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HIV/AIDS – Related Knowledge and Sexual Behaviour Among Secondary School Students in Benin City

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Abstract

Purpose: The high prevalence of HIV/AIDS amongst African youths has been a major problem in recent times, particularly in Nigeria where over 5% of the population is at risk of the disease. We undertook to assess HIV/AIDS related knowledge and sexual behaviour among secondary school students in Benin City.

Methods: In a cross-sectional study using a 59-item self-administered questionnaire, a survey was carried out among 1917 students (48.7% male and 51.3% female; age: 11-24 years) systematically selected from 13 secondary schools in Benin City to assess HIV/AIDS related knowledge and sexual behaviour.

Results: Awareness of HIV/AIDS was high. Misconceptions about the cause and spread was very high (91.4% and 93.1% of respondents, respectively). The knowledge on prevention was poor as only 40.4% of the respondents knew how to avoid contacting HIV/AIDS. While 9.1% of the students indicated ever having sex (with 67.4% of them using condom before sex), only 2.4% engaged in commercial sex. Some of the males (4.2%) are homosexuals. As many as 5.8% of the youths (and 12.4% of those who had done HIV test in the preceding 12 months) were HIV positive.

Conclusion: Despite the various educational efforts to address the problems of HIV/AIDS, the knowledge of secondary school students in Benin City is still poor and the adolescents still engage in risky behaviours. This calls for educational intervention that will impact in-depth knowledge about HIV/AIDS among the youths who are at the center of HIV/AIDS pandemic.

Keywords: HIV/AIDS knowledge, risky sexual behaviour, questionnaire survey, secondary schools, Benin City

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Introduction

Since HIV/AIDS was first diagnosed in Nigeria in 1986, the adult prevalence of HIV in the country rose progressively from 1.8% in 1991 to 5.8% in 2001 with an estimated 3.2 million people living with the disease^{1, 2}. In 2006, it was reported that a population of 2.9 million HIV positive persons lived in Nigeria and as many as 220,000 died from HIV/AIDS in 2005³. Although the reported national prevalence rates have been declining in the last 5 years, there are strong regional differences in this vast and socioeconomically diverse country, where prevalence rates in 2005 varied from as low as 1.6% in the South West to a high 10% in the North Central parts (2005 sentinel survey). Edo State with a population of 3.2 million people (Nigeria census figure 2006) had a prevalence rate of 4.4% in 1999 which increased to 5.2% in 2004 but declined to 4.6% in 2005⁴. This reported decline in the prevalence rates would suggest that the epidemic is stabilizing or better still, being controlled. On the contrary, it can disguise the worst phases of an epidemic—when roughly equally large numbers of people are being newly infected with HIV and are dying of AIDS.

Adolescents makes up 20 percent of the world population and 85 percent of these live in the developing countries. The adolescence is a period of experimentation which exposes the youths to health risk through irresponsible sexual behaviour, drugs, alcohol, and tobacco use. The fact that adolescents are disproportionately affected by the reproductive health morbidity, including HIV/AIDS, draws attention to the need for appropriate interventions. At the end of 2001, it was estimated that 11.8 million people aged 15 – 24 years were living with HIV/AIDS⁵ and more than half of all new cases occur among people under age 25 years. Young people are vulnerable to HIV because they are more

likely to engage in high – risk behaviours including political, economical, social and cultural facets of life. These risky behaviours are often influenced by societal factors that determine people's vulnerability to infection. Although previous studies in Nigeria indicate that most secondary schools students are aware of the existence of HIV/AIDS⁶⁻⁷, the problem of misconception and sexual behaviour abound⁸. The staggering 24.7 million sub-Saharan Africans, of the 39.5 million people living with HIV worldwide, and the 2.8 million sub-Saharan Africans of the 4.3 million new HIV infections worldwide in 2006⁹ lay credence to the fact that the issue of knowledge and behavioural change in Africa needs greater attention than elsewhere in the world.

HIV has found a wealth of opportunities to thrive among tragic human conditions fueled by poverty, abuse, violence, prejudice and ignorance. In Nigeria, HIV infected people often have to overcome the stigma and discrimination, and address some of the most painful parts of HIV infection including prejudice, rejection, hurt, and ostracism that are often attributable to cultural and religious beliefs, poverty, and poor education. In the last couple of years, access to fund to tackle the problem of HIV in the country has greatly improved due to the financial support from many governmental and non-governmental organisations including PEPFAR (the President's Emergency Plan for AIDS Relief), the Global Fund and the World Bank¹⁰. In addition, a series of discoveries and advances in understanding and controlling the virus that causes AIDS have been made. Nigeria's birth rate for adolescents is one of the highest in the world, and the prevalence of sexually transmitted infections including HIV, among female adolescents in the country has climbed rapidly in the last years¹¹. In an effort to reduce its high maternal and infant mortality and high rates of sexually transmitted infection and dropout from school, Nigeria developed a

national health Policy in 2000 whose aim included changing behaviour among adolescents leading to HIV and other sexually transmitted infections¹². However, these have had limited impact on the majority of HIV infected people living in Nigeria with a population of 140 million partly because of inadequate knowledge of the adolescents on issues relating to HIV/AIDS and other sexually transmitted infections.

Clearly, improved knowledge and sexual behavioural change are needed in developing response against HIV/AIDS among youths¹³. It is therefore important that the knowledge and sexual behaviour of the population is occasionally reviewed as the social and economic conditions that nurture the spread of the virus have to be confronted as essential elements to stem its spread and create effective solutions to halt the epidemic.

The main objective of this study therefore is to assess the level of HIV/AIDS related knowledge and sexual behaviour of secondary school students in Benin City. Specifically, this study will address the level of awareness and knowledge, misconceptions and sexual behaviour in relation to HIV/AIDS among secondary school students.

Methods

The study was conducted in Benin City (the capital of Edo State in Nigeria) with a population of 1.8 million people. The City is made up of three local government areas namely, Egor, Oredo and Ikpoba-Okha. The major business is transportation and petty trading. However, there are many civil servants and over 40% of the inhabitants are unemployed. There are over 20 public and 30 private secondary schools with student population ranging from 200 – 2000 students and 50 – 900 students in the public and private schools, respectively. Majority of the private schools have better

facilities and teachers than the public schools.

In a cross sectional study, 13 secondary schools were systematically selected from the private and public schools in the City. The schools included 5 private schools and 8 public schools, 2 of which were from the relatively poorer areas of the City. In selecting these schools, the City was divided into the three local government areas and at least 4 schools (1 private and 2 public schools) were randomly selected from each local government.

A sample size of 1917 students was used for this study. This number was much higher than the estimated minimum sample size using appropriate statistical method¹⁴⁻¹⁵ determined using 95% confidence interval, HIV/AIDS prevalence of 5% (national average is 4.4% and prevalence for the State is 4.6%) and estimated student population of a maximum of 20,000 students in the 13 secondary schools. The students were selected at random from all classes in each school (both junior and senior classes) and covered both males and females. Each student in any class had equal chance of completing the questionnaire but limited by approximate number of questionnaire expected to be distributed in that class, sitting position in the class, and willingness to complete the questionnaire. Teachers and those who were not students were excluded from the study.

The survey was carried out using a 59-item structured questionnaire based on UNAIDS HIV/AIDS survey indicators¹⁶. Open-ended and closed questions covering socio-demographic characteristics, knowledge of HIV/AIDS, sexual behaviour and HIV/AIDS status were used.

The self-administered questionnaire instruments were distributed to the students during school hours in their classrooms/lecture halls with the assistance of their classroom

teachers by 2 registered pharmacists who were specifically trained on how to administer the questionnaire. The pharmacists responded to issues in connection with the questions. An average period of 37 minutes was used in each class for the administration of the questionnaire. Completed questionnaire instruments were retrieved from the students and coded appropriately to reflect the source of data.

Permission to apply the questionnaire to the students was sought from the appropriate institutional authorities. Maximum effort was made to maintain confidentiality of information by omitting names of the respondents and making sure that they were aware that no information they provided could be linked to them by anybody, including the researcher.

The data obtained were coded and entered into a computer using a computer software, Epi-info 2003 version 3.3.2 (Centre for Disease Control, USA/World Health Organization, Geneva). Data fed into the computer software were double-checked to ensure accuracy. As appropriate, data were categorized and analyzed using descriptive statistics (frequencies and percentages) based on the total number of respondents (except where specified otherwise). The association between the dependent variables (knowledge of HIV/AIDS – correct knowledge of causes of HIV/AIDS, misconceptions, transmission and prevention; inappropriate sexual behaviour - sex before marriage, commercial sex, sex for pleasure, rape; being HIV positive) and the independent variable (socio-demographic characteristics) were determined using a logistic regression analysis. Logistic regression model was used to determine the independent variables that were the best predictors of what motivated the school children to inappropriate sexual behaviour. The sociodemographic characteristics included in the regression model were age, sex, educational status of parents, religion,

monthly income of parents, and expenditure per month. Any factor with odd ratio greater than 1 was considered to be predictive of the dependent variable related to the factor in the model. Statistical analysis were performed at a confidence interval of 95%; 2-tailed probability values (p-values) less than or equal to 0.05 were considered to be significant.

Results

All the students that received the questionnaire completed and returned them to the researchers (100% response rate). The male respondents accounted for 48.7% while the females accounted for 51.3% (Table 1). About 71.1% of them were between the ages of 15-19 years while 2.8% were above 24 years. Majority of the respondents (91.6%) were Christians and 69% of their parents live together. The number of children in majority of the respondents' families ranged from 5-8 children per family (57.8%) to less than 5 (30.9%). Most of the students were sponsored in the school by their parents (62.4%).

HIV/AIDS-related knowledge

The main sources of information about HIV/AIDS were the television (70.7%), radio (26.7%) and public lectures on AIDS (22.8%). Other sources included school education programmes, medical source, internet, national newspapers, magazines, class teachers, advertisement on billboards along the streets, friends and parents (Table 2).

The knowledge of HIV/AIDS among the students was generally very poor and independent of age, sex and level of education in school (class). As many as 40.5 % of the respondents (21.3% of males and 19.2% of females) did not know the cause of HIV/AIDS (Table 3). Bacteria, evil spirit/witch craft, fungi and misuse of drugs, including excessive drinking were miscon-

In- Table1: Sociodemographic characteristics of respondents

Characteristics	Male (%)	Female (%)
Age:		
<15	257 (13.4)	244 (12.7)
15-19	644 (33.6)	718 (37.5)
20-24	33 (1.7)	18 (0.9)
25-29	-	3 (0.2)
Total	934 (48.7)	983 (51.3)
Religion:		
Christian	849 (44.3)	906 (47.3)
Moslem	10 (0.5)	27 (1.4)
Traditional Religion	9 (0.5)	9 (0.5)
No Religion	50 (2.6)	32 (1.7)
Others	16 (0.8)	9 (0.5)
Total	934 (48.7)	983 (51.3)
Parent's marital status:		
Single parent	54 (2.8)	55 (2.9)
One parent has died	50 (2.6)	70 (3.6)
Live together	580 (30.3)	756 (39.4)
Separated	54 (2.8)	48 (2.5)
Divorced	57 (3.0)	32 (1.7)
No of children in our family:		
<5	309 (16.1)	283 (14.8)
5-8	513 (26.8)	595 (31.0)
9-14	80 (4.2)	87 (4.5)
15-19	13 (0.7)	9 (0.5)
>19	35 (1.8)	4 (0.2)
Sponsor in school:		
Father	494 (25.8)	527 (27.5)
Mother	68 (3.5)	107 (5.6)
Brother or sister	44 (2.3)	62 (3.2)
Other relatives	70 (3.6)	66 (3.4)
Self	97 (5.1)	39 (2.0)
Scholarship	122 (6.4)	111 (5.8)

ceived as the cause of HIV/AIDS by the school children. Mosquito bites, shaking hands with HIV infected person, living in the same house with HIV infected person, sharing the same bed with HIV infected person, sharing food with a person suffering from HIV/AIDS, using public toilet, kissing and hugging HIV infected person, being in a place where infected persons is sneez-

ing and coughing, and studying in the same classroom with HIV positive person were also misconceived as sources of HIV infection. As many as 96.6% of the students believe that HIV/AIDS cannot be cured while as many as 62.7% believe that people living with the disease can never live good lives.

Table 2: Frequent sources of information on HIV/AIDS

Source	Male (%)	Female (%)
Television	655 (34.2)	699 (36.5)
Radio	249 (13.0)	263 (13.7)
School education programmes	120 (6.3)	129 (6.7)
Medical source	122 (6.4)	110 (5.7)
Internet	97 (5.1)	68 (3.5)
Public lecture on AIDS	203 (10.6)	234 (12.2)
National Newspapers	145 (7.6)	155 (8.1)
Magazines	142 (7.4)	174 (9.1)
Class teacher	134 (7.0)	211 (11.0)
Advertisement on billboards along the streets	124 (6.5)	111 (5.8)
Friends	141 (7.4)	197_ (10.3)
Parents	166 (8.7)	240 (12.5)

Table 3: Misconceptions about HIV/AIDS-

	Male (%)	Female (%)
Cause of HIV/AIDS		
Bacteria	70 (3.7)	95 (5.0)
Evil spirit/ witch craft	33 (1.7)	31 (1.6)
Virus	735 (38.3)	794 (41.4)
Fungi	22 (1.1)	18 (0.9)
Excessive drinking	14 (0.7)	14 (0.7)
Drugs	25 (1.3)	16 (0.8)
How one can contact HIV/AIDS		
Mosquito bites	58 (3.0)	56(2.9)
Penetrative anal sex ,	178 (9.3)	188 (9.8)
Shaking hands with HIV infected person	17 (0.9)	14(0.7)
Living in the same house HIV infected person	19 (1.0)	19(1.0)
Sharing the same bed with HIV infected person	89 (4.6)	28(1.5)
Sharing food with a person suffering from HIV/AIDS	26 (1.4)	29(1.5)
Public toilet	52 (2.7)	65(3.4)
Kissing and hugging HIV infected person	125 (6.5)	135 (7.0)
Being in a place where infected persons is sneezing and coughing	36 (1.9)	49(2.6)
Studying in the same classroom with HIV(+) person	7 (0.4)	20 (1.0)
Treatment		
HIV/AIDS can be cured	46 (2.4)	24 (1.2)
People living with HIV/AIDS cannot never live good lives	608 (31.7)	595 (31.0)

Other than 55.9% of them knowing that mother to child transmission can be prevented by using antiretroviral therapy dur-

ing pregnancy, less than 50% of them knew the 13 other preventive approaches that were identified in the questionnaire

Table 4: Knowledge of HIV/AIDS prevention

	Male (%)	Female (%)
Avoid causal sex	473 (14.7)	512 (26.7)
Use condom during sex	416 (21.7)	352 (18.4)
Avoid sex with HIV-infect persons	385 (20.1)	390 (20.3)
Avoid sex with prostitute	290 (15.1)	278 (14.5)
Not sharing injection needles with others	391 (20.4)	405 (21.1)
Having sex with a faithfully uninfected partner	164 (8.6)	181 (9.4)
Avoiding anal sex	175 (9.1)	185 (9.6)
Avoiding contact with HIV infected person	93 (4.8)	205 (10.7)
Avoiding sex before marriage	409 (21.3)	482 (25.1)
Rejecting transfusion of unscreened blood	270 (14.1)	267 (13.9)
Abstain from penetrative sex	216 (11.3)	233 (12.1)
No way a person can avoid HIV infection	23 (1.2)	27 (4.9)
Mother to child transmission of HIV can be prevented by using antiretroviral therapy during pregnancy	543 (28.3)	529 (27.6)
Mother to child transmission of HIV can be prevented by avoiding breast feeding	302 (15.7)	378 (19.7)

Table 5: Sexual practices of respondents

	Male (%)	Female (%)
Has ever had sex	192 (10)	77 (4)
Has had sex with some body in the last 12 months	109 (5.7)	50 (2.6)
Has had sex with a partner who is 10 or more years older	42 (2.2)	42 (2.2)
Lives with the person he/she have had sex with	52 (2.7)	28 (1.5)
Was raped	57 (3)	35 (1.8)
Was drunk at the time he/she had sex with the person	42 (2.2)	22 (1.1)
Has had sex with a sex worker in the last 12 months-	34 (1.8)	20 (1)
Used condom the last time he/she had sex with somebody	93 (4.9)	28 (1.5)
Has sex with people to make money	29 (1.5)	18 (0.9)
Males who have had sex with other males in the last 12 month	39 (2)	0
Condom was always used to have sex with the person she/he had sex with in the last 12 months that she is not married to	64 (3.3)	25 (1.3)
Homosexual respondents used condom while having sex	12 (0.6)	0

(Table 4). Students from schools located in areas where the middle and upper class of people live in the City has significantly better HIV/AIDS knowledge than those from schools located in relatively poorer areas of the City ($p < .001$).

Sexual behaviour

Although none of the students was married, as many as 14% of them had had sexual intercourse and 8.3% had had sex in the 12 months preceding the study (Table 5). In 52.8% of these cases, the students were at least 10 years younger than their sexual partners while 57.9% were cases of rape. This sexual behaviour was not restricted to any particular age group and as many as 1.4% had had sexual intercourse before the age of 9 years. More students (13.2%) had sex the first time when they were between the ages of 10 – 19 years than when they were younger or older. The boys were significantly more likely to have had sexual intercourse at their early ages when compared with the girls ($p < 0.001$). For the majority (55%) of the students who have engaged in sexual intercourse, no condom was used and the sex was to earn some money. Homosexual activities was reported across all the secondary schools by 4.2% of the male students.

Bivariate analyses revealed association between the gender, parent caring for the child, and number of children in the families of the students and sexual intercourse. Variables independently associated with sexual activity were male sex (adjusted odds ratio 1.52; 95% confidence interval 1.05 to 2.12), single parents (1.92; 1.04 to 2.44), and number of children in family (1.12; 0.99 to 1.35). Students from families with more than 4 children were more likely to engage in sex while in school as compared to other students.

Discussion

Adequate knowledge on HIV/AIDS holds vast potential in hindering the prevention of the disease, as well as care and support for people already living with HIV/AIDS (PLWHA). It offers potential solutions to misinformation and myths, silence and denial as well as stigma and discrimination against PLWHA.

We have observed that very high level of awareness of HIV/AIDS was demonstrated by the secondary school students studied. Although our study and most other previous studies in Nigeria have often reported that awareness of HIV/AIDS was high, adequate knowledge about risks and prevention of the disease is still generally poor among secondary school students^{17, 18}. In many previous studies, there are reports that many secondary school students in Nigeria have inadequate knowledge of reproductive health^{19, 20}. Without doubt, the lack of knowledge of reproductive health issues influences sexual behaviour which in turn is a major threat to the health of many adolescents.

In our study, the age and level of education in secondary school was not associated with the knowledge of the students about the risks, preventive measure and misconceptions about HIV/AIDS. When compared with previous studies in Benin City, Calabar and River State in 2005^{7, 17, 18}, misconceptions about HIV/AIDS do not appear to be reducing. For example, the 31.2% of secondary schools students who did not know the aetiological agents of HIV/AIDS in the Calabar study¹⁷ is lower than the 40.5% in our study. Our study has also noted a number of misconceptions about the cause of HIV/AIDS, including evil spirit, mosquito bites, shaking hands with HIV infected person, living in the same house HIV infected person, sharing the same bed with HIV infected person, sharing food with a person suffering from HIV/AIDS, using

public toilet, hugging HIV infected persons, being in a place where infected persons is sneezing and coughing, and studying in the same classroom with HIV person, common among the students studied which are counter productive in the care and support of HIV/AIDS victims. Previous studies have also identified these misconceptions^{7, 13, 21, 22}. These misconceptions and the finding that as many as 96.6% of the students studied still believe that HIV/AIDS cannot be cured and as many as 62.7% believing that people living with the disease can never live good lives raise questions as to the effectiveness of the various educational programmes on HIV in Nigeria where huge sums of money has been spent¹⁰.

Consistent with earlier studies in some other African countries^{8, 13, 23}, mass media was the most common source of information on HIV/AIDS that was reported by the respondents. Other than the known fact that mass media does not allow in-depth knowledge of HIV/AIDS¹⁷, majority of the students do not have frequent access to television information (the mass media often reported) because of frequent interruption of electric power supply to most homes in Benin City.

The sexual health needs of young people in Nigeria are high, as evidenced by the prevalence of pregnancy and sexually transmitted disease, including HIV/AIDS¹². There is evidence in both developed and developing countries that meeting the sexual health needs of adolescents with targeted education and preventive care services can help to minimize risky sexual behaviour and its consequences^{24, 25}. Therefore, every education programme on HIV/AIDS ought to provide education that can directly influence understanding of all issues that can lead to attitude and behavioural changes. However, it does appear that the efforts to address HIV/AIDS concentrates more on creating awareness, as

evidenced by the high level of awareness among the students versus misconceptions, and not much information on in-depth knowledge that can lead to major changes in the sexual behaviour of the adolescents is being provided.

Although some cases of rape were reported by some students, sexual intercourse at very early age was observed in our study group. By age 9 years, some of the students were sexually active. This has been reported in previous studies in Nigeria²⁶ and elsewhere¹³. For example, the median age at first intercourse was 12 years, with a range of 6-19 years in a study in Western Nigeria²⁶. Strong associations between adolescent sexual behaviour and interpersonal family relationships, the education, presence, and expectations of parents, and the connectedness of the adolescents to parents and school have been demonstrated in studies in North and South America^{24, 27-34}.

Conclusion

Despite the various educational efforts to address the problems of HIV/AIDS, the knowledge of secondary school students in Benin City is still poor and the students still engage in risky behaviour. This study revealed an urgent need for educational intervention that will impact in-depth knowledge about HIV/AIDS among the youths who are at the centre of HIV/AIDS pandemic. An effective educational intervention will require partnership between health providers, religious and schools leaders, parents and the media. The primary and largest contribution towards the response to HIV/AIDS come from individuals, families, and communities confronted with HIV rather than from national and international efforts³⁴.

Though the findings of our study can help programme planners in Nigeria tailor prevention strategies to the needs of adoles-

cents they may not be generalised to all adolescents and secondary school drop-outs.

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