

## Patterns and predictors of contraceptive usage among HIV-positive women of reproductive age attending PMTCT/ART clinics in Ogbomoso, Nigeria

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### Abstract

**Objective:** the objective of the study is to assess the patterns and predictors of contraceptive usage among HIV positive women of reproductive age attending PMTCT/ART clinics in Ogbomoso, Oyo state, Nigeria.

**Methods:** it was a cross-sectional descriptive cross-sectional study conducted among HIV positive women of reproductive age group selected using multi-stage sampling technique. Data was collected using a pre-tested semi-structured interviewer administered questionnaire and analyzed using Statistical Package for Social Sciences. The questions about knowledge of and attitude towards contraception were scored, and categorized as good or poor knowledge, favourable or unfavourable attitude. Univariate, bivariate, and multivariate analyses assessed predictors of contraceptive usage. A bivariate logistic regression model which used  $p < 0.05$  as the entry criterion, was generated to calculate the odds ratios and 95% confidence intervals respectively.

**Results:** age ranges from 16 to 48 years with mean age  $31.8 \pm 7.8$  years. Majority are within age range of 25-35 years 110 (40.7%), Christians 178 (65.9%), Yoruba 235 (87%), educated 246 (91.1%) and within monogamous settings 179 (66.3%). About half of the respondents 158 (58.5%) had favorable attitude and adequate knowledge respectively. There is a significant difference ( $p < 0.05$ ) between education and categorized knowledge on usage of contraception. Those who have adequate knowledge are twice more likely to use contraception compared to those with inadequate knowledge. Those who are less educated are 3.3 times less likely to use contraception compared to those that are educated.

**Conclusion:** The findings in this study showed that about half of the respondents had high knowledge and favorable attitude on family planning.

**Keywords:** reproduction, education, health, virus, knowledge

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Received: November 6, 2018

Accepted: July 20, 2019

Published: June 30, 2019

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<http://dx.doi.org/10.4314/rejhs.v7i3.3>

## Modèles et facteurs prédictifs de l'utilisation de contraceptifs chez les femmes séropositives pour le VIH en âge de procréer fréquentant les cliniques de PTME / ART à Ogbomoso, Nigéria

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### Abstrait

**Objectif:** l'objectif de l'étude est d'avoir accès aux schémas et aux facteurs prédictifs de l'utilisation de la contraception chez les femmes séropositives pour le VIH en âge de procréer fréquentant des cliniques de PTME / ARV à Ogbomoso, dans l'État d'Oyo, au Nigéria.

**Méthodes:** il s'agissait d'une étude transversale descriptive transversale menée auprès de femmes séropositives pour le VIH du groupe en âge de procréer sélectionnées à l'aide d'une technique d'échantillonnage à plusieurs degrés. Les données ont été collectées à l'aide d'un questionnaire pré-testé administré par un intervieweur semi-structuré et analysées à l'aide de Statistical Package for Social Sciences. Les questions relatives à la connaissance de la contraception et à son attitude à l'égard de la contraception ont été notées et classées comme connaissances bonnes ou mauvaises, attitude favorable ou défavorable. Des analyses univariées, bivariées et multivariées ont permis d'évaluer les prédicteurs de l'utilisation de la contraception. Un modèle de régression logistique bivarié utilisant  $p < 0,05$  comme critère de saisie a été généré pour calculer les rapports de cotes et les intervalles de confiance à 95%, respectivement.

**Résultats:** l'âge varie de 16 à 48 ans et l'âge moyen est de  $31,8 + 7,8$  ans. La majorité d'entre eux ont entre 25 et 35 ans 110 (40,7%), les chrétiens 178 (65,9%), les yoruba 235 (87%), les adultes 246 (91,1%) et les monogames 179 (66,3%). Environ la moitié des répondants 158 (58,5%) avaient une attitude favorable et une connaissance adéquate, respectivement. Il existe une différence significative ( $p < 0,05$ ) entre l'éducation et les connaissances catégorisées sur l'utilisation de la contraception. Les personnes qui ont des connaissances suffisantes sont deux fois plus susceptibles d'utiliser une contraception que celles qui en ont une connaissance insuffisante. Les moins scolarisées ont 3,3 fois moins de chances d'utiliser une contraception que les moins scolarisées.

**Conclusion:** Les résultats de cette étude ont montré qu'environ la moitié des répondants avaient une connaissance élevée et une attitude favorable à l'égard de la planification familiale.

**Mots-clés:** Reproduction, éducation, santé, virus, connaissance

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Received: November 6, 2018

Accepted: July 20, 2019

Published: June 30, 2019

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## INTRODUCTION

Globally more than 2million HIV-positive women fall pregnant each year with up to 6000,000 dying of pregnancy related complications, annually, mostly in resource-constraint setting (1). However, in sub-Saharan Africa, women comprised 56 per cent of new infections among adults (15 and older); and the proportion was higher among young women aged 15-24, who made up 66 per cent of new infections among young people (2). Women therefore constitute the majority (60%) of adult living with HIV in sub-Saharan Africa of which only a few have access to contraceptives (3,4).

Nigeria with an HIV prevalence of 4.1%, has the second largest burden of AIDS in Africa and the third largest burden in the world after India and South Africa, with more women being affected than men (5). Evidently, women account for half of the estimated 31.3 million adults living with HIV and AIDs worldwide, the majority of whom are their reproductive years (6).

Many women who are sexually active would prefer to avoid becoming pregnant but are not using any method of contraception. These women are considered to have an unmet need for contraception is of great concern in developing countries (7).

It is estimated that approximately 160,000 HIV positive births per year would be averted if family planning needs of all HIV positive women in sub Saharan Africa could be met (8). Most children with HIV were infected through mother-to-child transmission (MTCT) of the HIV virus and the unmet needs for family planning has been recognized as a major barrier that is affecting all effort to limit the mother to child transmission of HIV due to the high level of unwanted pregnancy among HIV positive women of reproductive age group (7,9). Preventing unintended pregnancies among HIV-positive women through family planning (FP) reduces pregnancy-related morbidity and mortality, decreases the number of Paediatric HIV infections, and has also proven to be a cost-effective way to prevent mother-to-child HIV transmission (10).

Understanding the relationship between HIV and contraceptive used could be key element in developing programs and services that will enable HIV-positive individuals to achieve their reproductive goals. It will also help in the design of interventions that works in the reduction of new HIV infections among new borns and unwanted pregnancies among HIV positive women. Few studies have looked at predictors of

contraceptive usage among women living with HIV. There is therefore the need to find out the determinants of unmet need for contraception among HIV Positive women of reproductive age group attending PMTCT/ART Clinic in Ogbomoso, with a view to making recommendations that would help in the development of effective public health policies, programmes and evidence-based interventions. Hence, the objective of this study is to assess the knowledge, attitude and practice of contraception among HIV positive women of reproductive age group attending ART/PMTCT clinics in Ogbomoso, Oyo-state and to determine the factors that are responsible for non-usage of contraception among them.

## MATERIALS AND METHODS

### Description of study Area

The study was conducted in Ogbomoso which is an ancient city in Oyo state. South-west Nigeria. It has the geographical coordinates of  $8^{\circ}8'0''$  North and  $4^{\circ}16'0''$  East. It was founded in the mid 17<sup>th</sup> century and located along Ilorin-Ibadan express road (11).

It is about 95km North-West of Ibadan (The Oyo State capital) Ogbomoso has five Local Government Areas which are Ogbomoso North, Ogbomoso South, Surulere, Orire and Ogo-oluwa LGAs. The population was estimated as 1.167 million in 2006 (12).

The people residing in the area are predominantly Yorubas but tribes from other parts of the country such as the Hausa, Igbo, Edo and other nationalities such as Ghanaians and Togolese have also settled there. Majority of the inhabitants are farmers, traders, artisans and civil servants. Ogbomoso has a lot of healthcare institutions varying from private and public healthcare institution which includes tertiary, Secondary and Primary Health facilities.

### Study Population

The study population is HIV positive women attending PMTCT/ART clinics in Ogbomoso, Oyo state. The inclusion criterion was HIV positive women within the age 18–49 years. The exclusion criteria HIV positive women outside the age of 18-49 years.

**Study design:** The study is a descriptive cross-sectional design.

### Sample Size Determination

The minimum sample size for the respondents will be calculated using the Leslie

Fisher's formula

$$n = \frac{Z^2 pq}{d^2}$$

n= the desired sample size when the population is greater than 10,000

z= standard normal deviate set at 1.96 corresponding to the 95% confidence level.

p=prevalence of unmet need from a previous Nigerian study which is taken as 21.4% (6)

q= 1-p

d= degree of precision desired which is set at 5 % (0.05).

Minimum sample size =  $(1.96)^2 \times (0.214 \times 0.786) / (0.05)^2 = 258$

The minimum sample size for the respondents was 258, however this was increased to 270 to accommodate non-response.

### Sampling technique

A multistage sampling technique was employed in this study.

**Stage 1:** From the list of 2 ART and 6 PMTCT clinics in Ogbomoso, simple random sampling was used to select 1 ART Center and 3 PMTCT Centres. Thus, LAUTECH Teaching Hospital, Ogbomoso was selected as ART center while Ibrahim Taiwo, Okelerin and Alapata PHCs were selected using random sampling technique as PMTCT centres.

**Stage 2:** Proportional allocations were used to estimate the numbers of respondents to be selected in each of the selected facility. The number of respondents used in each of the selected facility after calculation using the sample size needed and the numbers of clients assessing care in each facility were as followed. LTH Ogbomoso contributing 152 respondents while Okelerin, Ibrahim Taiwo and Alapata PHCs contributed 59, 42 and 17 respondents respectively.

**Stage 3:** Systematic random sampling with sampling interval of 2 was used to select the respondents at the facility level and questionnaire was administered to them.

### Data collation and analysis

A self-administered semi-structured questionnaire was used to collect the data. The research instrument was pretested in other facilities outside the area of study in order to detect and correct any ambiguity in the questionnaire. Questionnaires were manually checked for errors and entered into the computer. Statistical package for social sciences (SPSS) version 23 was used to analyze the data. Variables were presented in frequency tables and charts.

Chi-square statistics was used to estimate the degree of association between the variables in the study while Fischer's exact test was used when cells have expected values less than 5. p values less than 0.05 was considered significant.

### Ethical Consideration

Ethical clearance for the study was obtained from the ethical committee of the LAUTECH Teaching Hospital and permission was also taken from the medical officers in each Primary Healthcare centres. Verbal consent was obtained from all respondents before the questionnaires were administered and only those who consent were involved. Confidentiality was assured and their identities were not shown on the questionnaire only the serial number.

### Limitation of Study

Our study had other limitations. First, we were unable to investigate certain information such as medical predictors of contraceptive use such as duration of ART, symptoms of reproductive tract infection/sexually transmitted infections (RTI/STI) as well as number of living children which could go a long way in framing strategies to address these unmet needs were not included in this study. Also, some of participants that didn't want to give correct information on their attitude, knowledge on contraceptive usage were assured of confidentiality and privacy by trained research assistants used during the study.

### Study Results

According to Table 1, Age ranges from 16 to 48 years with mean age  $31.8 \pm 7.8$  years. Majority are Christians i.e 178 (65.9%), Yoruba 235 (87%), educated 246 (91.1%), monogamous 179 (66.3%) and within age range of 25-35 years i.e 110 (40.7%). In terms of occupation, 57(21.1%), 57 (21.1%), 70 (25.9%). 38 (14.1%), 48 (17.8%) were house-wife's, unemployed, unskilled, semi-skilled and skilled labour respectively according to table 1 below.

In terms of reproductive history in Table 2, out of 270 respondents, 36(13.3%) decides alone when and where to obtain health care services, 207 (76.7%) decisions comes from both respondents and the husband while 27 (10%) had husband alone. In terms of number of pregnancy, 210 (77.8%) had pregnancy less than 5 years while 60 (22.2%) had pregnancy more than 5 years. Regarding age at first marriage, 200 (74.1%) had pregnancy within 15-25 years, 59 (21.9%) between 25-35 years while 11 (4.1%) cannot remember. In terms of age at first

pregnancy, 54 (20%) had between 15-19 years, 108 (40%) between 20-24 years while 108 (40%) greater than 25 years. Regarding current pregnancy status, 87 (32.2%) are currently pregnant while 183 (67.8%) are not pregnant

Out of 270 respondents according to Table 3, 119 (44.1%) are current users, out of which 3(2.5%), 36 (30.3%), 35(29.4%), 5 (4.2%) and 40 (33.6%) are using pills, IUCD, injectable, natural methods and other methods such as condom, femidom respectively. The purpose of using contraception according to respondents include spacing of child birth by 114 (95.8%) while 5 (4.2%) do not know. Regarding duration of contraceptive usage, 101 (84.9%) had been using contraceptive for less than 5 years while 18(15.1%) had been using contraceptive for more than 5 years according to Table 3.

In terms of attitude, 158 (58.5%) had favorable attitude while 112 (41.5%) had unfavorable attitude using the mean score. Regarding knowledge, 158 (58.5%) had good knowledge while 112 (41.5%) had poor knowledge according table 4 below:

There is a significant difference ( $p < 0.05$ ) between education and categorized knowledge on usage of contraception. In terms of logistic regression, those who have adequate knowledge are twice more likely to use contraception compared to those with inadequate knowledge ( $P=0.001$ ,  $OR= 1.9$ ,  $CI= 1.08 - 1.96$ ). Also, in terms of education, those who are less educated are 3.3 times less likely to use contraception compared to those that are educated. ( $P=0.016$ ,  $OR=0.3$ ,  $CI= 0.11-0.8$ )

## DISCUSSION

The study shows that the respondents within the age group 15-25 were educated 91.1%. The majority of the respondents were educated which is similar to a study done in Ghana (13). It was also found that two thirds of the respondents were Christians which is similar to a study done in Ghana (13) and contrasted to the study in Northern Nigerian where majority of the participants were Muslims (14) and that done in Cameroon (15) while over half of the respondents 57.4% were of the Yoruba speaking extraction which may be due to the fact that the study was carried out in the Yoruba speaking locality.

The study revealed in the reproductive history of the respondents that majority 76.6 % of the women takes decision along with their husband regarding their health which is similar to studies done where the husband is involved in health care decision for the family (13), while 13.

3 % of the respondents make decision alone regarding the health care they obtain, while 10% of the respondents claim it is their husband that have the final say on their health.

It was found that 44.1% of the respondents were current users of family planning which shows that over half of the respondents were not on any current contraception this corroborates studies done in some African countries where there are low contraceptive prevalence (16-18) but contrasted a study done in Uganda where 77.9% of the respondents were found to be current users of contraceptives (19). The most common form of contraception use by the respondents in the study was condom, femidom in 33.6 % of cases; the findings are consistent with other studies in HIV Clinics where condom was used due to easy accessibility and frequent exposure to counseling promoting condom use (16, 20). Intra uterine contraceptive device (IUCD) was used by 30.3 % of the women, 29.4% used injectable contraceptives, 4.2 % used natural method of family planning while 2.5 % used pills, this contrasted studies done where majority of the respondents were using condom (21-23) and were using it consistently which may be due the fact that condoms are the most common form of contraception available (24).

Majority 95.8% of the respondents use contraceptive for spacing of child birth which is similar to studies done in Ghana (13), Congo (25) where the women main reason for desire for contraception is to prevent unwanted pregnancy however this contrasted to that seen in a study done in Cameroon where the reason given for contraception by the respondents is that pregnancy could aggravate their infection (37%), the lack of financial means to carry a pregnancy to term (19%) and the unmarried status (19%). HIV has also contributed to the desire for women to limit child bearing.

The study also shows that a greater preponderance of the respondents are using the contraceptives for less than 5 years which is similar to study done in Ethiopia where the women were using the contraceptives for period less than two to five years (23). The respondents demonstrated unfavorable attitude to contraceptive as opposed to a study done in Cameroon where 84% of the women has positive attitude towards contraception (15).

The study shows a positive association with usage of family planning and educational status, because it shows that a significant predictor of usage of contraceptive use among the

respondents in the study was their educational status which was found to be statistically significant, women who were less educated were 3.3 times less likely to use contraception compared to those that were educated. ( $P=0.016$ ,  $OR= 0.3$ ,  $CI= 0.11-0.8$ ). This finding suggests that respondents with higher education are more likely to go for family planning services than those with lower education. This agrees with several other studies that revealed that women with higher education status tends to be better informed about family planning services and have greater access to family planning and are more likely to use the service than their peers with lower education (10-22,26-28). This may be due to the influence education make on their decision making process.

Good knowledge of contraception was seen in 58.5 % of respondents which was found to be higher in a study done in Cameroon (15). The study showed that adequate knowledge about contraception to be a statistically significant of predictor of usage of contraception. Women who had adequate knowledge about contraception were twice more likely to use contraception compared to those with inadequate knowledge ( $P=0.001$ ,  $OR= 1.9$ ,  $CI= 1.08 - 1.96$ ).

## CONCLUSION

Although it was seen that the respondents demonstrated a high level of knowledge of family planning, yet their attitude towards family planning is unfavorable which was reflected in their uptake of family planning. Adequate knowledge about contraception and education play a significant in the usage of contraception but there is still need to in-cooperate strategies that will enhance the uptake among HIV infected women and to increase integration of family planning services into PMTCT and HIV clinic, such interventions will help to improve the health status of the women and reduce pregnancy related morbidities and mortality. This is highly essential given that unmet needs for FP is one of the indicators being used to assess the quality of PMTCT programs.

**Acknowledgement:** We humbly acknowledge the authorities of the medical facility used in this study.

**Conflict of interest:** The authors declare no conflicts of interest.

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**Table 1:** Socio-demographic characteristics

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Religion</b>		
Christians	178	65.9
Non-Christians	92	34.1
Total	270	100
<b>Ethnicity</b>		
Yoruba	235	87
Non-Yoruba	35	13
Total	270	100
<b>marriage setting</b>		
Monogamy	179	66.3
Polygamy	91	33.7
Total	270	100
<b>Educational level</b>		
Not educated	24	8.9
Educated	246	91.1
<b>Total</b>	<b>270</b>	<b>100</b>
<b>Occupation of respondents</b>		
House wife	57	21.1
Unemployed	57	21.1
Unskilled labour	70	25.9
Semi-skilled labour	38	14.1
Skilled labour	48	17.8
Total	270	100
<b>Age of respondents</b>		
15-25	120	44.4
25- 35	110	40.7
35-45	40	14.8
<b>Total</b>	<b>270</b>	<b>100</b>

**Table 2:** Reproductive history

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Final say on obtaining health care?</b>		
Myself alone	36	13.3
Myself and my husband	207	76.7
Husband alone	27	10
Total	270	100
<b>Number of times pregnancy occurred</b>		
Less than 5 years	210	77.8
more than 5 years	60	22.2
Total	270	100
<b>Age at first marriage</b>		
15-25 years	200	74.1
25-35 years	59	21.9
Cant remember	11	4.1
Total	270	100
<b>Age at first pregnancy</b>		
15-19 years	54	20
20-24 years	108	40
Greater than 25 years	108	40
Total	270	100
<b>Current Pregnancy status</b>		
Yes	87	32.2
No	183	67.8
Total	270	100

**Table 3:** Usage of family planning methods among respondents

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Family Planning usage</b>		
Current Users	119	44.1
Non-current users	151	55.9
<b>Total</b>	<b>270</b>	<b>100</b>
<b>Methods of FP usage (n= 119)</b>		
Pills	3	<b>2.5</b>
IUCD	36	<b>30.3</b>
Injectables	35	<b>29.4</b>
Natural method	5	<b>4.2</b>
Others (Condom, Femidom)	40	<b>33.6</b>
<b>Total</b>	<b>119</b>	<b>100</b>
<b>Purpose of using Contraception</b>		
Spacing child birth	114	95.8
Don't know	5	4.2
<b>Total</b>	<b>119</b>	<b>100</b>
<b>Duration of Contraception usage</b>		
less than 5 years	101	<b>84.9</b>
Above 5 years	18	<b>15.1</b>
<b>Total</b>	<b>119</b>	<b>100</b>

**Table 4:** Respondents summarized attitude and knowledge of using contraceptives

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Attitude</b>		
Favorable attitude	158	58.5
Unfavorable attitude	112	41.5
<b>Total</b>	<b>270</b>	<b>100</b>
<b>knowledge</b>		
Good knowledge	158	58.5
Poor knowledge	112	41.5
<b>Total</b>	<b>270</b>	<b>100</b>

**Table 5:** Bi and multivariate analysis involving some socio – demographic data, Reproductive History, knowledge and attitude towards usage of contraception

N=270 VARIABLE	FREQUENCY		PERCENTAGE	Statistics		
	Current Users	FP	Non users of FP	X <sup>2</sup>	Df	P values
<b>Educational Status</b>				5.8	1	<i>p</i> =0.016*
Not educated	5 (20.8%)		19(79.2%)			
Educated	114(46.3%)		132(53.7%)			
<b>Ethnicity</b>				1.7	1	P= 0.19
Yoruba	100(42.6%)		135(57.4%)			
Non-Yoruba	19 (54.3%)		16 (45.7%)			
<b>Religion</b>				2.8	1	P= 0.09
Christians	85 (47.8%)		93(52.2%)			
Non-Christians	34 (37.0%)		58(63%)			
<b>Marriage setting</b>				1.8	1	P = 0.18
Monogamous	84(46.9%)		95(53.1%)			
Polygamous	35 (38.5%)		56(61.5%)			
<b>Knowledge score</b>				6.6	1	<i>P</i> = 0.01*
Adequate knowledge	80(50.6%)		78(49.4%)			
Inadequate knowledge	39(34.8%)		73(65.2%)			
<b>Attitude score</b>				1.78	1	P=0.18
Favourable attitude	75(47.5%)		83(52.5%)			
Unfavourable attitude	44(39.3%)		68(60.7%)			
<b>Regression of education, knowledge on usage of contraception</b>						
	P-Value	X <sup>2</sup>	OR	CI		
<b>Knowledge score</b>						
Inadequate knowledge-R	0.001	6.65	1.9	1.08- 1.96		
Adequate knowledge						
<b>Education</b>						
Educated -R						
Not Educated	0.016	5.78	0.3	0.11 – 0.8		