# EVALUATION OF PREVALENCE OF BURNOUT SYMPTOMS IN PRE-UNIVERSITY STUDENTS

# **Academic Burnout in pre-university students**

Mariah Salvan Rosenstengel <sup>1</sup>,
Christopher Antunes Negrello \*<sup>1</sup>, <a href="https://orcid.org/0000-0003-0492-2590">https://orcid.org/0000-0003-0492-2590</a>
Gustavo Feier <sup>12#</sup>

Rosenstengel, MS.1, Negrello, CA \*1, Feier, G. 12#

\* All authors declare that the second author had the same contribution as the first author.

<sup>1</sup>Curso de Medicina da Universidade do Extremo Sul Catarinense, Av. Universitária, 1105, Bairro Universitário, CEP 88806-000, Criciúma, SC, Brasil.

<sup>2</sup>Instituto João Quevedo, Rua Cel. Pedro Benedet 505, sala 104, Millenium Saúde Center, Centro CEP 88801-302, Criciúma, SC, Brasil.

#Corresponding author: Feier, G. <sup>1.2#</sup> <sup>1</sup>Curso de Medicina da Universidade do Extremo Sul Catarinense - Av. Universitária, 1105 - Bairro Universitário CEP: 88806-000 - Criciúma, SC, Brasil.

## **ABSTRACT**

Introduction: Burnout is described as a professional exhaustion resulting from prolonged exposure to stress, making the individual less productive, also reflecting on personal relationships. Stand out in academic exhaustion, the exhaustion due to studies, the cynicism and the dropping out of studies with thoughts of incompetence as a student. Objective: To evaluate the prevalence of symptoms of burnout in pre-university students in a city in the Extreme South of Santa Catarina. **Methodology**: This is a cross-sectional study, with collection of primary data. Data were collected from questionnaires applied to pre-university students in the city of Criciúma using two questionnaires, the Copenhagen Burnout Inventory, and another one developed by the authors. **Results**: High levels of burnout were found in 56.4% of students. A statistically significant correlation was found between male sex and a low level of burnout. There was a high prevalence in the use of psychotropic drugs, especially the class of antidepressants. Conclusion: More studies on burnout in students at all levels of education are needed, given that this study is the pioneer in burnout research in college entrance students and that the transition from high school to academic is a period of big changes, challenges and stress.

**Key-Words:** Burnout, Psychological; Students; Prevalence

## INTRODUCTION

Burnout was described for the first time, in 1974, by Freudenberger<sup>1</sup> as a professional exhaustion resulting from exposure to prolonged levels of stress, making less productive individual in the exercise of their function. This exhaustion is manifested through behaviors that express growing anger, frustration, excessive stiffness and signs of depression.<sup>1</sup>

Burnout reflects negatively on the professional's performance, as it provokes negative feelings and actions between the individual and their function, deteriorating the quality of care and hindering the relationship of the work team. It also reflects on the affected individual's personal relationships, causing family and marital problems and even inducing problems such as physical exhaustion, insomnia and increased use of alcohol and drugs.<sup>2</sup>

Regarding the prevalence of Burnout Syndrome in physicians, Boutou et al.<sup>3</sup> describes that it can vary from 25 to 77.8%, with the main reason for this discrepancy being the variety of data collection tools and definitions for diagnosis of Burnout Syndrome.

Comparing academic exhaustion to work-related professional exhaustion, Al-Alawi et al.<sup>4</sup>, when describing academic exhaustion, theorizes it involving three hypothetically different facets, but which are connected, being: exhaustion due to study requirements, cynicism and abandonment of studies with thoughts of incompetence as a student.

The concept of academic burnout, described by Maslach et al. <sup>2</sup>, seems to be in line with the multidimensionality of the burnout theory, which leads to emotional exhaustion, cynicism and reduced personal realization. <sup>2</sup> For Moutinho et al. <sup>5</sup>, the appearance of burnout symptoms in medical students is high in the first semester, even surpassing the anxiety levels of those who are already in the last years of graduation.

Chronic stress is evident not only in adults, but also in adolescents, because adolescence is a period characterized by great transitions in the individual's life, since they need to make choices such as: profession to follow, live away from the family and do choices autonomously. These changes can influence anxiety in young students<sup>6</sup>. A previous study carried out in Sweden showed that at least a third of high school students have a high degree of stress symptoms.<sup>7</sup> Therefore, the intense

academic study load, long hours of study and the obligation to learn a lot of information in a short time cause physical and psychological problems.<sup>8</sup>

When comparing students who take admission tests more than once with those with less experience, Bashir et al.<sup>9</sup> report that those who take admission tests more than once are more likely to develop a high level of anxiety on the exam, compared to those with less experience.<sup>9</sup> Fatigue, both physical and emotional, for Chen et al.<sup>10</sup> leads students with more experience and, consequently, with more opportunity to prepare for the tests, to have results that are not as good as expected.<sup>10</sup> Such symptoms, points out Santos et al.<sup>11</sup> predominate in female pre-university students. Having in mind that burnout has a great prevalence in medical students already in the initial stages of graduation, studies with students in pre-university courses to better understand this syndrome in students in the first semesters of the course. In addition, the results can expand the study to other levels of education, such as high school, and thus improve the literature and new research on the topic.

## **METHODOLOGY**

## **Ethical aspects**

The Human Research Ethics Committee of the University of the Extreme South of Santa Catarina approved the performance of this work, which appears to be number 4.740.520. The interview was only carried out after signing the Informed Consent Form.

# Study design:

This is a cross-sectional study, with collection of primary data.

# **Study Population:**

Students regularly enrolled in pre-university entrance courses in Criciúma-SC.

# **Sample Calculation:**

The study population was 370 students, regularly enrolled in pre-university entrance courses in Criciúma-SC. The minimum value of the study sample was not reached.

# Study location:

This study was carried out on the premises of Colégio Leme and Curso Sou Único, in Criciúma - SC.

#### **Collection instrument:**

The collection instrument consists of two questionnaires, the Copenhagen Burnout Inventory<sup>12</sup>, which consists of 25 questions that assess burnout in three dimensions: personal, connected to work (studies) and linked to the client (colleagues and teachers). 12. And another one developed by the authors, which assesses personal and socioeconomic issues, which involves the following questions: Female or male?; How old are you?; Lives with the parents?; Relationship?; In addition to studying, do you work?; What is your family's monthly income?; What is the intended course?; Do you intend to study at a federal, state or private college?; is this your first year doing a pre-university course?; How many years have you done counting on this one?; Do you use drugs (legal or illegal)? If so, which ones?; How many hours do you usually sleep per day considering weekdays (Monday to Friday)?; How do you consider your sleep? Do you take any psychiatric medication? If so, which one?; Do you follow up with a psychologist or psychiatrist?; Do you perform physical activity?; How many hours of physical activity per week do you perform?; Do you do any kind of leisure?; What leisure activities do you do?; How many times a week do you do leisure activities?; Stressing source that you consider most important at the moment: family pressure, pressure from teachers, feeling of failure, study load, insecurity, financial, study environment, doubt regarding the course of choice?

# Statistical analysis:

The collected data were analyzed using the IBM Statistical Package for Social Sciences (SPPS) software version 21.0. Quantitative variables were expressed as mean and standard deviation and median (minimum and maximum). Qualitative variables were expressed as frequency and percentage.

Statistical tests were performed with a significance level of  $\alpha$  = 0.05 and, therefore, 95% confidence. Quantitative variables were assessed for normality by applying the Shapiro-Wilk and Kolmogorov-Smirnov test.

The investigation of the existence of the association between qualitative variables was carried out by applying the Pearson's Chi-square test, Likelihood Ratio and Fisher's Exact tests, followed by residual analysis when statistical significance was observed.

The comparison of the means of quantitative variables was performed by applying the Kruskal-Wallis H test.

## **RESULTS**

In the research, 55 questionnaires obtained from students enrolled in pre-university courses in the city of Criciúma, Santa Catarina, were analyzed.

Table 1 shows that the mean age of the individuals evaluated is 18.47 years with a standard deviation of ± 1.49. It can be seen that the number of female individuals is 67.3%. In the question "do you live with your parents?" the answer "yes" represented 80.0% of the cases. Regarding marital status, 70.9% of individuals are single and 27.3% are in a serious relationship. In the question "in addition to studying, do you work?" 83.6% answered "no". Regarding family income, 74.5% did not want to inform. 87.3% of respondents wanted to study medicine and 45.5% wish to study at a federal/state university and 36.4 % intend to study at a federal/state and/or private university. And 74.5% of the individuals were in the first year of the course. It can be observed that 27.3% of the individuals use legal or illegal drugs, 73.3% of them alcohol use, 20.0% marijuana use and 6.7% tobacco use. The average number of hours slept is 6.94 with a standard deviation of ± 1.09. Regarding sleep, 41.8% of the individuals considers having regular sleep and 25.5% good. In the question "do you take psychiatric medication?" 18.2% answered "yes", of these, 16.4% used antidepressants, 3.6% used amphetamines, 1.8% used anxiolytics, 1.8% used benzodiazepines and 1.8% used antiepileptic drugs. As for follow-up with a psychologist or psychiatrist, 47.3% do it. Regarding physical activity, it can be observed that of the respondents, 58.2% perform some type, with 42.3% perform 150 minutes or more per week. In the question "do you do any leisure activities?" 85.5% answered "yes", with 49.1% watching series/movies/TV. Regarding the source of stress, 52.7% considered the feeling of failure as the most important, and 21.8% felt insecure about the test.

In table 2, the level of burnout was analyzed in relation to the personal dimensions, related to studies, related to colleagues and related to teachers. Regarding personal burnout, 56.4% had a high level, 43.6% had an average level and only 3.6% had a low level. In burnout related to studies, 56.4% had a high level, 38.2% had an average level and only 5.5% had a low level. Regarding burnout related to colleagues, 12.7% had a high level, 38.2% had an average level and 49.1% had a

low level. In burnout related to teachers, none of the participants had a high level, 23.6% had an average level and 76.4% had a low level.

In table 3, personal burnout session, a comparison was made between high, medium and low personal burnout and gender, in which it can be observed that there was a statistically significant correlation between male gender and low personal burnout level (p 0.036). There was no statistically significant correlation in the comparison between high, medium and low personal burnout and age, living with parents, marital status, whether in addition to studying, working, monthly income, intended course, federal/state or private college, and number of years of course. High, medium and low personal burnout and the use of legal or illegal drugs, hours of sleep and use of psychiatric medication were also related. Of the people with a high level of personal burnout, 32.3% use legal or illegal drugs, of which 22.6% use alcohol, 9.7% use marijuana and 3.2% use tobacco. Among those with an average level of personal burnout, 18.2% use legal and illegal drugs. The average number of hours slept by individuals with a high level of personal burnout is 6.79 hours with a standard deviation of ± 1.12. It was observed that there was a statistically significant correlation between high personal burnout and sleep considered bad, and average personal burnout and sleep considered good. Regarding the use of psychiatric medication, of the individuals with a high level of personal burnout, 22.6% use psychiatric medication, and of the individuals with a medium level of personal burnout, 9.1% use psychiatric medication. Furthermore, a comparison was made between high, medium and low personal burnout and the use of antidepressants, amphetamines, anxiolytics, benzodiazepines, antiepileptics, follow-up with a psychologist or psychiatrist and physical activity, and there was no statistically significant correlation.

Also in relation to table 3, in the burnout column related to studies, a comparison was made between burnout related to high, medium and low studies and gender, in which it can be observed that there was a statistically significant correlation between male gender and burnout related to low studies (p 0.025). There was no statistically significant correlation in the comparison between burnout related to high, medium and low education and age, living with parents, marital status, whether in addition to studying, working, monthly income, intended course, federal/state college or peer

particular, and number of years in the course. A comparison was also made between burnout related to high, medium and low studies and the use of legal or illegal drugs, alcohol, marijuana, tobacco, sleep quality and use of psychiatric medication, and there was no statistically significant correlation. The average number of hours slept by individuals who had a high level of burnout related to the studies was 6.90 hours with a standard deviation of  $\pm$  1.06, and for individuals who had an average level of burnout related to the studies it was 6.95 hours with standard deviation of  $\pm$  1.04. Still, a comparison was made between burnout related to high, medium and low studies and the use of antidepressants, amphetamine, anxiolytics, benzodiazepines, antiepileptics, follow-up with a psychologist or psychiatrist and physical activity, and there was no statistically significant correlation.

Following table 3, when referring to the burnout session related to peers, a comparison was made between burnout related to high, medium and low peers and gender, age, living with parents, marital status, whether in addition to studying, working, monthly income, intended course, federal/state or private college, and number of years in the prep course, and there was no statistically significant correlation. A comparison was also made between burnout related to high, medium and low peers and the use of legal or illegal drugs, alcohol, marijuana, tobacco, sleep quality and use of psychiatric medication, and there was no statistically significant correlation. The average number of hours slept by individuals who had a high level of burnout related to colleagues was 6.71 hours with a standard deviation of ± 1.70, and for individuals who had an average level of burnout related to colleagues it was 6.95 hours with standard deviation of ± 1.15. In addition, a comparison was made between burnout related to high, medium and low peers and the use of antidepressants, amphetamine, anxiolytic, benzodiazepine, antiepileptic, follow-up with a psychologist or psychiatrist and physical activity, and there was no statistically significant correlation.

Following table 3, in the burnout column related to teachers, a comparison was made between burnout related to medium and low teachers and gender, age, living with parents, marital status, whether in addition to studying, working, monthly income, course intended, federal/state or private college, and number of years in the course, and there was no statistically significant correlation. Still, a comparison was

made between burnout related to middle and low teachers and the use of legal or illegal drugs, alcohol, marijuana, tobacco, sleep quality and use of psychiatric medication, and there was no statistically significant correlation. The average number of hours slept by individuals who had an average level of burnout related to teachers was 6.50 hours with a standard deviation of  $\pm$  1.02, and for individuals who had a low level of burnout related to teachers it was 7.07 hours with standard deviation of  $\pm$  1.09. In addition, a comparison was made between burnout related to medium and low teachers and the use of antidepressants, amphetamines, anxiolytics, benzodiazepines, antiepileptics, follow-up with a psychologist or psychiatrist and physical activity, and there was no statistically significant correlation.

## DISCUSSION

The present study, so far and based on the researched databases, is the first study on Burnout focusing on the population of pre-university entrance exam students. This fact can stimulate further research and serve as guidance for identifying symptoms in this group.

High levels of burnout were found mainly in the dimensions of personal burnout and burnout related to the studies, both being present in 56.4% of the research participants. Compared with existing data in the literature on other student populations, the levels are above the expected average, as evidenced by Dinis et al.<sup>13</sup>, in a study with medical students from the University of Coimbra, 40% of respondents had a high burnout rating and 28.1% in study-related burnout. As this study is unprecedented, there are no data in the literature for a more reliable correlation between populations.

In the present study, a statistically significant correlation was found between male gender and a low level of burnout. This goes against the existing literature in which the stress-depression relationship is stronger for women as they physically mature, and it diminishes for developing men. Thus, at the end of puberty, boys no longer had a significant correlation between life stress and depressive symptoms. 14 The data found in the present study indicates that females are more prone to burnout symptoms when compared to males, corroborating the data found in the study by Santos et al.<sup>11</sup>.The likely cause of the higher prevalence of burnout in women is due to cultural and social factors, such as the fact that women have not been included in the academic environment until recently, also associated with hormonal factors and adolescence as a predisposing factor for insecurities and uncertainties. 15 In addition to various psychosocial factors, such as dual duties of home and work, gender-related social roles and social expectations, the risks of sexual harassment, domestic violence and gender-based discrimination<sup>16</sup>. Women have a more ruminative thinking style to face their anxieties, in contrast to the more active or distracting responses of men.<sup>17</sup>

In the present study, no association was found between alcohol and burnout, unlike what was found in a previous study by Jackson et al.<sup>18</sup>, which revealed a strong

interaction. The correlation between burnout and alcohol use can be observed in other studies, as drinking is an attempt to cope with stress<sup>19</sup>. The divergence between this study and previous studies can be explained by the presence of students under 18 years old, which, in Brazil, are prohibited by law from buying and consuming alcoholic beverages.

Regarding the level of burnout and average hours of sleep, it was demonstrated that individuals with a high level of burnout have an average number of hours of sleep less than expected for their age, which according to the National Sleep Foundation<sup>20</sup> is 7 -9 hours of sleep per night. A previous study by Do et al.<sup>21</sup> showed that sleep deprivation and inadequate quality of sleep can have serious effects on the mental health of adolescents. These findings can be compared with a study by Brubaker; Beverly<sup>22</sup> with medical students in which most participants reported poor sleep quality associated with high levels of burnout. Previous research states that lower quantity and quality of sleep are associated with higher levels of cortisol, and consequently with higher levels of daily stress<sup>23</sup>.

As for the use of psychotropic drugs, the present study revealed a high prevalence of the use of these medications, especially the class of antidepressants when compared to the study by Tsai et al<sup>24</sup> that interviewed adolescents in Taiwan, in which the use of psychotropic drugs was 4.5%, with the use of antidepressant medications present in 2.15% of adolescents. This makes this data worrying, as high levels of burnout can be associated with the inappropriate use of these medications<sup>25</sup>.

Regarding physical activity, 58.2% of the participants declared to perform some type of exercise, however, there was no correlation with the levels of burnout found. On the other hand, the literature suggests that aerobic exercise and weight training activities are associated with lower burnout rates and higher quality of life<sup>26</sup>, such divergence in these studies can be explained by the difference in the studied population, and in the latter, the target population was the medical academics.

Regarding the study limitation, the total population of students regularly enrolled in pre-university entrance courses in the city of Criciúma-SC is 370 students, which would result in a minimum sample of 189 participants. However, the sample of this

study had 65 completed questionnaires, which after analysis resulted in 55 correct questionnaires, which corresponds to an adherence rate of 17.56% of the expected sample number. This fact can increase the response bias. Such difficulty for data collection was also evidenced in the study by Rocha et al<sup>16</sup>, which used the Copenhagen Burnout Inventory<sup>12</sup>, and had an adherence rate of 10.8%. Another factor to be taken into account is that it is not known whether students with burnout are more likely to respond to surveys because they identify with the topic or less likely to fill out surveys because of the apathy generated by burnout itself. The low adherence to the research can also be attributed to the SARS-CoV-2 pandemic, which limited access to respondents in educational institutions.

# **CONCLUSION**

It is concluded that more studies are needed on burnout in students at both pre-university and high school and undergraduate level, considering that this study is the pioneer in research on burnout in pre-university college students and that the teaching transition from high school to academic is a time of great change, challenges and stress. It is noticed that the female sex was the most affected by the burnout syndrome, not only in professional life but also in academic life. The use of psychotropic drugs is a practice that has been growing among young people and deserves attention for its risks and benefits. The education and training of students for the professional universe must be well monitored so that professional success, physical and mental health are achieved in a satisfactory and healthy way.

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Table 1. Socioeconomic Data

Table 1. Socioeconomic Data	
	Mean ± SD, Median (min - max), n (%)
Age (years)	n = 55 18,47 ± 1,49
, igo (you.o)	10,17 ± 1,10
Sex	27 (67 2)
Feminine Masculine	37 (67.3) 18 (32.7)
	(02.11)
Do you live with parents?	44 (90 0)
Yes Not	44 (80.0) 11 (20.0)
1101	11 (20.0)
Marital status	20 (70 0)
Single Serious relationship	39 (70.9) 15 (27.3)
Married	1 (1.8)
	, ,
In addition to studying, do you work? Yes	9 (16.4)
Not	46 (83.6)
Monthly income (reais) (n = 14)	5815 (3000 – 30000)
Internal of course	
Intended course Medicine	48 (87.3)
Engineering	2 (3.6)
Law	1 (1.8)
Others	4 (7.3)
Intend to study at university:	
Federal/State	25 (45.5)
Private Both answers above	10 (18.2) 20 (36.4)
Both anowers above	20 (00.4)
Is this your first year of pre-university?	44 (74.5)
Yes Not	41 (74.5) 14 (25.5)
1101	11 (20.0)
Do you use legal or illegal drugs?	45 (07.0)
Yes Alcohol	15 (27.3) 11 (73.3)
Marihuana	3 (20.0)
Tobacco	1 (6.7)
Not	40 (72.7)
How many hours do you usually sleep a day?	6.94 ± 1.09

How do you rate your sleep? Very good Good Regular Bad Too bad	9 (16.4) 15 (25.5) 23 (41.8) 8 (14.5) 1 (1.8)
Do you take psychiatric medication? Yes Not	10 (18.2) 45 (81.8)
Antidepressant	9 (16.4)
Amphetamine	2 (3.6)
Anxiolytic	1 (1.8)
Benzodiazepine	1 (1.8)
Antiepileptic	1 (1.8)
Do you follow up with a psychologist or psychiatrist? Yes Not	26 (47.3) 29 (52.7)
Do you perform physical activity? Yes Not	32 (58.2) 23 (41.8)
How many hours of physical activity per week do you do?	
Less than 150 minutes 150 minutes or more Not applicable Absent	9 (17.3) 22 (42.3) 21 (40.4) 3
Do you perform any leisure activities? Yes Not	47 (85.5) 8 (14.5)
Reading	14 (25.5)
Series/Movies/TV	27 (49.1)
Hanging out with friends/family	13 (23.6)
Academy	4 (7.3)
Sports	11 (20.0)

Electronic games	4 (7.3)
Singing/music/instruments	4 (7.3)
Travel	2 (3.6)
Stressful source that you consider most important at the moment	
Feeling of failure	29 (52.7)
Insecurity about the evidence	12 (21.8)
Study hours	6 (10.9)
family pressure	6 (10.9)
Doubt regarding the course of choice	1 (1.8)
Financial	1 (1.8)

Source: Survey data, 2021.

Table 2. Burnout domains

Dimension	Level	n (%)	Average
			score
Personal burnout	Low	2 (3.6)	10.42
	Medium	22 (43.6)	42.80
	High	31 (56.4)	69.49
Burnout related to studies	Low	3 (5.5)	19.05
	Medium	21 (38.2)	43.37
	High	31 (56.4)	66.71
Burnout related to peers	Low	27 (49.1)	10.03
·	Medium	21 (38.2)	34.33
	High	7 (12.7)	58.33
Burnout related to teachers	Low	42 (76.4)	5.26
	Medium	13 (23.6)	34.62
	High	- ′	

Source: Survey data, 2021.

145.5 6. 56.16.	ation of burnout domains  Personal burnout				Burnout	t related	to stud	ies	Burnout related to peers				Burnout related to teachers		
	Low		n High	Value - p	Low	Medium		Value - p		Medium	•	Value - p		Medium	Value - p
	n = 2			٣	n = 3	n = 21	n = 31	٣	n = 27	n = 21		P	n = 42	n = 13	٣
Age (years)															
	19.00 ±2.83	18.32 ±0.57	18.55 ±1.86	0.810††	18.67 ±2.08	18.71 ±1.27	18.29 ±1.60	0.166††	18.48 ±1.22	18.43 ±1.89	18.57 ±1.27	0.588††	18.36 ±1.12	18.85 ±2.34	0.571††
Sex	0	40	0.4		0	4.4	00		40	4.4	_		07	40	
Feminine	0 (0.0)	13 (59.1)	24 (77.4)	0.036 <sup>†</sup>	` ,	14 (66.7)		0.025 <sup>†</sup>	. ,	14 (66.7)	. ,	0.968 <sup>†</sup>	. ,	10 (76.9)	0.510 <sup>‡</sup>
Masculine	2 (100.0) <sup>b</sup>	9 (40.9)	7 (22.6)		3 (100.0) <sup>b</sup>	7 (33.3)	8 (25.8)		9 (33.3)	7 (33.3)	2 (28.6)		15 (35.7)	3 (23.1)	
Lives with the Yes	•	10	24		2	16	25		22	15	e		22	44	
	2 (100.0)	` ,	. ,	0.587†	3 (100.0)	. ,		0.466 <sup>†</sup>	, ,	15 (71.4)	6 (85.7)	0.467†	,	11 (84.6)	0.999‡
Not	0 (0.0)	4 (18.2)	7 (22.6)		0 (0.0)	5 (23.8)	6 (19.4)		4 (14.8)	6 (28.6)	1 (14.3)		9 (21.4)	2 (15.4)	
Marital status					_						_				
Single	2 (100.0)	16 (72.7)	21 (67.7)	0.638 <sup>†</sup>	3 (100.0)	15 (71.4)	21 (67.7)	0.368 <sup>†</sup>	19 (70.4)	14 (66.7)	6 (85.7)	0.647†	29 (69.0)	10 (76.9)	0.691 <sup>†</sup>
Serious relationship	0 (0.0)	6 (27.3)	9 (29.0)		0 (0.0)	5 (23.8)	10 (32.3)		7 (25.9)	7 (33.3)	1 (14.3)		12 (28.6)	3 (23.1)	
Married	0 (0.0)	(0.0)	1 (3.2)		0 (0.0)	1 (4.8)	0 (0.0)		1 (3.7)	0 (0.0)	0 (0.0)		1 (2.4)	0 (0.0)	
In addition to s	` ,	` ,	` ,		(0.0)	(4.0)	(0.0)		(3.7)	(0.0)	(0.0)		(2.4)	(0.0)	
Yes	0	2 (9.1)	7 (22.6)	0 28 <b>7</b> †	0	3 (14 3)	6 (19.4)	0.513 <sup>†</sup>	5 (18.5)	2 (9.5)	2 (28.6)	0 458 <sup>†</sup>	6 (14.3)	3 (23.1)	0 428‡
Not	2	20	24	0.207	3	18	25	0.010	22	19	5	0.400	36	10	0.420
Intended cours	(100.0) se	(90.9)	(77.4)		(100.0)	(85.7)	(80.6)		(81.5)	(90.5)	(71.4)		(85.7)	(76.9)	
Medicine	1	20	27	0.650†	2	20	26	0.404†	25	17	6	0.457†	38	10	0 140 <sup>†</sup>
Engineering		(90.9)	(87.1)	0.650 <sup>†</sup>	(66.7)	(95.2)	(83.9)	0.481 <sup>†</sup>	(92.6)	(81.0)	(85.7)	0.157†	(90.5)	(76.9)	0.140 <sup>†</sup>
Right	(0.0) 0	(4.5) 0	(3.2) 1		(0.0) 0	(0.0) 0	(6.5) 1		(0.0) 0	(9.5) 0	(0.0) 1		(4.8) 0	(0.0) 1	
Others	(0.0) 1	(0.0) 1	(3.2)		(0.0) 1	(0.0) 1	(3.2)		(0.0) 2	(0.0) 2	(14.3) 0		(0.0) 2	(7.7) 2	
	(50.0)	(4.5)	(6.5)		(33.3)	(4.8)	(6.5)		(7.4)	(9.5)	(0.0)		(4.8)	(15.4)	
Intend to study Federal /	y at unive 2	rsity: 10	13		3	7	15		12	10	3		22	3	
state Private	(100.0) 0	(45.5)	(41.9)	0.413 <sup>†</sup>	(100.0)	(33.3)	(48.4)	0.186 <sup>†</sup>	(44.4)	(47.6)	(42.9)	0.637†	(52.4) 7	(23.1)	0.158 <sup>†</sup>
	(0.0)	(13.6)	(22.6)		(0.0)	5 (23.8)	(16.1)		3 (11.1)	5 (23.8)	(28.6)		(16.7)	(23.1)	
Both answers	0	9	11		0	9	11		12	6	2		13	7	
above Is this your firs	(0.0)	(40.9) ore-unive	(35.5)		(0.0)	(42.9)	(35.5)		(44.4)	(28.6)	(28.6)		(31.0)	(53.8)	
Yes	1	16	24		2	14	25	<del>-</del>	20	18	3		33	8	0 0 <b>-</b> 0+
Not	(50.0) 1	(72.7) 6	(77.4) 7	0.695 <sup>†</sup>	(66.7) 1	(66.7) 7	(80.6) 6	0.500 <sup>†</sup>	(74.1) 7	(85.7) 3	(42.9) 4	0.095 <sup>†</sup>	(78.6) 9	(61.5) 5	0.279 <sup>‡</sup>
	(50.0)	(27.3)	(22.6)		(33.3)	(33.3)	(19.4)		(25.9)	(14.3)	(57.1)		(21.4)	(38.5)	
Do you use leg Yes	gal or illeg	gal drugs' 4	? 10		1	5	9		1	9	2		12	3	
	(50.0)	(18.2)	(32.3)	0.400†	(33.3)	(23.8)	(29.0)	0.891 <sup>†</sup>	4 (14.8)	(42.9)	(28.6)	0.093†	(28.6)	(23.1)	0.999 <sup>‡</sup>
Not	1 (50.0)	18 (81.8)	21 (67.7)		2 (66.7)	16 (76.2)	22 (71.0)		23 (85.2)	12 (57.1)	5 (71.4)		30 (71.4)	10 (76.9)	
Alcohol			_				_			_				_	
Yes	1 (50.0)	3 (13.6)	7 (22.6)	0.443 <sup>†</sup>	1 (33.0)	3 (14.3)	7 (22.6)	0.643 <sup>†</sup>	3 (11.1)	7 (33.3)	1 (14.3)	0.155 <sup>†</sup>	9 (21.4)	2 (15.4)	0.999‡
Not	1 (50.0)	19 (86.4)	24 (77.4)		2 (66.7)	18 (85.7)	24 (77.4)		24 (88.9)	14 (66.7)	6 (85.7)		33 (78.6)	11 (84.6)	
Marihuana	, ,	,	, ,		,	, ,	, ,		, ,	,	, ,		, ,	, ,	
Yes	0 (0.0)	0 (0.0)	3 (9.7)	0.167 <sup>†</sup>	0 (0.0)	0 (0.0)	3 (9.7)	0.167 <sup>†</sup>	1 (3.7)	2 (9.5)	0 (0.0)	0.467 <sup>†</sup>	1 (2.4)	2 (15.4)	0.36 <sup>‡</sup>
Not	2 (100.0)	22	28		3 (100.0)	21 <sup>2</sup> (100.0)	28		26 <sup>°</sup> (96.3)	`19 <sup>´</sup> (90.5)	7 (100.0)		`41 <sup>°</sup> (97.6)	11 (84.6)	
Tobacco	(100.0)	(100.0)	(00.0)		(100.0)	(100.0)	(00.0)		(00.0)	(50.5)	(100.0)		(07.0)	(04.0)	
Yes	0 (0.0)	0 (0.0)	1 (3.2)	0.560 <sup>†</sup>	0 (0.0)	0 (0.0)	1 (3.2)	0.560 <sup>†</sup>	0 (0.0)	1 (4.8)	0 (0.0)	0.376 <sup>†</sup>	1 (2.4)	0 (0.0)	0.999 <sup>‡</sup>
Not	` 2 ´	22	30		3	21	30	0.000	27	20	7	0.070	41	13	0.000
How many hou	(100.0) urs do you	` ,			(100.0)	(100.0)	(96.8)		(100.0)	(95.2)	(100.0)		(97.6)	(100.0)	
	6.75	7.16	6.79 ±1.12	-	7.17	6.95	6.90	0.817††	6.98	6.95	6.71 ±1.70	0.667††	7.07	6.50	0.440++
How do you ra	±2.47 ate your sl	±0.93 eep?	<b>I</b> I.IZ	0.653††	±1.89	±1.04	±1.08	0.017	±0.87	±1.15	±1.70	0.007	±1.09	±1.02	0.110 <sup>††</sup>
Very good	1	4 (19.2)	4	0.050†	2	1	6	0.077†	4	5	0	0.071†	9	0	0.026+
Good	(50.0) 0	(18.2)	(12.9) 5	0.050 <sup>†</sup>	(66.7) 0	(4.8) 7	(19.4) 7	0.077†	(14.8) 7	(23.8) 5	(0.0) 2	0.071†	(21.4) 10	(0.0) 4	0.026 <sup>†</sup>
Regular	(0.0) 1	(40.9) <sup>b</sup> 9	(16.1) 13		(0.0) 1	(33.3) 12	(22.6) 10		(25.9) 15	(23.8) 6	(28.6) 2		(23.8) 19	(30.8) 4	
Bad	(50.0) 0	(40.9) 0	(41.9) 8		(33.3) 0	(57.1) 1	(32.3) 7		(55.6) 1	(28.6) 5	(28.6) 2		(45.2) 4	(30.8) 4	
Too bad	(0.0)	(0.0)	(25.8) <sup>b</sup>		(0.0)	(4.8)	(22.6)		(3.7)	(23.8)	(28.6)		(9.5)	(30.8)	
าบบ มสน	0 (0.0)	0 (0.0)	1 (3.2)		0 (0.0)	0 (0.0)	1 (3.2)		0 (0.0)	0 (0.0)	1 (14.3)		0 (0.0)	1 (7.7)	
Do you take p					4	9	c		2	E	2		7	9	
Yes	(50.0)	2 (9.1)	7 (22.6)	0.239 <sup>†</sup>	• •	3 (14.3)	-	0.723 <sup>†</sup>	3 (11.1)	5 (23.8)	2 (28.6)	0.389 <sup>†</sup>	` ,	3 (23.1)	0.685 <sup>‡</sup>
Not	1 (50.0)	20 (90.9)	24 (77.4)		2 (66.7)	18 (85.7)	25 (80.6)		24 (88.9)	16 (76.2)	5 (71.4)		35 (83.3)	10 (76.9)	
	•	•	•		-	,	•		,		•		,	-	

Antidepressan	ıt														
Yes Not	1 (50.0) 1 (50.0)	2 (9.1) 20 (90.9)	6 (19.4) 25 (80.6)	0.304†	1 (33.3) 2 (66.7)	3 (14.3) 18 (85.7)	5 (16.1) 26 (83.9)	0.746 <sup>†</sup>	3 (11.1) 24 (88.9)	4 (19.0) 17 (81.0)	2 (28.6) 5 (71.4)	0.507†	7 (16.7) 35 (83.3)	2 (15.4) 11 (84.6)	0.999‡
Amphetamine															
Yes Not	0 (0.0) 2 (100.0)	1 (4.5) 21 (95.5)	1 (3.2) 30	0.900†	0 (0.0) 3 (100.0)	0 (0.0) 21 (100.0)	1 (3.2) 30	0.560 <sup>†</sup>	0 (0.0) 27	2 (9.5) 19 (90.5)	0 (0.0) 7 (100.0)	0.137 <sup>†</sup>	2 (4.8) 40 (05.2)	0 (0.0) 13 (100.0)	0.999 <sup>‡</sup>
Anxiolytic	(100.0)	(93.3)	(96.8)		(100.0)	(100.0)	(96.8)		(100.0)	(90.5)	(100.0)		(95.2)	(100.0)	
Yes	0	0	1		0	0	1		0	1	0		0	1	
Not	(0.0) 2 (100.0)	(0.0) 22 (100.0)	(3.2) 30 (96.8)	0.560†	(0.0) 3 (100.0)	(0.0) 21 (100.0)	(3.2) 30 (96.8)	0.560 <sup>†</sup>	(0.0) 27 (100.0)	(4.8) 20 (95.2)	(0.0) 7 (100.0)	0.376 <sup>†</sup>	(0.0) 42 (100.0)	(7.7) 12 (92.3)	0.236 <sup>‡</sup>
Benzodiazepir	ne														
Yes Not	0 (0.0) 2	0 (0.0) 22	1 (3.2) 30	0.560 <sup>†</sup>	0 (0.0) 3	0 (0.0) 21	1 (3.2) 30	0.560 <sup>†</sup>	0 (0.0) 27	0 (0.0) 21	1 (14.3) 6	0.119 <sup>†</sup>	1 (2.4) 41	0 (0.0) 13	0.999 <sup>‡</sup>
	(100.0)	(100.0)	(96.8)		(100.0)	(100.0)	(96.8)		(100.0)	(100.0)	(85.7)		(97.6)	(100.0)	
Antiepileptic															
Yes Not	0 (0.0) 2 (100.0)	0 (0.0) 22 (100.0)	1 (3.2) 30	0.560 <sup>†</sup>	0 (0.0) 3 (100.0)	0 (0.0) 21 (100.0)	1 (3.2) 30 (06.8)	0.560 <sup>†</sup>	0 (0.0) 27 (100.0)	1 (4.8) 20 (95.2)	0 (0.0) 7 (100.0)	0.376†	0 (0.0) 42 (100.0)	1 (7.7) 12	0.236 <sup>‡</sup>
Do you follow	` ,	` ,	(96.8)	evchiatrie	(100.0)	(100.0)	(96.8)		(100.0)	(93.2)	(100.0)		(100.0)	(92.3)	
Yes	0	8	18	Sycination	0	8	18		10	11	5		17	9	
Not	(0.0) 2 (100.0)	(36.4) 14 (63.6)		0.079†	(0.0) 3 (100.0)			0.050†	(37.0) 17 (63.0)	(52.4) 10 (47.6)		0.218 <sup>†</sup>	(40.5) 25 (59.5)	(69.2) 4 (30.8)	0.070‡‡
Do you perfori	,	I activity?			,	, ,	` ,		, ,	` ,	, ,		, ,	` ,	
Yes	2	13	17		3	12	17		17	12	3		24	8	
Not	(100.0) 0 (0.0)	(59.1) 9 (40.9)	(54.8) 14 (45.2)	0.314†	(100.0) 0 (0.0)	(57.1) 9 (42.9)	(54.8) 14 (45.2)	0.183 <sup>†</sup>	(63.0) 10 (37.0)	(57.1) 9 (42.9)	(42.9) 4 (57.1)	0.628 <sup>†</sup>	(57.1) 18 (42.9)	(61.5) 5 (38.5)	0.779‡‡
How many hou	urs of phy	sical activ	vity per v	week do y	you do?										
Less than 150 minutes	0 (0.0)	4 (19.0)	5 (17.2)	0.437†	1 (33.3)	3 (15.0)	5 (17.2)	0.478 <sup>†</sup>	5 (18.5)	4 (21.1)	0 (0.0)	0.495 <sup>†</sup>	5 (12.8)	4 (30.8)	0.332†
150 minutes or more	2 (100.0)	9 (42.9)	11 (37.9)		2 (66.7)	9 (45.0)	11 (37.9)		12 (44.4)	8 (42.1)	2 (33.3)		18 (46.2)	4 (30.8)	
Not applicable	0 (0.0)	8 (38.1)	13 (44.8)		0 (0.0)	8 (40.0)	13 (44.9)		10 (37.0)	7 (36.8)	4 (66.7)		16 (41.0)	5 (38.5)	

2

1

0

2

3

0

0

1

2

0

Source: Survey data, 2021.

Absent

<sup>†</sup> Value obtained after applying the Likelihood Ratio test;

<sup>‡</sup> Value obtained after applying Fisher's exact test;

<sup>‡‡</sup> Value obtained after applying Pearson's Chi-square test;

<sup>††</sup> Value obtained after applying the Kruskal-Wallis H test;

b Statistically significant value after residual analysis;