


USE OF PSYCHOACTIVE SUBSTANCES AND MENTAL HEALTH IN UNIVERSITY STUDENTS DURING THE COVID-19 PANDEMIC

USO DE SUBSTÂNCIAS PSICOATIVAS E SAÚDE MENTAL DE ESTUDANTES UNIVERSITÁRIOS DURANTE A PANDEMIA DA COVID-19

CONSUMO DE SUSTANCIAS PSICOACTIVAS Y SALUD MENTAL DE LOS ESTUDIANTES UNIVERSITARIOS DURANTE LA PANDEMIA DE COVID-19


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ABSTRACT

Objective: to measure the level of psychoactive substance dependence of healthcare students from a public federal university and to verify relationships with mental health during the COVID-19 pandemic. **Method:** a cross-sectional study with a quantitative approach carried out with 527 students from seven undergraduate courses in the health area at a federal public university in the Brazilian South region. Collection was carried out virtually by means of a questionnaire for sociodemographic and academic characterization, the *Alcohol, Smoking and Substance Involvement Screening Test* and the *Mental Health Inventory*. Descriptive and inferential statistics was used for data analysis. **Results:** during the COVID-19 pandemic, most of the students presented occasional and suggestive of abuse consumption of tobacco products, alcoholic beverages, marijuana and hypnotics/sedatives. The lowest mean mental health scores corresponded to the students who had their addiction level classified as suggestive of abuse, and the highest mean scores were found in those who did not use these substances during the pandemic (no consumption/pandemic). **Conclusion:** given that higher mean scores point to better mental health, it can be inferred that worse mental health is associated with higher psychoactive substance consumption.

Keywords: Substance-Related Disorders; Mental Health; Students; Alcohol Drinking in College; Coronavirus Infections; Social Isolation.

RESUMO

Objetivo: mensurar o nível de dependência de substâncias psicoativas dos estudantes da área da saúde de uma universidade pública federal e verificar relações com a saúde mental durante a pandemia da COVID-19. **Método:** estudo transversal com abordagem quantitativa realizado com 527 estudantes de sete cursos de graduação da área da saúde de uma universidade pública federal da região Sul do Brasil. A coleta foi realizada de forma virtual por meio de um questionário de caracterização sociodemográfica e acadêmica, o *Alcohol, Smoking and Substance Involvement Screening Test* e o *Mental Health Inventory*. Para análise dos dados, foi utilizada a estatística descritiva e inferencial. **Resultados:** a maioria dos estudantes, durante a pandemia da COVID-19, apresentou uso ocasional e sugestivo de abuso para derivados do tabaco, bebidas alcoólicas, maconha e hipnóticos/sedativos. As menores médias de saúde mental foram dos estudantes que tiveram seu nível de dependência classificado como sugestivo de abuso, e as maiores médias foram dos que não fizeram uso dessas substâncias durante a pandemia (sem uso/pandemia). **Conclusão:** tendo em vista que médias mais elevadas apontam para uma melhor saúde mental, pode-se inferir que uma pior saúde mental está associada ao maior uso de substâncias psicoativas.

Palavras-chave: Transtornos Relacionados ao Uso de Substâncias; Saúde Mental; Estudantes; Consumo de Alcool na Universidade; Infecções por Coronavírus; Isolamento Social.

RESUMEN

Objetivo: medir el nivel de dependencia de sustancias psicoactivas entre estudiantes de salud de una Universidad Pública Federal y verificar las relaciones con la salud mental durante la pandemia de COVID-19. **Método:** Estudio transversal con enfoque cuantitativo realizado con 527 alumnos de siete cursos de pregrado del área de salud de una Universidad Pública Federal del sur de Brasil. La recogida se realizó de forma virtual a través de un cuestionario de caracterización sociodemográfica y académica, el *Test de Detección de Consumo de Alcohol, Tabaco y Sustancias*, y el *Inventario de Salud Mental*. Para el análisis de los datos se utilizaron estadísticas descriptivas e inferenciales. **Resultados:** la mayoría de los estudiantes durante la pandemia de COVID-19 tenían un consumo ocasional y sugestivo de productos de tabaco, bebidas alcohólicas, marihuana e hipnóticos/sedantes. Las puntuaciones medias de salud mental más bajas fueron las de los estudiantes cuyo nivel de dependencia se clasificó como sugestivo de abuso, y las puntuaciones más altas las de aquellos que no consumieron durante la pandemia (sin consumo/pandemia). **Conclusión:** teniendo en cuenta que las medias más altas apuntan a una mejor salud mental, se

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puede deducir que una peor salud mental está asociada a un mayor consumo de sustancias psicoactivas.

Palabras clave: Trastornos Relacionados con Sustancias; Salud Mental; Estudiantes; Consumo de Alcohol en la Universidad; Infecciones por Coronavirus; Aislamiento Social.

INTRODUCTION

Use of Psychoactive Substances (PAS) among university students has increased significantly, with higher rates when compared to the general population.¹ Use can be linked to a number of factors, such as new responsibilities, being away from the family, worrying about the future, and differentiated and high workload.^{2,3}

Currently, prevalence in the consumption of PAS among university students and its impact on people's lives are evident.⁴ In a university under study, the use of PAS has presented 99.39% prevalence of alcohol consumption in life, followed by tobacco (38.18%), marijuana (26.06%), inhalants (15.76%), cocaine or crack (9.09%), hallucinogens and hypnotics or sedatives matched (6.06%), amphetamines or ecstasy (5.45%) and opioids (1.21%).⁵

Considering these factors, the 2019 coronavirus disease pandemic (COVID-19), caused by the SARS-CoV-2 virus, has exerted direct impacts on the mental health of the population. In addition to the fear of contracting the disease, it has caused a feeling of insecurity in all aspects of life, in addition to symptoms such as depression, anxiety and stress.⁵ Moreover, the most effective method for controlling the disease, which is social distancing, ends up reducing human contact and interactions between individuals, which can mean a stressor with a considerable impact on mental health, as well as it can lead to initiation or intensification of PAS use.⁵⁻⁷

In the Brazilian context, ministerial, state and municipal agencies have sought strategies to mitigate the consequences of the pandemic and the possible repercussion on the mental health of Brazilians, with materials aimed at health professionals, family members, aged individuals, caregivers and the general population. The ministerial campaign proposal, for example, includes guidance on how people should deal with feelings such as fear and stress, in addition to presenting tips and strategies for mental health care.⁸

Furthermore, the National Health Council recommends the implementation of other measures to guarantee the rights of people with mental distress and/or disorders and needs arising from the use of alcohol and other drugs in the COVID-19 pandemic context.⁹ However, it is noted

that the young population, aged from 18 to 24 years old, which is mostly attending universities,¹⁰ does not receive the attention deserved in the strategies evidenced, which can influence the vulnerability of mental health care in this period of life.

Studies^{11,12} that analyze the pandemic situation and the mental health of the population show the negative impact of the pandemic on people's lives, as well as worsening in lifestyle habits and increased PAS use. Furthermore, social distancing exerts an impact on the teaching-learning process, causing interaction and learning difficulties in the students, with consequences in academic performance.^{13,14} Considering these elements, the urgency of conducting this study is emphasized, as university students are one of the groups especially prone to adopting health risk behaviors¹⁵ and because the COVID-19 pandemic has exerted an impact on these university students' mental health. Consequently, there may be an increase in the search of psychoactive substances. Therefore, the current study aims at measuring the level of psychoactive substance dependence of healthcare students attending a public federal university, as well as to verify relationships with mental health during the COVID-19 pandemic.

METHOD

A cross-sectional study with a quantitative approach conducted in a federal public university from the Brazilian South region. This university is made up of university units, and the Health Sciences Center has 2,357 students enrolled in its seven undergraduate programs, namely: Nursing, Medicine, Physiotherapy, Dentistry, Speech Therapy, Pharmacy and Occupational Therapy. A total of 2,243 of these students hold active enrollments.

The study participants were students enrolled in the health area undergraduate courses. The following were considered as inclusion criteria: enrolled students with active participation in the aforementioned courses and aged at least 18 years old. The exclusion criteria were the following: students enrolled in the courses in situations of academic exchange, cancellation or distancing due to treatments and/or medical leave.

Convenience sampling was used to define the research participants, although the minimum sample criterion was adopted to avoid biases in selection of the study subjects. To estimate the sample size, a 95% confidence level and a 5% margin of error were used. Thus, of the total of 2,243 enrolled students, a minimum of 329 participants was obtained to comprise the sample after applying the minimum sample calculation. According to the eligibility

criteria, 2,021 students were in due conditions to participate and all were invited to the study, with 527 students comprising the sample.

The data were collected online between July and August 2020 via *Google Forms*. The students were contacted through their e-mail addresses, which were made available by the coordination offices of the courses and by the institution's Data Processing Center. The e-mail message sent to the students included a link to the research protocol and the corresponding Free and Informed Consent Form. The research protocol consisted of three instruments, the first being a semi-structured questionnaire developed by the researchers in order to assess sociodemographic and academic variables and adherence to the Ministry of Health recommendations in the COVID-19 pandemic.

The second instrument was the *Alcohol, Smoking and Substance Involvement Screening Test* (ASSIST), version 3.0, designed by researchers from several countries under coordination of the World Health Organization (WHO) and validated for the Brazilian reality.¹⁶ This is a structured questionnaire containing eight questions about the use of psychoactive substances in different classes (tobacco derivatives, alcoholic beverages, marijuana, cocaine, stimulants, sedatives, inhalants, hallucinogens and opiates). The questions dealt with the following: use frequency in life and in the past three months; problems related to use; concerns about use on the part of people related to the user; impairment in performing expected tasks; ineffective attempts to cease or reduce use; feelings of compulsion; and use of injectable substances. Each answer refers to a score, which varies from 0 to 4, where the total sum can range from 0 to 20. The score range from 0 to 3 is considered as indicative of occasional consumption, from 4 to 15 as indicative of abuse, and scores equal to or higher than 16 as suggestive of dependence.

The third research instrument was the Mental Health Inventory (MHI), translated into Portuguese by Pais-Ribeiro as *Inventário de Saúde Mental* (ISM) in 2001. This instrument is constituted as a self-answering questionnaire with 38 items distributed in five subscales: anxiety, with 10 items; depression, with five items; loss of emotional/behavioral control, with nine items; positive affect, with 11 items; and emotional bonds, with three items. These five sub-scales are grouped into another two major dimensions that measure psychological distress (negative dimension) and psychological well-being (positive dimension), respectively. For the mental health analysis, the result of each dimension, either positive or negative, derives from the gross sum of the items corresponding to

it. The sum of both dimensions provides the Global Mental health Index. The highest values correspond to the best mental health status. The results, that is, the final score, were converted into a rating from "0" to "100". The cutoff points identified were 52 points for the presence of severe symptoms and 60 points for moderate symptoms.¹⁷

The data were organized in an electronic spreadsheet in the form of a database, using the Excel – Windows/XP program, and analyzed in the *Statistical Package for the Social Sciences* (SPSS), version 21. To describe the profile of the sample, descriptive statistics were used with absolute (n) and percentage (%) frequencies of the categorical variables and central tendency and dispersion measures for the continuous variables. Internal consistency of the scales was evaluated using Cronbach's alpha coefficient. In this study, the alpha values were 0.64 and 0.96 for ASSIST and MHI, respectively. It is noted that the Cronbach's alpha value can vary from zero to one. Thus, the higher the value, the greater the internal consistency of the instrument.¹⁸

The categorical variables were assessed by means absolute and percentage frequency. Position (mean, minimum and maximum) and dispersion (standard deviation) measures were analyzed for the continuous variables. Data normality was verified by means of the Kolmogorov-Smirnov test. Pearson's chi-square test was employed for the bivariate analyses. The Student's t and ANOVA tests were used to compare the means of the quantitative variables that followed normal distribution. The Mann-Whitney or Kruskal-Wallis tests were used for the data that did not present normal distribution. A 5% ($p < 0.05$) significance level was adopted.

The research was approved by the Research Ethics Committee and complied with the determinations set forth in Resolution No. 466/2012 of the National Health Council.

RESULTS

The study participants were 527 students, aged from 18 to 38 years old and with a mean of 22.3 (± 4.6). Most of the participants were female (79.2%) and had no children (94.2%) or partner (65.7%). During suspension of the in-person academic activities, 80.1% of the students lived with family members, 8.9% lived alone, 6.8% with a partner, and 4.2% with peers/friends. In relation to compliance with the Ministry of Health recommendations to prevent COVID-19 contagion, 49% answered being able to maintain social distancing. When asked about their academic performance during the pandemic, 49.5% ($n=261$) of the students answered that it was insufficient, 24.1%

(n=127) considered it sufficient, 19.4% (n=102) good, 5.9% (n=31) very good, and 1.1% (n=6) excellent.

The data referring to the levels of dependence on psychoactive substances are presented in Figure 1.

According to the data, the highest percentage of students classified as with “occasional consumption” and “consumption suggestive of abuse” corresponded to alcoholic drinks, followed by marijuana.

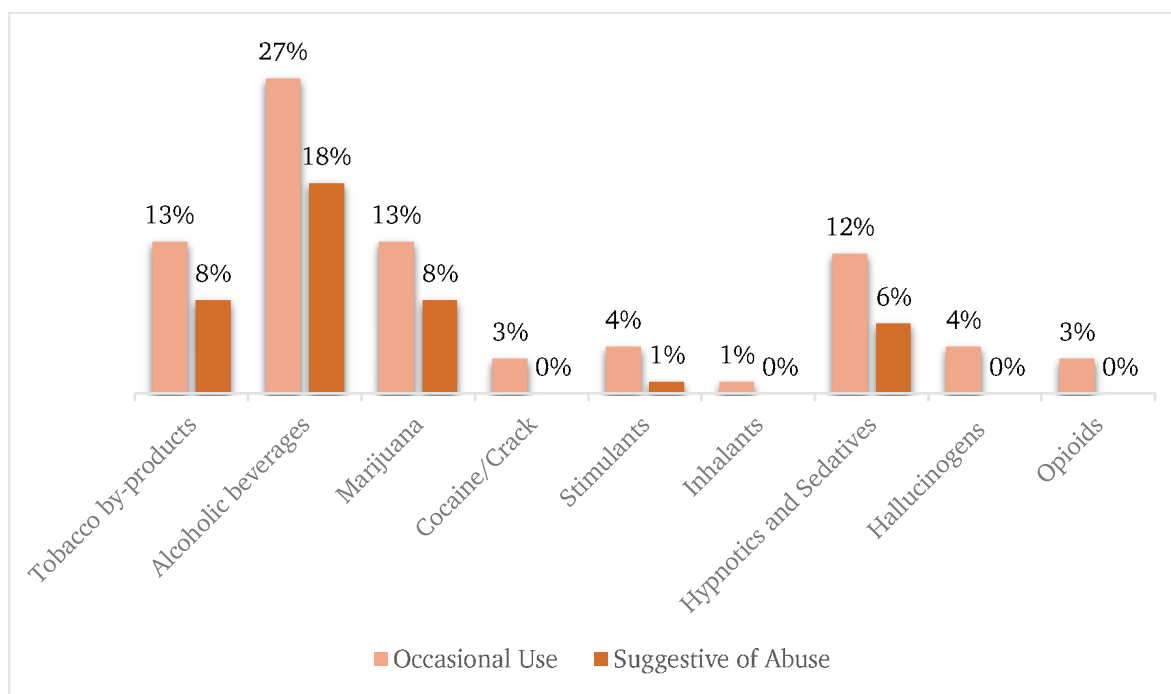


Figure 1 - Levels of dependence on psychoactive substances. Santa Maria, RS, Brazil, 2020. (n=527)

Source: Prepared by the authors.

As presented in Table 1, there was no significant difference between “occasional consumption” and “consumption suggestive of abuse” of psychoactive substances by health area courses. However, it is valid to note that all the courses included students with the “consumption suggestive of abuse” level for tobacco by-products, alcoholic drinks, marijuana and hypnotics/sedatives. A significant number of students that make use of alcoholic beverages is also observed, that is, classified at the “occasional consumption” or “consumption suggestive of abuse” levels.

When the relationship of the “occasional consumption” and “consumption suggestive of abuse” levels with academic performance is established, a significant association is found in relation to the following psychoactive substances: tobacco by-products ($p=0.00$), marijuana ($p=0.01$), inhalants ($p=0.00$), hypnotics/sedatives ($p=0.00$) and opioids ($p=0.00$). It is observed that the highest percentage of students with “occasional consumption” and “consumption suggestive of abuse” of these drugs assess their academic performance as insufficient during suspension of the in-person activities (Table 2).

Table 3 presents the data referring to the mental health of the health area university students according to the level of dependence on psychoactive substances.

According to the data presented in Table 3, there is a significant difference in the means of the global MHI and the “well-being” and “stress” dimensions when related to the “no consumption/pandemic”, “occasional consumption” and “consumption suggestive of abuse” levels of the following psychoactive substances: tobacco by-products, alcoholic beverages, marijuana and hypnotics/sedatives. Regarding stimulants and cocaine/crack, there was only a significant difference in the “well-being” dimension.

It was observed that the lowest mean scores corresponded to the students who had their dependence level classified as “consumption suggestive of abuse” and the highest mean scores were found in those who did not use substances during the pandemic (no consumption/pandemic). Considering that the highest mean values indicate better mental health, it can be inferred that worse mental health is associated with greater use of psychoactive substances.

Table 1 - Frequency of students classified as with “occasional consumption ” and “consumption suggestive of abuse”, by psychoactive substance and by course. Santa Maria, RS, Brazil, 2020 (n=527)

	Nur† (n=102)*	Med‡ (n=125)*	Pha§ (n=96)*	Den (n=47)*	S.Th.¶ (n=43)*	OT** (n=55)*	Phy†† (n=59)*	p-value‡‡
Tobacco by-products								
Occasional consumption	09	18	10	06	06	09	10	0.82
Consumption suggestive of abuse	09	13	10	02	02	04	03	
Alcoholic beverages								
Occasional consumption	28	27	25	14	09	14	27	0.19
Consumption suggestive of abuse	19	29	13	10	07	06	11	
Marijuana								
Occasional consumption	10	19	12	09	04	08	07	0.70
Consumption suggestive of abuse	06	11	09	04	03	06	05	
Cocaine/Crack								
Occasional consumption	04	02	01	01	01	02	02	0.77
Consumption suggestive of abuse	01	00	00	00	00	01	00	
Stimulants								
Occasional consumption	02	05	04	04	01	02	02	0.85
Consumption suggestive of abuse	01	02	01	00	00	00	00	
Inhalants								
Occasional consumption	02	00	02	00	00	01	01	0.38
Consumption suggestive of abuse	00	00	00	00	00	01	00	
Hypnotics/Sedatives								
Occasional consumption	14	13	12	05	04	07	09	0.81
Consumption suggestive of abuse	06	04	09	03	04	02	02	
Hallucinogens								
Occasional consumption	02	07	05	02	00	01	02	0.33
Consumption suggestive of abuse	00	00	00	01	00	01	00	
Opioids								
Occasional consumption	05	02	03	01	00	01	01	0.54
Consumption suggestive of abuse	00	02	00	00	00	00	00	

*Total frequency of students participating in the study, by course; †Nur: Nursing; ‡Med: Medicine; §Pha: Pharmacy; ||Den: Dentistry; ¶S.Th.: Speech Therapy; **OT: Occupational Therapy; ††Phy: Physiotherapy; ‡‡Chi-Square Test

DISCUSSION

According to the data, most of the students were female (79.2%), and 80.1% lived with family members during suspension of the in-person academic activities. A number of studies identify that living with and having a good affective bond with the family nucleus can be a protective factor against PAS use.^{19,20} On the other hand, coping with challenging situations and permissive behaviors are related to adherence or intensification of substance use, especially by students who present greater psychosocial vulnerability. The following can be mentioned among the stressors and aggravating factors: entering university, distance from the family nucleus, establishment of new bonds and overload of pedagogical/academic activities.^{3,21}

Consumption of PAS by young university students can occur as a coping strategy for these stressors, as well as for the desire to experiment at this time of life, given

the countless activities and events.²¹ Thus, the period of academic activities interrupted by the COVID-19 pandemic and the need to return home can be considered as a protective factor. Nevertheless, it is relevant to note that the role of the family in relation to substance use in young people can be both a protective and a risk factor, depending on the family dynamics. A study evidences that an harmonic and collaborative family environment, with well-established dialog, proves to be a protective factor. On the other hand, conflicting relationships marked by negligence and violence or PAS consumption by the family members reveals itself as a potential risk factor.²²

Regarding compliance with the Ministry of Health recommendations to prevent COVID-19 contagion, 49% of the students reported being always able to maintain social distancing. The commitment of society to comply with precautionary measures in the face of COVID-19 requires awareness and changes in behavior.²³ According

Table 2 - Frequency of students classified as with “occasional consumption” and “consumption suggestive of abuse”, by psychoactive substance and by academic performance. Santa Maria, RS, Brazil, 2020 (n=527)

	Insufficient n(%)	Sufficient n(%)	Good n(%)	Very good n(%)	Excellent n(%)	p-value*
Tobacco by-products						
Occasional consumption	43(63.2)	17(25.0)	06(8.8)	02(2.9)	00(0.0)	0.00
Consumption suggestive of abuse	31(72.1)	03(7.0)	07(16.3)	01(2.3)	01(2.3)	
Alcoholic beverages						
Occasional consumption	79(55.2)	41(28.7)	15(10.5)	07(4.9)	01(0.7)	0.27
Consumption suggestive of abuse	51(53.7)	19(20.0)	20(21.1)	05(5.3)	00(0.0)	
Marijuana						
Occasional consumption	43(62.3)	18(26.1)	05(7.2)	03(4.3)	00(0.0)	0.01
Consumption suggestive of abuse	31(70.5)	07(15.9)	05(11.4)	00(0.0)	01(2.3)	
Cocaine/Crack						
Occasional consumption	10(76.9)	03(23.1)	00(0.0)	00(0.0)	00(0.0)	0.46
Consumption suggestive of abuse	02(100.0)	00(0.0)	00(0.0)	00(0.0)	00(0.0)	
Stimulants						
Occasional consumption	12(60.0)	06(30.0)	01(5.0)	01(5.0)	00(0.0)	0.76
Consumption suggestive of abuse	03(75.0)	01(25.0)	00(0.0)	00(0.0)	00(0.0)	
Inhalants						
Occasional consumption	02(33.3)	02(33.3)	00(0.0)	00(0.0)	02(33.3)	0.00
Consumption suggestive of abuse	00(0.0)	00(0.0)	01(100.0)	00(0.0)	00(0.0)	
Hypnotics/Sedatives						
Occasional consumption	43(67.2)	11(17.2)	04(6.3)	06(9.4)	00(0.0)	0.00
Consumption suggestive of abuse	16(53.3)	05(16.7)	06(20.0)	01(3.3)	02(6.7)	
Hallucinogens						
Occasional consumption	14(73.7)	04(21.1)	00(0.0)	01(5.3)	00(0.0)	0.47
Consumption suggestive of abuse	01(50.0)	01(50.0)	00(0.0)	00(0.0)	00(0.0)	
Opioids						
Occasional consumption	07(53.8)	02(15.4)	01(7.7)	01(7.7)	02(15.4)	0.00
Consumption suggestive of abuse	01(50.0)	00(0.0)	01(50.0)	00(0.0)	00(0.0)	

*Chi-square test

to data from the Institute for Applied Economic Research (*Instituto de Pesquisa Econômica Aplicada*, IPEA), social restriction measures were better accepted by the population at the beginning of the pandemic, accompanying the increasing strictness of the legal measures of social distancing.²⁴ Furthermore, the first study conducted with Brazilian adults at beginning of the pandemic indicates that most of the Brazilian population adhered to social distancing; however, this period contributed to a negative impact on mental health, with an increase in alcohol and tobacco use, as well as worsening in lifestyle habits.¹¹

Academic performance during the pandemic was pointed out as insufficient, which is in line with data from other authors, who show that, in addition to social inequalities in access to technologies, there is the difficulty of interaction and interpersonal relationships between students and professors, which were impaired by social distancing during the pandemic. These difficulties impose relevant effects on training in the health area,

restricting the exchange of ideas and knowledge as a learning method.^{13,14}

Dependence on alcohol and marijuana presented the highest percentages of students classified as with “occasional consumption” (alcohol: 27.1%; marijuana: 13.1%) and as “consumption suggestive of abuse” (alcohol: 18.2% and marijuana: 8.3%). All the courses included students with the “consumption suggestive of abuse” level for tobacco by-products, alcoholic drinks, marijuana and hypnotics/sedatives. A significant number of students that make use of alcoholic beverages is also observed, that is, classified at the “occasional consumption” or “consumption suggestive of abuse” levels. Such results are close to other studies conducted with the university population, also pointing out more frequent use of alcohol, tobacco and marijuana, followed by the other PAS.^{1,3,19,25} In addition, the data found also resemble a study that showed prevalence of alcohol use (43.97%), followed by marijuana (18.26%). When comparing the data, it is noticed that

Table 3 - Mental health mean according to the level of dependence on psychoactive substances. Santa Maria, RS, Brazil, 2020 (n=527)

	Well-being	p	Distress	p	Global MHI	P
Tobacco by-products						
No consumption/ Pandemic	45.20±16.33	0.00*	53.93±18.14	0.00†	50.72±16.32	0.00†
Occasional consumption	38.57±16.32		46.98±19.01		43.88±17.30	
Consumption suggestive of abuse	32.69±12.09		38.77±16.73		36.53±14.23	
Alcoholic beverages						
No consumption/ Pandemic	45.00±17.06	0.00*	54.04±18.91	0.00†	50.71±17.46	0.00†
Occasional consumption	43.77±15.77		51.88±18.21		48.89±16.48	
Consumption suggestive of abuse	38.02±14.60		45.68±17.08		42.86±15.39	
Marijuana						
No consumption/ Pandemic	45.31±16.65	0.00*	53.84±18.55	0.00†	50.70±17.12	0.00†
Occasional consumption	37.51±12.91		46.79±17.05		43.37±14.28	
Consumption suggestive of abuse	34.02±14.55		41.04±17.16		38.45±15.45	
Cocaine/Crack						
No consumption/ Pandemic	43.64±17.46	0.03†	52.28±18.44	0.05†	49.11±16.94	0.15†
Occasional consumption	31.64±9.77		35.64±16.71		34.16±13.69	
Consumption suggestive of abuse	25.00±17.16		34.58±16.54		31.05±15.73	
Stimulants						
No consumption/ Pandemic	43.82±16.54	0.02†	52.24±18.54	0.10†	49.14±17.04	0.09†
Occasional consumption	34.28±10.30		46.00±17.01		41.68±13.87	
Consumption suggestive of abuse	26.07±8.98		25.21±23.69		25.52±17.68	
Inhalants						
No consumption/ Pandemic	43.31±16.50	0.84‡	51.77±18.71	0.76‡	48.65±16.13	0.80‡
Occasional consumption	44.52±14.88		53.75±18.04		50.35±15.71	
Consumption suggestive of abuse	-----		-----		-----	
Hypnotics/Sedatives						
No consumption/ Pandemic	45.41±16.32	0.00†	54.64±18.08	0.00*	51.24±16.62	0.00*
Occasional consumption	33.90±13.81		39.89±16.49		37.68±14.66	
Consumption suggestive of abuse	33.23±12.93		36.16±13.35		35.08±12.57	
Hallucinogens						
No consumption/ Pandemic	43.52±16.57	0.15†	51.84±18.70	0.38†	48.78±17.16	0.29†
Occasional consumption	38.79±13.41		52.28±18.66		47.31±15.77	
Consumption suggestive of abuse	35.00±7.07		36.67±3.53		36.05±4.80	
Opioids						
No consumption/ Pandemic	43.49±16.35	0.19†	52.01±18.52	0.38†	48.87±16.96	0.36†
Occasional consumption	38.90±20.73		47.62±22.26		44.41±20.79	
Consumption suggestive of abuse	29.28±1.01		25.83±23.56		27.10±15.25	

*ANOVA Test; †Kruskal Wallis Test; ‡Mann-Whitney Test.

this study presented higher numbers: 45.3% for alcohol and 21.4% for marijuana.³

It is noteworthy that, in the current study, the number of students who abuse tranquilizers (hypnotics and sedatives) was higher, 5.7%, when compared to 3% in the National Survey.²⁶ Considering the pandemic period currently experienced and the psychological impacts caused, it can be understood that this more expressive data on the abuse of sedatives and tranquilizers is coherent for the moment in question.²⁷

There was a significant difference between the means of the global MHI and the “well-being” and “distress”

dimensions when compared to the “no consumption/pandemic”, “occasional consumption”, and “consumption suggestive of abuse” levels of the following psychoactive substances: tobacco by-products, alcoholic beverages, marijuana and hypnotics/sedatives. It is observed that no indications suggestive of dependence were observed, although signs suggestive of abuse were present in all the classes. The lowest mean scores corresponded to students who had their dependence level classified as “consumption suggestive of abuse”, and the highest mean scores were found in those who did not use substances during the pandemic (no consumption/pandemic). Considering

that higher mean values indicate better mental health, it can be inferred that worse mental health is associated with greater use of psychoactive substances.

It is evident that university students are in a situation of vulnerability and face diverse risk conditions for their mental health and well-being. This happens because, from the beginning of the academic path and throughout their undergraduate studies, students face an exhausting and adversity process, which can lead to psychological distress and even configure itself as a critical period for the beginning and maintenance of PAS use.^{19,28} In addition to that, social distancing added to the pandemic can intensify substance consumption by the studied population, as greater permanence at home has contributed to a negative impact on the mental health and lifestyle of Brazilians. This context can result in an increase in the consumption of alcoholic beverages and tobacco, as well as of the other PAS.^{11,29}

As an implication of the study for scientific knowledge advancement in the Health and Nursing areas, it can be stated that it allowed seeing the reality of university students. With the results obtained, it is possible to organize and implement therapeutic intervention strategies with the target population to promote improvements in mental health and favor the necessary conditions to develop autonomy in the students about their decisions. Thus, it is fundamental that the authorities, departments and course coordinations work together to develop strategies for health promotion and conscious use of psychoactive substances with the academic community.

The difficulty generalizing the results is cited as a limitation of this study, as the sample is limited to students attending seven health courses at a federal public university in the Brazilian South region. The typical characteristic of this type of study is also pointed out, which comprises self-reported information and cross-sectionality. In a pandemic context, atypical and requiring immediate measures to mitigate the spread of a highly contagious virus such as SARS-CoV-2, it is urgent to develop mental health care strategies for students. The importance of this study is understood to warn about the use of psychoactive substances and its relation to mental health in the COVID-19 pandemic period, with a view to encouraging personalized interventions for this specific population.

CONCLUSION

The level of PAS dependence found in healthcare students attending a public federal university presented a higher percentage of “occasional consumption” and

“consumption suggestive of abuse” for alcoholic beverages, followed by marijuana. In addition, a significant association was verified between academic performance and tobacco by-products, marijuana, inhalants, hypnotics/sedatives and opioids. A higher percentage of students with “occasional consumption” and “consumption suggestive of abuse” of these substances rated their academic performance as insufficient during the suspension of in-person activities. Moreover, regarding the relationships between the level of dependence on PAS and mental health in the COVID-19 pandemic, it can be inferred that worse mental health is associated with higher PAS use.

As implications for the student assistance policy, it is interesting that the university implements tools that promote family bonding and spirituality to enhance these factors and, in the future, investigate whether there has been a decline in the rates of substance use by its students. Another possibly effective strategy for reducing PAS consumption is using technology-based entertainment, as in the educational environment it brings with it a pool of possibilities that makes the educational process more dynamic. Regarding the use of hypnotics and sedatives, it is suggested to implement strategies to inform the academic population about proper use of these medications, along with the application of appropriate regulatory measures to prevent inappropriate self-medication.

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