

*Research Article*

## Trends in the Prevalence of HIV-Seropositivity in Pregnant Women Initiating Antenatal Care in South-South, Nigeria

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*Received: 05-26-2015*

*Accepted: 06-25-2015*

*Published: 06-29-2015*

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### Abstract

**Background:** HIV Infection is still a pandemic in sub-Saharan Africa. Women and children are the most vulnerable. Antenatal Care clinic (ANC) evaluations have been used as a reflection of HIV dynamics in the community. Early ANC initiation and screening for infections can help to reduce the chances of pregnant women transferring infections to their children. Determining the prevalence of HIV infection in women attending the antenatal clinics can give an idea of the effectiveness of preventive measures in a community.

**Method:** Retrospective review of antenatal booking records containing age, occupation, educational status, HIV screening results from 2004 to 2013.

**Result:** A total of 37464 women had HIV screening results, 5.9% of them were HIV positive. The prevalence of HIV waxed and waned over the period, although it was lower in the first five years under review. There was a high incidence of late initiation of ANC, low educational attainment in the HIV positive women and about 1.2% were teenagers.

**Conclusion:** There was a high prevalence of HIV in the study population. Measures to prevent HIV transmission should be strengthened in this region and more should be done to educate school age girls.

**Keywords:** HIV/AIDS; Pregnancy; Antenatal Booking; Teenage Pregnancy

### Introduction

HIV still remains a pandemic in sub-Saharan Africa, and people of low socio-economic status are more affected by the disease. Nigeria has the largest burden in the West African sub-region with about 2.98 million people living with HIV [1]. Women are most commonly affected by HIV infection and in pregnancy it is associated with complications affecting the mother and the fetus. Thus, prompt initiation of antenatal

care is important for optimizing care to the mother and child. It also provides the health care workers the opportunity to screen for disease conditions and also commence treatment or preventive measures. One of such conditions that has shown improved outcome for the fetus with early maternal intervention is HIV infection. Prevention of Mother to Child Transmission (PMTCT) of HIV programs have been instituted in many facilities in Nigeria and most are supported by donor agencies, the service at the centre under review has bene-

fitted from several agencies and programs over time. There is basic rapid test kit screening, evaluation of CD4 counts and provision of Highly Active Anti-Retroviral Therapy (HAART) for affected individuals. This study does not however evaluate the immunological status of the affected women, it only sought to determine the trends in the prevalence of HIV in the women presenting for antenatal clinic booking in the 9 year period.

**Materials and Methods**

This study was carried out by reviewing the antenatal booking HIV screening results at Braithwaite Memorial Specialist Hospital; a tertiary referral centre in Port Harcourt, Rivers State - Nigeria from 2004 to 2013. Details of the age, gestational age at booking, marital status, parity, educational status, packed cell volume and serological screening results of the women were noted.

The result was analyzed with EPI Info version 6.0; a p value < 0.05 was taken to be significant. Pearson’s correlation was sought between the age of the HIV positive patients and their gestational age at booking.

**Results**

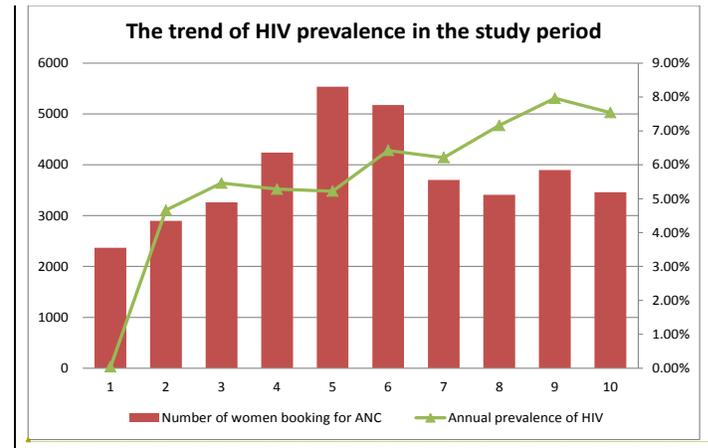
The data of 37506 women who booked for antenatal care (ANC) in the 10 year period under review was analyzed, 37464 of them had HIV screening results documented and thus their data was used for this analysis. The mean age of women included in the analysis for this study was 30.0 ± 4.66 years (range 11 – 49 years), majority of them were between the ages of 20 – 29 years,19491 (52.02%), however 10580 (28.24%) were of teen age (11-19years of age). 20118 (53.7%) of them reported having obtained some form of post-secondary education, 8410 (22.5%) of them were skilled workers, the rest were largely self-employed and involved in business.

Most of the women booked for ANC in the 2<sup>nd</sup> trimester of pregnancy 22539 (60.2%) and 13471 (35.9%) of them were primigravidae. The number of women booking for ANC gradually increase till 2008 when it gradually declined. However, the prevalence of HIV gradually peaked but had the lowest prevalence in 2008 and steadily increased after this period; Figure 1.

Out of the 37464 women, 2203(5.9%) were HIV seropositive in the 10 year period, the total prevalence of HIV in the first five years (2004-2009) was 4.13% and in the second half (2010 -2013) it grew by 2.93% to 7.06%. The mean age of the women who were seropositive was 28.95 ± 4.35 years (range 13 - 44), 28(1.27%) of them were of teenage; (mean age of 17.5years). About 1113 (50.5%) registered for ANC in the 2<sup>nd</sup> trimester, the rate of late booking was 81.4%. Eight hundred (36.3%) of the women were primigravidae. Most of the women were self-employed or involved in trading839 (43.6%), although majority of them had achieved some form of tertiary

education 1118(50.8%).

There were 53(2.41%) cases of HIV/HBV co-infection in the study period and only 1 (0.05%)VDRL/HIV co-infection. There was a significant negative correlation between the gestational age at booking and the age of the women ( $p = 0.001$ ) and also their packed cell volume ( $p=0.025$ ).



	N	%
<b>Age</b>		
10-14	3	0.1
15-19	25	1.1
20-24	273	12.4
25-29	943	42.8
30-34	712	32.3
35-39	227	10.3
40-44	20	0.9
<b>Educational status</b>		
Primary	162	8.4%
Secondary	657	33.9%
Post-secondary	1118	57.7%
<b>Gestational age at registration</b>		
1 <sup>st</sup> Trimester	325	16.5%
2 <sup>nd</sup> Trimester	1133	57.4%
3 <sup>rd</sup> Trimester	474	24.0%

Parity		
Primigravidae	800	36.3%
Multigravidae	1258	57.1%
Grandmultip	145	6.6%
Occupation		
Civil service	405	21.0%
Self employed	839	43.6%
		11.5%
Student	222	
House wife	459	23.8%

Characteristics of the HIV positive patients

## Discussion

The effect of HIV/AIDS in our community has been heavy on women and children; this has had a negative effect on the growing population as the economic power and employability of many have been affected. Prevention of the transmission of HIV from the infected mother to the children has been found to be a good tool for reduction of the prevalence of HIV in the community. Antenatal Clinic surveillance of HIV may be a reflection of what may be happening in the general population [2]. Women are more at risk because the heterosexual contact, high risk behaviors of partners, high prevalence of non-consensual sex, poverty, low social economic status, unprotected sex and cultural reasons [3]. When HIV infection progresses undiagnosed and untreated, it results in some complications in pregnancy [4]; this brings about the need to identify women with HIV infection early enough in pregnancy.

In this study over the 10 year period, 2203 of the women registering for ANC were seropositive for HIV; the annual prevalence waxed and waned over the period. It was apparently lower in the first 5 years than in the later 5 years, this may be a reflection of the effectiveness of prevention strategies in the larger society in the period. The total seroprevalence of HIV in this 10 year period was 5.8%; this is lower than reports of 9.7% -11.5% from other reports in Nigeria [5-7]. The prevalence of HIV was highest in 20 - 29 years age group; this is similar to findings from other centres in Nigeria [8]. The U.S. Office of National AIDS Policy has estimated that half of all new HIV infections occur in people under 25 and that half of these occur among young people between the ages of 13 and 21 [9].

The prevalence of HIV in teenage pregnancy in this study was 1.2%, a study in South Africa showed that early adolescent pregnancies increased the incidence of HIV, and this was associated with increased risky sexual behaviors [10]. Another

study put HIV prevalence among young women aged 15-19 at 6.9% [11].

Many of the women with HIV infection initiated ANC late, the mean gestational age was 6.3 months, which is higher than other reports from Africa - 4.5 [12], this late initiation of ANC has been reported by other researchers [13, 14]. The WHO recommended model for antenatal care states that ANC registration should be within the first trimester of pregnancy. This will make for prompt screening and detection of diseases such as HIV and make prompt treatment and transmission prevention strategies to be implemented [15].

HIV/HBV co-infection in the study population was 2.41%. HBV is also transmitted through sexual and parenteral routes and can also be transmitted vertically. HIV/HBV co-infection worsens the morbidity and mortality of patients and makes treatment more complicated especially in pregnancy. Reports have shown vertical transmission rates of HBV as high as 51.6% in some low income settings in Nigeria [16]. Some reports from Nigeria showed higher prevalence of HIV/HBV co-infection - 8.9% [17] in Ibadan, 11.8% in Jos [18]. Our finding is comparable to a report from Rwanda [19].

There was a significant negative correlation ( $R = -0.077$ ,  $p = 0.001$ ) between the age of the women and GA at booking. In the current study, the younger women appeared to initiate ANC later than the older women, this is contrary to findings from Ethiopia where the older women booked later because they feel that they have some experience with pregnancy and may not need to register early [9]. The low level of education attainment among the younger women in this study population may play a significant role in their health seeking behaviours. One of the findings from this study is that only 2 of the pregnant women in teen age had achieved some form of tertiary education.

The limitations of this study must be acknowledged, it was a retrospective review and some of the indices analyzed were not available for all the patients evaluated. The risk factors for HIV or other infections in these women were not also evaluated. A prospective study should be carried out in this centre to determine the factors that influence the HIV status of women registering for ANC.

## Conclusion

This study shows a total prevalence of HIV in women registering for ANC at 5.9%, there was a high rate of late booking among the HIV positive women, 1/3 of them were primigravidae with low educational attainment. These findings suggest that the strategies for prevention should be strengthened especially in schools and women of reproductive age should be taught to apply these skills to prevent transmission of the disease. Early ANC initiation should also be encouraged so that PMTCT measure can be initiated early.

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