Vulnerability of the young university population to HIV/AIDS and other sexually transmitted infections

Vulnerabilidade da população jovem universitária ao HIV/AIDS e outras infecções sexualmente transmissíveis

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ABSTRACT

Introduction: Brazilian universities receive annually thousands of young people who experience situations of vulnerability to the human immunodeficiency virus, sexually transmitted infections, and viral hepatitis. **Objective:** The aim of the present study was to analyze the secondary data obtained from the attendance record of the rapid testing campaign for these health problems at a federal university in the state of Minas Gerais, Brazil, in 2019. **Methods:** A cross-sectional study was conducted with secondary data of students (n=1,113) obtained from the standard attendance form by the Ministry of Health during the campaigns *Fique Sabendo* (Be Aware) in the period between November 25 and 29, 2019. Analyses were performed with the support of the Statistical Package for Social Sciences program, with the calculation of absolute and relative frequencies. Pearson's chi-square test (5%) was used for comparison. **Results:** The results revealed a young, heterosexual, white profile. More than half reported having consumed alcohol and drugs in their lives. Other findings were the non-use of condoms with steady partners (18.1%) and occasional partners (21.3%), oral sex (86.8%), and unprotected sex in the last intercourse (45.6%). Most declared never being tested for human immunodeficiency virus (74.5%), syphilis (67.4%), hepatitis B (76.1%), or hepatitis C (77.0%). **Conclusion:** The university population is vulnerable to human immunodeficiency virus and other sexually transmitted infections due to the number of sexual partners and discontinued use of condoms with occasional partners. Such vulnerability is increased by the use of alcohol and other drugs.

Keywords: University students. Vulnerability. HIV. AIDS. Sexually transmitted infections.

RESUMO

Introdução: As universidades brasileiras recebem anualmente milhares de jovens que experimentam situações de vulnerabilidade ao vírus da imunodeficiência humana (HIV), infecções sexualmente transmissíveis (IST) e hepatites virais. **Objetivo:** Analisar os dados secundários obtidos da ficha de atendimento na campanha de testagem rápida para esses agravos em saúde realizada numa universidade federal da Região Sudeste do Brasil, em 2019. **Métodos:** Estudo transversal realizado com dados secundários de estudantes (n=1.113) obtidos da ficha de atendimento padronizada pelo Ministério da Saúde nas campanhas "Fique Sabendo" no período entre 25 e 29 de novembro de 2019. As análises foram realizadas no programa Statistical Package for the Social Sciences (SPSS), verificadas as frequências absolutas e relativas percentuais. Usou-se o teste qui-quadrado de Pearson (5%). **Resultados:** Os resultados mostraram um perfil jovem, heterossexual e branco; mais da metade referiu o uso de álcool e drogas na vida. Foi observado o desuso do preservativo com parceiros fixos (18,1%), eventuais (21,3%), no sexo oral (86,8%) e sexo desprotegido na última relação sexual (45,6%). A maior parte afirmou nunca ter realizado a testagem para HIV (74,5%), sífilis (67,4%), hepatite B (76,1%) e hepatite C (77,0%). **Conclusão:** Concluiu-se que a população universitária possui vulnerabilidade acrescida perante o HIV e outras IST em função do número de parceiros sexuais, do uso descontinuado do preservativo com parceiros eventuais, acrescidos do uso de álcool e outras drogas.

Palavras-chave: Universitários. Vulnerabilidade. HIV. AIDS. Infecções sexualmente transmissíveis.

INTRODUCTION

Brazilian federal universities annually receive thousands of students from various regions of the country as well as some foreign students, generating expectations in terms of inclusion in different social groups. As such expectations are often permeated with sexual and gender issues, the use of alcohol and drugs, and concerns about the prevention of pregnancy, more than sexually transmitted infections (STIs), it is important to focus on the vulnerability of the young university population to such health problems[1,2].

Between 1980 and June 2020, a total of 1,011,617 cases of AIDS were reported in Brazil, and 27.2% of such cases were in the young population. From 2007 to June 2020, 342,459 cases of the human immunodeficiency virus (HIV) were stated, of which 42.7% were in the 20–29 age group. In the period between 2009 and 2019, a 20.7% increase occurred in the number of HIV cases in the 20–24 age group, and a 16.0% increase occurred in the 25–29 age group[3].

With the exception of syphilis and viral hepatitis (VH), reporting STIs is not mandatory in Brazil. Between 2010 and 2020, 783,544 syphilis cases were diagnosed, 38.2% of which occurred in the 15–29 age group[4]. From 2017 onwards, an increase in the hepatitis A rates was observed in the 20–39 age group and hepatitis B in the 25–39 age group. The prevalence of HIV in the Brazilian population is 0.4%[3]. Some studies conducted in the country found the prevalence of 18.4% in the gay population and men who have sex with men (HsH)[5], 36.7% in the transgender population[6], 9.4% among sex workers[7], and 5.9% among drug users[8]. In the 18–24 age group, 34% of individuals diagnosed with HIV do not undergo treatment with antiretrovirals[9].

There seems to be "common sense" among these new generations that HIV/AIDS has taken on an antiquated connotation, as if it

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was not as dangerous nowadays, hence, transforming the advancement of the disease into a silent epidemic[10,11]. A change has also occurred in the dynamics of sexual encounters as an aggravating element of the situation, revealing greater exposure of this population to risk. The advent of the internet and, subsequently, relationship apps revolutionized forms of personal interaction, offering greater ease, especially for the LGBTQIA+ population, who found a safe space for affective and sexual contact in these virtual instruments[11].

OBJECTIVE

This study aimed at analyzing the vulnerability of university students who participated in a rapid testing campaign for HIV, syphilis, and VH at a federal university in southeastern Brazil in 2019.

METHODS

A cross-sectional study was conducted with secondary data of students (n=1,113) obtained from the standard attendance form by the Ministry of Health during the "Be Aware" counseling campaigns[12]. It was applied during the rapid testing for HIV, syphilis, and hepatitis B and C at a federal university in southeastern Brazil in the period between November 25 and 29, 2019. The campaign was organized in partnership with the Municipal Program for Chronic Diseases and STIs with the support of the University Volunteer Center. University students who underwent counseling and testing for HIV, syphilis, and VH were included. Individuals who were not university students and students who did not undergo counseling and all testing were excluded.

A databank was created in the Microsoft Excel 2010 program. Descriptive analysis was conducted with the calculation of absolute and relative frequencies for sociodemographic variables, health-related behaviors, health history, number of partners, use of condoms, and history of testing for HIV, syphilis, and VH. Comparisons were made between men and women using Pearson's chi-square test at a 5% significance level. Figures were created with the distribution of absolute frequencies for questions with multiple answers — cases of STIs according to the disease, reported drugs, and reasons for the non-use of a condom during the most recent sexual intercourse. Access to the secondary data was authorized by the service coordination and analyses were performed with the support of the Statistical Package for Social Sciences (SPSS) program.

RESULTS

Table 1 displays the sociodemographic characteristics of the participants (n=1,081), 466 (43.1%) of whom were male and most were in the 19–29 age group (86.3%). In terms of sexual orientation, 61.1% declared themselves heterosexual. Most declared themselves white (65.0%). With regards to schooling, those who reported having eight to 11 years of education (9.0%) were in the first year of undergraduate studies. Significant differences between the sexes were found in all these variables (p<0.05).

A total of 63.3% declared the use of alcohol and 50.7% of drugs, with no significant difference between the sexes (p>0.05) (**Table 2**). Marijuana was the most reported drug used among participants (**Figure 1**).

Table 1. Sociodemographic characteristics according to sex of university students who participated in a rapid testing campaign for HIV, syphilis and viral hepatitis. Minas Gerais, Brazil, 2019.

Variables	n (%)	Sex		p-value
		Male n (%)	Female n (%)	
Age group				
<18	124 (11.5)	35 (7.5)	89 (14.5)	
18 to 29	933 (86.3)	419 (89.9)	514 (83.5)	0.002
30 or older	24 (2.2)	12 (2.6)	12 (2.0)	
Sexual orientation				
Heterosexual	664 (61.1)	264 (56.1)	400 (64.9)	
Homosexual	184 (16.9)	143 (30.4)	41 (6.7)	<0.001
Bisexual	239 (22.0)	64 (13.5)	175 (28.4)	
Skin color/race				
White	450 (65.0)	186 (57.6)	264 (71.5)	<0.001
Non-white	242 (35.0)	137 (42.4)	105 (28.5)	
Schooling (years)				
8 to 11	97 (9.0)	52 (11.2)	45 (7.4)	0.030
12 or more	975 (91.0)	411 (88.8)	564 (92.6)	

Note: No information was obtained from 413 participates regarding skin color/race.

In terms of health history, number of sexual partners, and condom use, 36.6% of the students had STIs in the previous 12 months, with a significant difference between the sexes (31.5% among men and 40.5% among women; p=0.002). Candidiasis and condyloma were the most prevalent diseases in the sample of students (**Figure 2**).

More than 60% of students had two or more sexual partners in the previous 12 months, with a significant difference between the sexes (p<0.001). A total of 18.1% reported never using a condom with a steady partner and this frequency was higher among women (p=0.002). The use of a condom with an occasional partner was higher among men (p<0.001), revealing again greater exposure among women. A total of 86.8% declared never using a condom during oral sex and 8.1% mentioned occasional use. A total of 45.6% reported not using a condom during the latest sexual intercourse. No information given on the use of a condom ranged from 0.7% (number of partners in the previous 12 months) to 9% (occasional partners) (**Table 2**).

Among the multiple-choice answers, the main reasons for the non-use of a condom during the latest sexual intercourse were trust in the partner (9.5%), the unavailability of a condom at the time of the sexual intercourse (4.8%), not liking condoms (4.2%), the partner had no STI signs or symptoms (4.0%), there was not enough time (3.40%), being under the effects of alcohol and drugs (2.2%), and lesbian sex (0.7%). In 68.9% of cases, no information was provided. Six individuals (0.2%) reported sex without consent, two of whom were sent to the Specialized Care Service for an assessment of the indication for HIV post-exposure prophylaxis. As for the reasons for seeking testing, prevention (31.30%) and unprotected sex (7.40%) stood out, with no information given in 59.0% of cases. Most students reported not having undergone testing for HIV (74.5%), syphilis (67.4%), hepatitis B (76.1%), and hepatitis C (77.0%).

Table 2. Health-related behavior, health history, number of partners and use of condoms according to sex of university students who participated in a rapid testing campaign for HIV, syphilis, and viral hepatitis. Minas Gerais, Brazil, 2019.

Variables	n (%)	Sex		p-value
		Male n (%)	Female n (%)	
Use of alcohol				
Yes	691 (63.3)	311 (65.8)	380 (61.4)	0.138
No	401 (36.7)	162 (34.2)	239 (38.6)	
Use of drugs				
Yes	547 (50.7)	230 (49.6)	317 (51.5)	0.520
No	532 (49.3)	234 (50.4)	298 (48.5)	
STIs				
Yes	391 (36.6)	145 (31.5)	246 (40.5)	0.002
No	676 (63.4)	315 (68.5)	361 (59.5)	
Nº of partners in previous 12 months				
None	74 (6.7)	26 (5.5)	48 (7.7)	<0.001
1	340 (31.0)	120 (25.3)	220 (35.1)	
2 to 4	413 (37.5)	179 (37.7)	234 (37.4)	
5 to10	205 (18.6)	103 (21.7)	102 (16.3)	
11 or more	61 (5.5)	46 (9.7)	15 (2.4)	
NI	8 (0.7)	1 (0.2)	7 (1.1)	
Uses condom with steady partner				
Always	395 (35.9)	192 (40.4)	203 (32.4)	0.002
Never	199 (18.1)	67 (14.1)	132 (21.1)	
Occasionally	441 (40.0)	191 (40.2)	250 (39.9)	
NI	66 (6.0)	25 (5.3)	41 (6.6)	
Uses condom with occasional partner				
Always	699 (63.5)	323 (68.0)	376 (60.1)	<0.001
Occasionally	235 (21.3)	104 (21.9)	131 (20.9)	
NI	99 (9.0)	35 (7.4)	64 (10.2)	
Uses condom during oral sex				
Always	18 (1.6)	5 (1.1)	13 (2.1)	0.315
Never	956 (86.8)	414 (87.2)	542 (86.6)	
Occasionally	89 (8.1)	42 (8.8)	47 (7.5)	
NI	38 (3.5)	14 (2.9)	24 (3.8)	
Used condom during last intercourse				
Yes	566 (51.4)	246 (51.8)	320 (51.1)	0.854
No	502 (45.6)	221 (46.5)	281 (44.9)	
NI	33 (3.0)	8 (1.7)	25 (4.0)	

Note: Comparisons between proportions performed considering records with information. NI: No information.

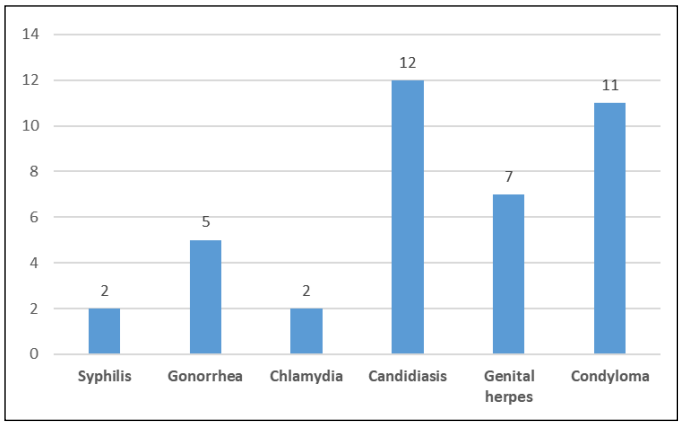

Figure 1. Number of cases of sexually transmitted infections among university students who participated in a rapid testing campaign for HIV, syphilis and viral hepatitis. Minas Gerais, Brazil, 2019.

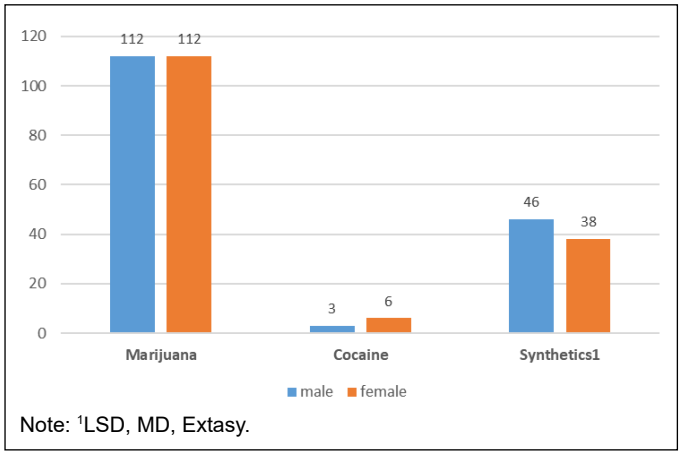

Figure 2. Drugs reported by university students who participated in a rapid testing campaign for HIV, syphilis and viral hepatitis. Minas Gerais, Brazil, 2019.

DISCUSSION

With regards to social aspects, other studies reported a similar young profile, age group, and sexual orientation, but differed from the Fifth National Undergraduate Profile Survey of the Federal Institutes of Education (2018), conducted at the same university, in terms of gender, average age, and race/color[13]. These differences may be related to the set of participants in the present study, that is, only individuals who participated in the testing campaign, but reaffirm the consideration of gender, sexual orientation, and race/color issues, in actions directed at the prevention of HIV, VH, and other STIs in the young population.

More than half of the participants declared they had consumed alcohol and drugs some time in their lives, with similar figures in both groups. Alcohol is the most consumed psychoactive substance among young university students in Brazil and the frequency of illicit drug use was higher than that reported in other studies conducted with the university population in the country[14,15]. The data indicate that, under the influence of these substances, university students may have a greater frequency of sexual relations, a greater number of sexual partners, and unprotected sex[8,10,14,16].

In the context of prevention, 18.1% declared that they never used a condom with a steady partner, especially women, and the frequency of occasional use was 40.0%. The practice of unprotected sex in the young female population is the main reason for HIV infection and the argument most reported for the non-use of a condom was trust in the partner. The same argument was found in previous studies that associated this behavior with the ideation of romantic love and a demonstration of love[17,18]. The non-use of a condom with occasional partners was reported by 6.2% of the participants and only 21.3% reported its occasional use; this frequency was higher among men, once again revealing the greater exposure of women. Furthermore, the use of a condom may be seen as an indication of

distrust, compromising the prevention of sexually transmitted diseases and pregnancy[17,19].

A high percentage of the non-use of a condom during oral sex was found in both groups (higher than 85%). This demonstrates the vulnerability to infection by STIs with oral manifestations, such as syphilis and acuminated condyloma, which is one of the human papillomavirus (HPV) forms that can cause anything from a simple wart to cancer. The site most affected by syphilis is the anogenital region, followed by the lips, tongue, palate, gingival tissue, and tonsils. The disease can also be transmitted vertically from mother to newborn[4,20].

A high frequency of vulvovaginal candidiasis was also found. This STI increases vulnerability to other STIs, VH, and HIV, and when in the chronic or recurrent form, may be associated with immunosuppression caused by HIV/AIDS[21].

Condyloma was reported mainly by the male group. This datum is similar to that reported in a study conducted in the city of São Paulo, in which acuminate condyloma accounted for 29.4% of cases among the 4,874 patients treated, and 82.4% of such cases were men[6]. The most frequent manifestations of condyloma in the mouth are found on the side of the tongue, lips, palate, or any oral surface; the disease is transmittable in unprotected oral sexual relations or from the genital tract of the mother to the oral cavity of the infant during birth[20-22].

In both groups, 45.6% reported unprotected sex during the most recent sexual intercourse, which is higher than the frequency reported in a previous study involving university students in the state of Rio Grande do Sul (41.5%)[23]. During pretesting counseling, two cases of sex without consent in the previous 72 hours were identified. These individuals were unaware of HIV post-exposure prophylaxis and were sent to the Specialized Care Service of the municipality for the prescription of this prophylaxis[24].

Most of the participants reported never having undergone testing for HIV, syphilis, and VH, indicating that the incentive for testing in national campaigns had not resulted in an increase in testing among young people. This requires communication strategies that encourage the adoption of this population to the Combined Prevention of HIV/AIDS[24]. Such results are in agreement with data described in the literature and indicate that individual vulnerabilities to infection by STIs and HIV are found among young university students with regard to prevention behavior[2,10]. The data also point to social vulnerability through unequal relations between the sexes in terms of negotiating the use of a condom[18,19].

Another aspect that perhaps should be investigated in future studies is the knowledge that university students have on STIs, forms of prevention, and the offer of testing at healthcare services. This was not the objective of the present study, which considered the results of the standard attendance form of the Ministry of Health in the "Be Aware" campaigns[12]. Thus, the present data delineate the challenge for STIs, HIV, and VH prevention at universities with a focus on the expansion of access to integral care for the young population in partnership with Specialized Care Services in municipalities.

Strengths

This study shows the vulnerability of Brazilian university students to HIV, AIDS, STIs, and viral hepatitis, and underscores the importance of partnerships between universities and healthcare services to address these health conditions.

Limitation

The main limitation of the present study is that the investigation focused on a single university campus without considering students from other courses. Thus, a convenience sample was used and the results cannot be generalized. However, the findings corroborate the data reported in previous studies involving the same population and suggest that future longitudinal studies with broader populations, although with a probably challenging execution, are essential to generate reliable, more widely applicable data.

CONCLUSION

The present results show that the university population is vulnerable to HIV and other STIs due to the number of sexual partners and discontinued use of condoms with occasional partners. Such vulnerability is increased by the use of alcohol and other drugs.

Approval by the Human Research Ethics Committee

This study received approval from the institutional ethics committee of Universidade Federal de Uberlândia (MG), registered under CAAE: 92164318.7.0000.5152.

Participation of each author

SFJ: Conceptualization, Data curation, Investigation, Writing – original draft. PMSBF: Formal analysis, Writing – review & editing. AML: Supervision.

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Conflict of interest

The authors declare no conflicts of interest.

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