



## USE OF TOBACCO AND ALCOHOL AMONG HEALTH CARE STUDENTS

*Uso de tabaco e álcool entre acadêmicos da saúde*

*Uso de tabaco y alcohol en académicos del área de la salud*

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### ABSTRACT

**Objective:** To assess the prevalence of alcohol and tobacco use among university students. **Methods:** Cross-sectional study carried out with 286 university students from the Federal District from August to October 2016 using a structured self-administered questionnaire on age, gender, type of high school, socioeconomic status, place of residence, frequency of alcohol and tobacco use, and self-perception of health. Data were analyzed using chi-squared tests and logistic regressions with a significance level of 5%. **Results:** Of the 286 students, 190 (66.4%) use alcohol and 14 (5%) smoke at parties or on the weekend. In all, 132 (94.3%) women and 46 (92%) men said these habits started before university admission. Those who live with their parents or relatives had a higher prevalence of smoking 25.4% [OR 1.27; 95%CI 0.40-4.03] and those who lived alone presented higher alcohol consumption 70.3% [OR 1.09; 95%CI 0.30-3.91]. The poorer the self-perception of health, the higher the probability of alcohol consumption (83.3%) [OR 2.25; 95%CI 0.25-19.9]. **Conclusion:** The prevalence of alcohol consumption among the analyzed students is high, with higher rates among women. As for tobacco use, there was a low prevalence among the students.

**Descriptors:** Ethanol; Tobacco; Students; Health Education.

### RESUMO

**Objetivo:** Verificar a prevalência do consumo de álcool e tabaco entre acadêmicos. **Métodos:** Estudo de corte transversal, realizado com 286 acadêmicos do Distrito Federal, no período de agosto a outubro de 2016, no qual se aplicou questionário estruturado de autopercepção sobre idade, sexo, tipo de escola no ensino médio, nível socioeconômico, local de moradia, frequência de uso do álcool e tabaco, e autopercepção de saúde. **Dados analisados** através dos testes qui-quadrado e regressões logísticas, com nível de significância de 5%. **Resultados:** Dos 286 acadêmicos, 190 (66,4%) consomem álcool e 14 (5%) fumam em festas ou no fim de semana. Entre eles, 132 (94,3%) mulheres e 46 (92%) homens relataram que este hábito foi adquirido antes de ingressar na instituição de ensino. Os que moram com os pais ou parentes apresentaram maior prevalência de tabagismo 25,4% [OR 1,27; IC95% 0,40-4,03], e os que moram sozinhos um maior consumo de álcool 70,3% [OR 1,09; IC95% 0,30-3,91]. Quanto menor a autopercepção de saúde, maior a probabilidade de consumo de álcool (83,3%) [OR 2,25; IC95% 0,25-19,9]. **Conclusão:** A prevalência do consumo de álcool entre os acadêmicos investigados é elevada, e a sua frequência é maior entre o sexo feminino. Quanto ao uso de tabaco, notou-se baixa prevalência entre todos os participantes.

**Descritores:** Etanol; Tabaco; Estudantes; Educação em Saúde.



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## RESUMEN

**Objetivo:** Verificar la prevalencia del consumo de alcohol y tabaco entre académicos. **Métodos:** Estudio de corte transversal realizado con 286 académicos del Distrito Federal en el periodo entre agosto y octubre de 2016 en el cual se aplicó un cuestionario estructurado y auto aplicable sobre la edad, el sexo, el tipo de la escuela de educación secundaria, el nivel socioeconómico, el local de la vivienda, la frecuencia de uso del alcohol y tabaco y la auto percepción de salud. Los datos fueron analizados a través de las pruebas Chi-cuadrado y regresiones logísticas con el nivel de significación del 5%. **Resultados:** De entre los 286 académicos, 190 (66,4%) consumen alcohol y 14 (5%) fuman en fiestas o fines de semana. Entre ellos, 132 (94,3%) mujeres y 46 (92%) hombres relataron que esta costumbre ha sido adquirida antes del ingreso en la institución de enseñanza. El 25,4% que viven con sus padres o parientes presentaron mayor prevalencia de tabaquismo [OR 1,27; IC95% 0,40-4,03] y el 70,3% que viven solos presentaron mayor consumo de alcohol [OR 1,09; IC95% 0,30-3,91]. Cuanto menor es la percepción de salud más alta la probabilidad de consumo de alcohol (83,3%) [OR 2,25; IC95% 0,25-19,9]. **Conclusión:** La prevalencia del consumo de alcohol entre los académicos investigados es elevada y su frecuencia es mayor en el sexo femenino. Se notó baja prevalencia de uso del tabaco entre los participantes.

**Descriptor:** Etanol; Tabaco; Estudiantes; Educación en Salud.

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## INTRODUCTION

College admission leads to changes in the lifestyle of youth, especially they are away from home, which is often the case. These changes lead them to adopt erroneous health habits that can last a lifetime, leading to present and future losses<sup>(1)</sup>.

Approximately 3.3 million annual deaths (6% of all deaths worldwide) are directly or indirectly related to alcohol consumption<sup>(2)</sup>. Young individuals (between 20 and 49 years old) are the main victims of deaths associated with alcohol use, representing an important loss of economically active people<sup>(2)</sup>.

Tobacco consumption accounts for about six million deaths a year worldwide<sup>(2)</sup>. In 2011, smoking was responsible for 14,072 deaths in Brazil, corresponding to 14.7% of all deaths in the country. Today, smoking kills more than alcoholism, AIDS, road traffic accidents, homicide and suicide together, which is a worrying situation for world authorities<sup>(3)</sup>.

Alcohol consumption is not only found in the adult population. Adolescents and young people start using it very early<sup>(4)</sup>. Most of the time, this consumption is influenced by the media, thus becoming a public health problem. According to researchers, alcohol is the drug most consumed by university students<sup>(4)</sup>.

In Brazil, the prevalence of alcohol use among university students in the capitals of Brazilian states in 2009 was 86%, with 22% of these being at risk of developing dependence<sup>(5)</sup>. This is worrisome problem because the use of this substance has been associated with lower academic performance, organic, social and behavioral problems, and the use of other drugs in addition to hindering professional performance<sup>(6)</sup>.

Tobacco is also widely consumed by university students. In Brazil, over the course of 10 years, the prevalence of its use increased from 43% to 50% among university students<sup>(6)</sup>. In 2009, the prevalence of tobacco use among university students was 47%, with 22% presenting a moderate to high risk of developing dependence<sup>(7)</sup>. In a study carried out in Spain, 35% of the university students had already smoked, consumed 11 or more cigarettes per day, and the psychoactive substance was consumed on a daily basis<sup>(7)</sup>. In addition to negative health effects, smoking has also been associated with the use of marijuana, inhalants, hallucinogens and amphetamines<sup>(6)</sup>.

To minimize the consequences of alcohol and tobacco abuse it is necessary to put into effect existing public policies, as they are important means to reduce social and economic inequalities and can ensure equitable access to goods and services, including health care<sup>(8)</sup>.

In this context, emphasis is placed on the need for health promotion actions, which are defined as transversal articulation strategies focused on the determinants of the health-disease process of the population and on the differences between needs, territories and cultures present in Brazil in order to build mechanisms that reduce situations of vulnerability and foster social participation and control in the management of public policies<sup>(9)</sup>. Thus, health promotion is understood as a process of empowering the community to improve and control their health. The scientific production on the interface between alcohol/tobacco consumption and the promotion of individual and/or collective health is still scarce, thus becoming a research field to be explored<sup>(10)</sup>.

Given that, the present study aimed to assess the prevalence of alcohol and tobacco use among university students.

## METHODS

This is an epidemiological cross-sectional study carried out from August to October 2016 with Pharmacy students of a private higher education institution in the Federal District.

Participants were undergraduate students enrolled in the first to the eighth semester who were in the classroom at the time of data collection. A total of 286 participants out of 480 students aged over eighteen years regularly enrolled in the second half of 2016 were invited to participate.

Trained researchers carried out data collection through the application of a self-administered structured questionnaire without the identification of the student. The questionnaire contained questions on health-related life habits. The following variables were analyzed: age, gender, type of high school attended (public high school, private high school, public and private high school, or other), socioeconomic status based on the 2014 guidelines of the Brazilian Association of Research Companies (*ABEP – Associação Brasileira de empresas de pesquisa – 2014 – www.abep.org*), place of residence (with parents or relatives, house/apartment shared with friends, alone, or other), frequency of use of alcohol (never drank, monthly or less, 2-4 times a month, 2-3 times a week, and 4 or more times a week) and tobacco (never smoked, tried, smokes at parties or on the weekend, former smoker, and current smoker), time of onset of drinking and smoking (before or after college admission), and self-rated health (excellent, very good, good, fair and poor).

The questionnaire was administered during class breaks in a room with capacity for 60 students so that the students of each class could be accommodated with a certain distance between them to preserve the privacy of their answers. After completion, the questionnaire was placed inside a dark envelope that contained the identification of the class and shift (morning and night) only.

In the classroom of the School of Pharmacy, prior to delivering the questionnaire and the Free Informed Consent Form, the researchers introduced themselves to the teacher in charge of the class, who was previously informed about the research objectives and methodology. After that, the researchers introduced themselves to the class and explained the objectives, methodology and importance of the study and invited them to participate in the research.

Alcohol consumption was assessed through a question about how often the student drank. Students who reported some type of consumption answered the CAGE questionnaire<sup>(11)</sup>, a widely used instrument that classifies suspected cases of alcoholism by means of affirmative answers to two or more of its questions. The questionnaire consists of four questions represented by the key words related to each letter: C – Cut Down; A – Annoyed; G – Guilty; E – Eye-Opener (need to drink first thing in the morning to avoid hangover). Two or more affirmative answers confirm suspected alcohol abuse. The validation of the CAGE questionnaire in Brazil found a sensitivity of 88% and a specificity of 83%<sup>(11)</sup>. After that, the participants were divided into two groups: “drinkers” – individuals who reported drinking at least once a month – and “non-drinkers” – individuals who never drank.

Regarding smoking, individuals who reported being smokers were asked whether they started smoking before or after college admission. The participants were divided into two groups: smokers – individuals who reported smoking cigarettes at parties or on weekends, and those who smoke regularly. On the other hand, those who do not smoke cigarettes, even if they had been smokers at some point in their lives, were considered non-smokers.

The appropriately completed questionnaires were entered into Excel spreadsheets twice and checked for possible inconsistencies. The statistical analysis was carried out using STATA 9.0. Descriptive analyses (with means and proportions) and analysis of associations using Chi-squared tests for heterogeneity and logistic regressions were carried out with a significance level of 5% and a 95% confidence interval.

This study was approved by the Research Ethics Committee of the Federal District University Center (*Centro Universitário do Distrito Federal – UDF*) under Approval No. 1.794.275. The research is in accordance with Resolution No. 466/2012 of the National Health Council.

## RESULTS

Participants were 286 students: 215 (75.1%) women and 71 (24.9%) men. The mean age of the students was 25.1 ( $\pm$  4) years and 195 (68.2%) of them were aged 20-29 years old. Table I describes the sample according to the demographic, socioeconomic and health characteristics. Regarding the type of high school, 190 (66.4%) students studied in a public school and 185 (64.7%) lived with parents or relatives. Regarding self-rated health, 116 (40.6%) students rated their health as “good” and 75 (26.2%) considered it to be “very good”.

Table I - Description of the sample according to demographic and socioeconomic variables. Brasília, Distrito Federal, 2016.

Variables	n	%
<b>Gender</b>		
Women	215	75.1
Men	71	24.9
<b>Age</b>		
< 20	39	13.6
20-29	195	68.2
> 30	52	18.2
<b>Type of high school</b>		
Public school	190	66.4
Private school	65	22.7
Public and private school	11	3.9
Other	20	7.0
<b>Socioeconomic status</b>		
A	23	8.0
B	108	37.8
C	124	43.3
D	31	10.9
<b>Place of residence</b>		
Parents or relatives	185	64.7
Sharing house with friends	19	6.7
Alone	27	9.4
Other	55	19.2
<b>Self-rated health</b>		
Excellent	34	11.9
Very good	75	26.2
Good	116	40.6
Fair	55	19.2
Poor	6	2.1
Total	286	100

Drinking and smoking are described in Table II. In all, 112 (39.2%) students drank at least once a month, with no differences between genders ( $p=0.08$ ).

Regarding smoking, 14 (5%) students said they smoke at parties or on weekends. In all, 11 (3.8%) interviewees were former smokers and approximately 217 (75.9%) reported never having smoked.

Table II - Use of alcohol and tobacco among Pharmacy students. Brasília, Distrito Federal, 2016.

Variables	Total		Women		Men	
	n	%	n	%	n	%
<b>Use of alcohol</b>			$p = 0.081$			
Never	96	33.6	75	34.9	21	29.6
Monthly or less often	112	39.2	84	39.1	28	39.4
2-4 times a month	55	19.2	44	20.5	11	15.5
2-3 times a week	20	7.0	11	5.1	09	12.7
4 or more time a week	03	1.0	01	0.4	02	2.8
Total	286	100	767	100	207	100
<b>Use of tobacco</b>			$p = 0.901$			
Never	217	75.9	165	76.8	52	73.2
Tried but was not a regular smoker	35	12.2	24	11.2	11	15.5
Smokes at parties or on weekends	14	5.0	11	5.1	03	4.2
Former smoker	11	3.8	08	3.7	03	4.2
Current smoker	09	3.1	07	3.2	02	2.9
Total	286	100	215	100	71	100

Suspected alcoholism was assessed among the students who reported drinking. In all, 07 (2.4%) of them presented a positive result according to the CAGE questionnaire (05 men and 02 women).

Among drinkers, 132 (94.3%) women and 46 (92%) men reported having started drinking before college admission, with no significant differences between genders ( $p=0.40$ ) (Table III). Table III also shows that there were no significant differences in smoking between genders ( $p=0.55$ ) – 40 (80%) women and 13 (68.4%) men reported having started smoking before college admission.

Table III - Description of the sample according to the time of onset of use of alcohol and/or tobacco. Brasília, Distrito Federal, 2016.

Variables	Women	Men
	n (%)	n (%)
<b>Time of onset of drinking</b>		
Before college admission	132 (94.3)	46 (92.0)
After college admission	08 (5.7)	04 (8.0)
Total	140 (100)	50 (100.0)
<b>Time of onset of smoking</b>		
Before college admission	40 (80.0)	13 (68.4)
After college admission	10 (20.0)	06 (31.6)
Total	50 (100.0)	19 (100.0)

Table IV depicts the association of drinking and smoking with demographic, socioeconomic and health variables. Students aged 20-29 exhibited a higher prevalence of drinking (69.7%), and those over 30 years of age showed a higher prevalence of smoking (25%). Students who completed secondary education in private schools were more likely to use tobacco. Likewise, individuals in the Group C of the socioeconomic status scale were also more likely to drink and smoke.

Students living with parents or relatives exhibited a higher prevalence of smoking (25.4%), and those living alone presented a higher alcohol consumption (70.3%). In contrast, the poorer the self-rated health, the greater the likelihood of alcohol consumption (Table IV).

Table IV - Association of drinking and smoking with demographic, socioeconomic and health variables. Brasília, Distrito Federal, 2016.

Variável	Drinking		Smoking	
	%	OR (95%CI)	%	OR (95%CI)
<b>Gender</b>				
Women	73.6	1.00	72.4	1.00
Men	26.3	1.27 (0.71-2.28)	27.5	1.20 (0.65-2.22)
<b>Age</b>				
< 20	58.9	1.00	25.6	1.00
20 - 29	69.7	1.60 (0.79-3.25)	23.5	0.89 (0.40-1.97)
> 30	59.6	1.02 (0.44-2.39)	25.0	0.96 (0.37-2.51)
<b>Type of high school</b>				
Private school	75.3	1.00	26.1	1.00
Public school	62.1	0.53 (0.28-1.01)	22.6	0.82 (0.43-1.58)
Private and public school	63.6	0.57 (0.14-2.20)	36.3	1.61 (0.41-6.20)
Other	80.0	1.30 (0.38-4.47)	25.0	0.94 (0.29-2.98)

<b>Socioeconomic status</b>				
A	73.9	1.00	26.1	1.00
B	64.8	0.65 (0.23-1.78)	21.3	0.76 (0.27-2.16)
C	69.3	0.79 (0.29-2.18)	29.0	1.15 (0.42-3.17)
D	54.8	0.42 (0.13-1.37)	12.9	0.41 (0.10-1.70)
<b>Place of residence</b>				
Sharing house with friends	68.4	1.00	21.0	1.00
Parents or relatives	68.5	1.01 (0.36-2.79)	25.4	1.27 (0.40-4.03)
Alone	70.3	1.09 (0.30-3.91)	22.2	1.07 (0.25-4.46)
Other	56.3	0.59 (0.19-1.79)	21.8	1.04 (0.29-3.74)
<b>Self-rated health</b>				
Good	68.7	1.00	20.6	1.00
Excellent	67.6	0.94 (0.41-2.13)	32.3	1.83 (0.78-4.27)
Very good	68.0	0.95 (0.51-1.78)	29.3	1.59 (0.81-3.10)
Fair	56.3	0.58 (0.29-1.12)	20.0	0.95 (0.43-2.13)
Poor	83.3	2.25 (0.25-19.9)	16.6	0.76 (0.85-6.87)

## DISCUSSION

The present study found a high prevalence of drinking (66.4%) among students. A study carried out in more than 100 Brazilian cities with more than 200 thousand inhabitants showed that alcohol consumption is very common in individuals aged 18-24 years and that 15.5% of this population is dependent<sup>(12)</sup>. Among medical students, the rate of binge drinking ranged 25% to 98% in some regions, depending on the sample and the way data were collected<sup>(13)</sup>. Students from Juiz de Fora, for example, presented a prevalence rate of 25% of binge drinking<sup>(13)</sup>.

The Brazilian youth has engaged into being under the influence of alcohol (“getting drunk”). In Brazil, epidemiological studies have shown that alcohol consumption is higher among university students compared with high school students<sup>(14)</sup>.

It is estimated that alcohol use is increasing due to lifestyle, anxiety, stress, depression and low self-esteem<sup>(14)</sup>. University students are more exposed to environments where access to alcohol is easier. This points to a greater need for the academic environment to provide effective support and training for students to quit drinking<sup>(13)</sup>.

A study carried out with 174 students from a public university of São Luís, Maranhão, found that 59% of the respondents had already abused some type of alcoholic beverage. Of these, 20.7% reported having been drunk in the past 19 days and 14.9% in the past five days prior to data collection<sup>(15)</sup>.

On the other hand, a study carried out in the city of Piracicaba, in the state of São Paulo, assessed alcohol consumption and quality of life in university students using a sample of 170 individuals of both genders. The study found that 68.20% of the participants presented low-risk alcohol consumption, 21.80% presented high-risk alcohol consumption, and 5.29% of the students were likely to be dependent on alcohol<sup>(16)</sup>.

Likewise, results found by a study carried out in a public school in São Paulo with 112 Nursing students aged 17-28 years indicated that 79.5% of the individuals were at low risk of developing alcohol dependence<sup>(17)</sup>.

Regarding the sample analyzed in the present study, there was a predominance of women. Consistent with these results, a previous study<sup>(18)</sup> on alcohol consumption found a predominance of women (61.6%), with only 38.4% of the sample being composed of men. Other studies on alcohol use have also corroborated the findings<sup>(19,20)</sup>.

The easy access to these substances is demonstrated by the fact that 80.3% of university students tried alcohol at age 18 or younger and 89.4% started smoking at age 19 or younger<sup>(21)</sup>. Alcohol use among Pharmacy students occurs substantially before college admission and under 21 years of age<sup>(22)</sup>. These data are consistent with the findings of the present study, which showed that 94.3% of women and 92% of men already used alcohol prior to college admission.

A study carried out with medical students from the Federal University of Uberlândia showed that almost half of the students started drinking between the ages of 16 and 18 (46.15%)<sup>(23)</sup>. The study also showed that the mean age of onset of drinking was younger among men – 15 years old or younger (52.68%). Among women, the onset of drinking was between the ages of 16 and 18 (53.92%)<sup>(23)</sup>. Regarding the frequency of drinking among university students, research has found that 65.17% of them drank occasionally, 27.86% drank once or twice a week, 5.97% drank three to four times a week, and 1% drank every day. All the participants who reported drinking every day were men<sup>(23)</sup>. These data are different from those found in the present study, in which only 19.2% of the students drank two to four times a month and 7% drank two to three times a week.

A study carried out with nursing students in a private institution in the city of Montes Claros, Minas Gerais, found a drinking rate of 77.4%, with a slightly higher prevalence among individuals in the Group B of the socioeconomic status scale<sup>(24)</sup>. In the present study, individuals in the Group C of the socioeconomic status scale were more likely to drink and smoke.

One explanation for the high consumption of alcohol among women is that with their financial independence, the acquisition of certain rights and positions in society and the struggle for gender equality, women have adopted some habits typically associated with men, including the alcohol use<sup>(25)</sup>.

A study carried out with 492 Brazilian university students found that health university students do not acknowledge that nicotine can cause dependence and classify it as a stress-reducing factor<sup>(26)</sup>. However, a study carried out with Nursing students of a private institution showed that tobacco generates major psychological dependence<sup>(27)</sup>.

In general, the prevalence of tobacco use among university students in other areas is slightly lower than that among health students (ranging 8.1% to 14.7%), with industrialized cigarettes being the most used by these university students<sup>(28)</sup>.

Studies carried out in Chile with 490 university students<sup>(29)</sup> and in Colombia<sup>(30)</sup> with about 1324 university students have shown that Social Sciences male students consume more tobacco than their female peers. This fact was also observed among health students<sup>(31)</sup>.

Tobacco and alcohol are substances that are harmful to health. It is estimated that by 2020 they will be determinants of death and disability in individuals predisposed to dependence<sup>(32)</sup>.

Several studies have been carried out in Brazil to describe the prevalence of smoking in the university environment, especially among health students<sup>(33)</sup>. Smoking was observed in 17% of medical students in Vassouras<sup>(34)</sup>, a rate that is well above those found in other similar studies carried out with university students in Pouso Alegre, with a prevalence rate of 7.8%<sup>(35)</sup>, and 6%<sup>(36)</sup> in the Federal University of Piauí, 6.7%<sup>(37)</sup> among Nursing students in Minas Gerais, 3% among North American university students and 58% in Japan, as well as in Spain and Greece, countries with the highest smoking rates<sup>(38)</sup>.

Increasing alcohol consumption can lead people to use other types of psychoactive substances. Research reports that tobacco is the second most commonly used drug among young people in the world and that there is a relationship between the two substances, i.e., individuals who use alcohol are likely to use or have already used tobacco<sup>(39)</sup>.

Advertising of alcoholic beverages influence the use of these substances by young people because most advertisings are targeted at this public. In Brazil, there are almost no programs to raise awareness of the dangerous effects of alcohol abuse; in addition, advertisements of alcoholic beverages are not restricted when they are advertised to the public<sup>(40)</sup>.

The selection of only one course is a limitation of the present study. It is considered important to carry out further studies on the risks caused by alcohol and tobacco abuse among university students in the health area, since they are knowledge holders and health promoters. It should be noted, therefore, that preventive measures must be carried out in the period prior to college admission. This aspect must be reinforced in the training of future health professionals.

## CONCLUSION

The prevalence of alcohol use among Pharmacy students is high, and its frequency is higher among women. Regarding tobacco use, there was a low prevalence among the participants.

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