Knowledge and Sources of Information of HIV/AIDS among Secondary School Students in Imo State, Nigeria

by Ignatius O. Nwimo and Lois N. Omaka

Abstract

This study was conducted to ascertain the knowledge and sources of information of HIV/AIDS among secondary school students in Imo State, Nigeria. A sample of 2800 students, aged 16-17 years completed the questionnaire designed for the study. Percentages of correct responses to HIV/AIDS questions were used to describe the knowledge the students had regarding HIV/AIDS. T-test and chi-square were used to verify hypotheses one and two, respectively. Results showed participants had moderate to high level of knowledge in all aspects of HIV/AIDS with boys (M = 58.8%) having, overall, lower level of knowledge than girls (M = 62.1%). T-test showed significant differences in all aspects of HIV/AIDS with girls having higher scores on all subscales. Major sources participants obtained HIV/AIDS information included radio, banners and posters, print media, television, and friends and peers. Chi-square test showed significant differences between boys and girls in most of the sources of HIV/AIDS information. It is recommended that HIV/AIDS education be made an integral part of secondary school curriculum.

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HIV/AIDS has emerged as a grave public health threat in sub-Saharan Africa, including Nigeria. With more than two-thirds of global HIV infection, sub-Saharan Africa is by far the most affected region of the world. At the end of 2004, it was estimated that about 29 million people were living with HIV infection in this region, with nearly 9% of adults infected (The Joint United Nations Program on AIDS and World Health Organization [UNAIDS/WHO], 2005).

The first case of AIDS was identified in Nigeria in 1986 and the HIV/AIDS prevalence rate rose from 1.8% in 1988 to 5.8% in 2003 (National AIDS and STDs Control Program, 2006). Since 1991 the Federal Ministry of Health has carried a National HIV/Syphilis Sentinel Seroprevalence Survey every 2 years. The most recent survey was completed in 2005 and it was estimated that there were 3,500,000 adults living with HIV/AIDS in Nigeria. In the 2005 survey, the national prevalence rate had dropped to 5% from 5.8% in 2003. However, it found that states’ prevalence rates vary from as low as 1.2% in Osun State to as high as 12% in Cross River State. Overall, 13 of Nigeria’s 36 states have a prevalence rate of over 5%. These figures give support to the claim that there are explosive, localized epidemics in some states. Presently, in Nigeria it is estimated that over 60% of new HIV infections are in the 15-25 years old age group (USAID, 2007) and this has been attributed to lack of knowledge and unreliable sources of information regarding HIV/AIDS.

It is necessary to ensure that young people have basic correct knowledge about HIV/AIDS. Clear and consistent information can help young people change their sexual behavior (Fee & Rajani, 1995). Education is a key factor in helping people to overcome their fears, ignorance and prejudices and also to reduce the spread of HIV/AIDS. However, lack of knowledge about HIV/AIDS is one of the possible barriers to HIV/AIDS prevention (Chela & Mensah, 1996).

Secondary school is a terminal point for many students, where they are exposed to formal education. Some subjects taught in the secondary school include health education, health science, integrated science and biology, among others. The secondary school age is also very important with regard to the issue of HIV/AIDS knowledge because many of the students are in the stage of adolescence (Rahman & Kabir, 2005), a period characterized by experimentation and imitation. Thus, students may want to try out behaviors, which they have observed among other students or even among non-students around them.

Imo State was created in 1976 by the defunct military administration led by late Major General Murtala Mohammed. The state, though not quite rich, is bordered by neighboring oil rich River State and the commercial Anambra State. The students, especially the girls, often migrate into these states where the rich class can prey them. This situation is capable of increasing the tendency for risk-taking behavior, thus, emphasizing the need for knowledge about HIV/AIDS and desirable sources of information of HIV/AIDS as a strategy for prevention.

In Nigeria, adolescent sexual activity is fast on the increase particularly for those in the secondary school, which exposes them to sex-related problems, including HIV/AIDS (Ezedum, 2001; Ezedum, 2002; Ezedum, 2003; Okafor 1997). Therefore the secondary school is a vital point in the educational system to determine the level of knowledge and sources of information regarding HIV/AIDS so that the students’ conceptions and misconceptions could be determined and thus used in planning health education activities concerning HIV/AIDS.

The discussion of issues concerning HIV/AIDS as in this study like any other communicable disease could be conveniently guided by the basic epidemiological format essentially for understanding of communicable disease. Benensen (1975) presented this format as consisting of the definition or meaning of the disease, the causative agent or organism, the manifestations or signs and symptoms, the mode of transmission and the preventive and control measures. This format was adopted in this study in determining the level of knowledge of the students regarding HIV/AIDS.

Several studies guided the selection of known sources of HIV/AIDS information (Hogan & Palmer, 2005; Li, Lin, Gao, Stanton, Fang, Yin, & Wu, 2004; Maswanya, Moji, Aoyagi, Yahata, Kusano, Nagata, Izumi, & Takemoto, 2000). These sources of information of HIV/AIDS were considered vital for inclusion in this study.

Studies showed secondary school students and other young adults possess low level of knowledge regarding HIV/AIDS. They receive HIV/AIDS information from friends, peers, TV/Video,
magnets and other print media and rarely do they get information from teachers and medical personnel (Sanches, 2002; Sangowawa, Owoaje, & Faseru, 2004). However, the low level of knowledge reported by the secondary school students must have resulted from their sources of HIV/AIDS information. Hartell (2005) had reported that general inadequate knowledge of adolescents about transmission of diseases was associated with conflicting messages about sex and sexuality.

Oladepo and Brieger (1994) found 72.6% of participants in their study indicated kissing, hugging and shaking of hands were the ways by which HIV/AIDS is spread. These beliefs must be countered with more facts and correct information about HIV/AIDS. Regarding sources of information about HIV/AIDS, Oladepo and Brieger (1994) found 51.7% of their participants got their information about HIV/AIDS from newspapers, 10.3% from magazines and journals, 6.8% from radio and 3.6% from television. Underwood (2001) observed many young people were unaware of what constituted risky sexual behavior and young women had far less knowledge about HIV/AIDS than young men (Omotoso, 2004; UNICEF, 2000).

Boyer and Keggles (1997) observed that when young people are not rightly informed about HIV/AIDS, they are more likely to have unprotected sexual intercourse, which might lead to infection with HIV. Many students are at risk because no one including health educators, counselors, health workers, parents and the mass media had told them much about HIV/AIDS despite international recognition of the need for education and communication about HIV/AIDS (El-Gawhary, 2000). Young people today still have limited opportunities to learn about the virus and AIDS.

Thus the purpose of the study was to ascertain the knowledge and sources of information of HIV/AIDS among secondary school students in Imo State, Nigeria. Two hypotheses were postulated for verification at p < .05, thus:

1. There is no significant difference in HIV/AIDS knowledge between boys and girls, and
2. There is no significant difference in the sources of HIV/AIDS information between boys and girls.

Methods
Participants and Setting

Between January and March 2007, a cross sectional survey was carried out among 2800 (boys 1400, girls 1400; age 16-17 years; class Senior Secondary [SS] 2-3) 11th and 12th grades students of both genders randomly drawn from 28 (14 rural, 14 urban) co-educational secondary schools in Imo State, Nigeria. The secondary schools were selected from two (Orlu and Owerri) out of three education zones in Imo State. In each school 50 boys (SS2 25, SS3 25) and 50 girls (SS2 25, SS3 25) were randomly selected using systematic random sampling technique. Compiling two lists one for boys and the other for girls, with respect to grade, facilitated this.

Instrument

The researchers used a self-developed questionnaire, the knowledge and sources of information of HIV/AIDS questionnaire (KSIHQ), which consisted of 48 items arranged in three sections; A, B, and C. Section A, contained three questions about the gender, age and class of the participants. Section B, consisted of 33 items on knowledge of HIV/AIDS. Section C, contained 12 items in which the participants were given the opportunity to select any applicable sources of HIV/AIDS information (See Appendix).

Five experts in health education from two institutions of higher learning in Enugu State were used for validating the KSIHQ. Thirty-two secondary school students (16 each from a rural and an urban school) of both genders (graders 11 and 12) in Oigkwe education zone, not included in the study were used for test of reliability. The data yielded a reliability coefficient of 0.78. A further reliability computation of each cluster (knowledge of HIV/AIDS $r = 0.84$, sources of information of HIV/AIDS $r = 0.76$) of the KSIHQ was done. The reliability coefficients were higher than Ogbazi and Okpala’s (1994) criteria of 0.60 acceptable for good instruments.

Procedure

Permission was granted from the principal of each secondary school participating in the study prior to data collection. A consent note with the explanation for the research purpose, method of response and assurance of anonymity was attached to each copy of the KSIHQ. Because of the knowledge questions, the participants were seated and supervised in an examination condition during the administration of the KSIHQ. The teachers in charge of the classes used in the study assisted the researchers in supervising the participants. The participants were allowed 45 minutes to complete the KSIHQ.

Data Analysis

The completed copies of the KSIHQ were examined for completeness of responses and copies that had incomplete responses were discarded. Out of 2800 copies of the KSIHQ administered; 2789 (boys 1393, girls 1396) representing about 99.6% return rate, were used for analysis. In describing the participants’ HIV/AIDS knowledge, a proportion of less than 20% correct responses was considered ‘very low’ level of knowledge; 21-39%, ‘low’; 40-59%, ‘moderate’; 60-80%, ‘high’, and above 80%, ‘very high’ level of knowledge (Ashur, 1977; Okafor, 1997). A T-test statistic and chi-square were used to analyze data in order to ascertain the differences in HIV/AIDS knowledge and in sources of HIV/AIDS information, respectively, between boys and girls. An alpha level of .05 was set for both sets of t-test and chi-square test. All data analyses were done with Statistical Package for Social Sciences (SPSS) Version 14.0 for Windows.

Results

Percentages of correct responses to the HIV/AIDS questions and results of t-test are listed in Table 1. The participants possessed high level of knowledge in overall and moderate to high knowledge in all aspects of HIV/AIDS as shown in column one. When boys were compared to girls, girls had higher mean scores in three aspects of HIV/AIDS (meaning, modes of transmission, and preventive and control measures) and in overall knowledge; boys demonstrated better knowledge in the other two aspects (causative organism and signs and symptoms) than girls. T-test indicated all differences in the possession of knowledge between boys and girls were significant with girls scoring higher on most subscales.
Regarding the specific aspects of HIV/AIDS, the participants had high level of knowledge about causative organism, and signs and symptoms. When boys and girls were compared statistically in overall and in specific aspects of HIV/AIDS, it was observed that all differences were significant (p < .05) with girls having higher mean scores on most subscales (Table 1).

The present study determined the knowledge and sources of information of HIV/AIDS among secondary school students in Imo State, Nigeria regarding HIV/AIDS. Results of the study demonstrated the adolescents used in the previous study instead lacked knowledge of modes of transmission and most other aspects of HIV/AIDS. The adolescents used in the previous study might have contributed to the inconsistency in the findings.

Regarding sources of information of HIV/AIDS, the participants reported their main sources of information included radio, banners and posters, print media (e.g., books), television, and friends and peers. When boys were statistically compared to girls; the boys were superior to girls in three sources of information of HIV/AIDS namely: print media, banners and posters, and movies, cinema and film; girls were superior in other nine sources of HIV/AIDS information studied. Chi-square test indicated differences in most sources of HIV/AIDS information between boys and girls were significant.

The present study underscores the need for a formal HIV/AIDS education in the secondary school health education or health science curriculum where teachers might have the opportunity of providing scientific information on HIV/AIDS to the students.

Table 1. Means, Standard Deviations and T-test Results of Knowledge of HIV/AIDS Questions Between Boys and Girls (N = 2789)

<table>
<thead>
<tr>
<th>Aspects of HIV/AIDS</th>
<th>Mean Correct Responses to HIV/AIDS Questions</th>
<th>Overall M± SD</th>
<th>Boys (n=1393) M± SD</th>
<th>Girls (n=1396) M± SD</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning</td>
<td>M± SD</td>
<td>58.9 12.8</td>
<td>57.5 12.8</td>
<td>62.2 11.9</td>
<td>-5.77*</td>
</tr>
<tr>
<td>Causative organism</td>
<td>M± SD</td>
<td>60.6 14.4</td>
<td>62.2 14.4</td>
<td>58.9 13.8</td>
<td>6.18*</td>
</tr>
<tr>
<td>Signs and symptoms</td>
<td>M± SD</td>
<td>59.1 13.9</td>
<td>63.4 13.9</td>
<td>54.7 13.5</td>
<td>16.77*</td>
</tr>
<tr>
<td>Modes of transmission</td>
<td>M± SD</td>
<td>62.5 15.7</td>
<td>52.8 15.7</td>
<td>72.3 18.3</td>
<td>-44.77*</td>
</tr>
<tr>
<td>Preventive and control measures</td>
<td>M± SD</td>
<td>61.5 15.5</td>
<td>58.3 15.5</td>
<td>64.6 12.9</td>
<td>-11.67*</td>
</tr>
<tr>
<td>Overall</td>
<td>M± SD</td>
<td>60.5 13.3</td>
<td>58.8 13.3</td>
<td>62.1 17.6</td>
<td>-8.84*</td>
</tr>
</tbody>
</table>

*M = Mean in percentages
T-critical for df of 2787 = 1.96,
*Significant at p < .05

Table 2. Percentages and Chi-square Test Results of Sources of Information of HIV/AIDS Between Boys and Girls (N=2789)

<table>
<thead>
<tr>
<th>Sources</th>
<th>Overall %</th>
<th>Boys (n=1393) %</th>
<th>Girls (n=1396) %</th>
<th>X²-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio</td>
<td>81.8</td>
<td>74.4</td>
<td>89.2</td>
<td>18.96*</td>
</tr>
<tr>
<td>Print media (e.g., books)</td>
<td>78.8</td>
<td>82.1</td>
<td>74.6</td>
<td>4.67*</td>
</tr>
<tr>
<td>School (Teacher)</td>
<td>35.9</td>
<td>22.5</td>
<td>49.2</td>
<td>138.24*</td>
</tr>
<tr>
<td>Church</td>
<td>35.5</td>
<td>28.4</td>
<td>42.6</td>
<td>39.20*</td>
</tr>
<tr>
<td>Handbills and leaflets</td>
<td>29.5</td>
<td>14.9</td>
<td>44.1</td>
<td>200.14*</td>
</tr>
<tr>
<td>Banners and posters</td>
<td>80.9</td>
<td>82.3</td>
<td>79.4</td>
<td>61.0</td>
</tr>
<tr>
<td>Family members</td>
<td>41.4</td>
<td>18.4</td>
<td>64.3</td>
<td>354.63*</td>
</tr>
<tr>
<td>Friends and peers</td>
<td>61.7</td>
<td>57.4</td>
<td>66.0</td>
<td>8.64*</td>
</tr>
<tr>
<td>HIV/AIDS campaigns</td>
<td>25.6</td>
<td>16.2</td>
<td>35.0</td>
<td>96.87*</td>
</tr>
<tr>
<td>Movies, cinema and film</td>
<td>29.1</td>
<td>47.2</td>
<td>11.1</td>
<td>309.11*</td>
</tr>
<tr>
<td>Doctors and nurses</td>
<td>30.3</td>
<td>9.1</td>
<td>51.4</td>
<td>411.95*</td>
</tr>
<tr>
<td>Television</td>
<td>73.2</td>
<td>58.7</td>
<td>87.7</td>
<td>80.32*</td>
</tr>
</tbody>
</table>

X² – critical for df of 1 = 3.84
p < .05

Discussion
The present study determined the knowledge and sources of information among secondary school students in Imo State, Nigeria regarding HIV/AIDS. Results of the study demonstrated that, overall, the participants had high level of knowledge about HIV/AIDS. Regarding the specific aspects of HIV/AIDS, the participants had moderate level of knowledge about meaning of HIV/AIDS, modes of transmission and preventive and control measures. On the other hand, they had high level of knowledge of causative organism, and signs and symptoms. When boys and girls were compared statistically in overall and in specific aspects of HIV/AIDS, it was observed that all differences were significant (p < .05) with girls having higher mean scores on most subscales (Table 1).

The participants having high level of knowledge of overall HIV/AIDS; its causative organism and signs and symptoms was interesting since, according to Silverman (1989), the knowledge people have about any disease condition determines what they do about the condition. Recent studies in both developed and developing countries revealed consistent findings among the participants (Ball & Mazarurwi, 2003; Maswanya, Moji, Aoyagi, Yahata, Kusano, Nagata, Izumi, & Takemoto, 2000; Nwimo, 2006; Tavoosi, Zaferani, Enzvevaei, Tajik, & Ahmadinezhad, 2004). Similarly, Omoteso (2004) found gender differences in HIV/AIDS knowledge among the students she studied. One explanation for the consistency in the findings of the present study with those of previous ones is that students across the globe share same characteristics, such as risk-related sexual behaviors, which make them have similar conception about HIV/AIDS. Therefore the findings of the present study are considered plausible and not misleading.

The students’ moderate level of knowledge regarding meaning, modes of transmission, and preventive and control measures related to HIV/AIDS are not consistent with those of Mahat and Scoloveno (2006) who found that the adolescents they studied instead lacked knowledge of modes of transmission and most other aspects of HIV/AIDS. The adolescents used in the previous study might have contributed to the inconsistency in the findings.

Regarding sources of information of HIV/AIDS, the participants reported their main sources of information included radio, banners and posters, print media, television, and friends and peers. When boys and girls were compared, statistical significant differences were found in most sources of information of HIV/AIDS (Table 2). From the results, it is evident that the vast majority of the participants received their information on HIV/AIDS from the mass media. Very little communication regarding HIV/AIDS occurred between the participants and their parents, teachers or health workers (e.g., doctors and nurses). This scenario, most often, is as a result of lack of interest on the part of teachers, culture on the part of parents and non-involvement in the organization of school health services on the part health workers. This suggests the importance of involving parents, teachers, health workers and even students in HIV/AIDS education programs. The stimulation of interest in parents, teachers and health workers concerning HIV/AIDS may help them to educate themselves and their children/or students regarding the subject matter (Maswanya, Moji, Horiguchi, Nagata, Aoyagi, Honda, & Takemoto, 1999). Previous studies revealed consistent findings with those of the present study (Maswanya, Moji, Aoyagi, Yahata, Kusano, Nagata, Izumi, & Takemoto, 2000; Sangowawawa, Owoaje, & Faseru, 2004). The implication of the findings of the present study underscores the need for a formal HIV/AIDS education in the secondary school health education or health science curriculum where teachers might have the opportunity of providing scientific information on HIV/AIDS to the students.
Conclusion and Recommendation

One important way of reducing the spread of HIV/AIDS is through provision of worthwhile information on the subject matter. When people are provided with accurate information on HIV/AIDS, they become better able to make informed decisions about their sexual behaviors (Action Health Incorporated, 2003). Though the participants demonstrated an overall high level of knowledge regarding HIV/AIDS, there should be increased teaching efforts in schools with regard to HIV/AIDS. Coalition of the media, non-governmental organizations (NGOs) that are active in grassroots levels and religious leaders who understand what is at stake, are needed in HIV/AIDS information provision because it is possible to reach a great number of people through this coalition. There is considerable rationale to include HIV/AIDS education as an integral part of secondary school curriculum in order to get every teacher compulsorily involved in the provision of HIV/AIDS information.

The results of the study may not be extrapolated to other population groups in Nigeria who may differ substantially in age, sex distribution and economic status. The students surveyed represent an important group of the Nigerian population and information generated will be useful in the planning of future HIV/AIDS programs in secondary schools in Nigeria and other developing countries in Africa.

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References


Appendix

Questionnaire
This questionnaire is concerned with obtaining relevant information on the Knowledge and Sources of Information of HIV/AIDS among Secondary School Students in Imo State, Nigeria. We assure you that the response you give will be used strictly for the purpose of this study, and that no part of it will be used against you or against your school. Do not write your name or that of your school on any part of the questionnaire. You are required to place a tick (✓) where applicable.

Section A: Personal Data
In numbers 1-3, place a tick (✓) in the box provided against the option that best expresses your opinion.
1. What is your gender?
   a. Male (boy) [  ]
   b. Female (girl) [  ]
2. How old are you?
   a. Less than 16 years [  ]
   b. 16 years [  ]
   c. 17 years [  ]
3. In which class are you?
   a. Senior Secondary (SS) 2 [  ]
   b. Senior Secondary (SS) 3 [  ]

Section B: Knowledge of HIV/AIDS
In number 4, place a tick (✓) in the box provided against the option that best expresses your opinion about the meaning of HIV/AIDS.
4. HIV/AIDS means:
   a. Human Immuno-deficiency Vitamin and Acquired Immune Deficiency Syndrome [  ]
   b. Human Amino-deficiency Virus and Acquired Immune Deficiency Syndrome [  ]
   c. Human Immuno-deficiency Virus and Acquired Immune Deficiency Syndrome [  ]
   d. Human Albino-deficiency Virus and Animal Immune Deficiency Syndrome [  ]
In numbers 5 and 6, place a tick (✓) in the box provided against the option that best expresses your opinion about the causative organism of HIV/AIDS.
5. Human Immune Disease Virus is the organism that causes AIDS [  ] [  ]
6. Human Immune Deficiency Virus is the organism that causes AIDS [  ] [  ]

From numbers 7-22, place a tick (✓) in the box provided against the option that best expresses your opinion about the signs and symptom of HIV/AIDS.
7. Excessive diarrhea for more than one month [  ] [  ]
8. Excessive vomiting for more than one month [  ] [  ]
9. Excessive passing of urine for more than one month [  ] [  ]
10. Excessive spitting for more than one month [  ] [  ]
11. Excessive weight loss [  ] [  ]
12. Excessive weight gain [  ] [  ]
13. Excessive appetite [  ] [  ]
14. Excessive loss of appetite [  ] [  ]
15. Common cold for one month [  ] [  ]
16. Sneezing for one month [  ] [  ]
17. Sore throat for one month [  ] [  ]
18. Persistent shivering for one month [  ] [  ]
19. Persistent fever for more than one month [  ] [  ]
20. Cough for more than one month [  ] [  ]
21. Persistent skin irritation for one month [  ] [  ]
22. Rashes on the skin for one month [  ] [  ]

In numbers 23-30, place a tick (✓) in the box provided against the option that best expresses your opinion about the mode of transmission of HIV/AIDS.
23. Hugging or shaking hands with an infected person [  ] [  ]
24. Having sexual intercourse with many partners [  ] [  ]
25. Sharing toilet seats with an infected person [  ] [  ]
26. Mosquito or insect bites [  ] [  ]
27. Transfusion of an unscreened blood [  ] [  ]
28. Sharing food with an infected person [  ] [  ]
29. Sharing of shaving razor blades [  ] [  ]
30. Use of syringes and needles used on an infected person [  ] [  ]

In numbers 31-36, place a tick (✓) in the box provided against the option that expresses your opinion about the preventive and control measures of HIV/AIDS.
31. Taking some antibiotics before and after sexual intercourse [  ] [  ]
32. Use of condom during sexual intercourse [  ] [  ]
33. Using contraceptive pills [  ] [  ]
34. Immunization against HIV/AIDS [  ] [  ]
35. Use of herbs from the traditional medicine man [  ] [  ]
36. Sticking to one sexual partner who is not infected [  ] [  ]

Section C: Sources of Information of HIV/AIDS
From which of the following sources do you receive information about HIV/AIDS? Tick (✓) as many as are applicable to you.
37. Radio [  ]
38. Print media (e.g., books, newspapers, magazines etc.) [  ]
39. School (Teacher) [  ]
40. Church (Pastor or Reverend) [  ]
41. Handbills and leaflets [  ]
42. Banners and posters [  ]
43. Family members (e.g., parents) [  ]
44. Friends and peers [  ]
45. HIV/AIDS campaigns [  ]
46. Movies, cinema and film [  ]
47. Health workers (e.g., doctors and nurses) [  ]
48. Television [  ]