



University Students Dealing with Sexually Transmitted Infections and HIV/AIDS: Knowledge and Practice, a Cross-sectional study Conducted in Fianarantsoa, Madagascar

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Abstract

This study aimed to evaluate the Knowledge and attitude of the academic students about sexually transmitted infections and HIV at the university of Fianarantsoa in 2018.

Materials and methods: This was an analytical cross-sectional study conducted among undergraduate students at the University Andrainjato-Fianarantsoa. Knowledge was assessed using a score where each correct answer was given one point.

Results: 1035 students were included, 67.7% (n=701) had good knowledge about STIs, and HIV/AIDS. Sexual transmission (83.9%; n=868) was the most known. On multivariate analysis, being a student at the faculty of medicine (p<0.001, aOR 137.3 [19.1-988]), faculty of Letters (p<0.001, aOR 4.5 [2.8-7.2]), or the Normal Graduate School (NGS) (p<0.001, aOR 6.7 [3.3-13.7]), being tested for HIV before (p= 0.002, aOR 1.6 [1.2-2.2]) constitute the major factor of good knowledge about the sexual infections. The majority (71.8%, n=743) have had sexual intercourse before, and the median age of first sexual activities was 18 years (17-20). The use of Condoms (44.4%, n=460) was the most practiced in the STIs prevention method, followed by fidelity (19.8%; n=205) and abstinence (11.4%, n=118). Among the students, 29.3% (302) had high-risk sexual behavior in the last 3 months.

Conclusion: The proportion of academic students with good knowledge of STIs and HIV is not satisfactory. There was a discordance between the knowledge of STI prevention and the daily university practice of the students.

Keywords: Attitude, knowledge, sexually transmitted infections, HIV, academic students

Introduction

Sexually transmitted infections (STIs) facilitate and increase the risk of HIV transmission. Properly managing STIs can significantly reduce new HIV infections [1,2]. More than one million people worldwide contract STIs every day [3]. The STIs constitute public health problems, especially among young people [4]. Young academic students are a sexually active population and are at risk of contracting sexually transmitted infections [3,4]. Young people are considered to have a high risk of STIs than older adults; in Madagascar, the prevalence of these diseases among this population group is high [5,6]. This population group is more likely to have unprotected sex and multiple sexual partners. They are a key population among which priority health actions should be initiated and targeted in their daily activities. A lack of knowledge about STDs prevention would be a gap in the fight against

these diseases [7]. The knowledge is an essential precursor to the reduction of STIs; therefore, a good knowledge of STIs/HIV by this age group is a significant help in the prevention of the transmission of these diseases [4]. The aims of this study were to evaluate the knowledge and the practice of the students at the university of Fianarantsoa about STIs and HIV and to determine the factors associated with good knowledge and practice.

Materials and Methods

Population and sampling

The study took place in Madagascar in the region of Fianarantsoa, University Andrainjato. The study population was the students in the 2nd and 3rd years at the faculties of the University, to have a fair level of knowledge. Four thousand one hundred and forty-eight young people were registered at the faculties. Three thousand six hundred and fifty-one students were enrolled in the faculties, with an estimated 70% of students having good knowledge, and positive practice of STIs and HIV, our sample size was to have at least 296 students.

Inclusion and exclusion criteria

Were included in this study for any academic student belonging to one of the faculties and schools of the University of Andrainjato Fianarantsoa: Faculty of Medicine; Faculty of Law, Economics, Management and Social Sciences (FLEMSD); Faculty of Letters; Faculty of Sciences; Normal Graduate School (NGS); National School of Informatics (NSCS); Management and Technological Innovation School (SMTI) enrolled in the 2nd or 3rd year, aged 15 years or older and agreed to participate voluntarily by giving their consent or with parental consent for students aged 15 to 18 years old. Students who were absent during the days of the survey were excluded.

Questionnaire

Until now, as far as we know, there was no standard questionnaire for a knowledge and practice study regarding STIs and HIV. The questionnaire was based on the literature review and on the questions that had been formulated. The latter was tested on 30 students.

Knowledge of STIs and HIV

There was no international consensus on the definition of the level of knowledge of STIs and HIV. One point was awarded for each correct answer. Knowledge was defined as good if a student's total score was above the lower quartile of the median (between 8 and 18), and poor knowledge if it was below (0 to 7).

Statistical analysis

The qualitative variables are represented by proportions and the quantitative variables are represented by median. The comparison of qualitative variables was made by the Chi² test or the Fischer exact test. The quantitative variables were compared by the Mann-Whitney-Wilcoxon test. A multivariate analysis using a logistic regression model was performed to determine factors associated with good knowledge as well as STIs practice. Factors identified with a $p < 0.1$ in univariate analysis were included in a logistic regression model. A p -value < 0.05 was considered statistical significant. Statistical analysis was performed with Epi info 7.2.2 software.

Ethical Consideration

This study was conducted in accordance with the ethical Declaration of Helsinki on June 1964 as amended in October 2013 and relevant research ethics guidelines in force in the country. It has been submitted to an authorization procedure and has received the approval of the Biomedical Research Ethics Committee of the Ministry of Public Health Madagascar (N°141-MSANP/CERBM). All students recruited were informed about the nature and objectives of the study. They participated voluntarily in this study, gave written informed consent in Malagasy or french, and were guaranteed confidentiality of the data collected and the results. The data collected were anonymized. Only the investigators and the scientific officer had access to the study data.

Results

Characteristics of the students

There were 1035 students included from seven faculties. Students from the faculty of FLEMSD 232 (22.4%) and SMTI 203 (19.6%) were predominant in the study population, followed by NSCS 156 (15.1%), Faculty of Letters 154 (14.9%), Faculty of Medicine 153 (14.8%), NGS 82 (7.9%) and finally the Faculty of Sciences 55 (5.3%). The median age was 21 years (20-23), with extremes of 15 years and 42 years. The sex ratio = 1, with predominantly heterosexual ($n= 886$; 85.6%); homosexual and bisexual students have respectively a proportion of 12.6% ($n=130$) and 1.3% ($n=13$).

Knowledge score and factors related to good knowledge

The median STIs and HIV knowledge score was 9 (7-12), and the maximum score was 18 of 18. More than half of the students ($n= 701$; 67.7%) had good knowledge with a score above seven. On multivariate analysis, factors related to good knowledge were: membership in the medicine ($p < 0.001$, aOR 137.3 [19.1-988]), faculty of Letters ($p < 0.001$, aOR 4.5 [2.8-7.2]), or the Normal Graduate School (NGS) ($p < 0.001$, aOR 6.7

[3.3-13.7])), being tested for HIV before ($p= 0.002$, aOR 1.6 [1.2-2.2]). The main sources of knowledge were: course at the faculty ($n=625$; 60.4%), health care workers ($n=612$; 59.1%), from television ($n=524$; 50.6%) and on internet 403 (38,9). **Table I** shows the factors associated with good knowledge of univariate and multivariate analysis.

Academic students' knowledge of STIs and HIV

The majority, 997 (94.4%) students, have heard of STIs. In order of frequency, the sexually transmitted diseases cited by the academics were: HIV infection ($n=944$;91.2%); syphilis ($n=846$; 81.7%); gonorrhea ($n=461$; 44.5%); HBV ($n=157$; 15.2); herpes ($n=29$; 2.8%); Trichomoniasis ($n=20$; 1.9%); Chlamydia ($n=17$; 1.6%); HCV ($n=14$; 1.4%); and chancroid ($n=9$; 0.9%). Seven hundred and ninety-five (77%) knew that multi-partnership increases the risk of contracting STIs. Sexual transmission (oro-genital, anal) was the mode of transmission of HIV ($n=868$;83.9%) and vertical transmission was the least known ($n=161$; 15.6%). In order of frequency, STIs prevention method cited by students were: condom use ($n=792$; 76.5%), then fidelity ($n=480$;46.4%) and finally abstinence ($n=201$; 19.4%). Selon le genre, la connaissance de la prévention par usage de préservatif a été de 401 (50,6) chez l'homme versus 391 (49,3) chez la femme ; pour la fidélité 228 (47,5) versus 252 (52,5) et pour l'abstinence 88 (43,8) versus 113 (56,2).

The practice of the students

About 743 (71,8%) students claimed to have already had sexual contact, and the median age of first sexual contact was 18 years (17-20), with extremes of 10 years and 28 years. One-third of the students ($n=353$; 34.1%) had at least one unprotected sexual contact in the past 3 months. The academics who had ever been tested for HIV numbered 485 (46.8%), and only 323 (31.2%) were aware of his or her partner's HIV status. The fact of already had sexual contact increased the initiative to get tested for HIV (81% versus 63.7%; $p<0.001$; OR (IC95): 2.4 [1.8-3.2]). Among academic students, 124 or 12% had at least two partners. The condom use ($n=467$; 45.1%) and the fidelity ($n=205$; 19.8%) were the most commonly practiced STIs prevention methods. According to a gender breakdown: the fidelity was 95 (53.7) in men versus 82 (46.3) in women. There was a correlation between female gender and abstinence practice (60.5% versus 39.5%; $p= 0.007$; 1.6 [1.1-2.4]). **Figure 1** summarizes the STIs prevention methods practiced by students. Of these included students, 302 or 29.2% were vaccinated against viral hepatitis B.

Discussion

With 94.4% have ever heard of STIs. Our result shows that the majority of students (67.7%) had a good knowledge about of STIs and HIV infection. The HIV infection (91.2%) was the most known sexually transmitted disease (STD). This could be explained by the fact that HIV infection is the most publicised, sensibilised in health facilities compared to other STIs [8–11]. Indeed, the latter promote and increase the risk of HIV infection and act as cofactors of HIV infection [1,2]. The existing sexual education programs should be strengthened by delivering more information on other STIs rather than focusing on HIV only. The knowledge of STIs prevention methods was from 19.4% to 76.5% depending on the type of prevention method. This knowledge, including prevention methods, among academic students in Fianarantsoa was therefore not satisfactory. The sex education programs should be strengthened to address this gap. In our study, being a medical student was the main factor associated with good knowledge, which could be explained by the fact that these students received courses about STIs. Thus, there was a difference in the level of knowledge of STIs among students depending on the faculty where they study. There was need to increase awareness among students in the faculties of FLEMSED, NSCS and SMTI. Indeed, knowledge about STIs should not depend on where studies. Everyone should know about STIs because they do not make a difference; everyone can contact them. Some students had the risk of sexual behavior because a third of them (34.1%) had at least one risk of sexual contact in the 3 last months. Our result confirms and supports the fact that youth are much more exposed to STIs and HIV through their sexual behavior [12–14]. The knowledge of STIs has been shown to be a predictor of the use of condoms among academic students [7,8]. However, there was a large gap between the knowledge and the practice of the students concerning the prevention methods of STIs. Indeed, 76.5% of students knew that use of condoms was the method to prevent sexual transmission of STIs and HIV, but only less than half (45.1%) used them in sexual contact with an unknown sexual partner status. This reluctance to use condoms could be explained by the fact that people consider that sexual contact without a condom was better; hence the discordance between knowledge and attitude: the people prioritize pleasure over safety. Only 46.8% of our population had ever been tested for HIV. We found that having sexual contact before significantly increases the likelihood of getting tested for HIV. This shows that students have become aware of their risk-taking and the need for HIV testing after risky sexual contact. Indeed, 34.1% of these young people had at least one unprotected risk of sexual contact in the last 3 months and only 31.2% were aware of the HIV status of their sexual partner. Moreover, 12% had at least two sexual partners. This shows that academic students in Fianarantsoa are at

risk of STIs and the knowledge of their risk-taking has motivated them to get tested for HIV. Hence the importance of raising awareness about the modes of transmission and prevention of STIs. Indeed, early screening and detection lead to an early discovery of the disease and an early start of treatment. Early detection of HIV and STIs was an essential public health strategy in poor countries like Madagascar. Indeed, it has been demonstrated that early treatment of STIs such as HIV/AIDS improves the prognosis of the disease and reduces the risk of transmission [15–17]. The academic students are, therefore, a key population group to target in the fight against STIs transmission. Outreach programs containing key messages about STIs and HIV should be developed at academic institutions to improve student practice, especially in the prevention of STI transmission.

A study by Mansor et al. among students in higher education institutions in Melaka, Malaysia found slightly higher knowledge of prevention methods ranging from 78% to 95% [18]. Other studies, such as Visalli et al, have reported other factors associated with knowledge, including the age and sexual orientation of students [19]. Other authors have found similar results to ours. In Brazil, Caetano et al. found that many academic students (80.4% and 74.8% respectively of men and women) had engaged in high-risk sexual behaviors to contract STIs [20]. In Nigeria, 48% of students reported having multiple sexual partners in the five years prior to the survey [21]. Thus, awareness should be raised among these young academic students to screen for and prevent STIs. Another possible bias that could have occurred in this study is information bias. Some respondents may be reluctant to answer questions truthfully due to the sensitive and personal nature of the topic at hand. However, the researcher attempted to reduce this bias by ensuring the reliability of the questionnaires. The main strength of this study is that the sample size was greatly exceeded. On the other hand, its monocentric nature is the main limitation: the results of this study may not represent students from all higher education institutions in Madagascar, as the study populations were limited to one university, the University of Fianarantsoa.

An attempt was made to determine the level of knowledge of academic students about STIs and HIV. A high knowledge by students of these infectious communicable diseases may in turn influence their attitude towards these diseases. However, awareness should be increased among young people because knowledge does not always mean practice as shown by our results. Thus, the practice of knowledge received with a change of behavior will subsequently help in the fight against the transmission of these STDs. In this study, we set objectives to evaluate the knowledge and attitude of academic students in Fianarantsoa concerning STIs and HIV. Academic students are one of the key targets in the fight against STIs and HIV. This

study contributes greatly to the fight against STIs and HIV transmission and constitutes a database for future studies. Knowledge was not satisfactory (median score of 9/18) and a significant proportion had a risk of sexual behavior. It would therefore be interesting to conduct another study to determine the prevalence of HIV infection among student universities.

Conclusion

The proportion of academics with good knowledge of STIs and HIV is not satisfactory. The best known STIs were HIV infection and sexual transmission mode was the most mentioned. There was a difference in the level of knowledge between students depending on the faculty where they studied. In addition, there was a discordance between the knowledge of STIs prevention and the everyday practice of the students. Many knew about prevention methods but did not practice them in their daily lives. Most engaged in STIs risk behaviors. Thus, awareness among young academic students should be continued and strengthened.

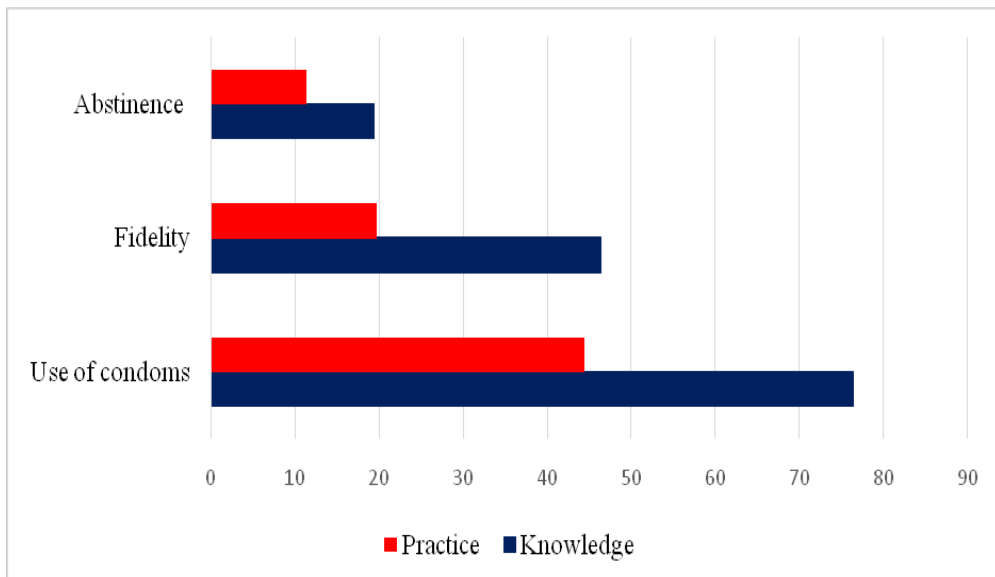


Figure 1. Knowledge, practice of STIs and HIV transmission prevention