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Short reports

Demographic factors in HIV infected patients seen at UCH, Ibadan, Nigeria.

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Summary

There is a rising rate of Human Immunodeficiency Virus (HIV) infection in Nigeria. Good knowledge of the demographic characteristics of the patients with HIV/AIDS may be of great importance in understanding its epidemiology in Nigeria and could facilitate efforts at curtailing the spread of the infection. The study was planned to determine the demographic factors in Nigerian patients with HIV infection. The study was conducted at the University College Hospital (U.C.H), Ibadan, located in the South West of Nigeria. It was a retrospective study of patients with HIV infection attending the U.C.H. from 1988 to 2002. The data collected from the clinical records of the patients with HIV infection included age, sex, marital status, number of spouses, tribe, occupation, education and their religious affiliation. A total of 460 patients aged 1-76 years with peak at 30-34 years were studied. The male / female ratio was 1.06 and the males were the older group. Traders accounted for 40% with female preponderance while the artisans (19.9%) and the military (2.9%) were mostly males. The patients were of Yoruba (70.6%), Igbo (20.0%) and Hausa (9.1%) races. Among the patients with marital status, majority (71.4%) were married while those separated and widowed accounted for 3.5% and 2.6% respectively. Also, a higher proportion of the female HIV patients were Christians whereas the majority of the males were of Islamic religion. Although, there was a low frequency of records on education, the males had better formal education. In conclusion, the study shows that HIV infection is presently an adult disease affecting the most productive segment of the Nigerian population regardless of the individual occupation, educational status, tribe and religious affiliation. Also, it shows that the infection could be associated with heterosexual intercourse.

Key words:- *Demographic characteristics, HIV infected patients, Nigeria.*

Resume

Il y'a une augmentation dans le taux d'infection du Virus Immunodéficient Humain (VIH) au Nigeria. Une bonne connaissance des caractéristiques démographiques des patients atteints du VIH/SIDA peut être d'une grande importance dans la compréhension de son épidémiologie au Nigeria et pourrait faciliter les efforts de tronquer la propagation de l'infection. L'était avait été planifiée pour déterminer les facteurs démographiques parmi les patients Nigérians infectées du VIH. L'était avait été faite a UCH, Ibadan, cite au Sud-ouest du Nigeria C'était une était rétrospective des patients atteints de l'infection du VIH fréquentant le UCH de 1988 a 2002. Les données obtenues des rapports cliniques des patients atteints de l'infection du VIH composant l'age, le sexe, la situation de famille, le nombre d'époux/épouses, la tribu, la profession, l'éducation et leur affiliation religieuse. Un total de 460 patients ages de 1-76ans avec le maximum a 30-34ans ont été étudié. La proportion homme et femme était de 1,06 et les homes formaient le groupe des plus ages. Les marchands représentaient 40% avec une prépondérance de femmes alors que les artisans (19,9%) et l'armée (2,, comptaient surtout des hommes les patients étaient de races Yoruba (70,6%) Igbo (20,0%) et Hausa (9,1%). Parmi les patients ayant des situations de famille, la majorité (71,4%) étaient maries alors que ceux qui étaient séparées et les veufs représentaient 3,5% et 2,6% respectivement. De même, une grande proportion de patients du VIH était de la religion Islam. Bien qu'il y' ait eu une faible fréquence de rapport sur l'éducation, les homes ont eu une meilleure éducation formelle. En conclusion, l'était montre que l'infection du VIH est actuellement une maladie des adultes affectant le segment le plus productif de la population Nigériane sans distinction de métier individuel, de condition éducative, d'affiliation religieuse et tribale. De même, il montre que l'infection pourrait être associée au rapport hétérosexuel.

Introduction

Human immunodeficiency virus (HIV) infection has become endemic in Nigeria where the prevalence rose from 1.8% in 1991 to 5.8% and 5.4% in 2001 and 2003 respectively among pregnant women seen at ante-natal clinics in the country [1]. Similarly, about 8.25% of 40 million people that are infected with the virus worldwide reside in Nigeria [2]. A way forward to early diagnosis, treatment and prevention of the disease in Nigeria could be aided by the knowledge of the demographic characteristics of the patients with the infection. Previous reports have shown varying patterns in demographic characteristics of patients with the infection [3-5]. In addition, the distribution of occupational types among persons infected with HIV has rarely been described [4]. Similarly the pattern of marital status, types of marriages, and tribes among the people with HIV infection in Nigeria remains unknown. This infor-

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mation needs further clarification. Hence, the need for the present study on the demographic factors in patients with HIV infection at the University College Hospital (UCH), Ibadan, Nigeria.

Methodology

A review of case notes of both out-patients and in-patients at UCH, Ibadan who were sero-positive for HIV infection from 1988 to 2002 was undertaken. Demographic data available at various degrees of completeness were on age, sex, occupation, religion, tribe, marital status and the number of spouses. The study was approved by the Joint University College Hospital/ University of Ibadan Ethical Review Committee.

HIV testing Alogrithm at UCH, Ibadan,

Blood samples from the patients were screened for HIV infection by Enzyme Linked Immuno-Sorbent Assay (ELISA) method. Confirmation of the infection was carried out using Western Blotting (WB) test kit. In the absence of the WB kit, ELISA reactive samples were retested in duplicates using ELISA test kits other than the one used for the initial test (double ELISA).

Data analysis

The data was analysed on a micro-computer using SPSS statistical package for data entry and statistical analysis. Frequency distribution tables and other descriptive statistics were used for data summary. The students t - test was used to compare two mean values while Chi – square test was used to investigate the significance of association between any two qualitative variables. All tests were carried out at 5% probability level.

Table 1: Age and sex distribution of patients with HIV infection in UCH, 1988 - 2002

Age	Sex		
	Male (%)	Female (%)	Total (%)
0-4	6 (2.2)	2 (0.8)	8 (1.5)
5-9	2 (0.7)	3 (1.2)	5 (1.0)
10-14	3 (1.1)	0 (0.0)	3 (0.6)
15-19	4 (1.5)	7 (2.7)	11 (2.1)
20-24	10 (3.7)	42 (16.3)	52 (9.8)
25-29	24 (8.9)	40 (15.5)	64 (12.1)
30-39	92 (34.0)	91 (35.3)	183 (34.5)
40-49	62 (22.9)	23 (9.0)	85 (16.1)
50-59	27 (11.0)	10 (4.1)	37 (7.0)
≥60	7 (2.6)	5 (2.0)	12 (2.3)
Unknown	34 (12.6)	35 (13.6)	69 (13.0)
Total	271 (100)	258 (100)	529 (100)

Results

There were 529 records of HIV patients who presented at the University College Hospital Ibadan over the 14 year study period (1988-2002). Table 1 shows the age and sex

distribution of these patients. The record of age for 69 (13.0%) patients was missing. There was a significant sex differential among the HIV patients.

Table 2: Demographic characteristics of HIV patients in UCH (1988-2002) by gender

Demographic characteristics	Gender		
	Male (%)	Female (%)	Total (%)
1. *Occupation*			
- Trading	46 (17.0)	64 (24.8)	110 (20.8)
- Civil servant	27 (10.0)	23 (8.9)	50 (9.5)
- Artisan	44 (16.2)	10 (3.9)	54 (10.2)
- Military	7 (2.9)	1 (0.4)	8 (1.5)
- Housewife	0 (0.0)	21 (8.1)	21 (4.0)
- Student	12 (4.4)	16 (6.2)	28 (5.3)
- House girl	0 (0.0)	1 (0.4)	1 (0.2)
- Unknown	135 9 (49.8)	122 (47.3)	257 (48.6)
2. *Ethnic*			
- Yoruba	166 (61.3)	163 (63.2)	329 (62.2)
- Igbo	39 (14.4)	54 (20.9)	93 (17.6)
- Hausa	31 (11.4)	11 (4.3)	42 (7.9)
- Bamako (Mali)	1 (0.4)	1 (0.4)	1 (0.2)
- Unknown	34 (12.6)	29 (11.2)	63 (11.9)
3. *Marital status*			
- Single	27 (10.0)	24 (9.3)	51 (9.6)
- Married	82 (30.3)	80 (31.0)	162 (30.6)
- Separated	1 (0.4)	5 (1.9)	6 (1.1)
- Widow	1 (0.4)	7 (2.7)	8 (1.5)
- Unknown	160 (59.0)	142 (55.0)	302 (57.1)
4. *Number of spouse*			
- 1	16 (5.9)	4 (1.0)	20 (3.8)
- 2	9 (3.3)	0 (0.0)	9 (1.7)
- 3	3 (1.1)	1 (0.4)	4 (0.8)
- 6	0 (0.0)	2 (0.8)	2 (0.4)
- Unknown	243 (89.7)	251 (97.3)	494 (93.4)
5. *Religion*			
- Christianity	86 (31.7)	85 (32.9)	171 (32.3)
- Islam	72 (26.6)	58 (22.5)	130 (24.6)
- Traditional	0 (0.0)	1 (0.4)	1 (0.2)
- Unknown	113 (41.7)	114 (44.2)	227 (42.9)
6. *Education*			
- None	2 (0.7)	0 (0.0)	2 (0.4)
- Primary	1 (0.4)	3 (1.2)	4 (0.8)
- Secondary/ Modern School	2 (0.4)	7 (2.7)	9 (1.7)
- Polytechnic/College of Education	4 (1.5)	4 (1.6)	8 (1.5)
- University	4 (1.5)	2 (0.8)	6 (1.1)
- Unknown	258 (95.2)	242 (93.8)	500 (94.5)

The males with a mean age of 36.6 years (SD= 11.8 years) were significantly older than the females with a mean age of 31.5 years (SD= 10.5 years) , t= 4.85, $P < 0.001$. The distri-

bution of the patients by gender revealed a higher proportion of females in the 15-24 year age group (19.0% vs 5.2%). Also, while 54.7% of females were between the ages of 20 and 34 years, a similar proportion of males (56.9%) were between 25 and 44 years.

The result showed traders to be predominant accounting for 20.8% of all patients. This is followed by artisans (10.2%), civil servants (9.5%) and students (5.3%) while housewives constituted 4.0%. The sex distribution of the patients by occupation was statistically significant X^2= 51.744, P<0.001. Indeed a higher proportion of the traders were females (24.8% females vs 17.0% males), while artisans and military were predominantly males (16.2% males vs. 3.9% females) and (2.9% males vs. 0.4% females) respectively. Also, a higher proportion of the students were females (6.2% vs. 4.4%). The majority of the patients were of the Yoruba race (62.2%) followed by Igbos (17.6%) and Hausa races (7.9%). There were only 2 non-Nigerians from Mali Republic.

Table 3: The occupational distribution of Nigerians vs those of HIV patients in this study

Occupation	HIV Patients in this study	Nigerian population*		
		Urban	Rural	Urban+ Rural
Traders	40.4	29.9	16.0	19.4
Artisans	19.9	11.4	6.2	-
Civil Servants	18.4	12.2	3.8	6.4
Students	10.3	30.9	17.1	21.5
House wife	7.7	8.1	18.3	15.2
Military	2.4	-	-	-
House girl	0.4	-	-	-
Farmers	-	3.1	32.4	23.2
Unemployed	-	2.7	2.6	2.6
Others	-	3.6	2.7	3.9
Total	272	10010	3171	6919

National HIV/AIDS and Reproductive Health Survey, 2003; Federal Ministry of Health, Abuja; Nigeria.

There was a statistically significant association between gender and tribe (X^2= 11.837, P<0.01). The Igbo and Hausas races had higher proportions of female and male HIV patients respectively while there was no appreciable sex difference among those of the Yoruba race.

Although, 42.9% of the records on marital status of patients were available, 71.4% of the patients were married and 22.5% were single. There were only 6 and 8 patients that were separated or widowed respectively. Of those who were married, only 35 reported their number of spouses and 57.1% were monogamous. The proportion of married males was slightly higher than their female counterparts (73.9% vs. 69.0%) while separated or widowed patient were commoner among fe-

males. However, the association between sex and marital status was not significant.

Although, there was no data on 57.1% of the patients' religion, the result showed that a slightly higher proportion of female HIV patients were Christians (59.0% vs. 54.4%) while the majority of the males were of Islamic religion. (45.6% vs. 40.3%). However, the differences were not statistically significant, (P>0.05).

Data on the level of education of the HIV patients were available in only 5.5% of the subjects. Almost half of the patients (48.3%) had post secondary education and another 31.0% had secondary education. Only 2 patients (6.9%) did not have any formal education. HIV patients seen in the hospital had a greater likelihood of being literate, P<0.05 however the distribution of their educational status was similar in both males and females (P>0.1).

Discussion

Although there are a few reliable demographic data on Nigeria, it varies from one geographic zone to another and from rural to urban population. The age distribution of the patients in this study does not follow the inverted pyramid structure in the developed countries of the world and as previously observed in Nigeria but predominate between 30 – 39 years age group. This age group is slightly higher than 20—30 years reported among similar patients at Lagos University Teaching Hospital (LUTH), Nigeria and Uganda [5,6]. This might be consequent to early age of first sexual activity (especially among the females) which is commoner among the urban than rural dwellers of Nigerian [7] and British populations [8]. Furthermore, the difference in age observed among male and female patient population could result from early age of marriage among the females since the age ranges for both gender are similar to the reproductive age group of Nigerian women (15-49years) and men (15 – 64 years) [7]. It corroborates the significant role that sex plays in the transmission of HIV infection especially the heterosexual activity and is further demonstrated by the similar peak age (30 – 34 years) of the infection among both the male and female patients. Therefore, there is the need for education of the adolescents on abstinence, safer (protective) sex in order to reduce the risk of acquisition of HIV infection and other sexually transmitted diseases [9]. In addition, the pattern of age distribution among our patients shows that HIV/ AIDS is presently an adult disease in Nigeria and is yet to become a paediatric problem as in Central and South Africa [10,11].

The occurrence of males more than females among our patient population is a feature previously reported by Akinsete *et al* at Lagos [5] but contrary to the observation among similar patients in Uganda and Central Africa [6,10] However, our finding is in line with the male / female ratio of 1:1 among Nigerians from 1991 census [7]. The occupational distribution among the patients is neither similar to what obtained among the rural nor the urban

populations of Nigerians (Table 3) [7] because UCH which is the site of the study, receives catchments of patients from all groups of populations within Nigeria. The high prevalence of the infection among traders, artisans, civil servants and students is in contrast to the occupational structure of Nigerians [7] but shows that they are vulnerable groups for HIV infection. However, housewives and the military personnel are also susceptible [4].

Concerning the distribution of the patient by tribe, the presence of Igbo and Hausa as well as other nationalities among the patients shows the hospital is national in its functional activity. The higher population of females and males among Igbo and Hausa respectively compared to equal proportions of both genders among the Yoruba race is significant. This is probably due to the pattern of use of hospital facility among the different ethnic groups, their sexual activity as well as the mobility patterns (traveling out of the home of origin) among the Hausa and Igbo races [7].

The preponderance of married patients as opposed to the singles is also in support of heterosexual transmission of HIV infection [5,7] more so that the patients could have engaged in premarital sex as practiced among British population[11]. In addition, this is corroborated by the presence of polygamous patients among the subjects. Furthermore, the presence of widows and widowers among the subjects could be consequent to the death of their spouses from HIV infection. Males usually have the habit of none disclosure of their HIV status to their spouses and when made, the havoc has already been done (personal observation by Ola S.O.). Similarly, separation of couples is usually related to sexual indiscipline on the part of either partners and this promotes infidelity. Hence, it should be discouraged in order to prevent its multiple devastating effects on the family and the nation.

The distribution of the patients along religious affiliation is not unexpected as it is similar to what prevails in the South West of Nigeria and is closer to the patterns among Nigerians as a whole [7]. However, the contrasting gender distribution along religious lines indicates the absence of the protection of religion on the infection [13] and the need for the believers of the different faiths to ensure strict adherence to the spiritual and moral values preached by their religion. In addition, religious leaders should offer care [14-16] to their infected subjects especially when newly diagnosed in order to allay psychiatric disorders that may prevail [17]. The presence of the infection among all the educational classes especially those with secondary and higher educational attainment (79.3%) shows the disparity between acquisition of knowledge and its practice [18,19]. It might be also an indication of a better health seeking behaviour among the literate subjects [20].

In conclusion, the study has shown that HIV infection in Nigeria is predominantly affecting the main productive group of the population and may progress further to involve the paediatric population if the scourge is not curtailed. Similarly, the most active working group of Nige-

rians such as traders, artisans, civil servants including students and especially the married subjects with multiple partners are the main vulnerable groups. In addition, HIV infection has no preference for tribe and educational status while religion has not contributed positively enough to reduce the tide of the infection in the nation. This calls for urgent attention on the part of every sector of the Nigerian community especially the religious leaders to contribute pragmatically on various preventive measures and therapeutic interventions aimed at arresting the epidemic of the infection in Nigeria.

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