



# A Comparative Study of Compliance with Preferred Infant Feeding Options among HIV Positive Women in Osun State, South Western Nigeria

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## Author's contribution

The design, of this study, literature searches, data collection and statistical analysis employed in this study are original contributions of the author AWO. Author AWO read and approved the final manuscript.

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## ABSTRACT

**Aims:** This study assessed and compared compliance with preferred infant feeding options among HIV positive booked and un-booked women in Osun State in South western Nigeria.

**Study Design:** Descriptive cross sectional study.

**Place and Duration of Study:** This study was carried out in Osun state in South-western Nigeria between January 2007 and June 2009.

**Methodology:** Descriptive cross sectional comparative study among 210 booked and 105 un-booked HIV positive women, to assess their compliance with pre-delivery infant feeding options preferred up to four months after delivery. Research instruments employed were semi structured, interviewer administered and pre tested questionnaires. Responses were analyzed using the SPSS software version 13.0.

**Results:** More booked women 153 (72.9%) preferred or selected exclusive replacement feeding as compared with un-booked women 29 (27.6%). Among un-booked women, 43 (40.9%) currently breastfeeds exclusively, while 22 (21.0%) give cow milk. Among booked women, 44 (21.0%) currently breastfeeds exclusively while 152 (72.4%) give cow milk. Compliance rate with preferred breastfeeding option was higher among

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booked than un-booked women (77.2% vs. 58.1%,  $p=0.010$ ). Compliance rate with preferred replacement feeding option was also higher among booked than un-booked women, (93.2% vs. 75.9%,  $p=0.001$ ). Mixed feeding rate was higher among un-booked than booked respondents (27.6% vs. 6.7%,  $p=0.001$ ). Respondents who preferred breastfeeding and replacement feeding among un-booked women were a half ((O.R of 0.57, 95%C.I of 0.41-0.95, and  $p=0.013$ ) and one-third ((OR of 0.32, 95%C.I of 0.1-0.8 and  $p=0.044$ ) fold more likely to practice preferred method respectively when compared with booked women.

**Conclusion:** Un-booked HIV positive women were less likely to practice selected infant feeding method compared to booked women.

*Keywords: Booked and un-booked women; infant feeding options; Nigeria.*

## 1. INTRODUCTION

In sub-Saharan Africa, about 4.5 million children have been infected with HIV since the beginning of the HIV-1 pandemic, and most of these infections were from mother to child [1]. In sub-Saharan Africa where prolonged breast feeding is the norm, breast milk transmission of HIV-1 accounts for one third to one half of all pediatric HIV-1 infections [2,3].

It is estimated that between 60 and 80% of all deliveries in the developing countries occur outside modern health care facilities, with a significant proportion of this attended to by Traditional Births Attendants (TBAs) [4]. Thus, acceptability and patronage of alternative hospital care such as TBAs and mission houses, and deliveries at homes could be regarded as high in this environment. When pregnant women are un-booked during labour, or comes late to book in hospital settings or are referred on emergency level to hospitals from TBAs and similar places during labour, the quality of HIV preventive care they could receive could be regarded as low compared to when they are fully booked most especially early in pregnancy. The time immediately after delivery is critical for reconciling infant feeding choice and practices, and subsequent support for the woman on her infant feeding choice and decisions, thus lowering the risk of transmission through mixed feeding.

In high HIV prevalence settings, even scientists have been embroiled in debates around ideal feeding practice. Promotion of exclusive breastfeeding has the potential to prevent 8% of child mortality, or save 37 million disability-adjusted life years every year [5,6]. Replacement feeding can reduce HIV-transmission, but is also associated with morbidity related to diarrhoea and respiratory infections [7,8]. Compared to exclusive breastfeeding, mixed feeding is associated with increased morbidity and mortality for infants of HIV-positive mothers [9,10].

Replacement feeding also has its own limitation in terms of high cost, relative and steady availability, the need for mothers to adopt good hygiene in preparation of formula to prevent occurrence of diarrhea and relative acceptability in an environment like ours where breastfeeding could be described as universal and cultural. The Nigerian national guideline on Prevention of Mother to Child Transmission (PMTCT) of HIV stipulates adoption of feasible, acceptable, affordable, safe and acceptable infant feeding option for infants of HIV positive women. In this environment, exclusive breastfeeding is universal as in most African setting.

Refusal to breastfeed by a woman may give rise to suspicion of disease such as HIV and cancer and subsequent stigma and discrimination. With better awareness, and husbands standing by their wives in such decision making, exclusive replacement feeding option is a viable option for those who could afford it, even with the usual troubles of mother in-laws trying to intervene in the family affairs of their son. The other options of pre-heated breast milk, wet nursing are not popular. Exclusive breastfeeding with early cessation is a viable option for the working class who may get only three months as maternity leave. However, to circumvent many of these challenges, more attention is now being placed on exclusive breastfeeding option under cover of antiretroviral drugs.

The issue of the need to use modern health care facility in antenatal services, timing of counseling, and its contribution to infant feeding in the context of PMTCT of HIV would therefore come to focus by the outcome of this study. In this environment, most research have dwelt on infant feeding options, but none has been done on its pattern and consequences among un-booked women who deliver in non hospital settings or who came late during labour. The objective of this study is to assess and compare compliance with preferred infant feeding options among HIV positive booked and un-booked women in Osun state in south-western Nigeria.

## **2. MATERIALS AND METHODS**

Osun State is situated in the Southwestern part of Nigeria, with Osogbo town as the state capital. There are thirty local government councils and an area office (in Modakeke). The HIV prevalence in the state is a bit lower than the national average of 4.6% [11]. This is a descriptive cross sectional, comparative study of compliance with chosen infant feeding options among HIV positive mothers in Osun state. The target population constituted all HIV positive women of reproductive age 15 to 49 years who just delivered an HIV exposed baby in the last four to six months prior to data collection, while those who responded to the research instrument constituted the study population. HIV positive women who did not delivered in hospital setting or who arrived late (less than four hours) into delivery were excluded from the study, since such women may not have the benefit of being counseled on choice of infant feeding by the attending skilled birth attendant.

From a list of nine secondary health facilities providing comprehensive PMTCT care in the state, six were chosen at random employing simple balloting. One hundred and five un-booked HIV positive women who delivered in the six selected facilities within the 30 months period of January 2007 and June 2009 (and whose contact addresses could be ascertained and traced) were followed up till their babies gets to 4 months of age. Two hundred and ten HIV positive booked women (which is twice number of un booked) or had formal ante natal care within the sampled facilities within the same period (and whose contact addresses could also be ascertained and traced) were matched (based on age), selected and followed up like their un-booked counterpart.

With an apparently more number of women being booked, deliveries in alternate months were selected in choosing the booked subjects. All deliveries within a month were conveniently recruited into the study until the desired number of booked respondents was exhausted. Both booked and un-booked deliveries during weekends were excluded because of the concern that services for prevention of mother to child transmission of HIV may not be readily accessible during weekend.

Research instrument used in data collection from all respondents 4 months after delivery includes a specifically designed, pre-coded, semi structured and pre tested questionnaires administered by trained nurse interviewers and research assistants. Areas of ambiguity was cleared and modified after the pre-testing exercise. The questionnaire was specifically designed for this study as a modification of the WHO standard questionnaire on infant feeding used by Center for Disease Control and Prevention in the Infant Feeding Practices Survey II <sup>[12]</sup>. This WHO questionnaire followed women continuously from early pregnancy throughout their infant's first year of life. This study modified questions asked in some of the modules (prenatal questionnaire, birth screener interview, neonatal questionnaire and the infant diet history questionnaire that was administered when babies are 4 months old). A vernacular version of the questionnaire was prepared for the uneducated respondents to reduce inter-observer variation in interpretation during the interview. This vernacular version was 'translated or interpreted back' into English for further validity.

Information on socio-demographic characteristics of the respondents, events at periods of antenatal and delivery (ante-natal registration, those aware of HIV status, whether or not she received counseling on infant feeding), preferred or selected method of infant feeding, and practice of feeding options for exposed babies were obtained from respondents. All respondents were assessed 4 months after delivery. This study asked questions that relied on memory of events during the ANC period in the 2 groups of women. Compliance was assessed by a woman who practiced the same method that she preferred (or selected) during ANC counseling. Clinical outcome of interest is the 'proportion of women who practiced pre-selected method of infant feeding after childbirth, or 'proportion of babies who were fed on infant feeding method earlier selected by the mother during ante natal care'.

Ethical clearance was obtained from the research ethics committee of LAUTECH Teaching Hospital Osogbo, while permission was obtained from the State Hospital Management, the medical director of selected health facilities and the PMTCT project managers. Written informed consent was obtained from each of the women who took part in the study.

The questionnaires were sorted and data cleaned. The SPSS Version 12.0 statistical package was used for data entry and analysis. Frequency distributions of all relevant variables were produced. Relevant measures of central tendencies and dispersion such as mean and standard deviation were also computed for quantitative variables. The Chi-square test was used to demonstrate relationships between two categorical variables. Binary logistics regression analysis of relevant variables was done, while level of significance was set at P-values  $\leq 0.05$  for all inferential analysis. A limitation of this study is possible recall bias on the path of respondents since respondents were accessed four months after delivery and asked to recall some events that happened during pregnancy.

## **2.1 Definition of Terms**

The PMTCT guidelines in Nigeria provides that counseling on infant feeding for HIV positive women should commence as soon as pregnant women access care, and that health care workers should counsel pregnant women on the various feasible methods, towards making a choice voluntarily, and the method that should be followed up after delivery of the baby. Booked women: are those diagnosed HIV positive pregnant women who register in the hospital settings and received comprehensive care of the pregnancy continuing into birth Un-booked: women are HIV diagnosed pregnant women who showed up for the first time during labour or delivery and have received no earlier care from this hospital for the current

pregnancy. They may be on referral from TBAs and mission houses etc usually during labour or women who deliver the baby at home.

Preferred infant feeding option is the method that the diagnosed HIV positive pregnant woman chooses voluntarily after counseling during ANC or during labour but before delivery of baby (in the case of un-booked clients). Other words such as 'chosen' or 'selected' option also suffice.

Practiced infant feeding option: is the method that the diagnosed HIV positive (earlier pregnant) woman eventually adopted in feeding the child after birth, and this was assessed at 4 months after birth.

AFASS criteria: means affordable, feasible, acceptable, safe and sustainable (method if infant feeding) HIV exposed babies: These are babies born to HIV positive mothers but who has not yet been confirmed to be infected with HIV or not.

### 3. RESULTS

Table 1 shows that the mean age of respondents was 32.7 ( $\pm 2.2$ ) years for booked and 33.1 ( $\pm 1.5$ ) years for un-booked women. This mean age difference was not statistically significant ( $p=0.106$ ). One hundred and thirty four (63.8%) of booked women were married compared with 60 (57.1%) of un-booked. Four (3.8%) of un-booked and 17 (8.1%) of booked women having no formal education. The difference in level of education among the two groups was not statistically significant ( $p=0.062$ ). Table 2 shows that seventy five (68.2%) of un-booked and 14(6.6%) of booked women had their full antenatal care (ANC) outside formal hospital setting. About 18 (17.1%) of un-booked were aware of their HIV status during ANC as compared with 193 (92.0%) of booked women.

**Table 1. Socio demographic characteristics of respondents**

<b>Socio demographic characteristics</b>	<b>Un-booked (No/%) N=105</b>	<b>Booked (No/%) N=210</b>
<b>Age (in years)</b>		
15-19	3(2.9)	7(3.3)
20-29	28(26.7)	60(28.6)
30-39	56(53.3)	109(51.9)
40-49	18(17.1)	34(16.2)
<b>Marital status</b>		
Married	60(57.1)	134(63.8)
Single	19(18.1)	31(14.8)
Others	26(24.8)	45(21.4)
<b>Level of education</b>		
No formal education	4(3.8)	17(8.1)
Primary	18(17.1)	40(19.0)
Secondary	51(48.6)	92(43.8)
Tertiary	32(30.5)	61(29.0)

**Table 2. Knowledge and practice of infant feeding options (IFO) among respondents**

Variable	Un-booked (No/%) N=105	Booked (No/%) N=210
Respondent also had ANC or contact with non formal hospital setting such as TBAs	75(68.2)	14(6.6)
Respondent is aware of positive HIV status in early pregnancy	18(17.1)	193(92.0)
Respondent lives in a polygamous setting	69(32.9)	58(27.6)
Husband aware of respondent's HIV status	6(5.7)	114(54.3)
Mother/father In-laws aware of her HIV status	7( 6.7)	39(18.6)
Respondent received IFC counseling during formal ANC	28(26.6)	178(84.7)
Options of IFC respondents are aware of		
Breastfeeding only	96(91.4)	148(70.5)
Replacement feeding only	58(55.2 )	184(87.6)
Others	8(7.6)	25(11.9)
Preferred/selected method before delivery		
Breastfeeding	74(70.5)	57(27.1)
Replacement feeding	29(27.6%)	153(72.9)
Undecided before delivery	2(1.9)	0(0.0)
Respondent discussed infant feeding options with husband or relatives	17(16.2)	41(19.5)
Caesarian section as her mode of delivery	64(61.0)	28(13.3)
Method the baby is being fed on now (practice)		
Breast milk only	43(41.0)	44(21.0)
Cow milk only	22(21.0)	152(72.4)
Combined cow and breast milk	29(27.6)	14(6.7)
Respondent would like to continue her choice of Infant feeding for at least 6 months	74(70.5)	186(88.6)

**Table 3. Association between selected variables among booked and un-booked women**

Variables	Un-booked Women (n/%)	Booked women (n/%)	P value
Mean age(in years)	33.1 ( $\pm$ 1.5)	32.7 ( $\pm$ 2.2)	0.106
Level of education> primary	83 (79.1)	153 (72.8)	0.062
Client received IFC counseling during formal ANC	28 (26.6)	178 (84.7)	0.001
Compliance rate with exclusive breastfeeding (%)	58.1	77.2	0.010
Compliance rate with exclusive breastfeeding (%)	75.9	93.2	0.001
Mixed feeding rate (%)	27.6	6.7	0.001

The spouse/husband is aware of positive HIV status of his wife among 6 (5.7%) and 114(54.3%) of un-booked and booked women respectively. Mother or father in laws was aware of status among 7 (6.7%) of un-booked and 39 (18.6%) of booked women. Twenty eight (26.6%) of un-booked and 178 (84.7%) of booked received ANC counseling by the health care workers during ANC visits. There was general awareness of different options of

IFC by the two groups of respondents, though awareness of exclusive replacement feeding as an option was higher among booked clients compared to un-booked clients, and this difference was statistically significant (87.6% vs 55.2%,  $p=0.010$ ).

Preferred infant feeding (IF) option among un-booked women were 74 (70.5%) for breastfeeding and 29 (27.6%) for replacement feeding. Among the booked women, 57 (27.1%) preferred breastfeeding while 153 (72.9%) preferred replacement feeding option. About 17 (16.2%) of un-booked and 41(19.5%) discussed selected IF option with their husbands or relatives. Among un-booked clients, 43 (40.9%) currently feeds exclusively on breast milk, 32 (29.5%) exclusively on cow milk while 29 (27.6%) mix feeds. Among the booked women, 44 (21.0%) currently breastfeeds only, 152 (72.4%) gave cow milk only while 14 (6.7%) mix feeds.

Further analysis in Table 3 showed that the compliance rate with selected breastfeeding option was higher among booked than un-booked women, and the difference was statistically significant (77.2% vs. 58.1%,  $p=0.010$ ). Compliance rate with selected replacement feeding option was also higher among booked than un-booked women, and the difference was statistically significant (93.2% vs. 75.9%,  $p=0.001$ ). Mixed feeding rate was higher among un-booked than booked respondents and the difference was statistically significant (27.6% vs. 6.7%,  $p=0.001$ ).

Binary logistics regression analysis showed that respondents who preferred breastfeeding and replacement feeding among un-booked women are a half ((O.R of 0.57, C.I of 0.41-0.95, and  $p=0.013$ ) and one-third ((OR of 0.32, C.I of 0.1-0.8 and  $p=0.044$ ) fold more likely to practice preferred method respectively when compared with booked women.

#### **4. DISCUSSIONS**

The fact that over two thirds of un-booked and about one tenth of booked deliveries in this study had their full antenatal care (ANC) outside formal hospital setting could suggest that many deliveries in Osun state occur outside modern hospital care mostly with traditional birth attendants. This agrees with other studies [13,14]. This have a lot of implications for the quality of care that un-booked cases would receive most especially as regards the prevention of mother to child transmission of HIV/AIDs. Majority of booked women studied were aware of their HIV positive status during ANC compared with about one fifth of un-booked women, and similar trend goes for partner notification. This could be basically as a result of the fact that all booked women in formal hospital settings were usually offered opt out HIV counseling and testing, and are therefore expected to know their status. For the same reason, partners of booked women are being encouraged to come along with their wives and get tested for HIV followed by a partner notification and disclosure of results process.

When partners are notified and aware of spouse HIV positive status, the husbands could serve as strong support for the woman towards adherence to anti retroviral drugs. In addition, decision on infant feeding options would be discussed and taken jointly and the husband could give her support against socio-cultural and family influences that may traditionally hinder the exclusive or holistic practice of selected option or contributes to mix feeding. This is supported by another study in which disclosure was found to be significantly and positively associated with ARV adherence, and to both family functioning and social support [14].

Majority of booked women had infant feeding counseling right from ANC period. This would afford booked clients the opportunity of knowing the risks of mixed feeding, and assist them in compliance with preferred option. As for un-booked women, many of them presents late in labour and may only get counseled after delivery while a few get counseled during labour. Such messages may not be re-enforced for un-booked women.

The timing of infant feeding counseling and selection of choice as reflected in this study supports another study in which the hospital counselor was described to have an important role in assisting women in their intended feeding choice as well as actual practice. The time immediately after delivery was noted as critical for reconciling about infant feeding and further support of the woman's decision, thus lowering the risk of mixed feeding [15].

Preference for breastfeeding was more for un-booked women while most of booked women preferred replacement feeding. This is expected as a traditional Nigerian woman is expected to commence breastfeeding immediately after delivery of a baby. The high awareness of HIV, and being a member of a HIV support group might have prompted many booked women into a preference for replacement feeding option.

Mixed feeding was observed among one fifth of un-booked women and about one twentieths of booked women. Un-booked clients may have challenges in continuing their selected options because they may not have the opportunity of repeated or reinforced message sessions by the attending care provider. Mother in laws and spouse who may not be aware of positive HIV status of the woman could serve as constraints to continuity of earlier selected infant feeding option. In addition, non affordability of replacement foods, and inability of un-booked women to cope with possibly changing AFASS criteria may prompt them into mix feeding, whereas booked women would have considered all these factors during repeated ANC counseling before opting for a method of infant feeding (IF).

The higher compliance rate with preferred infant feeding options (both exclusive replacement and exclusive breastfeeding options) among booked women stressed the importance of access of clients to trained health care workers, availability of full PMTCT services and re-enforcement of preferred infant feeding options and feeding support given to clients immediately after delivery. An un-booked woman may not benefit from these measures. In a comparative study among HIV positive women, exclusive replacement feeding, exclusive breastfeeding and mixed feeding were 46.8%, 30.6%, and 15.3% respectively [16]. Another study also demonstrated about 87.2% practiced exclusive replacement feeding, while 8.5% and 4.3% practiced exclusive breastfeeding and mixed feeding respectively [17].

However, the seemingly high compliance of un-booked women with preferred replacement feeding option may be disputed by the high rate of mixed feeding among un-booked women when compared with a very low mixed feeding rate recorded among booked women. These explanations that some of those un-booked women who preferred replacement feeding option might have ended up with mixed feeding could support some of the statistically significant association observed among some selected infant feeding options variables and their eventual practice as observed in this study. Issues relating to compliance with infant feeding options may be adequately addresses when all HIV positive mothers have clear cut and evidence based directive to go ahead to exclusively breastfeed their babies in which case affordability, sustainability, feasibility, availability and socio-cultural barriers would have been removed.



## **5. CONCLUSION**

Un-booked women are less likely to practice preferred or selected infant feeding method compared to booked women. Since HIV could be transmitted during infant feeding, health care workers need to carry out quality infant feeding counseling in a repeated, re-inforced and timely manner to all HIV positive women immediately they come in contact with them. More efforts should be geared towards early counseling of un-booked women during labour so that they could also benefit from the compliance with preferred infant feeding options later after delivery.

## **CONSENT**

The author declares that 'written informed consent was obtained from the patients (or other approved parties) for publication of this study.

## **ETHICAL APPROVAL**

The author hereby declares that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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## **REFERENCES**

1. UNAIDS. WHO Report on the Global HIV/AIDS Epidemic: Global HIV/AIDS and STD surveillance. UNAIDS, Geneva; 2000.
2. De Cock K, Fowler M, Mercier E. Prevention of mother-to-child HIV transmission in resource-poor countries, translating research into policy and practice. *JAMA*. 2000;283:1175-1182.
3. Nicoll A, Newell M, Peckham C. Infant feeding and HIV-1 infection-year 2000 [review]. *AIDS*. 2000;14:S57-S74.
4. Darmstadt GL, Lee AC, Cousens S, Sibley L, Bhutta ZA, Donnay F. Sixty million non-facility births: who can deliver in community settings to reduce intrapartum-related deaths? *Int J Gynaecol Obstet*. 2009;107 Suppl 1:S89-112.
5. Bhutta ZA, Ahmed T, Black RE, Cousens S, Dewey K, Giugliani, et al. What works? Interventions for maternal and child undernutrition and survival. *Lancet*. 2008;371(9610):417-440.
6. Black RE, Allen LH, Bhutta ZA, Caulfield LE, de Onis M, Ezzati M, et al. Maternal and child under nutrition: global and regional exposures and health consequences. *Lancet*. 2008;371(9608):243-260.

7. Nduati R, John G, Mbori-Ngacha D, Richardson B, Overbaugh J, Mwatha A, et al. Effect of breastfeeding and formula feeding on transmission of HIV-1: a randomized clinical trial. *JAMA*. 2000;283(9):1167-1174.
8. Embree JE, Njenga S, Datta P, Nagelkerke NJ, Ndinya-Achola JO, Mohammed Z, et al. Risk factors for postnatal mother-child transmission of HIV-1. *AIDS*. 2000;14(16):2535-2541.
9. Kramer MS and Kakuma R. Optimal duration of exclusive breastfeeding. *Cochrane Database Syst Rev*. 2002;(1):CD003517.
10. Coovadia H, Kindra G. Breastfeeding to prevent HIV transmission in infants: balancing pros and cons. *Curr Opin Infect Dis*. 2008;21(1):11-15.
11. Federal Ministry of Health FMOH. HIV Sero- prevalence sentinel survey 2009. FMOH Abuja Nigeria.
12. CDC and Prevention. Infant feeding practices study II questionnaire. Accessed 12 June 2011. Available: <http://www.cdc.gov/ifps/questionnaires.htm>.
13. Khalid SK, Daniel W, Lale S. WHO analysis of causes of maternal death: a systemic review. *The Lancet Maternal Survival Series*. 2006;367:1066-74
14. Rotheram-Borus MJ, Stein JA, Jiraphongsa C, Khumtong S, Lee SJ. Benefits of family and social relationships for Thai parents living with HIV. 2010;11(3):298-307.
15. Nishi S, Sasi J, Ashwini SE, Jayagowri S, Hemalata P, Kapila EB, et al. Infant Feeding Practices of HIV Positive Mothers in India The American Society for Nutritional Sciences. *J. Nutr*. 2003;133:1326-1331
16. Yetayesh M, Jemal H. Infant feeding practice of HIV positive mothers and its determinants in selected health institutions of Addis Ababa, Ethiopia. *Ethiop. J. Health Dev*. 2009;23(2):107-114.
17. Senyonga R, Muwonge R, Nankya I. Towards a Better Understanding of Exclusive Breastfeeding in the era of HIV/AIDS: A Study of Prevalence and Factors Associated with Exclusive Breast from Birth, in Rakai, Uganda. *Journal of Tropical Pediatrics*. 2004;50(6):348-353.

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