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Prevalence of mental disorder and associated factors among medical students

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Abstract

The World Health Organization estimates that nearly one billion people live with mental disorders, particularly young adults. This study investigated the prevalence of common mental disorders among medical students at the Federal University of Santa Catarina, Araranguá campus. In total, 273 students were evaluated using the Self-Reporting Questionnaire 20. The prevalence found was 56.04%, being higher among women (70.39%), students with a family history of mental disorders (64.74%), previous psychiatric condition (71.55%), under psychotherapy (68.18%), or using anxiolytics and antidepressants (71.60%). The disorders were more frequent in the initial phase of the course (66.10%), among those who were thinking of dropping out (74.11%), facing high personal demands (62.00%), and poor sleep quality (63.09%). The findings reinforce the need for preventive actions, although the single sample and cross-sectional design limit the generalization and temporal analysis of the associations.

Keywords: Mental health. Education, medical. Students, medical.

Resumo

Prevalência de transtornos mentais e fatores associados entre acadêmicos de medicina

A Organização Mundial da Saúde estima que quase um bilhão de pessoas convive com transtornos mentais, destacadamente adultos jovens. O estudo investigou a prevalência de transtornos mentais comuns em estudantes de medicina da Universidade Federal de Santa Catarina, *campus* Araranguá. Foram avaliados 273 estudantes, por meio do questionário Self-Reporting Questionnaire 20. A prevalência encontrada foi de 56,04%, sendo maior entre mulheres (70,39%), estudantes com histórico familiar de transtornos mentais (64,74%), condição psiquiátrica prévia (71,55%), em psicoterapia (68,18%) ou em uso de ansiolíticos e antidepressivos (71,60%). Os transtornos foram mais frequentes na fase inicial do curso (66,10%), entre aqueles que pensavam em desistir (74,11%), com alta cobrança pessoal (62,00%) e má qualidade do sono (63,09%). Os achados reforçam a necessidade de ações preventivas, embora a amostra única e o delineamento transversal limitem a generalização e a análise temporal das associações.

Palavras-chave: Saúde mental. Educação médica. Estudantes de medicina.

Resumen

Prevalencia de trastornos mentales y factores asociados entre estudiantes de medicina

La Organización Mundial de la Salud estima que casi mil millones de personas padecen trastornos mentales, especialmente los adultos jóvenes. El estudio investigó la prevalencia de trastornos mentales frecuentes en estudiantes de medicina de la Universidade Federal de Santa Catarina, *campus* Araranguá. Se evaluó a 273 estudiantes mediante el cuestionario Self-Reporting Questionnaire 20. La prevalencia encontrada fue del 56,04%, fue superior entre las mujeres (70,39%), los estudiantes con antecedentes familiares de trastornos mentales (64,74%), los que tenían antecedentes psiquiátricos (71,55%), en psicoterapia (68,18%) o en uso de ansiolíticos y antidepresivos (71,60%). Los trastornos fueron más frecuentes al principio del curso (66,10%), entre aquellos que pensaban en abandonar (74,11%), con alta exigencia personal (62,00%) y mala calidad del sueño (63,09%). Los hallazgos refuerzan la necesidad de medidas preventivas, aunque la muestra única y el diseño transversal limitan la generalización y el análisis temporal de las asociaciones.

Palabras clave: Salud mental. Educación médica. Estudiantes de medicina.

The authors declare no conflict of interest.
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Research

Health is not just the absence of disease or infirmity, but a state of physical, social, and mental well-being. Poor mental health can lead to mental disorders, considered disabling medical conditions [1,2]. According to the *Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition (DSM-5) [3], mental disorders are notable disorders in a person's cognition, emotional regulation, or behavior resulting from dysfunction in psychological, biological, or developmental processes related to mental functioning. Mental disorders are often associated with significant distress or disability, impacting social activities, professional activities, and other relevant activities.

In addition, according to Goldberg and Huxley [4], there are mental disorders that do not meet sufficient diagnostic criteria according to DSM-5, but are still frequent causes of mental distress, which have been called common mental disorders (CMD). The main symptoms of CMD include forgetfulness, difficulty concentrating and making decisions, insomnia, irritability and fatigue, in addition to somatic complaints (headache, lack of appetite, tremors, poor digestion, among others) [5].

In 2019, about 12.5% of the world's population lived with at least one mental disorder, a situation that worsened during the COVID-19 pandemic, with more than 25% [6] increase in cases of depression and anxiety. The global prevalence of common mental disorder, considering both high- and low-income countries, is approximately 1 in 5 individuals (17.6%, 95% CI: 16.3%-18.9%) for diagnoses in the 12 months prior to the evaluation. The prevalence of common mental disorders at some point in life was 29.2% (95% CI: 25.9%-32.6%) [7]. In studies conducted in Brazil, the prevalence of CMD ranged from 19.7% to 29.9% [8-10].

Several studies have analyzed the mental health of the university population. In the medical academic community, a meta-analysis conducted in 2021, for example, showed that 31.5% of students suffer from CMD. This indicates that medical school may be a predisposing factor for these disorders [11,12].

It is believed that the predisposition to CMD in this group is related to several factors, such as extensive workload and little leisure time, which are important sources of stress throughout undergraduate education [13]. Such factors may even be related to the increased risk of suicide in the medical setting [14,15].

Considering this context, the objective of this article is to analyze the prevalence of common mental disorders in medical students from a public university in southern Brazil and possible associated factors, in order to support prevention measures geared toward this population.

Method

This is an observational cross-sectional study with university students from the medical school of the Federal University of Santa Catarina (UFSC), Araranguá *campus*. The survey was conducted through a census with all medical students, with an estimated population of 314 individuals. To participate in the research, the students had to be regularly enrolled in the course in the second semester of 2023 and sign the informed consent form (ICF).

The final study sample consisted of 273 students enrolled in the medical course, corresponding to 86.9% of the total number of students. The invitation to participate in the data collection was sent individually via *email* and collectively via the course's undergraduate forum, and data were collected between October and November 2023, through an online questionnaire on the Google Forms platform, during the interval of academic activities.

The project was approved by the UFSC Human Research Ethics Committee (CEPSH) on August 16, 2023. Before data collection, all students were informed about the research, its objectives and the confidentiality of the answers provided.

The endpoint of this study was the screening of common mental disorders, measured using the Self-Reporting Questionnaire 20 (SRQ-20), with validation in Brazil. The instrument consists of twenty questions that assess mental distress based on pain and/or problems that affected the individual in the last thirty days. The questions are based on (yes or no) answers, and the result is obtained by the sum of affirmative answers, ranging from 0 (no probability of mental distress) to 20 (extreme probability of mental distress) [16,17]. The cutoff point for assessing the prevalence of

common mental disorders was ≥7, which classifies the existence of mental distress.

The evaluated independent variables included age (complete years, categorized into 18-24 years and ≥25 years), sex (male and female), family income (in reais, categorized into tertiles) and with whom they share housing (alone, with family/spouse or with friends/colleagues). Medical history was also surveyed, such as family history of self-reported common mental disorder (yes and no), pre-existing psychiatric conditions (yes and no) and psychotherapy (yes and no). In addition, academic aspects were surveyed, relating to course phase (1st year, 2nd year, 3rd and 4th years and internship), considering dropping out of the course (yes and no) and personal demand (low, normal, high and very high).

Finally, health-related behaviors were measured, such as tobacco use (yes and no), use of electronic cigarettes (yes and no) and use of illicit recreational drugs (yes and no). Alcohol consumption was surveyed using the Alcohol Use Disorders Identification Test (AUDIT) scale [18], validated in Brazil [19], consisting of ten questions, each with a score ranging from 0 to 4 according to the answer of the participant; at the end, the sum is performed, with a cutoff score established according to the following classifications: low-risk consumption (0 to 7 points), risk consumption (8 to 15 points), high-risk consumption (16 to 19 points) and possible dependence (20 or more points). In the present study, this variable was dichotomized (low risk and risk consumption).

Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI-BR) [20] questionnaire, an instrument validated in Brazil [21]. It consists of 19 self-administered questions that assess sleep habits over the past thirty days in seven domains: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disorders, use of sleep medications, and daytime dysfunction. A value from 0 to 3 was assigned for each domain Therefore, the total score ranges from 0 to 21 points, and total scores >5 indicate poor sleep quality and ≤5 indicate regular sleep quality.

The data were analyzed using STATA 14.2. First, a descriptive analysis of the independent variables was performed to characterize the sample and the endpoint variable. Subsequently, the prevalence of the endpoint was calculated with the respective 95% confidence interval according to the independent variables. In addition, crude and multivariable analyses used Poisson regression with calculation of prevalence ratios (PR). For multivariable analysis, a hierarchical model was used, with backward selection and adjustment for robust variance [22]. The first level included sociodemographic variables; the second, psychiatric variables; the third, academic aspects; and, finally, the fourth, behavioral variables. The associations of the independent variables with the endpoint were calculated using the prevalence ratios and respective 95% confidence intervals. In the multivariable analysis, aiming at adjusting for confounding factors, the variables associated with the endpoint with a *p*-value<0.20 were maintained in the model. Variables with a *p-value* <0.05 were considered associated.

Results

The final sample consisted of 273 students, with a 86.90% response rate. The sample consisted mostly of women (55.68%), more than half (56.41%) of the students were aged between 18 and 24 years, 35.29% were classified in the first income tertile, and just over half (50.92%) lived alone. Regarding psychiatric characteristics, most (50.92%) reported a family history of common mental disorders, most reported no pre-existing psychiatric condition (57.51%), not currently undergoing psychotherapy (51.65%) and not using anxiolytics (70.33%).

Regarding academic aspects, about 30% were in internship, almost a third reported considering dropping out of the course (31.14%), and more than 70% reported a high/very high level of personal demand. Regarding health-related behaviors, 15.38% had the habit of smoking tobacco, 20.51% used electronic cigarettes, 16.85% reported using illicit recreational drugs, 14.64% were classified as risky alcohol consumption, and the vast majority reported poor sleep quality (83.35%).

Table 1. Sample description according to sociodemographic, psychosocial, academic characteristics, health behaviors and common mental disorder prevalence in medical students from the Federal University of Santa Catarina (Araranguá/SC, 2023)

Variables	n (%)	Prevalence% (95% CI)	*p*
Sex			**<0.001**
Female	152 (55.68)	70.39 (62.45-77.51)	
Male	121 (44.32)	38.01 (29.34-47.28)	
Age group			**0.888**
18–24 years	156 (57.14)	56.41 (48.24-64.32)	
≥25 years	117 (42.86)	55.55 (46.08-64.74)	
Household income			**0.240**
1st tertile	90 (35.29)	63.33 (52.51-73.24)	
2nd tertile	84 (32.95)	55.95 (44.69-66.77)	
3rd tertile	81 (31.76)	50.61 (39.27-61.91)	
Housing			**0.696**
Alone	139 (50.92)	56.83 (48.17-65.20)	
With family/spouse	53 (19.41)	50.94 (36.83-64.93)	
With friends or colleagues	81 (29.67)	58.02 (45.53-68.91)	
Family history of CMD			**0.003**
No	134 (49.08)	47.01 (38.34-55.82)	
Yes	139 (50.92)	64.74 (56.19-72.65)	
Pre-existing psychiatric condition			**<0.001**
No	157 (57.51)	44.58 (36.66-52.71)	
Yes	116 (42.49)	71.55 (62.42-79.54)	
Psychotherapy			**<0.001**
No	141 (51.65)	44.68 (36.31-53.27)	
Yes	132 (48.35)	68.18 (59.51-76.01)	
Use of anxiolytics			**0.001**
No	192 (70.33)	49.47 (42.20-56.77)	
Yes	81 (29.67)	71.60 (60.49-81.07)	
Course phase			**0.005**
1st year	59 (21.61)	66.10 (52.60-77.91)	
2nd year	53 (19.41)	66.03 (51.73-78.48)	
3rd and 4th years	77 (28.21)	58.44 (46.64-69.57)	
Internship	84 (30.77)	40.47 (29.89-51.74)	
Considering dropping out of the course			**<0.001**
No	188 (68.86)	47.87 (40.54-55.26)	
Yes	85 (31.14)	74.11 (63.47-83.01)	
Personal demand			**0.001**
Low/Normal	73 (26.74)	39.72 (28.45-51.85)	
High/very high	200 (73.26)	62.00 (54.88-68.75)	

continues...

Table 1. Continuation

Variables	n (%)	Prevalence% (95% CI)	*p*
Tobacco Use			**0.132**
No	231 (84.62)	54.11 (47.45-60.66)	
Yes	42 (15.38)	66.66 (50.45-80.43)	
E-cigarette use			**0.090**
No	217 (79.49)	53.45 (46.58-60.23)	
Yes	56 (20.51)	66.07 (52.18-78.18)	
Use of illegal drugs			**0.470**
No	227 (83.15)	55.06 (48.34-61.65)	
Yes	46 (16.85)	60.86 (45.37-74.91)	
Alcohol consumption			**0.932**
Low risk	204 (85.36)	56.37 (49.27 63.28)	
Risk consumption	35 (14.64)	57.14 (39.35-73.67)	
Sleep quality			**<0.001**
Good sleep quality	40 (14.65)	15.00 (57.10-29.83)	
Poor sleep quality	233 (85.35)	63.09 (56.54-69.29)	

n: 273; 95% CI: 95% confidence interval

According to the SRQ-20 questionnaire, most students (56.04%, 95% CI: 50.06%-61.85%) were classified as having mental distress. There was a higher prevalence of this endpoint, with a significant difference between the categories, in women (70.39%), in those with a family history of CMD (64.74%), with a pre-existing psychiatric condition (71.55%), in those undergoing psychotherapy (68.18%) and in those who used anxiolytics/antidepressants (71.60%). In addition, CMD was more prevalent in the initial phase of the course (66.10%), in students considering dropping out of the course (74.11%) and in those who expressed high/very high personal demand (62.00%). In addition, those who reported poor sleep quality had a higher prevalence of CMD (63.09%).

Table 2. Description of the variables of the Self-Report Questionnaire 20 in medical students at the Federal University of Santa Catarina (Araranguá/SC, 2023)

Variables	n% (95% CI)
1. Do you have frequent headaches?	
No	58.61 (52.64-64.32)
Yes	41.39 (35.67-47.35)
2. Do you have a lack of appetite?	
No	79.12 (73.86-83.55)
Yes	20.88 (16.44-26.13)
3. Do you sleep poorly?	
No	50.92 (44.97-56.83)
Yes	49.08 (43.16-55.02)

continues...

Table 2. Continuation

Variables	n% (95% CI)
4. Are you easily frightened?	
No	64.47 (58.58-69.94)
Yes	35.53 (30.05-41.41)
5. Do you have hand tremors?	
No	74.73 (69.20-79.54)
Yes	25.27 (20.45-30.79)
6. Do you feel nervous, tense or worried?	
No	21.25 (16.77-26.52)
Yes	78.75 (73.47-83.22)
7. Do you have poor digestion?	
No	72.16 (66.52-77.17)
Yes	27.84 (22.82-33.47)
8. Do you have difficulty thinking clearly?	
No	57.88 (51.90-63.62)
Yes	42.12 (36.37-48.09)
9. Have you been feeling sad lately?	
No	52.38 (46.42-58.27)
Yes	47.62 (41.72-53.57)
10. Have you been crying more than usual?	
No	76.19 (70.75-80.89)
Yes	23.81 (19.10-29.24)
11. Do you find it difficult to carry out your daily activities with satisfaction?	
No	43.59 (37.79-49.56)
Yes	56.41 (50.43-62.20)
12. Do you have difficulty making decisions?	
No	54.21 (48.24-60.06)
Yes	45.79 (39.93-51.75)
13. Do you have difficulties in college (does it cause you suffering)?	
No	54.95 (48.97-60.77)
Yes	45.05 (39.22-51.02)
14. Are you unable to play a useful role in your life?	
No	87.55 (83.05-90.97)
Yes	12.45 (09.02-16.94)
15. Have you been losing interest in things?	
No	63.00 (57.09-68.55)
Yes	37.00 (31.44-42.90)

continues...

Table 2. Continuation

Variables	n% (95% CI)
16. Do you feel like a useless person?	
No	83.15 (78.21-87.15)
Yes	16.85 (12.84-21.78)
17. Have you been thinking about ending your life?	
No	94.87 (91.51-96.94)
Yes	5.13 (30.53-84.89)
18. Do you feel tired all the time?	
No	37.36 (31.79-43.28)
Yes	62.64 (56.71-68.20)
19. Do you get tired easily?	
No	37.73 (32.14-43.65)
Yes	62.27 (56.34-67.85)
20. Do you have unpleasant feelings in your stomach?	
No	65.57 (59.70-70.98)
Yes	34.43 (29.01-40.29)

n: 273; 95% CI: 95% confidence interval

Regarding the most reported CMD conditions, 41.39% of students reported having frequent headaches, 49.08% sleep poorly, 78.75% feel nervous, tense or worried, 42.12% have difficulties thinking clearly and 47.62% feel sad lately, 56.41% have difficulties performing daily activities with satisfaction, 45.79% have difficulties making decisions, 45.05% report that college causes suffering, 16.85% feel useless, 5.13% have thought about ending their lives and 62.64% feel tired all the time. The other variables are presented in Table 2.

In the adjusted analysis, it was observed that male students had a 48% lower prevalence (PR: 0.52, 95% CI: 0.41%-0.67%) of CMD. Their current phase in the course was inversely associated with the endpoint, and internship students had a lower prevalence of CMD (PR: 0.62, 95% CI: 0.45%-0.83%). Students who considered dropping out of the course had a 51% higher prevalence (PR: 1.51, 95% CI: 1.25%-1.82%) of CMD, which was also observed in relation to sleep quality, and endpoint prevalence was about three times higher in those who reported poor sleep quality (PR: 3.40, 95% CI: 1.44%-8.07%).

Table 3. Crude and adjusted analysis of sociodemographic, psychosocial, academic factors and health behaviors associated with common mental disorders in medical students from the Federal University of Santa Catarina (Araranguá/SC, 2023)

	Crude		Adjusted	
Variables	PR (95% CI)	*p*	PR (95% CI)	*p*
Sex		**<0.001**		**<0.001**
Female	1		1	
Male	0.54 (0.42-0.69)		0.52 (0.41-0.67)	

continues...

Table 3. Continuation

Variables	Crude PR (95% CI)	*p*	Adjusted PR (95% CI)	*p*
Age group		**0.888**		**0.889**
18–24 years	1		1	
≥25 years	0.98 (0.79-1.21)		1.03 (0.83-1.27)	
Household income		**0.095**		**0.052**
1st tertile	1		1	
2nd tertile	0.88 (0.69-1.13)		0.84 (0.66-1.08)	
3rd tertile	0.79 (0.61-1.04)		0.77 (0.60-0.99)	
Housing		**0.944**		**0.836**
Alone	1		1	
With family/spouse	0.89 (0.66-1.21)		0.88 (0.66-1.18)	
With friends or colleagues	1.02 (0.80-1.29)		0.98 (0.78-1.23)	
Family history of CMD		**0.004**		**0.344**
No	1		1	
Yes	1.37 (1.11-1.71)		1.12 (0.89-1.41)	
Pre-existing psychiatric condition		**<0.001**		**0.251**
No	1		1	
Yes	1.60 (1.30-1.97)		1.19 (0.88-1.59)	
Psychotherapy		**<0.001**		**0.167**
No	1		1	
Yes	1.53 (1.23-1.90)		1.19 (0.93-1.51)	
Use of anxiolytics		**<0.001**		**0.525**
No	1		1	
Yes	1.45 (1.19-1.76)		1.08 (0.85-1.37)	
Course phase		**0.001**		**<0.001**
1st year	1		1	
2nd year	0.99 (0.76-1.30)		1.05 (0.83-1.35)	
3rd and 4th years	0.88 (0.68-1.15)		0.82 (0.64-1.05)	
Internship	0.61 (0.45-0.84)		0.62 (0.45-0.83)	
Considering dropping out of the course		**<0.001**		**<0.001**
No	1		1	
Yes	1.55 (1.27-1.88)		1.51 (1.25-1.82)	
Personal demand		**0.004**		**0.102**
Low/normal	1		1	
High/very high	1.56 (1.15-2.11)		1.30 (0.95-1.79)	
Tobacco Use		**0.095**		**0.445**
No	1		1	
Yes	1.23 (0.96-1.57)		1.15 (0.80-1.63)	

continues...

Table 3. Continuation

Crude		Adjusted		
Variables	PR (95% CI)	*p*	PR (95% CI)	*p*
E-cigarette use		**0.065**		**0.110**
No	1		1	
Yes	1.24 (0.99-1.59)		1.27 (0.95-1.71)	
Use of illegal drugs		**0.450**		**0.791**
No	1		1	
Yes	1.10 (0.85-1.43)		1.03 (0.79-1.36)	
Alcohol consumption		**0.932**		**0.157**
Low risk	1		1	
Risk consumption	1.01 (0.74-1.38)		0.80 (0.56-1.09)	
Sleep quality		**<0.001**		**0.005**
Good sleep quality	1		1	
Poor sleep quality	4.20 (1.99-8.86)		3.40 (1.44-8.07)	

95% CI: 95% confidence interval; PR: prevalence ratio

Discussion

The present study observed that the prevalence of CMD among medical students was high (56.04%) compared to other Brazilian studies. The frequency was higher than those found at Universidade Estadual Paulista (44.6%) [23], Universidade Federal do Espírito Santo (37.1%) [5], Universidade Federal do Sergipe (40.00%) [24] and Universidade Regional de Blumenau (50.90%) [13].

It is estimated that 153 students who participated in the study presented suspected mental distress and require diagnostic evaluation by a qualified health care provider. The SRQ-20 is a screening scale for suspected cases of CMD, and the gold standard for diagnosing this clinical condition is consultation with a psychiatrist [5].

When comparing the prevalences between studies, it is important to consider that the teaching-learning process and the curriculum vary between the institutions where the survey was carried out, which can directly affect the discrepant results [25]. In addition, the evaluation carried out by the present study is influenced by the moment experienced by each student at the time, since the CMD screening questionnaire (SRQ-20) must be answered based on the signs and symptoms presented in the last thirty days [5].

It is noted that women had a higher prevalence of CMD (70.39%). Possible factors related to this increased prevalence in the female public include hormonal causes and psychosocial stressors, factors considered common for this gender. In addition, young women tend to have a worse quality of life score than the general population [26,27].

Similarly, individuals who reported a family history of common mental disorders had a prevalence of CMD of 64.74%. Although the literature is scarce in this regard, it is observed that the prevalence of CMD was high in this public [28]. In addition, students who reported pre-existing psychiatric condition and undergoing psychotherapy showed a high prevalence of common mental disorders (71.55% and 68.18%, respectively). These data may explain the overall high prevalence of CMD among medical students, as nearly half of them reported currently being on psychotherapy treatment. Considering that most of the students classified as a group suspected of this condition sought medical care at some point, it is possible that they have a established diagnosis [13].

The survey showed that 71.60% of individuals who used anxiolytics/antidepressants had CMD. The excessive use of licit or illicit drugs by medical students has proved an important factor. Often, drugs developed to treat certain medical

conditions are used illicitly by students, without diagnostic criteria, in order to improve academic performance. The indiscriminate use of these drugs can result in chemical dependence [11].

Regarding the phases of the course, it was observed that the highest prevalence of CMD among students was during the first two years of college (66.10%), and the lowest, during internship (40.47%). Throughout undergraduate medical training, students experience three psychological phases: initial euphoria, after recently achieving a place in the most sought-after course in the country; disappointment, which begins in the first two years of the course, mainly related to the extensive workload and the little time for leisure activities; adaptation, during internship, when students adapt to the course. These psychological phases are consistent with the data shown in the research. In addition, there are protective factors that are common in the final phase of the course and that contribute to the observed results, which include: being over 20 years old, higher maturity and improved skills to deal with day-to-day stressors [13].

The present study showed that the prevalence of CMD among those who consider personal demand high or very high was 62%. In addition, 78.75% of students reported feeling nervous, tense, or worried. The data presented may be related to the high pressure faced by them, who have the responsibility of studying in a field that deals directly with human life, in which an error can cost a life. This often leaves students feeling helpless in the face of certain illnesses, often leading them to consider dropping out of the course. This fact was observed in this study: students who reported thinking about dropping out of the course had a prevalence of CMD of 74.11%. In addition, 56.41% of the sample reported having difficulties to perform daily activities with satisfaction, which corroborates the justifications raised. Thus, students live a dilemma: studying hard and not having a social life, or reconciling study, social life and good quality of life, but becoming an average professional [11].

Regarding sleep quality, the strenuous routine of sleeping late and waking up early can be an important factor in developing sleep problems and contributing to impaired mental health [12]. In the present study, about 49.08% of the sample reported sleeping poorly. In addition, 63.09% of students were considered to have poor sleep quality by the sleep scale (PSQI-BR). It is known that altered sleep cycle results in insomnia, which can cause tiredness and daytime sleepiness, which may also explain the finding that 62.64% of the sample reports feeling tired all the time. In the long term, this condition can lead to significant physical and mental exhaustion, even affecting academic performance [26].

In the present study, it is important to note that, despite being a small part of the sample, 16.85% reported that they feel like a useless person and 5.13% reported that they had thought about ending their lives. Some authors justify that the mental distress of medical students may even be one of the main factors for suicide in the medical setting [14,15], a situation that turns out to be a paradox, since university students have access to more information and theoretically should have easier prevention and treatment, but in practice what is observed is greater vulnerability and low search for help [11].

Regarding the factors associated with the endpoint in the multivariate analysis, sex, course phase, the existence of thoughts of dropping out of the course and the quality of sleep were verified. It was observed that men had a 48% lower prevalence of CMD than women. Students in internship phase had a 38% lower prevalence of the endpoint. Students who reported thinking about dropping out of the course had a 51% higher prevalence of CMD compared to the others, and those who had poor sleep quality had an about three times higher prevalence of the endpoint compared to those who did not report this problem.

In general, it is observed that medical students are aware of the exhaustive characteristics of the course. However, while some cope better with everyday adversity, others need psychological support. The results of the present study show the need for developing strategies to minimize the factors associated with common mental disorders [12]. It is essential that higher education institutions consider the situation of medical training to assist students in the pursuit of a better quality of physical, psychological, social and spiritual life. Some medical schools have implemented initial measures, such as the inclusion of free periods

during the week for leisure activities. In addition, creating psychological support programs that encourage the participation of first-year medical students can be an effective strategy to reduce the stressors faced by medical students [11,12].

The results of the present study should be interpreted with caution, given some limitations. First, the cross-sectional design does not allow the analysis of the temporal relation between the exposures and the outcome; however, it indicates the magnitude of the associations, providing space for new approaches in the field of study. Furthermore, the study being carried out in a single public institution, with an intentional sample, precludes the extrapolation of the results to students from other institutions with different contexts. Finally, it is observed the potential failure to identify students under treatment for mental disorders as possible cases of CMD.

Final considerations

The results of the study show that the high prevalence of common mental disorders in medical students is inversely associated with sex and more advanced phases of the course, and men and internship students had a lower prevalence of the outcome. On the other hand, considering dropping out and poor sleep quality were strongly associated with CMD, with significantly higher prevalences among students who reported these factors.

The findings reinforce the need for universities to implement strategies to promote health and prevent symptoms that compromise the mental health of students. Structuring institutional psychological and pedagogical support programs, combined with awareness-raising and continuous monitoring initiatives, can contribute toward improving the quality of life and medical training.

From a bioethical point of view, the relevance of the issue is part of the responsibility of higher education institutions to ensure the integral well-being of students and decent conditions for professional and human development. Neglecting the mental health of future physicians can compromise not only their academic trajectory, but also the quality of the care they will provide to society. Thus, adopting measures that promote autonomy, beneficence and justice becomes not only desirable, but an ethical duty of medical schools.

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