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Alcohol and adolescents: study to implement municipal policies

ABSTRACT

OBJECTIVE: To build students' profile regarding alcohol consumption and risk behavior.

METHODS: A total of 1,990 students were included in the study, aged 11 to 21 years old, from both genders, enrolled in public and private schools, in Southeastern Brazil, in 2004. A self-administered questionnaire was answered in the classroom without the presence of the teacher. The questionnaire also assessed the perception of how easy it was to get alcoholic beverages, the contexts where they drunk, and the consequences of drinking.

RESULTS: Prevalence of lifetime alcohol use was 62.2%. Regarding consumption in the last 30 days, 17.3% of students reported at least one episode of binge drinking (five or more drinks). Adolescents reported that they had gotten alcoholic drinks very easily from shops, and also in social contexts with relatives and friends. Only 1% of underaged reported that they had tried and could not buy alcoholic beverages. As negative consequences of alcohol use in the last 12 months, students reported feeling sick due to drinking (17.9%), regret for doing something under the influence of alcohol (11%), blackouts (9.8%), and getting involved in a fight after drinking (5%). Over half of the students (55%) reported knowing someone who had been involved in a car accident because of a drunk driver.

CONCLUSIONS: Data showed high prevalence of alcohol use among adolescents studied and how easy access to alcoholic beverages is, including to underaged people. Youngsters put themselves at risk and presented negative consequences of alcohol consumption. Prompt actions regarding public alcohol policies in Brazil are needed.

KEYWORDS: Adolescent. Alcohol drinking, adverse effects. Alcohol drinking, prevention & control. Public policy. Students. Adolescent behavior. Questionnaires.

INTRODUCTION

Despite social, economical and cultural differences among countries, the World Health Organization (WHO) points out alcohol as the psychoactive substance most commonly consumed in the world and also as the drug of choice among children and adolescents.^{20,21} In Brazil, alcohol is also the most commonly used drug among all age groups and its intake among adolescents is increasing, especially among younger people (from 12 to 15 years of age) and among girls.³ According to "5th National Survey with Students" conducted in 2004 by the Centro Brasileiro de Informações sobre Drogas Psicotrópicas (CEBRID) Brazilian Center for Information on Psychotropic drugs, 65.2% of students reported lifetime use of alcohol, 44.3% reported use in the last 30 days, 11.7% drank frequently, that is, six or more times a month; and 6.7% were heavy drinkers, that is, 20 or more times in the last month.⁸

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Received: 3/31/2006
Reviewed: 9/30/2006
Approved: 12/1/2006

In addition to the high prevalence of alcohol intake by adolescents, another two factors are relevant: alcohol use initiation and the pattern of consumption. Studies⁸ suggest that use is starting increasingly earlier – in Brazil, the mean age for the first use of alcohol is 12.5 years. In turn, the earlier the use is, the worse the consequences are, and the greater is the risk for developing abuse and dependence.¹⁷

Regarding the pattern of consumption, the literature reveals that when adolescents drink they tend to drink heavily presenting episodes of binge drinking,¹² that is, drinking five or more doses in one occasion. This behavior increases the risk for several social and health problems, including: sexually transmitted diseases, unwanted pregnancies, myocardial infarction, traffic accidents, behavior problems, violence and unintentional injuries.¹⁹ It is estimated that 90% of the alcohol used by adolescents in the USA, and 50% of the alcohol used by adults occur in episodes of binge drinking.² A study conducted in the city of São Paulo in 2000, with 1,808 students (993 from public schools and 815 from private schools), showed that 25% of them had at least one episode of binge drinking in the 30 days previous to the interview.⁵

Young population is vulnerable to the negative, and very often, tragic consequences of the use of alcohol.¹⁹ In the United States, alcohol is involved in the four leading causes of death among people between the ages of 10–24: traffic accidents, unintentional injuries, homicides and suicide.⁹ Brazilian data associated with the use of alcohol and these consequences are still lacking. However, we know that traffic accidents are frequently associated with high concentration of alcohol in the blood, higher than 0.6g/L, which is the alcohol amount accepted by the Brazilian Traffic Code. Such accidents occur more frequently at night and weekends and men are more commonly involved in them especially young and single.⁶ A toxicological study with 5,960 blood samples and organs from fatal injured victims was performed in 1994 in the Institute of Forensic Medicine in São Paulo, and it revealed that 48.3% of the victims presented blood alcohol content. However, proportions varied according to the cause of death: alcohol was detected in the blood in 64.1% cases of drowning; 52.3% cases of homicide; 50.6% cases of traffic accident victims, and 32.2% cases of suicide.⁴ Specially regarding the relationship between use of alcohol and homicide, a study conducted between 1990 and 1995 in the city of Curitiba (PR) demonstrated that 53.6% of the victims and 58.9% of those committing crimes (N=130) were intoxicated when the crime was committed.⁶

Thus, understanding the problems regarding the use of alcohol among adolescents must go beyond the prevalence of use, and it must also take into account the pattern of use and the behavior. Several factors

influence the behavior of drinking: family and social contexts, expectations and beliefs, price, availability to buy, easy access, and others.¹ Although studies are more far-reaching and present greater surveys on the use of alcohol on Brazil, there are no studies encompassing all these variables. Because of that, the present study aimed especially at designing a profile of students regarding their perception of how easy it was to get alcohol; the pattern of use; the circumstances and context of drinking; and the consequences of drinking. The present study is part of a community trial, the first of its kind in Brazil, to reduce the problems regarding the use of alcohol of a city, which results will be used to guide the implementation of public policies about alcohol in the city. This is the first time that a representative sample of students from a Brazilian city is studied for this purpose.

METHODS

A cross-sectional epidemiologic study was carried out with a randomized sample of students from fifth grade to the last year of high school in regular courses in the mornings, afternoons, and evenings, from public and private schools of a southern Brazilian town (Paulínia, São Paulo). Data was collected in October and November 2004. Sample was probabilistic with a 97.5% confidence-interval. A stratified sample plan was considered, and the distribution was proportional to the strata sample size.

All students from the selected classes that were present at the time of collection were part of this sample. Participation was voluntary and anonymous. Students answered the self-administered questionnaire individually, there were two trained applicants in each class and the teachers were not present. One question with the names of fictitious drugs was inserted into the questionnaire to check inconsistencies and lack of attention when answering the survey. Sessions for applying the questionnaire varied from 20 to 90 min among the classes depending on the grade of the group; however, data collection in most classes was finished in less than 60 min.

Sample was drawn based on the list of students enrolled provided by the schools. Among 2,387 students randomly chosen in the 78 rooms, 2,074 were in the classroom when the survey took place and filled in the questionnaire. For data analysis, questionnaires that were left blank or those with positive answer for the fake drugs question were excluded, resulting in a response rate of 87%. Final population studied was 1,990 students, with ages ranging from 11 to 21 (mean=14.9; SD=2.28), 88% were younger than 18, and 54.5% were female. Grades were grouped: 28.9% were students from fifth and sixth grades; 23% from seventh and eighth grade, and 48.1% were students from first

to third year of high school. Population studied was predominantly catholic (59.9%); did not work (76.2%); lived with their parents (71.1%); 50.3% were middle class (C), 26.2% were upper class (A/B), and 23.5% were lower economic class (D/E).

The questionnaire was based in the instrument used by the Prevention Research Center – Pacific Institute for Research and Evaluation (PRC/PIRE) in surveys with young people* and we have included sets of questions from the Global School-based Student Health Survey (GSHS) inquiry developed by the WHO together with the The United Nation Children Fund (UNICEF), United Nations Educational, Scientific and Cultural Organization (UNESCO) and The Joint United Nations Programme on HIV/AIDS (UNAIDS), and with technical and scientific support of the Centers for Disease Control and Prevention** (CDC), as well as the questionnaire of the Brazilian Center for Information on Psychotropic drugs (CEBRID)⁷ which was used in the surveys with students. Specific questions regarding the behavior of the population of the city were also included.

A descriptive analysis was performed in order to determine the social and demographic profile of the sample studied, together with their behavior and consequences of alcohol use. Chi-square test (χ^2) was applied to verify the association between the variables studied, at the 5% significance level. We have used as a database and instrument for statistical analysis the SPSS 13.0 application.

The study was approved by the Ethical Committee in Research of the Hospital São Paulo from the Universidade Federal de São Paulo (Project # 0259/06).

RESULTS

Alcohol lifetime use in the total sample studied was 62.2%. Use of alcohol in the last 12 months was reported by 54.5% of the total sample. Almost 24% of the students reported that they have had an episode of binge drinking at some time in their life, and 19.5% reported drunkenness in the last 12 months. In Table 1 these data are presented according to age. In Table 2, data regarding

Table 1. Distribution of use of alcohol and drunkenness in life and in the 12 months preceding data collection, according to age group. Paulínia, Southeastern Brazil, 2004.

Age	Use of alcohol				Drunkenness			
	In life		In the last 12 months		In life		In the last 12 months	
	N	%	N	%	N	%	N	%
10 – 12	117	32.8	81	23.1	9	2.6	9	2.6
13 – 15	434*	59.0	374*	52.4	126*	17.5	105*	14.7
16 – 17	477*	75.8	428*	68.6	216*	34.8	178*	28.6
18 and +	189	80.4	162	70.4	108*	46.4	80	34.5
Total	1,217	62.2	1,050	54.5	459	23.9	372	19.5

* Statistically significant difference for the prevalence in use mentioned in relation to the previous age group (Chi-square $p < 0.001$)

Table 2. Distribution of the frequency of pattern of use on the 30 days before data collection, according to gender and age group. Paulínia, Southeastern Brazil, 2004.

Pattern of use	Use of alcohol (N=1,957)			Intoxication (N=1,930)			Episode of acute abuse (N=1,888)		
	Male	Fem	p	Male	Fem	p	Male	Fem	p
10 -12	17.5	14.0	0.365	1.3	1.6	0.841	2.7	4.3	0.453
13-15	33.6	38.7	0.163	7.8	10.7	0.182	10.9	16.6	0.031*
16-17	54.5	48.6	0.144	20.7	11.9	0.003**	30.4	17.8	0.000***
18 and +	64.6	51.0	0.037*	25.4	16.0	0.082	39.5	23.5	0.011*
Total	41.5	38.8	0.229	13.1	10.0	0.029*	19.6	15.5	0.020*

Statistically significant differences between the genders for the mentioned frequencies of pattern of consumption (Chi-square * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$)

* Grube JW, Keef DB, Stewart K. Guide to conducting youth surveys. Calverton: Pacific Institute for Research and Evaluation; 2002. Available at: <http://www.udetc.org/documents/YouthSurveys.pdf> [Accessed on March, 20th 2006]

** Centers for Disease Control and Prevention. Global School-based Student Health Survey. Core Questionnaire Modules. Atlanta; 2005. Available at: <http://www.cdc.gov/gshs/questionnaire/index.htm> [Accessed on March, 20th 2006]

Table 3. How alcohol was gotten in the last occasion that underage youngsters drank. Paulínia, Southeastern Brazil, 2004. (N=1,075)

How underage got alcohol	N	%	CI 95%
Bought alcohol without presenting an ID	272	25.4	22.7;28.0
Got alcohol with their friends	254	23.6	21.1;26.3
Got alcohol at home with parents permission	204	19.0	16.7;21.5
Got it with other relatives	137	12.8	10.9;14.9
Alcoholic beverages that were served in parties	90	8.4	6.8;10.2
Got alcohol at home without parents permission	36	3.3	2.4;4.6
Bought it in a shop using a fake ID	11	1.0	0.5;1.8
A strange person bought it for them	9	0.8	0.4;1.6
They stole it from a shop	9	0.8	0.4;1.6
Other ways that have not been mentioned	53	4.9	3.7;6.4

Table 4. Consequences of alcohol use reported by students in the last 12 months. Paulínia, Southeastern Brazil, 2004.

Consequence of use	N	%	CI 95%
Had a hangover	340	18.4	16.7;20.3
Felt sick because they had drunk	333	17.9	16.2;19.8
Regret about something they had done when drunk	204	11.0	9.6;12.5
Were worried about their consumption	194	10.5	9.1;12.0
Had problems with their parents because they had drunk	191	10.2	8.8;11.6
Cannot remember what they had done (blackout)	182	9.8	8.5;11.3
Had unplanned sex because they had drunk	106	5.7	4.7;6.9
Got into a fight after drinking	92	5.0	4.0;6.1
Missed class because of the use of alcohol	92	5.0	4.0;6.1
Fainted after having drunk too much	73	4.0	3.1;5.0
Had sexual relations without protection because they had drunk	64	3.5	2.7;4.4
Were drunk in school	64	3.5	2.7;4.4
Had problems with the police because of alcohol use	47	2.5	1.9;3.3
Were in a car accident after drinking	38	2.0	1.5;2.8

pattern of use in the last 30 days among adolescents are presented (use of alcohol, intoxication and episodes of binge drinking), according to age and gender.

Beer was the most commonly used beverage among students (40%), followed by wines (36.9%), and in the third place are alcopops, with 10.2% of the preference. Spirits are the last with 7.8%. The type of drink used was not specified in 5.1% of cases. When genders were compared, the two first most commonly used type of alcoholic beverages by the total sample (beer, followed by wines) are inverted in the case of girls, being wine the favorite beverage for 42.3% of female students, followed by beer (33.6%).

The use of alcohol started very early in the life of these adolescents: 32.8% of the students aged from 10 to 12 had already made use of alcohol. Mean age observed for the first use was 12.35 (SD=2.72), and the median was,

13; over half of the students (63.3%) started the use of alcohol before they were 14 years old. Considering all students that have drunk, 99.1% have tried alcoholic beverages before they were 18.

Regarding the context of the first use, 40.4% of the students reported that the relatives had been the first to offer them alcoholic beverages, followed by friends (35.5%), their own initiative (14.9%), and by other people (9.2%). As for the environment of the first use, 42.6% said they were in their houses, 26.5% in a friends' house, 18% in bars or nightclubs, and 12.9% in other places, such as parties and relatives' houses.

Students reported that they usually drink with friends and relatives (62.4% and 32%, respectively), almost half (47.9%) stated that there is someone who drinks too much in the family; 12.3% said that the father had drinking problems.

Places where young people usually drank were: parties (60.5%), in their own house (22.7%), in friends' houses (20.9%), nightclubs (19.2%), on the street (14.3%), in parks and public places (11%), bars (9.2%), restaurants (7.4%), sport events outside the school (5.1%), kiosks close to school (3.4%), in the car (2.8%), and in school (2.2%).

Students found it easy to buy alcoholic beverages. This perception varied according to the type of beverage. Beer was considered easy to be bought by 87.4% of students. Wines came in second with 76%; alcopops were in third place, with 56.5%; and last came spirits, with 51.1%.

Almost 55% of students answered that at least half of the shops they know would sell them alcoholic beverages without asking for an ID, and 24.9% of the students reported they had seen a salesperson, clerk or cashier requesting the ID of someone who wanted to purchase alcoholic beverage in the last 12 months.

Taking only underage students into account, 55% stated that they had been able to buy alcoholic beverages, and only 1.1% of the students reported that they had tried to buy but they could not for being underage. Asking for a stranger who was over 18 to buy alcoholic beverages was considered easy for 53.3% of students. Easy access is also noticed at home: 45.6% of underage students said it was easy to get alcoholic beverages at home without the parents' consent.

Underage students reported they had bought alcoholic beverages in several places in the last six months: parties (34.5%); bars (34.4%); supermarkets (25.3%); nightclubs (21.4%); liquor stores (19.4%); kiosks far from school (15.1%); gas stations (11.5%); sport events outside the school (9%); kiosks near the school (8.5%) and event or party in the school (4.7%).

How beverages were got in the last time underage students drank are presented in Table 3.

The negative consequences of alcohol use interfered in different areas of the life of these adolescents: health, school, sexual behavior, behavioral problems, violence, and accidents. The consequences of alcohol drinking in the last 12 months reported by students are presented in Table 4.

In the 30 days before the survey was conducted, 8.3% of the students reported alcohol use in the school premises, and 3.6% were absent from school because they had a hangover. Additionally, peer pressure for alcohol use was noticed by 16% of students.

Regarding sexual behavior, 7% of the students stated that alcohol use was determinant, at least once, for having sexual intercourse without having planned. Additionally, 2% said they had forced or had been forced to have sexual relations with someone.

As for drinking and driving, 8% of the students reported they had driven after using alcohol; 4.8% reported they had driven even though they had drunk too much to drive safely, and 2.8% reported they had been stopped by the police while driving. Thirty-two per cent of students reported they got a ride at least once in the last 12 months with a driver who had drunk at least one alcoholic drink. Also 16.6% said they had taken a ride with a driver that had drunk too much to drive safely in the last 12 months. When they were asked about the amount of drinks someone could have and still drive safely, the majority (63.6%) answered that it was possible to have one drink and drive safely. More than 41% reported that their own parents had drunk one or more alcoholic drinks and driven in the last 12 months, and that 36.1% of their friends had done the same. Over half of the students in the survey (55%) know someone that was in a car crash caused by a drunk driver.

DISCUSSION

Among the limitations, the youngsters who had finished their studies and the drop-outs were excluded from the sample, as well as those who were absent the day data collection occurred since it was not redone. Despite all the care taken, possible information biases should be addressed: lack of attention or understanding; memory mistake; lack of seriousness; being in a hurry to finish; self censorship; being afraid that school authorities might demand seeing the answers to the questionnaire. The length of the instrument used might have discouraged some students, especially those with reading problems. However, self administered instruments tend to leave participants more comfortable to answer the questions, especially those that are secret.

Despite the limitations, the present study shows important data discussed below.

Regarding the prevalence of use, alcohol drinking among teenagers was frequent, with an early onset, and increasing with age in both genders, in agreement with the international literature,^{18,19} and with Brazilian studies.^{7,8} When the pattern of use in the last 30 days was assessed, considering gender and age group, differences between males and females were not noticed until age of 15, except for binge drinking, which was greater among girls between 13 to 15 years old. However, the prevalence between boys (16 or older) was significantly higher ($p < 0.05$) in almost all patterns of use considered as shown in Table 2.

As for continuity of use, there was no statistically significant difference for the lifetime use among 16 and 17-year-old adolescents and those over 18. Among 16 and 17-year-old adolescents who have drunk, 77% reported alcohol use in the last 12 months, and 67% drank in the previous 30 days. These data enable visualizing a

progression of consumption as of 13 (mean onset age) and a stable pattern of consumption as of 16.

The analysis of the progression of drinking behavior showed no significant differences between the group of teenagers at 16 and 17 and that of teenagers who were 18 or over regarding the prevalence of “use in life”, in the “last 12 months”, in the “previous 30 days”, being drunk in the “last 12 months”, and in the “last 30 days”. Significant differences between these two groups were observed only in the variables “being drunk in life” (Table 1) and episode of acute abuse in the last 30 days (Table 2). Adolescents from 16 to 17 presented a behavior towards alcohol similar to those who were over 18, despite being against the law selling alcohol beverages for those under 18 (Children and Adolescents Statute, art.81 and art. 243 law # 8,069, July 13th, 1990).

Adolescents reported that it is easy to get alcohol, both by purchasing it, and getting with their groups (relatives and friends). Easy access was noticed in the homes and with friends: they were both the most commonly mentioned environment for getting and using alcoholic beverages.

Students had no problems purchasing alcohol, despite legal restrictions, even in places where selling would be awkward, such as their school. Over half of the underage students (55%) said they were able to buy alcoholic beverages and only 1% said they could not buy because the shop did not let them.

The sources that supplied beverages most often mentioned were relatives (31.7%), and friends (23.5%). This is relevant because friends have direct (offering liquor) and indirect (expectation on the effects of use, social acceptance) influence on the pattern of use.¹² Regarding relatives, studies show that the harmful use of alcohol by the parents and the lack of control and surveillance on children’s drinking are associated with the increase in risk of alcohol abuse and dependence later in life.^{10,13}

As consequences of use, alcohol increases the tendency of young people to engage in risky behaviors. Even occasional consumption may put them into risks such as traffic accidents, risky sexual behavior (sexually transmitted diseases, unwanted pregnancy), violence, unintentional injuries, school problems.^{15,19} Adolescents of the present study realized such harms correlated especially with alcohol abuse, and the most commonly reported complications were in accordance with the pharmacologic properties of alcohol on the body.

Almost all participants of the study (90%) were underage, that is, they did not have a driver’s license, however, this did not refrain them from being at risk for crashes, either as a passenger or in the street as a pedestrian (being run over) or being involved in a crash in non-motor vehicles.¹¹

Although young people and alcohol do not match, this mixture occurs very frequently, and the drinking behavior of teenagers can be seen all the time. It is likely that factors such as the omission of the authorities and the permissiveness of society regarding alcohol contribute to the picture confirmed by the present study. Alcohol use is a public health problem,¹⁶ once it affects not only the user but also the whole society, resulting in an avoidable high social cost.¹ Prevention strategies involving interventions in the community using public policies, have presented greater impact than individual interventions. WHO has proposed a variety of public policies suitable to fight the problems regarding alcohol use. Further details on such policies may be found in the Brazilian Consensus on Public Policies on Alcohol.¹⁴ In order to reduce the problems related to alcohol use among adolescents, the best public policies, that are effective based on evidences, quick impact, low cost, and satisfactory cultural shift, are:¹

- increase in prices of alcoholic beverages through taxation;
- setting and enforcing the minimum legal age for using, selling, and buying alcoholic beverage;
- restricting physical availability of alcohol, (setting times, having a especial system to license places, and established regions for selling alcohol; control of density and geographical places, not allowing such places near schools).

The authorities must enable the introduction of public health policies to prevent the use of alcohol and its associated problems, make the community aware, and get its support for the necessary interventions. Although popular, exclusively “educational” approaches are considered ineffective¹ however, they can also be used to raise the necessary support to a set of public policies. Enforcing the law on its own plays an educational role in society. Immediate action must be taken to avoid that problems deriving from early and massive exposure of adolescents to alcohol continue to occur. Making laws is not enough: they must be enforced with systematic surveillance and punishment for the law-breakers must be rapid, severe and consistent. Thus, the perception of the increase in the likelihood of getting caught is an essential condition to discourage breaking the law.¹ The authorities must, through suitable strategies, protect the society of the problems regarding the use of alcohol, raising people’s awareness and enabling them to practice their citizenship demanding and cooperating for a safer and healthier community.

ACKNOWLEDGMENTS

To Center for the Study of Law and Enforcement and Policy and Prevention Research Center of the Pacific

Institute for Research and Evaluation by the scientific support, especially their directors, Robert Reynolds, MA and Joel Grube, PhD. To the City Hall of Paulínia

and all its employees, as well as volunteer citizens that collaborated on the project, especially the schools and the students who participated in the study.

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