Prevalence of psychoactive substance use by medical students at a school in Bahia, Brazil, 2018

Prevalência do uso de substâncias psicoativas por estudantes de medicina de uma escola da Bahia, 2018

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ABSTRACT: *Objectives*: To estimate the prevalence of the use of alcohol, tobacco and other psychoactive substances among medical students at a private institution in Salvador-Bahia. *Methods*: A prevalence study with a probabilistic sample of students in 2018. A structured questionnaire with demographic, social, economic and behavioral data and the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) were used as data collection instruments. *Results*: A total of 457 students composed the sample, with 62.7% being female, and a median age of 22.0 years. Self-declared heterosexual, 92.6%; race/color white skin, 56.3%; with a steady boyfriend/girlfriend, 53.7%; and Catholic religion, 45.2%. Use of alcoholic beverages (89.1%), marijuana (36.6%), tobacco (31.5%), inhalants (17.3%) and amphetamines (12.0%) at least once in their lives were the most referred. The Prevalence Reasons remained statistically significant for gender, age group, and sexual orientation when using the best available model. *Conclusions*: Consumption of tobacco, alcoholic beverages and marijuana presented a high prevalence mainly among young men and young individuals, and low for more potent drugs such as: hypnotics, hallucinogens and opioids.

Keywords: Psychoactive substances; Medical students; Prevalence.

RESUMO: *Objetivos*: Estimar a prevalência do uso de álcool, tabaco e outras substâncias psicoativas entre estudantes de medicina de uma instituição privada em Salvador-Bahia. *Métodos*: Estudo de prevalência, com amostra probabilística do alunado em 2018. Questionário estruturado com dados demográficos, sociais, econômicos e comportamentais e *Alcohol, Smoking and Substance Involvement Screening Test*/ASSIST, foram instrumentos de coleta. *Resultados*: 457 estudantes compuseram a amostra, 62,7% feminino. Mediana de idade de 22,0 anos. Autodeclarados heterossexuais, 92,6%; raça/cor da pele branca, 56,3%; com namorado/a fixo/a, 53,7% e católicos, 45,2%. Uso de bebidas alcoólicas (89,1%), maconha (36,6%), tabaco (31,5%), inalantes (17,3%) e anfetaminas (12,0%) pelo menos uma vez na vida, foram os mais referidos. Quando utilizado o melhor modelo ajustado, as Razões de Prevalência mantiveram-se estatisticamente significantes para sexo, faixa etária, e orientação sexual. *Conclusões:* Consumo de tabaco, bebidas alcoólicas e maconha apresentou alta prevalência principalmente entre os homens e indivíduos jovens e baixa para drogas mais potentes, como: hipnóticos, alucinógenos e opioides.

Palavras-chaves: Substâncias psicoativas; Estudantes de medicina; Prevalência.

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INTRODUCTION

Humanity has consumed psychoactive substances since ancient times. However, it was only at the end of the 20th century that its use was consolidated as a field of attention and concern for entire societies due to the recognition of the numerous problems produced in the physical, psychological and social sphere, becoming a real public health problem at the global level[1,2,3].

Psychoactive substances are defined as any substance that acts on the Central Nervous System and can cause repercussions on thought, perception level, mood or behavior[4,5,6]. Some of these substances are extracted from nature, and can be used fresh or processed, while others have been more recently produced by the pharmaceutical industry and are used for therapeutic purposes or for recreational use and production of strong gratifying emotions. They can cause physical and psychological dependence, being called abusive drugs[6,7].

Tobacco and alcoholic beverages are socially tolerated and are among the most used in the world[8]. Other drugs, considered illicit, such as opiates, cannabinoids, sedatives and hypnotics, hallucinogens and volatile solvents, are also widely used[9,10]. Around 275 million people around the world in 2016, representing 5.5% of the global population aged between 15 and 64 years, reported having used some type of psychoactive substances at least once in the previous year. It is estimated that among these, 192.2 million used marijuana, 34.3 million opioids, 34.2% amphetamines and 18.2 million cocaine[11].

The use of psychoactive substances is present in all social classes and educational levels[12]. The consumption of alcohol and other substances is higher among university students when compared to the general population and high school students[13]. According to the 1st National Survey on the use of alcohol, tobacco and other drugs among university students in 2010, the highest prevalence was for the use of alcoholic beverages and tobacco products, with 86.2% and 27.8% at least once in life; 72.0% and 27.8% in the last 12 months; and 60.5% and 21.6% in the last 30 days. The proportions regarding the use of illicit drugs at least once in a lifetime, in the last 12 months, and in the last 30 days were 48.7%, 35.8% and 25.9%, respectively. Among these, marijuana/hashish/skank, inhalants/solvents, amphetamines and tranquilizers/anxiolytics, among others, stand out[14]. A study with students at the University of São Paulo (USP) in 1996 and 2001 revealed a significant increase in PAS consumption in relation to using at least once in their life for alcoholic beverages (88.5% to 91.9%), tobacco (42.8% to 50.5%), marijuana (31.3% to 35.3%), inhalants (17.9% to 24.5%), hallucinogens (6.1% to 11.4%) and barbiturates (1.0% to 1.7%)[13].

In view of this scenario, it is opportune to carry out investigations in different contexts and territories in order to produce information that can contribute to both the dimension of this public health problem, as well as to subsidize and/or improve the creation of public policies aimed at its prevention and damage reduction. This study aims to estimate the consumption of PASs among students at a medical school in Salvador, State of Bahia, Brazil, in 2018.

METHODS

A prevalence study was carried out from a random sample of 1,339 students who regularly attended all 12 semesters of the medicine course at a Medical School in Bahia, Brazil, in January 2018, and who signed the Informed Consent Form. The mean expected prevalence for the use of PASs in the last 30 days by university students of 65%[14], acceptable alpha error of 5% 2 (α=5%), and a design effect of 1.5 were considered as parameters for the sample calculation to avoid possible interference with randomization when stratified by semester, and a confidence level of 95%. The result obtained was 434 students, which added 10% (43 students) to cover possible losses and refusals, resulting in 458 participating students, with a loss of 19 (4.0%). This number (458) exactly corresponds to the amount of questionnaires sent. The same proportional distribution of students per semester was applied to the sample size obtained and the research participants were then selected by simple random drawing.

It is possible that there was a selection bias, since students who were willing to discuss the subject responded more truthfully. However, those who experienced the problem may have issued false answers, considering a fear of being identified or being ashamed of the situation.

Sociodemographic, economic and behavioral data were obtained through a structured self-administered questionnaire. In addition, a screening test for involvement with alcohol, tobacco and other substances was applied (Alcohol, Smoking and Substance Involvement Screening Test - ASSIST), which consists of a questionnaire developed by the World Health Organization (WHO)[15] translated into Portuguese and validated in Brazil[16] for use with university students[17]. A score of 0 (zero) is indicative of non-use, up to 3 of low risk, 4 to 26 of moderate risk, and greater than or equal to 27 is dependence on that drug, except alcoholic beverages, considered 1 to 10 low risk, 11 to 26 risk moderate and greater than or equal to 27 dependence[15].

Data analysis was initially performed from calculating absolute frequencies and percentages for qualitative variables, and means and standard

deviations for continuous variables. Bivariate analysis of sociodemographic, economic and behavioral variables was applied, such as gender, age group, sexual orientation, race/skin color, emotional status, religion, monthly family income, origin and who they were living with, and possible differences were evaluated by the Pearson's chi-squared test. Variables with p<0.10 entered the Multivariate Logistic Regression Model. The Akaike Information Criterion (AIC)[18] was used to choose the best-fitting model. Due to prevalence above 10% of the use of PASs once or twice in the last three months resulting in an overestimation of the Odds Ratio, the Prevalence Ratio (PR) estimates and their respective (95%CI) were calculated using the Robust Poisson Regression Model. Moreover, a p-value < 0.05 was used as statistical significance for all analyses. The analyzes were performed using STATA version 12 and SPSS version 22. The research project was approved by the Research Ethics Committee of the EBMSP, under number 2,529,431 and number 2,572,959 on 11/09/2018.

RESULTS

A total of 34.1% (457/1339) of the Medicine Course students from the school participated in this study, with 62.7% female; 38.4% were aged 21-23 years, followed by 18-20 years (28.8%). The median age for both genders was around 22 years (IIQ=20-25), with no statistically significant difference between them; 92.6% declared themselves heterosexual, 56.3% were white, 53.7% had a steady boyfriend/girlfriend, and 45.2% were Catholic. Regarding monthly family income, 22.9% reported it being less than R$8,000.00, as well as between R$12,001.00 and R$20,000.00, while this data was not informed by 23.4%. Furthermore, 94.3% of the students came from the State of Bahia, the majority (61.1%) from Salvador, and 80.8% lived with their families.

Of the total number of students investigated, 44.5% reported having used the PASs surveyed at least once in their lives. Of these, 89.1% referred to alcoholic beverages, 36.8% to marijuana, 31.5% tobacco derivatives and 17.3% inhalants. Regarding use in the last three months, 1 or 2 times it was reported by 36.4% for amphetamines/ecstasy, 33.3% for tobacco, 31.5% for marijuana, 30.0% for alcohol, 27.8% for inhalants, 26.7% for opioids, 20.0% for hypnotics/sedatives and 12.5% for hallucinogens. In the case of monthly consumption, alcohol was reported by 34.9%. It is noteworthy that 8.0% reported daily use of hypnotics/sedatives (Table 1).

Table 1. Number and percentage of use of tobacco derivatives, alcoholic beverages, marijuana, cocaine, amphetamines, inhalants, hypnotics, hallucinogens, opioids and others, according to the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). Salvador, BA, Brazil, 2018.

Drug	Used/tried at least once in life	Usage in the last 3 months				
	Yes	Never used/tried	1 or 2 times	Monthly	Weekly	Daily
Tobacco	31.5% (144/457)	49.3% (71/144)	33.3% (48/144)	9.0% (13/144)	6.9% (10/144)	1.4% (2/144)
Alcohol	89.1% (407/457)	9.8% (40/407)	30.0% (122/407)	34.9% (142/407)	25.1% (102/407)	0.2% (1/407)
Marijuana	36.8% (168/457)	51.2% (86/168)	31.5% (53/168)	10.7% (18/168)	5.4% (9/168)	1.2% (2/168)
Cocaine/Crack	0.9% (4/457)	100.0% (4/4)	- -	- -	- -	- -
Anphetamine/Ecstasy	12.0% (55/457)	58.2% (32/55)	36.4% (20/55)	3.6% (2/55)	1.8% (1/55)	- -
Inhalants	17.3% (79/457)	69.6% 55/79	27.8% (22/79)	1.3% (1/79)	1.3% (1/79)	-
Hypnotics/Sedatives	5.5% (25/457)	60.0% (15/25)	20.0% (5/25)	8.0% (2/25)	4.0% (1/25)	8.0% (2/25)
Hallucinogens	5.3% (24/457)	87.5% (21/24)	12.5% (3/24)	- -	- -	- -
Opioids	3.3% (15/457)	73.3% (11/15)	26.7% (4/15)	- -	- -	- -

With regard to the severity score for use at some point in life, the vast majority of students had low risk, ranging from 100.0% for Cocaine/crack to 73.7% for tobacco. The highest frequencies for moderate risk were for marijuana (25.6%), tobacco (24.3%) and hypnotics/ sedatives (24.0%). Lastly, 0.7% were classified as dependent for alcoholic beverages and 0.6% for marijuana (Table 2).

Table 2. Number and percentage of the severity classification score for the use of tobacco derivatives, alcoholic beverages, marijuana, cocaine, amphetamines, inhalants, hypnotics, hallucinogens, opioids and others according to the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). Salvador, BA, Brazil. 2018.

Variable	Low risk		Moderate risk		Dependence	
	n	%	n	%	n	%
Tobacco (n=144)	109	73.7	35	24.3	-	-
Alcoholic beverage (n=407)	333	81.8	71	17.4	3	0.7
Marijuana (n=168)	124	73.8	43	25.6	1	0.6
Cocaine/Crack (n=4)	4	100.0	-	-	-	-
Anphetamine/Ecstasy (n=55)	47	85.5	8	14.5	-	-
Inhalants (n=79)	70	88.6	9	11.4	-	-
Hypnotics/sedatives (n=25)	19	76.0	6	24.0	-	-
Hallucinogens (n=24)	24	100.0	-	-	-	-
Opioids (n=15)	14	93.3	1	6.7	-	-

Male, homo/bisexual students, with monthly family income greater than or equal to R$12,000.00 and coming from Salvador had a higher prevalence than female, heterosexual, income less than R$12,000.00 and coming from Salvador for all PASs. Also presenting a higher prevalence were those aged over or equal to 22 years old in relation to those under this age, except for alcoholic beverages; whites in relation to non-whites (blacks, browns and yellows) except for hypnotics/sedatives and hallucinogens; with steady companion compared to single except for hypnotics/sedatives; Catholics versus non-Catholics, except for marijuana, amphetamines/ ecstasy, hypnotics/sedatives, hallucinogens, and opioids; and living with family members in relation to those who live alone or in boarding houses and residences, except for inhalants. The PRs showed statistically significant values for males in relation to females, for tobacco 1.74 (1.33-2.26); marijuana 1.50 (1.18-1.89); inhalants 1.82 (1.22-2.71) and hallucinogens 2.36 (1.07-5.20). Those aged >22 years compared to those under 22, for amphetamines/ecstasy 1.79 (1.05-3.05); inhalants 1.59 (1.04-2.42) and hypnotics/ sedatives 2.76 (1.12-6.79). Homo/bisexual compared to heterosexuals, for tobacco 2.07 (1.51-2.82); marijuana 1.98 (1.53-2.58); amphetamines/ecstasy 2.85 (1.58-5.12) and hallucinogens 3.37 (1.35-8.46). Those of white race/ skin color compared to non-whites, for tobacco 1.36 (1.02-1.80) and marijuana 1.30 (1.01-1.67). Those with steady companion compared to single for alcoholic beverages 1.11 (1.03-1.20). Those with a family income >R$12,000.00 compared to those with an income <R$12,000.00 for inhalants 1.67 (1.08-2.60) and opioids 3.71 (1.05-13.06) (Table 3).

When the best adjusted model was used according to the AIC, the PRs remained statistically significant for gender, 1.33 (1.11-1.61), age group, 1.18 (1.00-1.39), and sexual orientation 1.94 (1.11-3.39) (Table 4).

Table 3. A - Prevalence, Prevalence Ratio and 95%Confidence Interval (95%CI) for tobacco, alcoholic beverages and marijuana use in the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) by demographic, social, economic and behavioral variables. Salvador, BA, Brazil, 2018.

Variable	Tobacco Prevalence ratio (95%CI)	Alcoholic beverages Prevalence ratio (95%CI)	Marijuana Prevalence ratio (95%CI)	Amphetamines/ecstasy Prevalence ratio (95%CI)
Gender				
Male	1.74 (1.33 – 2.26)*	1.04 (0.97 – 1.11)	1.50 (1.18 – 1.89)*	1.44 (0.86 – 2.31)
Female				
Age range in years				
>=22	1.26 (0.95 – 1.66)	0.94 (0.88 – 1.00)	1.16 (0.91 – 1.47)	1.79 (1.05 – 3.05)*
<22				
Sexual orientation				
Homo/bisexual	2.07 (1.51 – 2.82)*	1.02 (0.91 – 1.14)	1.98 (1.53 – 2.58)*	2.85 (1.58 – 5.12)*
Heterosexual				
Race/skin color				
White	1.36 (1.02 – 1.80)*	1.05 (0.98 – 1.13)	1.30 (1.01 – 1.67)*	1.45 (0.86 – 2.45)
Non-white				
Affective situation				
Companion	1.23 (0.92 – 1.64)	1.11 (1.03 – 1.20)*	1.16 (0.90 – 1.49)	1.24 (0.73 – 2.09)
Single				
Religion				
Catholic	1.15 (0.77 – 1.73)	1.10 (1.00 – 1.22)*	0.98 (0.69 – 1.39)	0.90 (0.46 -1.76)
Non-catholic				
Family income				
>=R$12,000.00	1.16 (0.86 – 1.56)	1.10 (1.00 – 1.22)*	1.18 (0.91 – 1.53)	1.47 (0.86 – 2.49)
<R$12,000.00				
Origin				
Salvador	1.18 (0.88 – 1.57)	1.03 (0.96 – 1.10)	1.21 (0.93 – 1.56)	1.20 (0.71 – 2.03)
Other municipalities				
Living with who?				
Family	1.16 (0.80 – 1.69)	1.00 (0.93 – 1.10)	1.15 (0.83 – 1.61)	2.3 (0.96 – 5.67)
Others				

*statistically significant

Table 3. B - Prevalence, Prevalence Ratio, and (95%CI) for the use of amphetamines, inhalants, and hypnotics/sedatives in the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), by demographic, social, economic and behavioral variables. Salvador, BA, Brazil, 2018.

Variable	Inhalants Prevalence ratio (95%CI)	Hypnotics/sedatives Prevalence ratio (95%CI)	Hallucinogens Prevalence ratio (95%CI)	Opioids Prevalence ratio (95%CI)
Gender				
Male	1.82 (1.22–2.71)*	1.33 (0.62–2.85)	2.36 (1.07–5.20) *	1.12 (0.41–3.11)
Female				
Age range in years				
>=22	1.59 (1.04–2.42)*	2.76 (1.12–6.79)*	1.03 (0.47–2.25)	2.40 (0.77–7.42)
<22				
Sexual orientation				
Homo/bisexual	1.65 (0.91–2.99)	1.11 (0.27–4.52)	3.37 (1.35-8.46)*	3.20 (0.95–10.79)
Heterosexual				
Race/skin color				
White	1.47 (0.96–2.26)	0.77 (0.35–1.67)	0.91 (0.41–1.98)	3.07 (0.88–10.72)
Non-white				
Affective situation				
Companion	1.41 (0.91–2.18)	0.98 (0.45–2.14)	1.31 (0.57–2.99)	2.62 (0.75–9.15)
Single				
Religion				
Catholic	1.59 (0.84 – 3.01)	0.62 (0.19–1.98)	0.72 (0.23–2.21)	0.77 (0.22–2.68)
Non-catholic				
Family income				
R$12,000.00	1.67 (1.08–2.60)*	2.19 (0.85–5.63)	1.35 (0.58–3.12)	3.71 (1.05–13.06)*
R$12,000.00				
Origin				
Salvador	1.09 (0.72–1.66)	2.00 (0.82–4.93)	1.27 (0.55–2.90)	1.74 (0.56–5.39)
Other municipalities				
Living with who?				
Family	1.00 (0.60–1.68)	2.68 (0.64–11.15)	5.36 (0.73–39.14)	3.26 (0.43–24.47)
Others				

*statistically significant

Table 4. Prevalence Ratio and (95%CI) and p-value of the association between use of selected drugs according to the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) and demographic, social and behavioral variables. Salvador, BA, Brazil, 2018.

Variable	PR	Confidence Interval (95%)	P
Gender			
Male	1.33	1.11 – 1.61	0.003
Age range			
≥22 years	1.18	1.00 – 1.39	0.044
Sexual orientation			
homo/bisexual	1.94	1.11 – 3.39	0.021
Race/skin color			
White	1.16	0.99 – 1.36	0.066
Affective situation			
Boyfriend/girlfriend	1.16	0.99 – 1.36	0.070
Living with who?			
family	1.07	0.87 – 1.30	0.523

DISCUSSION

The consumption of psychoactive substances by medical students is an extremely worrying fact, not only because of the damage it can cause to their physical and mental health, but also because of the impairment in the development and structuring of cognitive-behavioral and emotional skills, in addition to greatly interfering in their future role as a health professional[19].

Our study showed that the consumption of alcoholic beverages, marijuana and tobacco derivatives has a high prevalence of use in the lives of students of a medical course in Bahia, consistent with the result observed among students of the same course in Belo Horizonte (UFMG)[20], as well as at a Private University of Curitiba[21], at the Medical Schools of Salvador-Bahia[22], at a University in the United Kingdom[23] and at a Medical School in France[24]. The higher prevalence of alcohol and tobacco use can be explained by the fact that these PASs are socially accepted, especially in the western world.

A prevalence of 18.4% for the consumption of alcoholic beverages in the last 30 days and 15.2% for the daily use of tobacco derivatives was estimated in 2015 among the adult population worldwide[25]. This pattern is no different for students, as the consumption of alcoholic beverages in celebrations and festivities, especially in the university environment, is quite high, during which they are often consumed in excess, called "bringe drinking", as observed in medical students from Terezina-Piauí[26], the Federal University of São Paulo (UNIFESP)[27] and higher education institutions in Aracaju-Sergipe[28].

Alcohol consumption, at least weekly, reported by the students investigated in this study was the most strongly associated with social, legal and financial problems and with failing to do something expected. In this study, at least 7% of students reported that they had a relative, friend or other person concerned about their alcohol consumption and had already tried to stop, control or reduce it, but failed.

This finding is similar to that observed among medical students from two Faculties in Minas Gerais[29]. In the study carried out at the Federal University of Amazonas, drunk driving, followed by absence from school, absence from work, involvement in fights or an accident were the events that occurred most frequently after the use of alcohol by students[30]. In a study carried out in validating the Brazilian version of ASSIST, 34% of the total sample acknowledged having health and social problems associated with alcohol use, emphasizing the influence of its abuse on health[16] considered by the WHO to be one of the main preventable causes of morbidity and mortality in the world[25].

Lower prevalence of tobacco consumption than marijuana was also found in students at the UFMG School of Medicine[20], a School of Medicine in France[24] and among physical education university students in Bahia[31]. Perhaps this finding is due to the fact that despite the high consumption of tobacco, its prevalence among medical students has shown a decrease in recent years[32]. This behavior has been explained by the restriction of supply for purchase and sale, control of marketing and sales, educational activities in schools, preventive care in primary healthcare, and the control of consumption in public and work places. These actions undoubtedly substantially contributed to the reduction in the prevalence of smoking in Brazil[33].

The highest prevalence of illicit psychoactive substances found in this study was for marijuana, inhalants, amphetamines/ecstasy and hypnotics; although similar to that found in other Brazilian studies[34,35,36], they are different in terms of the prevalence of marijuana use, which in this study was higher than that of tobacco, similar to what was observed in the Faculties/Universities of the municipality of Governador Valadares-Minas Gerais[37] and in students of a Medical School of the University in Greece[38]. According to a survey of American university students, the use of marijuana has shown a steady increase in the last decade. In 2016, 39% of students aged between

19 and 22 indicated that they had used marijuana at least once in the past 12 months, and 22% at least once in the past 30 days. Both percentages are the highest since 1987, representing a steady increase since 2006, when they were 30% and 17%, respectively[39]. The results found in this study may also be the result of a greater distribution of this drug in Bahia, since this state is included in the Polygon of Marijuana (the greatest production region in Brazil, located in the middle and sub-middle regions of Vale do São Francisco River), and thus facilitate its distribution[40].

Inhalants/solvents were presented as the second most prevalent illicit PASs in this study, similar to that identified in a private university in Curitiba[21], in the Medical Schools of Salvador-Bahia[22], in students of a University Medicine school in Greece[38] and in a University of the United Kingdom[23]. Lance-perfume (chemical solvent composed of ether, chloroform, ethyl chloride and a scented essence) is widely used in Brazil, specifically in Bahia, mainly in carnival celebrations.[22,30,41,42].

Amphetamines/ecstasy also had a high prevalence, as identified at the Faculty of Medicine of Botucatu – São Paulo[42], the Federal University of Amapa[43] and university students from the Midwest of the State of Santa Catarina[44]. Their use can be explained by the fact that they are stimulant drugs for the Central Nervous System, which can improve the ability to concentrate, memory, mood, stay awake and consequently support learning[43].

Other psychoactive substances such as hypnotics/sedatives, hallucinogens, opioids and cocaine/crack had low prevalence, as well as in a private university in Curitiba[21], in the Federal University of Amazonas[30] and in Physical Education university students in Bahia[31]. They were perhaps the least used because they are more expensive, despite the high percentage for cocaine/crack identified in students at a private university in southern Brazil[32].

The predominance in this study of male psychoactive substances users also corroborates the results of studies carried out in different countries, mainly for the use of alcoholic beverages, tobacco, marijuana, and inhalants, while medications stood out for women, more specifically, benzodiazepines, stimulants and orexigenic substances[45]. However, a decrease in the frequency of use, abuse and dependence on alcohol and other PAS has been observed between genders over the years[46].

The high prevalence of psychoactive substances use in the age groups analyzed can be explained by the fact that the use of psychoactive substances has been substantially increasing in Brazil, especially among young people aged 18 to 24 years. It was identified that around 78% of this population had already consumed alcoholic beverages and 22.8% illicit drugs at least once in their lives. Most Brazilian university students are found in this age group,

and they present higher consumption frequency of these and other PASs than their peers of the same age in the general population[47].

Higher prevalences found for homo/bisexuals can be explained because sexual minorities are more prone to early experimentation, to higher rates of abuse/dependence and relapses, in addition to being less likely to abstain from the use of psychoactive substances[48]. Another author justifies the greater consumption of alcohol by homo/bisexuals due to the context in which they live, with greater vulnerability caused by homophobia, resulting in stress and violence, in addition to self-stigma by the young people themselves[49].

These high prevalences of psychoactive substances use among university students can be explained by the fact that entry into higher education coincides with leaving adolescence and entering adulthood, with opening to new experiences and learning, participation in new social groups that can lead to lo the experimentation of new sensations such as the use of drugs[50,51,52]. The feeling of freedom, the socio-environmental opportunities, in a context of physical-biological, social and psychological changes provided by the university environment can provide risk behaviors and a greater possibility of alcohol/drug consumption[37].

This study may have some limitations with regard to information bias, since an instrument was used that addressed extremely sensitive and personal issues to obtain the research data. It may have brought embarrassment to the respondents, leading them to biased responses due to fear, prejudice, stigma, and/or dishonor, which could compromise the veracity of the information. However, the use of anonymous questionnaires and respect for privacy are still the best format for collecting this type of data.

CONCLUSIONS

The results obtained in this study demonstrate that even among medical students who have greater opportunity to better understand the mechanisms of action and harmful effects of PASs in the body, the prevalence of their use shows similarity to other university students of other degrees, although the consumption pattern of some PASs differs.

In this context, the university has an important role in understanding the factors which favor and influence students to consume PASs, undertaking actions of an informative, preventive and clarifying nature about the risks and harms of their use. In addition to offering psycho-social support, psychopharmacological treatment, rehabilitation and reintegration into society for those who need it and so wish. Thus, the University will be contributing and promoting actions for physically and mentally healthy lives without drugs.

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