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Vulnerability of adolescent students in relation to human immunodeficiency virus infection

Vulnerabilidade de adolescentes escolares em relação à infecção pelo vírus da imunodeficiência humana

Vulnerabilidad de los adolescentes estudiantes en relación a la infección por el virus de la inmunodeficiencia humana

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ABSTRACT

Introduction: Adolescence is a period of intense changes, doubts, and indecisions, making it an age group vulnerable to health-related risks, such as infection by the Human Immunodeficiency Virus (HIV). **Aim:** To describe the situation of vulnerability of adolescent students in relation to HIV infection and its association with individual and social factors. **Outlining:** Descriptive, cross-sectional, and quantitative study. Data collection took place online, with high school teenagers from a public school, using the student leaflet "Should I get tested for HIV/aids test?". Data analysis was performed using the software JASP 0.9.1.0 and BioEstat 5.0. **Results:** Of the 126 participants, 81.7% had low to medium vulnerability to HIV infection and 18.3% had high vulnerability. Amongst the most vulnerable adolescents, the majority were aged between 18 and 19 years old, female, homosexual/bisexual, black, professed no religion or were non-Christian, with a stable sexual partner and were residents from the urban area. An association between the students' level of vulnerability and place of residence was found ($p=0.032$; $OR=2.71$; $95\% CI=1.07 - 6.89$). **Implications:** Adolescents may be vulnerable to HIV, and actions aimed at sex education are important.

DESCRIPTORS

Adolescent; Health Vulnerability; HIV; Sexually Transmitted Diseases; Sex Education.

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INTRODUCTION

Adolescence is recognized by World Health Organization as the period of growth and development which succeeds childhood and precedes the adult age, considering the preadolescence the 10 to 14 years age range and adolescence from 15 to complete 19 years.¹ By its turn, the Statute of Child and Adolescent (National Law No. 8.069, of July 13, 1990) considers the 12 to 18 years interval and, in some exceptions, until 21 years.²

This phase is a period marked by intense changes, doubts, and indecision that can contribute to an increase in health risk behaviors, and infection by the Human Immunodeficiency Virus (HIV) is one of the most important problems, especially because it is an infectious, communicable, and chronic disease.³

The term vulnerability corresponds to the possibilities of people being exposed to illness and is an expression that has been used in the context of HIV. In this sense, besides referring to individual factors, which would lead a person or a certain group to adopt more or less protected behaviors towards the virus, the term also seeks to analyze institutional, programmatic, and social issues that influence the practice of safe sex.³

Global statistics from the Joint United Nations Programme on HIV/aids (UNAIDS) showed that 37.6 million [30.2 million - 45.0 million] people were living with HIV in the world in 2020; 77.5 million [54.6 million - 110 million] people have been infected with HIV and 34.7 million [26 million - 45.8 million] have died from diseases related with Acquired Immunodeficiency Syndrome (aids) since the beginning of the epidemic.⁴

In Brazil, according to data from the Information System for Notifiable Diseases (SINAN), 342,459 cases of HIV infection were reported from 2007 to June 2020. In the Brazilian territory, the epidemic of infection by this virus has been undergoing significant changes in its epidemiological profile, highlighting the 64.9% increase in cases

among young people aged 15 to 19 years in the period between 2009 and 2019.⁵

Considering that most people living with HIV/aids are between 20 and 24 years of age, it is possible to assume that most infections occurred during teenhood, since the disease can remain asymptomatic for many years. It is worth pointing out that, even if the young person is exposed to the virus, many may not consider themselves vulnerable, not using condoms or other methods of combined prevention.⁶

These aspects that make adolescents vulnerable can be evidenced from the beginning of their sexual life, since in the first relationship there is a set of conditions that predispose them to the risk of HIV infection, such as: inadequate use of contraceptive methods, early sexual initiation, gender-related specificities, belief of invulnerability, unpredictability of sexual relations, lack of guidance on sexuality or little openness to dialogue at home or in schools.⁷⁻⁸

The beginning of actions on HIV prevention in schools happened from the last years of the 1980s, with the approach of subjects more related to contraceptives and Sexually Transmitted Infections (STI), and the first program of aids control was implemented in the country by the most affected states and municipalities. However, this initiative was only formulated in 1994, with the implementation of a set of initiatives since then, such as: School Project (1995-2004), Health and Prevention at Schools Project (2005-2007); and Health at School Program (from 2007 to date).⁹

Considering the importance of investigating the opinions, practices and behaviors of school adolescents that can make them more or less vulnerable to HIV, it is important to know the reality of these young people in the context in which they are inserted. Thus, making it possible to draw prevention strategies with a solid and objective educational basis, aiming at effective actions in HIV prevention education.

Given the above, an attempt was made to answer the following question: do school adolescents have behaviors, practices and opinions that make them vulnerable to HIV? With this purpose in mind, the objective of this study was to describe the situation of vulnerability of school adolescents in relation to HIV infection and its association with individual and social factors.

METHOD

This is a descriptive, cross-sectional, and quantitative study. The scenario of the study was a public high school placed in the Agreste of the state of Alagoas. Data collection was carried out online during the period from November 2020 to January 2021.

According to data provided by the school, the population of students participating in remote teaching, both morning and afternoon shifts, was 264 adolescents. The sample size calculation was performed with a confidence level of 95% and a sampling error of 5%, which resulted in a representative sample of 157 participants. However, only 126 adolescents agreed partake in the investigation and met the established eligibility criteria.

The inclusion criteria were: students in the 15 to 19 years age range, with access to internet, who were studying in the morning or afternoon shifts at the school and who were regularly enrolled in grades corresponding to the 1st year, 2nd year, or 3rd year of high school. The exclusion criteria were: adolescents who did not have an electronic device for their exclusive use, who had some disability (physical, motor and/or intellectual) that made it impossible for them to answer the form alone, and/or students who did not return the messages sent by the researchers after a double attempt.

For data collection, the student's leaflet "Should I get tested for HIV/aids?" was used. This leaflet was developed by the Project Health and Prevention in Schools, in partnership with the Ministry

of Health, Ministry of Education, United Nations Educational, Scientific and Cultural Organization (UNESCO) and United Nations Children's Fund (UNICEF) in the national mobilization of adolescents and young people in high school to prevent HIV infection and aids.¹⁰

The questionnaire had questions which addressed opinions and daily situations as the use or non-use of condoms, experiences of sexual relations which increased the exposure to HIV, if the pregnancy only happens when there is no safe sexual practice, if the use of drugs increases the exposure to HIV, if health services were sought either to prevent or treat STIs, if would take HIV test, behaviors in situations such as condom breakage, and notions about condoms and with whom they can talk about sexuality and prevention. For each answer alternative, there was a color that corresponded to a level of risk for HIV.

From the questionnaires, participants had their responses ranked as low vulnerability (only green alternatives signed), indicating no sexual health risk behaviors; medium vulnerability (green and pink responses signed), which reveals the need for further search for information and means of protection; or high vulnerability (one or more blue alternatives signed), demonstrating that adolescents have lived experiences that resulted in a high vulnerability to HIV.

Also, to meet the objectives of the study, the variables age, age group, sex, gender, sexual orientation, education, religion, color, location of residence, relationship, maternal education, and family income were added to the instrument. The questionnaire was created in Google Forms, a free service in which it is possible to create online surveys, which facilitated the process of data collection and analysis of results.

Initially, before data collection, the research was presented to school's managers and faculty, explaining its aims, anticipated benefits, possible risks and discomforts, ethical aspects, methods, and study's relevance. At this time, teachers were invited

to collaborate with the investigation, disseminating the research in their remote classes.

Concomitant to the aforementioned strategy, to encourage the participation of adolescents, the researchers were included in online chat groups of the biology discipline, created in the WhatsApp application, and organized by grade and shift, where information about the investigation was forwarded. Subsequently, after ample knowledge of the research by the students, the researchers contacted the students individually to make the invitation.

The research link was forwarded, immediately after consent, to the adolescents between the ages of 18 and 19. The minors were instructed to explain the research to their guardians and to present the Informed Consent Form (TCLE) for them to read and consult about the consent to the participation of the minor in the research. After the consent, the students had access to the Free and Informed Consent Form (TALE) to be read and/or printed. To those who agreed, the form directed them to the sociodemographic questions and then to the questionnaire.

The data obtained were tabulated and stored in an electronic spreadsheet built in Excel™. Data analysis was performed using the softwares JASP 0.9.1.0 and BioEstat 5.0. Both descriptive and analytical Statistics were applied for the categorical variables (low to medium and high vulnerability), from Pearson's chi-square test and Fisher's exact test for association between groups of different individual and social factors. In the case where there was a significant association, the Odds Ratio was calculated. For all analyses, a 95% confidence

interval was considered, and the results were arranged in tables.

This work was approved by the Research Ethics Committee of the State University of Health Sciences of Alagoas (UNCISAL) with opinion number: 3.780.508.

RESULTS

Of the 126 participants in the research, 91 (72.2%) were female and 35 (27.8%) were male. Age ranged from 15 to 19 years; 44 (34.9%) were 17 years old and 38 (30.2%) were 18 years old, with a mean and median age of 17.2 and 17 years, respectively.

Regarding the grade, 21 (16.7%) were first-year students, 44 (34.9%) were second-year students and 61 (48.4%) were third-year students, all in high school. One of the participants identified as being of non-binary gender. 113 (89.7%) students were heterosexual, 71 (56.3%) declared themselves as pardo (mixed-race), 89 (70.6%) were Catholic, 76 (60.3%) were single and 89 (70.6%) lived in the countryside of the city.

The educational attainment of participants' mothers also was a variable took into account. Incomplete/Complete Elementary/Middle School was referred by 70 (55.6%) adolescents; followed by Incomplete/Complete High School, referred by 30 (23.8%) participants. 66 (52.4%) students reported family income of up to one minimum wage, and 32 (25.4%) adolescents could not answer the question. The characterization of the 126 students regarding sociodemographic data is described in table 1.

Table 1 - Sociodemographic characterization of the adolescents participating in the study. Municipality in the state of Alagoas, Brazil, 2023.

Study Variables	N	%
Age		
15	5	4.0
16	27	21.4
17	44	34.9
18	38	30.2
19	12	9.5

Grade (high school)		
1 st year	21	16.7
2 nd year	44	34.9
3 rd year	61	48.4
Sex at birth		
Male	35	27.8
Female	91	72.2
Gender		
Male	34	27.0
Female	91	72.2
Non-binary	1	0.8
Sexual orientation		
Heterosexual	113	89.7
Homosexual	8	6.3
Bisexual	5	4.0
Color		
White	33	26.2
Pardo (mixed-race)	71	56.3
Yellow	12	9.5
Black	9	7.1
Indigenous	1	0.8
Religion		
Catholic	89	70.6
Evangelist	20	15.9
None	12	9.5
Other	5	4.0
Relationship Status		
Single	76	60.3
Dating	43	34.1
Married	3	2.4
Hooking Up	4	3.2
Area		
Rural (countryside)	89	70.6
Urban	37	29.4
Educational attainment of the mother		
Incomplete/Complete Elementary/Middle School	70	55.6
Incomplete/Complete High School	30	23.8
Incomplete/Complete Higher Education	12	9.5
Did not know the answer	14	11.1
Family Income*		
Up to 1 minimum wage	66	52.4
Between 1 and 2 minimum wages	17	13.5
Between 2 and 3 minimum wages	6	4.8
More than 3 minimum wages	5	4.0
Did not know the answer	32	25.4
Total	126	100.0

*Based on the minimum wage of R\$ 1,100.

Source: Data from the research.

The vulnerability rating for HIV was shown to be low to medium in 103 (81.7%) adolescents. Of these, most were in the 15-17 age group (84.4%), were in the 3rd year of high school (82.0%), male (82.9%), non-binary gender (100.0%), heterosexual (82.3%), of other skin colors (white, yellow, pardo (mixed-race), and indigenous) (83.8%), were Christian (82.3%), single (86.3%), living in rural areas (86.5%), and with a family income of up to one minimum wage (83.3%).

Among the 23 (18.3%) students who had high vulnerability, there was a higher prevalence of students who were between 18 and 19 years (22.0%),

who were enrolled in the 1st and/or 2nd year of high school (18.5%), who were female (18.7%), of the binary gender (18.4%), with homosexual/bisexual sexual orientation (23.1%), black (44.4%), who had no religion or were not Christian (23.1%), with stable sexual partnership (26.1%), living in urban areas (29.7%), and with family income higher than one minimum wage (28.6%).

A statistically significant association was found between the level of vulnerability and the place of residence (p=0.032; OR=2.71; 95%CI=1.07-6.89) of the adolescents. All the aforementioned aspects are detailed in Table 2.

Table 2 - Association between adolescents' individual and social factors with vulnerability classification (low to medium and high). Municipality in the state of Alagoas, Brazil, 2023.

Variables	Low to medium		High		Total N (100%)	p-value
	N	%	N	%		
Age range (years)						0.377*
15-17	64	84.2	12	15.8	76 (100)	
18-19	39	78.0	11	22.0	50 (100)	
Grade (high school)						0.950*
1 st and 2 nd	53	81.5	12	18.5	65 (100)	
3 rd	50	82.0	11	18.0	61 (100)	
Sex at birth						0.841*
Male	29	82.9	6	17.1	35 (100)	
Female	74	81.3	17	18.7	91 (100)	
Gender						1.000**
Binary	102	81.6	23	18.4	125 (100)	
Non-binary	1	100.0	0	0.0	1 (100)	
Sexual orientation						0.702**
Heterosexual	93	82.3	20	17.7	113 (100)	
Homosexual/bisexual	10	76.9	3	23.1	13 (100)	
Color						0.057**
Black	5	55.6	4	44.4	9 (100)	
Other	98	83.8	19	16.2	117(100)	
Religion						0.702**
Cristian	93	82.3	20	17.7	113 (100)	
None/non-Cristian	10	76.9	3	23.1	13 (100)	
Relationship status						0.084*
Single	69	86.3	11	13.8	80 (100)	
Stable relationship	34	73.9	12	26.1	46 (100)	
Area						0.032*
Rural	77	86.5	12	13.5	89 (100)	
Urban	26	70.3	11	29.7	37 (100)	

Family income ¹						0.189*
Up to 1 minimum wage	55	83,3	11	16.7	66 (100)	
More than 1 minimum wage	20	71.4	8	28.6	28 (100)	
Total					126 (100)	

*Pearson's Qui-Square **Fisher's exact ¹Those who did not know their family income were excluded from the analysis.
Source: Data from the research.

Regarding sexual practices, it was found that 85 (67.5%) adolescents had never had sexual intercourse and, of the 41 (32.5%) who had, 18 (43.9%) reported using condoms in all relations. On the other hand, 20 (48.8%) students affirmed at least one unprotected relationship and 3 (7.3%) never used condoms; of these 23 adolescents who had already stopped using condoms, 17 (73.9%) were female.

Of the 126 adolescents, 102 (81.0%) reported that they had never gone to a health service for questions related to sexual health, with 30 (29.4%) male participants and 72 (70.6%) female; another 13 (10.3%) declared having tried to access the service, but they were ashamed and gave up.

Regarding the HIV test, 11 (8.7%) adolescents mentioned that they would do it out of concern for a situation they were experiencing, but most indicated positive attitudes, as follows: 58 (46.0%) students would do it just to know the result or out of curiosity and 66 (52.4%) would do it to discover, prevent and treat HIV early.

With regard to relationships that can increase exposure to HIV, of the 23 (100.0%) adolescents who were highly vulnerable, 9 (39.1%) mentioned not using condoms because they had made a fidelity pact with their sexual partner. Another 3 (13.0%) participants reported having experienced practices with different people, mentioning that with some they used a condom and with others, not.

With reference to the condom, 110 (87.3%) students recognized that it is an effective alternative to prevent unplanned pregnancy, HIV and other STIs. For 17 (13.5%) participants, it is a method that they can use with pleasure; another 9 (7.1%) adolescents reported that it is not necessary to use it with a person who they like and trust.

Regarding the people with whom they can talk about sexuality and prevention, the data showed that 50 (39.7%) students did not have any adult with whom they felt comfortable talking about the subject, and another 50 (39.7%) said they approached these topics with people their own age.

DISCUSSION

The present study described the situation of vulnerability of adolescent students in relation to HIV infection and its association with individual and social factors. The results showed that the age group of the oldest, from 18 to 19 years old, showed a higher proportion of participants in a situation of high vulnerability. This datum corroborates a scientific study carried out with university students, with mean ages of 18.93 and 19.73 years, in which advancing age was associated with greater vulnerability to HIV.⁶

The onset of sexual activity and knowledge on HIV may be associated with age and vulnerability. According to a scientific study that evaluated knowledge of the adolescents about STIs and contraceptive methods, the lack of access to reliable information during adolescence contributes to early sexual initiation and greater chances of unprotected sexual practices.¹¹

The proportion of high vulnerability was similar among students of both sexes, being slightly higher in females, although without a statistically significant association, as well as in a study carried out with adolescents from the outskirts of Fortaleza, capital of a state in northeastern Brazil.¹²

In this perspective, an investigation carried out with adolescents from a public school in the city of Pouso Alegre, Minas Gerais, Brazil, concluded that female participants had greater knowledge about

contraceptive methods, STIs and the practice of safe sex. On the other hand, the males showed a great deficit, in which 22.7% of the male participants considered the use of condoms unnecessary in all sexual relations and another 24.6% of these believed that oral contraceptives protected against STIs.¹¹

Being female was associated with the intention to use condoms in a scientific survey with adolescents in rural areas of Tanzania.¹³ These gender-related issues may contribute to non-use of condoms. For example, in heterosexual relationships, the decision for its use is often a man's decision, and it is important to empower women to negotiate this issue.¹⁴

The historical construction of society envisages a social relationship of gender to power, devaluing women. For example, both in Greece and Rome, there was a repression of sexuality. Men were given the choice of seeking hedonistic experiences, whose pleasure was sought with prostitutes and homosexual practices; while their wives stayed in their homes, almost like prisoners of housework and childcare.¹⁵

These gender inequalities negatively affect women's autonomy to decide what they want in their lives and their reproductive and sexual rights, leaving them at the mercy of various forms of violence (patrimonial, sexual, physical, moral, and psychological).¹⁶ Empowering women beginning from school environment is a global need, so that they can become aware of their rights and the struggle that transcends generations to achieve gender equality.

Regarding sexual orientation, homosexual/bisexual students had higher vulnerability, data that meet an investigation carried out in a university in the Midwest region, in which 57.9% of homosexuals and all bisexuals had high vulnerability.⁶ Consolidating these findings, in another study conducted with 1120 African-American adolescents, it was found that young people from sexual minorities were more likely to engage in

higher-risk sexual behaviors when compared to heterosexuals.¹⁷

Despite the largest number of absolute aids cases in Brazil is concentrated in the heterosexual category, HIV prevalence rates among gay men, men who have sex with men, and transgender people are higher when compared to the general population. Among adolescents, there is a prevalence of HIV/aids cases in males and in the 15-19 age range.⁵

It is known that there are still prejudices related to sexual orientation, which enhances the non-search for prevention and health promotion services. And in the context of HIV/aids, homosexuals, especially males, still carry the social representation of villains and victims of this disease, which favors stigma and discrimination.¹⁸

With regard to color, Black participants were more vulnerable to HIV. In Brazil, among men, 49.2% of reported aids cases are of Black (black, 9.8% and pardo (mixed-race), 39.4%); among women, 54.3% of cases occurred among black women (black, 12.9% and pardo (mixed-race), 41.4%).⁵

From this perspective, it is clear that the Black population still faces difficulties in accessing their basic rights, such as education, health, employment and social security. Requiring the application of existing public policies for this public is essential to improve the quality of life of these people, in order to reduce the social inequalities that favor and increase vulnerability to HIV.¹⁹

As to the religion, the adolescents who either did not have one or were non-Christians had higher vulnerability. This finding corroborates a study carried out with 287 Brazilian students, where it was found that 75.0% of those who had no religion were vulnerable.²⁰ In a study on sexuality, adolescence and religious practice, it was found that religiosity influences the sexual practices of young people, for example, the postponement of sexual relations until marriage, as it is considered a value that tends to be adopted mainly among evangelicals and Catholics.²¹

In reference to relationship status, the students who had stable sexual partners were more susceptible to HIV. For a long time, condom use was associated with multiple partners, prostitution and extramarital relationships, and these aspects still hinder its use in stable relationships.¹⁴ Still, the need to please the partner, long-term relationships and trust in the sexual partner are also issues that favor the non-use of protection.⁸

With regard to educational attainment, students enrolled in the early years of high school were more vulnerable. Analogously, a study that assessed vulnerability to STIs in high school adolescents concluded that fewer years of schooling have shown to contribute to increased vulnerability.²⁰

When it turns to family income, the partakers who had an income greater than one minimum wage were more vulnerable. A study carried out with young people from the Amazon found that low family income associated with low parental education is associated with students' knowledge deficit and, as an effect, can make them more vulnerable to HIV infection.²² Faced with this reality, the investigation suggests that reproductive health education actions are necessary for young students and for the communities surrounding the schools.

Concerning students' place of residence, the study showed a significant association with the degree of vulnerability, with adolescents from the urban area being more susceptible and approximately 2.7 times more likely to have high vulnerability. This result was similar to the one of an investigation carried out with young people and adolescents in Vietnam, where participants living in urban areas were more likely to not want to use condoms and have unwanted pregnancies.²³

On the other hand, it is known that people living in rural community face difficulties in accessing health services, with limitations in quality, which shows greater precariousness when compared to urban health conditions. The exposed data draw attention to the creation of preventive strategies that

take into account the particularities of each geographic area.²⁴

Most of the adolescents in the study reported that they never went to health services for issues related to sexual health. In a context of greater social vulnerability, access to health and education services is more precarious.²⁵ In addition, prejudice and sexist stereotypes influence the search for and access to these health services.²⁶

Regarding the people with whom the adolescents talked about sexuality and prevention, most did not have an adult with whom they felt comfortable and, therefore, preferred to talk to people their own age. In this context, a study with students from a municipal school in the Southern region of Rio Grande do Sul, Brazil, reported that girls talked more about sexuality with their mothers. As a source of information, it showed that parents and the school stood out when adolescents seek to learn about STIs.²⁷

In a study with African-American and Latino male adolescents, it was shown that their parents tended to transmit messages, albeit vague ones, on how to protect themselves, and there were still barriers that made conversations difficult.²⁸ However, the frequency and dialogue style can help to overcome existing obstacles, such as speaking in individual settings and using strategies aimed at reducing adolescents' discomfort.

Several studies published and conducted in Brazil show that adolescents lack information and that the school is an appropriate place for educational activities on HIV prevention. It is at school where adolescents spend most of their time, and it is pertinent to offer quality information on the prevention of injuries related to sexual activity.^{3,11,24,29}

Considering what was mentioned above, educational actions are the best way to disseminate knowledge, information, demystify HIV and reduce its negative impact. It is configured as an efficient strategy, in which health and education professionals

can jointly develop actions, taking into account all the singularities of students. Through active methodologies, it is possible to achieve positive results in reducing risk behaviors, breaking taboos, and prejudices, thus increasing reproductive health skills and adherence to condom use.²⁹

The limitations of the study are restricted to the pandemic of COVID-19 and the lack of acceptance by some students and parental permission. In relation to the first, it became evident the many challenges of the transition from in-person to remote learning, especially for students from the public-school network, since many of them still did not have access to the Internet, which resulted in a large number of school dropouts. With regard to other limitations, as this is a study that involves sexual issues which are little discussed in educational institutions, especially in public ones, it is common to have a low number of participants, despite all the clarifications, both on the part of the adolescents, who have fears and doubts about the subject, as well as on the part of the parents who, often, do not want their adolescent sons to discuss this kind of subject.

CONCLUSION

There was a greater situation of vulnerability among students with the following aspects: being aged between 18 and 19 years old, living in the urban

area, studying in the early years of high school, being female, being of the binary gender, being black, having a stable sexual partner, not having a religion or not being a Christian, having a higher family income and being homosexual/bisexual.

Other factors that contributed to the increased vulnerability of adolescents were: not using a condom because of not liking it, having made a fidelity pact with a sexual partner, believing that it is not necessary to use it with someone you love and trust, never having gone to the health services for issues related to sexuality and not having reliable sources of information.

The growing number of cases of HIV infection among young people demands the intensification of educational activities, especially in educational institutions. Its objective is not to encourage sex, but to guarantee appropriate and correct information, so that they can build their sexuality free of fears and taboos, contributing to their overall health, with a reduction of health risks.

The knowledge generated by this study is expected to provide subsidies to increase the incentive and planning of educational and preventive actions related to sexuality, which aim, in a clear and objective way, to sensitize students to rethink their behaviors and sexual practices.

RESUMO

Introdução: A adolescência é um período de intensas mudanças, dúvidas e indecisões, tornando-se uma faixa etária vulnerável a riscos relativos à saúde, como a infecção pelo Vírus da Imunodeficiência Humana (HIV). **Objetivo:** Descrever a situação de vulnerabilidade de adolescentes escolares em relação à infecção pelo HIV e sua associação com fatores individuais e sociais. **Delineamento:** Estudo descritivo, transversal e quantitativo. A coleta de dados aconteceu de forma *on-line*, com adolescentes do ensino médio de uma escola pública, utilizando o folheto do estudante “Eu preciso fazer o teste do HIV/aids?”. A análise de dados foi realizada por meio dos softwares JASP 0.9.1.0 e BioEstat 5.0. **Resultados:** Dos 126 participantes, 81,7% possuíam vulnerabilidade baixa à média para a infecção pelo HIV e 18,3%, alta. Dentre os adolescentes com maior vulnerabilidade, a maioria encontrava-se na faixa etária entre 18 e 19 anos, eram do sexo feminino, com orientação sexual homossexual/bissexual, de cor preta, sem religião ou não eram cristãos, com parceria sexual estável e residentes da zona urbana. Foi encontrada associação entre o nível de vulnerabilidade e o local de residência ($p=0,032$; $OR=2,71$; $IC\ 95\%=1,07-6,89$) dos estudantes. **Implicações:** Os adolescentes podem estar vulneráveis ao HIV, sendo importante ações voltadas à educação sexual.

DESCRITORES

Adolescente; Vulnerabilidade em Saúde; HIV; Infecções Sexualmente Transmissíveis; Educação Sexual.

RESUMEN

Introducción: La adolescencia es un período de intensos cambios, dudas e indecisiones, lo que la convierte en un grupo etario vulnerable a riesgos relacionados con la salud, como la infección por el Virus de la Inmunodeficiencia Humana (VIH). **Objetivo:** Describir la situación de vulnerabilidad de los adolescentes estudiantes en relación a la infección por VIH y su asociación con

factores individuales y sociales. **Delineación:** Estudio descriptivo, transversal y cuantitativo. La recolección de datos se llevó a cabo en línea, con adolescentes de secundaria de una escuela pública, utilizando el folleto para estudiantes "¿Necesito hacerme la prueba de VIH/SIDA?". El análisis de datos se realizó con el software JASP 0.9.1.0 y BioEstat 5.0. **Resultados:** De los 126 participantes, el 81,7% tenía vulnerabilidad baja a media a la infección por el VIH y el 18,3% tenía vulnerabilidad alta. Entre los adolescentes más vulnerables, la mayoría tenía entre 18 y 19 años, sexo femenino, homosexual/bisexual, negro, no religioso o no cristiano, con pareja sexual estable y residente del área urbana. Se encontró asociación entre el nivel de vulnerabilidad de los estudiantes y el lugar de residencia ($p=0,032$; $OR=2,71$; $IC95\%=1,07-6,89$). **Implicaciones:** Los adolescentes pueden ser vulnerables al VIH y las acciones dirigidas a la educación sexual son importantes.

DESCRIPTORES

Adolescente; Vulnerabilidad en Salud; HIV; Enfermedades de Transmisión Sexual; Educación Sexual.

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COLLABORATIONS

ASM and GCM: conception and design of the study; collection, analysis, and interpretation of the data; writing and critical review of the manuscript; approval of the final version to be published. BMFCA and AMBF: collection, analysis, and interpretation of the data; writing and critical review of the manuscript; approval of the final version to be published; IPD, MRS and LMFS: analysis, and interpretation of the data; writing and critical review of the manuscript; approval of the final version to be published. All authors agree and are responsible by the content of this version of the manuscript to be published.

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CONFLICTS OF INTEREST

There are no conflicts of interest to declare.