# Knowledge of Sexually Transmitted Infections (STIs) Including HIV/AIDS Among Undergraduate Students of University of Abuja, Nigeria

***Makwe Edith[1], Adenyuma Mercy Ovaioza[2]**

*[1,2]Department of Geography and Environmental Management, University of Abuja, PMB 117, Abuja Nigeria*

## ABSTRACT

**Aims:** To assess knowledge of students of the University of Abuja about sexually transmitted infections (STIs) including HIV/AIDS by determining their knowledge about the types, routes of transmission and symptoms of STIs including HIV/AIDS and the preventive measures available.

**Study design:** Descriptive cross-sectional study of non medical undergraduate students.

**Place and Duration of Study:** University of Abuja, Nigeria. Between September, 2012 and February, 2013

**Methodology:** A detailed semi structured questionnaire identifying socio-demographic characteristics, knowledge of STIs including HIV/AIDS, routes of transmission, symptoms and preventive measures was administered to 405 students using stratified random sampling method, 356 questionnaires were retrieved and used for the study.

**Results:** Knowledge about STIs (87.4%) and HIV/AIDS (91%) was high; most known types of STIs were gonorrhea (89.3%) and syphilis (81.2%) with the least known being cancroids (25%). Television was the highest source of knowledge (82%), then school education (81.5%), magazines (74.4%), friends (74.2%), newspapers (73.3%) and health workers, teachers, religious education, parents (61.2% to 67.4%). Knowledge of routes of transmission was varied with sexual intercourse (93%), blood transfusion (90.7%), sharing sharp objects (83.7%) and mother to unborn child (77.8%). 23.6% of the respondents had the misconception that STIs and HIV/AIDS can be transmitted through sharing toilets, eating utensils, witchcraft and kisses. Knowledge about symptoms of HIV/AIDS were shared as 84.3% chose weight loss, fever off and on (74.4%), itchy skin rash (68.3%), watery stool lasting >2weeks (44.1%), and sore throat (43.3%); there was varied knowledge of preventive measures with condom use (88.2%), abstinence (86.2%), faithfulness to one uninfected partner (79.8%), avoiding sex with commercial sex workers (67.4%), reduce number of sexual partners (63.2%), delay onset of sex (32%), use of injection after sex (14.3%).

**Conclusion:** The students' knowledge about STIs and HIV/AIDS was high with some misconception about the routes of transmission. There should be incorporation of STIs and HIV/AIDS education in the University curriculum by making it part of the General Studies courses in the universities in Nigeria.

*Keywords: Students, Knowledge, HIV/AIDS, STIs, Symptoms, Prevention, Nigeria*

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

## 1. INTRODUCTION

Adolescents, defined by World Health Organization as persons between 10 and 19 years of age, constitute about 20% of the world's population [1]. In Nigeria, as in other parts of the world, adolescents constitute a significant proportion of the population. Estimation from the 1991 census indicates that adolescents and young adults, aged between 15-24 years account for approximately 20.4% of the Nigerian population [2].

Studies also revealed that over 90% of adolescents and young adults have become sexually active by the age of 20years in Nigeria, with a large proportion of these occurring with casual and non- conjugal relationships, thereby increasing their vulnerability to several sexual and reproductive problems [3]. Emerging data about the high incidence of sexual activity among adolescents suggest that factors that influence this include, socio- economic deprivations, parental inadequacies, peer pressure, effects of cultural changes and modernization and media influence [4,5].

Sexually transmitted infections (STIs) are infections that are spread primarily through person-to-person sexual contact. There are more than 30 different sexually transmissible bacteria, viruses and parasites. The most common sexually transmitted infections are Gonorrhea, Chlamydia infection, Syphilis, Trichomoniasis, Cancroids, Granuloma inguinale, Candidiasis, Genital herpes, Genital warts, Human immunodeficiency virus (HIV) infection and Hepatitis B infection [5]. Several, in particular HIV and syphilis, can also be transmitted from mother to child during pregnancy and childbirth, and through blood products and tissue transfer. The clinical features of these diseases includes painful menstruation, penile or vaginal discharge, itchy perineum, Lower abdominal pain, swollen glands in the groin, fever on and off, menstrual disorders, genital ulcers, painful or difficult intercourse, warts in the genital area, conjunctivitis in infants born to infected mothers and sores in the mouth. However many are asymptomatic. It must be stated that not all the symptoms enumerated above may be seen in a single individual. On the other hand, HIV/AIDS may be accompanied by symptoms such as fever, weight loss, sore throat, chronic diarrhea, skin rash and other non specific symptoms [6].

Sexually transmitted infections including HIV/AIDS have been reported to be disproportionately high among young people in Nigeria. Report reveals that about 50% of new HIV infections in Nigeria occur in

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

people between 15-25 years of age [7]. Sexually transmitted infections (STIs) remain an important cause of morbidity and mortality among women in the child-bearing age. In order to institute appropriate preventive measures there is need to establish the profile of knowledge of the predisposing factors and causation of STIs, as well as transmission routes and preventive measures among the susceptible young people, such as university students [8]. While the reported number of young people infected with HIV/AIDS in Nigeria seems to be rapidly increasing, a good opportunity exists to prevent the epidemic from exploding to unmanageable proportions provided there is a willingness to mitigate the spread. Therefore adequate information about the determinants of sexual and reproductive behaviour of young people is critical [8].

In tune with the rising rates of HIV infection among adolescents, a deluge of intervention activities that focus on increasing awareness, and access to information and services, and encouraging changes in behaviour that facilitate the spread of infections among those who are sexually active have been put in place. However, there is evidence that many still lack adequate information and the necessary skills to enact and sustain healthy behavior [9].

Adolescents constitute a great resource base for humanity. The productive workforce of many countries, Nigeria inclusive, consists of this demographic group of people. Consequently, any adverse health affliction of this group portends deleterious consequences on the economic virtues of the country. STIs including HIV/AIDS have the capacity to cause this. Thus their effects remain of grave public health importance; Not only because of the debilitating morbidity and loss of man-hours they can cause, but also for their ability to inflict serious mortality on any population. The need therefore arises for proactive action aimed at instilling among the young adults, particularly undergraduates, those attributes capable of enhancing sexual and reproductive development. Improving knowledge and imbibing good sexual attitudes remain critical in realizing this objective.

With the unsavory picture painted above, it becomes pertinent, if not urgent to invigorate activities targeted at curtailing the menace of poor knowledge to sexual issues among undergraduates, who represent the cesspool and repository of the future productive human resources. Targeting of the undergraduates in the University of Abuja that constitute a major collection of young adults could be of

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

major strategic importance in checking the menace of poor knowledge, and particularly the attendant risk of exposure to incurable STIs including HIV/AIDS. Improving their level of awareness about the types, routes of transmission and symptoms of STIs including HIV/AIDS and the preventive measures available, will contribute immensely to mitigating the problems posed by STIs including HIV/AIDS.

## 2. MATERIAL AND METHODS

### 2.1 Study Area

The study was carried out in the University of Abuja, located in Gwagwalada town, Federal Capital Territory (FCT) of Nigeria. Gwagwalada is one of the six Area Councils of the Federal Capital Territory located about 40kilometers away from the Federal Capital City, Abuja; and it is centrally located within the FCT. It is located between latitude $8^{o}55$'N and $9^{o}00$'N and longitude $7^{o}00$'E and $7^{o}00$'E. The Gwagwalada Area Council is bounded by Kuje Area Council to the East, Abaji Area Council to the West Kwali Area Council to the South and Abuja Municipal Area Council to the North East and Suleja Local Government of Niger State to the North [10].

### 2.2 Study Population

The University of Abuja is the major and largest tertiary educational institution in the Federal Capital Territory. As at the time of this study, it had a population of Sixteen Thousand Two Hundred students in the ten faculties that exist in the school. This study is a descriptive cross sectional study carried out on Non medical students in the University of Abuja. The population for the study consisted of students of eight faculties of the University of Abuja.

### 2.3 Study Design

This was a descriptive cross sectional study carried out on the non medical undergraduate students of the University of Abuja, Nigeria. The study was carried out from September 2012 to February 2013 for a period of six months

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

## 2.4 Questionnaire

The questionnaire was self designed and based on the Adolescent AIDS knowledge scale by Zimet [11] and the request of knowledge about HIV/AIDS prevention for young people by the United Nations General Assembly Special Session [12]. The questionnaire is made up of eighteen semi structured questions which were grouped into 3 sections.

Section A: Socio- demographic characteristics of the respondents.

Section B: Knowledge about STDs including HIV/AIDS.

Section C: Knowledge about routes of transmission and prevention of STDs including HIV/AID.

### 2.4.1 Pretesting of questionnaire

Pretesting of the questionnaire was carried out in Nasarawa State University Keffi, Nigeria, this was done in order to identify and correct errors in the questionnaire and also to ascertain the relevance, importance and adequacy of the questionnaires in collecting the required information from respondents. The questions and the answers were in English language. Eligible students were given an explanation about the purpose and objectives of the study before being asked for consent and to fill in the questionnaire. Twenty questionnaires were administered randomly to students of the University. This helped to ensure that the questions in the instrument were in line with the objectives of the study. The pre-testing was carried out by the researcher.

## 2.5 Sample Size Determination

The minimum sample size was determined using the formula for single proportion:

$$n = \frac{Z^2 (P) (1 - P)}{E^2}$$

Based on the estimated awareness level of 80%, 95% confidence level (*Z*-score value: 1.96) and 5% precision level, the estimated minimum sample size was approximately 245 ($Z$ = 1.96; $P$ = 0.8; $E$ = 0.05). However, 405 students were sampled to allow for non-response [13,14].

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

## 2.6 Sampling Technique and Procedure

The sampling technique adopted was stratified random sampling method. This technique is good for the objectives because stratification reduces sampling variability, especially when the strata created are homogenous than the population as a whole [15]. Stratified random samplings are particularly good representative of the population [16]. For the purpose of the study, the decision to administer 400 questionnaires was made giving a sampling fraction of 0.025. Eight Faculties of the University of Abuja were randomly selected. These were: Faculties of Agriculture (1,850), Arts (2,550), Education (1,600), Management Sciences (3,650), Science (1,490), Social Sciences (2,840), Law (1,280) and Veterinary Medicine (920). Samples were taken from each faculty as follows: Agriculture (46), Arts (64), Education (40), Management Sciences (91), Sciences (37), Social Sciences (71), Law (32) and Veterinary Medicine (23). A total of 405 questionnaires were then administered in all the faculties. Random sampling was used to select departments and levels for administration of data instrument. The following departments were utilized: Agricultural Economics, English, History, Theatre Arts, Environmental Science Education, Social Studies, Public Administration, Accounting, Physics, Biological Sciences, Sociology, Political Science, Public and International Law and Veterinary Medicine.

The questionnaire was administered to students of the selected faculties. Medical students were excluded from the study because their training includes the sought of information and also to avoid bias that could arise from their knowledge about the subject matter. Simple random sampling method was used to select participants.

## 2.7 Data Collection

Students of the University of Abuja were the respondents. To administer the questionnaires, enumerators were employed. Eight enumerators (one from each Faculty) were used. They were adequately trained and mobilized for the exercise. A total of Four Hundred and Five (405) questionnaires were administered and Three Hundred and Sixty Seven (367) questionnaires were retrieved. Out of this number, eleven (11) questionnaires were rejected due to poor filling. The data analysis was therefore carried out with Three Hundred and Fifty Six (356) questionnaires.

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

## 2.8 Data Analysis

Collected data from the questionnaires were utilized for the analyses. Data analysis was done using the SPSS software (version 13). Simple descriptive statistics were adopted for the analysis. The objective, which dealt with knowledge of Undergraduates of sexually transmitted infections, was analyzed using simple descriptive measures (Frequency, percentages and mean)

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

## 3. RESULTS AND DISCUSSION

**Table 1: Socio-Demographic Characteristics.**

| Characteristics | Frequency | Percentage |
|---|---|---|
| **Age** | | |
| <15 | 0 | 0 |
| 15 – 19 | 25 | 7 |
| 20 – 24 | 99 | 27.8 |
| 25 – 29 | 35 | 9.8 |
| 30 and above | 7 | 2 |
| No response | 190 | 53.4 |
| Total | 356 | 100 |
| **Sex** | | |
| Male | 251 | 70.5 |
| Female | 98 | 27.5 |
| No response | 7 | 2 |
| Total | 356 | 100 |
| **Religion** | | |
| Christianity | 279 | 78.4 |
| Islam | 68 | 19.1 |
| Traditional | 4 | 1.1 |
| No response | 5 | 1.4 |
| Total | 356 | 100 |
| **Ethnic group** | | |
| Ibo | 94 | 26.4 |
| Hausa | 27 | 7.6 |
| Yoruba | 88 | 24.7 |
| Others | 140 | 39.3 |
| No response | 7 | 2 |
| Total | 356 | 100 |
| **Marital Status** | | |
| Single | 335 | 94.1 |
| Married | 16 | 4.5 |
| Separated | 2 | 0.6 |
| Divorced | 2 | 0.6 |
| No response | 1 | 0.3 |
| Total | 356 | 100 |
| **Level** | | |
| 100 | 92 | 25.8 |
| 200 | 101 | 28.4 |
| 300 | 81 | 22.8 |
| 400 | 82 | 23.0 |
| Total | 356 | 100 |

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

### 3.1 Knowledge of HIV/AIDS

On the knowledge of the respondents about HIV/AIDS, the result reported high knowledge (91%) of HIV/AIDS. Few (1%) reported not having heard of the infection, while Eight percent (8%) did not respond.

### 3.2 Knowledge about Sexually Transmitted Infections (STIs)

Adequate knowledge is of utmost importance in the fight against the rampaging effects of STIs, particularly, HIV/AIDS. The results in Table 1 reveal a high level of knowledge of STIs among the respondents.

**Table 2: Knowledge of STIs**

| Respondents who have heard of STIs | Frequency (N) | Percentage |
|---|---|---|
| Yes | 311 | 87.4 |
| No | 28 | 7.8 |
| No response | 17 | 4.8 |
| **Total** | **356** | **100** |

However, almost eight percent (7.8%) of the respondents said they have never heard of STIs, this was probably because they were not informed. Comparing the results from the knowledge of STIs (87.4%) and HIV/AIDS (90.7%), it is obvious that more of the respondents have knowledge about HIV/AIDS than they do about the STIs. This is probably due the greater publication given to HIV/AIDS by the different information media. Notwithstanding, the knowledge of the respondents for both HIV/AIDS and STIs was quite high. This result tallies with those from a similar study in Wuhan, China, and in Abeokuta, Nigeria, which reported knowledge level of 99% and 98% respectively[17,18].

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

### 3.3 Knowledge of Types of STIs

The conventional STIs include Gonorrhea, Syphilis, Cancroids, Herpes Genitalis, Chlamydia infection etc. Figure 1 shows the distribution of knowledge of STIs according to types among the respondents. The figure showed that the most known types of STIs among the respondents were Gonorrhea and Syphilis. The least known STI was cancroids, which accounted for 25%. The findings support the result from a study on refugees in Ogun state, Nigeria, which showed that the most known STI was Gonorrhea [19].

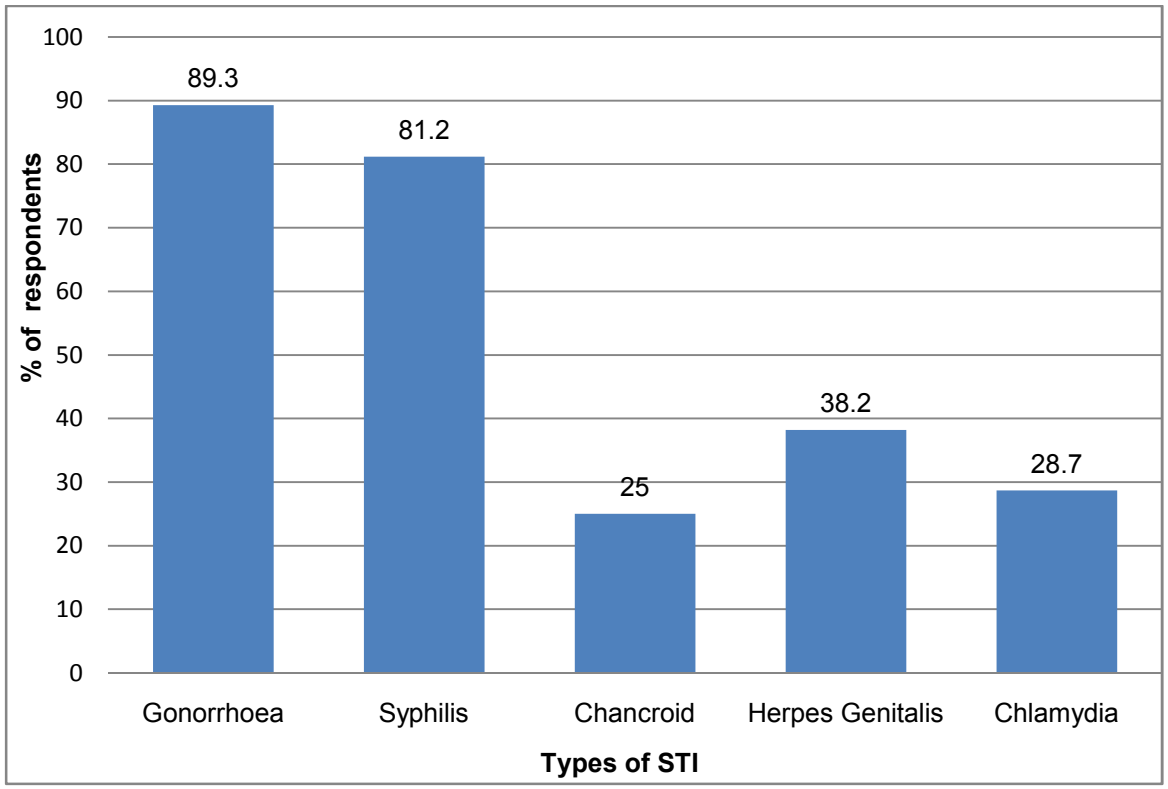


**Fig 1: Knowledge of respondents on types of STIs**

### 3.4 Source of Knowledge about STIs Including HIV/AIDS

Information relating to STI including HIV/AIDS can be accessed through many sources. These include; Friends (peers), parents, Teachers, Television (Mass media), Newspaper etc. Figure 2 shows varying sources of knowledge about STIs including HIV/AIDS as provided by the respondents. The results indicated that the highest source of knowledge about STI including HIV/AIDS among the respondents

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

was from Television, accounting for 82%. There is agreement between this result and that obtained by Gao *et al*. in a similar study among Secondary School Students in Wuhan, China [20].

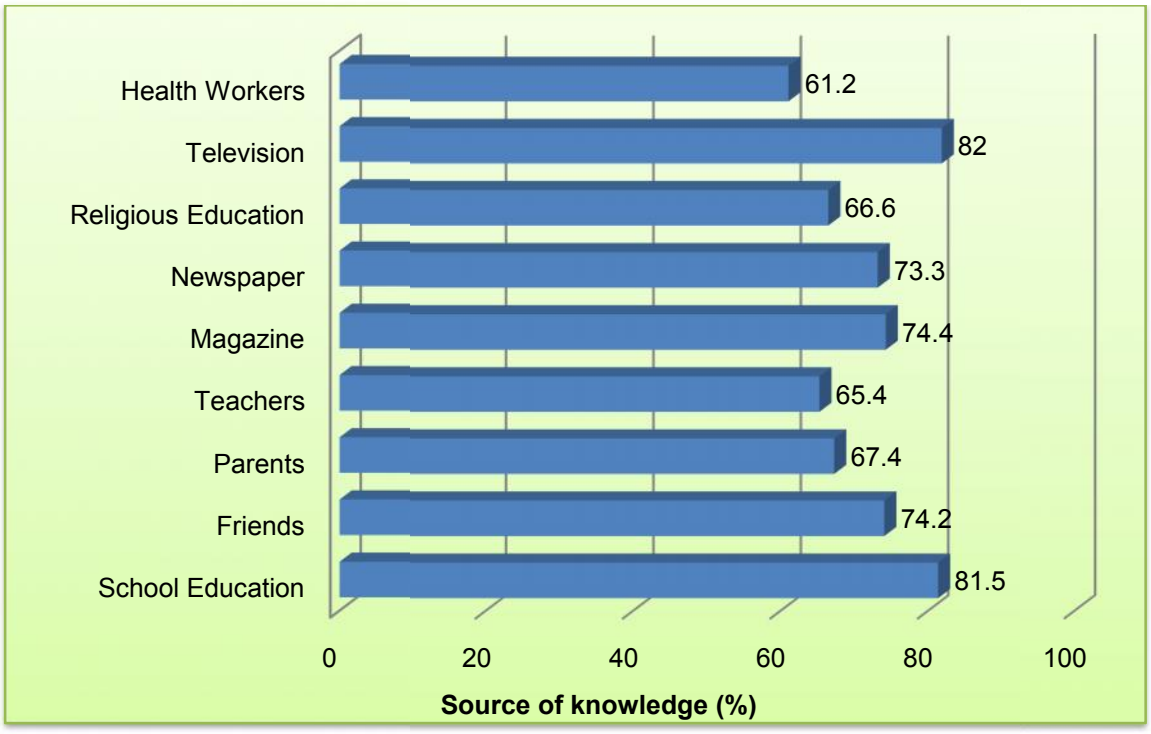


**Figure 2: Distribution of source of knowledge about STIs including HIV/AIDS**

### 3.5 Knowledge about Routes of Transmission of STIs and HIV/AIDS

Transmission of HIV/AIDS can be through many ways. Whatever route, the basic denominator is the admixture of body fluids. Consequently, the infection could be transmitted through sexual intercourse, blood transfusion, Mother to unborn child, sharing sharp objects like needle, razor etc. Table 3 shows the distribution of knowledge of routes of transmission of STIs including HIV/AIDS.

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

**Table 3: Distribution of Knowledge of Routes of transmission of STIs including HIV/AIDS**

| **Responses** | **Route of transmission (Frequency and %)** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Sxi | Blt | Muc | Sht | Sso | Seu | Wtc | Kss |
| Yes | 333(93.5) | 323(90.7) | 277(77.8) | 17(4.8) | 298(83.7) | 7(2.0) | 24(6.7) | 53 (14.9) |
| No | 2(0.6) | 2(0.6) | 18(5.1) | 176(49.4) | 11(3.1) | 181(50.8) | 172(48.3) | 153 (43.0) |
| No response | 21(5.9) | 31(8.7) | 61(17.1) | 163(45.8) | 47(13.2) | 168(47.2) | 160(44.9) | 150 (42.1) |
| Total | 356(100) | 356(100) | 356(100) | 356(100) | 356(100) | 356(100) | 356(100) | 356 (100) |

**Key:** Sxi: Sexual intercourse; Blt: Blood transfusion; Muc: Mother to unborn child; Sht: Sharing toilet; Sso: Sharing sharp objects; Seu: Sharing eating utensils; Wtc: Witchcraft; Kss: Kissing;

Although most of the respondents indicate knowledge about the basic routes of transmission of STIs including HIV/AIDS as shown in Table 3, about 23.6% of the respondents also have a misconception on the routes of transmission. This is because they believe that STIs including HIV/AIDS can be transmitted through kissing, sharing of eating utensils and witchcraft. This result is similar to that obtained by Gao *et al*., (2012), where about 26.73% of the respondents had the misconception that STIs including HIV/AIDS can be transmitted through mosquitoes bites, casual contact with people who live with HIV/AIDS like sharing of utensils, beddings, toilet seat and swimming pool. Over the years and with improvement in the level of awareness there is tremendous reduction in people's misconception about the various routes of transmission of STIs including HIV/AIDS. In a study conducted on street youths in Accra, Ghana, there was a high level of misconception about the routes of transmission. Most (68%) of the youths believed that transmission is possible through witchcraft, kissing, hand shaking, sharing of clothes, utensils and beddings [21].

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

### 3.6 Knowledge about Symptoms of HIV/AIDS

The report showed that the most known symptom of HIV/AIDS was weight loss, accounting for 84.3% of responses. This was followed by fever off and on (74.4%), Itchy skin rash (68.3%), watery stool lasting for more than two weeks (44.1%) and sore throat (43.3%). This result however, does not agree with that from Benue, Nigeria, which recorded low knowledge of symptoms with the most frequently known symptom being skin rash [19].

### 3.7 Knowledge of Preventive Measures by Method

Prevention remains the mainstay strategy in the fight against STI including HIV/AIDS. Faithfulness to one uninfected partner, use of condom, abstinence, avoiding commercial sex workers etc are some preventive measures. The result showed that there was a high level of knowledge of preventive measures as displayed in Figure 3; condom use was the most known preventive measure, accounting for 88.2%. The result equally showed that 32.9% of students have never engaged in sex, which is encouragingly significant. The result agreed with the report of another work in Accra, Ghana, which reported 78% condom use and 70% abstinence [22]; a similar study in Nigeria, reported 40% abstinence [23].

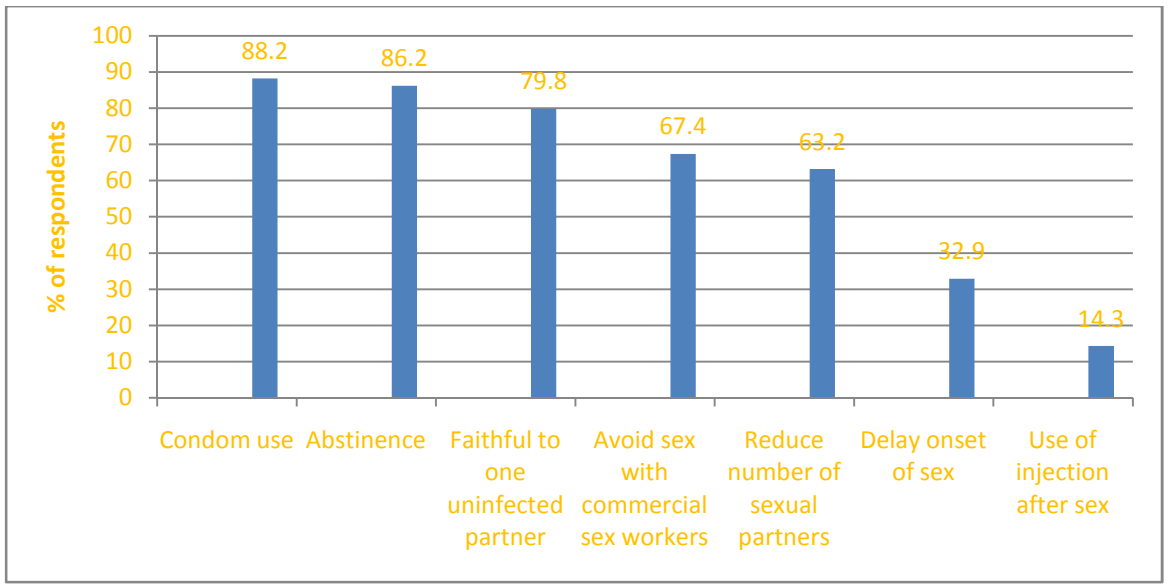


**Figure 3: Distribution of knowledge of Preventive measures by method.**

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

## 4. CONCLUSION

The above study examined the knowledge of sexually transmitted diseases including HIV/AIDS among undergraduates in University of Abuja. Generally it was found that knowledge about STI including HIV/AIDS was high. The study also revealed that Gonorrhea and Syphilis were the most known types of STIs among the respondents; there is also a high level of knowledge with a moderate misconception about the routes of transmission of STIs including HIV/AIDS; knowledge about the symptoms of HIV/AIDS, and the preventive measures of STIs and HIV/AIDS were also high, with condom use, abstinence and faithfulness to one uninfected partner being the most known preventive measures. While the majority of university students had heard about STIs and HIV/AIDS, their knowledge can be said to be inadequate.

Following from the study, there is therefore the need for the realignment of STIs and HIV/AIDS prevention programmes to tackle the problem of wrong or unjustified perceptions. One way of doing this may be through the incorporation of STIs and HIV/AIDS education in the University curriculum in Nigeria. STIs and HIV/AIDS education may be made part of the General Studies or Foundation Studies courses in the universities. Furthermore, parents, teachers and sex educators should increase their involvement in STIs and HIV/AIDS education, with much emphasis on the routes of transmission and prevention strategies.

## ACKNOWLEDGEMENT

The author acknowledges the co-operation of the management of the University of Abuja, Nigeria and the numerous students that participated in this study. I appreciate the efforts of the research assistants (enumerators) who assisted in the collection of data and the anonymous reviewers whose comments and suggestions helped to enrich the content of the manuscript.

## COMPETING INTEREST

The authors declare that there are no competing interests

*Tel.:+2348166739317; E-mail address: edithmakwe@yahoo.com

## AUTHORS' CONTRIBUTION

Makwe Edith designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Adenyuma Mercy Ovaioza managed the literature searches. All authors read and approved the final manuscript.

## ETHICAL APPROVAL

Prior permission was sought and obtained from the authorities of the University of Abuja before the study commenced. Recruitment into the study was voluntary and nobody was coerced into participation. Confidentiality was maintained by asking respondent not to write their names.

## .LIMITATIONS

The study is limited in that it was carried out in a school environment involving 356 students, thereby making the research participants very selective. Any generalization of the results of this study must be made with caution. More so, Sexually Transmitted Infections (STIs) and HIV/AIDS are sensitive topics that many young people are reluctant to talk about. As such, there could be some bias in the filling of the questionnaires.

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