

KNOWLEDGE, ATTITUDES, AND PRACTICES OF STUDENTS IN THE CITY OF BUKAVU ON HIV/ AIDS

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SUMMARY

Introduction: This is a cross-sectional descriptive study, conducted on knowledge, attitudes, and practices on HIV/AIDS among students of ISDR, ISP, ISTM, and ISGEA in higher institutions in the city of Bukavu. The objective of this study was to compare the level of knowledge, attitudes, and practices of students from different higher institutions in the city of Bukavu on HIV/AIDS.

Methodology: During this work, a survey questionnaire was sent to students, 399 students participated in this interview to collect different data.

Results: We arrived at the results according to which, the knowledge of HIV/AIDS among the students of the higher institutions of Bukavu was 37, 34%. The female sex contributed the most to the study with a proportion of 67.17%. The Protestant religion was the most represented with 37.84%. Candidiasis has been overlooked in the knowledge of STDs in our research. HIV/AIDS, Syphilis, and viral hepatitis B/C are recognized as sexually transmitted diseases/infections by ISGEA students, i.e. 36.2%, followed by ISTM students, i.e. 33.6%. Knowledge of AIDS was much more relayed by the media and schools, i.e. 27.57%. Condom use was 29.07%, with predominance at ISTM, 18.96% at ISGEA, 32.75% at ISDR, and 9.5%.

Conclusion: AIDS remains a serious STD that must be taught in academic institutions with rigor to stop this scourge that ravages the young population in sexual activity.

Keywords: HIV/AIDS, Knowledge, attitudes, and practices.

INTRODUCTION

Immunodeficiency syndrome is a public health issue due to the large number of people infected, the severity of the progressive forms of the infection, and the high cost of patient care. AIDS was recognized in 1981 among American homosexuals and was quickly considered a viral disease transmitted by blood and sexually. It gradually spread to all continents in the form of a pandemic affecting millions of men, women, and children (1).

According to the UN AIDS and WHO 2021 report, an estimated 38.4 million (33.9-43.8 million) people were living with HIV (2). 1.5 million (1.1-2.0 million) people became newly infected with HIV in 2021. Of this 1.5 million PLHIV, approximately 650,000 (510,000-860,000) deaths were in 2021 (3).

In sub-Saharan Africa, there are more than 25 million HIV-positive people and it hosts about 70% of the infected people on the planet. Poverty, gender inequality, and the displacement of people due to conflict or natural disasters are the socio-economic factors that can increase people's vulnerability to HIV infection (4). According to the DHS-IV, the prevalence of HIV infection within the general population in Mali is estimated at 1.3%, and among young people aged 15-19, it is 0.5% (5).

The latest EDS-IV report shows that high-risk sexual relations (sex with an extramarital and non-cohabiting partner) are more frequent among young women with secondary education and more (47%) against only (8%) among those who have no level; and the use of a condom during high-risk sexual intercourse among these young women aged 15-19 appears low, only (30.6%) declared having used a condom during the last high-risk sexual intercourse (5).

Young people are particularly vulnerable to HIV infection because of their risky behavior, lack of access to HIV information and prevention services, and insufficient knowledge about HIV transmission and means of prevention. The absence of sex education at university and at home is a significant problem, as evidenced by the fact that 33% of all pregnancies and 26% of all abortions are observed among those under 20 years of age and the high incidence of sexually transmitted infections in both urban and rural areas (6). Several studies examine knowledge and attitudes toward HIV-AIDS among the general population (Adrien et al. 2013) and among post-secondary/university students (Labra et al. 2017).

Other studies have targeted specific populations, such as caregivers (Labra and Dumont, 2012), men who have sex with men (Beyrer et al. 2012; Trottier et al. 2014), drug users (Malta et al.) and indigenous people (Labra et al. 2021). These studies show that knowledge and attitudes about HIV-AIDS vary according to people's education, religion, socio-economic status, and whether or not they have known a person living with HIV-AIDS (PLHIV-AIDS).

Our research question was to know the level of knowledge, attitudes, and practices of students in the city of Bukavu concerning HIV-AIDS?

MATERIALS AND METHODS

Our work carried out on the study of knowledge, attitudes, and practices of students in the city of Bukavu in terms of STI/AIDS concerns all students of higher university institutions, in particular, ISTM, ISDR, ISGEA, and ISP regularly registered for the academic year 2022-2023. In total, we recorded 399 respondents.

This is a descriptive cross-sectional study. To verify our hypotheses and achieve our objectives, we used the survey questionnaire method which was completed with respect for the anonymity and informed consent of each student.

With the inclusion criteria, we based ourselves on students regularly enrolled in undergraduate and graduate studies and who gave their consent. Students who were not from these institutions were excluded from the study; as a parameter to study students' knowledge, attitudes, and practices regarding STI/AIDS.

Data analysis was performed with SPSS software. The word processing was carried out with the Office 2010 software. The diagrams were produced using the Microsoft Excel table. The statistical test used was the Chi-square test. The quantitative variables were compared by a Mann and Whitney test. Qualitative variables were compared using Fisher's exact test. We conducted multivariate analyzes using logistic regression. The significant variables with $p < 0.1$ in the univariate analysis were retained for the multivariate analysis. A value of $p < 0.05$ was retained as the significance threshold. Results were expressed as N (percentage) and median [25th-75th] percentiles.

RESULTS

I. DATA ON STUDENT KNOWLEDGE OF HIV

1. Distribution of respondents according to the knowledge of STDs by university

Knowledge of STDs	ISGEA	ISDR	ISTM	ISP
AIDS	7(58.33%)	1(8.33%)		4(33.33%)
AIDS, HEPATITIS B, and C	11(8.8%)	56(44.8%)	50(40%)	8(6.4%)
AIDS, SYPHILIS	13(20%)	16(24.62%)		36(55.38%)
AIDS, SYPHILIS, GONORRHEA, CANDIDIASIS	14(29.17%)	18(37.5%)		16(33.33%)
HIV / AIDS, SYPHILIS, HEPATITIS B and C	54(36.2%)	9(6.0%)	50(33.6%)	36(24.2%)
overall	99	100	100	100

The proportion of students recognizing AIDS as a sexual illness comes from the ISDR, ie 45%. No correlation between sexually transmitted disease knowledge and academic institutions. P= **0.49476887**.

2. Distribution of respondents according to AIDS transmission routes

Transmission	ISGEA	ISDR	ISTM	ISP
Unprotected sex	21(94.45%)			1(4.55%)
Unprotected sex, contaminated objects				1(100%)
Unprotected sex, contaminated objects, mother-to-child transmission	6(85.71%)			1(14.29%)
Unprotected sex, contaminated blood	6(85.71%)			1(14.29%)
Unprotected sex, contaminated blood, contaminated objects	25(24.5%)	57(55.88%)	12(11.76%)	8(7.84%)
Unprotected sex, contaminated blood, contaminated objects, mother-to-child transmission	8(100%)			
Unprotected sex, contaminated blood, mother-to-child transmission	20(24.09%)	16(19.27%)	43(51.80%)	4(4.81%)
Unprotected sex, mother-to-child transmission	13(7.7%)	27(16%)	45(26.6%)	84(49.7%)
Overall	99	100	100	100

No correlation between belonging to a university institution and knowledge of HIV/AIDS transmission routes p= 0.464348747.

3. Distribution of respondents according to sources of information

	ISGEA	ISDR	ISTM	ISP
Friends, school, church	8(100%)			
Friends, school, parents	1(100%)			
Friends, newspapers and books, school	2(100%)			

School	30(29.12%)	26(25.24%)	45(43.7%)	2(1.94%)
Media	6(100%)			
media, friends	32(34.78%)	16(17.39%)	43(46.73%)	1(1.1%)
media, school	2(1.81%)	13(11.82%)	3(2.73%)	92(83.64%)
Media, newspapers and books, school	18(23.68%)	44(57.9%)	9(11.84%)	5(6.57%)
Parents		1(100%)		
Overall	99	100	100	100

There is no link between sources of information on HIV/AIDS and membership in an academic institution. Of the 110 students who learned about the disease from the media and schools, 83.64% of them are from ISP and 1.81% from ISGEA. $P = 0.496560185 > 0.05$: null hypothesis confirmed.

2. DATA ON ATTITUDES AND PRACTICES ON HIV/AIDS

4. Distribution of respondents according to the reasons for being tested for AIDS

Testing for HIV/AIDS	ISGEA	ISDR	ISTM	ISP
None	33(26.19%)	29(23.01%)	45(35.71%)	19(15.07%)
desire to know	24(17.26%)	5(3.59%)	40(28.77%)	70(50.36%)
desire for marriage	24(31.17%)	37(48.05%)	10(12.98%)	6(7.8%)
unprotected sex	12(24.5%)	29(59.2%)	5(10.2%)	3(6.1%)
RAS	6(75%)			2(25%)
Overall	99	100	100	100

There is no correlation between the reason for being tested and belonging to an academic institution.

3 QUESTIONS RELATING TO STUDENT PRACTICES

5. Distribution of respondents by age at first sexual intercourse

Age Sexual relationship	ISGEA	ISDR	ISTM	ISP
≥21 years old	24(30.4%)	41(51.9%)	10(12.6%)	4(5.1%)

12-14 years old	18(100%)			
15-17 years old	3(30%)		7(70%)	
18-20 years old	45(21.6%)	54(26%)	88(42.3%)	21(10.1%)
RAS	9(10.7%)	5(6%)	2(2.3%)	68(81%)
Overall	99	100	100	100

There is no link between the age group at which students had their first sexual intercourse and belonging to a university institution $p= 0.474794039$.

6. Distribution of respondents according to the use of condoms

Condom Use	ISGEA	ISDR	ISTM	ISP
Never	28(29.4%)	17(18%)	43(45.3%)	7(7.3%)
Sometimes	48(43.24%)	41(36.93%)	10(9.01%)	12(10.81%)
RAS	1(1.2%)	4(5.2%)	2(2.6%)	70(91%)
Often	22(18.96%)	38(32.75%)	45(38.79%)	11(9.5%)
Overall	99	100	100	100

This table points out that there is no correlation between condom use and membership in an academic institution.

7. Distribution of cases according to the use of condoms by religion

	Branamist	Catholic	Kimbanguist	Muslim	Protestant
Never	1(1.05%)	50(52.63%)	5(5.26%)	7(7.36%)	32(33.7%)
Sometimes	1(1%)	58(52.2%)	11(9.9%)	4(3.60%)	37(33.3%)
RAS	4(5.19%)	13(16.88%)	42(54.54%)	3(3.89%)	15(19.5%)
Often	3(2.6%)	28(24.13%)	6(5.17%)	12(10.3%)	67(57.8%)
Overall	9	149	64	26	151

This table shows us that there is a very significant link between the use of condoms and belonging to a religion $p= 0.025096237$.

DISCUSSION

1. STUDENT KNOWLEDGE ABOUT HIV/AIDS

Before going any further, it would be relevant to define what we understand by the concept of “knowledge” in the context of this study. According to the theory of social representation, knowledge is defined as being the sum of information about a social object, its quantity, and its quality, more or less stereotyped, banal, or original (Moscovici, 1961; Kaës, 1968 Herzlich, 1972). For Bano (2013), knowledge is the ability to acquire, retain and use information; it is therefore a mixture of understanding, experience, discernment, and competence (9).

A survey conducted by Alawad et al. (2019) among university students in Saudi Arabia found that around 81% of survey respondents said they would not visit friends' houses with HIV-AIDS-infected members. Also, 73.1% of students indicated that they would not provide home care to HIV-positive parents. In addition, 45.05% believed that HIV and sexually transmitted infections (STIs) are like a punishment for immoral behavior, and 77.7% said that sex workers, young people, and other vulnerable groups were responsible for the transmission of HIV and STIs (Alawad et al., 2019). Studies in Africa show that university students had insufficient knowledge about HIV-AIDS (Anteneh et al., 2019; Ncube et al., 2014; Shiferaw et al., 2011) as well as negative attitudes towards these patients (Al-Rabeei et al., 2012; Iwoi et al., 2017; Linguissi et al., 2018) and were not inclined to use condoms (Tatientse, 2009). In this sense, knowledge gaps on HIV post-exposure prophylaxis have been revealed among students (Anteneh et al, 2019; Ncube et al, 2014). Also, a study carried out among Ethiopian students showed that only 45% of the people surveyed had information on the co-infection of sexually transmitted diseases and HIV-AIDS (Shiferaw et al, 2011). For his part, Ajayi (2019) shows that 94% of Nigerian university students think that HIV can be contracted by rape, 93.5% by blood transfusion, and 90.8% believe that it is transmitted during sexual intercourse. Regarding the attitudes and practices of university students concerning HIV-AIDS, certain studies reveal behaviors that can be qualified as negative vis-à-vis PLHIV-AIDS, such as the fact of thinking that these people should be punished, put in isolation, stay at home, and be excluded from school (Iwoi et al., 2017; Linguisi et al., 2018) (9).

a. Knowledge of STDs

The results revealed that the knowledge of AIDS increased in the 4 universities by a margin of 37.34%, followed by the combined knowledge of AIDS, HEPATIE B, and C with 31.33%, candidiasis was ignored in the knowledge of STDs in this research. HIV/AIDS, syphilis, and viral hepatitis B/C are recognized as sexually transmitted diseases/infections by ISGEA students, i.e. 36.2%, followed by ISTM students, i.e. 33.6%. A study carried out on students from the University of Clermont Auvergne (35) concerning the screening and prevention of sexually transmitted infections revealed that certain STIs are well-known such as HIV (87.6%), syphilis (83.6%), chlamydia (78.4%), HPV (71%) and herpes (69.2%) (35).

b. Knowledge about the transmission route of HIV

Unprotected sexual relations and mother/child transmission were the most incriminated in 42.36% of students, contaminated objects associated with unprotected sexual relations are responsible for the transmission of HIV only for 0.25% of students. The association of contaminated objects and unprotected sexual relations is only observed at the ISP, of the 42.36% of students who answered that unprotected sexual relations are associated with mother-to-child transmission, 49.7% are of the ISP, only 7.7% are from ISGEA; 16% are from ISDR and 26.6% from ISTM.

In a study carried out in KATI (MALI) on knowledge, attitudes, and behavioral practices in terms of sexually transmitted diseases and HIV-AIDS in the urban school environment of KATI (36), the author found that more than half of the pupils know sexual intercourse as the main route of HIV transmission. The study (35) showed that the students were very familiar with certain means of transmission such as vaginal penetration (99.7%), anal penetration (84.5%), contact with blood (84.6%), contact orogenital (75.4%), but kissing (34.2%) and caresses (32%) were still undervalued.

c. Sources of knowledge of HIV/AIDS disease

27.57% of students were better informed about AIDS by the media and school. 0.25% was done by parents. Of the 110 students who learned about the disease from the media and schools, 83.64% of them are from ISP and 1.81% from ISGEA. Our results do not corroborate with the results of KATI (36), according to him the health center, the theater, and the conferences were the main sources of information, on the other hand in the study of Clermont (35), 83.68% of students had information at school, 62.70% on the internet, 37.18% with their parents, 23.80% in books, 1.47% do not know the source of their information and 16.07% mention another information source. These results also differ from what we found in Bukavu. Of the 155 students who learned about the disease at school, 53.55% are from ISTM and 1.3% from ISP. PSI students learned more about pathology from the media and schools.

2. ATTITUDES AND PRACTICES ON HIV/AIDS

Concerning HIV-AIDS prevention practices, let's first look at some definitions given to this concept by certain researchers. For example, Jodelet (1989) holds that "practices are socially structural systems of action instituted with roles". As for Bano (2013), he thinks that practice must be understood as the application of rules and knowledge that lead to action. Good practices are an art linked to the progress of knowledge and technologies and said art is performed ethically. In this perspective, the study conducted in Mali by Tatientse (2009)

underlines that Malian university students have a negative perception of condom use. The low use of condoms by young people and university students is a major risk factor favoring HIV-AIDS infection (Haffejee et al., 2018). Ntirampeba and De Sutter (2017) indicate that the main factors for the non-use of condoms among the sexually active population are: the reduction of sexual pleasure, they are embarrassing, they create suspicion between known partners and they are not reliable. But the majority of Burundians say condoms would only be useful for casual partners (9).

a. A screening

60.90% of students answered "NO" to HIV/AIDS testing. Of the 156 students who declared "YES", 47.4% of them are from ISDR and only 6.4% from ISP. The desire to know was reported in 34.84% of students who had already taken part in an HIV/AIDS screening and 19.30% were screened for HIV/AIDS for the desire to marry. The majority of our respondents, i.e. 50.36%, are from the ISP. The students showed a desire for marriage at 48.05% at the ISDR.

b. The sexual relationship

The students reported that 79.20% of them had already had sexual intercourse. Of the 316 students who have already experienced sexual relations, 31% are from ISTM, and 30.06% are from ISDR. About the sexual relationship and religion, the added value was 0.08535043 (8.535043%) greater than 5% therefore the value is not significant, i.e. the probability of belonging to such or such other religion influences the sexual relationship.

c. Age of first sexual intercourse

The students reported that 52.13% of them had their first sexual intercourse between the ages of 18-20. Of the 208 students who had sexual intercourse at the age of 18-20, 42.3% are from ISTM, 26% from ISDR, 21.6% from ISGEA, and 10.1% at PSI.

In the study by (36), the author reports that the majority of students had their first sexual intercourse between the ages of 17 and 20 (56%). These results are similar to those obtained at BUKAVU.

d. The use of condoms

The students said that 29.07% of them often use condoms during sex. Of the students who reported using condoms only often, 38.79% are from ISTM, 18.96% from ISGEA, 32.75% from ISDR, and 9.5% from ISP. Regarding the use of condoms and religion, Catholics use condoms in the same way as Branamists. Their added value was 0.025096237 (2.5096237%) which is less than 5%, that is to say, a significant value, which implies that the effect of being a Branamist or a Catholic does not influence the use of condoms. Concerning condoms and sex, the students declared that girls do not use condoms more than boys in 74.7% (N=95). The added value was 0.09161959 (9.161959%) which is greater than 5%, therefore a non-significant value which means that the effect of being a girl or a boy influences whether or not condoms are used.

The added value compared to the never-age pattern was 0.033383 (3.3383%) value less than 5%, which implies that the effect of being old does not influence the use of condoms.

CONCLUSION

Here we are at the end of our work which consisted of presenting the knowledge, attitude, and practice of the city of Bukavu in its four universities on HIV/AIDS. This work has found that students' knowledge is increased about HIV/AIDS.

During our analysis of data on the socio-demography of our respondents, we found that the students who responded in this study had an age range between 19-23 years old within a margin of 50.38%. The female sex contributed the most to the study with a proportion of 67.17%. The majority of our respondents were of the Protestant religion with 37.84%. The combined knowledge of AIDS, SYPHILIS, HEPATITIS B, and C is increased in the 4 universities by a margin of 37.34%, followed by the combined knowledge of AIDS, HEPATITIS B and C with 31.33%; candidiasis was unknown in the knowledge of STDs in this research. HIV/AIDS, syphilis, and viral hepatitis B/C are recognized as sexually transmitted diseases/infections by ISGEA students, i.e. 36.2%, followed by ISTM students, i.e. 33.6%. Knowledge of AIDS and HVB and C was much more relayed by the media and the schools from where we found 27.57% of students were better informed of AIDS by the media and the school. 0.25% was done by parents. Of the 110 students who learned about the disease from the media and schools, 83.64% of them are from ISP and 1.81% from ISGEA.

Concerning the sexual relationship and religion, the added value was 0.08535043 (8.535043%) greater than 5% therefore the value is not significant, i.e. the probability of belonging to such or such other religion influences the sexual relationship. The students said that 29.07% of them often use condoms during sex. Of the students

who reported using condoms only often, 38.79% are from ISTM, 18.96% from ISGEA, 32.75% from ISDR, and 9.5% from ISP.

AIDS remains a serious STD that must be taught in academic institutions with rigor to stop this scourge that ravages the young population in sexual activity.

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