

Alcohol consumption among Brazilian Adolescents according to the National Adolescent School-based Health Survey (PeNSE 2012)

Consumo de álcool entre adolescentes brasileiros segundo a Pesquisa Nacional de Saúde Escolar (PeNSE 2012)

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ABSTRACT: *Objective:* To describe the prevalence of alcohol consumption among Brazilian students and identify the sociodemographic factors associated alcohol consumption in the last 30 days. *Methods:* Cross-sectional study with a cluster sample of 109,104 9th grade students in Brazilian public and private schools in 2012. The prevalence and 95% confidence intervals of the indicators of alcohol consumption were analyzed. *Results:* Of the students analyzed, 50.3% (95%CI 49.0 – 51.6) experimented one dose of alcoholic beverages or more. The consumption of alcohol in the last 30 days was 26.1% (95%CI 24.5 – 27.7), and there was no difference in prevalence between students from public and private schools. Drunkenness episodes were reported by 21.8% (95%CI 21.1 – 22.5) of the students. The perception of students about the negative reaction of their family if they came home drunk occurred in 89.7% (95%CI 89.6 – 89.9) of cases, and 10% (95%CI 8.9 – 11.1) of them reported having problems with their families or friends because they had been drinking. Among adolescents aged less than 14 years old, the first alcoholic drink intake was predominantly at 12 to 13 years old. The most common way to get a drink was at parties, with friends, buying in them in supermarkets, stores or bars and at home. The consumption of alcohol in the last 30 days was less frequent among boys, increasing with age. *Conclusion:* The study demonstrates the extension of alcohol as a problem, making it important to advance in measures such as the improvement of protective legislation for children and adolescents and stricter enforcement in alcohol sales.

Keywords: Adolescence. School health. Alcoholic beverages. Surveys. Drunkenness. Family.

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RESUMO: *Objetivo:* Descrever a prevalência do consumo de álcool entre escolares brasileiros e verificar os fatores sociodemográficos associados ao consumo nos últimos 30 dias. *Metodologia:* Estudo transversal com amostra de conglomerados de 109.104 estudantes do 9º ano do ensino fundamental de escolas públicas e privadas do Brasil em 2012. Foram analisadas as prevalências e intervalos de confiança de 95% de indicadores do consumo de álcool. *Resultados:* Experimentaram uma dose ou mais de bebidas 50,3% (IC95% 49,0 – 51,6) dos escolares. O consumo de bebida alcoólica nos últimos 30 dias foi de 26,1% (IC95% 24,5 – 27,7), e alunos de escola privada e pública não diferiram nas prevalências. Episódios de embriaguez foram relatados por 21,8% (IC95% 21,1 – 22,5) dos alunos. A percepção dos escolares sobre a reação negativa de sua família caso eles chegassem em casa bêbados ocorreu em 89,7% (95%CI 89,6 – 89,9) dos casos; 10% (IC95% 8,9 – 11,1) dos estudantes relataram ter tido problemas com suas famílias ou amigos devido a bebida. Entre adolescentes com idade igual ou superior a 14 anos, a primeira dose de bebida alcoólica ocorreu de forma mais frequente entre 12 a 13 anos. As formas mais comuns de obter bebidas foram em festas, junto aos amigos, comprando no mercado, bar ou supermercado e em casa. O consumo de bebida alcoólica nos últimos 30 dias foi menos frequente entre meninos, aumentando com a idade. *Conclusão:* O estudo demonstra a extensão do problema do álcool, tornando-se importante avançar em ações como o aperfeiçoamento das medidas legislativas protetoras e maior rigor na fiscalização das vendas de bebidas para adolescentes.

Palavras-chave: Adolescência. Saúde escolar. Bebidas alcoólicas. Inquéritos. Embriaguez. Família.

INTRODUCTION

The act of trying alcoholic beverages usually occurs in adolescence, and this period is characterized by intense psychosocial and biological changes¹. Even though it is forbidden to sell alcoholic beverages to people aged less than 18 years old, alcohol consumption by teenagers is still a common practice². Studies have shown that the use of alcohol in adolescence is associated with sociocultural and environmental factors, use of psychoactive substances by family members and friends, besides conflicts with parents and negative feelings, such as sadness and loneliness³.

The damage resulting from the consumption of alcohol among adolescents is different from that observed in adult individuals, due to the psychosocial specificities in this cycle of life, or to specific neurological matters that exist due to brain maturation⁴. Besides, the use of alcohol among adolescents is usually more episodic, being consumed abusively or heavily, which leads to potential risks, including of overdose or alcoholic intoxication, and this may affect the development and cause consequences to adulthood^{4,5}.

Alcohol causes many effects on the central nervous system of adolescents. Brain immaturity in that phase brings great vulnerability, associated with genetic predisposition⁴. The use of alcohol and other drugs can affect its maturation. As a consequence, adolescents who are

addicted to alcohol and drugs may present with reduced hippocampal volume and skills, such as memory and learning⁴. Neurophysiological studies have shown that the frontal lobe is essential for functions such as responses for inhibition, emotional regulation, planning and organization, and its development and maturation continue during adolescence and in young adults. The lateral lobe is associated with language and hearing, and these functions are widely mature in adolescence. With regard to occipital, parietal and temporal lobes, they present small changes in these phases of life and are less affected⁴.

For collective health, it is very important to verify the frequency of early alcohol consumption, once it is not only associated with damages to health, but it can also be related to the use of other substances, risky sexual behavior and involvement with episodes of violence and accidents. Besides, the abusive use can lead to dependency, and it is one of the main risk factors for chronic diseases in the future. It is calculated that the use of alcohol can cause 2.5 million deaths every year, and a considerable proportion of them corresponds to young people; therefore, it is the third among the main risk factors for premature death and impairment in the population^{6,7} and the sixth among young people aged between 10 and 24 years old⁸.

Both editions of the National Adolescent School-based Health Survey (PeNSE), in 2009 and in 2012, monitored the health of adolescents. Among the researched indicators, the use of alcohol was included due to its strategic importance in the health of adolescents. This study aims at describing the prevalence of alcohol consumption among Brazilian 9th grade students in 2012 and to verify the sociodemographic factors associated with consumption in the past 30 days.

METHODS

PeNSE 2012 is a cross-sectional study conducted by the Ministry of Health, together with the Brazilian Institute of Geography and Statistics (IBGE), with 9th grade students of public and private schools. The sample of PeNSE 2012 was representative of Brazil, the five regions (South, Southeast, North, Northeast, Center-West) and the 26 Brazilian state capitals and the Federal District; 3,004 schools and 4,288 classrooms were analyzed⁹. The sample (n = 109,104) was composed of male (47.8%) and female students (52.2%); 86% of the students were aged between 13 and 15 years old, 82.8% studied in public schools and 16.2% attended private schools⁹.

The study was approved in the Ethics Research Council of the Ministry of Health, report n. 192/2012, referring to registration n. 16805 of CONEP/MS on 27/03/2012.

SAMPLING PLAN

For the sampling plan, at first 27 geographic strata were defined, corresponding to all of the State capitals and the Federal District. In each of these strata, schools, which were

the primary sampling units, were selected and, afterwards, the eligible classrooms of these schools were selected, which were the secondary sampling units⁹.

The five regions were represented by the capitals and by the cities that are not capitals. The cities that are not capitals were grouped according to homogeneity and neighboring criteria. In this case, cluster sampling was conducted and selected in three stages: primary sampling units were groups of cities; secondary sampling units were schools; and classrooms in these schools were the tertiary sampling units⁹. The sample of each geographic stratum was allocated proportionally to the number of schools, according to their administrative dependency (private or public)⁹.

All of the students in the selected classrooms who were present on the day of data collection formed the sample of students and were invited to participate in the study. The 9th grade was chosen because the students in this grade, mostly aged between 13 and 15 years old, have already acquired the necessary skills to answer the self-applicable questionnaire, since they are prone to being exposed to several risk factors and because it enables the relative comparability with systems from other countries¹⁰.

The self-applicable structured questionnaire was inserted in the smartphone and has about 140 questions. The questionnaire includes subjects such as diet, physical activity, alcohol, tobacco and drug use, among others. Further methodological information can be obtained in the technical report of PeNSE 2012⁹.

The collected information was inserted in a data base and was analyzed with the statistical package SPSS (PASW Statistics 18)¹¹.

VARIABLES

The studied variables refer to the following situations related to alcohol consumption:

- Trying alcohol (“At any point in life, have you tried alcohol?”), with the orientation to exclude “taste some wine for religious purposes”,
- Trying one dose of alcohol (“Have you ever had a dose of alcohol? One dose refers to a can of beer, or one glass of wine, or one dose of cachaça or scotch etc.”);
- Alcohol consumption in the past 30 days or current/regular consumption (“In the past 30 days, how many days did you have at least one glass or one dose of alcohol?”), with the codification “No” and “Yes” (1 or more days);
- Drunkenness in life (“In your life, how many times have you consumed so much alcohol to become completely drunk?”);
- Problems with family or friends due to alcohol consumption (“In your life, how often did you have problems with family or friends, missed classes or fought because of drinking?”);
- Perception of family members if the adolescent got home drunk (“Which would be your family’s reaction if you came home drunk?”).

The number of glasses/doses of alcohol consumed in the past 30 days was verified by the question “In the past 30 days, on days when you had any drink, how many glasses or doses did you have a day?”. The age of trying alcohol was obtained by the question “How old were you when you drank your first alcoholic beverage? One dose refers to a can of beer, or a glass of wine, or one dose of cachaça or scotch etc.” For this single indicator, only students aged 14 years old or more were selected ($n = 86,661$), so all of the students would have the opportunity of passing by the age of higher frequency of alcohol experimentation. This option existed because, if all of the students in the sample had been considered, it would have been possible to observe higher frequencies of initiation at younger ages due to the cut off effect.

STATISTICAL ANALYSIS

At first, for the variables tasting beverages, trying one dose of alcohol, alcohol consumption in the past 30 days, drunkenness, family’s reaction and having problems with family, prevalence and its respective 95% confidence intervals (95%CI) were estimated for Brazil, by sex, administrative dependency of the school and regions.

For the variable trying alcohol, prevalence and 95%CI were estimated according to age of first alcohol drink and sex. Prevalence and respective 95%CI were also estimated for the number of glasses/doses consumed in the past 30 days and place where the drink was obtained according to sex.

For the univariate and multivariate model, the dependent variable use of alcohol in the past 30 days (current use) was analyzed. The odds ratio (OR) of the model, their respective 95%CI and p values were estimated. In the univariate model, the alcohol consumption in the past 30 days was analyzed by the logistic regression, with one sociodemographic variable at a time. In the multivariate model, all of the sociodemographic variables participated in the model at the same time.

RESULTS

Indicators related to alcohol consumption show that 66.6% of the students (95%CI 64.0 – 69.2) tried alcohol, regardless of amount; the ones who tried/drunk one dose of alcohol are 50.3% (95%CI 49.0 – 51.6), and prevalence was higher among girls (51.7%; 95%CI 50.8 – 52.6) than among boys (48.7%; 95%CI 46.6 – 50.8), and among students attending public schools (50.9%; 95%CI 49.6 – 52.2) (Table 1).

Besides, there are differences between regions, and the highest prevalence of students who reported having tasted drinks was in the South region (56.8%; 95%CI 54.3 – 59.3), and the lowest in the Northeast (47.3%; 95%CI 46.0 – 48.6) (Table 2).

Alcohol consumption in the past 30 days was of 26.1% (95%CI 24.5 – 27.7) in Brazil, being 25.2% (95%CI 23 – 27.5) for males and 26.9% (95%CI 25.7 – 28.0) for females. The episodes of drunkenness in life were reported by 21.8% (95%CI 21.1 – 22.5) of students being more frequent among boys (22.8%; 95%CI 22.0 – 23.7) than girls (20.9%; 95%CI 20.1 – 21.6), and more common in public (22.5%; 95%CI 21.7 – 23.2) than private schools (18.6%; 95%CI 17.8 – 19.3) (Table 1). Among regions, there is a 17.3% variation (95%CI 16.5 – 18.0) in the Northeast region to 27.4% (95%CI (25.4 – 29.5) in the South region (Tables 1 and 2). With regard to the perception of students about their families' perception in case they got home drunk, 89.7% (95%CI 89.6 – 89.9) of the students stated their parents would care very much, mostly for girls (90.6%; 95%CI 90.3 – 90.9) than for boys (88.7%; 95%CI 88.4 – 89.0) (Table 1).

Table 1. Prevalence and respective 95% confidence intervals of situations related to alcohol consumption, according to gender and administrative dependence of the school. National Adolescent School-based Health Survey (PeNSE). Brazil, 2012.

Situations related to alcohol consumption	Total		Gender				Administration of school			
			Male		Female		Private		Public	
	%	95%CI	%	95%CI	%	95%CI	%	95%CI	%	95%CI
Tasting beverages	66.6	64.0 – 69.2	64.8	61.4 – 68.1	68.3	66.2 – 70.4	71.3	67.3 – 75.3	65.6	63.1 – 68.2
Trying one dose of alcohol	50.3	49.0 – 51.6	48.7	46.6 – 50.8	51.7	50.8 – 52.6	47.4	46.0 – 48.9	50.9	49.6 – 52.2
Drinking in the past 30 days	26.1	24.5 – 27.7	25.2	23.0 – 27.5	26.9	25.7 – 28.0	23.0	21.3 – 24.6	26.7	25.2 – 28.3
Drunkenness	21.8	21.1 – 22.5	22.8	22.0 – 23.7	20.9	20.1 – 21.6	18.6	17.8 – 19.3	22.5	21.7 – 23.2
Would the Family mind	89.7	89.6 – 89.9	88.7	88.4 – 89.0	90.6	90.3 – 90.9	91.6	90.7 – 92.5	89.3	89.0 – 89.6
Having problems with family	10.0	8.9 – 11.1	9.5	9.0 – 10.0	10.4	8.7 – 12.2	8.4	7.8 – 9.1	10.3	9.1 – 11.6

Table 2. Prevalence and respective 95% confidence intervals of experimenting alcoholic beverages in life, alcohol consumption in the past 30 days and having problems with the use of alcohol. National Adolescent School-based Health Survey (PeNSE). Brazil and regions, 2012.

	Regions									
	North		Northeast		Southeast		South		Center-West	
	%	95%CI	%	95%CI	%	95%CI	%	95%CI	%	95%CI
Tasting beverages	58.5	56.7 – 60.4	59.6	59.3 – 59.8	68.1	62.2 – 74.0	76.9	75.4 – 78.3	69.8	68.5 – 71.2
Trying one dose of alcohol	47.4	44.4 – 50.4	47.3	46.0 – 48.6	49.6	46.9 – 52.3	56.8	54.3 – 59.3	54.5	53.3 – 55.7
Drinking in the past 30 days	21.2	19.1 – 23.4	22.9	21.0 – 24.8	26.1	22.9 – 29.3	33.3	29.0 – 37.5	28.1	25.1 – 31.1
Drunkenness	18.9	16.5 – 21.2	17.3	16.5 – 18.0	22.3	21.1 – 23.6	27.4	25.4 – 29.5	25.9	25.0 – 26.8
Would the Family mind	90.3	89.8 – 90.7	91.8	91.7 – 91.9	89.0	88.7 – 89.3	89.0	88.8 – 89.2	87.9	86.9 – 88.8
Having problems with family	9.1	8.1 – 10.0	8.4	7.0 – 9.9	10.6	8.2 – 12.9	10.8	10.6 – 10.9	11.5	11.1 – 11.8

Among the regions, the lowest frequency occurred in the Center-West (87.9%; 95%CI 86.9 – 88.8), and the highest frequency occurred in the Northeast region (91.8%; 95%CI 91.7 – 91.9) (Table 2). With regard to alcohol consumption, 10.0% (95%CI 8.9 – 11.1) of students reported having had problems with their families or friends, missing school or getting involved in fights because of drinking, without differences between boys and girls. Problems with alcohol consumption among students ranged from 11.5% (95%CI 11.1 – 11.8) in the Center-West region to 8.4% (95%CI 7.0 – 9.9) in the Northeast region (Table 2).

Among adolescents aged 14 years old or more, the first dose of alcoholic beverage occurred mostly at the age of 12 or 13 years old, being higher among girls (42.0%; 95%CI 39.1 – 44.4) than among boys (36.6%; 95%CI 35.0 – 38.3), followed by the occurrence at the age of 14 or 15 years old, being 34.5% (95%CI 32.2 – 36.8) and 34.2% (95%CI 30.1 – 38.3) among boys and girls, respectively. The age of 9 years old or less was the age of initiation in 9.7% (95%CI 8.8 – 10.7) of the boys and 8.1% (95%CI 6.7 – 9.3) of the girls (Figure 1).

More than half of the students (55.5%) drank one dose or less, and 16.0% drank five doses and more on the 30 days prior to the study; abusive consumption, that is, five doses and more, is prevalent among boys (18%; 95%CI 14.6 – 21.9) and among girls (14.3%; 95%CI 11.7 – 17.3). Girls tend to drink less than one dose (31.4%. 95%CI 29.3 – 33.6), while the same variable had a 26.6% prevalence (95%CI; 24.7 – 28.6) among boys (Figure 2).

Among students who consumed alcohol in the past 30 days, the most common way of obtaining beverages was in parties, especially among girls (44.4%, and 33.9% among boys); with friends (23% for girls and 20.4% for boys); or buying in the market, store, bar or supermarket (21.9% for boys and 10.5% for girls); in the fourth position, 11.2% of the boys and 8.8% of the girls consumed alcohol in their own houses (Figure 3).

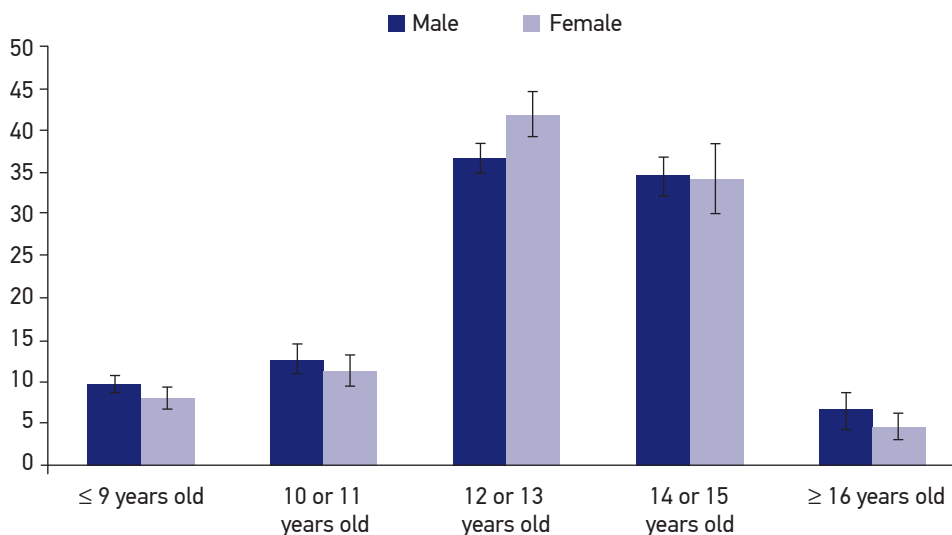


Figure 1. Prevalence and respective 95% confidence intervals of age of experimenting alcohol among Brazilian 9th grade students aged 14 years old or more, according to gender. Brazil, 2012.

Alcohol consumption among students increases with age, and it ranges according to race/color, being 26.2% among white people, 27.7% among black people, 25.3% among mulattos, 26.9% among yellow and 27.7% among indigenous people. From private and public students, this indicator was 23.0% and 26.7%, respectively. The crude and adjusted OR was calculated by all of the sociodemographic variables of the model, therefore, the study points to lower chances of alcohol consumption among boys (OR = 0.84); increasing consumption with age, being OR = 1.34 at the age of 14, OR = 2.13 at the age of 15, and OR = 2.63 at the age of 16. Students attending private and public schools showed no differences when adjusted by the other variables (Table 3).

DISCUSSION

Results confirmed the magnitude of alcohol use among adolescents, which constitutes one of the main risk factors for the occurrence of accidents and violence, in Brazil and in the world^{1,6}.

The age of drinking for the first time occurred more frequently among 12 to 13 years old. A similar initiation age (12.5 years old) was described in a study conducted in 2004,

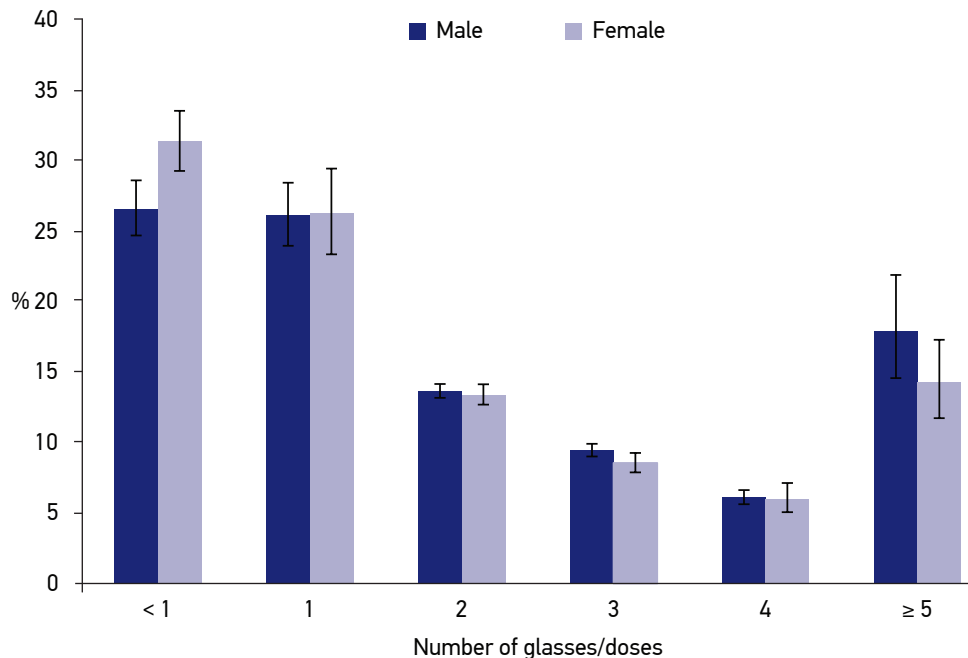


Figure 2. Prevalence and respective 95% confidence intervals of alcoholic beverage consumption according to the number of glasses/doses consumed within the last 30 days and gender. National Adolescent School-based Health Survey (PeNSE). Brazil, 2012.

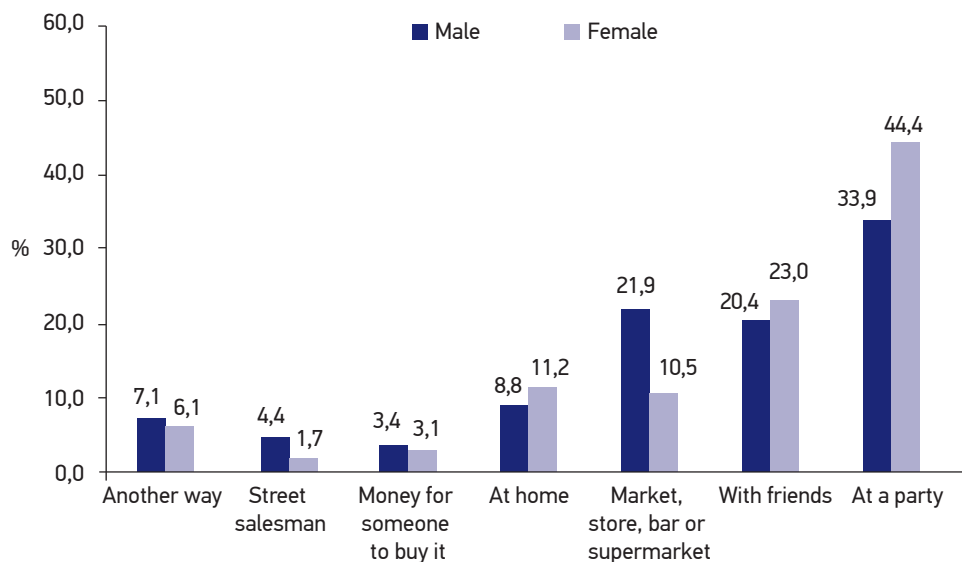


Figure 3. Prevalence of alcohol consumption within the last 30 days according to place where alcoholic beverages were obtained among Brazilian 9th grade students who reported alcohol consumption in the past 30 days, by gender. National Adolescent School-based Health Survey (PeNSE). Brazil, 2012.

Table 3. Prevalence, crude and adjusted odds ratio (OR) and respective 95% confidence intervals of alcohol consumption within the last 30 days, according to sociodemographic characteristics. National Adolescent School-based Health Survey (PeNSE). Brazil, 2012.

Variables	Use of alcohol in the past 30 days				
	Prevalence % (95%CI)	Crude OR (95%CI)	p-value	Adjusted OR (95%CI)	p-value
Gender			0.043		0.002
Male	25.2 (23.0 – 27.6)	0.92 (0.85 – 1.00)		0.84 (0.76 – 0.94)	
Female	26.9 (25.7 – 28.0)	1.00		1.00	
Age (years)					
< 13	11.4 (7.3 – 17.3)	0.55 (0.39 – 0.78)	< 0.001	0.55 (0.39 – 0.78)	< 0.001
13	19.0 (16.7 – 21.5)	1.00		1.00	
14	23.8 (20.9 – 27.0)	1.33 (1.28 – 1.38)		1.34 (1.30 – 1.39)	
15	32.8 (29.6 – 36.2)	2.08 (1.98 – 2.20)		2.13 (2.00 – 2.27)	
16 and more	37.4 (35.6 – 39.3)	2.56 (2.30 – 2.84)		2.63 (2.29 – 3.02)	
Color or race					
White	26.2 (24.6 – 28.0)	1.00	< 0.001	1.00	< 0.001
Black	27.7 (24.9 – 30.7)	1.08 (0.99 – 1.17)		0.96 (0.88 – 1.05)	
Mulatto	25.3 (23.9 – 26.6)	0.95 (0.91 – 0.99)		0.87 (0.82 – 0.92)	
Yellow	26.9 (22.8 – 31.4)	1.03 (0.89 – 1.19)		0.96 (0.84 – 1.11)	
Indigenous	27.7 (25.7 – 29.8)	1.08 (0.96 – 1.21)		0.99 (0.86 – 1.12)	
School					
Public	26.7 (25.2 – 28.3)	1.22 (1.12 – 1.34)	< 0.001	1.08 (0.93 – 1.26)	0.310
Private	23.0 (21.4 – 24.7)	1.00		1.00	

Adjusted according to sex, age, race, and school (public and private).

with students from elementary and high school of the public schools in the 27 Brazilian state capitals¹².

Trying alcohol is an important control indicator, since it enables to verify if the adolescent has early contact with the drink. In 2012, two indicators were investigated: the first one asks if the person has tasted drinks, which was also used in 2009, and the second one, which asks if the person has tried one dose of drink.

Frequencies were different, which showed that alcoholic beverages is more unspecific and can contain attitudes, such as tasting in little sips¹. Therefore, in accordance with international literature, trying alcoholic beverages should be considered by the more specific question, formulated here as drinking one dose¹. The variable trying one dose of alcohol reached half the students, and girls did it more frequently. In the United States the national study Youth Risk Behavior Surveillance (YRBS) revealed that trying one dose of alcohol at least once at any point in life has presented decreasing tendency throughout the years. In 1997, it corresponded to 81.6%, and it fell to 70.8% among adolescents in 2012¹³. Prevalence in the United States is higher than in Brazil, even though it is not possible to compare them entirely, since the American study included students at older ages (14 to 17 years old). In Spain, the frequencies of trying alcohol among 13 to 14 year-old students were of 35.5% among boys and 27.3% among girls, with increasing tendency among older students (from 15 to 16 years old), for 67.6% among boys and 71.9% among girls¹⁴.

Alcohol consumption in the past 30 days was of 26%, and its increasing use was observed with age. Besides, the facility with which the interviewed teenagers had access to alcohol at parties, bars, stores and in their own houses calls the attention. The great exposure of adolescences to alcohol is partly explained by the fact that alcohol is socially accepted and stimulated in Brazil and most countries in the world⁶. Among older adolescents (14 to 17 years old) in the United States, the current use of alcohol was observed in 44.7% of the interviewees¹³. In the case of Brazil, beer commercials are free, since this beverage is not included as an alcoholic beverage under the current legislation, with the explanation of having "low alcohol content". Therefore, children and adolescents are continuously exposed to marketing, and this fact can contribute with the very high prevalence in this age group^{15,16}. Brazil has made important progress in the policy to regulate tobacco, which contributed with the reduced prevalence¹⁷, especially among teenagers. In order to obtain the same results with the reduction of alcohol use in vulnerable and young populations, it is important to move forward in the regulation debate, especially concerning the prohibition of the beer commercial, once this type of advertisement stimulates alcohol consumption among children and teenagers¹⁶.

In PeNSE, girls present higher prevalence of alcohol consumption, which is not consensual in literature. The Health Behavior in School Aged Children (HBSC), conducted by World Health Organization (WHO), found a 17% prevalence in the female sex and 25% in the male sex, which occurred in most of the 40 analyzed countries¹⁰. In a cross-sectional study

conducted in Pelotas¹⁸, the authors found similar results: 24.2% for women and 21.7% for men, which can be understood as something associated with adolescence and faster maturity among girls. However, with the years, boys tend to overcome this type of consumption and, in general, young male teenagers tend to drink more¹⁹. However, these behaviors should be monitored, since they can constitute new tendencies of gender identity²⁰.

With regard to the habit of getting drunk and the more frequent intake of alcoholic doses in a single occasion were mostly reported by boys in PeNSE, and numbers were higher than those in other studies. HBSC showed that 11% of the students (9% of girls and 13% of boys) had drunk excessively, or gotten drunk, at least twice. A study in several countries conducted by the WHO also showed that episodes of drunkenness before the age of 13 were more frequent among boys¹⁰. The excessive alcohol consumption increases the risk of involvement in episodes of accidents and violence¹⁰, unprotected sex²¹, among others. In PeNSE, about 10% of the students referred problems with family, school and friends, and that was also described in other studies¹⁵.

A positive factor was the high proportion of adolescents about 90% who reported that parents would be upset in case they got home drunk. Studies indicate the importance of family for the protection of adolescents, and the fact that parents are worried about their children's attitudes discourages risk behaviors²¹⁻²³. Other studies^{21,24,25} show that children whose parents pay more attention to their activities present less involvement with alcohol, drugs and tobacco.

The analysis shows that the variation of prevalence concerning use in the past 30 days between categories of color/race is little expressive. The adjusted statistical test showed that students who identified themselves as mulattos present with a little less expressive use. Besides, no differences were observed between the public and the private school after the adjustment by other sociodemographic factors.

FINAL CONSIDERATIONS

Data from PeNSE show the magnitude of alcohol consumption among adolescent students. It showed the early exposure to alcohol, the extension of the problems and the risks to which they are exposed. Besides, it reveals how easy it is for teenagers to have access to alcohol at parties, bars, stores and in their own houses. It is important to improve protective legislation and to establish more rigid control concerning the sale of beverages to adolescents.

REFERENCES

- World Health Organization. Social determinants of health and well-being among young people. Health Behaviour in School-aged Children (HBSC) study: international report from the 2009/2010 survey. Copenhagen: WHO; 2012 (Health Policy for Children and Adolescents, No. 6).
- Gomes BM, Alves JG, Nascimento LC. Consumo de álcool entre estudantes de escolas públicas da Região Metropolitana do Recife, Pernambuco, Brasil. *Cad Saúde Pública* 2010; 26(4): 706-12.
- Barbosa FV, Campos W, Lopes AS. Prevalence of alcohol and tobacco use among Brazilian adolescents: a systematic review. *Rev Saúde Pública* 2012; 46(5): 901-17.
- Pechansky F, Szobot CM, Scivoletto S. Uso de álcool entre adolescentes: conceitos, características epidemiológicas e fatores etiopatogênicos. *Rev Bras Psiquiatr* 2004; 26 (1): 14-7.
- Malta DC, Mascarenhas MDM, Porto DL, Duarte EA, Sardinha LM, Barreto SM, et al. Prevalência do consumo de álcool e drogas entre adolescentes: análise dos dados da Pesquisa Nacional de Saúde Escolar. *Rev Bras Epidemiol* 2011; 14(1): 136-46.
- World Health Organization. International guide for monitoring alcohol consumption and related harm. Geneva: WHO; 2002.
- World Health Organization. Global health risks: mortality and burden of disease attributable to selected major risks. Geneva: WHO; 2009.
- Gore FM, Bloem PJ, Patton GC, Ferguson J, Joseph V, Coffey C, et al. Global burden of disease in young people aged 10-24 years: a systematic analysis. *Lancet* 2011; 377(9783): 2093-102.
- Brasil. Instituto Brasileiro de Geografia e Estatística. Pesquisa Nacional de Saúde do Escolar (PeNSE) - 2012. Rio de Janeiro: IBGE; 2013.
- World Health Organization. Inequalities in young people's health: Health Behavior in School-aged Children. International Report from 2005-2006. Geneva: WHO; 2008. (Health Policy for Children and Adolescents, No. 5)
- SPSS Inc. PASW Statistics for Windows [computer program]. Version 18.0. Chicago: SPSS Inc, 2009.
- Galduróz JC, Noto AR, Fonseca AM, Carlini EA. V Levantamento nacional sobre o consumo de drogas psicotrópicas entre estudantes do ensino fundamental e médio da rede pública de ensino nas 27 capitais brasileiras, 2004. São Paulo: Centro Brasileiro de Informações Sobre Drogas Psicotrópicas, Escola Paulista de Medicina; 2005.
- United States of America. Centers for Disease Control and Prevention (CDC). Youth Risk Behavior Surveillance. *Morb Mort Week Rep* 2012; 61(4): 168.
- Espanña. Ministério de Sanidad y Consumo. Los adolescentes españoles y su salud. Resumen del estudio Health Behavior in School Aged Children (HBSC – 2002). Madrid; 2005.
- Vieira PC, Aerts DR, Freddo SL, Bittencourt A, Monteiro L. Uso de álcool, tabaco e outras drogas por adolescentes escolares em município do Sul do Brasil. *Cad Saúde Pública* 2008; 24(11): 2487-98.
- Vendrame A, Pinsky I, Faria R, Silva R. Apreciação de propagandas de cerveja por adolescentes: relações com a exposição prévia às mesmas e o consumo de álcool. *Cad Saúde Pública* 2009; 25(2): 359-65.
- Malta DC, Iser BP, Sá NN, Yokota RT, Moura L, Claro RM, et al. Tendências temporais no consumo de tabaco nas capitais brasileiras, segundo dados do VIGITEL, 2006 a 2011. *Cad Saúde Pública* 2013; 29(4): 812-22.
- Strauch ES, Pinheiro RT, Silva RA, Horta BL. Uso do álcool por adolescentes: estudo de base populacional. *Rev Saúde Pública* 2009; 43(4): 647-55.
- Schulte MT, Ramo D, Brown SA. Gender Differences in Factors Influencing Alcohol Use and Drinking Progression Among Adolescents. *Clin Psychol Rev* 2009; 29(6): 535-47.
- Machado IE, Lana FC, Felisbino-Mendes MS, Malta DC. Factors associated with alcohol intake and alcohol abuse among women in Belo Horizonte, Minas Gerais State, Brazil. *Cad Saúde Pública* 2013; 29(7): 1449-59.
- Oliveira-Campos M, Giatti L, Malta D, Barreto SM. Contextual factors associated with sexual behavior among Brazilian adolescents. *Ann Epidemiol* 2013; 23(10): 629-35.
- Malta DC, Porto DL, Melo FC, Monteiro RA, Sardinha LM, Lessa BH. Família e proteção ao uso de tabaco, álcool e drogas em adolescentes, Pesquisa Nacional de Saúde dos Escolares. *Rev Bras Epidemiol* 2011; 14(1): 166-77.
- DiClemente RJ, Wingood GM, Crosby R, Sionean C, Cobb BK, Harrington K, et al. Parental monitoring: association with adolescents' risk behavior. *Pediatrics* 2001; 107(6): 1363-8.
- Paiva FS, Rozani TM. Estilos parentais e consumo de drogas entre adolescentes: revisão sistemática. *Psicol Estud* 2009; 14(1): 117-83.
- Barreto SM, Giatti L, Casado L, Moura L, Crespo C, Malta DC. Exposição ao tabagismo entre escolares no Brasil. *Ciênc Saúde Coletiva* 2010; 15(2): 3027-34.

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