

Sexual behavior among Brazilian adolescents, National Adolescent School-based Health Survey (PeNSE 2012)

Comportamento sexual em adolescentes brasileiros, Pesquisa Nacional de Saúde do Escolar (PeNSE 2012)

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ABSTRACT: *Objective:* This study describes the sexual behavior among students who participated in the National Adolescent School-based Health Survey (PeNSE) 2012 and investigates whether social inequalities, the use of psychoactive substances and the dissemination of information on sexual and reproductive health in school are associated with differences in behavior. *Methodology:* The response variable was the sexual behavior described in three categories (never had sexual intercourse, had protected sexual intercourse, had unprotected sexual intercourse). The explanatory variables were grouped into socio-demographic characteristics, substance use and information on sexual and reproductive health in school. Variables associated with the conduct and unprotected sex were identified through multinomial logistic regression, using “never had sexual intercourse” as a reference. *Results:* Over nearly a quarter of the adolescents have had sexual intercourse in life, being more frequent among boys. About 25% did not use a condom in the last intercourse. Low maternal education and work increased the chance of risky sexual behavior. Any chance of protected and unprotected sex increased with the number of psychoactive substances used. Among those who don't receive guidance on the prevention of pregnancy in school, the chance to have sexual intercourse increased, with the largest magnitude for unprotected sex (OR = 1.41 and OR = 1.87). *Conclusion:* The information on preventing pregnancy and STD/AIDS need to be disseminated before the 9th grade. Social inequalities negatively affect risky sexual behavior. Substance use is strongly associated with unprotected sex. Information on the prevention of pregnancy and STD/AIDS need to be disseminated early.

Keywords: Adolescents. Survey. Sexual behavior. Schools. Condoms. sexual intercourse.

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RESUMO: *Objetivo:* Este estudo descreve o comportamento sexual entre estudantes que participaram da Pesquisa Nacional sobre a Saúde do Escolar (PeNSE) 2012 e investiga se as desigualdades sociais, o uso de substâncias psicoativas e a presença de informações sobre a saúde sexual e reprodutiva na escola estão associados a diferenças nesse comportamento. *Metodologia:* A variável resposta foi o comportamento sexual descrito em três categorias (nunca teve relação sexual, teve relação sexual com preservativo, teve relação sexual sem preservativo). As variáveis explicativas foram agrupadas em características sociodemográficas, uso de substâncias psicoativas e informações sobre saúde sexual e reprodutiva na escola. As variáveis associadas a realizar sexo com e sem uso de preservativo foram identificadas por meio de regressão logística multinomial, tendo como referência “não teve relação sexual”. *Resultados:* Mais de um quarto dos adolescentes já tiveram relação sexual na vida, sendo mais frequente entre os meninos. Cerca de 25% não fizeram uso de preservativo na última relação sexual. Baixa escolaridade materna e trabalhar aumentaram a chance de comportamento sexual de risco. Tanto a chance de sexo protegido quanto de desprotegido aumentou com o número de substâncias psicoativas utilizadas, sendo maior chance para relação sexual sem preservativo. Entre os que não recebem orientação sobre prevenção de gravidez na escola, a chance ter relação sexual aumentou, sendo a magnitude maior para sexo desprotegido (OR = 1,41 versus 1,87). *Conclusão:* As informações sobre prevenção de gravidez e DST/AIDS necessitam ser disseminadas antes da 9ª série. As desigualdades sociais afetam negativamente o comportamento sexual de risco. O uso de substâncias psicoativas está fortemente associado ao sexo desprotegido.

Palavras-chave: Adolescentes. Inquérito. Comportamento sexual. Escolas. Preservativos. Relação sexual.

INTRODUCTION

In almost all countries, sexual activity begins in late adolescence, usually between 15 and 19 years of age¹⁻⁴. For girls, the average age of first intercourse is lower in regions of the world where early marriage is the norm, such as in Asia (central, west and east) and Africa; and high in Latin America and some countries in the Middle East and Southeast Asia. For boys, the age of the first sexual intercourse is usually not associated with age of marriage. Gender differences for age at first intercourse are more pronounced in less industrialized countries^{4,5}.

In Brazil, the proportion of adolescents who have had sexual intercourse before age 15 has increased among boys, but not among girls, in the last four decades⁵. Data from the National Adolescent School-based Health Survey (PeNSE) in 2009, in the Brazilian capitals, showed that among adolescents aged 14 who have already had sexual intercourse, about more than a third (35.4%) had their first sexual intercourse when 12 years old or less, 42.3% among boys and 19.7% among girls⁶.

Studies in Brazil^{7,8} and in the world^{4,5,9} show that early sexual intercourse is associated with unprotected sex and more partners over a lifetime. Unprotected sex is one of the factors which contribute the most to the increasing number of disability-adjusted life years (DALY)

in adolescents and young adults¹⁰. The non-use or inappropriate use of condoms can lead to infections by sexually transmitted diseases (STDs) and pregnancy^{4,5,9,11}.

The high prevalence of STDs among Brazilian adolescents, such as chlamydia and HPV, is worrying¹². It is observed among youth a recent upward trend in the prevalence of HIV infection. In the period from 2002 to 2006, in Brazil, there was a decrease in the incidence rate of AIDS among young people (15 – 24 years of age) from 10.3 to 7.8/100,000 inhabitants/year. But since 2007, the incidence in young rose up to 10.9/100,000 inhabitants/year in 2011¹³.

Another factor that can be avoided by using condoms is unwanted pregnancies, which besides compromising sexual and emotional development, is associated with the dropping out of school^{14,15} and worst jobs opportunities¹⁶. On the National Survey on Demography and Health, in 2006, 16.2% of adolescents of 15 – 19 years of age were already mothers and 13.5% had two or more children¹⁷. Moreover, teenage mothers are at greater risk of serious pregnancy complications. In a study in Latin America with girls who became pregnant before the age of 16, the chance of dying from complications in pregnancy or during labor was three to four times higher than women over 20 years of age¹⁸.

Sexual risk behavior in adolescents is strongly associated with other risk behaviors such as alcohol use, smoking, and illicit drugs^{19,20}. A cohort study in the United States¹⁵ and in Scotland²¹ found a strong association between early psychoactive substance use, early sexual initiation and unprotected sex among adolescents. Furthermore, Cavazos-Reigh et al.²² found that the use of psychoactive substances contributed to a greater chance of pregnancy/unwanted parenting in adolescents.

The vast majority of teenagers spend most of their time in school, where social contact and peer groups are established and maintained. Scientific evidence²³⁻²⁵ shows that a good school involvement positively affects health behaviors. Schools contribute to adolescent health indirectly, through its organization, curriculum development and pedagogical practice, and directly, through health-related educational programs²⁶. Thus, scientific studies show that sex education in schools is important in order to pass information to teens about preventing new HIV infections, STDs and unwanted pregnancy²⁶.

Assuming that the use of psychoactive substances and having no information about sexual and reproductive health in school are associated with adolescents having intercourse with and without the use of condoms, with the greatest magnitude for unprotected sex, the present study aims at describing the sexual behavior of adolescents in Brazilian schools and at verifying behavioral and contextual factors associated with school.

METHODS

In 2012, 110,109 students enrolled in the 9th year of the elementary school, in day shifts, in public and private schools in Brazil, participated in the second edition of the PeNSE. Out of this total, 2,641 were excluded from this study because they did not answer the

question about the use of condom during their last intercourse. Of the 107,468 students studied, 52.5% were female, 23% were 13 years old or younger, 45.6% were 14 years old and 31.4% aged 15 or older.

The sample was designed to represent Brazil, major geographical regions and capitals. For the sampling plan, 27 geographic strata corresponding to all state capitals and the Federal District were set. The sample of each geographic stratum was allocated in proportion to the number of schools according to their administrative dependence (private and public). For each of these strata, a sample of clusters was selected in two stages, the first stage being schools, and the second stage, the selected eligible classes in the selected schools (9th year of elementary school).

The other municipalities were grouped within each of the five major geographical regions, creating five geographic strata. In the stratum formed by non-capital cities, it was decided to group them according to the homogeneity and neighborhood criteria, having groups yielding from 300 to 600 classes in 9th grade, and a sample of these groups in each region. For those non-capital cities, the primary sampling units were groups of municipalities, secondary sampling units were schools, and classrooms of these schools were the tertiary sampling units. In both cases, all students in the selected classes, present on the day of data collection, formed the sample of students and were invited to participate in the research²⁷.

Schools with fewer than 15 students in the desired range were excluded from the record because, although they represented about 10% of schools, they would sum out to less than 1% of total students. The night shift classes were also excluded from the record, because these students were generally older and could have different risk compared to other students in the 9th grade.

To collect data, we used a self-administered structured questionnaire. Students responded to it on a smartphone. The participation in the study was voluntary, with the possibility of non-response. It was not collected any information that could identify the student and school data are confidential and are not contained in the database. The research project was approved by the National Ethics in Research Committee – CONEP, No. 11,537.

VARIABLES

In this study, the following variables were used to describe the sexual behavior among students:

- Reporting of sexual intercourse at least once in life, by asking “Have you ever had sexual intercourse (sex)?”;
- Age of first sexual intercourse, by asking: “How old were you when you had sexual intercourse (sex) for the first time?”;
- Number of lifetime sexual partners, by asking: “In life, how many people have you already had sexual intercourse (sex) with people?”;

- The dependent variable, sexual behavior, was assessed by the question “In the last time you had sexual intercourse (sex), did you or your partner use a condom?” and categorized as: never had sexual intercourse, had protected sexual intercourse and had unprotected sexual intercourse.

The explanatory variables were grouped into three areas:

1. Socio-demographic characteristics of the students:
 - Gender (male, female);
 - Age in years (≤ 13 , 14, 15, ≥ 16);
 - Color/ethnicity (caucasian, black, brown, yellow, indigenous).
2. Behavioral Risk Factors:
 - Regular use of alcohol, obtained by reported consuming of at least one drink of alcoholic beverage in the last thirty days (no, yes);
 - Current smoking, obtained by reported smoking of cigarettes at least one day in the last thirty days (no, yes);
 - Experimentation of drugs such as marijuana, cocaine, crack, glue, *loló*, *lança perfume*, ecstasy or another, any time in their lifetime (no, yes). The combined use of psychoactive substances was conducted by the sum of the three indicators (regular use of alcohol, smoking and drug experimentation), and coded 0 (did not used substances), 1 (used one substance), 2 (used two substances) and 3 (used three substances).
3. School factors:
 - Legal nature of the school (public, private);
 - Information about AIDS and other STDs, whose question was: “In school, have you ever received guidance on AIDS or other sexually transmitted diseases?” (yes, no);
 - Information about preventing pregnancy, through the question: “In school, have you ever received guidance on preventing pregnancy?” (yes, no).

DATA ANALYSIS

The descriptive analysis of the sexual behavior was conducted according to the independent variables. The associations between the independent variables and sexual behavior were measured by the Pearson χ^2 test, with significance level of 0.05.

A multinomial logistic regression was used in order to identify the individual and contextual variables associated with sexual behavior, taking “never had sexual intercourse” as reference category for the analysis.” Initially, a multinomial univariate analysis was performed within each domain. The variables associated to the level of $p < 0.20$ were selected for the multivariate model in each domain. A model was constructed for each domain and then a final model including all those variables statistically associated to the response variable for each domain. The domains have

been included in a sequence: first, individual characteristics, followed by behavioral ones, and finally, by school factors. The magnitude of the associations was determined by the Odds ratio (OR), with a 95% confidence interval (95%CI). The analysis were performed using the Stata software (version 11) software, using the survey command, which considers the estimated proportional weights in order to correct the different probabilities of selection of students in each stratum and the effect of the sample's design.

RESULTS

The PeNSE results show that 28.7% (95%CI 26.4 – 31.2) of the students have had sexual intercourse at least once in life, and this percentage is 40.1% (95%CI 37.6 – 42.6) for boys and 18.3% (95%CI 15.3 – 21.8) for girls. This proportion increased with age, presented as 13.7% (95%CI 12.1 – 15.5) among students under 13 years of age, 22.9% (95%CI 21.2 – 24.7) among students of 14 years of age and 48.1% (95%CI 41.7 – 54.5) among those aged 15 years old or older. Regarding the administrative responsibility of schools, 30.9% (95%CI 27.7 – 34.3) of public school students and 18% (95%CI 17.1 – 19.5) of private schools said they had had sexual intercourse. The North Region had the highest percentage (38.2%, 95%CI 37.1 – 39.3) of students who reported sexual intercourse, followed by the Midwest (32.1%; 95%CI 29.1 – 35.3), Southeast (29.1%; 95%CI 28.3 – 30.0), South (27.3%; 95%CI 26.4 – 28.3) and Northeast (24.9%; 95%CI 22.9 – 27.1) regions.

Among teens who have already had sexual intercourse, 75.3% (95%CI 74.5 – 76.1) used a condom at their last intercourse. Out of this total, 77.1% (95%CI 76.2 – 78.0) are boys and 71.8% (95%CI 70.5 – 73.1), girls. Regarding the schools' managerial dependency, there was no significant difference: 75.0% (95%CI 70.2 – 79.8) of students of private schools and 75.4% (95%CI 74.7 – 76.1) from public ones reported not having used a condom. Only for the data from the Brazilian capitals in 2012, 30.8% (95%CI 29.6 – 32.1) had sexual intercourse, 40.9% (95%CI 39.2 – 42.6) among boys and 21.1 % (95%CI 20.0 – 22.2) among girls, in addition to the highest percentage in public schools (34.8%; 95%CI 33.5 – 36.1) than in private ones (19.2%; 95%CI 17.6 – 20.7).

The frequency of students who reported having ever had sexual intercourse is higher in males, who also showed a higher prevalence of sex without the use of condom at their last intercourse (7.9% among boys and 4.8% among girls). With the increasing of age, the frequency of sexual intercourse with and without condoms also increases. The prevalence of sexual intercourse is lower among students with mothers with higher education (college degree), and only 3.8% of these students reported sex without a condom. Unprotected sex is lower among students who reported themselves as caucasians (4.9%), and highest among those who are currently working (10.2%). Among the regions, the Northern Region had the highest prevalence of students who had sexual intercourse with and without protection (Table 1).

Table 1. Sexual behavior of Brazilian adolescent 9th grade students according to sociodemographic characteristics (PeNSE, 2012).

	Sexual intercourse		
	No % (95%CI)	Yes	
		With condom* % (95%CI)	Without condom* % (95%CI)
Sociodemographic factors			
Gender			
Male	60.4 (57.9 – 63.0)	31.7 (29.7 – 33.9)	7.9 (7.3 – 8.4)
Female	81.8 (78.4 – 84.7)	13.4 (11.2 – 16.0)	4.8 (4.0 – 5.8)
Age			
≤ 12 years old	90.4 (89.3 – 91.4)	7.8 (6.6 – 9.2)	1.8 (1.1 – 3.0)
13 years old	86.8 (84.9 – 88.5)	10.1 (8.6 – 11.8)	3.1 (2.7 – 3.5)
14 years old	77.5 (75.8 – 79.1)	17.5 (16.2 – 18.9)	5.0 (4.5 – 5.5)
15 years old	57.9 (52.0 – 63.5)	33.2 (28.6 – 38.2)	8.9 (7.9 – 10.0)
≥ 16 years old	43.4 (35.9 – 51.1)	43.9 (37.9 – 50.3)	12.8 (11.2 – 14.7)
Race/Color			
Caucasian	74.5 (73.3 – 75.7)	20.3 (19.2 – 21.4)	5.2 (5.0 – 5.5)
Black	64.2 (61.8 – 66.5)	27.4 (25.4 – 29.5)	8.4 (7.9 – 9.1)
Brown	72.5 (69.4 – 75.4)	21.3 (18.8 – 24.0)	6.3 (5.5 – 7.1)
Yellow	71.8 (67.9 – 75.4)	21.9 (19.2 – 24.9)	6.3 (5.4 – 7.3)
Indigenous	66.4 (64.0 – 68.7)	25.3 (23.1 – 27.5)	8.4 (7.6 – 9.2)
Maternal school education			
Complete college degree	78.6 (75.6 – 81.2)	17.8 (15.9 – 19.7)	3.8 (2.8 – 4.9)
Incomplete college degree	73 (71.2 – 74.8)	21.2 (19.5 – 23.1)	5.8 (5.2 – 6.2)
Incomplete high school	69.8 (67.6 – 71.9)	23.5 (21.9 – 25.1)	6.8 (6.0 – 7.5)
Did not study /incomplete primary school	68.6 (63.5 – 73.3)	24.2 (20.5 – 28.4)	7.2 (6.3 – 8.3)
Does not know how to inform it	73.7 (71.1 – 75.9)	20.5 (18.4 – 22.6)	6.0 (5.4 – 6.6)
Currently working			
No	74.6 (72.3 – 76.8)	19.7 (18.0 – 21.6)	5.6 (5.2 – 6.2)
Yes	51.7 (48.6 – 54.8)	38.0 (35.6 – 40.5)	10.2 (9.5 – 11.1)
Region			
Southeast	71.4 (70.7 – 72.1)	22.3 (21.7 – 22.9)	6.3 (6.0 – 6.5)
North	62.1 (61.0 – 63.1)	30.1 (28.9 – 31.4)	7.8 (7.3 – 8.2)
Northeast	75.2 (73.2 – 77.1)	19.1 (18.1 – 20.2)	5.7 (4.9 – 6.7)
South	73.0 (72.1 – 73.9)	21.0 (20.2 – 21.8)	6.0 (5.9 – 6.1)
Midwest	68.5 (65.2 – 71.5)	24.8 (22.0 – 27.9)	6.7 (6.5 – 6.9)

All variables presented p-value < 0.001 through the Person χ^2 test.

* last sexual intercourse

The sexual behavior of students in 9th grade and the use of psychoactive substances is described in Table 2. Among students who have already had sexual intercourse in life, had protected sex: 38.9% (95%CI 36.4 – 41.5) out of those who used alcohol, 48.9% (95%CI 47.2 – 50.6) of those who smoke and 45.6% (95%CI 43.1 – 48.0) of those who experienced psychoactive substances; and, did not use condom use at their last sexual intercourse: 11.2% (95%CI 10.5 – 12.0) of teens who used alcohol, 21.3% (95%CI 19.9 – 22.7) of those who smoke and 19% (95%CI 17.8 – 20.1) of those who experienced psychoactive substances (Table 2).

Table 2. Sexual behavior of Brazilian adolescent 9th grade students according to use of psychoactive substances and characteristics of the school environment (PeNSE, 2012).

	Sexual intercourse		
	No	Yes	
		With condom*	Without condom*
	% (95%CI)	% (95%CI)	% (95%CI)
Use of psychoactive substances			
Current use of alcohol			
No	79.3 (77.2 – 81.2)	16.2 (14.7 – 17.9)	4.5 (4.1 – 5.0)
Yes	49.9 (46.8 – 53.0)	38.9 (36.4 – 41.5)	11.2 (10.5 – 12.0)
Currently smoking			
No	73.8 (71.7 – 75.9)	20.7 (19.0 – 22.5)	5.4 (5.1 – 5.9)
Yes	29.8 (28.0 – 31.6)	48.9 (47.2 – 50.6)	21.3 (19.9 – 22.7)
Current use of illegal substances			
No	74.3 (72.2 – 76.4)	20.4 (18.7 – 22.2)	5.3 (4.9 – 5.7)
Yes	35.5 (33.0 – 38.1)	45.6 (43.1 – 48.0)	18.9 (17.8 – 20.1)
School context characteristics			
School managerial domain			
Public	69.5 (66.2 – 72.5)	23.8 (21.4 – 26.4)	6.7 (6.1 – 7.4)
Private	82.1 (80.9 – 83.3)	13.9 (12.9 – 14.9)	4.0 (3.5 – 4.5)
Information on the orientation about the prevention of pregnancy, AIDS or other STD			
Yes	71.6 (69.1 – 73.9)	22.2 (20.3 – 24.2)	6.2 (5.8 – 6.7)
No	58.5 (55.8 – 61.1)	31.6 (29.8 – 33.4)	10.0 (8.9 – 11.0)
Information, in school, about how to get condoms for free			
Yes	61.2 (58.3 – 64.0)	28.4 (26.2 – 30.7)	10.3 (9.6 – 11.0)
No	72.7 (70.4 – 74.8)	21.7 (19.9 – 23.6)	5.6 (5.3 – 6.1)

Public schools had a higher frequency of students who had already had sex with and without condoms (23.8%; 95%CI 21.4 – 26.4 and 6.7%; 95%CI 6.1 – 7.4, respectively) than of private school students (13.9%; 95%CI 12.9 – 14.9 and 4.0%; 95%CI 3.5 – 4.5, respectively). The ones who did not use condom at their last intercourse are 10% (95%CI 8.9 – 11.0) of the students who had not received information about preventing AIDS or other STDs in school (Table 3).

MULTIVARIATE ANALYSIS

Among sociodemographic characteristics, the chance of having sex with and without condoms increases with age. Observing gender, boys are more likely to have had protected (OR = 3.54) and unprotected (OR = 2.53) sex, but the 95%CI of these ORs overlap one another. In addition, students who considered themselves black, indigenous and yellow were more

Table 3. Factors associated with the sexual behavior of Brazilian adolescent 9th grade students, measured by multiple multinomial regression.

	Sexual intercourse with condom*	Sexual intercourse without condom*
	OR (95%CI)	OR (95%CI)
Sociodemographic factors		
Gender		
Female	1	1
Male	3.54 (2.84 – 4.40) [†]	2.53 (2.05 – 3.12) [†]
Age		
13 years old	1	1
14 years old	1.72 (1.55 – 1.91) [†]	1.60 (1.40 – 1.82) [†]
≥15 years old	4.60 (4.22 – 5.02) [†]	4.10 (3.60 – 4.70) [†]
Race/Color		
Caucasian	1	1
Black	1.18 (1.03 – 1.36)	1.46 (1.40 – 1.51) [†]
Brown	0.99 (0.93 – 1.18)	1.11 (0.97 – 1.26)
Yellow	1.08 (0.98 – 1.19)	1.17 (1.08 – 1.29) [†]
Indigenous	1.27 (1.18 – 1.37) [†]	1.60 (1.41 – 1.81) [†]

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Table 3. Continuation.

	Sexual intercourse with condom*	Sexual intercourse without condom*
	OR (95%CI)	OR (95%CI)
Maternal school education		
Complete college degree	1	1
Incomplete college degree	1.26 (1.12 – 1.42) †	1.63 (1.11 – 2.39) ‡
Incomplete high school	1.35 (1.10 – 1.65) ‡	1.93 (1.23 – 3.01) †
Did not study /incomplete primary school	1.34 (1.1 – 1.81) §	1.92 (1.20 – 3.07) ‡
Does not know how to inform it	1.18 (0.93 – 1.52)	1.67 (1.14 – 2.46) ‡
Region		
Southeast	1	1
North	1.54 (1.40 – 1.70) †	1.42 (1.26 – 1.60) †
Northeast	0.76 (0.69 – 0.83) †	0.85 (0.72 – 1.00)
South	0.86 (0.81 – 0.90) †	0.88 (0.84 – 0.92) †
Midwest	1.02 (0.88 – 1.18)	0.97 (0.87 – 1.07)
Currently working		
No	1	1
Yes	1.72 (1.64 – 1.80) †	1.60 (1.43 – 1.80) †
Combined use of psychoactive substances		
0 (did not use)	1	1
1	3.34 (3.18 – 3.51) †	3.05 (2.83 – 3.28) †
2	8.06 (7.54 – 8.61) †	10.65 (9.38 – 12.1) †
3	18.16 (16.15 – 20.4) †	32.65 (28.4 – 37.5) †
School factors		
School managerial domain		
Private	1	1
Public	1.72 (1.49 – 2.00) †	1.69 (1.44 – 1.99) †
Information on the orientation about the prevention of pregnancy, AIDS or other STD		
Yes	1	1
No	1.41 (1.35 – 1.47) †	1.87 (1.78 – 1.95) †

Never had sexual intercourse was used as a reference in the analysis; OR: *odds ratio*; *at the last sexual intercourse; †p < 0.001; ‡p < 0.01; §p < 0.05.

likely to have unprotected sex than those who consider themselves to be caucasian. The students whose mothers have lower school education and are currently working have a greater chance of sexual intercourse, regardless of condom use. In relation to the Southeast region, the Northern region had a greater chance of sexual intercourse with (OR = 1.54) and without condom use (OR = 1.42), and in the South they were less likely to have sexual intercourse with (OR = 0.86) and without a condom (OR = 0.88), with no significant difference between the magnitudes of association with protected and unprotected sex.

The combined use of psychoactive substances increased the chance of sexual intercourse with and without condoms, with greater magnitude for the latter. Among students who used psychoactive substances combined, the chance of unprotected sexual intercourse was higher, being (OR = 10.65) for two substances (OR = 32.65) for the use of three substances.

As for school factors, public school students were more likely to have sexual intercourse with and without condom use (OR = 1.72 and 1.69, respectively). Among students who did not receive information about sexual and reproductive health in school, the chance of sexual intercourse was higher, with greater magnitude for unprotected sex (OR = 1.41 and 1.87).

DISCUSSION

The results show that more than a quarter of students have already had sexual intercourse, with a higher percentage among boys. One out of five sexually active teens reported not having used a condom, a very troubling behavior due to its associated risk.

Our findings confirm that the presence of psychoactive substance abuse and not having information about sexual and reproductive health in school are associated with teens having sex, with greater magnitude for unprotected sex.

Nearly a third of students in the 9th grade have already had sexual intercourse at least once in life, with regional differences. In recent decades, in Latin America, there was a significant increase in the proportion of young people who had early sexual intercourse⁵. However, comparing the data of PeNSE 2009 and 2012 from the Brazilian capitals, the percentage of students who have already had sex has remained stable at around 30%²⁷.

Among teens who have already had sex, one out of four did not use condoms and are at risk of STD/AIDS and/or pregnancy/early parenting. A longitudinal study showed that the condom use at the first sexual intercourse is associated with subsequent use⁹.

The percentage of exposure to unprotected sex we found in this study is close to that observed in the investigation by the World Health Organization (23%)¹, but much lower than in the United States (39.8%)². However, there are differences between the age groups of these studies. In the PeNSE, most students are between 13 and 15 years of age, mean of 14 years of age. In the WHO survey, the majority is 15 years of age, and the investigation in the United States includes broader age range. As the

average age of PeNSE is lower, and the prevalence of sexual intercourse increases with age²⁸, it is not possible to say that the prevalence of unprotected sex among Brazilian adolescents is lower or greater than that seen in those investigations. Sexual initiation of boys was more precocious than girls'. The social pressure for sexual initiation among boys as a proof of their masculinity is an important gender differential. A study in three Brazilian capitals showed that girls tend to initiate sex in their relationships with greater stability and a little later. Have the boys start earlier and in eventual relationships²⁹. The associations of sex without protection with low maternal school education, studying at a public school, working and the races/skin colors black, indigenous and yellow indicate social inequality in the exposure to this risk behavior among adolescents in the country . In a population study on sexual, contraceptive and reproductive behavior of 2,991 women from 15 to 20 years in the National Demographic and Health Research of Children and Women, in 2006 , the poorest and least educated adolescents had more unprotected behavior, i.e., lowest percentage of contraceptive use at the first intercourse and at current use when compared to youngsters in better social conditions¹⁴. In Brazil, teenage pregnancy is related to lower family income, school dropout in primary education for both gender and higher possibility to perform abortions^{14,29,30}. Moreover, early integration at work may induce maturity and the adoption of adult roles prematurely, besides reinforcing unhealthy behaviors and even stimulating the formation of a new family³¹.

The sexual risk behavior of adolescents was strongly associated with psychoactive substance use, with a dose-response gradient. In adolescence, some behaviors are mutually reinforced in dynamic feedback relationships, such as the association of sexual behavior with the use of psychoactive substances. The use of these substances may affect judgment, decision and planning and, together with the inexperience of the teenager, may negatively influence the use of condom³². Jackson et al.²¹, in an analysis of two cohort studies in Scotland, found a strong association between the use of psychoactive substance before 15 years of age and early sexual initiation. In the study National Longitudinal Study of Adolescent Health, conducted among adolescents in the United States, it was found that those who reported use of illegal substance at baseline were more likely to intercourse, and the reverse situation was also observed¹⁵. So, it is extremely important that sex education and easier access to condoms for all adolescents should be combined with educational approaches to sexual prevention and the prevention of alcohol, tobacco and other drugs' use.

Not receiving information about sexual and reproductive health education increased the odds of having sexual intercourse, with greater magnitude for unprotected sex. Evidence shows that an increased student involvement with the school and the presence of programs on sexual and reproductive health is associated with later sexual initiation and unprotected sex^{25,33,34}. Most young Brazilian who became pregnant before the age of 20 did so for lack or failure of contraception¹⁴. A study in 27 Latin American countries found that, in most countries, the school curriculum lacks information on sex education,

including the prevention of HIV and other STDs. It was observed that only three countries (Argentina, Brazil and Costa Rica) have specific legislation on sex education in school. There is a connection between students and health services with access to free condoms just in Argentina, Brazil and Mexico³⁵.

Despite being a high percentage of students who received sexual health education in schools, we found that there was no such coverage expansion in the Brazilian capitals between 2009 and 2012. The discussion about the inclusion of the theme of sexuality in the curriculum of Brazilian schools has intensified since the 1970s, as it is considered important in the overall development of the individual. With different approaches and emphasis, there are records of discussions and work in schools since the 1920s. Starting in the mid 1980s, the demand for work in the area of sexuality in schools has increased, due to the concern of educators with the great growth of unwanted pregnancy among adolescents and with the risk of HIV infection among young people. In Brazil, only 63% of Brazilian schools already work with the theme of STDs and AIDS and there is distribution of free condoms, especially for young people. The public school is the second largest place of access to condoms after the health service. Brazilians between 15 and 24 years of age are the ones who use condoms the most condoms when compared to other age groups and the ones who get condoms for free more often³⁶.

Among the limitations of this study, it is emphasized that the PeNSE did not collect information on the relationship of adolescents with their peers, which has a strong influence on risk behaviors. The question of condom use at their last sexual intercourse is and can be a memory bias, but there is no reason for such bias to be differential. Finally, due to the cross-sectional characteristic of this study, we cannot infer the temporal nature of most of the observed associations.

CONCLUSION

The PeNSE 2012 comes with the innovation of a national sample, which is important to know the profile of the sexual and reproductive health of students. About one out of three students have already had sexual intercourse, which reinforces the need to initiate sexual and reproductive health education before 9th grade, for adolescents to better prepare for this initiation, with greater autonomy and use of contraceptive methods.

Social inequalities are important markers for sexual risk behavior. The psychoactive substance use is strongly associated with early sexual intercourse and especially to unprotected sex, being important to approach these factors combined. The school environment is a support for the students and has important implications for the welfare and promotion of sexual and reproductive health of those. Receiving information on sexual and reproductive health in school is an important tool to prevent pregnancy/unwanted parenting and STDs and among adolescents.

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