



Journal of Nursing

Revista de Enfermagem

UFPE On Line

ISSN: 1981-8963

ORIGINAL ARTICLE

FACTORS ASSOCIATED WITH ALCOHOL CONSUMPTION AMONG STUDENTS FROM PUBLIC SCHOOLS

FATORES ASSOCIADOS AO CONSUMO DE ÁLCOOL ENTRE ESTUDANTES DE ESCOLAS PÚBLICAS

FACTORES ASOCIADOS CON EL CONSUMO DE ALCOHOL ENTRE ESTUDIANTES DE ESCUELAS PÚBLICAS

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ABSTRACT

Objective: to analyze the association between alcohol consumption by adolescents and family, personal, and social factors. **Method:** this is an epidemiological, cross-sectional, and population-based study. By means of the questionnaire “Global School-Based Student Health Survey”, 1,878 public school students from the Metropolitan Region of Recife, Pernambuco, Brasil, were investigated for age, sex, alcoholic beverages consumption, marital status, religion, educational status, work, and housing. This study was approved by the Research Ethics Committee of Hospital Agamenon Magalhães, under the CAAE 1130.0.000.217-07. **Results:** alcohol consumption in the past 30 days amounted to 29.8% of individuals. Sample distribution with regard to the variables showed that the percentage of students who drank alcohol increased according to the age group and it was higher among men (39%) (OR = 2.05; CI = 95%: 1.73 to 2.42; p = 0.0001). **Conclusion:** multivariate logistic regression indicated that being a man, being from 18 to 20 years old, working, and having no religion constituted factors associated with alcohol consumption. **Descriptors:** Alcoholic Beverages; Students; Adolescent Behavior; Family.

RESUMO

Objetivo: analisar a associação entre o consumo de álcool por adolescentes e fatores familiares, pessoais e sociais. **Método:** trata-se de estudo epidemiológico, transversal e de base populacional. Por meio do questionário “Global School-Based Student Health Survey”, 1.878 estudantes de escolas públicas da Região Metropolitana do Recife (PE) foram investigados quanto a idade, sexo, consumo de bebidas alcoólicas, estado civil, religião, escolaridade, trabalho e moradia. Este estudo foi aprovado pelo Comitê de Ética em Pesquisa do Hospital Agamenon Magalhães, sob o CAAE n. 1130.0.000.217-07. **Resultados:** o consumo de álcool nos últimos 30 dias totalizou 29,8% dos indivíduos. A distribuição da amostra quanto às variáveis mostrou que o percentual de estudantes que consumiram álcool aumentou segundo a faixa etária e foi maior no sexo masculino (39%) (OR = 2,05; IC = 95%: 1,73 a 2,42; p = 0,0001). **Conclusão:** a regressão logística multivariada indicou que ser do sexo masculino, ter de 18 a 20 anos, trabalhar e não ter uma religião constituíram fatores associados ao consumo de álcool. **Descritores:** Bebidas Alcoólicas; Estudantes; Comportamento do Adolescente; Família.

RESUMEN

Objetivo: analizar la asociación entre el consumo de alcohol por adolescentes y factores familiares, personales y sociales. **Método:** esto es un estudio epidemiológico, transversal y basado en población. Por medio del cuestionario “Global School-Based Student Health Survey”, 1.878 estudiantes de escuelas públicas de la Región Metropolitana de Recife, Pernambuco, Brasil, fueron investigados en cuanto a edad, sexo, consumo de bebidas alcohólicas, estado civil, religión, escolaridad, trabajo y vivienda. Este estudio fue aprobado por el Comité de Ética en Investigación del Hospital Agamenon Magalhães, bajo el CAAE 1130.0.000.217-07. **Resultados:** el consumo de alcohol en los últimos 30 días totalizó 29,8% de los individuos. La distribución de la muestra en cuanto a las variables mostró que el porcentaje de estudiantes que consumieron alcohol se incrementó según la franja etaria y fue mayor entre el sexo masculino (39%) (OR = 2,05; IC = 95%: 1,73 a 2,42; p = 0,0001). **Conclusión:** la regresión logística multivariada indicó que ser del sexo masculino, tener de 18 a 20 años, trabajar y no tener una religión constituyeron factores asociados con el consumo de alcohol. **Descriptor:** Bebidas Alcohólicas; Estudiantes; Conducta del Adolescente; Familia.

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INTRODUCTION

Alcohol use accounts for 95% of the results of morbidity and mortality reported due to substance abuse.¹ The first contact usually occurs during adolescence, since this life stage is marked by physical and psychological changes that make the individual more vulnerable to abuse of alcohol and other drugs.²

The use of alcohol, at first, is directly linked to the search for pleasure and new sensations. The fact is that, by consuming alcohol and other drugs, adolescents seek, besides pleasure, extroversion, group sharing, differentiation, autonomy, and independence from family. The negative side of pleasure seeking by adolescents is the risk for a problematic pattern of use, compromising her/his entire life trajectory.³

In Brazil, alcoholism was the fourth risk factor for chronic non-communicable diseases, according to a multicenter study conducted in some Latin American capitals, following the basic guidelines of the Pan American Health Organization (PAHO).⁴ In a study carried out in 2004, 65.2% of students reported lifetime alcohol consumption; 44.3% in the past 30 days; 11.7% reported frequent use; and 6.7% reported heavy use, i.e. ≥ 20 times in the past month.⁵

Alcohol consumption during adolescence, in addition to high prevalence, presents two other factors for initiation, age and consumption pattern. A study reports that, in the United Kingdom, about 1/5 of young people aged 12 and 13 years reported alcohol consumption, but this proportion increases from 40% to 50% between 14 and 15 years and $> 70\%$ at 17 years.⁶ In Brazil, the regular use of alcoholic beverages starts at 14.8 years and that by young adults starts at 17.3 years.⁷

Despite the ban on sale of alcoholic beverages to people under 18 years in Brazil (Law 9,294/1996), alcohol consumption by young individuals is still a common practice. Adolescent's vulnerability and the ease for drinking alcohol are mediated by the interdependence of individual, family, and social risk factors.⁸

OBJECTIVE

- Analyze the association between alcohol consumption and family, personal, and social factors of High School students.

METHOD

This is an epidemiological, cross-sectional, population-based study. The target population was restricted to students from the state public schools in the Metropolitan Region of

Recife, Pernambuco, Brazil, within the age group between 14 and 20 years. According to data provided by the State Department of Education of Pernambuco, considering all the administrative spheres (federal, state, municipal, and private), the subjects enrolled in state public schools represent 47% of all High School students in the Metropolitan Region of Recife.

To calculate the sample size, based on the software *Sample XS*, the following criteria were used: population estimated in 164,456 subjects; boys/girls ratio of 50%/50%; sampling design effect equal to 4.0; confidence interval (CI) of 95%; maximum tolerable error of 3%. Additionally, in order to alleviate the limitations imposed by potential losses, due to inadequate application or completion of the questionnaire, we decided to have a sample 20% larger. The final sample, corresponding to students aged between 14 and 20 years, totaled 1,878 students.

We tried to ensure that the selected sample represented the target population with regard to the distribution according to geographical region, school size, and student enrollment period (day and night shifts). The regional distribution was observed by means of the number of schools in each of the 4 Regional Offices of Education (GEREs). Schools were classified into 3 categories: small (< 200 students); medium-sized (200 to 499 students); and large (≥ 500). Students enrolled in the morning and afternoon periods were grouped into a single category (students from the day shift).

To select the required sample, we resorted to a procedure of cluster sampling in two stages, and "school" and "class" represented the sampling units, respectively, in the 1st and 2nd stages. All schools in the state public school network in the Metropolitan Region of Recife were considered eligible for inclusion in the study. In the 1st stage, we adopted as a stratification criterion for the draw school density in each microregion of GERE according to size. In the 2nd stage, we considered the class density in selected schools by period (day and night shifts) as a criterion to draw the classes in which the questionnaires were to be applied. All students in selected classes were invited to participate in the study. The draws were conducted by random number generation using the software *Epi Info 6.04*.

Data were collected through the questionnaire "Global School-Based Student Health Survey" (GSHS)⁹, already validated for Brazilian Portuguese. This instrument was proposed by the World Health Organization (WHO), with the objective of evaluating

exposure to health risk behaviors among adolescents. The questionnaire was applied within the period from April to September 2006, in the classroom, in groups of 20 to 30 students, with an interval of 30 days corresponding to the period of school holidays.

After approval of the research project by the Research Ethics Committee (REC) of Hospital Agamenon Magalhães and formal consent from the Secretary of Education and Culture of the State of Pernambuco for data collection in schools, a meeting with the managers from all GEREs was held to present the project and the list of schools selected to participate in the study, in addition to the consent of schools participating in the study and parents or legal guardians of each student selected. The research subjects were informed about study objectives; data collection procedures; possible constraints or benefits; besides the guarantee of confidentiality and respect for the wish to participate in the research or not.

The independent variables used in this study were all self-reported: age categorized as 14 or 15 years, 16 or 17 years, and 18 to 20 years; sex; marital status; religion; educational status; work; living with parents. The variable “living with parents” was dichotomous (yes/no) and only students who reported living with father and mother were classified as “yes”. The adolescent’s occupation status was a dichotomous variable analyzed by means of adolescent engagement in the formal or informal labor market, thus, all those who reported working, regardless of complying with the requirements of the employment record book, were classified as “workers”.

The procedure named final tabulation of data was conducted using the software *Epidata*, version 3.1, which is a public domain system, with which we also conducted the electronic procedures to control data entry, using the function *check* (controls). In order to detect errors, data entry was repeated and,

through the function comparison of duplicate files, typos were detected and corrected.

The analysis was conducted using the software *Statistical Package for the Social Sciences (SPSS)*, version 15.0. We calculated the absolute and percentage distributions, univariate and bivariate, using the chi-square test of independence, including the determination of odds ratio (OR) at a significance level of 5%.

As it involves human beings, the research project was submitted to the REC of Hospital Agamenon Magalhães, complying with Resolution 196/96, from the National Health Council, and it was approved with CAAE n. 1130.0.000.217-07.

RESULTS

Among the 1,878 students surveyed, 60.7% were female and 39.3% male, and 3 students who chose to omit this information were excluded. As for age distribution, 17.9% were aged 14 or 15 years, 44.2% were 16 or 17 years, and 37.9% were between 18 and 20 years old. Regarding alcohol consumption, 29.8% reported to have drunk alcohol within 30 days preceding the survey. Sample distribution with regard to the sociodemographic variables and the religious practice showed that the percentage of students who had drunk alcohol increased according to the age group, ranging from 18.7% at 14 or 15 years to 36.6% from 18 to 20 years. Between genders, we observed that alcohol consumption was higher among males (39%) (OR = 2.05; CI = 95%: 1.73 to 2.42; p = 0.0001). We also observed that the percentage of students who had drunk alcohol was higher among single individuals (32.8%), those working (39.9%) and those who reported following no religion (43.7%). As for living or not with the father and/or mother, we observed no significant association (p = 0.730) (Table 1).

Table 1. Evaluation of alcohol use in the 30 days prior to data collection, according to sociodemographic characteristics and religious practice. Metropolitan Region of Recife, Brazil, 2006.

Variables		Alcohol consumption (%)			P value*	OR†
		Yes	No	Total		
Age group (years)						
	14-15	18.7	81.3	100.0	< 0.0001‡	1.00
	16-17	29.1	70.9	100.0		1.76 (1.29-2.40)
	18-20	36.6	63.4	100.0		2.48 (1.81-3.39)
	Total	28.1	71.9	100.0		
Sex						
	Male	39.1	60.9	100.0	< 0.0001‡	2.05 (1.68-2.50)
	Female	24.2	75.8	100.0		1.00
	Total	31.6	68.4	100.0		
Educational status						
	1 st grade	30.3	69.7	100.0	0.179	1.00
	2 nd grade	33.6	66.4	100.0		1.17 (0.96-1.42)
	3 rd grade	33.9	66.1	100.0		1.18 (0.97-1.44)
	Total	32.4	67.6	100.0		
Marital status						
	Single	32.8	67.2	100.0	0.838	1.11 (0.67-1.85)
	Married	31.6	68.4	100.0		1.05 (0.61-1.82)
	Other	30.6	69.4	100.0		1.00
	Total	32.6	67.4	100.0		
Live with father						
	Yes	32.4	67.6	100.0	0.730	1.00
	No	33.1	66.9	100.0		1.03 (0.87-1.21)
	Total	32.7	67.3	100.0		
Live with mother						
	Yes	31.8	68.2	100.0	0.148	1.00
	No	34.9	65.1	100.0		1.15 (0.95-1.38)
	Total	32.6	67.4	100.0		
Work						
	Yes	39.9	60.1	100.0	< 0.0001‡	1.51 (1.26-1.82)
	No	30.3	69.7	100.0		1.00
	Total	32.6	67.4	100.0		
Religion						
	Catholic	39.8	60.2	100.0		0.25 (0.20-0.31)
	Evangelical	14.1	85.9	100.0		1.05 (0.62-1.77)
	Spiritualist	41.0	59.0	100.0		1.43 (0.89-2.31)
	Other	48.6	51.4	100.0		1.17 (0.95-1.44)
	None	43.7	56.3	100.0		
Total		32.4	67.6			

* Using Pearson’s chi-square test. † CI = 95%. ‡ Significant association at the 5% level.

Based on the multivariate logistic regression model, we found out that: being male, being in the age group between 18 and 20 years, working, and having no religion were factors associated with alcohol consumption.

Assuming the adjusted model, age group increased by 2.36 times the risk for using alcohol, while being male accounted for 1.82 times, and these were the main associated factors (Table 2).

Table 2. Logistic regression model of factors associated with alcohol consumption among adolescents. Metropolitan Region of Recife, Brazil, 2006.

Variables selected for the model		Bivariate analysis	OR adjusted for the model (CI 95%)	P value
Age group (years)				< 0.001*
	14-15	1.00	1.00	
	16-17	1.76 (1.29-2.40)	1.54 (0.86-2.79)	0.144
	18-20	2.48 (1.81-3.39)	2.36 (1.33-4.20)	0.003
Sex				
	Male	2.05 (1.68-2.50)	1.82 (1.53-2.17)	< 0.001*
	Female	1.00	1.00	
Religion				
	Yes	1.00	1.00	< 0.001*
	No	1.83 (1.51-2.22)	1.71 (1.39-2.09)	
Work				
	Yes	1.51 (1.26-1.82)	1.18 (0.97-1.45)	< 0.001*
	No	1.00	1.00	

* Significant association at the 5% level.

DISCUSSION

The results of this study demonstrated an alcohol consumption of 29.8% among the students surveyed, which increased according to age, rates similar to other national and international studies.¹⁰⁻¹⁵ Overall prevalence estimates help knowing the problem

magnitude, but they can mask important differences, such as, for instance, consumption concentration in a specific population group.

When separately analyzed by gender, it was observed that the prevalence of alcohol consumption was higher among boys. These findings are consistent with those reported by

other epidemiological studies.^{4,10-11,13,16-21} In 2002, the detected prevalence of alcohol consumption among adolescents, in the past month, was 49% in males and 37.9% in females.¹² A similar finding was obtained in an investigation involving 1,990 adolescents, by identifying a frequency of consumption pattern in the 30 days prior to data collection of 41.5% and 38.8% among boys and girls, respectively.¹³

In a study involving 1,221 students, in the state of Nuevo León, Mexico, an alcohol consumption of 13.3% was identified in the previous month to the application of the instrument and a higher proportion of consumption was found out among males (36.6%), when compared to females (27.8%). These data show a prevalence of alcohol consumption among male students.¹⁸

However, we found out a higher proportion of consumption among female students.¹ We identified a consumption prevalence in both sexes.⁶ This finding is similar to that of a survey conducted in 2007⁷, alcohol consumption among adolescents, in the age group from 14 and 17 years, was 36% among boys and 32% among girls, a difference of only 4%.

This movement that would lead to closer alcohol consumption habits between boys and girls implies the immediate concern, from the viewpoint of public health, regardless of the scenario (prevalence of males or similar consumption among females).

Out of the data presented here, the presence of father and/or mother at home also stands out, whose results in this study are similar to those of other research. A previous study reported that, in the sample under study, the risk for alcohol consumption was not associated with presence or absence of father and/or mother at/from home.¹⁹

Adolescent care should focus on various social contexts, among them family, since it is the primary socialization core, in which the standards for developing social behavior are ensured. Family plays an important role to create conditions that favor both drug use by an adolescent and a protective effect.⁴

Regarding work, alcohol consumption was higher among the students who work when compared to those who do not work in this study. The significant association between the risk for consumption of alcoholic beverages and work has also been confirmed in other studies, which point out a higher prevalence of alcohol consumption among adolescents who work.^{1,20-21} In this regard, the authors emphasize that addict's behaviors may be related to financial independence, interaction

with adults who use this substance in recreational meetings or due to the stress caused by work.

As for the religious practice, being affiliated to any religion has shown to be negatively associated with greater alcohol consumption among adolescents and young people. We add that mechanisms implied in this finding are not clear, yet.²¹

In a cross-sectional study involving 2,287 students from public schools, through the questionnaire of the Brazilian Information Center on Psychotropic Drugs (CEBRID), variables related to religiosity were analyzed, among them, the most recurrent in multivariate analysis, associated to a possible inhibitor of the use of alcohol and other drugs, was "having received a religious education (or a very religious one) during childhood".²² Besides, in the United States, the consumption of alcohol and other drugs among adolescents and young people is associated with those who claim to have no religion, little belief, and do not attend churches and cults.

In Brazil, there is a weak, but continued, correlation between the consumption of alcohol and other drugs and the frequency of religious activities. Among the students who practice religious activities, there was a slight decreased use of alcohol and other drugs.¹⁴

In this research, alcohol consumption was higher among students who reported not following any religion, something which reinforces data obtained in other studies. Another study also reports that alcohol consumption was higher among adolescents who did not follow any religião.²³ Being male, being within the age group from 18 to 20 years, working, and having no religion was associated with the outcome. These results were similar to those of other epidemiological studies.

In an analytical cross-sectional study involving 2,472 students from 10 to 20 years, using the questionnaire of CEBRID, an association was identified between alcohol consumption and being male, as well as a higher prevalence among adolescents who work.²⁴ In a multicenter study conducted in Brazil, with 48,155 students, the highest factor associated with heavy alcohol consumption was reported among adolescents who work, followed by age > 15 years.²¹

It is worth stressing that the vulnerable segments, in the age groups of children, adolescents, and young people in Brazil, live with poor access to health care services, enter the labor market early, and start substance use on an increasingly early basis.²⁵

Due to the need for ensuring some fight against these issues, the Ministry of Health created the Emergency Plan for Increasing Access to Treatment and Prevention on Alcohol and Other Drugs (PEAD), 2009-2011, which aims to enhance, expand, and diversify actions for health prevention and promotion, treatment, and reduction of risk and damage associated with the harmful consumption of psychoactive substances.²⁶

CONCLUSION

Knowledge on the factors associated with alcohol consumption by adolescents may provide means to develop preventive strategies involving community interventions through public policies, in order to prevent that problems deriving from early exposure to alcohol keep being observed.

With a broader implication, the results of this research may contribute to guide the planning of educational activities on this theme with students from other contexts, in order to promote health.

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Submission: 2013/07/15

Accepted: 2013/11/26

Publishing: 2014/05/01

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