

Impacts of smoking on the quality of life of medical students, an integrative review



<https://doi.org/10.56238/uniknowindevolp-065>

André Grisani

Bachelor of Laws and Graduating in Medicine
Institution: Instituto Tocantinense Presidente Antônio Carlos (ITPAC/Palmas)
E-mail: andregrisani@gmail.com

Eduardo José Paz dos Santos

Graduating in Medicine
Institution: Instituto Tocantinense Presidente Antônio Carlos (ITPAC/Palmas)
E-mail: eduardo.gtpm@gmail.com

Lucas Leal Germino

Graduating in Medicine
Institution: Instituto Tocantinense Presidente Antônio Carlos (ITPAC/Palmas)
E-mail: nglucasleal@gmail.com

Rafael de Paula Rosa Cunha

Graduating in Medicine
Institution: Instituto Tocantinense Presidente Antônio Carlos (ITPAC/Palmas)
E-mail: rafaeldepaula96@gmail.com

Ronyere Olegário de Araújo

PhD in Science (UNB) and Professor of Medicine at ITPAC
Institution: Instituto Tocantinense Presidente Antônio Carlos (ITPAC/Palmas)

ABSTRACT

Introduction: when entering university, although it entails positive feelings related to the dreams and goals of academics, it can sometimes become a difficult period, which leaves students vulnerable to starting and/or maintaining the use of psychotropic drugs, despite the use of tobacco. Among young academics in the health area, this situation becomes more serious due to the close emotional contact with different people and with their pains. In addition, the beginning of a graduation has an impact on the individual's psychological aspects, as it is

something new, stressful and full of expectations created by the student himself or his family members. In the group of undergraduate medical students, more specifically, there is great coercion to be a good professional before society, friends and family, a factor that contributed as a stressful trigger for the tendency to smoke. Objective: to verify smoking and the like in the student population, more specifically in undergraduate medical students. Materials and methods: the present study is an integrative review, in which the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) method was used, which consists of the QUORUM (Quality of Reporting of Meta-Analyses) recommendations, in which it was decided to include studies in Portuguese and limit the search temporally to 2020 to 2023. The search bases were Pubmed, Scielo and Google Scholar, with search based on the controlled and uncontrolled descriptors of Descriptors in Health Sciences (DeCS) and Boolean operator "and". Results: A total of 1,300 publications were found, arranged as follows: 185 studies on the Scielo platform, 902 articles on Scholar Google and 226 articles on Pubmed. The number of studies included that answered the study's guiding question (n=16), of which there was a higher prevalence of smoking in males, with a greater tendency in the initial periods and a decrease in use in the clinical cycle. In some studies, most of the sample showed knowledge about the harmful effects of smoking, but no carriers of such complications were seen. Conclusion: the studies show a prevalence of smoking among medical students from different Brazilian institutions. This is an extremely worrying fact, not only because of the damage it can cause to their physical and mental health, but also because of the impairment in the development and structuring of their cognitive-behavioral and emotional skills as future health professionals.

Keywords: Cigarette, Vape, Tobacco, Life habit.



1 INTRODUCTION

The habit of smoking is recognized as an epidemic disease that causes physical, psychological and behavioral dependence similar to what occurs with the use of other drugs (BRASIL, 2020). This routine practice is called smoking, which by the National Cancer Institute (INCA, 2023) is a chronic disease caused by nicotine dependence present in tobacco products. In turn, tobacco is an herb (*Nicotiana tabacum*), from which nicotine is extracted, which can be used in several ways: chewed, aspirated, absorbed by the oral mucosa and, mainly, smoked (INCA, 2023; SIRQUEIRA et., 2020).

As the highest frequency of use is by the habit of smoking there is the commercialization of the cigarette that is composed of approximately 4,700 substances, such as nicotine, which in addition to causing dependence, potentiates the negative action of cigarette smoke (WILLEMANN and BURCI, 2014). Dependence forces smokers to inhale toxic substances, such as: carbon monoxide, ammonia, ketones, formaldehyde, acetaldehyde, acrolein, as well as 43 carcinogenic substances, the main ones being: arsenic, nickel, benzopyrene, cadmium, lead, pesticide residues and radioactive substances (BRASIL, 2020).

Thus, smoking contributes to the development of the following types of cancer: bladder; of pancreas; liver; from the cervix; of the esophagus; of kidney and ureter; larynx (vocal cords); cancer in the oral cavity (mouth); pharynx (neck); stomach; of colon and rectum; of trachea, bronchi and lung, and acute myeloid leukemia (WHO, 2022). Statistics reveal that smokers, compared to non-smokers, have a 10 times higher risk of getting sick from lung cancer, 5 times higher of suffering infarction, 5 times higher of suffering from chronic bronchitis and pulmonary emphysema and 2 times higher of suffering stroke (BRAZIL, 2020).

Thus, there are more than 7 million deaths resulting from direct tobacco use, while more than 1.2 million deaths are the result of non-smokers exposed to secondhand smoke (PAHO, 2023). In the Brazilian scenario, there are 428 deaths per day due to tobacco consumption, resulting in a loss of 56.9 billion reais every year due to medical expenses and loss of productivity (AMS, 2020). It should be noted that the spread of nicotine occurs to all tissues of the body, such as lung, brain and others (INCA, 2023). It is also found in saliva, gastric juice, breast milk, skeletal muscle and amniotic fluid (MARTINS, 2022).

In this perspective, it is demonstrated that both the scientific community and the media should be alarmed, given that even health students are in a state of vulnerability, even with all access to information, becoming easy targets for tobacco industries that innovate to increasingly reach their audience (BRAGA, et al., 2021).

In the meantime, it is verified that smoking is present in several social classes, groups and genders. Thus, the objective is to verify smoking and the like in the population of students, more strictly in undergraduate medical students. Since, when entering the university, although it entails positive



feelings related to the dreams and goals of the students, it can sometimes become a difficult period, which leaves students vulnerable to initiate and/or maintain the use of psychotropic drugs.

Medical students who, despite supposedly presenting greater knowledge about the effects of smoking, consume such substances in proportions similar to those of young people of the same age in the population (SILVA, et al., 2006). Developing the conviction that they are able to control the problems that may eventually arise from the misuse of drugs (MILLAN et al., 1991 apud MORAES et al., 2013). Since they will be, as future doctors, health models for the community deserve differentiated attention, since they are not immune to the problem of nicotine abuse and dependence (MARQUES and CRUZ, 2000).

It is notorious that substance abuse among university students is quite widespread and the environment in which they live and relate to people has a great influence on their life habits. Among young academics in the health area, this condition becomes more severe due to emotional contact close to different people and with their particular pains. In addition, the beginning of a degree has an impact on the psychological aspects of the individual, because it is something new, stressful and full of expectations created by the student himself or by his family.

Thus, in the academic environment, more specifically that of medical graduation, there is great coercion to be a good professional before society and family members (MOURA et al., 2021). The tense profile, typical of medical students, covers the intellectual complexities required of the student, the inflexible workload, the excessive responsibility, the need for early maturation and integral commitment (HARADA, 2013). Factors that favor the construction of a stressed and compromised psychological profile in which it makes the medical student vulnerable to the use of psychoactive substances that provided him with fictitious calm in the face of the turbulent period of graduation.

Thus, it is of great relevance for academics in both areas of health, especially that of medical graduation, to discuss this problem as information is gathered about this subject – which contributes to the awareness of this group (DA SILVA et al., 2020). An awareness not only for the dangers of smoking, but also for the awakening that as future doctors this will be influencers and orinetadores of practices and habits of life for other individuals, that is, their patients.

2 METHODOLOGY

The present study is an integrative review, whose objective was to analyze the presence of tobacco use and the like by the academic population of the medical course, thus contributing to the identification of triggering factors of such a problem situation, which is the psychochemical dependence of these components that bring harm to health and reflect on the type of health professional who is being trained. The integrative review combines data from the theoretical and empirical literature, in addition



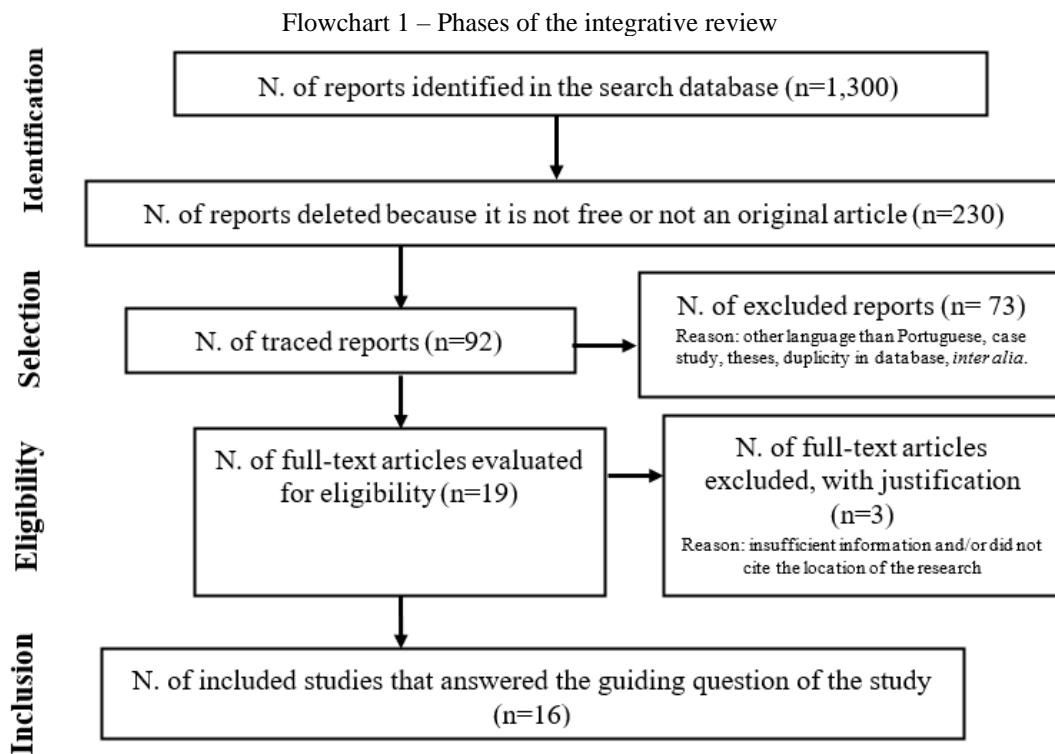
to incorporating a wide range of purposes: definition of concepts, review of theories and evidence, and analysis of methodological problems of a particular topic (SOUZA, SILVA and CARVALHO, 2010).

In this sense, for the present integrative review, the PRISMA (*Preferred Reporting Items for Systematic Reviews and Meta-Analysis*) method was used, which consists of the QUORUM (*Quality of Reporting of Meta-Analyses*) recommendations. According to Mendes, Silveira and Galvão (2008) the review is composed of six stages, namely: (1) identification of the theme and hypothesis selection; (2) determination of inclusion and exclusion criteria and conducting bibliographic research; (3) definition of the information to be extracted from the studies and categorization of the studies; (4) critical analysis of the selected articles; (5) interpretation of the results and presentation of the review.

Regarding the eligibility of studies, database and search strategies, it was decided to include studies in Portuguese and limit the search temporally in 2020 to 2023. The search bases were *Pubmed*, *Scielo* and *Google Scholar*, with search from the controlled and uncontrolled descriptors of the Descriptors in Health Sciences (DeCS) and Boolean operator "and". Regarding the exclusion criteria of the studies, those that presented some cost for acquisition, foreign language (English and Spanish), which did not show the institution of the research location, theses, manuscripts, case studies, *inter alia*, were related.

3 FINDINGS

Initially, a search was conducted in the *databases Scholar google, Scielo and Pubmed*, based on the period 2020-2023 and the descriptors Smoking ("Smoking"), Life habits and Medical students and the Boolean operator *AND*, in order to include these terms alternately and concomitantly in the articles. Thus, a total of 1,300 publications were found: 185 studies on the *Scielo* platform, 902 articles on *Scholar Google* and 226 articles on *Pubmed* (Flowchart 1).



Source: Galvão, Pansani and Harrad, 2015 (adapted by the author)

After the first reading through analysis of the abstracts available on the platforms themselves, 16 articles were selected for a more detailed study. This first selection had as a parameter the analysis of the framing of the publications within the inclusion and exclusion criteria. In a second, more careful analysis, all readings were performed in full, taking into account the criterion of relevance of the articles and that were delimited within the title of this bibliographic review. Therefore, it was decided to keep the corpus of the present study composed of 11 (eleven) articles, which are shown in Chart 1. The other articles informed the discussion.

Table 1 – Demonstration table of the articles selected to compose the corpus of this research.

Ribeiro, G. F. F., França, V. M., Faria, R. L. D. B. C., Cuellar, P. M. G., Martins, M. L. B. Álcool: uso por estudantes de medicina da Universidade Federal do Tocantins. Revista Cereus , v. 7, n. 1, p. 29-39, 2015.	
Local	Federal University of Tocantins (UFT).
Sample	320 students enrolled from the 1st to the 8th periods of the medical course.
Method	Questionário de Carlini-Cotrim et al (1989) baseado no instrumento proposto pela OMS e desenvolvido pela WHO - <i>Research and Reporting Project on the Epidemiology of Drug Dependence</i> .
Findings	A total of 218 questionnaires were analyzed. 72.5% (158) of the sample reported having used psychoactive substances in recent months, of which alcohol and tobacco were the substances with the highest prevalence of use in life, with 95% and 30.3%, respectively. Of the tobacco users, 12.4% (in relation to the absolute number, but 40.9% in relation only to the total number of users) had 1 to 3 absences from college in the last month.
Comment	It was observed in this group that the second substance of greatest use in life (30.3%) and in the month (11.9%) was the cigarette. Thus, a considerable and worrying number of medical students of this institution are making use of this substance and other drugs in an experimental and moderate way, which deserves attention on the part of the various representatives of the university before the damages may not be perceived until there is a disabling dysfunction in the personal and professional field.



Fagundes, L. C., Paz, C. J. R., Freitas, D. A., Barbosa, H. A., Soares, W. D. Consumo de álcool entre universitários na cidade de Montes Claros-MG. Arquivos Catarinenses de Medicina , v. 49, n.3, p. 12-22, 2020.	
Local	Public institution of higher education in the city of Montes Claros-MG.
Sample	150 students.
Method	Test for Identification of Problems Related to Alcohol Use (AUDIT) and Screening Test for Involvement with Alcohol, Cigarettes and Other Substances (ASSIST).
Findings	Most university students (73.4%, n= 110) make occasional use of these substances and 26.6% (n=40) abuse them.
Comment	Given this scenario and considering the numerous negative consequences arising from the use of alcohol and tobacco, it is important that the university invests in primary prevention actions to avoid use among students and that it also intervenes adequately in those students who already have high consumption, bearing in mind that socialization is one of the main reasons that lead to use among university students.
Tavares, C. F., Barbosa, A. G. L., Sacramento, B. O., dos Anjos, T. L., Dias, J. P. Prevalência do uso de substâncias psicoativas por estudantes de medicina de uma escola da Bahia, 2018. Revista de Medicina , v. 100, n. 6, p. 544-553, 2021.	
Local	Medical School of Bahia.
Sample	458 students.
Method	Alcohol, Cigarette and Other Substance Involvement Screening Test (ASSIST).
Findings	Most participants were female (62.7%), aged 21 to 23 years (38.4%). Of the total sample, 92.6% self-declared heterosexual, 56.3% were white, 53.7% had a steady boyfriend, and 45.2% were Catholic. It was found that 89.1% reported consuming alcoholic beverages, 36.8% marijuana, tobacco derivatives with 31.5% and inhalants 17.3%.
Comment	The results obtained in this study demonstrate that even among medical students who have greater opportunity to better understand the mechanisms of action and harmful effects of psychoactive substances in the body, the prevalence of their consumption shows similarity with other university students of other degrees, although it differs in the pattern of consumption of some psychoactive substances.
Dos Santos Sirqueira, R., Soares, A. C. G. M., Andrade, M. L., Fraga, R. R. A., Santos, T. L., de Carvalho Dantas, A. S., Junior, A. S. L. Perfil do uso do tabaco em estudantes de medicina em uma universidade particular de Sergipe. Revista Eletrônica Acervo Saúde , v. 48, p. e3371-e3371, 2020.	
Local	Private university (Universidade Tiradentes) of the municipality of Aracaju, State of Sergipe.
Sample	281 students.
Method	Questionnaire not validated, but based on CAGE.
Findings	Of the total sample, 32% reported having already used tobacco products. Regarding gender: 24.7% were women and 46.7% men. Regarding the period of the students who at some point have already tried the drug: 1st period and the 12th period have the same percentage of 7.8%, and the highest values are the 3rd period, with 14.4% and the 8th period with 17.8%. 41.1% are non-smokers per se, 56.7% are occasional smokers and 2.2% are daily smokers. Another question in the questionnaire inspired by CAGE was an attempt to reduce or stop tobacco use. 52.4% never tried, 3.3% tried and failed, 3.3% tried and soon after returned with the use, 37.8% tried and succeeded. Regarding the reasons that led the respondents to start smoking, in the present study the following were reported: fun (67.8%), stress reduction (20%) and socialization (18.9%).
Comment	There is a high prevalence of tobacco use in medical students at a private university in Sergipe when compared to others, and of these, more than half have never tried to quit. As for the profile of the smoker, it corresponds mostly to men, occasional smokers and who are aware of the possibility of future dysfunctions, even if they do not have them in the present and the reasons that stimulate the beginning of tobacco use are, mainly mentioned, the search for fun, stress reduction and socialization.
De Aquino Scuarcialupi, M. E. C., de Queiroga Vilar, S. A., Casimiro, W. T., da Silva, V. G. S., Cavalcanti, M. C. B., & Freitas, J. S. D. F. S. Tabagismo entre estudantes de Medicina das Faculdades Nova Esperança e Ciências Médicas da Paraíba. Research, Society and Development , v. 12, n. 3, p. e14412340508-e14412340508, 2023.	
Local	Faculty of Medical Sciences of Paraíba, located in the municipality of João Pessoa, State of Paraíba.
Sample	129 students.
Method	Fagerström test.



Findings	Of the smokers, 71.4% are from the 1st period and 28.6% from the 12th period. 60% of the students of the 1st period make use of the electronic cigarette, while in the 12th period there are no students who make use of this device. There is a predominance of moderate anxiety, with most students scoring between 4 and 12.
Comment	The epidemiological profile of the smokers interviewed is characterized by the predominance of men, aged 20 to 25 years, white, with a low degree of nicotine dependence and anxiety, with a higher rate of beginner students adept at smoking, when compared to the graduates.
Pires, A. M. F. D. S., Gusmão, W. D. P., Pureza, I. R. D. O. M., Gomes, M. H. L., Custódio, R. M. B. P., Oliveira, J. J. F. C. D. Avaliação do comportamento de risco de graduandos de Medicina em uma universidade de Alagoas. Revista Brasileira de Educação Médica , v. 46, 2022.	
Local	State Public University of Alagoas, located in the city of Maceió.
Sample	134 students.
Method	Questionnaire of Risk Behaviors in University Students (QREU).
Findings	Mostly, the sample was composed of individuals over 26 years of age (81.3%), female (54.47%), single (88.80%), who lived with more than one person (68.65%) and had a religious belief (70.14%). In the univariate analysis, only daily smoking (OR = 1.05; p = 0.01) and condom use (OR = 0.77; p = 0.01) showed differences between the initial and final stages of the course.
Comment	College students are at a particularly high risk for substance use, with alcohol being the most used substance. In general, the consumption of alcohol, cigarettes and other drugs is associated with depression, anxiety and chemical dependence.
Da Silva, Í. D. G., Zingra, K. N., Giron, K. G., Neto, N. S., de Andrade, R. A. O., Junior, A. G. B. Prevalência de consumo de álcool e tabaco em estudantes universitários da cidade de Porto Velho-RO. Revista Mundi Saúde e Biológicas , v. 5, n. 1, 2020.	
Local	São Lucas University Center in the city of Porto Velho, Rondônia.
Method	Questionnaire composed of 28 open and closed questions regarding alcohol and tobacco.
Intervention	255 students.
Findings	218 people reported using some substance, being represented by 85.49% of the students and only 37 of the interviewees denied the use of alcohol or tobacco. . Among smokers, the beginning of use prevailed in the age group between 16 and 18 years, being 54.8% of the interviewees, followed by the age group of 13 to 15 years with 26.2% of the interviews and the lowest age group between 19 and 22 years, being represented by 19% of the interviewees. 176 students reported consuming only alcoholic beverages, and 80.74% of the students. Study participants were asked if they believe alcohol and tobacco are harmful to everyone's health. In this regard, 193 participants answered yes, being represented by 88.54% of the interviewees.
Comment	The present study shows that the use of alcoholic beverages and tobacco by medical students of the studied institution is a reality, revealing the early onset in the use of these substances. This reality is worrisome, since these licit drugs are capable of leading to negative situations. The faculty must play an active role in the face of this problem, alerting and guiding academics, who will be the future health promoters, of the consequences of the abusive use of these licit drugs.
Staedele, G. V., Schlindwein, L., Rocha, F. E., Steiner, O., Cunha, A. D., Konrad, R., Bonsoni, J. C. Prevalência do uso de substâncias derivadas do tabaco por estudantes de medicina de uma universidade de Santa Catarina. Arquivos Catarinenses de Medicina , v. 50, n. 1, p. 81-92, 2021.	
Local	Regional University of Blumenau (FURB), located in the city of Blumenau, SC, Brazil.
Sample	299 university students enrolled between the 1st and 5th year of medical school.
Method	Questionnaire not validated
Findings	Of the 299 students evaluated, 63.88% (191) were female and 36.12% (108) were male, with a mean age of 21.97. The use of tobacco products at least once in life was reported by 45.48% of the sample. 87 students who responded positively for use in the last 3 months, 59.77% reported having used tobacco products 1 or 2 times, 18.39% reported using it monthly, 9.20% using it weekly, 5.75% almost every day and 6.90% reported daily use. Another important finding was the higher prevalence of tobacco users at the beginning of the course (35.54%) compared to those in more advanced stages (24.72%). Regarding psychiatric comorbidities, it was noted that the population with a clinical diagnosis of depression had a greater association with the use of tobacco products.



Comment	The current study demonstrated a high prevalence of the use of tobacco products among medical students of this university. Although some data are like those of national and international studies, there were also divergences in which, in general, the population studied here presented a higher prevalence of use of tobacco derivatives. It was noticed a greater use of tobacco derivatives by students at the beginning of the course when compared to students who have already passed through the chairs of pulmonology and cardiology, evidencing that the knowledge obtained in these subjects can be a factor that reduces smoking.
Miranda, C. C., Azevedo, G. Z., Moreira, B. R., Pesca, J. P. M., Destefani, B. P., Rizzi, L. M., Ferreira, F. B. Análise do consumo de substâncias psicoativas por estudantes de medicina de uma Faculdade do Espírito Santo, Brasil. Arquivos Médicos dos Hospitais e da Faculdade de Ciências Médicas da Santa Casa de São Paulo , 1-of, 2020	
Local	School of Sciences of the Santa Casa de Misericórdia de Vitória – EMESCAM.
Sample	267 students, being 94 from the 1st to the 4th period, 98 from the 5th to the 8th period and 75 from the 9th to the 12th period of the medical course.
Intervention	Questionário Cut down, Annoyed by criticism, Guilty and Eye-opener (CAGE) e questionário de Fagerström.
Findings	Regarding the type of cigarette, 63.2% reported using straw cigarettes, while 36.8% reported using industrial cigarettes. Regarding the difficulty not to smoke in places where it is prohibited, 92.5% of the students answered that they had no difficulty and 7.5% answered that they did. When asked which cigarette of the day brought more satisfaction, 12.7% answered "the first of the day", while 82.3% answered "others". Regarding the number of cigarettes smoked per day, 93.2% answered that they smoke less than 10 cigarettes. Regarding how long after waking up they started smoking, 93.5% answered "after 60 minutes". Regarding the frequency of cigarette use, 77% reported restricted use on weekends, 16.4% reported use for more than 4 days a week and 6.6% reported use for less than 4 days a week.
Comment	Regarding the degree of nicotine dependence of Fagerström, 93.1% of the students had very low risk, 5.2% medium risk and 1.7% high risk. A prevalence of cigarette use by medical students (20.1%) was higher than the average of the general population (9.3%).
Staudt, G. F., Tormem, L. T., de Souza, P. A., de Souza, M. A. Epidemiologia do tabagismo no curso de Medicina em Lages–Santa Catarina. Research, Society and Development , v. 9, n. 5, p. e177953283-e177953283, 2020.	
Local	University of Planalto Catarinense in Lages/SC.
Sample	94 students of the Medical Course of the University of Planalto Catarinense enrolled between the 1st and 4th year of graduation.
Method	Questionnaire not validated.
Findings	It was found that most of the students who smoked started using tobacco in adolescence. It is observed that the mean age of initiation was 17.88 years. The reasons that led the study participants to smoke were: the influence of friends (61.1%), stress (11.1%) and relaxation attempt (11.1%). Regarding the sensation described by smokers during exposure to cigarettes, participants described pleasure (38.9%) and reduced anxiety (33.3%) in most cases.
Comment	In view of the high prevalence of smokers presented by the study, it is necessary that, in addition to the preventive and educational measures applied to the students, there is also frequent monitoring of this group.
Gonçalves, A. T. S., Rodrigues, M. L., Alvarenga, N. T., Padovam, G. L., de Freitas, L., Silva, L. C., Paglia, B. A. R. Uso de cigarros eletrônicos e fatores associados entre estudantes de Medicina em Maringá: Use of electronic cigarettes and associated factors among Medical students in Maringá. Brazilian Journal of Health Review , v. 5, n. 5, p. 20125-20141, 2022.	
Local	University Center of Maringá in Paraná, PR (UniCesumar).
Sample	303 students.
Method	Questionnaire not validated.
Findings	44.8% (n=136) are non-smokers, 6.9% (n=21) use conventional cigarettes and electronic cigarettes, 8.9% (n=27) consume only conventional cigarettes and 4.9% (n = 15) are vapers, that is, smokers only of electronic cigarettes. 25.7% (n=26) of the interviewees replaced the use of conventional cigarettes with electronic cigarettes. Males consume more conventional cigarettes than females, accounting for about 55.6%. Regarding the risks of using electronic cigarettes, 35% (n=105) of the students knew about the risks they were susceptible. In addition, 43% (n=129) of the students were not aware of what the use of these vaporizers could cause to the body. About 63



	students (20.8%) started using e-cigarettes after they entered medical school. Regarding the factors that influence the use of electronic cigarettes, 114 students smoked electronic cigarettes only out of their own curiosity and 62 students were influenced by friends. About 52.1% of students believe that e-cigarettes make people who use them more comfortable during parties or social gatherings.
Comment	In this study it was found that the rate of use only of electronic cigarettes was 4.9%, the majority of respondents, that is, about 44% of students reported that they had never smoked. Another finding was that about 34.65% (n=105) are aware of the risks that electronic cigarette consumption can cause.

Source: elaboration of the authors

Based on the studies carried out, it is considered that there is a prevalent consumption in the group of medical undergraduate students. As it is found in the Faculty of Medicine of the University of Santo Amaro that found an average incidence of 17.8% of smokers whose average age was 21.6 years (MAGLIARI et al., 2008); University of Passo Fundo (UPF) a usage rate of 16.5% (STRAMARI, 2009); of 18.6% at the Lutheran University of Brazil (ULBRA) in Canoas/RS (ZETTLER, 2005); 10.1% at the Federal University of Pelotas (MENEZES, 2004); 14% at the Faculty of Medicine of the Fluminense Federal University (JUNIOR, 2006); 8.1% at the Federal University of Acre (OLIVEIRA, 2015).

Nationally, 242,000 Brazilians, about 6.86%, make concomitant use of conventional cigarettes and electronic cigarettes in Brazilian capitals (BERTONI, 2021). Also according to the I National Survey on the use of alcohol, tobacco and other drugs among university students in the 27 Brazilian capitals, in relation to the use of alcohol at any time in life, the most used drugs were alcohol (86.2%), tobacco (46.7%), marijuana (26.1%), inhalants and solvents (20.4%), amphetamines (13.8%), tranquilizers (12.4%), cocaine hydrochloride (7.7%), hallucinogens (7.6%) and ecstasy (7.5%) (BRAZIL, 2010).

It appears that the medical degree differs from the others because the individual who opts for this course goes through several conflicting moments ranging from providing the entrance exam, which has high competition, to the long hours of pre-vestibular studies, family charge for approval, feeling of incapacity at each failure and charging for the then approval that is sometimes restricted to only in public institutions. After achieving the goal of approval and entry into the course, comes the personal charge of being an exemplary student, external people who charge a good professional, abdication of social life and lack of time for being in a full course. And so, after going through long six years of graduation you are faced with the social charge of having to be a specialist and the cycle is repeated, it will be a few more long years until approval in a residency that will last about 2 to 4 years and so, finally, be a professional that they expect you to be.

And so, in the face of so many stressors one finds perhaps the consolation in substance that act on the central nervous system, especially in the acetylcholine receptors, having an effect on the dopaminergic tract generating an effect of gratification and relief. What is evident in the studies is the search by students for these substances that activate the neural circuit, with reward and pleasure, for a pleasurable sense of well-being, allowing the control of stress. And even if they know, because they



study about smoking, the health problems attributed to tobacco addiction opt for this path that is seen as an easy and quick way to solve the problem here called stress caused by the routine imposed in medical school.

4 CONCLUSION

In view of the studies, a high prevalence of smoking among medical students from several Brazilian higher education institutions can be seen, what is more touching is the fact that this occurrence is among students who are attending an undergraduate degree in the health area, and these students in their professional future will be opinion makers about life habits for their patients. Thus, avoiding an increase in the smoking history of this group should be the target objective of health actions. Since, knowledge about the risks and harms that the use of cigarettes and other devices with the same effect bring to health are fully known by these students, but the issue is that they do not see themselves as possible carriers of the diseases that this erroneous habit can bring them.



REFERENCES

- ASSOCIAÇÃO MEDICA BRASILEIRA (AMS). Evidências científicas sobre tabagismo para subsídio ao poder judiciário. 2013. Disponível em: https://diretrizes.amb.org.br/_bibliotecaantiga/tabagismo-para-subsidio-aopoder-judiciario.pdf.
- BERTONI, N., SZKLO, A. S. Dispositivos eletrônicos para fumar nas capitais brasileiras: prevalência, perfil de uso e implicações para a Política Nacional de Controle do Tabaco. Cadernos de Saúde Pública, v. 37, n. e00261920, 2021.
- BRAGA, A. V. C., VIEIRA, C. G., MENDONÇA NETO, J. N., ALMEIDA, L. L., GOMES, S. C. A. A socialização por meio da fumaça: o uso de narguilé entre estudantes de medicina, Trabalho de conclusão de curso, 2021.
- BRASIL. Biblioteca virtual em saúde (BVS). Ministério da saúde (MS). Tabagismo, 2020. <https://bvsmms.saude.gov.br/tabagismo-13/>
- BRASIL. Presidência da república. Secretaria nacional de políticas sobre drogas. I levantamento nacional sobre o uso de álcool, tabaco e outras drogas entre universitários das 27 capitais brasileiras. Brasília: SENAD, 2010. Disponível em: https://www.mds.gov.br/webarquivos/arquivo/cuidados_prevencao_drogas/obid/publicacoes/livros/i%20levantamento%20nacional%20universit%20-%202010.pdf
- DA SILVA, Í. D. G., ZINGRA, K. N., GIRON, K. G., NETO, N. S., DE ANDRADE, R. A. O., JUNIOR, A. G. B. Prevalência de consumo de álcool e tabaco em estudantes universitários da cidade de Porto Velho, RO. Revista mundi saúde e biológicas, v. 5, n. 1, 2020.
- DE AQUINO SCUARCIALUPI, M. E. C., DE QUEIROGA VILAR, S. A., CASIMIRO, W. T., DA SILVA, V. G. S., CAVALCANTI, M. C. B., FREITAS, J. S. D. F. S. Tabagismo entre estudantes de medicina das faculdades nova esperança e ciências médicas da paraíba. Research, society and development, v. 12, n. 3, p. E14412340508-e14412340508, 2023.
- MORAES, D. P. A. de, DE MEDEIROS, G. M. R., CALDAS, F. A. X. B., OLIVEIRA, L. A., BALDAÇARA, L. 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 De São Paulo, p. 127-133, 2013.
- DOS SANTOS SIRQUEIRA, R., SOARES, A. C. G. M., ANDRADE, M. L., FRAGA, R. R. A., SANTOS, T. L., DE CARVALHO DANTAS, A. S., JUNIOR, A. S. L. Perfil do uso do tabaco em estudantes de medicina em uma Universidade Particular De Sergipe. Revista Eletrônica Acervo Saúde, v. 48, p. E3371-E3371, 2020.
- FAGUNDES, L. C., PAZ, C. J. R., FREITAS, D. A., BARBOSA, H. A., SOARES, W. D. Consumo de álcool entre universitários na cidade de Montes Claros-MG. Arquivos Catarinenses De Medicina, v. 49, n.3, p. 12-22, 2020.
- GALVÃO, T. F., PANSANI, T. de S. A., HARRAD, D. Principais itens para relatar Revisões sistemáticas e Meta-análises: A recomendação PRISMA. Epidemiologia e Serviços de Saúde, v. 24, p. 335-342, 2015.
- GONÇALVES, A. T. S., RODRIGUES, M. L., ALVARENGA, N. T., PADOVAM, G. L., DE FREITAS, L., SILVA, L. C., PAGLIA, B. A. R. Uso de cigarros eletrônicos e fatores associados entre



estudantes de medicina em Maringá. *Brazilian Journal Of Health Review*, v. 5, n. 5, p. 20125-20141, 2022.

HARADA, B. A., FAXINA, C. F., CAPELETTO, C. D. M., SIMÕES, J. C. Perfil psicológico do estudante de medicina. *Revista Do Médico Residente*, v.15, n.2, 2013.

INSTITUTO NACIONAL DE CÂNCER – INCA, 2023. Disponível em: <https://www.gov.br/inca/pt-br/assuntos/causas-e-prevencao-do-cancer/tabagismo>

SILVA JUNIOR, C. T., BRAGA, M. U., VIEIRA, H. V., BASTOS, L. D. P., TEBALDI, B. D. F., RONCHETTI, R. D. M., CARDOSO, G. P. Prevalência de tabagismo entre estudantes de graduação em medicina da Universidade Federal Fluminense. *Pulmão RJ*, v. 15, n. 1, p. 11-15, 2006.

MAGLIARI, R. T., PAGLIUSI, A. L., PREVIERO, B. M., MENEZES, F. R., FELDMAN, A., & NOVO, N. F. Prevalência de tabagismo em estudantes de faculdade de medicina. *Revista De Medicina*, v. 87, n. 4, p. 264-271, 2008.

MARQUES A. C. P. R., CRUZ, M. S. O adolescente e o uso de drogas. *Rev Bras Psiquiatr*, v. 22, n. 32, p. 6. 2000.

MARTINS, S. R. Nicotina: o que sabemos? Nota técnica sobre a nicotina. ACT promoção da saúde. Rio de janeiro, p. 48, 2022.

MENEZES, A.M.B. ET AL. TABAGISMO EM ESTUDANTES DE MEDICINA: TENDÊNCIAS TEMPORAIS E FATORES ASSOCIADOS. *J. BRAS. PNEUMOL.*, SÃO PAULO, 30(3):223-228, 2004.

MENEZES, A. M. B., HALLAL, P. C., SILVA, F., SOUZA, M., PAIVA, L., D'ÁVILA, A., HORTA, B. L. Tabagismo em estudantes de Medicina: tendências temporais e fatores associados. *Jornal Brasileiro de Pneumologia*, v. 30, p. 223-228, 2004.

MIRANDA, C. C., AZEVEDO, G. Z., MOREIRA, B. R., PESCA, J. P. M., DESTEFANI, B. P., RIZZI, L. M., FERREIRA, F. B. Análise do consumo de substâncias psicoativas por estudantes de medicina de uma faculdade do espírito santo, brasil. *Arquivos Médicos Dos Hospitais E Da Faculdade De Ciências Médicas Da Santa Casa De São Paulo*, 1-of, 2020.

MOURA, R. S., CRUZ, L. T. S., RODRIGUES, I. M., ASSUNÇÃO, C. M., FERREIRA, V. L., DA ROCHA SIQUEIRA, B., MENDONÇA, M. A. Síndrome de burnout em acadêmicos de medicina: uma revisão de literatura. *Revista Eletrônica Acervo Saúde*, v. 13, n. 11, p. E9205-e 9205, 2021.

OLIVEIRA, S.M.C.; LEITE, W.S. Tabagismo e sua relação com a educação médica. *Revista Debates Em Psiquiatria*, Rio De Janeiro, p.6-15, set/out, 2015.

OPAS. Relatório sobre o controle do tabaco na região das américas 2023. Disponível em: <https://www.paho.org/pt/topicos/tabaco>

PIRES, A. M. F. D. S., GUSMÃO, W. D. P., PUREZA, I. R. D. O. M., GOMES, M. H. L., CUSTÓDIO, R. M. B. P., OLIVEIRA, J. J. F. C. D. Avaliação do comportamento de risco de graduandos de medicina em uma universidade de alagoas. *Revista Brasileira De Educação Médica*, v. 46, 2022.

RIBEIRO, G. F. F., FRANÇA, V. M., FARIA, R. L. D. B. C., CUELLAR, P. M. G., MARTINS, M. L. B. Álcool: uso por estudantes de medicina da universidade federal do tocantins. *Revista Cereus*, v. 7, n. 1, p. 29-39, 2015.



SILVA, L. V. E. R., MALBERGIER, A., STEMPLIUK, V. A., ANDRADE, A. G. Fatores associados ao consumo de álcool e drogas entre estudantes universitários. *Rev Saúde Pública*. V. 40, p. 280-8, 2006.

SOUZA, M. T. D., SILVA, M. D. D., CARVALHO, R. D. Revisão integrativa: o que é e como fazer. *Einstein (São Paulo)*, v. 8, p. 102-106, 2010.

STAEDELE, G. V., SCHLINDWEIN, L., ROCHA, F. E., STEINER, O., CUNHA, A. D., KONRAD, R., BONSONI, J. C. Prevalência do uso de substâncias derivadas do tabaco por estudantes de medicina de uma Universidade De Santa Catarina. *Arquivos Catarinenses De Medicina*, v. 50, n. 1, p. 81-92, 2021

STAUDT, G. F., TORMEM, L. T., DE SOUZA, P. A., DE SOUZA, M. A. Epidemiologia do tabagismo no curso de Medicina Em Lages – Santa Catarina. *Research, Society And Development*, v. 9, n. 5, p. E177953283-e177953283, 2020.

STRAMARI, L. M., KURTZ, M., & SILVA, L. C. C. D. Prevalência e fatores associados ao tabagismo em estudantes de medicina de uma universidade em Passo Fundo (RS). *Jornal Brasileiro de Pneumologia*, v. 35, p. 442-448, 2009.

TAVARES, C. F., BARBOSA, A. G. L., SACRAMENTO, B. O., DOS ANJOS, T. L., DIAS, J. P. Prevalência do uso de substâncias psicoativas por estudantes de medicina de uma escola da Bahia, 2018. *Revista De Medicina*, v. 100, n. 6, p. 544-553, 2021.

WILLEMANN, J. R., BURCI, L. M. Os malefícios do uso do cigarro e seu impacto na sociedade. *Revista Gestão & Saúde*, v. 11, n. 1, p. 28-34, 2014.

WORLD HEALTH ORGANIZATION. International classification of diseases 11th revision. The global standard for diagnostic health information. 2022. Available at: <https://icd.who.int/en>.

Zettler, E. W., Nudelmann, L. M., Cunha, D. P. D., Hilgert, C., Mattos, M. D., Scholl, M., Nader, T. L. Prevalência do tabagismo entre estudantes de Medicina e fatores de risco associados. *Rev. AMRIGS*, p. 16-19, 2005.