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Self-medication of Psychotropic Drugs Among Dental and Medical University Students *

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ABSTRACT

The academic life of university students requires dedication and many hours of study, so that many young people to withstand stress and tiredness use psychotropic drugs in order to minimize these sensations. The aim of this research was to evaluate the use of psychotropic drugs among medical and dental students. This is a descriptive, observational, analytical and cross-sectional study with 1.111 students from two higher education institutions, regularly enrolled in medical and dental courses, aged 18 years or older. A structured questionnaire with objective questions was applied. Statistical analyses were performed in the SPSS 22 program, and the significance level established as $p < 0.05$. Lifetime use of psychotropic drugs was reported by 36.7%, while 14.7% used it in the last month. The frequency of use of psychoactive drugs is higher in situations of stress, family loss or submission to surgeries by students. 37.2% said that obtained the drugs without a prescription. The most commonly used pharmacological classes were anxiolytics, antidepressants and psychostimulants. The latter were more consumed by medical students ($p < 0.05$; OR: 2.12). The precipitating factors for the beginning of use are the course demand (41.6%), other factors (33.7%) and family problems (29.1%). 90.8% said that they are aware of the risks regarding use. The study found a high prevalence of non-prescribed use of psychotropic drugs among students. Given the requirements presented, it is necessary to search for guidance and prevention strategies by universities.

KEYWORDS

Psychotropic drugs. Students, medical. Students, dental. Mental health.

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Automedicação de Psicofármacos Entre Estudantes Universitários de Odontologia e Medicina

RESUMO

A vida acadêmica dos estudantes universitários exige dedicação e horas de estudos, de forma que muitos jovens para suportar o estresse e cansaço utilizam psicofármacos visando minimizar essas sensações. O objetivo desta pesquisa foi avaliar o uso de psicofármacos entre estudantes de medicina e odontologia. Trata-se de estudo descritivo, observacional, analítico e transversal, com 1.111 estudantes de duas instituições de ensino superior, regularmente matriculados nos cursos de medicina e odontologia, com idade igual ou superior a 18 anos. Foi aplicado um questionário estruturado com questões objetivas. As análises estatísticas foram realizadas no programa SPSS 22, e o nível de significância estabelecido como $p < 0,05$. O uso de psicofármacos ao longo da vida foi informado por 36,7%, enquanto 14,7% fez uso no último mês. A frequência de uso de psicofármacos é maior em situações de estresse, perda familiar ou submissão a cirurgias pelos estudantes. 37,2% afirmaram que obtiveram os medicamentos sem prescrição médica. As classes farmacológicas mais utilizadas foram ansiolíticos, antidepressivos e psicoestimulantes. Estes últimos foram mais consumidos por estudantes de medicina ($p < 0,05$; OR: 2,12). Entre os fatores precipitantes para início do uso estão a demanda do curso (41,6%), outros fatores (33,7%) e problemas familiares (29,1%). 90,8% afirmaram ter consciência dos riscos quanto ao uso. O estudo verificou alta prevalência de uso não prescrito de psicofármacos entre os estudantes. Diante das necessidades encontradas, faz-se necessária a busca por estratégias de orientação e prevenção pelas universidades.

PALAVRAS-CHAVE

Psicotrópicos. Estudantes de medicina. Estudantes de odontologia. Saúde mental.

La Automedicación de Drogas Psicotrópicas Entre Estudantes Universitarios de Odontología y Medicina

RESUMEN

La vida académica de los estudiantes universitarios requiere dedicación y muchas horas de estudio, de modo que muchos jóvenes para resistir el estrés y el cansancio usan drogas psiquiátricas para minimizar estas sensaciones. El objetivo de esta investigación fue evaluar el uso de drogas psicotrópicas entre estudiantes de medicina y odontología. Estudio descriptivo, observacional, analítico y transversal, con 1.111 alumnos de dos instituciones de educación superior, matriculados regularmente en cursos médicos y dentales, de 18 años o más. Se aplicó un cuestionario estructurado con preguntas objetivas. Los análisis estadísticos se realizaron en el programa SPSS 22, y el nivel de significancia se estableció como $p < 0,05$. El uso de drogas psicotrópicas durante toda la vida se informó en un 36,7%, mientras que el 14,7% lo usó en el último mes. La frecuencia de uso de drogas psicotrópicas es mayor en situaciones de estrés, pérdida de familia o cirugía por parte de los estudiantes. El 37,2% declaró que obtuvieron los medicamentos sin receta médica. Las clases farmacológicas más utilizadas fueron ansiolíticos, antidepressivos y psicoestimulantes. Estos últimos fueron más consumidos por los estudiantes de medicina ($p < 0,05$; OR: 2,12). Entre los factores precipitantes para comenzar a usar están la demanda del curso (41,6%), otros factores (33,7%) y los problemas familiares (29,1%). El 90,8% dijo conocer los riesgos relacionados con el uso. El estudio encontró una alta prevalencia de uso no prescrito de drogas psicotrópicas entre los estudiantes. En vista de las necesidades encontradas, es necesario buscar estrategias de orientación y prevención por parte de las universidades.

PALABRAS CLAVE

Drogas psicotrópicas. Estudiantes de medicina. Estudiantes de odontología. Salud mental

Introduction

According to the concept proposed by the World Health Organization (WHO), [MSH, 1997], the rational use of medication occurs when the patient receives the medication appropriate to his/her clinical need, in the correct dose and posology, for an adequate period of time and at the lowest cost to him/her and to the community.

Misuse is considered to be the use of a drug other than that advised by the physician, in a deliberate manner, and abuse as the use of a drug or drug for non-medical purposes (STAHL, 2017), while recreational use is defined as the applicability of a certain drug, generally in social or relaxation situations, without implying negative consequences (OLIVEIRA *et al.*, 2013).

The term psychopharmacology is applied to compounds that modify psychic functions and mental states due to their ability to alter the action of neurotransmitters in the brain. They are used mainly for the treatment of mental disorders such as: psychoses, anxiety and depressive disorders, attention deficit and hyperactivity disorder (ADHD) and bipolar disorder (DORLAND, 1985). The terms psychotropic and psychoactive substances are also used (SADOCK; SADOCK; SUSSMAN, 2013).

Psychoactive drugs are classified into antipsychotics or neuroleptics, anxiolytics, hypnotics, antidepressants and anti-manics. The effect of these substances depends on several factors such as the type of drug (stimulating, depressant, or disruptive), the route of administration, the psychological and physical conditions of the individual (BRUNTON; HIDAL-DANDAN; KNOLLMANN, 2017).

These substances, like all drugs, must be used rationally and with caution, since the excessive, prolonged and indiscriminate use of them can produce several adverse effects, psychic and/or somatic disorders and even death, and can also result in chemical or physical dependence, and is therefore considered a public health problem (LOPES; GRIGOLETO, 2011; SILVA; IGUTI, 2013; UN, 2016). Among the psychopharmaceuticals, benzodiazepines, Z-line drugs (such as zolpidem and zopiclone) and opioids are the main drugs used and used inappropriately (CASATI; SEDEFOV; PFEIFFER-GERSCHEL, 2012).

Self-medication has increased among young people around the world, promoted both by ease of access and the false perception that drugs are completely safe (MANCHIKANTI, 2006; KUEHN, 2007; JOHNSTON, 2009). Admission to the University is a time of great changes, and this requires a high level of work and dedication on the part of students, making it a highly competitive space (FINGER; SILVA; FALAVIGNA, 2013).

The academic life of university students requires dedication of hours of study, which become strenuous moments. Among the main stress factors that affect them are: the completion of tests and work, the need to reconcile work and course as well as study with

leisure and family, insecurity, workload, the difficulty in obtaining materials for study and developing techniques, the relationship with colleagues and teachers, the lack of a person to share the difficulties and the absence of positive feedback from what is done, influencing the performance of these students (BORGES; CARLOTTO, 2004; RIBEIRO; MELO; RIBEIRO, 2011).

Charges for productivity, excessive activities, course evolution, no demonstration of insecurity, tiredness and sadness, in addition to the need to respond to the demands of academia, society, colleagues and oneself can lead people to search for solutions to overcome the anxiety and anguish experienced. One of the alternatives adopted refers to the use of psychopharmaceuticals, either to reconcile sleep, achieve better performance in daily activities and studies or to minimize the anxiety and concern generated. Thus, it is perceived that the imposition of intense rhythms of life can compromise the quality of life of the student (FEODRIPPE; BRANDÃO; VALENTE, 2013; LUNA *et al.*, 2018).

Medical and dental schools have been recognized as sources of stress during the training of their students, which can affect the physical and mental well-being in this population (NEWBURY-BIRCH; LOWRY; KAMALI, 2002; DYRBYE; THOMAS; SHANAFELT, 2006; NOGUEIRA-MARTINS, 2006).

These students are inserted in an intense study routine, due to their workload, the need to master theoretical content and technical skills, and growing responsibilities for becoming early caregivers during the teaching-learning process. Therefore, the objective of this study was to evaluate the use of psychopharmaceuticals among medical and dental students.

Methods

It is a descriptive, observational, analytical and transversal study, carried out in two universities, one public and one private, in the campuses located in the municipality of Maceió, State of Alagoas. The sample consisted of students regularly enrolled in the medical and dental courses of both institutions, aged 18 years or older. The exclusion criterion was the absence of volunteers in one of the three attempts of data collection in the classroom.

According to data obtained from the university course coordinators, there were 1,874 students enrolled in both courses, 771 of them in public and 1,103 in private. In the public university, there were 538 students enrolled in the medical course and 233 students enrolled in the dental course, in the private one, 647 students enrolled in the medical course and 456 in the dental one. A census study was conducted.

The applied questionnaire was developed by the researchers themselves, composed only by objective questions, after a pilot study, and is divided in four parts: information related to sociodemographic data, the use of psychopharmaceuticals, the course and psychosocial aspects. No validated research instrument was found in the literature regarding the specific use of psychoactive drugs.

The research was conducted from November 2018 to September 2019, and the application of the questionnaires took place between January and June 2019. After contact with the course coordinators for the presentation of the research and knowledge of the schedule of student activities, contact was made with the teachers and the date and time were scheduled for the application of the research instrument.

All students enrolled in both courses of the two institutions were approached during class hours, for three times, and invited to participate in the study. They received explanations from the researcher about the importance of the subject in question and were informed about the nature of the research, in its entirety, by reading the Term of Free and Informed Consent - TCLE, which was duly signed after understanding and authorization of their participation. They then answered the questionnaires individually.

The information collected from the questionnaires was transferred to a spreadsheet of the Microsoft Excel software (Microsoft Corporation, USA) and later transferred to the SPSS 22 for Windows software (Statistical Package for Social Sciences; IBM USA) for statistical analysis. An exploratory analysis of the data was carried out, observing the absolute values and percentages for the sample description and the prevalence of socio-demographic findings, psychopharmaceuticals, course and psychosocial aspects. The chi-square test (χ^2) was used to investigate the statistical significance of the association between these data. The odds ratio (OR) was also estimated, with 95% confidence interval in the analysis of categorical variables.

The study was approved by the Research Ethics Committee, linked to the CESMAC University Center, under the opinion number: 2,993,783.

Results

Of the 1,874 students enrolled in both universities, 1,111 volunteers actively participated in the survey. The sample loss occurred due to the non-return of the questionnaires by the students, the non-authorization of the teachers to apply the study during their class, the questionnaires answered incorrectly or incompletely and the fulfillment of the exclusion criterion, reaching the n found, which is representative of the universe of students of both universities.

The age range of students varied between 18 and 45 years, with an average of 22.74 years (PD: 4.26). The information related to the socio-demographic data of the research participants is described in Table 1.

Table 1. Sociodemographic data of medical and dental students, Maceió-Alagoas, 2019 (n=1,111)

GENDER	N	%
Female	696	62,6
Male	415	37,4
INSTITUTION		
Private	679	61,1
Public	432	38,9
CONTINUE		
CONTINUATION		
COURSE		
Odontology	549	49,4
Medicine	562	50,6
CIVIL STATE		
Single	5995	89,5
Married	82	7,4
Stable Union	21	1,9
Divorced	9	0,8
Do not wish to answer	4	0,4
DEPENDENTES		
No	958	86,3
Yes	96	8,6
Missing Data	37	3,3
Do not wish to answer	20	1,8
LEVEL OF EDUCATION		
Medium	822	73,9
Higher	241	21,7
Specialization	30	2,7
Master / Doctorate	6	0,6
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Missing Data	2	0,2
Do not wish to answer	10	0,9
RELIGION		
Catholic	606	54,6
Evangelic	167	15
Spiritualist	54	4,9
Others	33	3
Does not have	217	19,5
Missing Data	6	0,5
Do not wish to answer	28	2,5
MUNICIPALITY OF RESIDENCE		
Capital	970	87,3
Countryside	103	9,3
Other State	4	0,4
Missing Data	3	0,3
Do not wish to answer	31	2,8
WITH WHOM RESIDES		
With parents or partner	672	60,5
Alone	196	17,6
With friend	111	10
Outros	121	10,9
Missing Data	4	0,4
Do not wish to answer	7	0,6
SEXUAL ORIENTATION		
Heterosexual	975	87,7
Homosexual	61	5,5
Bisexual	41	3,7

Others	2	0,2
Missing Data	10	0,9
Do not wish to answer	22	2

Source: Research data (2019).

Of the total of 1,111 students, 178 (16%) have received some psychiatric diagnosis, while 859 (77.3%) have never received this diagnosis, 43 (3.9%) have left this question blank and 31 (2.8%) have not wanted to answer this item. Of this total, 110 (9.9%) currently have psychological follow-up, 311 (28%) have already done so, but no more, 638 (57.4%) have never done this type of follow-up, 14 (1.3%) did not want to answer and 38 (3.4%) left this question blank.

The information related to the use of psychopharmaceuticals among the participants of the survey throughout their lives and in the last month is described in Table 2.

Table 2. Prevalence of the use of psychopharmaceuticals by medical and dental students throughout life and in the last month, Maceió-Alagoas, 2019 (n=1,111)

Psychopharmaceuticals	Throughout life		Last month	
	n	%	n	%
Yes	408	36,7	163	14,7
No	678	61	260	23,4
Missing Data	1	0,1	-	-
Do not wish to answer	24	2,2	10	0,9
Does not apply	-	-	678	61
Total	1.111	100	1.111	100

Source: Research data (2019).

Table 3 presents the frequency of use and the source of obtaining psychoactive drugs by students. Among the other situations cited regarding the frequency of use of these substances is the death of a family member, periods of stress and tension, termination of relationships, and the performance of surgical or dental procedures by students.

Table 3. Frequency of use and source of obtaining of psychopharmaceuticals by students of Medicine and Dentistry, Maceió-Alagoas, 2019 (n=433)

Frequency of use of psychopharmaceuticals	n	%
Daily	91	21
Weekly	20	4,6
Monthly	15	3,5
Only during weeks of exams	57	13,2
In other situations	166	38,3
Do not wish to answer	64	14,8
Missing Data	20	4,6
Source to obtain psychopharmaceuticals		
Medical prescription	239	55,2
Without Medical prescription	161	37,2
Friends and parents	93	21,5
Without Medical prescription	56	12,9
Others	12	2,8
Do not wish to answer	30	6,9
Missing Data	3	0,7

Source: Research data (2019).

The pharmacological classes that the students claimed to use were anxiolytics (n=185; 42.7%), antidepressants (n=140; 32.3%), psychostimulants (n=87; 20.1%), herbal medicines (n=73; 16.8%), mood stabilizers (n=17; 3.9%), others (n=16; 3.7%) and antipsychotics (n=12; 2.8%). These values are not mutually exclusive since students could answer that they were using more than one drug class simultaneously.

There is statistical significance between the use of psychopharmaceuticals throughout life and marital status (divorcees: χ^2 : 15.37; $p < 0.001$), having dependents (χ^2 : 12.89; $p < 0.001$) and sexual orientation (bisexual: χ^2 : 18.82; $p < 0.001$). According to the municipality of residence, students who live in the capital have higher consumption of psychopharmaceuticals compared to those who live in the interior (χ^2 : 8.5; $p = 0.04$), residents of another state were excluded from this analysis because they were only three participants and, in the case of these three, all of them claimed to use these substances.

Male students were twice more likely to claim to use psychostimulants than females (OR= 2.29; CI: 95% 1.41-3.72; $p < 0.001$), according to Table 4.

Table 4. Performance of the use of psychopharmaceuticals by male students of Medicine and Dentistry, Maceió-Alagoas, 2019.

Psychopharmaceuticals	χ^2	p-value	OR	Trust interval	
				Lower	Upper
Psychostimulants	11,51	0,00	2,29	1,41	3,72
Anxiolytics	1,16	0,28	0,80	0,53	1,20
Antidepressants	3,53	0,06	0,66	0,42	1,02
Antipsychotics	0,84	0,36	1,70	0,54	5,39
Mood Stabilizer	1,45	0,23	0,50	0,16	1,57
Phytotherapies	0,01	0,94	0,98	0,58	1,66
Others	2,54	0,11	2,23	0,81	6,13

χ^2 :Chi-square test. OR: Odds Ratio. Source: Research data (2019).

Medical students were twice as likely to claim to use psychostimulants as dentists (OR= 2.12; CI: 95% 1.28-3.52; p<0.001), as shown in Table 5. While dental students were twice as likely to claim to use anxiolytics as dentists (OR= 2.44; CI 95% 1.62-3.68; p<0.001).

Table 5. Performance of the use of psychopharmaceuticals by students in the medical course, Maceió-Alagoas, 2019

Psychopharmaceuticals	χ^2	p-value	OR	Trust interval	
				Lower	Upper
Psychostimulants	8,65	0,00	2,12	1,28	3,52
Anxiolytics	18,48	0,00	0,41	0,27	0,62
Antidepressants	1,18	0,28	1,26	0,83	1,92
Antipsychotics	0,91	0,34	0,57	1,18	1,83
Mood Stabilizer	0,47	0,49	0,71	0,27	1,89
Phytotherapies	0,95	0,33	1,29	0,77	2,17
Others	2,10	0,15	0,47	0,17	1,33

χ^2 :Chi-square test. OR: Odds Ratio. Source: Research data (2019).

The demand for the course was identified in 41.6% (n=180) of the participants as a precipitating factor for starting the use of psychopharmaceuticals, while the existence of family problems was registered in 29.1% (n=126) and of relationship difficulty in 16.2% (n=70), other factors, such as curiosity, stress, death of a family member, anxious and depressive symptoms, recreational use and/or academic performance, were mentioned by 33.7% (n=146).

Most of the participants of the research (90.8%) stated to be aware of the risks regarding the use of psychoactive drugs. Among the participants of the research, 92.5% stated they were satisfied with the professional choice, although the majority of the interviewees (60.8%) affirmed that the workload of activities contributes a lot as a source of tension in the course, be it curricular or extra-curricular activities.

Approximately half of the students (49.9%) stated that they presented physical discomfort (nausea, diarrhea, excessive sweating, lack of appetite, tremors, etc.) related to academic activities, such as tests or presentation of seminars and papers, while 29.8% stated that they had difficulty in reconciling sleep. In addition, 56.4% of the students stated that they have difficulties in reconciling academic life with physical, leisure, or other activities, while 41.1% denied having this difficulty.

Discussion

The students of medical and dental courses constitute a differentiated group within universities, being considered one of the populations with the highest socioeconomic and cultural level of public and private universities, coming mostly from parcels of the upper middle class and intellectuality (CARDOSO FILHO *et al.*, 2015; FONAPRACE, 2019). Over the years, there has been a marked increase in the number of women in both courses, with the prevalence of young people up to 24 years old, white, with a privileged economic level when considering the Brazilian monthly family income (FERREIRA *et al.*, 2000; FIOROTTI; ROSSONI; MIRANDA, 2010; GRANJA *et al.*, 2016; MENDES *et al.*, 2018).

Higher education requires a certain level of development of cognitive functions, and in health courses this level is particularly high (WILENS *et al.*, 2008). University settings are often competitive and academic performance influences career opportunities. Thus, the use of drugs in higher education serves different purposes, including self-medication, recreational use and academic performance (OLIVEIRA *et al.*, 2018).

There is a limited number of research on the patterns of use of psychopharmaceuticals by medical and dental students and it is known that prevention measures are only effective when based on the reality of consumption, which shows the importance of conducting research on this topic (GRAÇA, 2013; PAPAZISIS *et al.*, 2018). The prevalence of lifetime use of psychopharmaceuticals was 36.7% in the present study, however, this number may be underestimated, since some students who make use of it may have left this item blank or did not wish to answer it.

In this study, a clear predominance of female students was identified, which was already observed in other studies (CABRITA *et al.*, 2001; CORREIA *et al.*, 2010; SOARES, 2017; LUNA *et al.*, 2018; TAM *et al.*, 2018), however, no statistically significant difference was identified regarding the use of psychopharmaceuticals between the sexes, differently from that observed in other studies (SEEMAN, 1997; AQUINO; BARROS; SILVA, 2010).

The average age of participants (22.74 years; SD: ± 4.26) is in line with the age range of most published research on the consumption of psychoactive drugs among university students (SOARES, 2017; LUNA *et al.*, 2018; TAM *et al.*, 2018). The consumption of psychopharmaceuticals in the participants in question was not significantly associated with the variables institution of origin, course attended, religion, with whom they live and family income ($p > 0.05$).

In the survey, it was observed that 55.2% of the participants claimed to obtain the psychopharmaceuticals in use through medical prescription, given that this is in accordance with other surveys already conducted (CABRITA *et al.*, 2001; MARTÍNEZ *et al.*, 2008; BALAYSSAC *et al.*, 2018), followed by those obtained with friends and family (21.5%) and those without medical prescription (12.9%). The data show that obtaining the drugs through sources other than the medical prescription, although they were not the main source, generates concern for demonstrating a high rate of self-medication among research participants, which leads to excessive, undue, and sometimes unnecessary medicalization by students, and can generate undesirable effects, adverse reactions and risk of dependence among those who use them (CASTRO *et al.*, 2016).

It was identified that the class of anxiolytics was the most used (42.7%), followed by antidepressants (32.3%) and psychostimulants (20.1%), which corroborates data from previous research (PETROIANU *et al.*, 2000; SOARES, 2017). However, in a research with health science students it was identified that antidepressants were the most used drugs, followed by anxiolytics and psychostimulants (MARTÍNEZ *et al.*, 2008), confirming that these three classes are the most used among university students.

National and international literature shows that anxiolytics are among the most indiscriminately consumed psychotropic substances worldwide, which is a public health problem (UN, 2018; MADRUGA *et al.*, 2019). It is known that the use of these substances can lead to impairment of memory, rebound insomnia, development of tolerance and dependence, and thus cause disastrous consequences in the quality of life of university students (CARDOSO *et al.*, 2009; ALVARO; SILVA; OLIVEIRA, 2014). Research has shown that dental students are more likely to claim to use anxiolytics than medical students (OR: 2.44; $p < 0.001$).

Antidepressants, as the second most frequent class, are justified because depressive and anxious symptoms are prevalent in the university population, being reported in several researches (POLYCHRONOPOULOU; DIVARIS, 2005). Throughout these courses, the initial phase of enthusiasm of the student is replaced by one of frustration, with frequent

complaints related to the excessive volume of studies, the lack of usefulness of some contents, the teachers' poor teaching and the excessive burden of academic activities, so that these issues can interfere with student performance, because feelings of fear, anger, tension, incompetence, guilt may emerge in some students, which may be related to the manifestation of mental illness that needs treatment with these medications (FERREIRA *et al.*, 2000; DYRBYE; THOMAS; SHANAFELT, 2005).

Several studies have shown that the prevalence of non-medical use of stimulants is considerably high among university students, with use rates ranging from 5% to 35% (ADVOKAT; GUIDRY; MARTINO, 2008; WILENS *et al.*, 2008). It was identified that males have a higher consumption of psychostimulants than females (OR: 2.29; $p < 0.001$), which was confirmed in other investigations (PASSOS *et al.*, 2006; OLIVEIRA *et al.*, 2009), besides showing that medical students are more likely to claim to use this class of drugs than dental students (OR: 2.12; $p < 0.001$).

The higher education environment has become conducive to the development of mental disorders such as anxiety, depression and abuse of psychoactive substances (MORAES *et al.*, 2013) and this greater predisposition to these conditions seems to be related to different stress factors throughout the courses and can cause intense psychic suffering, damage to academic performance and personal, professional and social relationships (VALLILO *et al.*, 2011; ABBASI-GHAHRAMANLOO *et al.*, 2015).

Among the precipitating factors reported for the use of psychopharmaceuticals, 41.6% of the students pointed out the demand for the course as the main factor (LUNA *et al.*, 2018). This can be justified by the demand of the courses, extensive workload, difficulty in managing the time between the different disciplines and leisure, and, of the very fragility of the generation (CHAZAN; CAMPOS, 2010; MOREIRA; VASCONCELOS; HEATH, 2015; PAPAISIS *et al.*, 2018). However, data in the literature on motivations and precipitating factors for the initiation and maintenance of use are limited among student populations, especially with respect to the profile of student's subject to this research. The importance of understanding and knowing the motivations for use is then realized, so that the risks associated with such consumption are fully understood, since the people involved may face different consequences, depending on the character of use, whether for self-treatment or recreational use.

The great majority of the participants (90.8%) stated that they are aware of the risks regarding the use of psychopharmaceuticals, however, this is a worrying fact, since, in spite of claiming to be aware of these risks, they submit themselves to the use without the guidance of a qualified professional. This data was also found in other researches carried out with higher education students (CABRITA *et al.*, 2001; LUNA *et al.*, 2018).

Approximately 30% of the students evaluated stated that they have difficulties in reconciling sleep, and this may occur due to changes in the circadian cycle by the stress of the academic environment associated with and/or aggravated by habits such as accessing the

Internet or watching television at night and the use of alcohol, tobacco or other psychoactive substances, habits often found in this population and that hinder the good standard of sleep (MESQUITA; REIMÃO, 2010; ARAÚJO *et al.*, 2014).

This damage to the quality of sleep directly interferes with the effectiveness of academic and emotional performance. The improvement of sleep quality is related to the performance of physical activities and other tasks, such as leisure, however, 56.4% of the students evaluated report difficulties in reconciling academic life with these tasks, which may be one of the reasons for poorer sleep quality (LEMMA *et al.*, 2014; ROPKE *et al.*, 2017).

The present study found that 49.9% of the students claimed to have anxious symptoms related to academic activities, such as tests or presentation of seminars and papers. The presence of these symptoms in relation to such tasks can be related to a strong motivation to make a good impression, as well as to doubts about one's own ability, and this can affect the student's performance, by avoiding asking questions in public, low academic performance, doubts about professional choice or even withdrawal from the university course (ZIMBARDO, 1982). In an attempt to minimize the anxiety caused by the development of these tasks, students can increase the consumption of psychoactive drugs and other psychoactive substances (KERR-CORREA *et al.*, 1999; KEYES; HATZENBUEHLER; HASIN, 2011).

Final Considerations

The present study verified high prevalence of non-prescribed use of psychopharmaceuticals among medical and dental students, mainly of anxiolytics, antidepressants and psychostimulants, besides showing a discrete association between the use of psychopharmaceuticals throughout life and the period of the course, marital status, whether there are dependents, municipality of residence and sexual orientation, as well as an association between the male sex and the use of psychostimulants.

Through this study and in view of the needs found, it is necessary to search for strategies of orientation and prevention by the universities, either through the awareness of these students through conversation wheels, lectures, booklets, holding the welcome week, and, mainly, through the creation of a mental health service directed to the student, so that they feel welcomed and can be accompanied by professionals specialized in the area.

Despite the difficulties regarding the limited number of researches available in the literature on the subject, this study has great importance because it is one of the few to approach this subject in the national literature and because it stimulates more research on this subject.

References

ABBASI-GHAHRAMANLOO, Abbas *et al.* Prescription drugs, alcohol, and illicit substance use and their correlations among medical sciences students in Iran. **International Journal of High Risk Behaviors and Addiction**, Zahedan, v. 4, n. 1, p.1-6, 2015.

ADVOKAT, Claire; GUIDRY, Devan; MARTINO, Leslie. Licit and illicit use of medications for Attention-Deficit Hyperactivity Disorder in undergraduate college students. **Journal of American College Health**, Washington, v. 56, n. 6, p. 601-606, 2008.

AQUINO, Daniela Silva de; BARROS, José Augusto Cabral de; SILVA, Maria Dolores Paes. A automedicação e os acadêmicos da área de saúde. **Ciência & Saúde Coletiva**, Rio de Janeiro, v. 15, n. 5, p. 2533-38, 2010.

ARAÚJO, Márcio Flávio Moura de *et al.* Health indicators associated with poor sleep quality among university students. **Revista da Escola de Enfermagem da USP**, São Paulo, v. 48, n. 6, p. 1085-92, 2014.

BALAYSSAC, David *et al.* Use of Psychotropic Medications and Illegal Drugs, and Related Consequences Among French Pharmacy Students – SCEP Study: A Nationwide Cross-Sectional Study. **Frontiers in Pharmacology**, Lausanne, v. 9, p.1-12, 2018.

BORGES, Angela Maria Brazil; CARLOTTO, Mary Sandra. Síndrome de Burnout e Fatores de Estresse em Estudantes de um Curso Técnico de Enfermagem. **Aletheia**, Canoas, v. 19, p.45-56, jan./jun. 2004.

BRUNTON, Laurence; HIDAL-DANDAN, Randa; KNOLLMANN, Björn. **Goodman & Gilman: The Pharmacological Basis of Therapeutics**. 13. ed. New York: McGraw-Hill, 2017.

CABRITA, José *et al.* Estudo do padrão de consumo de medicamentos pelos estudantes da Universidade de Lisboa. **Revista Portuguesa de Saúde Pública**, Lisboa, v. 19, n. 2, p. 39-47, 2001.

CARDOSO, Hígor Chagas *et al.* Avaliação da qualidade do sono em estudantes de medicina. **Revista Brasileira de Educação Médica**, Rio de Janeiro, v. 33, n. 3, p. 349-55, 2009.

CARDOSO FILHO *et al.* Perfil do Estudante de Medicina da Universidade do Estado do Rio Grande do Norte (UERN), 2013. **Revista Brasileira de Educação Médica**, Rio de Janeiro, v. 39, n. 1, p. 32-40, 2013.

CASATI, Alicia; SEDEFOV, Roumen; PFEIFFER-GERSCHEL, Tim. Misuse of medicines in the European union: A systematic review of the literature. **European Addiction Research**, Switzerland v. 18, n. 5, p. 228–245, 2012.

CASTRO, Cristiana *et al.* A Automedicação nos alunos da Escola Superior de Saúde do Instituto Politécnico de Bragança. **Millenium Journal of Education, Technologies, and Health**, Viseu, v. 1, p.123-30, 2016.

CHAZAN, Ana Claudia Santos; CAMPOS, Mônica Rodrigues. Qualidade de Vida de Estudantes de Medicina medida pelo WHOQOL-bref — UERJ, 2010. **Revista Brasileira de Educação Médica**, Rio de Janeiro, v. 37, n. 3, p. 376-384, 2013.

CORREIA, Teresa *et al.* Consumo de psicofármacos pelos alunos do ensino superior. *In*: LOPES, V. *et al.* **Caderno Promoção da saúde e atividade física**: contributos para o desenvolvimento humano. Vila Real: Universidade de Trás-os-Montes e Alto Douro. Centro de Investigação em Desporto Saúde e Desenvolvimento Humano, 2010. Vol. 1, p. 607-619.

DORLAND, William. **Diccionario enciclopédico ilustrado de medicina**. 8ª ed. Madrid: Interamericana, 1985.

DYRBYE, Liselotte; THOMAS, Matthew; SHANAFELT, Tait. Medical student distress: causes, consequences, and proposed solutions. **Mayo Clinic Proceedings**, Rochester, v. 80, n. 12, p.1613-1622, 2005.

DYRBYE, Liselotte; THOMAS, Matthew; SHANAFELT, Tait. Systematic Review of Depression, Anxiety, and Other Indicators of Psychological Distress Among U.S. and Canadian Medical Students. **Academic Medicine**, Philadelphia, v.81, n.4, p.354-373, 2006.

FEODRIPPE, André Luiz Oliveira; BRANDÃO, Maria Carolina da Fonseca; VALENTE, Tânia Cristina de Oliveira. Medical students' quality of life: a review. **Revista Brasileira de Educação Médica**, Rio de Janeiro, v. 37, n. 3, p.418-28, 2013.

FERREIRA, Roberto Assis *et al.* O estudante de medicina da Universidade Federal de Minas Gerais: perfil e tendências. **Revista da Associação Médica Brasileira**, São Paulo, v. 46, n. 3, p. 224-231, 2000.

FINGER, Guilherme; SILVA, Emerson Rodrigues da; FALAVIGNA, Asdrubal. Use of methylphenidate among medical students: a systematic review. **Revista da Associação Médica Brasileira**, São Paulo, v. 59, n. 3, p. 285-289, 2013.

[FIOROTTI, Karoline Pedroti](#); [ROSSONI, Renzo Roldi](#); [MIRANDA, Angélica Espinosa](#). Perfil do estudante de Medicina da Universidade Federal do Espírito Santo, 2007. **Revista Brasileira de Educação Médica**, Rio de Janeiro, v. 34, n. 3, p. 355-362, 2010.

GRAÇA, [Carina Susana Gouveia da](#). **Consumo de estimulantes cerebrais nos estudantes de Medicina da Universidade da Beira Interior**. 2013. 50 f. Dissertação (Mestrado em Medicina)- Universidade da Beira Interior, Covilhã, 2013.

GRANJA, Gélica Lima *et al.* Perfil dos estudantes de graduação em Odontologia: motivações e expectativas da profissão. **Revista da ABENO**, Brasília, v. 16, n.4, p. 107-113, Out./Dez. 2016.

JOHNSTON, Lloyd. Prescription drug use by adolescents: what we are learning and what we still need to know. **Journal of Adolescent Health**, New York, v. 45, p. 539-40, 2009.

KERR-CORRÊA, Florence *et al.* Uso de álcool e drogas por estudantes de medicina da Unesp. **Revista Brasileira de Psiquiatria**, São Paulo, v. 21, n. 2, p. 95–100, 1999.

KEYES, Katherine M.; HATZENBUEHLER, Mark L.; HASIN, Deborah S. Stressful life experiences, alcohol consumption, and alcohol use disorders: the epidemiologic evidence for four main types of stressors. **Psychopharmacology**, Berlin, v. 218, n. 1, p.1–17, 2011.

KUEHN, [Bridget M.](#) Prescription drug abuse rises globally. **JAMA**, Chicago, v. 297, n.12, p. 1306, 2007.

LEMMA, Seblewengel *et al.* Good quality sleep is associated with better academic performance among university students in Ethiopia. **Sleep & Breathing**, Titisee-Neustadt, v.18, n. 2, p. 257-63, 2014.

LOPES, Letícia Martins Borelli; GRIGOLETO, Andréia Regina Lopes. Uso consciente de psicotrópicos: responsabilidade dos profissionais da saúde. **Revista Brasileira de Pesquisa em Saúde**, Vitória, v. 2, n. 1, p. 1-14, 2011.

LUNA, Ilanna Sobral de *et al.* Consumo de psicofármacos entre alunos de medicina do primeiro e sexto ano de uma universidade do estado de São Paulo. **Colloquium Vitae**, Presidente Prudente, v. 10, n. 1, p. 22-28, jan./abr. 2018.

MADRUGA, Clarice S. *et al.* Prevalence of and pathways to benzodiazepine use in Brazil: the role of depression, sleep, and sedentary lifestyle. **Brazilian Journal of Psychiatry**, São Paulo, v. 41, p. 44–50, 2019.

MANCHIKANTI, Laxmaiah. Prescription drug abuse: what is being done to address this new drug epidemic? Testimony before the Subcommittee on Criminal Justice, Drug Policy and Human Resources. **Pain Physician**, Paducah, v. 9, p. 287-321, 2006.

MARTÍNEZ, Glória I. *et al.* Características del consumo de fármacos psicotrópicos em estudiantes de ciencias de la salud. **Revista de La Facultad de Química Farmacéutica**, Medellín, v. 15, n. 2, p. 244-250, 2008.

MENDES, Maria do Socorro Silva Ferreira *et al.* Perfil dos estudantes que ingressam no curso de Odontologia: motivos da escolha. **Revista da ABENO**, Brasília, v. 18, n. 4, p. 120-129, 2018.

MESQUITA, Gema; REIMÃO, Rubens. Quality of sleep among university students: effects of nighttime computer and television use. **Arquivos de Neuro-Psiquiatria**, São Paulo, v. 68, n. 5, p. 720-5, 2010.

MORAES, Diego Pereira Alves de *et al.* Prevalência do uso de drogas psicotrópicas por estudantes de medicina da Universidade Federal do Tocantins. **Arquivos Médicos dos Hospitais e da Faculdade de Ciências Médicas da Santa Casa São Paulo**, São Paulo, v. 58, n. 3, p. 127-33, 2013.

MOREIRA, [Simone da Nóbrega Tomaz](#); VASCONCELOS, [Rafael Luiz dos Santos Silva](#); HEATH, [Nancy](#). Estresse na Formação médica: como Lidar com Essa realidade? **Revista Brasileira de Educação Médica**, Rio de Janeiro, v. 39, n. 4, p. 558-564, 2015.

MSH (MANAGEMENT SCIENCES FOR HEALTH). **Manging Drug Supply**. 2. ed. Connecticut: Kumarian Press, 1997.

NEWBURY-BIRCH, Dorothy; LOWRY, R.J.; KAMALI, F. Drink, drugs and depression in dental students. **British Dental Journal**, London, v.192, n.11, p.646-649, 2002.

NOGUEIRA-MARTINS, Luiz Antônio. **Sufrimento psíquico e estresse ocupacional em estudantes e profissionais da área de saúde**. In: DINIZ, D.P.; SCHOR, N. (Org.). Guia de qualidade de vida. Barueri: Manole, 2006.

OBSERVATÓRIO DO FÓRUM NACIONAL DE PRÓ-REITORES DE ASSUNTOS ESTUDANTIS. FONAPRACE. **V Pesquisa Nacional de Perfil Socioeconômico e Cultural dos (as) Graduandos (as) das IFES – 2018**. Brasília: 2019. Available on: <http://www.andifes.org.br/wp-content/uploads/2019/05/V-Pesquisa-do-Perfil-Socioecon%C3%B4mico-dos-Estudantes-de-Gradua%C3%A7%C3%A3o-das-Universidades-Federais-1.pdf> Acesso on: 16 nov. 2020.

OLIVEIRA, Lucio Garcia *et al.* Drug consumption among medical students in São Paulo, Brazil: influences of gender and academic year. **Revista Brasileira de Psiquiatria**, São Paulo, v. 31, n. 3, p. 227-39, 2009.

OLIVEIRA, Ana Emília Figueiredo de *et al.* **Conceitos básicos sobre o uso abusivo e dependência de drogas**. Universidade Federal do Maranhão. Universidade Aberta do SUS-UNASUS. São Luís, 2013. 12f.

OLIVEIRA, Maristela Maximovitz *et al.* Automedicação em acadêmicos: Uma revisão da literatura brasileira entre 2000 e 2017. **Revista Saúde e Pesquisa**, Maringá, v. 11, n. 3, p. 623-630, 2018.

ONU. United Nations. UNITED NATIONS OFFICE ON DRUGS AND CRIME [UNODC] (2016). **World Drug Report 2016**. 2016.

ONU. United Nations. **Psychotropic Substances International Narcotics Control Board in 2017**. Nova Iork. 2018. Available on: https://www.incb.org/documents/Psychotropics/technical-publications/2017/Technical_Publication_2017_English_04042018.pdf Acesso on: 16 nov. 2020.

PAPAZISIS, Georgios *et al.* Nonmedical Use of Prescription Medications Among Medical Students in Greece: Prevalence of and Motivation for Use. **SUBSTANCE USE & MISUSE**, New York, v. 53, n. 1, p. 1–9, 2017.

PASSOS, Sonia Regina Lambert *et al.* Prevalence of psychoactive drug use among medical students in Rio de Janeiro. **Social Psychiatry and Psychiatric Epidemiology**, Berlin, v. 41, n. 12, p. 989-96, 2006.

PETROIANU, Andy *et al.* Avaliação do uso de drogas por estudantes de Medicina. **Revista médica de Minas Gerais**, Belo Horizonte, v.10, n. 1, p. 8-12, 2000.

POLYCHRONOPOULOU, Argy; DIVARIS, Kimon. Perceived Sources of Stress Among Greek Dental Students. **Journal of Dental Education**, Washington, v. 69, n. 6, p. 687-92, 2005.

RIBEIRO, [Cacilda Barsanulfo](#); MELO [Luciano Antônio](#); RIBEIRO, [Julio César](#). O Estresse do Graduando de Enfermagem no Âmbito da Universidade. **Neurobiologia**, Recife, v. 74, n. 4, p. 59-74, abr./jun. 2011.

RIBEIRO, Cairon Rodrigo Faria; SILVA, Yasmin Maria Garcia Prata da; OLIVEIRA, Sandra Márcia Carvalho de. O impacto da qualidade do sono na formação médica. **Revista da Sociedade Brasileira de Clínica Médica**, São Paulo, v.12, n. 1, p. 8-14, 2014.

ROPKE, Lucilene Maria *et al.* Efeito da atividade física na qualidade do sono e qualidade de vida: revisão sistematizada. **Archives of Health Investigation**, Araçatuba, v. 6, n. 12, p. 561-566, 2017.

SADOCK, Benjamin J.; SADOCK, Virginia A.; SUSSMAN, Norman. **Manual de Farmacologia Psiquiátrica de Kaplan & Sadock**. 5ª ed. Porto Alegre: Artmed, 2013
SEEMAN, Mary V. Psychopathology in women and men: focus on females hormones. **American Journal of Psychiatry**, Arlington, v. 154, n. 12, p. 1641-7, 1997.

SILVA, Tatiana Oliveira.; IGUTI, Aparecida Mari. Medicamentos psicotrópicos dispensados em unidade básica de saúde em grande município do estado de São Paulo. **Revista Eletrônica Gestão & Saúde**, Brasília, v. edição especial, p. 1726-1737, 2013.

SOARES, Juliany. **O uso de medicamentos controlados por estudantes do curso de odontologia na Universidade Federal de Santa Catarina**. 2017. Monografia (Trabalho de Conclusão de Curso) - Universidade Federal de Santa Catarina, Florianópolis, 2017.

STAHL, Stephen M. **Psicofarmacologia: bases neurocientíficas e aplicações práticas**. 4. ed. Rio de Janeiro: Guanabara Koogan, 2017.

TAM, Cheuk Chi *et al.* Non-medical use of prescription drugs and cultural orientation among college students in China. **Drug and Alcohol Dependence**, Limerick, v. 192, p.271-276, 2018.

VALLILO, Nathália Gaspar *et al.* Prevalência de sintomas depressivos em estudantes de Medicina. **Revista Brasileira de Clínica Médica**, São Paulo, v. 9, n. 1, p. 36-34, 2011.

WILENS, Timothy E. *et al.* Misuse and diversion of stimulants prescribed for ADHD: a systematic review of the literature. **Journal of the American Academy of Child and Adolescent Psychiatry**, Baltimore, v. 47, n.1, p. 21–31, 2008.

ZIMBARDO, Philip. **A Timidez**. Lisboa: Edições70, 1982.