nigeria, 2008Adejuyigbe E, and Odebiyi A. 2006. Parental HIV serodiscordance: implications for the care of the HIV seropositive child in a poor-resource setting. *AIDS Care*, 18:537-543.

[6] Coovadia M, Rollins C, Bland M, Little K, Coutsoudis A, Bennish L, Newell M. 2007.Mother-to-child transmission of HIV-1 infection during exclusive breastfeeding in the first 6 months of life: an intervention cohort study. *Lancet*, 369:1107-1116.

[7] WHO (2010). HIV and Infant Feeding. UNAIDS/WHO/UNICEF Guidelines for Decision Makers. World Health Organization. Geneva. pp 12-17.

[8] Federal Ministry of Health. 2010. *National Guidelines for Prevention of Mother-to-Child Trasmission(PMTCT) of HIV in Nigeria*, 2010:52-55

[9] Adejuyigbe E, Orji E, Onayade A, Makinde N and Anyabolu H. 2008.Infant feeding intentions and practices of HIV-positive mothers in Southwestern Nigeria. *Journal of Human Lactation*, 24:303-310.

[10] Muluye D, Desalegn W, Mucheye G and Moges T. 2012. Infant feeding practice and associated factors of HIV positive mothers attending prevention of mother to child transmission and antiretroviral therapy clinics in Gondar Town health institutions, Northwest Ethiopia. *BMC Public HealthJournal* 12:240

[11] Oladokun R, Brown J and Osinusi K. 2010. Infant-feeding pattern of HIV- positive women in a prevention of mother-to-child transmission (PMTCT) programme. *AIDS Care*, 22(9):1108-14.

[12] Olatona A., Ginigeme N., Roberts A and Amu O. 2014. Infant feeding practices in the first six months of life among HIV positive mothers attending Teaching Hospitals in Lagos, Nigeria. *Nigerian Journal of Peadiatrics*, 41(1):64-69

[13] Doherty T., Sanders D., Goga A. and Jackson, D. 2011. "Implications of the new WHO guidelines on HIV and infant feeding for child survival in South Africa". *Bulleting World Health Organization*. 89(1) : 62-67.

[14] Becquet R, Bland R, Leroy V, Rollins NC, Ekouevi DK, Coutsoudis A, Dabis F, Coovadia HM, Salamon R and Newell M. 2009. Duration Pattern of Breastfeeding and Postnatal Transmission of HIV: Pooled Analysis of Individual Data from West and South African Cohorts. *PLoSONE* , 4:e7397. 14.

[15] Maru Y. and Haidar J. 2009. Infant feeding practice of HIV positive mothers and its determinants in selected health institutions of Addis Ababa, Ethiopia. *Ethiopian Journal of Health Development* , 23:107-114.

[16] Nwanko BO, Brieger WR.2012. Exclusive breastfeeding is undermined by use of other liquids in rural south western Nigeria. *Journal of Tropical Paediatrica*, 48: 109-112.

[17] Njunga J. 2008. Infant Feeding Experiences of HIV positive mothers enrolled in Prevention of Mother -to -Child Transmission (PMTCT) programmes: The case for Rural Malawi. MSC Thesis. Medical School of Dentistry Norway, University of Bergin. Available at: https://bora.uib.no/bitstream/ handle/1956/2883/47446228.pdf?sequence=1. Accessed June 6, 2013.

[18] Ndubuka J., Ndubuka N., Li Y., Caitlin M., Ehiri J. 2013. Knowledge, attitudes and practices regarding infant feeding among HIV-infected pregnant women in Gaborone, Botswana: a cross-sectional survey. *BMJ Open* .Acccesed from http:// bmjopen./bmj.com on December 31, 2013.

[19] Wapang'ana G. 2013. Assessment of factors influencing infant feeding practices among HIV positive mothers in Rongo District, Western Kenya. MPH Thesis School of Public Health.Kenyatta University.

[20] Hailu C. 2005. Assesment of knowledge, attitude and practice among mothers about VCT and feeding of infants born to HIV positve women in Jimma Town, Ethopia. MPH Thesis.Department of Community Health. Addis Abba University ,Addis Ababa

[21] Mengistie A. 2011. Assessment of factors associated with infant and young child feeding practices by HIV positive mothers in selected hospitals of SNNPR, Ethiopia. MPH Thesis.Department of Community Health. Addis Abba University ,Addis Ababa.

[22] Mohammed A, Shehu U, Aliyu A, Zoaka I. 2010. Infant feeding options, practices and determinants of HIV-positive mothers in Abuja, Nigeria. *Nigerian Medical Journal*, 51:14-17

[23] Aswa L. 2010. Study of factors affecting uptake of Exclusive Breastfeeding among HIV positive postnatal mothers in Kitwe urban district. MPH Thesis. Dept. of Community Medicine. University of. Zambia.

[24] Doherty T, Chopra M, Nkonki L, Jackson D, Greiner T. 2006. Effect of the HIV epidemic on infant feeding in South Africa: "When they see me coming with the tins they laugh at me ". *Bulletin of World Health Organization*, 84(2): 90-96.

[25] Muko K.N,Tchangwe G.K,Ngwa V.C and Njoya L. 2004. Preventing mother-to-child transmission:factors affecting mothers' choice of feeding—a case study from Cameroon. *Journal of Social Aspects of HIV/AIDS.*3:132-138.

[26] Abiona CT, Onayade A. A, Ijadunola T. K, Obiajunwa O.P, Aina O.I and Thairu L.N.2006. Acceptability, feasibility and affordability of infant feeding options for HIV-infected women: a qualitative study in Southwest Nigeria. *Maternal and Child Nutrition*, 2:135-44.

[27] Goosen C. 2013. Factors influencing feeding practices of primary care givers of infant 0-59 months in Avian Park and Zwelethembia,Western Cape,South Africa. MPH Thesis. Stenllenbosch University.

[28] Mcinnes R., Love G.and Stone, D. 2010. Independent predictors of breastfeeding intention in a disadvantaged population of pregnant women. *BioMed Central Public Health journal*, 1 (10): 1-4.

[29] Sebalda C., Peggy K., Anne A., Marina D. and Karen M. 2007. Translating Global Recommendations on HIV and Infant Feeding to the Local Context: The Development of Culturally Sensitive Counseling Tools in the Kilimanjaro Region, Tanzania. *Biomed Central Ltd*. Available at: http://www.implementationscience.Com/content/1/1/22. AccessedNovember 15th, 2013.