

## Use of psychoactive substances among university students

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The objective of this study was to identify the profile of use of psychoactive substances among students of Biological Sciences, Physical Education, Nursing, Physiotherapy, Pharmacy, Dentistry and Nutrition courses. It was a cross-sectional, quantitative, exploratory and descriptive study with 567 students. Data were collected through a questionnaire and analyzed through descriptive statistics. In the results, it was found that 11.6% of students had never tried psychoactive substances in their lives. The most prevalent drugs among university students were alcohol (n = 501), tobacco (n = 161), marijuana (n = 115), and cocaine (n = 26). The result led to the conclusion that consumption of psychoactive substances among students is a problem that must be faced through the implementation of preventive and harm reduction actions.

Descriptors: Mental Health; Primary Health Care; Family Health Strategy; Family Health.

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## **Uso de substâncias psicoativas entre estudantes universitários**

O objetivo do estudo foi identificar o perfil do uso de substâncias psicoativas entre estudantes dos cursos de Ciências Biológicas, Educação Física, Enfermagem, Fisioterapia, Farmácia, Odontologia e Nutrição. Trata-se de estudo transversal, quantitativo, exploratório e descritivo, com 567 estudantes. Os dados foram coletados por meio de um questionário e analisados através da estatística descritiva. Nos resultados, verificou-se que 11,6% dos estudantes nunca experimentaram substâncias psicoativas na vida. As drogas mais prevalentes entre os universitários foram o álcool (n=501), tabaco (n=161), maconha (n=115) e cocaína (n=26). Conclui-se que o consumo de substâncias psicoativas entre os estudantes é problema que deve ser enfrentado através da implantação de ações preventivas e de redução de danos.

Descritores: Saúde Mental; Atenção Primária a Saúde; Estratégia de Saúde da Família; Saúde da Família.

## **Uso de sustancias psicoactivas entre estudiantes universitarios**

El objetivo del estudio fue identificar el perfil del uso de sustancias psicoactivas entre estudiantes de Ciencias Biológicas, Educación Física, Enfermería, Fisioterapia, Farmacia, Odontología y Nutrición. Se trata de un estudio transversal, cuantitativo, exploratorio y descriptivo, con 567 estudiantes. Los datos fueron recolectados por medio de un cuestionario y analizados a través de la estadística descriptiva. En los resultados, se constató que el 11,6% de los estudiantes nunca experimentó el consumo de sustancias psicoactivas. Las drogas prevalentemente consumidas fueron: alcohol (n = 501), tabaco (n = 161), marihuana (n = 115) y cocaína (n = 26). Se concluye que el consumo de sustancias psicoactivas entre los estudiantes es un problema y que debe ser enfrentado a través de acciones preventivas y de reducción de daños.

Descriptorios: Salud Mental; Atención Primaria de Salud; Estrategia de Salud Familiar; Salud de la Familia.

## Introduction

Abuse of psychoactive substances has become a concern for society and for the scientific community in the last decades of the twentieth century. Consumption of these substances is increasingly precocious and has reached high rates of incidence and prevalence associated with serious health risks<sup>(1)</sup>.

Many young people decide to try drugs during adolescence because of their wish to become independent of the family. This stage of human development is marked by profound physical and psychic changes that make the adolescents more vulnerable from the psychological and social point of view, favoring a greater exposure to risk factors which can facilitate, for example, the onset of use of psychoactive substances<sup>(2)</sup>.

The start of academic life in universities brings positive feelings and means the reaching of a goal by high school students. However, this moment can sometimes become a critical due to greater vulnerability that can lead to the onset and maintenance of use of alcohol and/or other drugs<sup>(3)</sup>.

Consequently, use of drugs begins to cause impacts early in academic life, resulting in lack of attention during classes, absences, delays and greater drowsiness<sup>(4)</sup>. This problem is correlated with the growth of crime, automobile accidents, antisocial behavior and school dropout<sup>(5)</sup>.

Given the high prevalence of drug use among university students and its impact on people's lives and level of development of countries, this phenomenon has aroused the interest of researchers with respect to its identification, and the understanding and search for solutions that can directly influence social welfare<sup>(1)</sup>.

In a review about the consumption psychoactive substances among university students between 1997 and 2007<sup>(6)</sup>, there are prevalence studies conducted in several Brazilian universities with Medicine<sup>(7)</sup>, Nursing<sup>(8)</sup>, and Pharmacy<sup>(9)</sup> students. In all of these studies, alcohol was the substance with the highest prevalence, followed by tobacco. Likewise, data from the I National Survey on drugs of abuse among University students of the 27 Brazilian capitals<sup>(3)</sup> showed that the most frequently used drugs were alcohol (86.2%) and tobacco (46.7%).

Knowing the pattern of consumption of psychoactive substances in a given population, besides eliminating existing myths on the subject, is essential to the implementation of drug prevention programs and gives direction to the development of public policies and health care, including prevention and treatment both in the general sense, and in the particular context of universities<sup>(5)</sup>. The scarcity of data addressing this theme in Brazil has been the subject of new studies whose focus is the search and development of awareness

in society and the elimination of the abusive use of these substances<sup>(5)</sup>.

The objective of this study was to describe the profile of users of psychoactive substances among university students in the health area of the UFVJM and provide subsidies to future prevention programs aimed at them.

## Method

This is a cross-sectional study with a quantitative, exploratory and descriptive approach carried out at the Federal University of the Jequitinhonha and Mucuri Valleys (UFVJM), Diamantina campus, from March 2013 to March 2014. The participants were students enrolled in the following undergraduate courses of the College of Biological and Health Sciences (FCBS): Biological Sciences, Physical Education, Nursing, Physiotherapy, Pharmacy, Dentistry and Nutrition.

The research was previously approved by the Research Ethics Committee of the CEP-UFVJM through Process nº 075/2012.

The study had a proportional sampling stratified per course, considering the degree of reliability of 95%, the precision of 5%, calculated with the aid of prevalence data of a previous study<sup>(8)</sup>.

Students who agreed to participate in the study signed the Informed Consent Form (ICF) and received information about the objectives, methodology, and risks and benefits of the research.

A structured questionnaire was used for data collection. I was based on a study carried out among university students from the 27 Brazilian capitals<sup>(10)</sup>, containing 24 self-response questions regarding sociodemographic data and the use of the following psychoactive substances: alcohol, tobacco, marijuana, cocaine, crack, tranquilizers, inhalants and ecstasy. The instrument was applied in times according to the availability reported by the coordinators of the courses.

The team was trained with the objective of evaluating the time taken to answer the questionnaire, training of the researchers and the changes to improve the adequacy of the instrument. The adjustment of question 15 was necessary to improve its understanding. The average time to complete the search instrument was 20 minutes.

Data were tabulated and data analysis was performed using the R software v. 2.14.1.

## Results

According to the data in Table 1, 567 university students participated in the study. They were enrolled in the courses in Biological Sciences (n = 76; 13.4%), Physical Education (n = 73; 12.9%), Nursing (n = 49; 8.6%), Pharmacy (n = 102; 18.0%), Physiotherapy

(n = 98; 17.3%), Nutrition (n = 67; 11.8%) and Dentistry (n = 102; 18.0%).

These students were concentrated in the age group of 20 to 24 (n = 341; 60.1%), they were predominantly single (n = 549; 96.8%), without children (n = 537, 94.5%), and the majority were females (n = 444; 78.3%). Of these students, 305 (53.7%) lived with colleagues/friends in college student residences or boarding houses.

Table 1 - Academic and sociodemographic characterization of the university students interviewed. Diamantina, MG, Brazil, 2014

Variables	N	Frequency (%)
<b>Courses</b>		
Biological Sciences	76	13.4%
Physical Education	73	12.9%
Nursing	49	8.6%
Pharmacy	102	18.0%
Physical therapy	98	17.3%
Nutrition	67	11.8%
Dentistry	102	18.0%
Total	567	100%
<b>Sex</b>		
Female	444	78.3%
Male	123	21.7%
Total	567	100%
<b>Age group</b>		
15 - 19	127	22.4%
20 - 24	341	60.1%
25 - 29	85	15.0%
30 or more	14	2.5%
Total	567	100%
<b>Marital status</b>		
Single	549	96.8%
Married /live with partner"	15	2.7
Separated	3	0.5
Widowed	0	0.0%
Total	567	100%
<b>Lives with</b>		
Parents/relatives	205	36.2%
Spouse/partner	22	3.9%
Friends/Students residence/Boarding house	305	53.7%
Alone	29	5.1%
Others	6	1.1%
Total	567	100%
<b>Children</b>		
Yes	30	4.5%
No	537	94.5%
Total	567	100%

A sum of 11.6% (n = 66) of students stated that they had never tried psychoactive substances in their lives. Of the 567 students, 168 (29.62%) had tried illicit drugs before entering university (Table 2).

Comparing the consumption of substances in the different courses, the highest rate of university students who had never tried psychoactive substances was found in the courses of Pharmacy (n = 13) and Dentistry (n = 13) (Table 2).

Among the academics, 501 respondents reported using alcohol and 161 tobacco, among the legal drugs. In relation to illicit drugs, marijuana was the most frequent, used by 115 students (20.3). Of the students using this drug, the majority were of dentistry (n = 30), who were also the majority of users of tobacco (40.2%), marijuana (29.4%), cocaine (5.9%), crack (1.9%), inhalants (26.5%), hallucinogens (18.6%) and ecstasy (14.7%) (Table 3). The Physical Therapy course had the highest proportion of students who had tried alcohol (92.9%) and tranquilizers (20.4%) (Table 3).

As for the age of onset of use of psychoactive substances, the age group of 15 to 19 years predominated, except for use of cocaine, which was 20 to 24 years. More details on the use of licit psychoactive substances (alcohol and tobacco) are shown in Figure 1, which distinguishes the frequency of use in life, in the last 12 months and in the last 30 days of the interview (Figure 1).

As can be seen in Figure 2, there was an association of alcoholic beverages with other substances; at least once in life, in the last year, and in the last month. The highest frequencies were for university students of the Dentistry course, of the female gender (69.6%, 70.2%, 63.2%), aged 20 to 24 years (65.4%, 68.2%, 70.8%).

As for the main reasons that led the interviewees to try the substances for the first time, curiosity stood out as the main factor among both males (40.4%) and females (46.6%), followed by wish of having fun and pleasure (men: 35.1%; women: 25.0%), and psychological stress relief (men: 1.8%, women: 8.7%).

Regarding the main influences that led to drug use for the first time, the interviewees of all courses indicated their friends, with the following percentages: 90.9% (Nutrition), 83.8% (Dentistry), 80.0% (Physiotherapy), 75.0% (nursing), 67.6% (Pharmacy), 61.1% (Biological Sciences), and 57.9% (Physical Education).

When questioned about their knowledge about drugs, the majority of students (47.4%; n = 269) considered themselves to be very well informed. However, 17.1% (n = 97) of the students said they would like to obtain more information about psychoactive substances and 25.7% (n = 146) would only like to help people with drug problems; 40.6% (n = 230) mentioned the two options. Regarding the sources of knowledge about alcohol and other drugs, the Internet (54.9%; n = 311) was the most frequently chosen option, followed by parents (13.8%, n = 78), and friends (13.4%; n = 76).

When the data were crossed, there was a significant association between the use of psychoactive substances and gender after entering the university ( $p = 0.014$ , *Pearson's chi-square test*). Such use was more prevalent in the female gender, with 80.7% (n = 344) of a total of 425 women using PAS, whereas among men (n = 116), only 69.8% (n = 81) used PAS.

Table 2 - Frequency of use of psychoactive substances by students before entering university per gender and course. Diamantina, MG, Brazil, 2014

Substance	Sex		Course								Total
	F*	M†	BS‡	PE§	NUR	PHA¶	PHI**	NU††	DE##		
NS <sup>§§</sup>	51	15	11	11	04	13	07	07	13	66	
Licit											
Tobacco	-	-	63	67	28	91	82	46	124	501	
Alcohol	-	-	64	62	45	89	91	60	90	501	
Illicit											
Marijuana	27	28	6	11	2	9	8	4	15	55	
Hallucinogens	4	8	0	3	1	1	1	0	6	12	
Cocaine	4	9	1	2	0	2	2	2	4	13	
Crack	0	1	0	0	0	0	0	0	1	1	
Amphetamine	4	2	1	0	1	3	1	0	0	6	
Anticholinergics	2	3	0	2	0	1	1	0	1	5	
Inhalants	14	17	0	5	4	7	4	0	11	31	
Tranquilizers	9	6	2	0	3	3	2	1	4	15	
Opiates	2	1	1	0	1	0	1	0	0	3	
Barbiturates	1	1	0	0	0	0	1	0	1	2	
Synthetic drugs	0	1	0	1	0	0	0	0	0	1	
Ecstasy	7	8	0	4	1	2	2	2	4	15	
Others	3	6	0	1	1	3	1	1	2	9	
Total for illicit drugs	77	91	11	29	14	31	24	10	49	168	

\*female; †male; ‡BS = Biological Sciences; §PE = Physical Education; ||NUR = Nursing; ¶PHA = Pharmacy; \*\*PHI = Physiotherapy; ††NU = Nutrition; ##DE = Dentistry; §§Never used any substance; ||The questionnaire did not address such data

Table 3 - Frequency of use of psychoactive substances after entering university according to course. Diamantina, MG, Brazil, 2014

Substance	Course								Total n
	BS* n(%)	PE† n(%)	NU‡ n(%)	PHA§ n(%)	PHI   n(%)	NU** n(%)	DE## n(%)		
Alcohol	64(84.2)	45(91.8)	62(84.9)	89(87.3)	91(92.9)	60(89.6)	89(87.4)	501	
Tobacco	21(27.6)	5(10.2)	22(30.1)	30(29.4)	27(27.5)	15(22.4)	41(40.2)	161	
Marijuana	17(22.3)	7(14.2)	16(21.9)	21(20.6)	16(16.3)	8(12.0)	30(29.4)	115	
Cocaine	2(2.6)	-	8(10.9)	5(4.9)	2(2.04)	3(4.5)	6(5.9)	26	
Crack	1(1.3)	-	-	-	-	-	2(1.9)	01	
Tranquilizers	9(11.7)	10(20.4)	5(6.8)	16(15.6)	20(20.4)	6(9.0)	20(19.6)	86	
Inhalants	4(5.2)	9(18.3)	9(12.3)	18(17.6)	10(10.2)	8(12.0)	27(26.5)	85	
Hallucinogens	-	2(4.0)	6(5.6)	7(6.8)	3(3.06)	2(2.9)	19(18.6)	39	
Ecstasy	1(1.3)	2(4.0)	7(9.5)	4(3.9)	4(4.08)	3(4.5)	15(14.7)	36	

\*BS = Biological Sciences; †PE = Physical Education; ‡NUR = Nursing; §PHA = Pharmacy; ||PHI = Physiotherapy; \*\*NU = Nutrition; ††DE = Dentistry. The percentages per course refer to the "n" of each course separately.

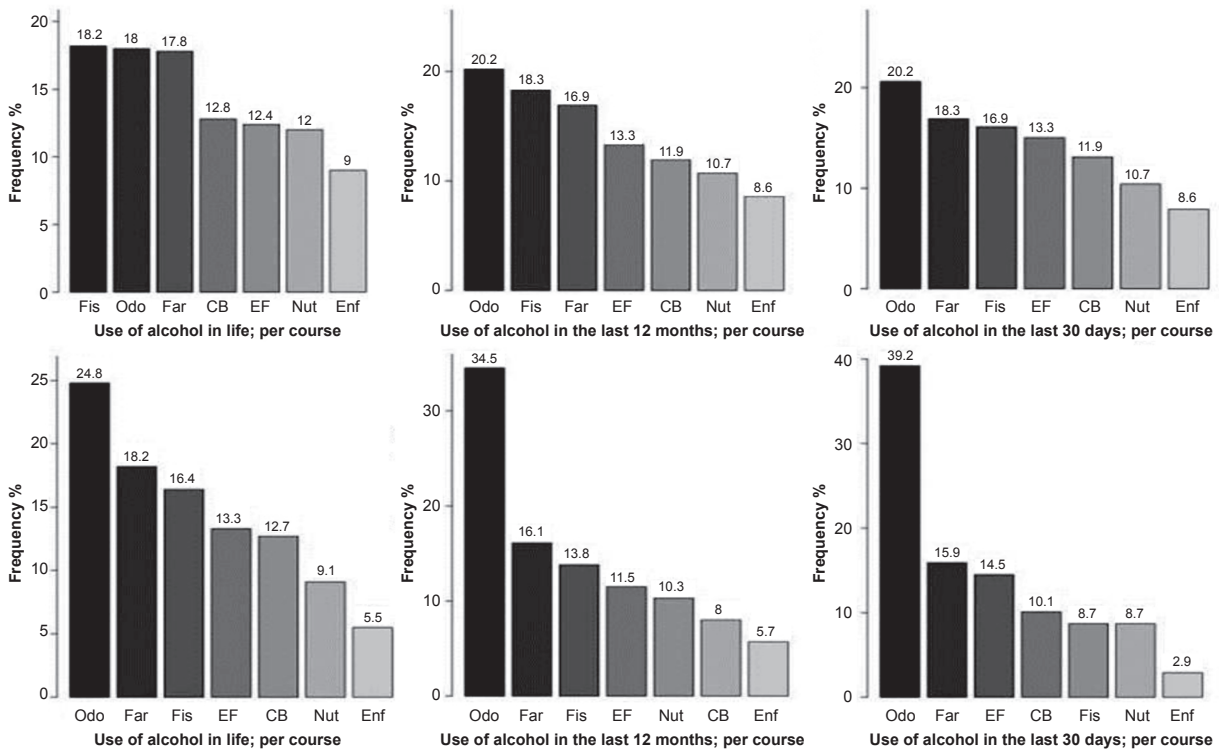


Figure 1 - Alcohol and tobacco use in life, in the last 12 months, and in the last 30 days, per course

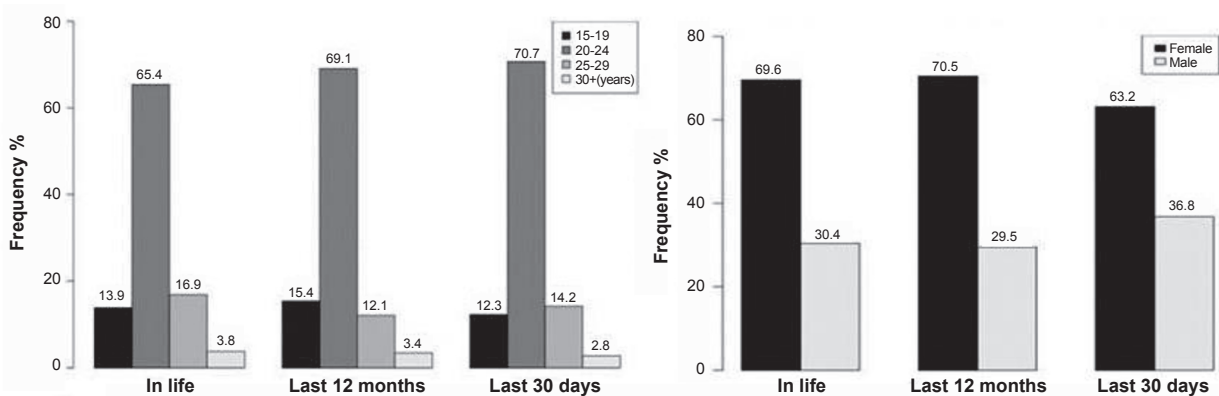


Figure 2 - Association of alcohol with other substances in life, year and month, per gender and age group

## Discussion

Comparing the genders, a significantly higher prevalence of psychoactive substance use was observed among women after entering the university ( $p = 0.014$ , *Pearson's Chi-square test*), which corroborates the findings of other researchers<sup>(1,8)</sup>. In the survey carried out among the University students of the 27 Brazilian capitals, multiple and simultaneous use of alcohol and other substances was reported, with a higher prevalence among men and young people aged 25 to 34 years. This is contrary to our results, where the female sex between the ages of 20 and 24 prevailed<sup>(8)</sup>.

The significant association of consumption of PAS with the female gender ( $p = 0.014$ ) differs from results reported by authors in a study conducted with students

from the University of Guayaquil<sup>(11)</sup>. A review of the literature on alcohol and drug abuse as indicators of violent behavior also found a higher prevalence among men, detecting an association between substance abuse and violence<sup>(12)</sup>. Furthermore, the justifications for the use of PAS also differ between genders. Women use them as a way to help them deal with problems<sup>(13)</sup>, while men use them to stay "up" and change their behavior, becoming slightly drunk<sup>(11,14)</sup>. In relation to the age at which the use of PAS was started, the age group of 20 to 24 years was predominant. In other studies, the age range of 18 to 24 years predominated<sup>(8)</sup>.

Consumption of licit drugs such as alcohol (88.4%) was predominant in the present study. This is similar to the findings of the I National Survey on Use of Alcohol, Tobacco and other Drugs among university students

from 27 Brazilian capitals (86.7%)<sup>(9)</sup>, as well as the rates reported in similar studies<sup>(5,9)</sup>.

This manuscript points to consumption of marijuana before entering university, as observed by other researchers<sup>(8)</sup>, who also verified the same pattern of use. On the other hand, a study carried out in Feira de Santana with individuals from 12 to 24 years showed the onset of consumption of psychoactive substances occurred up to 14 years of age, specially the consumption of tobacco, marijuana, cocaine and *crack*. In those who started consumption after 14 years, it was observed early use of *crack* among adolescents aged 15 to 19<sup>(15)</sup>.

Among the reasons for trying drug for the first time, curiosity was the most prevalent, followed by desire of having fun and pleasure. This agrees in part with the study conducted at a private university in Curitiba in which the main motive was the pursuit of fun or pleasure<sup>(3)</sup>, as well as another study carried out at the Pontifical University of São Paulo, which found recreational use as the main reason for drug use in the courses investigated<sup>(16)</sup>. Friends or acquaintances are singled out as the main motivators to introduction to drugs. Friends are also frequent companions during consumption of psychoactive substances<sup>(1,17)</sup>, which are results that corroborate our findings.

The entrance to the university brings a series of changes of personal character to the students. In particular, in the case of students who do not reside in the same city where the University is located, leaving the parental home brings new responsibilities linked to daily tasks, boosting the development of autonomy. It also imposes the need to develop adaptive responses to a set of challenging situations related to life management<sup>(18)</sup>. These factors undoubtedly generate stress and anxiety, a fact supported by our study because the interviewees admitted that tension relief was one of the reasons for having tried PAS. A survey conducted with academics from a university in the northern region of Rio Grande do Sul also highlighted that the students' greatest challenge was to take on new responsibilities<sup>(19)</sup>. In the midst of so many changes and stressful situations, it is important to highlight the role of the family in the prevention of drug use by young people. The family can do this through appropriate transmission of values, monitoring and imposition of limits. In this aspect, the university has an implicit responsibility, because many young people leave their families to attend the course<sup>(20)</sup>. This was corroborated in our study; most of the respondents (53.7%) lived in boarding houses, college student residences or with friends. The influence of friends is perceptible, as described in a recent research, based on the premise that young people seek to adopt the behavior of the group in which they are inserted, thus seeking *status* and the sense of belonging, motivated by

the pursuit of fun, pleasure, a break in the routine and the reduction of anxiety and stress<sup>(21)</sup>.

Most of the college students surveyed indicated to be well informed (47.4%) or very well informed (46.6%) about psychoactive substances, which might have contributed to a lower prevalence in the use of the PAS. This happens because information is taken as one of the main protective factors for drug abuse<sup>(22)</sup> and is also an important element in the development of prevention programs<sup>(23)</sup>. However, contrary to these concepts, a survey conducted with high school students in Mexico found that the likelihood of using drugs is up to three times greater when the person has higher level of education, because if on the one hand there is the educational training, on the other hand, the person cuts the bond with relatives and starts to hang out with groups of friends. This change favors the involvement with risk factors like experimenting with drugs<sup>(24)</sup>. These are factors that might explain the high rates found in our study, as most respondents (53.7%) had left their homes and now lived with friends, in college student residences or boarding houses.

When the participants were questioned about the first resource they would look for in case of doubts about drugs, the majority cited the Internet (54.9%) as the means to obtain information about the subject and this may have contributed to the high prevalence of use of PAS. A study carried out with Physical Education students at a public university in Maranhão stated that the consumption of psychoactive substances is frequently stimulated by the media, such as commercial ads, movies, song lyrics and other means of mass communication. Continuous exposure to psychoactive substances associated with factors of desire such as pleasure, beauty, financial success, sexual benefits and others, explicitly or implicitly represent an important risk factor for addiction<sup>(25)</sup>.

The limitations of this research are a sample that was not representative, because it was a convenience sample, the fact that genders were not paired, and there was no proportional number of students between courses.

This study intends to contribute to call the attention of the university population to the inherent damages to the exacerbated alcohol consumption and emphasize the need to work on the theme in order to prevent the abovementioned problems.

## Conclusion

The results of the present study reveal that the use of psychoactive substances among students of the Biological Sciences and Health courses at the Federal University of the Jequitinhonha and Mucuri Valleys is

high, becoming a cause of concern with respect to the health of this population.

These results pointed to the need for interventions, especially among students of the Dentistry course, serving as a starting point to develop projects in the area of prevention of abusive use of psychoactive substances. This could be done through by addressing this theme in the academic curriculum of UFVJM students and by the creation of specific prevention programs for university students.

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