Vulnerability of adolescents to sexually transmitted infections

Vulnerabilidade a infecções sexualmente transmissíveis em adolescentes

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ABSTRACT

Introduction: Adolescents are especially susceptible to sexually transmitted infections, with approximately 1/7 of all new cases of human immunodeficiency virus infection in this group. **Objective:** To investigate the vulnerability to sexually transmitted infections among adolescents of the Centers for Testing and Counseling for Sexually Transmitted Diseases / Aids, CTAs, in the city of Juazeiro, state of Bahia, Brazil, from 2006 to 2012. **Methods:** This was an exploratory cross-sectional study that used secondary data from 1,173 adolescents. Data analysis was processed in Stata 9.0 software by descriptive statistics and Pearson's χ^2 test. **Results:** There was predominance of female adolescents (56.86%), brown (22.85%), single (80.22%), with 8–11 years of education (44.76%) and stable partner (56.78%). The prevalence of sexually transmitted infections was of 5.88%, and there was statistically significant association with sex (more prevalent among girls; p=0.014), education (more common among the less educated; p=0.031) and marital status (more frequent among married/common-law; p=0.036). **Conclusion:** Safer sex practices and later start of sexual activity combined with empowering actions, especially girls', are important steps to reduce sexually transmitted diseases among adolescents.

Keywords: adolescents; sexually transmitted diseases; counseling; aids.

RESUMO

Introdução: Os adolescentes são especialmente susceptíveis às infecções sexualmente transmissíveis, com aproximadamente um sétimo de todos os novos casos de infecção pelo vírus da imunodeficiência humana ocorrendo nesse grupo. **Objetivo:** Investigar a vulnerabilidade a infecções sexualmente transmissíveis em adolescentes usuários do Centro de Testagem e Aconselhamento para Doenças Sexualmente Transmissíveis/Aids, da cidade de Juazeiro, Bahia, de 2006 a 2012. **Métodos:** Tratou-se de um estudo analítico transversal exploratório que utilizou dados secundários de 1.173 adolescentes. A análise dos dados foi realizada pelo *software* Stata 9.0, por estatística descritiva, e teste χ^2 de Pearson. **Resultados:** Houve predomínio de adolescentes do sexo feminino (56,86%), pardos (22,85%), solteiros (80,22%), com 8 a 11 anos de estudo (44,76%) e parceiro estável (56,78%). A prevalência de infecções sexualmente transmissíveis foi de 5,88%, e houve associação estatisticamente significativa com o sexo (mais prevalente entre as meninas; p=0,014), escolaridade (mais frequente entre os de menor escolaridade; p=0,031) e estado civil (mais frequente entre casados/união estável; p=0,036). **Conclusão:** A adoção de práticas sexuais seguras e o início mais tardio da vida sexual, aliados a ações de empoderamento, especialmente das meninas, são medidas importantes para reduzir a propagação das infecções sexualmente transmissíveis entre os jovens.

Palavras-chave: adolescentes; infecções sexualmente transmissíveis; aconselhamento; aids.

INTRODUCTION

Estimates indicate there are more than two million adolescents living with human immunodeficiency virus (HIV) worldwide — about 1/7 of all new cases occur during adolescence —, and in spite of the efforts focused on preventing the infection, teenagers and young people in the age group 20–24 years old are still extremely vulnerable to contamination, especially girls[1].

According to the World Health Organization, access to counseling and testing, as well as the assimilation of information by teenagers, is significantly lesser considering adults, and access and coverage vary in different countries and regions[2]. The consequence can be observed in the mortality rates related to HIV, which increased 50% in this group from 2005 to 2012, although the overall number of deaths showed reduction of 30%[1], emphasizing the need of prioritizing actions for this population.

Adolescence involves the period between 10 and 19 years of age, characterized by numerous biological, psychological, social, and behavioral transformations[3]. Adolescents make up a group particularly susceptible to sexually transmitted infections (STI), due to new experiences and experiments that often occur in this age group, early start of sexual activity, difficulty to distinguish self-care attitudes, such as condom use, and involvement with alcohol and other drugs[3]. Those ones who live in economic and social vulnerability situations are more exposed to the risk of being infected with STIs[2].

When the situation of adolescents is compared with other age groups, they are considered the most vulnerable to STIs[4]. They are also a heterogeneous group (with some being particularly vulnerable to HIV and other infections) composed of orphans, migrants and refugees, prisoners, girls who have sex with older men and with multiple or simultaneous sexual partners, the sexually abused and exploited, who live on the streets and are socially marginalized and discriminated[2].

This study was developed in the STD/Aids Reference Unit of the city of Juazeiro, Bahia State, by the Center of Epidemiology and Health of the Universidade Federal do Vale do São Francisco.

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We can also characterize a higher or a lesser adolescents' vulnerability according to sex, as it is observed that girls are at greater risk, due to biological, social and economic motives[5]. Unequal gender relations and non-recognition of women's rights, including the sexuality legitimacy, are some of the reasons that make girls especially vulnerable to STIs[4]. This heterogeneity of adolescents needs to be recognized, from infection modes, age, sex, sexual orientation up to their roles and responsibility for the family and community[2], since such differences may influence the ability to make decisions and to access health services.

In Brazil, skin color, sex, place of residence, having or not some type of disability can determine opportunities and access to the right to health[4]. Adolescents in the northeastern region of the country, more specifically in the northeastern semi-arid region, are in a situation of inequality when compared to other Brazilian regions, and, consequently, have their vulnerabilities amplified and their rights daily violated[4] and therefore they are more exposed to STIs.

Many adolescents living with some STI, especially HIV, are unaware of their status, and effective strategies are necessary to promote greater access to counseling and HIV testing, which are essential for early diagnosis, reduction of transmission and improvement of life quality[3]. The Testing and Counseling Centers (CTA) are among the services that provide assistance to STIs cases and are gateways to the application of prevention strategies. These services, in addition to prevention activities of HIV infection and other STIs, such as hepatitis B, C, and syphilis, also perform confidential and anonymous diagnostic tests, distribute supplies to prevent transmission, as male and female condoms, refer users with positive testing to services and offer monitoring after diagnosis, including counseling for HIV-positive and serodiscordant couples[6].

In general, adolescents have more access to information about STIs and self-care, which does not necessarily mean adopting protective attitudes.

OBJECTIVE

To investigate the vulnerability of STIs amongst adolescents of the CTA to STD / Acquired Immune Deficiency Syndrome (Aids) in the city of Juazeiro, state of Bahia, Brazil, in the period from 2006 to 2012.

METHODS

Observational cross-sectional analytical study of exploratory character based on secondary data from health services. The study was developed in the CTA Reference Unit for STD / Aids of Juazeiro, where also operates the Specialized Assistance Service (SAE) in STD / HIV / Aids.

The data were extracted from the Entry Forms of the CTA Information System (FE-SI-CTA), of the clinical records of the SAE and the Care Description Form in which the complementary sociodemographic data are registered. The study population consisted of adolescents enrolled in the aforementioned CTA, between 2006 and 2012, excluded blank forms and repeated forms (when the individual had more than one FE-SI-CTA registered, it was considered the most recent one, observed the date of the interview).

The sample calculation took as groundwork 40,245 adolescents (considering the population estimate of this age group of the city in 2012)[7], adopting the outcome prevalence of 50%, and the estimated error of 4% was defined as the sample size corresponded to 1,040 subjects. As the total of adolescents with valid forms slightly exceeded the sample size, all of them were included, totaling 1,173 participants.

The data collection took place in the service during the working period through the evaluation of the documents mentioned above, with direct typing in a specific database for research, since a digital information system is not available in the CTA of Juazeiro yet. Prior to the start of the data collection, the staff was trained for the standardization of procedures.

Sociodemographic variables were analyzed (sex, age, color, marital status, schooling, professional situation and clientele origin), as well as variables related to individual vulnerability (type of exposure, STD in the former year, steady partner, sexual preference, number of sexual partners in the previous year, condom use with steady and nonsteady partners, motive for not using a condom with a steady and nonsteady partner, age of the first sexual experience, condom use in the first sexual experience and serology results for HIV, hepatitis B, hepatitis C, and syphilis). The categories adopted for the variables were the same presented in the FE-SI-CTA and in the Care Description Form, except age group and age of first sexual experience, which were categorized based on the frequency observed in the sample.

The conclusive variable (STI) was categorized as "no" when the result of all serologies was negative, and "yes" for the positive result. For the analysis of the association, all observations that did not present the results of the test (ignored information) were excluded, and the adolescents who had more than one infection were computed only one time.

The data were typed in Microsoft Office Excel 2007, sent to Stata 9.0 software, and processed for quality control and analysis of coherence and consistency through the generation of frequency tables. Whenever failures were identified, the collection tools were consulted again. The statistical analysis was performed by the distribution of variables by sex, in absolute and relative values. Pearson's χ^2 test was used for association analysis, and it was adopted the confidence interval of 95% (significance level of 5%).

This study is part of the Epidemiological Survey on Testing and Counseling Center Reference Unit for STD / Aids of Juazeiro-BA, which was adopted by the Committee of Ethics in Human and Animal Studies of Universidade Federal do Vale do São Francisco (Univasf), following the recommendations of the current legislation. As secondary data, secrecy and confidentiality was assured by the responsible researcher.

RESULTS

The sociodemographic characteristics of participants according to sex are detailed in **Table 1**. Of the total of 1,173 adolescents investigated, 56.86% were women. The frequency of assistance increased with age, and the age group with the highest concentration of care was 19 years old, for both females and males. Sixteen-year-old girls sought more the service. However, from 17 years of age, this search was more observed among boys. The age group up to 12 years old distinguishes, as the percentage of girls attended

was more than twice of the boys. As for the civil state, about 20% of young people were married or living in a common-law status, a situation more frequent in females.

Although more than 2/3 of the adolescents had no record of skin color, among those who had, most of them were defined as brown.

Table 1 – Sociodemographic characteristics of adolescents attended at the Testing and Counseling Centers (CTA) in Juazeiro, Bahia, Brazil, from 2006 to 2012, according to sex (N=1,173).

Variables			Male		Female	
	n	%	n	%	n	%
	1,173	100	506	43.14	667	56.86
Age group (years old)						
≤12	33	2.81	8	1.58	25	3.75
13	50	4.26	16	3.16	34	5.10
14	69	5.88	20	3.95	49	7.35
15	123	10.49	51	10.08	72	10.79
16	156	13.30	60	11.86	96	14.39
17	194	16.54	85	16.80	109	16.34
18	250	21.32	115	22.73	135	20.24
19	298	25.40	151	29.84	147	22.04
Color						
Brown	268	22.85	110	21.74	158	23.69
Black	62	5.29	31	6.13	31	4.64
White	54	4.60	24	4.74	30	4.50
Not informed	789	67.26	341	67.39	448	67.17
Marital status						
Married/ Common-law	225	19.18	59	11.66	166	24.89
Single	941	80.22	444	87.75	497	74.51
Not informed	7	0.60	3	0.59	4	0.60
Education (years)						
None	7	0.60	1	0.20	6	0.90
1–3	69	5.88	30	5.93	39	5.85
4–7	420	35.81	172	33.99	248	37.18
8–11	525	44.76	227	44.86	298	44.68
12 or more	148	12.61	75	14.82	73	10.94
Not informed	4	0.34	1	0.20	3	0.45
Occupation						
Freelance	64	5.46	45	8.89	19	2.85
Unemployed	110	9.38	61	12.05	49	7.35
Employed	222	18.92	137	27.08	85	12.74
Student	619	52.77	246	48.62	373	55.92
Housework	148	12.62	12	2.37	136	20.39
Not informed	10	0.85	5	0.99	5	0.75
Clients origin						
Dissemination material	185	15.77	91	17.98	94	14.09
Friends/users	489	41.69	223	44.07	266	39.88
Newspaper/ radio/TV	9	0.77	4	0.79	5	0.75
Blood bank	4	0.34	3	0.60	1	0.15
Service/health professional	418	35.63	154	30.43	264	39.58
Call centers	29	2.47	14	2.77	15	2.25
Others	27	2.30	11	2.17	16	2.40
Not informed	12	1.03	6	1.19	6	0.90

The most prevalent schooling was 8 to 11 years of education, with similar percentage between the sexes, although, in general, women showed less years of education. The predominant occupation was student. The percentage of participants with formal employment was higher among boys and, housework among girls. In relation to the origin of the clientele, friends/users was predominant in both sexes, with higher percentage of males, followed by health service/ professional, with higher percentage of females, and dissemination material more frequent among males.

Table 2 presents the variables related to situations of vulnerability to STIs, according to sex. The kind of exposure most prevalent was sexual intercourse, with similar distribution between sexes,

Table 2 – Vulnerability situations according to sex of adolescents attended at Testing and Counseling Centers (CTA) of Juazeiro, Bahia, Brazil, from 2006 to 2012 (N=1,173).

Variables			Male		Female	
	n	%	n	%	n	%
	1,173	100	506	43.14	667	56.86
Type of exposure						
Sexual intercourse	938	79.97	409	80.83	529	79.31
Vertical transmission	27	2.30	5	0.99	22	3.30
No risk	30	2.56	14	2.77	16	2.40
Others	123	10.48	50	9.88	73	10.94
Not informed	55	4.69	28	5.53	27	4.05
STD in former year						
Yes	480	40.92	170	33.60	310	46.48
No	459	39.13	225	44.47	234	35.08
Not informed	234	19.95	111	21.93	123	18.44
Steady partner						
Yes	666	56.78	218	43.08	448	67.17
No	469	39.98	271	53.56	198	29.68
Not informed	38	3.24	17	3.36	21	3.15
Sexual preference						
Heterosexual	1,027	87.55	426	84.19	601	90.10
Homosexual	25	2.13	21	4.15	4	0.60
Bisexual	26	2.22	20	3.95	6	0.90
No sexual life	41	3.50	13	2.57	28	4.20
Not informed	54	4.6	26	5.14	28	4.20
Number of sexual partners in the previous year (partners)						
None	151	12.87	60	11.86	91	13.64
1	474	40.41	121	23.91	353	52.92
2–4	353	30.09	188	37.15	165	24.74
5–10	121	10.31	82	16.20	39	5.85
11–50	55	4.69	42	8.30	13	1.95
51–100	2	0.17	2	0.40	0	0.00
>100	3	0.26	2	0.40	1	0.15
Not informed	14	1.2	9	1.78	5	0.75
Use of condom with steady partner						
Always	207	17.65	94	18.58	113	16.94
Never	258	21.99	69	13.64	189	28.34
Sometimes	370	31.54	145	28.65	225	33.73
Does not apply	318	27.11	185	36.56	133	19.94
Not informed	20	1.71	13	2.57	7	1.05

Continue...

Table 2 – Continuation.

Variables			Male		Female	
	n	%	n	%	n	%
	1,173	**100**	**506**	**43.14**	**667**	**56.86**
Motive for not using condom with steady partner*						
Do not like	202	31.17	62	27.31	140	33.25
Partner not acceptance	55	8.49	10	4.41	45	10.69
No condom at the moment	98	15.12	55	24.23	43	10.21
Trust partner	168	25.93	62	27.31	106	25.18
Others	80	12.35	18	7.93	62	14.73
Not informed	45	6.94	20	8.81	25	5.94
Use of condom with nonsteady partner						
Always	193	16.45	132	26.09	61	9.15
Never	121	10.31	53	10.47	68	10.19
Sometimes	211	17.99	132	26.09	79	11.84
Does not apply	628	53.54	176	34.78	452	67.77
Not informed	20	1.71	13	2.57	7	1.05
Motive for not using condom with nonsteady partner**						
Does not like	91	25.85	47	23.74	44	28.57
Partner not acceptance	19	5.40	3	1.51	16	10.39
Not available at the moment	78	22.16	64	32.32	14	9.09
Trust partner	38	10.79	18	9.09	20	12.99
Others	70	19.89	37	18.69	33	21.43
Not informed	56	15.91	29	14.65	27	17.53
Age of first sexual intercourse (years old)						
≤12	96	8.18	54	10.67	42	6.30
13	124	10.57	60	11.86	64	9.59
14	169	14.41	71	14.03	98	14.69
15 y	163	13.90	70	13.83	93	13.94
>15	246	20.97	100	19.76	146	21.89
Does not know/ does not remember	11	0.94	7	1.38	4	0.60
Not applied	91	7.76	39	7.71	52	7.80
Not informed	273	23.27	105	20.76	168	25.19
Use of condom in the first sexual intercourse						
Yes	145	12.36	60	11.86	85	12.74
No	116	9.89	55	10.87	61	9.15
Does not remember	4	0.34	1	0.20	3	0.45
Not applied (did not start sexual life)	92	7.84	41	8.10	51	7.65
Not informed	816	69.57	349	68.97	467	70.01

STD: sexually transmitted diseases; *excluded participants who in the variable use of condom with steady partner reported using condom always and those who did not have a fixed partner (N=648); **excluded participants who in the variable use of condom with nonsteady partner reported using condom always and those who did not have a nonsteady partner (N = 352).

followed by vertical transmission, often about three times higher among women. The occurrence of STIs in the previous year was increased and more common in females. Most women had a regular partner, unlike men. Heterosexual preference was observed, but the proportion of homosexuals and bisexuals was approximately five times higher among men. Most women had only one partner in the previous year; among men, the majority had two to four partners. High percentage of adolescents mentioned more than four sexual partners in the former year (15.44%), and among men, this percentage was of 25.31% compared to women, who showed the percentage of 7.95%.

The consistent or routine use of condoms (uses always) with regular partner was low, with similar percentages in both sexes, but the proportion of women who never used it was the double of men (**Table 2**). The main reasons reported for not using condoms were as follows: "do not like it", with higher percentage among women; "trust partner", with similar percentage between the sexes; and "not available at the moment," with twice as often among men. It stands out that the percentage of women who declared "partner does not accept" as the reason for not using condoms was two times higher than that of men (**Table 2**).

Concerning the consistent use of condoms with no steady partner, only 26% of men and 9.15% of women adopted this behavior; the percentage of those who never used it was similar between sexes. The more reported reasons to not use condom were "do not like" among women and "not available at the moment," between men. The proportion of women who said "partner not acceptance" was seven times higher than that of men (**Table 2**).

Most adolescents reported having initiated the sexual life early, less than 15 years of age. It was observed the percentage reporting sexual initiation before 12 and 13 years old, respectively 8.18 and 10.57%; in both cases, the frequency was higher among men. The use of condom in first sexual experience was low, with prevalence of a slightly higher use among women, although almost 70% had no record of this information (**Table 2**).

The prevalence of STIs in this population was of 5.88% (**Table 3**). **Table 3** shows the frequency of each quarter (HIV, hepatitis B and C, and syphilis) according to sex. Syphilis registered the highest STI occurrence, and in women it was almost twice that of men; the HIV seropositivity was five times higher among women. Considering the results of the serology for hepatitis B and C, the prevalence of infection was low, but it stands out the percentage of young people who did not carry out the tests besides ignoring information.

Table 4 presents the results of analysis of the association between the outcome (STI) and the sociodemographic variables, showing statistically significant association with sex (almost twice the frequency among girls), education (more common among adolescents with lower education) and marital status (more common among married/common-law). The presence of STI did not show statistically significant association with age and skin color.

DISCUSSION

The female predominance in the study was similar to the observed by the CTA in the southern region of Brazil[8] and in the northeast region (Feira de Santana, BA, Brazil)[9], evidencing women's greater concern regarding health care and, consequently, the greater demand for services. However, this may also mean that women are more exposed to situations of risk of STIs and wish to know their serological status.

The prevalence of STIs in this group of adolescent was high, but it might be underestimated because many adolescents did not perform some of the serologies offered, especially hepatitis B and C, or had no record of the test results. Adolescents are more susceptible to STIs due to the inherent age characteristics and often deficiency in information and practical knowledge, therefore they need actions and specific health interventions[5]. Adolescence is one of the richest stages of human life, full of possibilities for learning, experimentation, and innovation that needs to be lived fully and healthy. Facing the inequalities and reducing the vulnerabilities of that group are urgent tasks and can be done through universal public policies and specific policies for different living conditions of adolescents[4], empowerment and individual and collective responsibility.

The STI frequency difference observed between sexes can be related to the fact that the consistent use of condoms has been lower among adolescents, especially with nonsteady partners, showing gender-related inequalities regarding sexuality, and also to the fact that women are more susceptible to contamination by biological[5] issues, and therefore more exposed and vulnerable. In addition, women are often shy to discuss issues about sexuality and STD/Aids, demonstrating greater ignorance about these themes when compared with men[10].

Table 3 – Results of serology for human immunodeficiency virus (HIV), hepatitis and syphilis, according to sex, of adolescents attended at the Testing and Counseling Centers (CTA) of Juazeiro, Bahia, Brazil, from 2006 to 2012 (N=1,173).

Variables			Male		Female*	
	n	%	n	%	n	%
	1,173	**100**	**506**	**43.14**	**667**	**56.86**
HIV serology testing						
Non-reagent	1,007	85.85	436	86.16	571	85.61
Reagent	16	1.36	2	0.40	14	2.10
Not carried out	10	0.85	2	0.40	8	1.20
Not informed	140	11.94	66	13.04	74	11.09
Hepatitis B serology						
Non-reagent	397	33.84	166	32.81	231	34.63
Reagent	9	0.77	3	0.59	6	0.90
Not carried out	200	17.05	85	16.80	115	17.24
Not informed	567	48.34	252	49.80	315	47.23
Hepatitis C serology						
Non-reagent	203	17.31	79	15.61	124	18.59
Reagent	3	0.25	1	0.20	2	0.30
Not carried out	339	28.90	146	28.85	193	28.93
Not informed	628	53.54	280	55.34	348	52.18
VDRL serology						
Non-reagent	939	80.05	409	80.83	530	79.46
Reagent	49	4.18	15	2.96	34	5.10
Not carried out	14	1.19	4	0.79	10	1.50
Not informed	171	14.58	78	15.42	93	13.94

VDRL: Venereal Disease Research Laboratory; *eight adolescents had two sexually transmitted infections (STIs) simultaneously (six had syphilis and HIV; two had syphilis e hepatitis B).

Syphilis was the most prevalent STI, with frequency almost twice higher in females, evidencing the risk of vertical transmission and occurrence of congenital syphilis. Syphilis is a disease that could be controlled with relative easiness, since there are effective means of diagnosis and treatment available. The vertical transmission is preventable through the early supply of serology for pregnant women during prenatal care and the appropriate treatment of the infected, including the treatment of the partners, which is indispensable to break the disease transmission chain[11]. There are frequent associations between the different STDs, with an important relationship between syphilis and the increased risk of contracting HIV, especially with the presence of genital ulcers[12].

The prevalence of HIV seropositivity was similar to that found in another CTA in Bahia, in young people aged 13 to 19 years old (1.26%)[9]. As well as syphilis, there were more cases of HIV infection in females, a situation also observed in other studies[8,9]. This result reveals the tendency to increase the incidence of HIV infection

Table 4 – Results of the analysis of association between sociodemographic variables and sexually transmitted infection (STI) in adolescents attended at the Testing and Counseling Centers (CTA) of Juazeiro, Bahia, Brazil, from 2006 to 2012 (N=1,173).

Variables	Yes		No		Total		p[b]
	n	%	n	%	n	%	
	69[a]	**5.88**	**1,104**	**94.12**	**1,173**	**100**	
Sex							
Male	20	3.95	486	96.05	506	100	0.014
Female	49	7.35	618	92.65	667	100	
Education[c4]							
None	1	14.29	6	85.71	7	100	
1–3	6	8.70	63	91.30	69	100	
4–7	35	8.33	385	91.67	420	100	0.031
8–11	21	4.00	504	96.00	525	100	
12 or more	6	4.05	142	95.95	148	100	
Age (years old)							
≤12	2	6.06	31	93.94	33	100	
13	1	2.00	49	98.00	50	100	
14	4	5.80	65	94.20	69	100	
15	8	6.50	115	93.50	123	100	0.966
16	9	5.77	147	94.23	156	100	
17	11	5.67	183	94.33	194	100	
18	14	5.60	236	94.40	250	100	
19	20	6.71	278	93.29	298	100	
Marital status[c7]							
Married/ Common-law	20	8.89	205	91.11	225	100	0.036
Single	49	5.21	892	94.79	941	100	
Color[c789]							
Brown	22	8.21	246	91.79	268	100	
Black	5	8.06	57	91.94	62	100	0.776
White	6	11.11	48	88.89	54	100	

[a]Adolescents with coinfections (8) were considered only one time (n=69); [b]level of statistical significance; [c]number of observations lost in variable.

among women, a process known as the feminization of Aids, which has been occurring in practically all countries[5].

According to data from the Ministry of Health, the gender ratio (which expresses the number of cases in men divided by the number of cases in women) in 1989 was of six cases in men per one case in women (6:1) and in 2011 it grew to 1.7:1. However, since 1998, in the age group from 13 to 19 years old, the number of Aids cases was higher among women, an inversion observed only in this age group[13]. In 2013, the ratio of sexes in the age group from 13 to 19 years old was 1.3:1, but, as age increases, the sex ratio decreases, with greater participation of men among the youngest and of women among the oldest[14]. These oscillating tendencies show that, although young people know about STD/Aids and their forms of prevention, HIV infection grows[14].

Regarding the prevalence of hepatitis B and C, it should be taken into account the large proportion of adolescents who did not perform tests or who did not have the result registered, representing loss of information, and, above all, a missed opportunity for the infection prevention, diagnosis and treatment. Expanding the testing and diagnosis of viral hepatitis is extremely important and one of the priorities of the Ministry of Health, because it means more notification and, consequently, more reliable information on the number of existing cases, enabling appropriate interventions planning[15].

In 2010, the northeast region showed the lowest rate of detection of hepatitis B in the country, 2.5 cases per 100,000 inhabitants, which can be the result of both the low diagnoses index and the high underreporting of cases diagnosed in this region. According to the distribution by age group in the same year, it was observed that the rate of detection of hepatitis B cases was higher in females between 15 and 29 years old, higher in boys under 10, and similar between genders in the age group from 10 to 14 years old[15], but in general the rate of detection of hepatitis B was higher in adolescents. With regard to hepatitis C, in 2010, the northeast region also showed lower detection rate than the national, 1.2 cases per 100,000 inhabitants, while the national average for this year was 5.4. In adolescents, the detection rate was similar between sexes[15].

As for the color, there was higher percentage of brown people, which is similar to the findings of a study conducted at the CTA of Feira de Santana, which found more than 70% of brown[9], diverging from the study in a CTA in the south region, which found higher percentage of white users[7,8]. These divergences reflect the existing miscegenation in the different regions[16]. In the present study, the color of more than 2/3 of the adolescents was not registered. The fact that this variable is not investigated in the FE-SI-CTA, as it is recorded only in the entry description form, can contribute to the loss of information. The variables related to race/color indirectly bring important information related to the historical process of social organization, which may indicate situations of iniquities[17], and, therefore, it is essential to register them in health services. Comparing the proportional distribution of Aids cases according to race/color between men and women in Brazil from 2004 to 2013, it is observed that there is no statistically significant difference in proportions by sex, except among those of black color, in which the proportion of infected women is higher than in men[14].

In the analysis of the association between STI and education, less years of study means more prevalence of STIs. Higher schooling represents greater degree of education and empowerment, which favors the adoption of safer[18] sexual practices, as it influences the discernment and decision-making skills. Among the adolescents investigated, there was higher percentage of women in the categories "none" and "4 to 7 years" compared to men, and, in general, men's schooling was higher. This may also be an explanation for the higher percentage of women with STIs, since the knowledge and the ability to process information is an important factor for the infection's prevention.

When the marital status is concerned, despite the predominance of single individuals attended in the service, the percentage of STIs among the married/common-law status was higher than among the single ones, and this variable was statistically associated with the outcome. Considering that the proportion of married women was twice the men's, this could also be a factor that would explain the higher percentage of STIs among them, since married women/common-law trust their partners and tend not to use condom or use it in an inconstant[9] way. Similar behavior can be observed in steady relationships, even if they do not configure a conjugal relationship, highlighting that most of these women declared to have a stable partnership (steady partner) and does not use condoms or use them irregularly. The literature revealed that the use of hormonal contraceptives is one factor to be associated with the inconsistent use of condoms with stable partners, suggesting that adolescents use less condoms when they have access to other means of contraception[19].

Regarding the origin of the clientele, sharing information with group of friends and the contact with health professionals proved to be important to encourage the investigation of serological status. On the other hand, it is observed that the dissemination of information in the media had a very small scope and it seems not to achieve the goal of stimulating the adolescent to self-care. This result may be an alert so that the strategy of information disclosure be revised and appropriate, seeking more effective alternatives.

The most frequent exposure type was sexual intercourse, followed by vertical transmission, similar results to those found in a CAT in the southern region[8]. According to the epidemiological bulletin of HIV/Aids among children under 13 years of age, almost all cases had the vertical transmission as the way of HIV infection; among individuals with 13 years old or over, the main route of transmission is sexual, both among men and women[14]. This reflects the nonuse or the inconsistent use of condoms during sexual intercourse, as observed in adolescents who participated in this study, confirmed by the high prevalence of STDs in the year prior to filling out the form, mainly among women. The male condom is the most effective available technology to reduce the sexual transmission of HIV and other sexual[5] transmission. The female condom is a new technology, but very efficient, which can serve as a means to control the difficulties that women have in negotiating the condom use with their sexual partners, although the use is still restricted.

Heterosexual preference predominated in this population, but homosexual and bisexual frequency was approximately five times greater among men, reaching 8%. There is an increased tendency in the proportion of Aids cases in men who have sex with men in the last ten years, from 34.6% in 2004 to 43.2% in 2013, also observed in the age group 13–19 years old[14]. On the other hand, the

proportion of cases among heterosexual men in the same age group shows decrease during that period.

The regular use of condoms with steady partner, in both sexes, was low, reflecting the vulnerability of these adolescents to STI. The most common reasons for not using condom with regular partner, both for girls and boys, were "do not like it", and "trust partner", similar to that observed in a study conducted in the city of Goiânia, GO, Brazil[19]. According to the authors, the trusting partner is probably related to the bond and emotional involvement at the time of the sexual intercourse, added to the fear of jeopardizing the relationship by creating doubts about the fidelity of the partner[19].

The fact of disliking the use of condoms can reflect misinformation or prejudice about the preservative, associating it with the loss of naturalness in the relationship and the discomfort caused by its use. It was noted that the percentage of women who claimed that reason was higher than that of men's. Among the adolescents, the fact that the partner does not accept condoms also had major proportion showing the predominance of male wish, so that the woman still has a little active role on that decision. Among boys, the third alleged motive was "not available at the moment", showing that condom use is not a routine behavior yet.

Likewise, the consistent use of condoms with nonsteady partner was very low in both sexes. The reasons for not using a condom with nonsteady partner reported by adolescents resemble the reasons "do not use with steady partners", "do not like it", "trust partner". Assigning trust to a nonsteady partner shows that female adolescents adopt similar postures with steady partners, revealing an emotional significance to a sporadic relationship. Among female adolescents the motive "partner not acceptance" reinforces the gender behavior, and among boys the unavailability of the condom at the time of sexual intercourse.

Most adolescents revealed the first intercourse at the age of 15 or under, similar to that found in the city of Goiânia[19]. The early start of sexual intercourse (under 15 years of age) is a risk factor to STIs, especially for girls, since many start their sexual intercourse with older men and become more exposed[3,5]. The high percentage of adolescents who reported first sexual experience at the age of 13 or under can also be related to sexual abuse and prostitution situations, since the number of partners in the previous year was high.

The condom use at first sex experience was low, considered the large number of lost data in that category. The precocity of sexual initiation also contributes to the nonuse. This reinforces the importance of the family, the school and the health services in guiding these adolescents to practice safe sex from the beginning of their sexual activities, contributing to the reproduction of this behavior throughout life[20].

It must be considered that this study presents some limitations related to the use of secondary data, such as the reliability of the records and the loss of information. The homogeneity of the group of participants from a CTA can also be seen as a limitation of the study, as it hinders the identification of statistically significant differences.

CONCLUSION

The results identified the high prevalence of STIs, with predominance of syphilis, inconsistent use of condoms, early start of sexual life, greater vulnerability among girls — those with lower levels of education and those involved in stable relationships. The adoption of safer sexual practices, with the correct and systematic use of male and female condoms, as well as the later start of sexual life and the reduction in the number of partners, coupled with actions to rescue the identity, self-esteem and empowerment of adolescents, in particular girls, is an important measure to prevent or reduce the transmission of STIs among young people.

The CTA has a strategic role in the protection of this group, and should be articulated with the health network and schools, bringing information and establishing bonds that favor access to counseling, testing and early diagnosis.

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Conflict of interests

The authors declare no conflict of interests.

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