Patterns of alcohol use among Brazilian adolescents

Padrões de uso de álcool entre adolescentes brasileiros

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Abstract

Objective: To describe patterns of alcohol consumption by adolescents in Brazil. **Method:** From November 2005 to April 2006, a sample composed of 661 subjects aged between 14 to 17 years was rigorously selected in Brazil using a multistage probabilistic method to represent the profile of the adolescent Brazilian population. **Results:** 34% of Brazilian adolescents drink alcoholic beverages. The mean age of drinking initiation was 14 years of age. Older adolescents, as well as those living in the southern part of Brazil, those who are not attending school and those who are working, and black individuals and those with personal income reported a higher frequency of drinking. Socio-demographic factors such as gender, income bracket, family income and student status do increase the amount of alcohol consumed. Males report a higher frequency of *binge* drinking than females. Moreover, more than half of the males that had drunk in the previous year reported having engaged in *binge* drinking on at least one occasion. Beer represents approximately half of all the drinks consumed by adolescents. There was no significant difference between genders in the kind of alcohol consumed. **Discussion:** Among adolescents who drink, the consumption of several drinks is frequent. Alcohol consumption varies from region to region, social economic status (including self-generated income) and age. These findings are discussed in light of their importance for the development of alcohol prevention policies in Brazil.

Descriptors: Alcohol drinking; Adolescent; Epidemiology; Social class; Brazil

Resumo

Objetivo: *Apresentar um panorama nacional sobre o padrão de consumo de bebidas alcoólicas entre adolescentes no Brasil.* ***Método:*** *Amostra rigorosamente selecionada em procedimento probabilístico em múltiplos estágios em todo o território brasileiro, de novembro de 2005 a abril de 2006, representando um perfil da população adolescente brasileira, composta por 661 sujeitos entre 14-17 anos.* ***Resultados:*** *34% dos adolescentes brasileiros bebem. A idade média de início da experimentação de bebidas alcoólicas foi de 14 anos. Adolescentes mais velhos, habitando a região Sul, que não estudam, que trabalham, de cor negra e que têm rendimento próprio apresentaram maior frequência de consumo. A quantidade usual consumida varia de acordo com sexo, classe social, renda familiar e o fato de estudar ou não. Os jovens do sexo masculino se destacam por apresentarem um percentual bem maior do beber em* binge *quando comparados com as jovens e mais da metade dos adolescentes do sexo masculino que bebem o fizeram em* binge *em pelo menos em uma ocasião. Aproximadamente metade das doses consumidas por adolescentes é de cerveja ou chope. Com relação aos gêneros, não foi detectada diferença significativa entre tipos de bebida.* ***Discussão:*** *O consumo de altas doses é frequente entre os adolescentes. Os padrões de consumo dos adolescentes apresentam variações em relação a região, estrato social, rendimentos próprios e idade. Os achados têm importância para o estabelecimento de políticas nacionais.*

Descritores: *Consumo de bebidas alcoólicas; Adolescente; Epidemiologia; Classe social; Brasil*

Introduction

Both worldwide and in Brazil, alcohol is the psychotropic substance most widely used by adolescents.[1-3] Several elements combine to make the consumption of alcohol harmful at this age range. Consumption patterns displayed by adolescents (including acute consumption of several doses of alcohol, aka binge drinking, their inexperience with this behavior, their tendency towards impulsivity and certain biological aspects involving the maturing of the nervous system are some of these factors.[4,5] Other elements include several symbolic aspects of drinking, ranging from those linked to the transgression which characterizes the act (all things considered, alcohol consumption is forbidden for minors) to a more social aspect i.e., the need to belong to a group of friends or peer group pressure, and even the idea of relaxation and leisure that alcohol advertisement promotes in their minds.[6] The fact of the matter is that adolescents and young adults alike form a group of individuals who are highly vulnerable to suffering from

Submitted: May 31, 2009
Accepted: October 29, 2009

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alcohol-related problems. The consumption of alcohol among adolescents is associated with acute risks (unprotected sex, violence and accidents) and broader problems (school problems, social problems, alcohol dependence).[7]

The consumption of alcoholic beverages in Brazil is only legally authorized to people above 18. However, adolescents can easily buy and drink alcohol.[8] Although, in our society, this behavior seems to be common as seen, for example, at teenage parties where alcoholic beverages are frequently consumed, studies show that initiating drinking at an early age is a central factor influencing the development of alcohol problems during adulthood.[3,9,10] Therefore, the implementation of national surveys to monitor alcohol consumption patterns among adolescents is important to gather data on drinking-related behaviors that should be prevented. The objective of this paper is to present a national update on the consumption of alcoholic beverages among adolescents in Brazil. Several comprehensive studies have already been conducted in Brazil with adolescents, including surveys with elementary and high-school students,[2] homeless boys[11] and household studies.[12] This study, however, is the first to analyze a rigorously selected sample that represents the profile of the Brazilian adolescent population and to deepen the investigation of alcohol consumption in this important population group. More specifically, the paper describes the drinking frequency and intake amount, binge drinking and the identification of the beverages most consumed by adolescents.

Method

1. Sample

The survey sample was composed of subjects aged 14 years or above, selected by means of a multistage probabilistic method covering the Brazilian territory. The interviews, which were conducted at the respondents' households were held from November of 2005 to April 2006. We visited 143 Brazilian cities and within them, a total of 325 census sectors, including those situated in rural areas. The sample was composed of 2,522 interviews with a general population aged 14 years or more, with a sampling error of approximately 2% at a 95% confidence level. An oversample of 485 interviews with the population aged between 14 and 17 years (adolescents) was conducted, thus totaling 3,007 interviews with a sampling error of approximately 4% at a 95% confidence level. This being the case, a total of 2,346 interviews were carried out with adults aged 18 years or more and 661 interviews were conducted with adolescents aged 14-17 years. Based on another national population survey, the *Pesquisa Nacional por Amostra de Domicílio* (PNAD, Household Sample National Survey), which obtained a design effect of around 2 and 3 and a sampling error of approximately 2% at a 95% confidence level, our survey's total sample, comprised of 3,007 interviews, is considered to be acceptable as representative of the Brazilian population.[13] This is a rigorously selected sample composed of 661 adolescents representing a profile of the Brazilian population, with the exception of the Indian population living in reserves, individuals living in shared places such as boarding schools, and adolescents who live exclusively on the streets.

The sampling involved 3 stages: Stage 1: selection of 143 counties using the systematic probability proportional to size methods (PPS), after stratifying the country into 25 strata as defined by the 5 Brazilian Administrative Regions, and 5 groups divided by city size within each region. Fourteen cities were identified as being self-representative because of their large population. The sample covered all Brazilian cities at this stage. Stage 2: selection of two census sectors for each county, with the exception of the 14 self-representative counties for which the number of selected sectors was proportional to the population. A total of 325 census sectors were selected, also using PPS. At this stage, the sample covered all sectors in the selected cities, including rural sectors. Stage 3: households within each census sector were listed. Based on this list, a simple random sampling of households was then performed. The number of households selected per sector was based upon previous knowledge of the response rate of the region and the goal of completing 8 interviews per sector. Finally, a household member was selected to be interviewed using "the closest future birthday" technique. One-hour, face-to-face interviews were conducted at the respondents home by trained interviewers using a standardized closed questionnaire. No replacement of respondents that were not to be found or refused to answer the survey was allowed. The response rate was 66.4%.

The response rate for the extra quota was calculated dividing the total number of interviews performed by the total number of households approached, excluding those homes that were approached but had no adolescents living there. Since all households that were not approached (due to refusal or lack of access) and had no adolescents should be excluded, the final number represents the lower limit of the response rate of adolescents. Non-response was attributed to refusal or when the selected adolescent was not to be found.

The interviews' instrument was a version of the questionnaire used in the Hispanic Americans Baseline Alcohol Survey (HABLAS).[14] The questionnaire was translated by the survey's coordinators and underwent a process of adaptation to the socio-cultural reality of the Brazilian population. The full Portuguese version of the questionnaire can be found at the website of *Unidade de Pesquisa em Álcool e Drogas* (UNIAD, Research Unit of Alcohol and Drugs – www.uniad.org.br).

The study was approved by a human subjects/internal review board process at the university (registration number: CEP 1672/04). All respondents signed an informed consent form and were assured of the confidential nature of the study before the interview. The interview was conducted without the presence of another person, in a separate room or even outside the house to preserve a safe distance from other relatives or any other subject living in that household. They were told that this was a pioneer national study and that their participation was important to guide future government public policies. Parental consent was required for all adolescents.

2. Measures

1) Consumption of alcoholic beverages

Questions used covered the initiation of use, the amount and the frequency, and types of alcoholic beverages. Moreover, categories

of intensity of alcohol consumption were designed according to the explanation below:

Two questions covered the initiation of alcohol use:

a) Initiation of consumption – *How old were you when you started to consume alcoholic beverages? Do not take into account those occasions when you had only one or two sips.*

b) Initiation of regular consumption – *How old were you when you initiated to consume alcoholic beverages regularly?*

Other questions about consumption:

c) Frequency – *How often do you generally drink any alcoholic beverage (including beer, wine, liquors, ice beverages or any other beverage)?*

d) Amount – *In the days in which you drink beer, wine, ice beverages, liquors, how many doses do you normally drink per day?*

The unit of measure used in this study was a "drink". It corresponds, in average, to a beer can or to 350 ml of draft beer or to a 90 ml wine glass, a 30 ml dose of distilled beverage or one can or a small bottle of any ice beverage. Each dose contains nearly 10-12g of alcohol.

e) Binge drinking – *During the last 12 months, how often have you drunk (if boy: five or more doses- if girl: four or more doses) any alcoholic beverage in one single occasion? (possible answers: from everyday to never in the last 12 months)*

f) Type of alcoholic beverage - Interviewers asked "how often" the adolescent consumed each of the alcoholic beverages and "which was the amount consumed" of each of them in one single day, in the prior 12 months. The types of beverages included beer, wine, ice beverages and distilled beverages. The category "beer" included beer and draft beer; "ice beverages" are distilled alcohol blended with fizzy drinks or industrialized juices; *liquors* include *cachaça* (similar to schnapps), whisky, vodka, cognac, rum.

2) Socio-demographic characteristics

a) Gender (male or female);

b) Age (14/15 or 16/17);

c) Brazilian Geographical Regions (Northern/Center-Western, Northeastern, Southeastern or Southern);

d) Education level (up to elementary school, some years of middle school or middle school graduate, some years of high school or more);

e) Income bracket (A&B, C or D&E);

f) Family income up to R$399.00, From R$400.00 up to R$999.00 and R$1000.00 or more (1 R$ - Brazilian currency Real - is worth approximately US$ 0.5);

g) Personal income (with income or without income);

h) Ethnic group (White or Caucasian, Black, Mulatto/Others);

i) Working status (working, intermediate, studying and not working);

j) Student status (studying or not studying);

k) Religion (None, Catholic, Protestant /Others);

l) Importance of religion (Very Important, Important, Indifferent/Not Important);

m) Marital status (Single or Married/Concubine);

n) Area (Capital/Metropolitan Regions or Countryside),

o) Schooling of the person in charge of the domicile (up to elementary school, some years of middle school or middle school graduate, and some years of high school or more).

The demographic variables were all categorical. In the case of the working status, the intermediate category includes those who were unemployed or were looking for a job and housewives. In the case of ethnicity, the category "others", which was small, was combined with mulatto. The same was applied to the variable religion, where the category "others", present in only a few interviews of the interviews was combined with Protestant. Regarding Family income, those who did not declare it, which corresponds to a significant part (129 interviews) of our sample, were eliminated from the analysis of this variable.

3. Statistical analysis

Data were initially weighed by an expansion factor which assigns to each individual the inverse of his/her probability of selection. This factor was multiplied by another weighting factor aimed at correcting the non-response rate (gender, schooling and regions). We also applied a post-stratification weight to adjust the sample to known census-based distributions of the population on selected demographic variables (gender, age and region of the country). In order to take into account the sampling design (Multistage Stratified Cluster Sample) in data analysis, data were analyzed with the "Complex Samples" module of the SPSS.

The statistical test used for contingency tables was the chi-square test. For comparisons of means, the T-student test for independent samples was used, whereas ANOVA was used when more than two means were compared. Tests of normality and non parametric tests are not available in the SPSS Complex Sample, so we first ran the non-parametric Kolmogorov-Smirnov test for normality without accounting for sampling design and, as expected, none of the tested variables were normally distributed. Therefore, all ANOVA tests were run after a logarithm transformation (or square root when the variable had zeros). The significance level adopted was 5%.

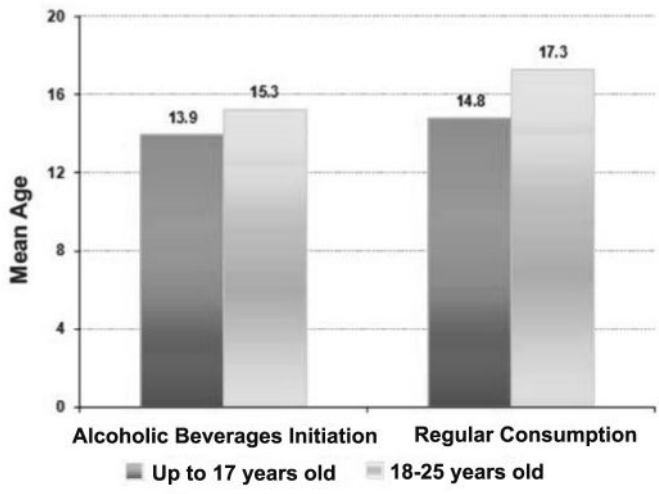

Figure 1 – Mean age of initiation of consumption and regular consumption of alcoholic beverages among adolescents and young adults.

Table 1 – Frequency of consumption of alcoholic beverages among Brazilian adolescents (%). Significant variables at 5%

Demographics		Frequency at which adolescents drink any alcoholic beverage				N (Unweighted)
		At least once per week	From 1 to 3 times per month	Less than once per month	Less than once per year - Abstinent	
Age	**14/15**	6.2	10.7	10.9	72.2	320
	16/17	11.8	19.4	8.4	60.4	341
Regions*	**NO/CO**	6.5	11.8	6.2	75.5	106
	NE	8.4	12.0	17.4	62.2	202
	SE	8.1	16.7	7.1	68.1	270
	SOUTH	16.3	21.4	3.6	58.6	83
Personal income	**Without income**	7.0	13.3	9.8	69.9	484
	With income	15.3	20.8	9.6	54.3	171
Ethnic group	**White**	7.6	16.6	6.3	69.5	296
	Black	21.7	11.5	8.4	58.5	82
	Mulatto/Others	6.9	14.7	13.3	65.2	283
Working status	**Working**	13.8	20.6	10.0	55.6	181
	Intermediate	18.1	11.2	5.4	65.4	74
	Student	5.3	13.4	10.3	71.0	406
Studies currently	**Yes**	7.8	14.4	10.5	67.3	571
	No	17.0	19.2	4.3	59.5	90
Total		**9.1**	**15.1**	**9.7**	**66.2**	**661**

**NO/CO stands for North and Center-Western; NE for Northeastern and SE for Southeastern.*

Results

The mean age at which adolescents begin drinking alcoholic beverages is at almost 14 years, and the mean age at which regular consumption begins is one year later. In comparison to the 18 to 25 years olds drawn from the same dataset as indicated in the methods section, significant differences were found for both parameters, as can be seen in Figure 1 ($p < 0.01$). In both cases, adolescents report an earlier initiation of use compared to that of young adults.

Table 1 shows the frequency at which Brazilian adolescents drink any alcoholic beverage, including only the demographic variables which present a chi-square test significant at 5%.

In the Brazilian adolescent population, 66.2% are abstinent. This percentage is higher among the youngest ones, those without income, whites, students and those living in the Center-Northern region of Brazil, where abstinence reaches 75.5% of the adolescent population. There were no significant differences regarding the percentage of abstinent subjects between genders, types of religion and family income level. This means that boys and girls drink alcohol at the same frequency.

Frequent drinking i.e., at least once a week occurs in 9.1% of the adolescent population, representing 1.3 million of individuals in Brazil. Demographic groups with a high

Table 2 – Mean usual daily intake of alcoholic beverages in the prior year among adolescents who had drunk in the prior year (%). Significant variables at 5%

		Mean	Standard deviation	N (unweighted)
Gender	Male	4.22	0.38	119
	Female	2.49	0.24	109
Class	AB	2.37	0.27	46
	C	3.64	0.43	80
	DE	3.68	0.41	102
Currently in school	Yes	3.11	0.22	188
	No	5.03	0.86	40
Family income*	Up to R $ 399	3.96	0.75	45
	From R$ 400 to 999	3.21	0.28	82
	R$ 1000 or more	2.73	0.33	51
Total		**3.43**	**0.25**	**228**

** Family Income was tested using linear regression, that is, it was treated as a continuous variable*

Table 3 – Daily usual consumption intake of alcoholic beverages in the prior year divided by gender (%) – adolescents who drank in the prior year

Usual dose	Mean	Gender		N	p-valor
		Male	Female		
12 or more doses	4	6	1	12	0.035
From 5 to 11 doses	18	25	10	38	0.010
From 3 to 4 doses	24	27	19	56	0.187
Up to 2 doses	54	41	69	122	0.001
Sample	228	119	109	228	

prevalence of more frequent drinking are those who are older, those living in the Southern region, adolescents who do not study, blacks, and those who work and report generating their own income.

Table 2 presents data on the usual daily mean amount of alcohol use by adolescents who had drunk at least once in the prior year, that is, we excluded from this table not only those who had never drunk, but also those who had not consumed alcoholic beverages in the past year. The analysis shows that the usual amount varies according to gender, income bracket, family income and whether or not the adolescent is a student. Therefore, boys, adolescents who belong to the underprivileged classes and those who do not study do drink larger amounts of alcoholic beverages per drinking occasion.

To complement the data on the amount, we examined gender differences on the usual amount consumed (Table 3). The data show that adolescents who drink consume a relatively large volume of alcohol. Almost half of the adolescent boys who had drunk in the prior year had consumed three doses or more per occasion. In contrast to the data on frequency, there are differences between boys and girls as to the amount of alcohol usually ingested ($p < 0.1$). Almost one third of the boys who drink had consumed 5 or more doses in the prior year, in contrast with one tenth of the girls.

Table 4 – Occurrence of binge drinking among adolescents who have drunk alcoholic beverages in the prior year (%). Variables significant at 5%

		% Binge drinking	Standard deviation
Gender	Male	52.9	5.6
	Female	37.6	5.3
Age	14/15	37.1	6.4
	16/17	51.1	4.9
Importance of religion*	Very important	38.9	9.4
	Scarcely important	59.1	4.9
	Indifferent or not important	63.0	7.4
Personal income*	With income	43.1	4.5
	Without income	50.7	7.5
Total		**48.4**	**4.2**

** Both personal income and importance of religion were included as continuous variables in the logistic regression model.*

Another important way of assessing drinking patterns, especially in the case of the youngest age groups is to examine the consumption of large amounts of alcohol (5 doses for boys and 4 doses for girls) at short periods of time, the so-called binge drinking. Table 4 shows the socio-demographic variables that showed a statistically significant association with binge drinking. Here, tests were performed using logistic regression. One model of logistic regression was adjusted separately for each independent variable, binge drinking being considered as a binary dependent variable. As the nature of this article is more descriptive than inferential, associations are only studied in a bivariate fashion. Again, we noticed that boys show a higher percentage of binge drinking. More than half of the boys who drank had binged at least on one occasion. As for girls, the percentage is slightly higher than one third. Age also influences binge drinking: younger adolescents report a lower prevalence of this behavior compared to older ones.

Noteworthy is the fact that neither income bracket nor family income was significantly associated with binge drinking. As for personal income, the results were statistically significant ($p = 0.018$). The importance given by adolescents to religion has been shown to be strongly associated with the incidence of binge drinking i.e., the greater the importance, the lower the percentage who reported binge drinking.

Table 5 complements these data by examining the frequency of binge drinking by gender among adolescents who reported at least one episode of binge drinking in the past 12 months. On one hand, about half of these adolescents had binged at least once a month. On the other hand, 30% of them had experienced two binge drinking episodes per month or more.

Finally, Table 6 presents the percentages of doses by type of alcohol and by gender in the case of adolescents that drink at least one kind of alcohol beverage. Approximately half of the doses ingested by adolescents are of beer or draft beer. To reach this conclusion, the data on the amount of doses consumed of each type of beverage and the frequency at which they were consumed by adolescents were crossed. Wine represents more than 30% of the doses consumed by adolescents. There was no significant difference between genders regarding the types of alcohol beverage, that is, no differences were detected between boys and girls regarding their preferences for different types of alcohol.

Table 5 – Frequency of binge drinking divided by gender (%) of those who have already had an incident of binge drinking in the prior year

Usual dose	Mean	Gender		N
	(%)	Male (%)	Female (%)	(Unweighted)
Less than once per month	51	47	58	53
Once per month	15	14	17	16
Two or three times per month	12	15	7	13
Once per week or more	18	20	13	18
Does not know	4	4	5	4
Sample	**104**	**63**	**41**	**104**

Discussion

This article presents data about alcohol consumption patterns among Brazilian adolescents. The use of a probabilistic nationwide sample provides reliable results with important implications with respect to the designing of public health programs and policies. The data show that adolescents of both genders drink in a similar way. Differences found are more related to the amount of ingestion than to its frequency and type of beverages consumed, which are practically the same for both boys and girls. The data also show that Brazilian adolescents start regular consumption well before the legal age and, comparatively, before the age at which young adults do.

Nearly two thirds of the adolescents of both genders are abstinent. It is worthwhile keeping in mind that the consumption of alcohol in Brazil is legally forbidden to people under 18. Nevertheless, in a universe of adolescents which is representative of the country's several regions and urban and rural areas, almost 35% of underage adolescents consume alcohol at least once per year. At the highest frequencies, boys seem to drink more than girls, but the difference is not as remarkable as between adults and does not reach significance. Anyway, the fact that 24% of adolescents drink at least once per month deserves attention. The frequency of consumption of alcohol increases according to certain socio-demographic characteristics of the population analyzed. Thus, older adolescents, adolescents with a personal income, black adolescents and those who work and do not study drink more frequently.

An interesting finding concerns the difference in frequency of alcohol consumption among Brazilian regions. The result shows that adolescents from Southern Brazil drink more frequently, especially when compared to the populations of the Northern and Center-Western states. One hypothesis to explain this finding is related to the regional traditions of Southern Brazil. This is a grape-growing and wine-producing region of the country, where wine consumption is high. The proximity to Uruguay and Argentina strengthens this hypothesis, as data on the consumption of alcohol in Argentina point to a considerably lower abstinence than that found in Brazil.[13] This finding confirms the existence of regional differences in the consumption of alcohol among adolescents, which constitutes important information for the development of public policies for this population group. This information also suggests that more detailed studies should be performed with a higher number of adolescents per region so that existing differences can, perhaps, be more thoroughly identified.

Results for frequency of drinking are different from those reported by other surveys conducted in Brazil. Thus, in a previous household survey, the frequency of alcohol consumption in the age range of 12-17 years was slightly higher than in half of the sample (54.3%), whereas the abstinence rate found in the current study was 66.2%.[12] Major differences seem to arise when comparing results from this study with those from a survey conducted among elementary and high school students. In that survey, about 63.3% of the students reported having consumed alcohol in the prior year, a percentage higher than that found in the current study.[2] In fact, caution should be exercised when comparing all these surveys. Obstacles related to the target public (adolescents aged 14-17 years) in particular, but also the sampling (multiple-stage probabilistic, aiming to assess Brazil as a whole) and the data analysis method employed in our survey, which placed greater emphasis on the consumption of alcohol in the prior year than on the amount ingested. Therefore, the apparently lower results found by the present survey regarding the frequency of consumption among adolescents are not unexpected.

Table 6 – Types of alcoholic beverages in number of doses consumed in the prior year, per gender (%)

Gender	Types of beverages			
	% of the annual doses which is WINE	% of the annual doses which is BEER	% of the annual doses which is ICE BEVERAGES	% of the annual doses which is DISTILLED BEVERAGES
Male	32.4	52.8	4.8	10.0 *
Female	37.5	50.5	8.0	4.0
Total	**34.7**	**51.8**	**6.3**	**7.2**

** Marginally significant difference – p = 0.06*

However, even considering methodological differences across studies, they all provide strong evidence of the problem of drinking among Brazilian adolescents. Therefore, 5.2% of the Brazilian adolescents reported being concerned about their consumption of alcohol in Cebrid's survey[12] and the frequent use (six times or more per month) occurred among 11.7% of the students[2] The current survey shows that, although a significant part of the adolescents is abstinent, among those who consume alcohol, the amount consumed per occasion tends to be high. Moreover, another important information is that these findings vary per region, social stratum, age and, sometimes, gender.

When analyzing intake amounts, both the usual consumption and the excessive consumption of alcohol in a short time period, aka binge drinking, are essential. Binge drinking has been widely described as being associated with physical, social and mental problems.[4] In several countries in which this phenomenon was studied, binge drinking, even of the sporadic kind, causes high social and health costs.[15,16] This study found that binge drinking is frequent among adolescents who drink, especially among boys, older adolescents, those who have their own income and those who do not value religion. In addition to how frequent adolescents engage in binge drinking, recent studies in several countries have demonstrated the association of this kind of behavior with health-threatening and risky behaviors such as riding as a passenger in a car driven by a drunk driver, using other psychoactive substances, and becoming involved in physical fights.[3,9,10] These data suggest that this consumption pattern should be at the center stage of prevention policies.

Finally, the age at which adolescents start drinking is also an essential factor for understanding drinking and trends in drinking among Brazilian adolescents. There is an important body of evidence relating earlier alcohol consumption with a series of future problems ranging from a higher probability of engaging in alcohol abuse to the consumption of other psychoactive substances and other health-threatening problems.[17-19] Due to these reasons, public policies addressing the postponing of the age at which consumption of alcohol begins among Brazilian adolescents should be designed and future surveys should monitor trends in this variable.

Study limitations

This is a rigorously selected sample composed of 661 subjects within 14-17 years-old based on a multistage probabilistic method aimed at representing the profile of the Brazilian adolescent population. People in other non-residential settings such as hospitals and the indigenous population were not included in this sample. This limitation is common in population sample surveys and does not markedly affect the results of the present investigation. This is so because the excluded population represents a very small percentage of the country's population. This study also does not examine the association between family composition (father/mother/children vs. single mother or single father based families) and alcohol consumption. It is possible that factors related to this variation in family structure (e.g.: level of monitoring of the adolescent) is connected to the consumption of alcoholic beverages.

Acknowledgements

This project was made possible thanks to the sponsoring of the *Secretaria Nacional de Políticas sobre Drogas* (SENAD, National Secretariat on Drugs Policies, process number 017/2003).

Disclosures

Writing group member	Employment	Research grant[1]	Other research grant or medical continuous education[2]	Speaker's honoraria	Ownership interest	Consultant/ advisory board	Other[3]
Ilana Pinsky	UNIAD	-	-	-	-	-	-
Marcos Sanches	Ipsos Reid	-	-	-	-	-	-
Marcos Zaleski	UNIAD	-	-	-	-	-	-
Ronaldo Laranjeira	UNIAD	-	-	-	-	-	-
Raul Caetano	UTSW	-	-	-	-	-	-

** Modest*
*** Significant*
**** Significant. Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author.*
Note: UNIAD = Unidade de Pesquisa em Álcool e Outras Drogas (Alcohol and Drugs Research Unit); UTSW = University of Texas Southwestern.
For more information, see Instructions for Authors.

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