

# Sero-Prevalence Of Hiv Infection Among Blood Donors In A Secondary Health Institution In The Middle Belt Of Nigeria

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## Abstract

**BACKGROUND:** In Nigeria, Benue state was identified to have the highest HIV/AIDS burden according to the results of the national HIV sentinel seroprevalence survey conducted in 2005. The objective of this paper is to determine the current seroprevalence of HIV infection among prospective blood donors at a General hospital in Otukpo, an urban area of Benue State, in the Middle Belt of Nigeria. **Method:** Results HIV screening at the blood bank of the general hospital over a three year period (2006 – 2008) were reviewed retrospectively. The subjects were all blood donors. Screening was done using enzyme linked immunosorbent assay (ELISA) technique. **Results:** A total of 2,500 samples were screened for HIV over the three – year period. The seropositivity rate was 12%. **Conclusion:** These results indicate an increasing endemicity of HIV infection in Benue state. There is an urgent need to intensify HIV/AIDS control programmes in order to reverse this dangerous trend in the prevalence of HIV infection among Nigerians living in the middle belt and elsewhere in Nigeria.

## INTRODUCTION

Human immunodeficiency virus (HIV) infection, since its first description in 1981 in the United States of America, has continued to spread rapidly. WHO estimates that about 40 million people were living with the HIV infection at the end 2000 worldwide with more than 90% of them living in the developing world<sup>1, 2</sup>. Studies from different parts of Nigeria have reported varying prevalence rates (0.57-32%) among selected groups<sup>3-14</sup>. According to the results of the national HIV sentinel seroprevalence survey of 2005, Benue state ranked highest, with a prevalence rate of 10%. This study aims at analyzing the results of HIV screening among blood donors at the General Hospital Otukpo, an urban area of Benue State over a three – year period, 2006 – 2008, with a view to establishing the current sero-prevalence rate in this region of the Nigerian Middle Belt, and hence assess the impact of HIV/AIDS control programmes in Benue state.

## MATERIALS AND METHODS

Subjects consisted of all prospective blood donors who reported to the blood bank of the General Hospital under study for bleeding over the three – year period, 2006 – 2008.

Their blood samples were screened for HIV antibodies. Routine screening for HIV antibodies was part of the criteria for donor selection.

All tests were done using enzyme linked Immunosorbent assay technique (ELISA kit). Positive samples were re-tested with a second ELISA kit, and only samples seropositive with both kits were taken as truly seropositive (double-ELISA technique).

## RESULTS

Over the three year period under study, a total of 2,500 donor samples were screened. The age range was between 17 and 60 years with a mean of 38 years, the modal age range of the study population was 41 – 50 years, representing 43.3% of the study population. (Table I). Three hundred donors (12%) were positive for HIV antibodies comprising of 285 males (95%), and 15 females (5%). The peak age prevalence was in the 51 – 60 years age range (18.9%) (Table II)

**Figure 1**

Table 1: Age and sex distribution of donors

Age (in years)	Total No (%)	Male No (%)	female No (%)
0 - 10	-	-	-
11 -20	10(0.4)	10(100)	0(0)
21 -30	433(17.0)	420(96.9)	13(3.1)
31 -40	859(34.4)	835(97.2)	24(2.8)
41 -50	1076(43.3)	1066(99.1)	10(0.9)
51 -60	122(4.9)	119(97.5)	3(2.5)
Total	2500(100)	2450(98)	50(2.0)

**Figure 2**

Table 2: Age & Sex Distribution of HIV antibody positive Donors

Age (in years)	No screened	No positive (%)	Sex distribution of positive donors	
			Male(%)	female(%)
0 - 10	-	-	-	-
11 -20	10	-	-	-
21 -30	433	36(8.3)	33(92.0)	3(8)
31 -40	859	107(12.5)	98(92.0)	9(8)
41 -50	1076	134(12.5)	132(98.5)	2(1.5)
51 -60	122	23(18.9)	22(96.0)	1(4)
Total	2500	300(12.0)	285(95.0)	15(5)

## DISCUSSION

The results of this study indicate that HIV infection is highly prevalent in this region of the Middle Belt where the study was conducted. Over the three – year period under study, the mean seropositivity rate of HIV infection among the blood donors was 12%. These donors were mostly “healthy” males and represent a largely “well” segment of the population and therefore may mirror more closely the overall prevalence of HIV infection in this community. An earlier study conducted in 2007 by Jombo GMT et al recorded a prevalence rate of 9.3% among prospective blood donors in Benue State<sup>4</sup>. Comparatively, therefore, the current prevalence of 12% may suggest a possible increase in the spread of HIV in this region of the Nigerian Middle Belt.

The seroprevalence rate 12% among blood donors in this

study is significantly higher than that found in blood donors in some other parts of Nigeria such as Port Harcourt (1%), Benin City (0.57%), Lagos Island (8%), Jos (2.7%), Kaduna (2.8%) 10-14.

It is also higher than the figures reported among other selected groups that are not necessarily blood donors such as pregnant women in Port Harcourt (7.3%), prisoners in Lagos (6.7%), and unemployed persons in Port Harcourt (3.19%) 7-9.

These findings put together clearly suggest that Benue State is an area of high prevalence of HIV infection compared to other parts of Nigeria. As a matter of fact, an earlier study conducted by the Federal Ministry Health in 2005 ranked Benue State as having the highest HIV seroprevalence (10%) in Nigeria<sup>3</sup>. Why HIV infection rate continues to be on the upward trend in Benue State is not quite clear for now. Possibly, there may be activities in this state that increase the risk of acquisition and spread of HIV infection. Whatever may be the factors responsible; our findings indicate a significantly increasing endemicity of HIV infection in Benue state, Middle Belt of Nigeria. Without urgent intervention, these figures are likely to increase even further in the nearest future. Effective control strategies aimed at curbing this dangerous trend in the spread of HIV infection in Benue State are urgently needed. This should include a sensitive and stringent screening of all blood donors, public awareness programmes, and efforts aimed at promoting behavioural, cultural, and social changes that will reverse the current trend in the prevalence of HIV infection in Benue State.

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