

Research Article

# Knowledge of HIV and Intention to Engage in Risky Sexual Behaviour and Practices among Senior School Adolescents in Ibadan, Nigeria

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## Abstract

A high proportion of adolescents still engage in risky sexual behaviours that put them at risk of infection complications of risky sexual behaviours including Human Immunodeficiency Virus (HIV) infection despite the different interventions already in place. This study was designed to determine the adolescents' knowledge of HIV, intention to engage in risky sexual behaviour and sexual practices. A 3-stage sampling technique was used to select 240 adolescents in senior secondary schools in Ibadan, Nigeria. Data were obtained using a pretested, semi-structured, self-administered questionnaire. Data were analysed using descriptive statistics and Chi-square test at 5% level of significance. The mean age of the respondents was 16.3±1.4 years and 126(52.5%) were females. Only 34.3% had good knowledge of HIV and there were misconceptions about its transmission. Most of the respondents (95.0%) had intention to engage in risky sexual behaviour and those with good knowledge of HIV were willing to engage in risky sexual behaviour with familiar people. Good knowledge was associated with intention to engage in low risk sexual behaviour. Seventy-nine (32.9%) were sexually active and they had better knowledge of HIV. Knowledge of HIV was low among this study group and was not associated with their intention to engage in risky sexual behaviour. There is need for more effective and appropriate school and community-based intervention programmes which can impact positively on the adolescents' sexual behaviour.

**Key Words:** Human Immunodeficiency Virus, Risky sexual behaviour, Behavioural intention, Secondary school adolescents

## INTRODUCTION

The prevalence of Human Immunodeficiency Virus (HIV) infection among adolescents has remained high globally with a higher rate in developing countries (Mahmud *et al.*, 2011). More than eighty percent of adolescents living with HIV are found in sub Saharan Africa (Sam-Agudu *et al.*, 2016). Many of the adolescent HIV infections are as a result of high risk sexual behaviour which adolescents have because of their tendency to experiment (Temple *et al.*, 2012). Although, more children who got the infection from mother-to-child-transmission are now surviving into adolescence. Different reasons have been given for the high prevalence of HIV among adolescents including poor knowledge of HIV. However, studies have shown that good knowledge of HIV does not always translate to reduction in risky sexual behaviour (Wagbatsoma and Okojie, 2006). Adolescence has been identified as a stage when health habits are formed which have a strong correlation with future adult lifestyle (UNICEF, 2011). This is why any step taken to improve their wellbeing is likely to have an exponential impact not only on the adolescents, but the wellbeing of the general populace on a long term. If the control of HIV incidence can be achieved among adolescents, the national prevalence rates is expected to reduce.

Adolescents in Nigeria have been introduced to different health education packages, which aim to increase knowledge

of HIV and promote HIV prevention skills. The National Family Life and HIV Education (FLHE) curriculum for Nigerian secondary schools was introduced in 2003 and it aims to increase the awareness of HIV and promote prevention among school students (NERDC, 2003). This programme has been introduced in phases by incorporating the contents in subjects taken in schools and it has been widely accepted by stakeholders (Nwaorgu *et al.*, 2009). There has also been an increased access to HIV education among adolescents in Nigerian communities through the programmes of Association of Reproductive and Family Health (ARFH), Girl Power Initiative (GPI) and Action Health International in Oyo, Cross River and Lagos States respectively (Udegbe *et al.*, 2015). Specifically, ARFH implemented the Expanded Life Planning Education in Oyo State using peer education and also has a Youth Friendly clinic (Udegbe *et al.*, 2015). It is therefore expected that the knowledge of HIV should have increased among adolescents in Oyo State and this might have a positive influence on sexual behaviour.

There is some link between the intention to perform a behaviour and the actual performance of the behaviour (Webb and Sheeran, 2006). This, therefore, makes intention to perform a behaviour a good proxy of actual performance. One of the big influence on intention to perform a behaviour is knowledge of the behaviour, which also affects the attitude towards the behaviour (Eyal *et al.*, 2009). It is important to identify adolescents who have the intention to engage in risky

sexual behaviour as they are likely to perform the actual behaviour if the external conditions are favourable. They can then be included in interventions to promote safe sexual behaviour which can have positive impact on them. It is assumed in this study that adolescents with good knowledge about HIV and its prevention will not have intention of engaging in risky sexual behaviour. Although, some studies have not been able to link good knowledge of HIV with positive sexual behaviour (Okonta and Oseji, 2006; Oster, 2012), some have found positive association between HIV knowledge and sexual behaviour (Akwaru *et al.*, 2003; Waghbatsoma and Okojie, 2006).

Nigeria has the highest population of adolescents in Africa and they have been shown to have low risk perception towards HIV infection (Oladepo and Fayemi, 2011). They also have a high rate of new HIV infection in the country (Federal Ministry of Health, 2015). Earlier researches have documented actual sexual behaviour of Nigerian adolescents (Asuzu, 1994; Orji and Esimai, 2005; Morhason-Bello *et al.*, 2008; Duru *et al.*, 2010) but intention to engage in risky sexual behaviour (which predicts actual behaviour) is yet to be documented. An insight into the relationship between the knowledge adolescents have about HIV and their intention to engage in risky sexual behaviour could help in developing more encompassing and effective interventions as more adolescents will be positively influenced and this can help to curtail the spread of HIV infection among them. The aim of this study was to determine the current HIV knowledge of adolescents in senior secondary schools in Ibadan, their intention to engage in risky sexual behaviour and the sexual practices of the adolescents.

## MATERIALS AND METHODS

**Study area:** This was a cross-sectional study among in-school adolescents in Ibadan North East Local Government Area (IBNELGA), Nigeria. There were 35 public schools in this local government area at the time of the study under the administration of the Ministry of Education, Oyo State.

**Study population:** Senior secondary school students were purposively selected because they have been exposed to the FLHE curriculum in their junior classes and were likely to have benefitted from other HIV educational programmes taking place in Oyo state. They were also more likely to have experimented with sex compared with those in the junior classes.

**Sample size calculation:** The sample size was determined using the Kish Leslie formula for estimating single proportions (Kish, 1965) and the percentage of adolescent with correct knowledge of HIV was taken to be 17.0% as obtained from a previous study in Benin, Nigeria (Temin *et al.*, 1999) and considering 10.0% non-response.

**Sampling:** A three stage random sampling technique was employed to select wards, schools and students. Four wards were randomly selected from the existing twelve wards in IBNELGA by balloting technique. The list of secondary schools in each ward was then obtained and one school was randomly selected from each ward. The students were proportionately selected by using systematic random sampling from a list of all senior secondary school students in each school.

## Ethical consideration

The study protocol was approved by the Oyo State Ministry of Health Research Ethical Review Committee. Both consent and assent were obtained from the parents of the adolescents and the adolescents respectively.

**Data collection procedure:** An interviewer assisted questionnaire was used to obtain data regarding sociodemographic characteristics, knowledge about HIV and its prevention, intention to engage in risky sexual behaviour and sexual practices. The respondents were informed that they are free to leave any question they don't feel at ease with.

**Data analysis:** Data was analysed using Statistical Package for Social Sciences version 22. Knowledge of HIV was determined using responses to 11 questions regarding general knowledge of HIV and its prevention. Each correct response was scored 1 with minimum and maximum scores being 0 and 11 respectively. Scores equal to or greater than the mean (5.5) were categorised as good knowledge. Intention to engage in risky sexual behaviour was determined using 6 questions which explored willingness to engage in transactional sex, not insisting on consistent condom use and yielding to sexual coercion. Any affirmative response to any of these constitute intention to engage in risky sexual behaviour and those who have intention to engage in 3 or more risky sexual behaviour were classified as high risk while those who have intention to engage in less than 3 risky behaviour was low risk. Categorical variables were summarized using frequencies and proportions while numeric variables were summarized using means and standard deviations. Association between HIV knowledge and sexual behaviour was determined using Chi square test. Level of significance for all tests was at 5.0%.

## RESULTS

A total of 240 adolescents were recruited for this study of which 52.5% were females. The mean age of the respondents was 16.3±1.4 years. Table 1 shows socio-demographic characteristics of the students.

**Table 1:**  
Sociodemographic characteristics of respondents

| Variable                       | Frequency | Percent (%) |
|--------------------------------|-----------|-------------|
| <b>Age (years)</b>             |           |             |
| 10-14                          | 28        | 11.7        |
| >14                            | 212       | 88.3        |
| <b>Sex</b>                     |           |             |
| Male                           | 114       | 47.5        |
| Female                         | 126       | 52.5        |
| <b>Religion</b>                |           |             |
| Christianity                   | 137       | 57.1        |
| Islam                          | 103       | 42.9        |
| <b>Family Type</b>             |           |             |
| Monogamy                       | 176       | 73.3        |
| Polygamy                       | 40        | 16.7        |
| Single parent                  | 24        | 10.0        |
| <b>Person child lives with</b> |           |             |
| Both parents                   | 185       | 77.1        |
| Mother                         | 36        | 15.0        |
| Father                         | 7         | 2.9         |
| Other relatives                | 12        | 5.0         |

**Table 2:**  
Respondents' knowledge of HIV and its prevention

|   | Yes<br>n (%) | No<br>n (%) | I don't know<br>n (%) |
|---|--------------|-------------|-----------------------|
| I have heard about HIV before                             | 219 (91.2)   | 21 (8.8)    |                       |
| It is possible to cure HIV                                | 115 (47.9)   | 125 (52.1)  |                       |
| HIV can be contracted through:                            |              |             |                       |
| *Sexual intercourse                                       | 182 (75.8)   | 58 (24.2)   |                       |
| *Sharing sharp unsterilized objects                       | 145 (48.4)   | 95 (51.6)   |                       |
| *Mother to child in pregnancy                             | 67 (27.9)    | 173 (72.1)  |                       |
| *Transfusion with unscreened blood                        | 75 (31.3)    | 165 (68.7)  |                       |
| Sharing clothes   | 4 (1.7)      | 236 (98.3)  |                       |
| *Sharing toothbrush                                       | 1 (0.4)      | 239 (99.6)  |                       |
| Shaking hands   | 1 (0.4)      | 239 (99.6)  |                       |
| People living with HIV always look emaciated or unhealthy | 147 (61.3)   | 74 (30.8)   | 19 (7.9)              |
| *You can find out if you have HIV by taking a simple test | 205 (85.4)   | 14 (5.8)    | 21(8.8)               |

\*Correct statements about HIV

**Table 3:** Intention to engage in risky sexual behaviour among respondents\*

| Sexual behaviour  | Yes n (%)  | No n (%)   | Not sure  |
|---|------------|------------|-----------|
| I can refuse transactional sex  | 93 (38.8)  | 81 (33.8)  | 66 (27.5) |
| I can always insist on condom use for sex   | 93 (38.8)  | 75 (31.2)  | 72 (30.0) |
| I am willing to have sex with someone not prepared to use condom                  | 43 (17.9)  | 129 (53.8) | 68 (28.3) |
| I can refuse to have sex if I am not interested                                   | 144 (60.0) | 70 (29.2)  | 26 (10.8) |
| I will have sex with my boy/girl friend to keep our relationship                  | 60 (25.0)  | 158 (65.8) | 22 (9.2)  |
| I will feel safe to have sex with someone I am familiar with without using condom | 45(18.8)   | 155(64.6)  | 40(16.7)  |

\*There were non-responses to some of the questions

**Table 4:**  
Relationship between individual indicators for intention for risky sexual behaviour and knowledge of HIV<sup>#</sup>

| Indicator  | HIV knowledge score |           |       |
|--|---------------------|-----------|-------|
|  | Good n (%)          | Poor n(%) | p     |
| <b>I can refuse sex even when offered gifts/money</b>                              |                     |           |       |
| Yes  | 34(38.2)            | 55(61.8)  | <0.01 |
| No   | 16(9.0)62           | 62(79.5)  |       |
| <b>I can always insist on condom use for sex</b>                                   |                     |           |       |
| Yes  | 38(40.9)            | 55(59.1)  | 0.16  |
| No   | 20(26.7)            | 55(73.3)  |       |
| <b>I am willing to have sex with someone not prepared to use condom</b>            |                     |           |       |
| Yes  | 13(30.2)            | 30(69.8)  | 0.80  |
| No   | 46(35.7)            | 83(64.3)  |       |
| <b>I can refuse sex if I am not interested-</b>                                    |                     |           |       |
| Yes  | 54(37.5)            | 90(62.5)  | 0.34  |
| No   | 47(67.1)            | 23(32.9)  |       |
| <b>I can have sex with my boy/girl friend to keep our relationship -</b>           |                     |           |       |
| Yes  | 14(23.3)            | 46(76.7)  | 0.05  |
| No   | 63(39.9)            | 95(60.1)  |       |
| <b>I will feel safe to have sex with a person familiar to without using condom</b> |                     |           |       |
| Yes  | 7(15.6)             | 38(84.4)  | 0.01  |
| No   | 60(38.7)            | 95(61.3)  |       |

<sup>#</sup>Those unsure of their responses were not included in the analysis

**Table 5:**  
Association between HIV knowledge, grade of intention for risky sexual activity and sexual practices of the respondents

|   | HIV knowledge score |           |        |
|---|---------------------|-----------|--------|
|   | Good n(%)           | Poor n(%) | p      |
| <b>Presence of intention for risky sexual behaviour</b> |                     |           |        |
| Present   | 77(38.8)            | 151(66.2) | 0.25   |
| Absent  | 6(50)               | 6(50)     |        |
| <b>Grade of intention for risky sexual behaviour</b>    |                     |           |        |
| High  | 48(29.3)            | 116(70.7) | 0.04   |
| low   | 29(45.3)            | 35(54.7)  |        |
| <b>HIV knowledge score</b>                              |                     |           |        |
| <b>Sexual practices</b>                                 |                     |           |        |
| <b>Sexually active</b>                                  |                     |           |        |
| Yes   | 56(70.9)            | 23(29.1)  | <0.01  |
| No  | 27(16.8)            | 134(83.2) |        |
| <b>Sexual debut</b>                                     |                     |           |        |
| Early   | 56(82.4)            | 12(17.6)  | <0.01* |
| Not early   | 0(0)                | 13(100)   |        |
| <b>Multiple sexual partners</b>                         |                     |           |        |
| Yes   | 4(26.7)             | 11(73.3)  | 0.10*  |
| No  | 0(0)                | 4(100)    |        |

\*Likelihood ratio reported

The mean knowledge score for HIV was  $5.7 \pm 1.7$  and only 83 (34.3%) of the students had good knowledge of HIV. The responses to the questions on the knowledge of HIV were as shown in table 2. The females significantly had better knowledge of HIV compared with the boys ( $p=0.04$ ) but the family type and who the adolescent lived with was not associated with their knowledge of HIV. Only 25 (10.4%) had HIV screening in the past and all the screening were done at health care facilities. One hundred and eighty-nine (78.8%) adolescents were willing to have HIV screening if the test is free and 150 (62.5%) would not mind having a friend that is HIV positive. Seventy-nine (32.9%) adolescents had ever had sex, of these, 68 (86.1%) had sex before 15 years while 53 (67.1%) had sex for the first time at 9 years. Among those sexually experienced, 38 (48.1%) currently had more than one sexual partner. Almost all (95.0%) of the respondents had the intention of engaging in risky sexual behaviour of which 64(26.7%) had low risk and 164(68.3%) with high risk. Other details of the respondents' sexual behaviour were as shown in Table 3. There was no significant relationship between the knowledge of HIV and the overall intention to engage in risky sexual behaviour. However, good knowledge of HIV was significantly related to intention for low risk sexual behaviour ( $p=0.04$ ). There was also some significance when the HIV knowledge score was compared with individual indicators of intention to engage in risky sexual behaviours as shown in Table 4.

## DISCUSSION

This study revealed that almost all the adolescents had the intention of engaging in some form of risky sexual behaviour and there was poor knowledge of HIV and its prevention. The sexually active ones were also involved in risky sexual behaviours. The proportion of the respondents with good knowledge about HIV was much lower than the national average value for the age group studied (NDHS, 2014). This raises a lot of concern as it implies that the inclusion of sexuality and HIV topics in the school curriculum and the efforts put in by different NGOs did not appear to affect their knowledge about HIV. This can be corroborated by the low percentage who had ever had HIV screening. It is also surprising that all those who had been previously screened had the test in health care facilities. It may be that this group of adolescents are not accessing the services offered by the NGOs as they may be ignorant of their existence. These are public school adolescents who are more likely to be from the lower socioeconomic class and so may not be aware of services rendered by NGOs. It is however encouraging that a high number of them were willing to be screened if this does not attract a fee. It has been reported that poor access to HIV screening is one of the factors contributing to high mortality among adolescents living with HIV in sub Saharan Africa (Sam-Agudu *et al.*, 2016). This is a huge unmet need that should be filled in order to get these adolescents on track with HIV prevention.

The urgency in this is also shown in the high rate of sexual activity which is also higher than the national average figure though comparable with some earlier reports in Nigeria (Bamidele *et al.*, 2009; Duru *et al.*, 2010). A higher figure has also been reported from Delta State (Okonta and Oseji, 2006). This explains the reason why the adolescent age group has the highest incidence of new HIV infection in Nigeria. Sexual activity is high and many of them engage in risky sexual

behaviours with almost all of them having the intention of engaging in these risky behaviour. This is likely to stem from the immaturity of the adolescents' frontal cortex (Yurgelun-Todd and Killgore, 2006) which makes them to underestimate the risk they are taking. As it can be seen in this study, many of them correctly identified sexual intercourse as a route of HIV transmission but were either already indulging in risky sex or had the intention of having risky sexual behaviours. This shows that they do not fully grasp the implication of their risky sexual behaviours.

Early sexual debut was high among the sexually active adolescents with the modal age of 9 years. This suggests that these children were likely abused sexually and this may be the reason why many of them are involved in risky sexual behaviours (Baumgartner *et al.*, 2009). The sexually active adolescents also had better knowledge regarding HIV. They may be conscious of the risk they are exposed to and this may be the prompt that has helped them to acquire the knowledge that they have.

Good knowledge about HIV was associated with refusal to be involved in transactional sex. The good knowledge most likely made them to realise that the risk of contracting HIV far outweighs the benefit that may be derived from such relationship. Poor knowledge that was associated with the intention to engage in high risk sexual behaviours showed that such knowledge to some extent, HIV knowledge mediate intended sexual behaviours. However, these adolescents appear not to be worried about intending to engage in risky sexual behaviours with familiar people like romantic relationship and were even ready to have sex without condom in such situations. The physiological limitation in their reasoning could also account for this (Yurgelun-Todd and Killgore, 2006), making them not to think seriously about the dangers associated with their social relationships.

The large disparity between actual sexual behaviour and intended sexual risk behaviour may also be due to some external factors which tend to curtail the activities of the adolescents. These include parental monitoring, societal expectations and adolescent religiosity (Wang *et al.*, 2014). These have been shown to affect adolescents' sexuality. It is possible that if the circumstances were changed, the intended sexual behaviours will become actual behaviours. This is one of the strength of this study as it is not only the actual sexual behaviour was captured. The study was able to give insight into intended sexual behaviours which could become actual behaviours should the circumstances be put right.

Both the high-risk sex practised by the sexually active adolescents and the high rate of intention to engage in risky sexual behaviour predisposes these study group to sexual complications like HIV and other sexually transmitted disease and unwanted pregnancies which could result in abortions and it complications or adolescent parents. On a long-term basis, the females are predisposed to developing cervical cancer in an environment where both the primary and secondary prevention of this cancer are still primitive. The lack of significance between the know ledge of HIV and intention to engage in in risky sexual behaviours may be as a result of complex interplay of other factors that can affect sexuality like culture and family setting.

There is an urgent need to reach out to the needs of these secondary school adolescents with effective education regarding HIV and appropriate sexual behaviour in order to protect them from problems associated with risky sexual

behaviour. Perhaps, community based interventions like peer educators and adolescent health clinics will serve this population better as access will be improved and it will be easier to deliver the services in a way that will be acceptable to them. Faith based organisations have been used to successfully deliver such services in the past. They may be able to impact on the sexual health of these adolescents as well.

This study has some limitations. There is a potential for social desirability bias where respondents might not be truthful about sensitive information such as sexual behaviour. Hence there could be under-reporting of some events. Secondly, the cross-sectional nature of the data makes it difficult to draw causality relationships among the variable studied. In addition, there were some sensitive questions under the section on intention to engage in risky sexual behaviour were unfilled and these were regarded as non-responses. The non-response rate could bias the estimates of these sexual behaviour variables. Another limitation is that this is a school based survey which did not consider out of school adolescents so the findings cannot be generalized.

In conclusion, the knowledge of HIV and its prevention was poor among the adolescents in this study and they were either already involved in risky sexual behaviour or have intention to engage in risky sexual behaviour. The knowledge of HIV was not associated with the intention to engage in risky sexual behaviour but good knowledge was associated with intention to engage in low risk sexual behaviour. There is an urgent need to reach out to these adolescents with appropriate and effective sexual health education in order to avoid the consequences of risky sexual behaviour among them

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