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Case Report

Level of Adherence to Option B+ Antiretroviral Therapy Among HIV Positive Pregnant Women Attending Antenatal Clinics at Tertiary Health Institutions in Anambra State, Nigeria

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A R T I C L E I N F O

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Adherence,
HIV,
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Women.

A B S T R A C T

Aim: This study ascertained level of adherence to option B+ antiretroviral therapy (B+ ART) among HIV positive pregnant women attending antenatal clinics at tertiary health institutions in Anambra state and reason(s) for non-adherence. Materials and methods: A cross-sectional descriptive design was adopted in conducting the study among HIV positive pregnant women attending antenatal clinics at tertiary health institutions in Anambra state. Purposive and convenience sampling techniques were used to select sample size of one hundred and forty-six (146) HIV positive pregnant women by Adult AIDS Clinical Trial Group (AACTG) standardized questionnaire was used in data collectionwhich were analysed with IBM SPSS software database (version 25). Results: Results revealed that 89% of the HIV positive pregnant women adhered to Option B+ ART while 11% of the women were not adherent to their antiretroviral drugs. Conclusion: From the study, the level of adherence to Option B+ ART among HIV positive pregnant women attending the tertiary health institutions in Anambra state is good but there is still need for improvement to reach the peak which is 100% adherence so as to totally eliminate mother to child transmission of HIV. Recommendations: Nurses and mentor mothers in the health care facilities should intensify health education on adherence to ART.

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Introduction

HIV is a deadly virus that attacks and weakens the immune system of human beings making the affected individual susceptible to infection. Since the beginning of the epidemic, 85.6 million people have been infected with the HIV virus and about 40.4 million people have died of HIV [1].Globally, 39.0 million people were living with HIV at the end of 2022 and an estimated 0.7% of adults aged 15–49 years worldwide are living with HIV, although the burden of the epidemic continues to vary considerably between countries and regions [1]. The WHO African Region remains most severely affected, with nearly 1 in every 25 adults (3.2%) living with HIV and accounting for more than two-thirds of the people living with HIV worldwide [1]. In Nigeria, approximately 2 million adults aged 15-49 years of age are living with HIV [2] and of the estimated 220,000 new infections in Nigeria, 37,000 were from mother-to-child transmission [3].

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To address the International Human Immunodeficiency Virus epidemic, the World Health Organization developed three drug treatment regimens between 2010 and 2012 specifically for HIV positive pregnant women and their infants. World Health Organization (WHO) developed the regimens calling them Option A, Option B and Option B+, to reduce or prevent mother to child transmission of HIV. Each option comprises of different types and schedules of antiretroviral medications [4]. WithOption B+ all HIV-infected pregnant and breastfeeding women are immediately initiatedon lifelong antiretroviral therapy (ART), regardless of clinical stage or CD4+ T-cell count unlike what is obtainable in Option A and B. Option B+ which is an improved version of both option A and option B treatment regimen was introduced in 2012 but was adopted in Nigeria in 2016 with full implementation reported in 2017 [5].

Non adherence to Antiretroviral Therapy(Option B+) by HIV positive pregnant women will increase their chances of transmitting HIV to their babies either during pregnancy, labour or delivery and if HIV is transmitted to the baby, it will weaken the baby's immune system resulting to increased susceptibility to infection and failure to thrive afterwards [6].

A descriptive cross-sectional survey done by Oginni, Aremu, Olowokere, Ayamolowo and Komolafe [7]on HIV positive pregnant women in Ibadan, Nigeria revealed poor level of adherence as only 47% of the women adhered to their drug regimen. Also, Omonaiyeet al.[5] in their study on adherence to ART in AkwaIbom State in the South- South region of Nigeria also recorded poor adherence (32.7%).

The researcher discovered that the studies on adherence to ART done in Nigeria showed poor adherence (as shown above) while those conducted outside Nigeria revealed good adherence therefore this study was borne out of curiosity to determine level of adherence to Option B+ ART among HIV positive pregnant women attending antenatal clinics at

tertiary health institutions in Anambra State, Nigeria and reason(s) for non-adherence.The general purpose of this study was to ascertain the level of adherence to Option B+ ART among HIV positive pregnant women attending antenatal clinics at tertiary health institutions Anambra State, Nigeria and to determine reason(s) for non-adherence.

MATERIALS AND METHODS

Cross-sectional descriptive survey design was utilized in the study to determine the level of adherence to option B+ antiretroviral therapy among HIV positive pregnant women attending antenatal clinics at tertiary health institutions in Anambra state. This study was conducted in the tertiary health institutions in Anambra State, Nigeria. There are two tertiary health institutions in Anambra State, Nigeria which include NnamdiAzikiwe University Teaching Hospital (NAUTH), Nnewi and ChukwuemekaOdimegwuOjukwu University Teaching Hospital (COOUTH), Awka.

The study population was 230 HIV positive pregnant women who attend antenatal clinics at tertiary health institutions in Anambra state for one year. The sample size for the study is 146 which was calculated with Yaro Yamane formula. Convenient and purposive sampling techniques were used in the selection of the participants. The instrument for data collection was Adult AIDS Clinical Trial Group (AACTG) standardized questionnairewhich was validated by a statistician and an expert in maternal and child health Nursing. A total of 146 copies of the questionnaire were distributed and were all retrieved. Consent of the respondents was sought, confidentiality of information supplied by the respondents during and after the procedure was ensured and anonymity was also ensured by their names not appearing on the questionnaire. Also, ethical approval was obtained from the ethical committees of the tertiary health institutions (NAUTH and COOUTH). Data were analysed using IBM SPSS software database (version 25). Tables were used to present date.

TABLE 1.1: Summary of Socio-demographic Characteristics of the Women (n=146)

	Characteristics		Frequency	Percentage
1	Age	15 – 25	33	22.6
		26 – 35	70	47.9
		36 - 45	41	28.2
		Above 45	2	1.4
2	Religion	Christian	141	96.6
		Islam	2	1.4
		Traditional	3	2.1
3	Marital status	Married	121	82.9
		Divorced	4	2.7
		Widowed	9	6.2
		Single	12	8.2
4	Occupation	Formal sector	34	23.2
		Informal sector	56	38.4
		Unemployed	56	38.4
5	Ethnicity	Hausa	11	7.5
		Igbo	131	89.7
		Yoruba	2	1.4
		Others	2	1.4
6	Highest level of Education	No formal education	13	8.9
		Primary education	14	9.6
		Secondary education	94	64.4
		Tertiary education	25	17.1
7	. Income of per month(in ₦)	Less than 50,000	138	94.5
		Above 50,000	8	5.5
8	Income of Spouse per month(in ₦)	Less than 50,000	107	73.3
		Above 50,000	27	18.5
		Unknown	12	8.2
9	Parity	Less than 4	119	81.5
		4 and above	27	18.5
10	CD4 Count	<350	26	17.8
		(b) >350	68	46.6
		Unknown	52	35.6

Table 1.1 showed that majority of the women 101(67.8%) were in the age range of 26-35 years, followed by 41(27.5%) within the age range of 15-25 years then 6(4.0%) in the age range of 36-45 years and finally 1(0.7%) in the age range of 46-55 years. Also, majority of the women 145(97.3%) were Christians, 1(0.7%) was a traditionalist, 1(0.7%) of the respondents was a muslim and 2(1.3%) fell under 'others' (atheists). Majority of the respondents were married (148(99.3%) and 1(0.7%) was divorced. 73(49.0%) of the women were into business, 44(29.5%) were professionals while 32(21.5%) are unemployed. 144(96.6%) of the women were Ibos, 2(1.3%) followed by those from other ethnic groups (2(1.3%) while 1(0.7%) of the respondents were Hausas. 99(66.4%) of the women had tertiary education, 45(30.2%) stopped at secondary school while 5(3.4%) of the respondents had no formal education. 72(48.3%) of the respondents had a child less than five years, 43(28.9%) had two children less than five years, 21(14.1%) had three children below five years while 13(8.7%) had four children less than five years of age.

Research Question 1: What is the level of adherence of the HIV positive pregnant women to option B+ ART?

Table 1.2: The self-reported Adherence of the HIV Positive Pregnant Women to Option B+ ART n=146

Adherence to option B+ ART	**n (%)**	**Percentage (%)**
Adherent	130	89.0
Non-adherent	16	11.0
Total	146	100.0
Have you skipped taking pills before?		
No	113	77.4
Yes	33	22.6
Total	146	100.0
When last did you skip a pill? n=33		
Within last four days	10	30.3
Yesterday	3	9.1
Day before yesterday	3	9.1
Last weekend (Saturday and/or Sunday)	4	12.1
Within last two weeks	12	36.4
Within last four weeks	1	3.0
Total	33	100.0

Table 1.2 shows that130(89%) HIV positive pregnant women that were part of the study are adherent to Option B+ ART while 16(11%) of the women are not. 33 (22.6%) have skipped their drugs before while 113(77.4%) have not skipped their drugs before. Out of the 33 that have skipped their drugs before, 10 skipped it within the last four days, 3 skipped yesterday, 3 skipped a day before, 4 skipped last weekend, 12 skipped within last 2 weeks and only one skipped within last four weeks as at the time the questionnaires were administered.

Table 1.3: Reasons for Missing ART Dose in the Past n=33

Reasons for missing ART dose in the past (multiple responses) n = 33	**Yes (%)**	**No (%)**
Simply forgot	12(36.4)	21(63.6)
Away from home	11(33.3)	22(66.7)
Busy with other things	5(15.2)	28(84.8)
Had a change in daily routine	1(3.0)	32(97.0)
Fell asleep/slept through dose	2(6.0)	31(94.0)
Had problems taking drugs at specific times	1(3.0)	32(97.0)
Felt ill or sick	4(12.1)	29(87.9)
Wanted to avoid side effects	3(9.0)	30(91.0)
Felt depressed/overwhelmed	1(3.0)	32(97.0)
Had too many pills to take	1(3.0)	32(97.0)
Did not want others to notice me taking drugs	2(6.0)	31(94.0)
Felt drug was toxic	3(9.0)	30(91.0)

The above are the reasons for missing Option B+ ART by the sixteen women that missed their medication in the last four days. Major reason by the women was forgetfulness 12(36.4), followed by being away from home 11(33.3%), busyness 5(15.2), illness 1(12.1%), feeling that drug is toxic 3(9%), side effects 3(9%), change in daily routine 1(3%), issue taking drugs 1(3%), depression 1(3%), too many pills to take 1(3%).

DISCUSSIONS

Research Question 1: What is the level of adherence of the HIV positive pregnant women to option B+ ART?

It was discovered from the study that 130(89%) of the HIV positive pregnant women adhered to option b+ ART while 16(11%) of the women were not adherent to their drugs. A respondent is considered adherent if she has not missed taking any doses over a 4-day period prior day of survey. Missing at least one dose over the 4 days' period prior day of survey is considered as non-adherent. This entails that majority of the HIV positive pregnant women that participated in this study showed good adherence to Option B+ ART. This revealed that majority of the HIV positive pregnant women that participated in this study showed good adherence to Option B+ ART. This is likely due to the effort of the mentor mothers and nurses in counselling the women on the need for adherence to their medications.

This finding is line with the findings of Ebuyet al. [8] In their study, they determined the level of adherence to Option B+ PMTCT drugs and factors associated with adherence among HIV positive pregnant women in public hospitals of Northern Ethiopia. From their findings, 87.1% of their respondents were adherent to Option B+ ART which they described as reasonably good. Also, Mukoshaet al.[9] in their study in Lusaka Zambia discovered that 81.7% of their respondents were adherent to their medication (ART).However, the findings contrast that of Oginniet al.[7] which showed that only 47% of the respondents adhered to their drug regimen and that of Omonaiye, et al.[5] which pointed out that only 32.7% of the HIV positive women that took part in the study self-reported to have taken all ART doses in the past 96 hours following the study.The disparity in findings might be due to different level of efforts that was made in counselling and creating awareness on the need for adherence by the nurses and mentor mothers at different health facilities.

Reasons for non-adherence of the HIV positive pregnant

16(11%) of the women were not adherent to their drugs. They indicated the following as reasons: Forgetfulness, being away from home, busyness, change in daily routine, sleepiness, illness, side effect of drugs, depression, too many pills to take, hiding from others, feeling that drug is toxic, not wanting to be noticed by others while taking drugs.

Forgetting to take their drugs and being away from home are both unintentional revealing that the majority of the women do not miss taking their drugs intentionally. Also being busy can make the women forget to take their drugs. The finding above is in line with that of Tesfaye and Melese [10] who determined adherence to antiretroviral therapy among people living with HIV/AIDS in Hara town and its surroundings, North Eastern Ethiopia. Their findings showed that participants who had never encountered drug side effects were 2.69 times more likely to adhere to their ART medication than those who had ever encountered drug side effect. In agreement, Wondimu, et. al.[11] in their study in Central Ethiopia, found out that fear of stigma for taking ART was among the associated factors enhancing the adherence to PMTCT Option B+ care.

Also Nthala, et al.[12] in their study discovered that adherence to ART was a challenge (low) that needed to be addressed and reasons for that included economic factors (lack of food), physical factors (side effects of the drugs), environmental factors (long waiting hours with long queues) and community factors (social stigma). Still in line with the above findings, Obonyo [13] from her findings opined that fear of discrimination and stigma (69.9%) also affected adherence to ART. Ebuyet al.[8]in their cross-sectional study identified that among the challenges for adherence to Option B+ PMTCT, forgetting to take the medications (92.3%) was the dominant obstacle, followed by the fear of side effects (38.5%).

On the contrary, the study carried out by Chukwukaodinaka [14] in FCT, Abuja, Nigeria, revealed that PMTCT services were hindered by the following: permission from spouse before being tested, couple counselling not done, group posttest counselling, non-incorporation of family planning and low support group enrolment. The different reasons for non-adherence to ART might likely be due to the options in the questionnaire. It can also be due to different individuals that participated in and conducted the studies.

Conclusion

The level of adherence to Option B+ ART among HIV positive pregnant women attending the tertiary health institutions in Anambra state is good but there is still need for improvement to reach the peak which is 100% adherence so as to totally eliminate mother to child transmission of HIV.

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