SOCIODEMOGRAPHIC CHARACTERISTICS OF YOUNG ADULTS SCREENED FOR HIV IN A TERTIARY HEALTH CENTRE IN SOUTH-SOUTH NIGERIA

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ABSTRACT

Background

Human immune deficiency virus (HIV) infection is endemic globally, more so in developing countries like Nigeria and is an important cause of mortality and morbidity.

AIM

This study was undertaken to document the sero-prevalence of HIV infection among young adults (10 – 24 years).

Method

HIV screening was performed on all (n = 673) young adults referred to the retrovirology unit of the Haematology Department of the University of Port Harcourt Teaching Hospital between January 2003 and December 2003. Two hundred and five males and 432 females were screened for HIV using a double ELISA confirmatory of Immunocomb and Genscreen HIV 1 & 2 kits.

Result

A total of 637 young adults were screened for HIV. Two hundred and seventy-two (42.7%) were found positive to HIV. The highest infection burden occurred among the 20-24 years group 242 (50%) and lowest among the 10-14years group 4(12.1%). Infection rate was significantly higher among females 217 (50.2%), and in less educated adolescent with no formal education 56 (80%). History of alcoholism 262 (99.2%), drug use 146(60.6), number of sexual partners and age at first sexual debut were independent risk factors in adolescents for infection with HIV ($P < 0.05$).

Conclusion

This study confirmed a high prevalence of HIV among adolescents and describes the groups more at risk as seen in other parts of Nigeria. This calls for urgent health education of the young adult population with emphasis on a combination of behavioural and social changes to curb the spread of HIV.

Key Word: Socio demographic, HIV infection, young adults, Nigeria.

INTRODUCTION

This marks the third decade of what may be the most devastating epidemic in human history: HIV/AIDS. As at 1998, more than 33 million people were living with Human immune deficiency virus (HIV), almost half of whom were women in their reproductive years [1]. In Nigeria the prevalence has increased steadily over the years ;1.8% in 1991 to 3.8% in 1993, 4.5% in 1996, 5.4% in 1999, 5.8% in 2001 and 5.0% in 2003[2]. In many African countries 70% of HIV infections are as a result of heterosexual transmission[3], and more than 60% of all new HIV infection are among the 15-24 years old with females out numbering males in the ratio of 2:1(4)

Gender inequality, poverty, less access to education lack of employment opportunities and commercial sex work,

are all risk factors to HIV infection[5]. The erosion of traditional African values with emphasis on chestity and adoption of Western cultures with permissive attitude to sexual matters [6], have contributed to the more liberal attitude to sex and increased sexual activities among Nigerian youths. Previous studies in Nigeria indicates that adolescent are sexually active at an early age, engage in premarital sex and have multiple sex partner [7]. In sub-Saharan Africa there were over 12 to 13 infected women for 10 infected men in 2001, the difference was more pronounced among those less than 25 years of age [8].

The sero -prevalence level among pregnant women, a less vulnerable group is still being used as indicator of prevalence of the pandemic for the general population in Nigeria. This level may not reflect a true picture of the epidemic in the general population since it has a deficiency of female sex bias.

The aim of this study was to determine the socio demographic characteristics of HIV among young adults.

PATEINTS AND METHODS

A total of 637 consecutively recruited young adults aged 14 – 24 years referred to the HIV unit of the University of Port Harcourt Teaching Hospital for retroviral screening between January 2003 and December 2003 constituted subjects for this study. Socio demographic data of age, sex, educational level, history of intravenous drug use, alcohol, sexual history and informed consent were obtained from all subjects by means of anonymous questionnaire.

LABORATORY METHODS

Five millilitre of whole venous blood was collected from each study subjects and the serum were separated and stored at -20^{0}C till the time of analysis. All samples were screened with the World Health Organization (WHO) approved Immunocomb HIV 1 & 2 kits (Organics, Israel)-an enzyme linked immunoassay test for the qualitative and differential diagnosis of HIV in human serum. Initially positive samples had their sero-status confirmed using the second quantitative Genscreen HIV 1 & 2 kits (Bio Rad, France) in the absence of a Western blot confirmatory test.

STATISTICAL METHOD

Data were entered and analyzed using a statistical package on personal computers (SPSS Version 10, 2001). Student test and the chi-square test were used to assess the significance of difference among groups. Significance was determined at the 95% confidence level.

RESULTS

A total of 637 adolescents were screened for HIV. This number was made up to 206 males (32.2%) and 431 females (67.8%). The mean age of subjects was 21.3 $\pm$ 3.08. Out of the 637 adolescents screened 272 were positive giving an overall prevalence of (42.7%). Sero prevalence rate was significantly higher among females 217 (50.2%) compared to males 55 (26.8%) ($p < 0.05$).

Table 1 shows the age distribution of HIV positivity among young adults. Sero prevalence of HIV was higher among the 20 – 24 years group 242 (49.9%) and lowest in the younger 10 – 14 year group 4 (12.1). HIV-1 was the predominant viral subtype 260 (95.6%) compared to 9 (2.94%) for HIV-2 and 3(1.1%) for dual HIV-1 and 2.

Table 1: Age distribution of HIV positivity among young adults.

Age Group	No. Screened	No. and % HIV Positive	No. and % HIV-1	No. and % HIV-2	No. and % HIV 1 & 2
10 – 14	33	4 (12.1)	4	-	-
15 – 19	119	26 (22.0)	19	6	1
20 – 24	485	242 (50.0)	238	2	2
Total	637	272 (42.7)	260 (95.6)	8(2.94)	3(1.1)

$\chi^2 = 48.20$; df = 3, P = 0.0001

Breakdown of HIV prevalence rate by gender, educational level and risk factors is shown in table 2. The sero prevalence of HIV was significantly higher in females 217 (50.2%) compared to males 55 (20.2%) ($p < 0.001$). Sero prevalence was significantly higher among less educated young adults with no formal education 56 (80%) and lowest among those with tertiary education 53 (32.3%).

Table 2: HIV Sero prevalence rates by gender and education level .

Variable	Number Tested	Number Positive	% Positive	df	χ^2	P-value
GENDER						
Male	205	55	20.2	1	31.12	0.0001
Female	432	217	50.2			
EDUCATIONAL LEVEL						
No formal	70	56	80	3	562.15	0.0001
Primary	345	143	41.5			
Secondary	58	20	34.5			
Tertiary	164	53	32.3			

Analysis of behavioural and sexual risk factors for HIV infection is shown in table 3. Infection rate was significantly higher among young adult with history of alcoholism, drug use, history of multiple sex partners and those who had their first sexual intercourse at a younger age (10 -14 years).; 91.7%, 60.6%, 81.2% and 58.7% respectively. The mean age at first sexual debut for males was 17.95 ± 2.67 compared to 17.29 ± 2.03 for males ($t = 3.98$, $p < 0.002$). The mean age of first intercourse of the total population was 15.92 ± 1.18 years. The mean age of first sexual intercourse in adolescent positive for HIV was significantly lower among females 15.84 ± 1.19 compared to 15.21 ± 1.09 for males ($t = 2.03$, $p < 0.04$).

Table 3: HIV sero prevalence rate based on behavioural and sexual risk factors

Risk Factors	Total No tested	No Positive	% Positive	df	χ^2	P-value
History alcoholism	264	242	91.7	1	591.97	0.0001
No history alcoholism	373	30	8.03			
History of drug use	241	146	60.6	1	507.63	0.0001
No history of drug use	396	126	31.8			
Sexual Partners						
None	30	3	10	2	562.55	0.0001
One	293	14	4.8			
Multiple (2 &3)	314	255	81.2			
Age of first intercourse (years)						
10 – 14	46	27	58.7	2	117.48	0.0001
15 – 19	448	226	50.5			
20 – 24	113	16	14.2			

A significant difference was found using chi square analysis which indicated that both age (χ^2 = 48.2, df = 2), gender (χ^2 = 31.12, df = 1), educational status (χ^2 = 48.85, df = 3), history of alcoholism (χ^2 = 592.0, df = 1) drug use (χ^2 = 507. 6 df = 1) number of sexual partners (χ^2= 562.2, df = 3) and age of first intercourse (χ^2 = 117.5, df = 2) were independent risk factors for HIV infection among adolescents ($p < 0.05$).

DISCUSSION

Human immunodeficiency virus (HIV) infection constitute a serious threat to the world public health in this century. More than 33 million people worldwide are estimated to have been infected. It is largely unknown to what extent HIV affect young adults in many of the world developing countries particularly in sub-Sahara Africa. Our study represent the first large scale effort to examine the prevalence of HIV infection among young adults seen at the University of Port Harcourt Teaching Hospital, Nigeria.

Our finding of HIV sero prevalence of 40.4% is significantly higher than the population based national prevalence of 5.0% as at 2003 and the prevalence observed among blood donors in Nigeria [8, 9]. The prevalence level amongst young adults in this study is higher than that in the general population which targets pregnant women. The higher prevalence seen among young adult in his study may be due to the fact that young people are vulnerable to HIV because they are more likely to engage in high-risk behaviour; such as unprotected sex with multiple sex partner, alcohol and drug use.

Our study indicates a significant female gender- associated risk to HIV infection among adolescents. We observed HIV prevalence of 50.2% among females compared to 26.8% among males. Socio-economic, cultural and biological factors contribute to this female gender vulnerability to HIV. Women of all ages are more likely than men to become infected with HIV during unprotected vaginal intercourse [4]. Young girls are also far more likely than boys to be coerced or raped or be enticed into sex by some one

older, stronger or richer. Sometimes the power held over there is mainly that of greater physical strength. Sometimes it is social pressure to acquiesce to elders or a combination of factors as may be the case with older "sugar daddies" who offer school girls gift or money for school fees in return for sex [5]. In this era of HIV/AIDS, the consequences for young female adolescents can be disastrous. This "age mixing" pattern whereby older men are having sex with young girls is fuelled by the dangerous cultural myth in some places that having sex with a virgin can free a man from HIV infection. This belief has led to child rape and to some men seeking sex with very young girls [10]. The female-gender associated vulnerability to HIV seen in this study parallels observation in sub Saharan Africa that there were 12 to 13 HIV-infected women for every 10 infected men in 2001 [11]. Biological factors contributes to women's greater vulnerability to HIV/AIDS. During unprotected vaginal intercourse, a woman's risk of becoming infected is up to four times higher than a man [4]. This vulnerability is especially marked in adolescents whose vaginal tract is still not fully mature and tissue tear easily. The vagina's greater area of susceptible tissue and micro trauma during intercourse makes women more physiologically vulnerable to HIV [12]. Another biological factor that makes women vulnerable to HIV involves the synergy between HIV and Sexually Transmitted Infection (STI). Sexually transmitted infection can increase the risk of HIV transmission as much as 10 folds [13]. This is especially significant for women because most STI cases in women are untreated because they are often latent or difficult to see coupled with lack of access to medical treatment and fear of stigmatization for those diagnosed with sexually transmitted infections [14].

Cultural traditions such as forced marriage, older men's preference for young women and female genital mutilation contribute to women's lack of power [15].

Our finding that HIV sero prevalence was significantly higher in less educated persons without formal education (80%) compared to 41.5%, 34.5% and 32.3% respectively among those with primary, secondary and tertiary education parallels data found in the general population of the United State and Peru in which sero prevalence of sexually transmitted viral infection has been found to be higher in less educated persons [16, 17]. Speculatively, there may be several reasons for this association; better educated people generally have greater access to information than those who are illiterate or uneducated and they are more likely to make well informed decisions and act on that information. In addition educated people generally have better jobs and greater access to money and other resources which can help them support healthier lives. History of alcoholism and drug use were found to be significant independent risk factors for HIV infection among young adults an indication that the fight against HIV/AIDS must rest firmly on prevention programmes which emphasise a combination of behavioural and social changes [18]. This finding is consistent with previous suggestion that the chances of contracting HIV are greatest among individuals who use drugs, have unprotected sex, have multiple sex partners have been sexually abused and who already have a sexually transmitted disease [19].

The number of sexual partners and age of first sexual intercourse were found as significant independent risk factors for infection with HIV among adolescents ($p<0.05$). The mean age of first intercourse found among HIV-infected adolescents in this study, was 15.92 ± 1.18 years. The mean age in females (15.84 ± 1.19) was significantly lower than that in males (16.21 ± 1.09). This observation

however lower than the mean age of 11 years observed among low income African American adolescents in Baltimore, United States [20]. The number of premarital sexual partners is not the only factor contributing to the risk of HIV infection. The other crucial factor for girls are early sexual debut at an age when their biological vulnerability is very high and with older and more heavily infected men.

This hospital based study has confirmed a high prevalence of HIV among young adults and described the sero-epidemiology. This however calls for an urgent need for government and non governmental organizations to embark on interventional measures such as health education of the young adult population, preventive programme which emphasize behavioural and social changes, public awareness programme to address the various social, economic and cultural factors that promote the spread of HIV infection.

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