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## Prevalence of HIV Infection among Healthy and Sick Adults in Maiduguri Nigeria\*

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**Abstract:** The prevalence of HIV infection was assessed in about 160 people (healthy and sick) in Maiduguri, Nigeria. Three hospitals were used as the study sites. They are the University of Maiduguri Teaching Hospital, chest disease Hospital and TB Hospital all in Maiduguri Nigeria. Medical questionnaires were filled by each of the subjects, before their blood samples were collected. The subjects were divided into four groups i.e., apparently healthy controls (group 1), condition apparently unrelated to HIV disease (group 2), conditions suggestive of early HIV disease (group 3) and conditions indicative of progressive HIV disease (group 4). Forty subjects were allocated to each of the four groups based on the reports from the medical questionnaires. The 160 blood samples (the four groups) were screened for HIV and their results recorded. The percentage HIV infection among the different age groups in the four groups were also recorded. From the results obtained 12.5% of the apparently healthy controls (group 1) were HIV positive, 22.5% of the condition apparently unrelated to HIV disease were positive, 30% of the condition suggestive of early HIV disease were positive and 60% of the condition indicative of progressive HIV disease were also positive. It can be concluded that prevalence of HIV among apparently healthy persons particularly the young, is now very high and some conditions not associated with HIV infection may indeed be the result of HIV infection.

**Key words:** HIV, healthy, sick, prevalence, Maiduguri, Nigeria

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### Introduction

Human Immunodeficiency Virus (HIV) causes AIDS (Acquired Immunodeficiency Syndrome) which is a human retrovirus that belongs to the lentivirus family (Cotran *et al.*, 1994). Two genetically different but related forms of HIV called HIV-1 and HIV-2, has been isolated from patient with AIDS and also closely related viruses (SIVs) are found in many species of non-human primates (Cotran *et al.*, 1994; Klinger *et al.*, 1998).

The World Health Organisation (WHO) estimated that at the end of 1997, 30.6 million people world wide were living with HIV/AIDS of which over 90% were in developing countries two thirds in sub-Saharan Africa. The prevalence is more in cities like Kampala, Lusaka, Yaounde and Francistown of the sub-Saharan countries (Grant and Decock, 1998; Tarantola and Schwarflander, 1997). The expanding epidemic of HIV infection threatens to engulf more than 40 million persons world wide by the year 2000 (Lacasse *et al.*, 1999).

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There is a significant risk that some countries will be locked in a vicious cycle, as the number of people falling ill and subsequently dying from AIDS has a tremendous impact on many part of African society, including demographic, household, health sector, educational, work places and economic aspects. In all affected countries the HIV/AIDS epidemic is bringing additional pressure to bear on the health sector. As the epidemic matures, the demand for care for those living with HIV/AIDS rises, as does the toll among health workers (Haacker, 2001). In sub-Saharan Africa, the annual direct medical costs of AIDS (excluding antiretroviral therapy) have been estimated at about US \$ 30 per capita, at a time when overall public health spending is less than US \$10 for most African countries (Rosen, 2004).

HIV is present in the vaginal fluids, semen, blood and breast milk of infected people. HIV can be transmitted from one person to another when infected vaginal fluid, semen, blood or breast milk get into another person's body (Peterman *et al.*, 1988; Royce *et al.*, 1997)

Presently, the risk of people being infected with HIV from both sick and healthy people is on the increase world wide. Therefore the aim of this study is to ascertain the prevalence of HIV infection among healthy and sick adults in Maiduguri Nigeria.

### **Materials and Methods**

Three hospitals were used as the study sites. They are the University of Maiduguri Teaching Hospital, Chest disease Hospital and TB Hospital, all in Maiduguri, Nigeria. Medical questionnaires were produced. The medical questionnaire contains the following information: Biodata, anthropometry, past and present medical history. One hundred and sixty people (subjects) were used for this study. All the subjects were made to fill the questionnaires before their venous blood samples (about 4 mL) were collected.

The subjects were divided into four groups based on the information obtained from the questionnaire. The groups are namely: apparently healthy controls (group 1), conditions apparently unrelated to HIV disease (group 2), condition suggestive of early HIV disease (group 3) and conditions indicative of progressive HIV disease (group 4). Forty subjects were allocated to each group. The venous blood samples collected were left to stand for about 1 h, before being spun by a centrifuge in order to get the serum which was screened for HIV.

The collection of blood samples from the subjects took about 60 Days. Rapid capillus method was used for the HIV screening (Des Jarlis, 1984) and the method of determine was used for the HIV confirmatory test (NCCLS Guidelines, 1991).

### **Results and Discussion**

From the results obtained (Table 1), 12.5% of the apparently healthy controls (group 1) were positive. This shows that the prevalence among apparently healthy persons, particularly the young, is now very high. This can be supported by the fact, that in 2004, it is estimated that 17% of Mozambique's healthy teachers were HIV positive. This is considerably higher than the national average of 13% HIV prevalence among people aged between 15 and 49. It is believed that this will lead to the death of 1.6% per year of the country's teachers (Allafrica. Com, 2004). People who have HIV may feel and look completely well, but their immune systems may nevertheless be damaged. It is important to note that once some people are infected, they can pass HIV on, even if they feel well. The more time passes, the more likely damage would occur to the immune system.

Table 1: Prevalence of HIV among healthy and sick people

	Group			
	1	2	3	4
Subjects	40	40	40	40
HIV+Ve	5	9	12	24
HIV+Ve (%)	12.5%	22.5%	30%	60%

Table 2: HIV infection among different four age groups

	Age (years)		
	17-28	29-40	41 and above
No. of subjects	79	57	24
No. of positive	21	22	7
Positive (%)	26.6%	38.6%	29.2%

Group 2 shows that 22.5% of the condition apparently unrelated to HIV disease were positive. This can be explained by the fact that some conditions hitherto not associated with HIV infection may indeed be the result of HIV infection. Group 3 shows that 30% of the condition suggestive of early HIV disease were positive, while in group 4, 60% of the condition indicative of progressive HIV disease were positive.

From this study, it can be seen that the prevalence of HIV infection is higher among the youths i.e., the age group of between 17 years and 40 years (Table 2). This can be as a result of the fact, that this age group is sexually active. Hence they can contract HIV and pass it on to other people. Many of the continent's economic development goals depend on Africa's ability to diversify its industrial base, expand exports and attract foreign investment. By making labour more expensive and reducing profits, AIDS limits the ability of African countries to attract industries that depend on low-cost labour and makes investments in African businesses less desirable. HIV/AIDS therefore threatens the foundation of economic development in Africa (Rosen, 2004).

### Conclusions

From the overall results obtained from this study, it can be inferred that some people who look very healthy might have been infected by HIV. It can be seen too that the prevalence of HIV infection is high among the youths. The government of various African countries should spend more money in educating the youths of this continent on the risk of HIV infection. This will help in bringing down its prevalence.

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