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Characteristics of volunteers and non-volunteers for voluntary counseling and HIV testing among unmarried male undergraduates

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Summary

The 2001 HIV sero-prevalence survey in Nigeria revealed a rate of 5.8 percent with those under the age of 25 years having the highest prevalence rate. Most University students fall within this age group. This study is part of a larger study on the sexual behavior of youths and young adults and was designed to compare the characteristics of volunteers and non-volunteers for voluntary confidential counseling and HIV testing (VCT) among males. Six hundred and nine male undergraduate students were randomly selected and enrolled for the study. Data were collected using a pre-tested questionnaire. Of the 609, 51 (8.3%) volunteered to have their blood screened for HIV. All volunteers who received pre-test counseling went for the HIV test. Volunteers were significantly older than the non-volunteers ($P < 0.0001$), and were more likely to be sexually experienced ($P = 0.002$). Among the sexually experienced, the volunteers were older at first sexual intercourse (FSI) ($P < 0.0001$), and were more likely to have used a condom at FSI ($P = 0.001$). Volunteers had significantly higher knowledge scores for HIV/AIDS ($P = 0.006$), and the attitude to HIV/AIDS in both groups was positive. The marriage pattern of their parents with regard to polygyny was similar, and fewer volunteers had fathers in the higher socio-economic class and mothers who had completed secondary education ($P < 0.00001$, ($P = 0.02$). Among the 51 volunteers, 8 (15.7%) tested positive. Those who tested positive were less likely to have lived with parents, and were all sexually experienced. Those who screened positive were also more likely to be currently sexually active and to have fathers with low level of education. Three (5.9%) of volunteers did not return for results and posttest counseling. One of the three was positive for HIV. Of those who tested positive, 3 (37.5%) reported not using the condom at all, while the rest were using it only occasionally. VCT among the youths is possible however, small numbers encountered in the study is a limitation and there is a need to replicate this study using larger numbers. Tertiary institutions should provide VCT services for the students where they can be counseled appropriately and continuously throughout their stay in the institution. This hopefully will reduce the number of new HIV cases seen.

Keywords: *Voluntary counseling and testing, male, unmarried youths, HIV/AIDS, school health.*

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Résumé

En 2001, le taux des séro-positifs au VIH au Nigeria s'élevait à 5.8%, avec une prévalence plus élevée chez les moins de 25 ans. La majorité des étudiants universitaires sont dans ce groupe. Cette étude faisait parti d'une étude épidémiologique sur le comportement sexuel des jeunes et des jeunes adultes et désignée pour comparer les caractéristiques volontaires et non sur les conseils confidentiels et examiner le VIH sur parmi les males. Six cent neuf étudiants étaient sélectionnés au hasard et recrutés. Les données étaient collectées utilisant le questionnaire structuré. 51 (8.3%) des volontaires ont participé au test du VIH lorsque tous reçus les conseils. Les volontaires étaient significativement plus vieux que les non-volontaires ($P < 0.0001$) et plus expérimenté sexuellement à leur premier acte sexuel ($P = 0.002$). Les volontaires avaient des connaissances plus élevées sur le VIH/SIDA ($P = 0.006$) et l'attitude par rapport au VIH/SIDA était positive. La fréquence du mariage de leur parents sans distinction de la polygamie était semblable et quelques volontaires avaient leur pères dans la classe socio-économique élevée et leurs mères ayant complétés l'éducation secondaire ($P < 0.00001$, $P = 0.02$). Parmi les 51 volontaires, 8 (15.7%) étaient positive au VIH. Ceux-ci restant moins avec leurs parents, expérimenté sexuellement et active avaient leurs parents avec un niveau d'éducation bas. Trois (5.9%) des volontaires ne retournaient pas leurs résultats après les conseils et l'un était séro-positif. Parmi ceux qui étaient positif, 3 (37.5%) certifiaient n'ayant jamais utilisé le condom lorsque le reste y utilisaient occasionnellement. Le VCT parmi les jeunes reste possible, cependant ceci signale le besoin d'évaluer une large population. Bien que les institutions tertiaires doivent promouvoir les services du VCT pour les étudiants ou ils peuvent être conseillé proprement et continuellement durant leur séjour dans les institutions afin de réduire le nombre croissant d'individus infectés par le VIH.

Introduction

At the end of 2002, there were 42 million persons living with HIV/AIDS and 29.6 million of these live in sub-Saharan Africa [1]. Data from UNAIDS at the end of the year 2002 also showed that 12,000 adults were infected daily that year, of which about half were between the ages of 15-24 years [1].

HIV/AIDS is by far one of the most important public health problems confronting Nigeria today. With a

rate of 5.8% and an estimated 3.8 million infected person at the end of 2002, Nigeria has the second highest absolute number of infected persons globally [1-3]. High prevalence rates of 6.1 and 6 percent were observed among antenatal attendees 15-19 years and 20-24 years respectively in the 2001 sentinel survey [2]. Most University students fall within this age group characterized by high-risk sexual behavior, lack of access to HIV information and prevention services and a host of socio-economic and other problems. Many studies have been conducted on females but too few have been done on their male partners resulting in a paucity of data on the male. Most investigations have collected convenience rather than probability samples, raising the questions about generalization of findings. Many studies also stop at HIV risk-related knowledge, attitudes and practice, with very few reporting information on voluntary counseling and testing among the youths. Voluntary HIV counseling and testing has been shown to be a useful preventive intervention among adults, promoting sexual behavior change [4-6]. Studies have also found that African and black American youths are less likely to participate in VCT and less likely to return for the results [7-8]. VCT is still relatively new in Nigeria and only a few facilities conduct VCT. This study was part of a larger study examining high-risk sexual behavior among males. It was conducted to identify and compare the characteristics of volunteers and non volunteers for VCT among undergraduate males students from the University of Ibadan, Nigeria and to see if VCT is possible among these students.

Material and methods

Study area

The study was carried out in Ibadan, the capital of Oyo State, Nigeria. It is one of the largest cities in Africa and has a projected population of about 4 million. The city has several primary and secondary schools and two tertiary institutions namely the federal government owned, University of Ibadan and the State Polytechnic.

Study design and study population

This descriptive cross-sectional survey was aimed at collecting information on sexual behavior of unmarried male undergraduate students in the University of Ibadan, irrespective of the course, year of study, socio-economic and religious background and to determine the characteristics of those who take advantage of VCT during the study period.

Sampling technique

Using multi stage sampling technique, 12 official hostels, apartments and houses lived in by the University of Ibadan students within and outside the university campus were identified and listed. The total number of rooms was also determined. Proportionate sampling technique was adopted in allocating rooms for the study, based on location on and off campus and the sample size. Each room consti-

tuted the primary sampling unit and was selected using systematic sampling technique. All consenting males in the selected rooms were interviewed. The instrument used was a pre-tested, self administered, structured questionnaire. Most of the questions were coded while a few others were open ended to allow for free responses.

Voluntary counseling and testing was conducted at the University Health Services subsequent to the questionnaire survey. Testing was at no cost to the students.

Ethical consideration

Approval was sought and obtained from the office of the vice chancellor of the University and from the rector of the Polytechnics where the questionnaire was pre-tested. The approval of the Dean of students' affair as well as all the hall wardens of the selected halls was sought and obtained. A copy of the proposal was also sent to the Joint University of Ibadan/University College Hospital ethical committee. Respondent's privacy and confidentiality was guaranteed by anonymity of responses and no names were used. Pre and Post test counseling was carried out on a one to one basis during the screening exercise. Clients were tested using an ELISA-based rapid tests [9]. The positive cases were counseled to go for confirmatory test at the University College Hospital, while sero-negative clients received reinforcement of the preventive messages and were informed about the window period.

Definitions

Socio-economic class was classified into high, middle and low. This is dependent on parents' occupation within the community and not a classification of individuals. The high socio-economic class included professional, top civil servants, businessmen and those in high managerial cadre. The middle class included technical and skilled workers while the lower class included the partially skilled and unskilled. A student was classified as sexually active if he has had regular sex in the last one year and had sex within a month prior to the study. Parents' education was classified as low if they did not complete secondary level of formal education, and high if they completed at least secondary level education. For the purpose of this study, high-risk sexual behavior included having unprotected sex, having multiple partners and having non-regular, non co-habiting sexual partners.

Results

Over two thirds (67.7%) of these unmarried students were sexually experienced and 41% were currently sexually active.

Characteristics of volunteers and non-volunteers

The volunteers were significantly older than the non-volunteers ($P < 0.0001$), were more likely to be sexually experienced ($P = 0.002$), and to have ever-used a condom at first sexual intercourse ($P = 0.001$). The volunteers were significantly older at first sexual intercourse ($P < 0.0001$), were more likely to live off-campus ($P = 0.005$), and had signifi-

Table 1: Socio-demographic characteristics, knowledge, attitude and sexual behaviour of volunteers and non-volunteers for VCT.

Characteristics	Non-Volunteers n = 558	Volunteers n= 51 n = 51	P-value
Current mean age (years)	22.8 ± 2.9	24.7 ± 3.2	< 0.0001
Ever had sexual intercourse	365 (65.4%)	44 (86.3%)	0.002
Mean age at first sexual intercourse (FSI)	17.3 ± 2.8	19.2 ± 3.4	<0.0001
Median age at FSI (years)	17.0	19.0	
Ever patronized CSW among sexually experienced (SE)	21 (5.8%)	1 (2.3%)	>0.05
Had sex in the last one month among SE	155 (42.5%)	13 (29.5%)	>0.05
Ever use condom among SE	304 (83.3%)	39 (88.6%)	>0.05
Use Condom at FSI among SE	48 (13.2%)	14 (31.8%)	0.001
Still use condom among SE	257 (70.4%)	29 (65.9%)	>0.05
Pattern of condom use among current users			
Always	148 (57.6%)	13 (44.8%)	>0.05
Occasional	109 (42.4%)	16 (55.2%)	>0.05
Mean number of lifetime sexual partners	4.5 ± 3.9	3.7 ± 3.4	>0.05
Location while in the University			
On Campus	477 (85.5%)	36 (70.6%)	0.005
Off-Campus	81 (14.5%)	15 (20.4%)	
Usual Location while at home			
Living with both parents	474 (85.0%)	42 (82.4%)	>0.05
Others	84 (15.0%)	9 (17.6%)	
Mean of HIV knowledge score*	7.3 ± 1.5	7.9 ± 1.5	0.006
Mean of attitude score to HIV*	6.2 ± 1.3	6.3 ± 1.4	>0.05
Fathers socio-economic status #			
Low	188 (33.7%)	14 (27.5%)	
Middle	46 (8.2%)	18 (35.3%)	
High	324 (58.1%)	15 (29.4%)	<0.00001
Mothers socio-economic status #			
Low	328 (58.8%)	25 (49.0%)	
Middle	52 (9.3%)	17 (33.2%)	<0.00001
High	178 (31.9%)	5 (9.8%)	<0.001
Fathers educational status			
Low**	103 (18.5%)	14 (27.5%)	
High***	455 (81.5%)	37 (72.5%)	>0.05
Mothers educational status			
Low**	174 (31.2%)	24 (47.1%)	
High***	384 (68.8%)	27 (52.9%)	0.02
Type of family			
Polygamous	143 (25.6%)	18 (35.3%)	
Monogamous	415 (74.4%)	33 (64.7%)	>0.05

* Maximum attainable score was 10

**Nil or Primary complete

*** Completed secondary education and above

Some missing data

cantly higher knowledge scores for HIV/AIDS ($P=0.006$). They were less likely to have fathers and mothers in the higher socio-economic class ($P<0.00001$, $P<0.001$). (Table 1). There was no statistically significant difference found in the mean number of lifetime sexual partners among the sexually experienced in both groups. Attitudes to HIV/AIDS were similar in both groups and positive, neither was any difference found in the proportion from polygynous families.

All 51 (100%) volunteers who had pre-test counseling agreed to have their blood tested. Table 2 shows the differences between the volunteers who tested positive and those who tested negative.

Characteristics of volunteers who tested positive and those who tested negative

Those who screened positive were older, more likely to have initiated sex at a younger age and they had a longer span of sexual activity since their sexual debut compared with those who screened negative. They were more likely to live off campus and were less likely to have lived with both parents. Those who screened positive were also more likely to have ever-used condom and used it at first sexual intercourse, and more of them were currently sexually active. Fewer students among those who tested positive had fathers with high formal education (completed secondary school and higher), and there was no differ-

Table 2: Socio-demographic characteristics, sexual behaviour, knowledge and attitude scores and HIV test result among the volunteers

Characteristics	Test positive (n = 8)	Test negative (n = 43)
Current mean age (years)	25.6 ± 6.2	24.6 ± 2.5
Mean age at first sexual intercourse (years)	18.3 ± 3.2	19.7 ± 3.7
Mean number of years since sexual debut	7.3 ± 6.4	4.9 ± 2.9
Location while in the University		
On Campus	5 (62.5%)	32 (74.4%)
Off-Campus	3 (37.5%)	11 (25.6%)
Location while at home		
Living with both parents	6 (75.0%)	36 (83.7%)
Others	2 (25.0%)	7 (16.3%)
Mean number of lifetime sexual partners	3.4 ± 3.4	3.4 ± 3.3
Ever patronized CSW	Nil	1 (2.3%)
Ever-used condom	8 (100%)	31 (72.1%)
Used condom at first sexual intercourse	4 (50%)	10 (23.3%)
Ever-had sexual intercourse (SE) #	8 (100%)	36 (83.7%)
Currently sexually active (among SE) #	5 (62.5%)	20 (55.6%)
Still used condom	5 (62.5%)	24 (66.7%)
Pattern of condom use among current users		
Always	2 (40%)	11 (45.8%)
Occasional	3 (60%)	13 (54.2%)
Mean of HIV knowledge score*	8.30 ± 1.1	7.5 ± 1.2
Mean of attitude score*	6 ± 1.5	6.5 ± 1.4
Mothers level of education		
Low**	4 (50%)	20 (46.5%)
High***	4 (50%)	23 (53.5%)
Father educational status		
Low**	4 (50%)	10 (23.3%)
High***	4 (50%)	33 (76.7%)
Type of family		
Polygamous	3 (37.5%)	15 (34.9%)
Monogamous	5 (62.5%)	28 (65.1%)

*Maximum attainable is 10,

** Below secondary education,

*** Secondary education and above # SE-Sexually experienced

ence in the type of family formation with regards to polygyny among those who tested positive and those who were negative. High-risk sexual behavior was also reported among those who were HIV negative. Students continued to visit the health center for VCT long after the study had ended.

Discussion

The study informs that youths and the young men when given the opportunity are likely to take advantage of the voluntary, confidential counseling and testing program especially if results are released at the same visit. Such programs play a very important role in comprehensive prevention and care strategies. VCT has been proven to be a useful tool for preventing new HIV infections among adults and also for helping HIV positive individuals access appropriate care [10-13]. It is therefore necessary that tertiary institutions in Nigeria provide VCT services for the

students so they can be counseled appropriately and continuously throughout their stay in the institution. This hopefully will reduce the number of new cases seen among the youths and young adults.

Fry and Fernandez in their study showed that youths were less likely to return for their result and the posttest counseling [8]. From this study, only 5.9% of the clients failed to return for their results. This high return rate may be due to the confidential nature of testing and counseling and the rapidity at which results were released.

Among the volunteers, the 8 who screened positive denied ever-patronizing commercial sex workers (CSW) and rates of CSW patronage were generally very low in this study even among non-volunteers. Low CSW patronage has been observed among men from this region highlighting the need to look more circumspectly at the dynamics of HIV/AIDS spread in this country so that appropriate intervention programs can be developed which

enabled men deal with their risks for HIV infection more judiciously.

From the data presented, over two-thirds of these unmarried students had ever-had sex and compares favorably with the rate obtained (65 percent) among out of school youths and young adults males in Ibadan [14]. The study rate is however higher than 54 percent reported by The Center for Disease Control (CDC) among high school youths in America [18] but much lower than the 90.1 percent and 80 percent reported among males in South Africa and Tanzania [16,17]. The study finding corroborates earlier studies showing that a large proportion of young unmarried males in Nigeria are sexually active and at a risk for sexually transmitted infections including HIV/AIDS [18-21].

Condom use among volunteers and non-volunteers at sexual debut was low in this study. Since unprotected sexual intercourse places young people at risk for HIV and other sexually transmitted infections, it is necessary that condom awareness and counseling programs be scaled up as a matter of urgency among the youths who would not remain sexually abstinent. Promotion of abstinent behavior should however be a priority among the unmarried. The UN general assembly special session on HIV/AIDS unanimously adopted the resolution that by 2005, at least 90% of young people age 15-24 should have access to information, education and services necessary to develop the life skills needed to reduce their vulnerability to HIV [1]. It is needful that attention is paid to this decision. The short period in which the VCT was offered and the small number of volunteers is an obvious limitation of this study. It is therefore suggested that the study be done using larger number of volunteers.

In conclusion, VCT is possible and such program should be implemented at the tertiary level of education in a bid to control the spread of HIV/AIDS among the youths.

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