

## Attitude and Practice towards HIV/AIDS among Students of Tertiary Institutions Coming for Industrial Work Experience Scheme (SIWES) At National Institute for Pharmaceutical Research and Development, Abuja, Nigeria

Ya'aba Yakubu<sup>1,2\*</sup>, Mohammed Shehu Busu<sup>1</sup>, Chuku Aleruchi<sup>2</sup>, Orole Olukayode Olugbenga<sup>2</sup>, Mojisola Christiana Owoseni<sup>2</sup>, Odonye Dauda Dantani<sup>2</sup>, Upla Peter Uteh<sup>2</sup>, Okposhi Usman Shuaibu<sup>2</sup>, Abarike Moses Chinenye<sup>1</sup> and Abdulmumin Adam Raji<sup>1</sup>

<sup>1</sup>Department of Microbiology and Biotechnology, National Institute for Pharmaceutical Research and Development (NIPRD) Abuja, Nigeria

<sup>2</sup>Department of Microbiology, Federal University of Lafia, Nasarawa State, Nigeria

DOI: [10.36347/sajb.2019.v07i11.003](https://doi.org/10.36347/sajb.2019.v07i11.003)

| Received: 10.11.2019 | Accepted: 16.11.2019 | Published: 24.11.2019

\*Corresponding author: Ya'aba Yakubu

### Abstract

### Original Research Article

Negative attitude and risky practice are major obstacles to prevention and control to the spread of HIV. This study aimed to assessing HIV-related attitude and practice of tertiary institutions students coming for industrial work experience scheme (SIWES) at National Institute for Pharmaceutical Research and Development (NIPRD), Abuja, Nigeria. A cross-sectional study of students aged between 15 and 39 years old was undertaken from August to October, 2019 to evaluate their attitudes and risk practices using a well-structured self-administered questionnaire. Two hundred and seventy (270) students were recruited for the study using the minimum sample size calculation. Virtually, all of the respondents completed the questionnaire correctly giving a response rate of 100%. Positive attitude towards persons living with HIV/AIDS (PLWHA) were observed among 58.1% of students. Nearly half of the respondents (47.0%) said that they would be willing to continue studying in a school with HIV-positive friends, and 140 (51.9%) said they would continue attending a school with HIV-positive teachers. One hundred and twenty-one (44.8%) students had a history of sexual intercourse, 199 (73.7%) had done an HIV test and 187 (69.3%) are willing to encourage other students for the same services. However, the use of injectable drugs was not seen and hence, the consequent risky practice of sharing and exchanging syringes/needles was absent. The risky behaviors and discriminatory attitude provide strong evidence that there is a need to advocate for prompt and appropriate National HIV/AIDS awareness raising campaigns in tertiary institutions in Nigeria to reduce the gaps in knowledge and decrease stigmatizing attitude towards PLWHA. Therefore, sexual education in schools and health education in religious sermons should be reinforced to correct the misconceptions, encourage safe practice and positive attitude towards PLWHA.

**Keywords:** Attitude, Practice, Institutions, Students, Cross-sectional, injectable drugs.

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## INTRODUCTION

The transmission of deadly Human immunodeficiency virus (HIV) among productive age group particularly young ones is still a major public health challenges in the country (Nigeria). It is estimated that since the outbreak of the epidemic in the 80s, approximately 70 million people have been diagnosed and affected; and over 35 million of them have died of the infection [1]. World Health Organization (WHO) also reported in 2018 that about 1.8 million people became newly infected and about 940,000 people died of AIDS related challenges in 2017 alone [2, 3]; and sub-Saharan Africa continues to be the most heavily

affected region worldwide [3]. There are tremendous efforts made in combating the pandemic globally with an estimated 43% reduction in the annual Acquired immunodeficiency syndrome (AIDS) related casualties and concerted efforts is still needed to further curbs the menace [4].

The burden of HIV/AIDS is not evenly distributed across or within countries and regions. Sub-Saharan Africa countries are the regions of the world mostly and seriously affected by the virus epidemic, accounting for over 70% of persons living with HIV/AIDS (PLWHA) worldwide. This means that

to almost 1 in every 25 adults (4.4%) living with the virus in the region [5]. It was also reported in Joint United Nations Global Fact Sheet [6], that sub-Saharan Africa is harboring over two-third of all people living with HIV/AIDS globally, which translate that more than 66% of the estimated population infected with HIV/AIDS are home and lived in the region. The most populous country in sub-Saharan Africa being Nigeria is home to 3.5 million people with HIV infection, this is accounting for 9.4% of the global population of PLWHA. Although, the recent HIV prevalence among aged 15-49 in Nigeria is relatively low at 1.4%, with estimated 1.9 million persons still living with the virus. The South-South and North Central Zones of the country having the highest HIV prevalence at 3.1% and 2.0% respectively [7] compared to other African countries such as Zambia, South Africa and Chad with two-digit prevalence rates [1].

The National HIV/ AIDS and Reproductive Health survey of 2012 also reported that the uptake of HIV testing is low with just 23% of males and 29% of females knowing their status despite disturbing prevalence figures and only 24% of age 15-49 who were HIV positive were on anti-retroviral therapy (ART). Thus, over 70% of persons living with the virus remain untreated and will serve as sources of new viral infection [8]. Although, globally, there was reported general decline in AIDS related deaths and new HIV infection cases due to the concerted efforts by various stakeholders [9, 10].

The young ones are much more prone to HIV infection due to their physical, social, psychological and economic attributes of adolescence especially at age between 15-24 [11] and are also at high risk due to their high levels of risky sexual activities, behaviours, attitudes, practice, expectations and the norms of the societies in which they grow up [12]. Studies reported that, young people who begin sexual activity at early stage are more likely to have sex with more partners, and with partners who have been at high risk of HIV infections and other sexually transmitted infections (STIs) exposure as a results of their sexual activeness. This may be due to their lacks of required health information and access to appropriate reproductive health services [13, 14]. Therefore, the main aim of HIV prevention and control programs was to delayed sexual activity debut.

With the overall national prevalence of 1.4% obtained in 2019, the UNAIDS and other stakeholders in HIV/AIDS prevention and control programmes in the country welcomes the new survey report and continuous calls for better focus on the delivery of HIV prevention, treatment and care services to the people [7]. Therefore, this work was encouraged by the desire in assessing the level of attitude and practice among students of tertiary institutions coming for industrial work experience

scheme (SIWES) towards PLWHA at National Institute for Pharmaceutical Research and Development (NIPRD), Abuja, Nigeria.

## MATERIALS AND METHODS

### Study site, Design and Period

This study was developed and carried out at National Institute for Pharmaceutical Research and Development (NIPRD), Abuja, Nigeria. The NIPRD is one of the highest medical research, HIV/AIDS care and treatment centre and referral institution in Nigeria charged with the responsibility to conduct research into infections of public health significant. The institute also serves as the nation's research backup and referral centre for both local and international purses in academic and other related research activities. It is situated in Abuja, the heart/centre of the nation. The city is located at latitude 8° 25' N and 9° 20' E of the equator and longitude 6° 45' N and 7° 39' E with an area land mass of approximately 7,315 km<sup>2</sup>, of which the actual city occupies 275.3 km<sup>2</sup> [15].

This study was a cross-sectional descriptive designed and was carried out between August and October, 2019 with some well-structured standard questionnaires with both open and close ended questions administered to students of tertiary institutions in Nigeria coming for industrial work experience scheme (SIWES) to the institute. These questionnaires were used to obtained information on their level of attitude and practice towards PLWHA.

### Ethical clearance and Sample size determination

The ethical clearance and approval for the study was given by the Health Research and Ethics Committees (HREC) of Federal Capital Territory Abuja and endorsed by the authority of the institute (NIPRD), Abuja, Nigeria were the cross-sectional study was carried out.

The students were adequately counseled on the objectives and significance of the study prior to the data collection. Written informed consent form was filled and obtained from the students who agreed to participate in the study. They were also informed about the confidentiality of information that they provide in the questionnaire and rights to participate or refuse to participate in the study.

The institute usually housed over 600 students per annum on industrial work experience scheme (SIWES) from the five (5) technical departments.

The minimum sample size was determined using the formula for cross-sectional study designs.

$$N = Z^2pq / d^2$$

Where: N = Minimum sample size; Z = the standard normal deviation corresponding to 95% levels

of significance (1.96); P = prevalence of awareness (80% or 0.8) [16, 17].  $q = 1 - p = 0.2$ ;  $d = \text{degree of precision} = 0.05$

$$N = (1.96)^2 \times 0.8 \times 0.2 = 0.6147/0.0025 = 246.$$

We added 10% (24.6) of this value to cover for attrition and non-responses, giving a value of 271.

It is expected that 271 students should be selected for the study to allow for nonresponses, but there are five (5) technical departments ( $271/5 = 54.2$ ). Thus, 54 students from each technical department were chosen from each department i.e. ( $54 \times 5 = 270$ ) = 54.

### Study Questionnaire

A well-structured self-administered questionnaire was developed and used to collect the needed baseline socio-demographic characteristics of the students that consented to participate in the study. Their understanding on HIV-related attitude and risk practice were included. The questionnaire consisted of Three sections. Section 1 contained social demographic information, which includes age, sex, marital status, institutional type, residence and institution type. Section II consisted of eighteen (18) questions related to attitude of students towards HIV/AIDS infected persons and lastly, section III contained 14 questions on student's risk practices such as sexual involvement and everyday activities towards PLWHA. The questionnaire was pre-tested on 10 students' each of the five (5) technical department previous year in the institute. The modification and corrections necessary were made. These were further compared with HIV indicator survey model (developed by the MEASURE DHS program), the AIDS survey model with some indicators from the National HIV/AIDS prevention programs for young people guide [18] and worldwide school-based health related survey and family health on HIV/AIDS deterrence in developing countries [4]. The reviewed questionnaire has questions related to HIV attitudes and practice of the students towards PLWHA and students' sexual practices. The completed questionnaires were examined for completeness. The two hundred and seventy (270) questionnaires were filled by the students and returned for analysis.

### Data Analysis

The data were analyzed statistically using SPSS version 20 statistical software. Standard descriptive statistics were used to present the socio-demographic information, HIV/AIDS attitude and practice in a tabular form. All statistical tests were carried out at 5% significance level.

## RESULTS

Virtually, all of the student's respondents ( $n = 270$ ) completed the questionnaire correctly giving a response rate of 100%. This response rate was achieved through the entry point used in administering the questionnaires. The study comprises of 82 (30.4%) males and 188 (69.6%) females. The ages of the students ranged from 15 to 39 years with a mean age of 34.5 years. The age group 20 – 24 years had the highest (50.0%) students, followed by 15 – 19 years with 30.4%. Only 11 (4.1%) of them were married and the rest (95.9%) were single. The state University had the highest 122 (45.2%) students and followed by the Federal University with 95 (35.2%) students as shown in Table-1.

The attitude of the students towards PLWHA is illustrated in Table-2. Majority of the students (74.5%) revealed positive attitudes to willingly taking care of the HIV-positive family members if they become sick and 127 (47.0%) of the students said they would continue their friendship with HIV infected classmates or friends. Although, over 50.0% of the students exhibited positive attitudes on questions such as, allowing HIV-positive teacher to continue teaching in the school (51.9%) and allowing HIV-positive students to continue studying in the school (74.5%). Only less than half of the students (46.3%) were willing to buy food items from a HIV-positive shopkeeper. For the total 18 questions that addressed students' attitudes towards PLWHA, the mean percentage score was 58.1%. Accordingly, the mean attitude scores greater than 58.1% of the students score were classified as "positive" attitude and the mean attitude score less than 41.9% is classified as "negative" attitude towards PLWHA. Thus, only 58.1 % of students had positive attitudes towards PLWHA while those who had negative attitudes comprised of 41.9 % students.

The risk practices exhibited by student's respondents in this study towards PLWHA are depicted in Table-3. It was shown that 96 (35.6%) of the students have had a history of sexual activity relationship. Out of these students, non 0 (0.0%) had sex experiences with men having sex with men (MSM), despite 189 (70.0%) had heard about men having sex with men (MSM). Thirteen (4.8%) had unprotected casual sex while none of the students ever had sex under the influence of alcohol. None of the student's respondents had ever used injectable drugs or share needles for injection. Conversely, 199 (73.7) students had used HIV voluntary counseling and testing (HVCT) and 187 (69.3%) are willing to encourage other students for the HVCT services. One hundred and eighty- three (67.8%) of the students indicated a willingness to take care of PLWHA, but none accepted to keep them as wife.

**Table-1: Socio-demographic characteristics of the students (n = 270)**

Variable	Total (n)	Percentage (%)
Sex		
Male	82	30.4
Female	188	69.6
Age Group		
15 – 19	67	24.8
20 – 24	135	50.0
25 – 29	38	14.1
30 – 34	21	7.8
35 – 39	09	3.3
Marital Status		
Single	259	95.9
Married	11	4.1
Residence		
On Campus	101	37.4
Off Campus	169	62.6
Institution		
Federal University	95	35.2
State University	122	45.2
Private University	33	12.2
Federal Polytechnic	19	7.0
State Polytechnic	01	0.4
Private Polytechnic	00	0.0

**Table-2: Attitude towards persons living with HIV/AIDS**

	Yes	No
Can you live or stay with HIV positive persons in the same hostel/home	121 (44.8)	149 (55.2)
Can you share cooking utensils with HIV patients	151 (55.9)	119 (44.1)
Can you eat food with HIV patients	125 (46.3)	145 (53.7)
Can you use the same toilet as HIV patients	121 (44.8)	149 (55.2)
Can you learn in the same class as HIV patients	181 (67.0)	89 (33.0)
Are you ready to take care of the HIV-positive family members if they become sick	201 (74.5)	69 (25.6)
Do you think it is good to do your HIV testing	263 (97.4)	7 (2.6)
Do you think abstinence is best way for HIV prevention	256 (94.8)	14 (5.2)
The only way to avoid contacting the disease is by not associating with the person living with HIV/AIDS.	79 (29.3)	191 (70.7)
When one contact HIV/AIDS his or her life cannot be managed.	53 (19.6)	217 (80.4)
A person living with HIV/AIDS should be discriminated against as they are the cause of their own problem.	27 (10.0)	243 (90.0)
People should discourage their relations from marrying a person living with HIV/AIDS.	263 (97.4)	7 (2.6)
People should avoid engaging in any physical activity with PLWHA	266 (98.5)	4 (1.5)
If a teacher is HIV positive, she/he should be allowed to continue his/her teaching in school	140 (51.9)	130 (48.2)
If your friend is HIV positive, would you continue your friendship with him/her	127 (47.0)	143 (53.0)
If a shopkeeper or food seller is HIV positive, would you buy items from him/her	158 (58.5)	112 (41.5)
If a student is HIV positive, she/he should be allowed to continue his/her studying in school	201 (74.5)	69 (25.6)
People with HIV and AIDS should be distanced in a social and religious setting.	93 (34.4)	177 (65.6)

**Table-3: Risk practices towards HIV/AIDS persons**

	Yes	No
Can you take care of persons living with HIV	183 (67.8)	87 (32.2)
Can you marry persons living with HIV	00 (0.0)	270 (100)
Can you assist injured HIV patient with open wound without using gloves	11 (4.1)	259 (95.9)
Have you ever had sexual intercourse	96 (35.6)	174 (64.4)
Have you ever heard about men having sex with men (MSM)	189 (70.0)	81 (30.0)
Are you ever been involved in men having sex with men (MSM) (male only)	00 (0.0)	270 (100)
Have you ever drunk alcohol	58 (21.5)	212 (78.5)
Have you ever had sex when under the influence of alcohol	00 (0.0)	270 (100)
Have you ever had unprotected casual sex	13 (4.8)	257 (95.2)
Have you ever used HIV voluntary counseling and testing (HVCT) services	199 (73.7)	71 (26.3)
Can you encourage others for HCT services	187 (69.3)	83 (30.7)
Have you ever used injectable drugs	00 (0.0)	270 (100)
Do you share needles for injection	00 (0.0)	270 (100)
Do you practice self – injection	00 (0.0)	270 (100)

## DISCUSSION

HIV/AIDS continue to remain global major public health challenge and indeed Nigeria is not left out in spite of the concerted efforts by federal government, non-governmental organizations (NGOs) and other stakeholders in curbing the menace since the first diagnosis in the country in 1980s. Knowledge, attitudes and practices (KAP) studies are most useful tools to any intervention infection like HIV/AIDS. This is to assess the extent to which individuals or communities are ready to adopt risk-free behaviors of infection [19]. Our study previously among same target group but different sample size (n=360), showed that students had relatively high level of knowledge on issues related to HIV/AIDS, since 99.4% of the students had good level of knowledge about the virus [20].

This present study has findings that have two main messages, attitude and practices among students towards PLWHA. The students are reported to be important productive segments and drivers of tool in HIV/AIDS prevention and control globally, in order to adopt risk-free behaviors [19]. Low knowledge about HIV/AIDS is a major factor that can lead to HIV risk practices among the students. The response rate 100% of student respondents completing the self-administering questionnaires correctly was achieved through the entry point. The entering point for SWIES acceptance and placement in the institute is through a coordinator and the secretary of the department where the coordinator resides. The students are accepted and deployed to various technical departments, at this point they are given the questionnaires, to filled and immediately returned to the coordinator's secretary.

In this study, students exhibited mixed feelings on attitudes towards PLWHA. Whilst they displayed positive attitudes on most of the issues and negative attitudes on others towards them. Generally, only 58.1% of students had a positive attitude towards PLWHA. This shows that discriminatory attitudes were present in a small proportion (41.9 %) of the students. This finding was a little higher than that was found in a study by Zou and Wang [21], although, their study was based on a survey of AIDS knowledge, attitude and behavior among students in Linyi City. This study is similar to findings that were reported in several studies carried out in Ghana, China, Turkey and Iran [22-25]. In a similar study, carried out by the Iranian researchers in 2002 among 4,641 second-grade high school students, it was reported that about half of the students (33% - 46%) disagreed with PLWHA being able to enter school premises and would not like to sit near or to shake hands with them. Nevertheless, roughly half of the study students were also eager to show compassion towards these infected persons [22]. This may be due to empathetic nature of students toward PLWHA. More also, they are afraid of coming in close contact with them, which may put them at risk of contracting this

infection. This is further strengthened and demonstrated by a reported willingness to continue a friendship or to be taught by PLWHA, but not wanting to sit with them in the social and religious settings. This might be due to their knowledge for HIV mode of transmission through items bought from an HIV-infected shopkeeper or food seller [26]. All these attitudes are very important when developing and designing strategies to respond for HIV/AIDS interventions.

Conversely in this study, a greater majority of students accepted that HIV positive students could be allowed to continue their studying in the school (74.5 %) and that an HIV positive teacher should be allowed to continue teaching in the school (51.9 %). The discriminatory attitudes towards PLWHA might be a challenge for the efficient propagation of some related awareness programs and HIV voluntary counseling and testing (HVCT) services for the virus. Although, sustained health education of young ones on HIV/AIDS is of paramount importance to the total elimination of discriminatory attitudes towards PLWHA. The knowledge alone is not enough tool to change the attitudes of other individuals towards PLWHA. Hence, the deep seated cultural and social factors such as society norms, religion, attitude towards ill-health and risk behaviors such as sexual behaviors can equally affect attitude too.

Youth need specific targeted counseling about safe practices by avoiding unprotected sexual activity relationships and sharing of syringes/needles for injection. Another barrier for HIV prevention is the risky sexual practices among the productive segments (youth). In this study, only 35.6% students had a history of sexual intercourse, which is similar to the findings from other reports [24, 27, 28, 29]. Also, the proportion of sexual intercourse by the students reported in our study is lower than 54% reported by Tarkang, [30] and 43.7 % reported by Haddison his co-researchers [31], but higher than 14.9 % that was reported by Andargie and his co-workers [32] in Ethiopia and Thanavanh and his colleagues [33] in Lao People's Republic. Sex is now viewed as a norm among young people and this might explain the early age at which they start engaging in sexual activities. None of surveyed student had sexual experiences for men having sex with men (MSM). This finding is very interesting in the conservative and religious culture of the people of Nigeria. It is believed that religion has a strong influence on personal as well as societal behaviour and practices of people of Nigeria, since extramarital sex, premarital and homosexuality are discouraged by religious faiths in the country. Therefore, religious issues should be also considered important and included in HIV/AIDS activities carried out by UNICEF, UNAIDS and other stakeholders in curtailing this deadly menace.

The use of HIV voluntary counseling and testing (HVCT) services was high among students as 199 (73.7%) had done an HIV test and 187 (69.3%) are willing to encourage other students for the same services. Although, HVCT services in other study carried out by Haddison his co-researchers [31] was generally poor among study participants (28.7%). This may be attributed to some factors that could have contributed to perception of the confidentiality of the process and the perceived attitude of the staff towards the young ones in the past.

In this study, the use of injectable drugs was not seen and hence, the consequent risky practice of sharing and exchanging syringes/needles was absent. The use of injectable drugs is not a common practice among youths in the country (Nigeria). Therefore, the federal government and the law enforcement agents should be more proactive in order to maintain the tempo, since, activities related to HIV/AIDS should be more focused on youths because this is the age when sexual activity begins and active. At this age most youths are in school thus are accessible through in-school education. Adequate and accurate of HIV attitude measures would assist and support youths in taking standard and acceptable decisions about practices that may protect them from acquiring HIV infection.

## CONCLUSION

The findings on risky behaviors and discriminatory attitudes provide strong evidence that there is a need to advocate for prompt and appropriate National HIV/AIDS awareness raising campaigns in tertiary institutions in Nigeria to reduce the gaps in knowledge and decrease stigmatizing attitudes towards PLWHA. Therefore, sexual education in schools and health education in religious sermons should be reinforced to correct the misconceptions observed in this study, encourage safe practices and positive attitudes towards PLWHA.

## LIMITATION OF THE STUDY

This study is having several limitations in that it was carried out in a research environment involving only 270 students in Nigeria, thus making it restricted to one institute, the students were selective and not including out-of-school young ones. Therefore, any generalization and usage of the findings revealed from this study must be made with great care. Finally, because of the self-administered questionnaire, social desirability bias may have occurred. Although, the anonymity of the questionnaires hopefully encouraged students to be honest in their responses. We believe this study might be a reasonable source of information for scientists and policymakers, despite the numerous limitations.

## RECOMMENDATIONS

It is recommended that PLWHA in the society should be not be discriminated but be given equal treatments in terms of respect, value and norms of the society and various strategies that will help in reducing social stigma towards them be exploit, through religious sermons, teaching in schools and being examples by providing spiritual care/support.

## ACKNOWLEDGEMENT

We wish to appreciate the Director General/Chief Executive Officer (DG/CEO), Dr. Peter Obi Adigwe and his management team for administrative support during the study period at National Institute for Pharmaceutical Research and Development (NIPRD) Abuja. We also acknowledge the Health Research and Ethics Committees (HREC) of Federal Capital Territory Abuja for the ethical clearance approval for this study. Finally, the authors gratefully thank all the students that accepted and took their time to complete the survey questionnaires. You are all wonderful.

**Conflict of Interest:** The authors confirm that this article content has no conflict of interest.

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