



## **Adolescent awareness of HIV/AIDS pandemic among secondary school students in Calabar, South-South Nigeria**

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### **Abstract**

Since the discovery of HIV/AIDS, concerted efforts are being made by different countries and some international organisations to curb the spread nationally and globally. These efforts involve providing adequate information about the virus and the infection modes as well as the preventive measures. They also include providing information on the available treatments of infected persons. This study investigates the awareness of HIV/AIDS among senior secondary school students in Calabar, Cross River State Nigeria leaning on the AIDS Risk Reduction Model (ARRM) as its theoretical framework. Using a multistage sampling technique, data for the study were collected from 360 respondents (180 each male and female) from selected 6 senior secondary schools in Calabar South and Calabar Municipality Local Government Areas, Cross River State, Nigeria. The analysis showed that the female respondents have more knowledge of HIV/AIDS in the study area than the male respondents. Although a majority of the subjects showed evidence of relative knowledge of HIV/AIDS, low awareness of some of the transmission modes such as the mother to baby transmission, as well as preventive methods such as the use of condom were found. The incorporation of HIV/AIDS education into school activities of the students and involving the adolescents in the HIV/AIDS campaign is suggested.

**Keywords:** HIV/AIDS, infection, students, awareness, adolescents

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### **Introduction**

The HIV/AIDS prevalence in Nigeria is high despite the efforts made by the authorities to curb its spread. Nigeria has an estimated number of 3,228,600 people living with HIV/AIDS which is the second-largest number of infected persons by country estimates behind South Africa globally

(CIA World Factbook, 2014; NACA, 2015). The CIA Factbook (2014) also asserts that the adult (aged 15-49) prevalent rate is about 3.17%. UNAIDS and WHO (1998) report that the estimated number of people living with HIV/AIDS in Nigeria as at 1997 was 2,300,000. According to the report,

the adults (people aged 15-49) were 2,200,000, those that died in 1997 were 150,000, while the reported cases of AIDS from 1986 to 1997 were 590,000. Although the exact figure of the adolescents that had the virus was not indicated, the report of the Facebook and the UN AIDS/WHO report imply that a reasonable number of them are infected.

Acquired Immune Deficiency Syndrome (AIDS) is a viral disease caused by human Immunodeficiency virus (HIV) which is mainly found in body fluids such as vagina fluid, blood, semen, and breast milk of those who are infected. According to Hubley (2002), AIDS which is caused by HIV, was first reported in 1981 by doctors in Los Angeles who were baffled by a strange disease. Hubley (2002) further states that researchers found that the patients (young men) with the disease were all homosexuals and that many of them were equally suffering from sexually transmitted diseases such as gonorrhoea and syphilis. It was reasoned that this new disease was a sexually transmitted disease. These diseases (HIV/AIDS) were also found in haemophiliacs and persons injecting drugs such as heroin. Many of the injecting drug users did not sterilize their needles and shared them with other addicts.

Dehne and Riedner (2001) observe that of all the groups affected by HIV/AIDS, the adolescents are the most vulnerable to the pandemic. In 1997 the World Health Organization (WHO) estimated that over 30 million people globally were living with HIV infection with 1.1 million of this number being children under the age of 15 years. WHO established that about 10 million children throughout the world would be infected with the Human Immunodeficiency Virus (HIV) by the year 2000. Adolescents constitute about 30% of the entire population of a country; they are very important in the society and are any country's most valuable assets. During the period of their growing up into adult, a lot of changes occur in their lives which make them vulnerable such that they can engage in risky sexual behaviours which can lead to contracting the HIV/AIDS Virus, if not properly guided. To effectively reduce the rate of infection among the youth and adolescents, it is necessary to involve them in the campaign for a change in

human sexual behaviour (FMNH, 2003). Although WHO (2011) reports that the new infection rate is declining and that some of the infected people have improved due to the retroviral drugs, the pandemic is still a cause for concern particularly for the adolescents. According to Urmil *et al.* (1989), adolescents represent a significant number of students who are in the schools, who can also be used for dissemination of HIV/AIDS information.

A clear delineation of the term adolescent is necessary in order to put this study into its proper perspective. The word adolescent is usually associated with teenage years or the young people. It is a transitional stage of physical and psychological development that generally occurs during the period from puberty to legal adulthood (Wikipedia). However, World Health Organisation defines adolescents as young people between the ages of 10 and 19 years, who are often thought of as a healthy group (WHO, 2017). Although this definition of adolescent rightly captures the age bracket prior to adulthood, it conflicts with the classification of people aged 15 and 49 years as adults by both CIA World Factbook (2014), UNAIDS and WHO (1998) and UNAIDS (2015) in their different HIV/AIDS reports. The implication of this divergent definition of adolescent is that the HIV/AIDS reports divide this group into two. While part of the adolescents are considered adults i.e. from ages 15-19, the other delineates part of them as children (from ages 10 - 14). No matter how the adolescents are grouped, the fact is that they are vulnerable to the HIV/AIDS pandemic and can die due to the illnesses and other related complications resulting from the virus when they contact it, hence the need for their awareness of the virus for a risk free health behaviour. This study examines the adolescents' awareness of HIV/AIDS pandemic with a view to ascertaining the level of awareness, and safety practices about HIV/AIDS among secondary school students in Calabar, South-South Nigeria.

### **Theoretical Framework**

This study uses the AIDS Risk Reduction Model (ARRM) as its theoretical framework. This theory was introduced in 1990 by Catania *et al.* (1990). The model is used to explain or to predict human efforts towards change with regard to the sexual

transmission of HIV/AIDS. ARRM is based on the view that in order to avoid HIV infection, people who are at risk should perceive that their sexual behaviours place them at risk of infection. Labelling sexual behaviours as a problem is not enough and would not likely lead to a behaviour change unless it is matched with a strong commitment to change one's activities, which requires a decision of whether or not such behaviour can be altered and whether the benefits supersede the costs.

ARRM provides a three-pronged model that combines inputs from other behaviour change theories such as the Health Belief Model, "efficacy" theory, emotional influences, and interpersonal processes. The three stages are as follows: Recognition and labelling of one's behaviour as high risk (stage 1), Making a commitment to reduce high-risk sexual contacts and to increase low-risk activities (stage 2) and Taking action (stage 3). Catania *et al.* (1990) hypothesised that the stage 1 which is Recognition and labelling of one's behaviour as high risk, is influenced by four variables which are: knowledge of sexual activities associated with HIV transmission; believing that one is personally susceptible to contracting HIV; believing that having AIDS is undesirable and social norms and networking. The stage 2 (Making a commitment to reduce high-risk sexual contacts and to increase low-risk activities) has cost and benefits; enjoyment (e.g., will the changes will affect one's enjoyment of sex?); response efficacy (e.g., will the changes successfully reduce the person's risk of HIV infection?); self-efficacy; and knowledge of the health utility and enjoyability of a sexual practice, as well as social factors (group norms and social support), are believed to influence an individual's cost and benefit and self-efficacy beliefs.

Stage 3 (Taking action), is broken down into three phases: 1) information seeking; 2) obtaining remedies; 3) enacting solutions. Depending on the individual, the phases may occur concurrently or phases may be skipped. This stage has the hypothesised Influences as: social networks and problem-solving choices (self-help, informal and formal help); prior experiences with problems and solutions; level of self-esteem;

resource requirements of acquiring help; ability to communicate verbally with sexual partner; and sexual partner's beliefs and behaviours.

The proponents identified other internal and external factors that may motivate individual movement across stages (FHI, 2002). For instance, aversive emotional states (e.g., high levels of distress over HIV/AIDS or alcohol and drug use that blunt emotional states) may facilitate or hinder the labelling of one's behaviours. External motivators, such as public education campaigns, an image of a person dying from AIDS, or informal support groups, etc<sup>^</sup>may also cause people to examine and potentially change their sexual activities. The AIDS Risk Reduction Model (ARRM) is applied in this study in order to use it to determine and explain the adolescents' awareness of HIV/AIDS, their understanding of its mode of transmission as well as its preventive methods all aimed at curbing the spread of the pandemic among the secondary school students in the study area.

## Materials and Methods

The population for this study consists of Senior Secondary School Students from Calabar South Local Government Area and Calabar Municipal Council, from both public and private secondary schools which gave a total population of 20,707. Of this number, 10,433 were males while 10,274 were females in 44 Secondary Schools (Post Primary School Board/Min. of Education December, 2014). Calabar is made up of two Local Government Areas namely Calabar South Local Government Area and Calabar Municipality Local Government Area in Cross River State. The headquarters of Calabar South local Government Area is at Anantigha and it is made up of 12 wards. Calabar Municipal Council is one of the oldest Local Government Councils in Cross River State and it has a total of ten (10) wards.

Multistage sampling technique was adopted in the study. The first stage involved simple random selection of 6 out of the 44 secondary schools in the study area (2 private and 4 public secondary schools were selected). The 6 selected schools used for this study were Henshaw Town Secondary School, Unical International Secondary School,

West African People's Institute, Government Secondary School, Akim, Government Science School, Idang and Majesty High School, White House with a population of 3,385 senior secondary school students, 1,661 males and 1,724 females. Balloting method was used to give equal chance of being selected to every secondary school. The second stage involved random selection of 60 students per school. Stratified random sampling was used to select 10 males and 10 females per senior secondary school per class in 6 schools, which amounted to 180 males and 180 females, aged between 15 to 19 years, totalling 360 students.

A structured questionnaire was used to collect the data, and the questionnaire solicited information on respondents' awareness of HIV/AIDS, the mode of transmission and preventive methods. Appropriate permissions were obtained from the principals of the given schools prior to the administration of copies of the questionnaire

through the assistance of some of the teachers. The data were analysed descriptively using Statistical Package for the Social Sciences (SPSS) version 21, and the result of the analysis were presented in frequency table. The qualitative analysis was done based on the review of the analysed data and relating the result to the themes that underlie the objectives of the study.

**Results**

Table 1 shows the sample distribution of the respondents. A total of 360 respondents were selected. Of this number, 10 male subjects and 10 female subjects were each selected from SSI, SS2 and SS3 (totalling 60 subjects) of each of the selected schools in Calabar South and Calabar Municipality. This distribution shows that there is gender equality in the data distribution of the respondents in this study.

**Table 1: Sample distribution in Calabar South and Municipality**

L.G.A S/N Selected Schools	Number of No of Students Selected Per SSI	Class and Per Sex						Overall No of Selected Students
		Male	Female	SS2 Male	Female	SS3 Male	Female	
1	Calabar South	10	10	10	10	10	10	60
2	"	10	10	10	10	10	10	60
3	"	10	10	10	10	10	10	60
4	Calabar	10	10	10	10	10	10	60
Municipality								
5	"	10	10	10	10	10	10	60
6	"	10	10	10	10	10	10	60
Total	2	60	60	60	60	60	60	360

Where: L.G.A. = Local Government Area; SS = Senior Secondary School

Table 2 shows the summary of findings on HIV/AIDS awareness and safety practice. All the students both males and females have heard of HIV/AIDS. However, only 58.6% (n = 211) were able to write the full form of AIDS, while a

significantly lower number 32.7% (n - 118) were able to write the full form of HIV. In terms of the gender awareness level, Table 2 shows that the females are more aware of HIV/AIDS than the males.

This is because while 64.4% (n = 116) of the females were able to write the full form of AIDS, only 52% (n = 95) of the males could write it. The females were also able to write HIV in full more than the males with 38.9% (n = 70) which is more than the frequency of the males who were able to write HIV in full 26.6% (n = 48). Similar findings were made by Lai, Nath, Badhan and Ingle (2008) in a study conducted among senior secondary school students in India which showed gender disparity in favour of females with higher awareness level than the males. However, the overall performance of the subjects in the Indian study and this present study shows that the students in Calabar South and Calabar municipality generally indicated higher awareness level than the subjects in the Indian study.

With regard to the respondents' awareness of the mode of transmission, 79.7% (n = 303) indicated that they were aware that HIV/AIDS can be transmitted through sexual intercourse. This comprises 77.7% (n = 140) of boys and 90.5% (n = 163) of girls. A total of 57.2% (n = 206) of the subjects indicated that they were aware of transmission of HIV/AIDS through blood transfusion. This figure comprises 47.7% (n = 86) males and 66.6% (n = 120) females. Those who indicated that they were aware of transmission through sharing of needles amount to 46.1% (n = 166). This includes 38.3% (n = 69) of the Males, and 53.8% (n = 97) of the females. In respect of the transmission from mother to baby, a total of 25.5% of the subjects indicated their awareness of this mode of transmission. This comprises 23.3% (n = 42) of the male respondents and 27.7% (n = 50) of the female respondents. It is obvious from this data that the level of awareness with regard to the mother to baby mode of transmission is very low among the secondary school students in Calabar. However, the knowledge that AIDS is preventable was found to be relatively high among the respondents 75.5% (n = 272). This number consist of 74.4% (n = 134) of the male respondents and 76.6% (n = 138) of the female respondents.

On the issue of the method of prevention, several variables were investigated. Table 2 shows that 21.1% (n = 76) stated that they were aware that

the use of condom is one of the preventive measures. This figure comprises 22.2% (n = 40) of the male respondents and 20% (n = 36) of the female respondents. Those who knew about safe blood transfusion as a preventive measure were 12.3% (n = 47), comprising 9.4% (n = 17) of the male respondents and 16.6% (n = 30) of the female respondents. This is a reflection of the subjects' poor knowledge of safe blood transfusion, which may be attributed to their young age as their parents and guardians usually decide on such important health issues.

On the use of disposable syringes at health facilities, only 26.6% (n = 96) of the students indicated that they were aware of this preventive measure. This number consist of 24.4% (n = 44) of the male respondents, and 28.8% (n = 52) of the female respondents. Regarding the students' awareness of available treatment for HIV/AIDS, 33.3% (n = 120) affirmed their awareness. This figure was made up of 15.8% (n = 57) of the male respondents and 35% (n = 63) of the female respondents. A total of 71.1% (n = 256) of the subjects affirmed that they knew that abstinence is an effective preventive measure. This figure consist of 69.4% (n = 125) of males and 72.7% (n = 131) of females. This high level of awareness of the importance of abstinence may have resulted as a positive outcome of the various campaigns against the spread of HIV/AIDS and information dissemination on the preventive measures by various government agencies in Nigeria (both at the states and Federal levels) in collaboration with some international organisations such as WHO, UNAIDS, USAIDS among others.

The result of the analysis also showed that 21.6% (n = 36) of the entire subjects knew that premarital HIV test is an important preventive method. The males in this group represent 20% (n = 36) of the male respondents while 23.3% (n = 42) represent the female respondents. The low level of awareness to the need for premarital HIV test may be attributed to the fact that majority of the students were yet to start considering marital issues as they were still young and in school. On the variable of abstinence from hard drugs, a total of 58.8% (n = 194) comprising 71.1% (n = 128) of the male respondents and 36% (n = 66) of the female

respondents indicated that they were aware that it is a preventive measure. From the data on abstinence from hard drugs, it is evident that the male respondents are more aware of this factor than the

female respondents. This suggests that the boys in the study area know more about hard drugs and its effect than the girls, with the implication that some of them may have experienced its effect.

**Table 2: HIV/AIDS awareness and safety practice**

Variable	Male(%)	Female(%)	Total(%)
<b>Awareness regarding HIV/AIDS</b>			
Heard of HIV (yes)	180(100)	180(100)	360(100)
Wrote full form AIDS	95(52.7)	116(64.4)	211(58.6)
Wrote full form of HIV	48(26.6)	70(38.9)	118(32.7)
<b>Mode of transmission</b>			
Sexual intercourse	140(77.7)	163(90.5)	303(79.7)
Blood transfusion	86(47.7)	120(66.6)	206(57.2)
Sharing needles/syringes	69(38.3)	97(53.8)	166(46.1)
Mother to baby	42(23.3)	50(27.7)	92(25.5)
Knowledge about AIDS being preventable	132(74.4)	138(76.6)	272(75.5)
<b>Method of prevention</b>			
Condom	40(22.2)	36(20.0)	76(21.1)
Safe blood	17(9.4)	30(16.6)	47(12.3)
Disposable syringes	44(24.4)	52(28.8)	96(26.6)
Awareness of treated for HIV/AIDS	57(15.8)	63(35.0)	120(33.3)
Abstinence	125(69.4)	131(72.7)	256(71.1)
Premarital HIV test	36(20.0)	42(23.3)	78(21.6)
Abstinence from the hard drugs	128(71.1)	66(36.6)	194(58.8)

## Discussion

From the result of the analysis, it is evident that the level of awareness of the female respondents in respect of HIV/AIDS, the mode of transmission and preventive methods, was significantly higher than that of the male respondents with the exception of the variable on abstinence from hard drugs. This finding differs from the findings of Ugbona *et al.* (2011) which studied the HIV/AIDS knowledge level of some secondary schools in Niger delta and concluded that there was no gender difference in the awareness level of the students. The findings in this study also differ with the findings of Aluede *et al.* (2005) which investigated the awareness level of university students, and concluded that the male students showed higher level of knowledge of HIV/AIDS than the female students. While the difference between this study and that of Aluede, Imhonde, Maliki and Alutu (2005) with regard to gender differences may be

attributed to the difference in knowledge level at the university and secondary schools, we can only suggest that there are regional or environmental differences in the awareness level which depend on other factors such as level of information dissemination, sex education, etc. However, this study disagrees with the conclusion of Ugwuanyi (2015) which avers that gender is not a significant factor that influences students' awareness of HIV/AIDS. This position is taken given that there are different manifestations of gender asymmetry in different researches on the level of awareness/knowledge as indicated above.

The level of awareness on some aspects of the mode of transmission and method of prevention were found to be very low. For instance, the respondents showed low knowledge of mother to baby as a mode of transmission (25.5%), the use of condom (21.1%), safe blood (12.3%), etc.

This is worrisome in the sense that transmission enables the spread of the virus and if not prevented from occurring, HIV/AIDS may spread like a wildfire. This is an indication that a lot needs to be done in educating these young students on these areas given that 'knowledge is power' and that they need to be aware in order to make informed decisions concerning their health status in relation to the HIV/AIDS pandemic.

The role played by sexual behaviour is also highlighted in this study. This is evident in the high percentage of the subjects' affirmative acceptance of almost all the variables in the instrument related to sexual activities. For instance, the respondents significantly identified sexual intercourse as a mode of transmission of HIV/AIDS. They also identified abstinence as a preventive measure. However, they did not identify condom as a preventive measure in spite of showing their understanding of the role sex play in the spread of HIV/AIDS. Although these subjects were students who have shown a high understanding of the importance of abstinence, they should be educated more on the importance of the use of condom as a preventive measure, to protect them in the event that they ever have course to reconsider abstinence. This is because it is not just enough to know the transmission and preventive methods, but the knowledge should also be backed by a commitment in the form of action, as suggested by AIDS Risk Reduction Model (ARRM). Taking action includes: a) information seeking; b) obtaining remedies and c) enacting solutions. There are other internal and external factors that cause people to engage in their sexual activities, hence the need for the students to be properly armed with adequate information that would help them at the appropriate time.

## Conclusion

The adolescents are considered the healthiest group of a nation. They are the group that would immediately take over from their parents in the affairs of their families, communities and the entire nation. The study has found that adolescents, particularly those in senior secondary schools in Calabar, Cross River State Nigeria, have a relatively substantial knowledge of HIV/AIDS,

in relation to the meaning, mode of transmission and the preventive methods. Despite the knowledge they have, this study has identified also that they still need to acquire knowledge in a lot of other areas particularly relating to the transmission and preventive methods of HIV/AIDS.

It seems appropriate to incorporate HIV/AIDS information dissemination and awareness campaigns into their school activities such that they cannot escape acquiring the needed knowledge in these areas since they are still in secondary schools. This group of young people should also be involved in these awareness campaigns and information dissemination. This is because it is easier for them to reach out to their fellow adolescents the best way possible and in the language they understand. This is likely to achieve a better result rather than adopting a method that excludes them from the campaign. Such a campaign should also aim at removing the existing or imagined barriers that affect dissemination of information on the use of condoms especially among the adolescents.

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**How to cite this article:**

Ibebuikwe J.E., Nwokike G.I., Nwagu S.A., Ezenwuba C.O Nwosu D. C., Nwonjo H.U, Obeagu E.I., Ozims S.J., Akujuobi A.U. and Agu G.C. (2017). Adolescent awareness of HIV/AIDS pandemic among secondary school students in Calabar, South-South Nigeria. *Int. J. Curr. Res. Med. Sci.* 3(7): 152-159.

DOI: <http://dx.doi.org/10.22192/ijcrms.2017.03.07.022>