





Prevalence and predictive factors of 'Fear of Missing Out' among medical students during the Covid-19 pandemic

Prevalência e fatores preditores do 'Fear of Missing Out' entre acadêmicos de Medicina durante a pandemia da Covid-19

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ABSTRACT

Introduction: The indiscriminate use of social networks is closely related to social anxiety, including Fear of Missing Out (FoMO), an expression in English that means the "fear of being left out". This phenomenon is defined as a lasting apprehension that others may be having rewarding experiences from which the user is absent, and FoMO can be intensified in specific situations, such as during the Covid-19 pandemic.

Objective: This study aimed to evaluate the prevalence and predictive factors of Fear Of Missing Out among medical students from a federal public university in the Legal Amazon during the Covid-19 pandemic.

Method: This is an analytical study, with a cross-sectional design and a quantitative approach. The data were obtained through an online questionnaire, made available to study participants through Google forms®, which addressed sociodemographic, economic, academic characteristics, lifestyle habits and health status. To assess FoMO, the Fear of Missing Out Scale was applied. For the statistical analysis, multivariate analysis was performed, and the crude and adjusted prevalence ratios (PR) and the 95% confidence interval (95%CI) were calculated, with the significance level of 5% ($p < 0.05$) being adopted for the final adjusted model.

Results: 185 students participated in the study, with 42.2% of respondents having FoMO during the Covid-19 pandemic. The predictive factors of FoMO included residing in student housing [PR 1.66 (95%CI 1.03 – 2.54); $p = 0.037$] and presence of symptoms of depression during the Covid-19 pandemic [PR 2.03 (95%CI 1.27 – 3.25); $p = 0.003$].

Conclusion: The prevalence of FoMO among medical students from the assessed institution was high, and sociodemographic factors and health status remained associated with the investigated outcome. These findings indicate the need to implement emotional support strategies and promote the health and well-being of medical students, contributing to a more holistic and healthy approach in the training of future medical professionals, especially in public universities.

Keywords: Student Health; Medical Education; Mental health; Covid-19; Epidemiology.

RESUMO

Introdução: O uso indiscriminado das redes sociais está intimamente relacionado à ansiedade social, incluindo o Fear of Missing Out (FoMO), expressão em inglês que significa "medo de ficar de fora". Esse fenômeno é definido como uma apreensão duradoura de que os outros podem estar tendo experiências gratificantes das quais o usuário está ausente, e o FoMO pode ser intensificado em situações específicas, como o caso da pandemia da Covid-19.

Objetivo: Este estudo teve como objetivo avaliar a prevalência e os fatores preditores do FoMO em acadêmicos de Medicina de uma universidade pública federal da Amazônia Legal durante a pandemia da Covid-19.

Método: Trata-se de um estudo analítico, com delineamento transversal e abordagem quantitativa. Os dados foram obtidos por meio de um questionário online, disponibilizado aos participantes do estudo por meio do Google Forms®. Esse questionário abordava características sociodemográficas, econômicas, acadêmicas, hábitos de vida e estado de saúde. Para avaliação do FoMO, foi aplicada a Fear of Missing Out Scale. Para análise estatística, realizou-se análise multivariada, e calcularam-se as razões de prevalência (RP) brutas e ajustadas e o intervalo de confiança de 95% (IC95%), sendo adotado, para o modelo final ajustado, o nível de significância de 5% ($p < 0,05$).

Resultado: Participaram do estudo 185 acadêmicos, dos quais 42,2% apresentaram FoMO durante a pandemia da Covid-19. Entre os fatores preditores do FoMO, estão residir em república de estudantes [RP 1,66 (IC95% 1,03-2,54); $p = 0,037$] e presença de sintomas de depressão durante a pandemia da Covid-19 [RP 2,03 (IC95% 1,27-3,25); $p = 0,003$].

Conclusão: A prevalência do FoMO em acadêmicos de Medicina da instituição investigada foi elevada, e fatores sociodemográficos e estado de saúde se mantiveram associados ao desfecho investigado. Esses achados apontam para a necessidade da implementação de estratégias de suporte emocional e promoção da saúde e do bem-estar dos acadêmicos de Medicina, contribuindo para uma abordagem mais holística e saudável na formação dos futuros profissionais médicos, sobretudo nas universidades públicas.

Palavras-chave: Saúde do Estudante; Educação Médica; Saúde Mental; Covid-19; Epidemiologia.

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INTRODUCTION

Covid-19 is an infectious disease caused by the SARS-CoV-2 virus, which belongs to the Coronavirus family. The first recorded cases of the disease were reported in December 2019 in the Hubei province, China^{1,2}. The clinical manifestations of the disease occur in many diverse ways; in some cases, the infection is asymptomatic; in other cases, gastrointestinal and neurological symptoms can be observed, and predominantly severe involvement of the respiratory system³. The fact that it is a highly transmissible virus meant that in less than four months there were cases reported on all five continents; which led the World Health Organization (WHO) to characterize Covid-19 as a pandemic on March 11, 2020^{1,4}.

State bodies faced one of the biggest global health challenges of this century when trying to contain the transmission of the virus. "Vertical isolation" measures were implemented and were generally accompanied by a reduction in social contact, resulting in the suspension of activities in theaters, nightclubs, cinemas, shopping malls, schools and universities^{5,6}.

Regarding academic activities in educational institutions, the Brazilian government, through the National Education Council, on April 28, 2020, approved Opinion N. 05/2020 reorganizing the academic calendar, enabling the implementation of Emergency Remote Education (ERE) in public universities⁷. However, the ERE was unable to meet all the needs of health courses, such as medical courses. This teaching modality was very useful in delivering theoretical content, but ineffective when considering the large practical workload for medical training, which requires face-to-face teaching in hospitals, outpatient clinics and basic health units⁸. Therefore, medical students experienced a period in which they were stagnant in academic life during the pandemic. This situation considerably increased the use of electronic devices, technological resources, service applications, message exchanges, and information on networks due to social isolation and remote classes. a situation that exposed this group of individuals to other forms of illness^{2,9}.

The indiscriminate use of social media is closely related to social anxiety, including the Fear of Missing Out (FoMO), an expression in English that means "fear of being left out". This phenomenon is defined as a lasting apprehension that others may be having rewarding experiences from which the user is absent^{10,11,12}. During the Covid-19 pandemic, medical students in Amazonas experienced this reality even more intensely, as social isolation measures restricted face-to-face interactions, increasing the use of social media as a way of staying connected to the outside world.

The impacts of FoMO on the physical and mental health of these students are significant. This manifests itself as

concerns and anxieties related to exclusion from events and fulfilling experiences in their social circles. This situation leads university students to loss of focus, decreased productivity and sleep deprivation, becoming a serious public health problem¹³. In this context, studies on the prevalence and factors associated with FoMO in medical students become relevant, especially in the context of Amazonas, which was marked as the epicenter of the second wave of Covid-19 in Brazil¹⁴. Furthermore, the peculiarities of the state are emphasized, being a state that faces great social inequality¹⁵, as demonstrated by the Gini index, which in 2023 was 0.512¹⁶. This demonstrates that despite public policies implemented in the country as a whole, the majority of states that constitute the legal Amazon region show an index that is lower than the country average¹⁶. This situation can impact the health of the population, exposing medical students to stressful situations that increased during the Covid-19 pandemic.

Therefore, this study aimed to evaluate the prevalence and predictive factors of the Fear Of Missing Out in medical students attending a federal public university in the Legal Amazon region during the Covid-19 pandemic.

METHODS

This is an analytical study, with a cross-sectional design and a quantitative approach. The study target population comprised medical students attending a federal Public University located in the North of Brazil, in the Legal Amazon region, enrolled from 2017 to 2019, and who experienced academic activities before and during the pandemic.

To calculate the sample size, we considered the total number of students enrolled at that institution in the established period (338), unknown prevalence of Fear of Missing Out (FoMO) (50%), tolerable error of 5% and confidence level of 95%¹⁷, totaling a minimum sample of 181 students, to be representative of the study population. There was no randomization to obtain the study sample and this number was obtained from the attendance lists of classes enrolled in the period of study, available through the e-campus system. The sample was completed as the questionnaires were answered.

The following inclusion criteria were adopted: students who were enrolled in the course in the period $\leq 2019/2$ and who remained regularly enrolled and attended classes during the Covid-19 pandemic through the Emergency Remote Education (ERE) and who were aged ≥ 18 years old. The exclusion criteria included: questionnaires in which the study participants did not answer all the proposed questions and students who, during the questionnaire application, felt uncomfortable or embarrassed when answering such questionnaire.

Before the data collection period, a pilot study was conducted with a group of medical students from that institution. The pilot study allowed evaluating the adequacy of the questionnaire, ensuring the clarity of understanding and relevance of the questions in relation to the study objectives. No content changes to the instrument were necessary and the field research was started.

The data were obtained through an online questionnaire, made available to study participants through Google forms[®]. Each student was invited to participate, after being informed about the study purposes, and after accepting the invitation, they virtually signed the Free and Informed Consent Form (TCLE, *Termo de Consentimento Livre e Esclarecido*). The form was sent to the WhatsApp[®] group of the Academic Center of Medicine of the target institution, consisting of class leaders, who were invited to share the form link with the general group of their respective class, when it met the proposed inclusion criteria.

The questionnaire consisted of multiple-choice questions with variables that addressed sociodemographic, economic and academic characteristics, including: sex (female; male), religion (yes; no), marital status (with a steady partner; without a steady partner), family income (≥ 5 minimum wages; < 5 minimum wages), who they lived with (parents or guardians; student dormitory; alone) and medical school cycle (basic/intermediate; internship). The students were also asked about lifestyle habits: smoking (no; yes) and alcohol consumption (no; yes).

To investigate FoMO, the Fear of Missing Out Scale¹² was used, which is a scale with a Likert response format that has no validation for the Brazilian context or translation into Brazilian Portuguese. However, it had already been used in other studies with the Brazilian population^{13,18}, and a free translation of the instrument was used for data collection¹⁸. The variables that comprise the instrument include five dimensions of the personal experience of FoMO, starting from the need to check social networks when you are in the company of other people, when you cannot access them for some reason, when you are engaged in work activities, when you are studying or alone. The variables were evaluated on a scale of 1 to 5, according to the degree of agreement in relation to the statements. The sum of the points led to a score; the higher the score, the greater the possibility of developing FoMO. In this study, the obtained score was dichotomized, based on the average of the points, as "above average" (the student has FoMO) and "below average" (the student does not have FoMO)¹³.

The self-perception of the health status, obtained from the Vigitel questionnaire, Brazil¹⁹ and adapted to the context of social isolation, was investigated through the question: During the period of social isolation, how do you consider your health status? The four response categories were dichotomized into

positive (for the "very good" and "good" options) and negative (for the "regular" and "poor" options)²⁰.

Symptoms of stress, anxiety and depression were also assessed among students, using the Depression, Anxiety and Stress Scale-21 (DASS-21), adapted and validated for the Portuguese language by Vignola; Tuci²¹. The DASS-21 is a self-report instrument containing 21 questions, and its score is based on a four-point Likert-type scale, ranging from 0 (did not apply to me) to 3 (applied to me very much), regarding the feeling related to the last week. Questions 3, 5, 10, 13, 16, 17 and 21 constitute the depression subscale. Questions 2, 4, 7, 9, 15, 19 and 20 constitute the anxiety subscale. Questions 1, 6, 8, 11, 12, 14 and 18 constitute the stress subscale. For the final score, the values for each subscale were added and multiplied by two to correspond to the original scale score (DASS-42)²². The symptoms of depression, anxiety and stress were dichotomized into absent and present, and the latter encompassed the score that classified the symptoms as mild, moderate, severe and extremely severe, and were designated as dependent variables^{23,24}.

Weight and height were obtained through self-report^{25,26}, and the Body Mass Index (BMI) was subsequently calculated using the formula: $BMI = \text{weight}/\text{height}^2$ and classified according to the following cutoff points as proposed by the World Health Organization for adults: underweight (BMI $< 18.5\text{kg}/\text{m}^2$), normal weight (BMI between $18.5\text{kg}/\text{m}^2$ and $24.9\text{kg}/\text{m}^2$), overweight (BMI between 25 and $29.9\text{kg}/\text{m}^2$) and obese (BMI $> 30\text{kg}/\text{m}^2$)²⁷.

The Statistical Package for the Social Sciences (SPSS)[®], version 21, was used for data analysis. Initially, an exploratory descriptive analysis of the data was carried out, where the absolute and relative frequencies of the study variables were obtained. Subsequently, bivariate analyses were carried out, looking for associations between the dependent variable (FoMO) and the independent variables, using the chi-square test, and associated variables up to the 20% level ($p = 0.20$).

Considering that Poisson regression with robust variance provides correct estimates and is a better alternative for the analysis of cross-sectional studies with binary results and prevalence of the outcome above 10%²⁸, the crude and adjusted prevalence ratios (PR) were calculated with their respective 95% confidence intervals (95%CI), with a significance level of 5% ($p < 0.05$) being adopted for the final adjusted model. The complex sample analysis was considered in this analysis.

The project was submitted to the Human Research Ethics Committee (CEP, *Comitê de Ética em Pesquisa*) of Universidade Federal do Amazonas, under Certificate of Presentation for Ethical Appreciation (CAAEE) number 64650222.3.0000.5020, having been evaluated and approved under Opinion number

5.780.065, on November 27, 2022. All participants included in the study agreed to participate in the study by virtually signing the Free and Informed Consent Form (TCLE).

RESULTS

A total of 185 medical students from a federal public university in northern Brazil, located in the Legal Amazon region, were assessed. The study sample had a mean age of 23.9 ± 3.3 years. Regarding the sociodemographic characteristics, it was observed that most of them were female (55.7%), had some religion (70.3%), did not have a steady partner (64.3%), received < 5 minimum wages (54.0%) and lived with their parents (77.8%). Regarding the academic characteristics, it was observed that the majority were studying to obtain their first degree (81.6%) and were in the basic/clinical cycle of the medical course (81.6%) (Table 1).

Regarding the lifestyle habits, it was observed that the majority of the university students participating in the study reported that during the Covid-19 pandemic they did not smoke cigarettes (88.6%) and did not drink alcoholic beverages (61.1%). Regarding their health status, 42.2% of those interviewed had FoMO during the pandemic, and during

Table 1. Sociodemographic, economic and academic characteristics of medical students attending a federal public university in the Legal Amazon region, Manaus, AM, 2023 (n = 185).

Variables	n	%
<i>Sex</i>		
Female	103	55.7
Male	82	44.3
<i>Has a religion</i>		
Yes	130	70.3
No	55	29.7
<i>Marital status</i>		
With a steady partner	66	35.7
Without a steady partner	119	64.3
<i>Family income</i>		
≥ 5 minimum wages	85	45.9
< 5 minimum wages	100	54.1
<i>With whom they live</i>		
Parents or guardians	144	77.8
Student housing	11	5.9
Alone	30	16.3
<i>Cycle at medical school</i>		
Basic/Clinical	151	81.6
Internship	34	18.4

this period, most reported that they considered their health status to be regular/poor, had symptoms of depression, anxiety and stress and were suffering from altered body mass index, with 49.2% classified as underweight and 45.4% as overweight/obese (Table 2).

The result of the bivariate analysis revealed that the variables that were associated with the high FOMO outcome were: religion (p = 0.172), family income (p = 0.148), who the students lived with (p = 0.163), medical course cycle (p = 0.200), symptoms of depression (p = 0.002), anxiety (p = 0.001) and stress (p = 0.002) (Table 3).

The independent variables that were associated with FoMO after the multivariate analysis were living in the student housing [PR 1.66 (95%CI 1.03 – 2.54); p = 0.037] and presence of symptoms of depression during the Covid-19 pandemic [PR 2.03 (95%CI 1.27 – 3.25); p = 0.003] (Table 4).

Table 2. Lifestyle habits and health status of medical students at a federal public university in the Legal Amazon region, Manaus, AM, 2023 (n = 185).

Variables	n	%
<i>Smoking</i>		
No	164	88,6
Yes	21	11,4
<i>Alcohol consumption</i>		
No	72	38,9
Yes	113	61,1
<i>Fear of Missing Out (FOMO)</i>		
Low	107	57.8
High	78	42.2
<i>Health status</i>		
Very good/Good	68	36.8
Regular/Poor	117	63.2
<i>Symptoms of Depression During the Pandemic</i>		
Absent	59	31.9
Present	126	68.1
<i>Symptoms of Anxiety During the Pandemic</i>		
Absent	81	43.8
Present	104	56.2
<i>Symptoms of stress During the Pandemic</i>		
Absent	61	33.0
Present	124	67.0
<i>Body Mass Index</i>		
Normal weight	10	5.4
Underweight	91	49.2
Overweight/Obesity	84	45.4

Table 3. Distribution (%) of the Fear of Missing Out according to sociodemographic, economic characteristics, lifestyle habits and health status of medical students attending a federal public university in the Legal Amazon region, Manaus, AM, 2023 (n = 185).

Variables	Fear of Missing Out				p-value*
	Low		High		
<i>Sex</i>					
Female	56	54.4	47	45.6	0.284
Male	51	65.2	31	37.8	
<i>Religion</i>					
Yes	71	54.6	59	45.4	0.172 ^a
No	36	65.5	19	34.5	
<i>Marital status</i>					
With a steady partner	42	63.6	24	36.4	0.234
Without a steady partner	65	54.6	54	45.4	
<i>Family income</i>					
≥ 5 minimum wages	54	63.5	31	36.5	0.148 ^a
< 5 minimum wages	53	53.0	47	47.0	
<i>With whom they live</i>					
Parents or guardians	86	59.7	58	40.3	0.163 ^a
Student housing	04	36.4	07	63.6	
Alone	17	56.7	13	43.3	
<i>Medical school Cycle</i>					
Basic/Clinical	84	55.6	67	44.4	0.200 ^a
Internship	23	67.6	11	32.4	
<i>Smoking</i>					
No	97	59.1	67	40.9	0.314
Yes	10	47.6	11	52.4	
<i>Alcohol consumption</i>					
No	43	59.7	29	40.3	0.679
Yes	64	56.6	49	43.4	
<i>Health status</i>					
Very good /Good	42	61.8	26	38.2	0.410
Regular/Poor	65	55.6	52	44.4	
<i>Symptoms of Depression During the Pandemic</i>					
Absent	44	74.6	15	25.4	0.002 ^a
Present	63	50.0	63	50.0	
<i>Symptoms of Anxiety During the Pandemic</i>					
Absent	58	71.6	23	28.4	0.001 ^a
Present	49	47.1	55	52.9	
<i>Symptoms of stress During the Pandemic</i>					
Absent	45	73.8	16	26.2	0.002 ^a
Present	62	50.0	62	50.0	
<i>Body Mass Index</i>					
Normal weight	04	40.0	06	60.0	0.440
Underweight	52	57.1	39	42.9	
Overweight/Obesity	51	60.7	33	39.3	

* Pearson's chi-square test; p value = significance level at p < 0.20; ^avariables selected for the final model considering the significance level at p < 0.20.

Table 4. Factors associated with the Fear of Missing Out among medical students attending a federal public university in the Legal Amazon region, Manaus, AM, 2023 (n = 185).

Variables	Fear of Missing Out	
	PR _{crude} (95%CI)	PR _{adjusted} (95%CI)
<i>Sex</i>		
Female	1	
Male	0.82 (0.58 – 1.17)	
<i>Religion</i>		
Yes	1	
No	0.76 (0.50 – 1.14)	
<i>Marital status</i>		
With a steady partner	1	
Without a steady partner	1.24 (0.85 – 1.81)	
<i>Family income</i>		
≥ 5 minimum wages	1	
< 5 minimum wages	1.28 (0.90 – 1.82)	
<i>With whom they live</i>		
Parents or guardians	1	1
Student housing	1.58 (0.96 – 2.57)	1.61 (1.03 – 2.54)
Alone	1.07 (0.68 – 1.69)	1.03 (0.66 – 1.63)
<i>Medical school Cycle</i>		
Basic/Clinical	1	
Internship	0.72 (0.43 – 1.22)	
<i>Smoking</i>		
No	1	
Yes	1.28 (0.82 – 2.00)	
<i>Alcohol consumption</i>		
No	1	
Yes	1.07 (0.75 – 1.53)	
<i>Health status</i>		
Very good /Good	1	
Regular/Poor	1.16 (0.80 – 1.67)	
<i>Symptoms of Depression During the Pandemic</i>		
Absent	1	1
Present	1.96 (1.22 – 3.14)	2.03 (1.27 – 3.25)
<i>Symptoms of Anxiety During the Pandemic</i>		
Absent	1	
Present	1.86 (1.26 – 2.75)	
<i>Symptoms of stress During the Pandemic</i>		
Absent	1	
Present	1.90 (1.20 – 3.00)	
<i>Body Mass Index</i>		
Normal weight	1	
Underweight	0.71 (0.40 – 1.24)	
Overweight/Obesity	0.65 (0.37 – 1.16)	

DISCUSSION

This study demonstrated a high prevalence of FoMO, suggesting that a considerable number of medical students at the aforementioned Higher Education Institution (HEI) had feelings of social anxiety and fear of missing experiences during the pandemic. Regarding the factors associated with the outcome, social characteristics and health status stand out, such as living in student housing and the presence of symptoms of depression during the Covid-19 pandemic.

The results of this study pointed to an elevated prevalence of high FoMO in the investigated sample, being similar to other studies carried out in Brazil, one before and another during the pandemic. The first was carried out by Pêgo et al.¹³, who evaluated 311 students from a private HEI in the North of the state of Minas Gerais and found that 58% of students had high FoMO. This phenomenon was more frequently observed in women, students attending the first half of the course and those who more often utilized the WhatsApp and Messenger social media. The authors also reported that FoMO was associated with negative feelings such as anxiety, loneliness, and low self-esteem. In the second study, Souza²⁹ analyzed 491 university students from Passo Fundo, state of Rio Grande do Sul, and found that 62.7% of the students had FoMO; this phenomenon was more common among younger individuals, single people and those with lower family income. This finding highlights the occurrence of FoMO among Brazilian university students, regardless of the region in which they are located.

The high prevalence of FoMO among medical students at a federal public university in the Legal Amazon region during the Covid-19 pandemic discloses an intriguing and relevant phenomenon that deserves in-depth analysis. The concept of FoMO refers to the fear or anxiety of missing out on interesting experiences, social opportunities or relevant information that are occurring in the lives of others, especially on social networks and digital environments¹². The observation of the high prevalence can be interpreted in the light of the unique needs that students, especially those in the health field, face. The intense study load, the constant search for updates and the desire to establish social connections in a highly competitive environment may be driving this trend. Moreover, as pointed out by Santander-Hernandez et al.³⁰, the university environment tends to encourage the frequent use of digital devices, such as smartphones and computers, to access academic information, interact with classmates and stay connected to the global health scenario.

During the Covid-19 pandemic, this behavior was exacerbated, as physical restrictions made digital media the main source of interaction and updates. Particularly during the

height of the Covid-19 pandemic, it is important to consider the impact on the capital city of the state of Amazonas, as it was one of the epicenters of the public health crisis¹⁴. The city of Manaus faced unique challenges, including a shortage of medical resources and a high rate of virus transmission^{31,32}. This critical situation may have generated a sense of urgency among the students, leading them to constantly seek information and updates relevant to their training and to deal with the developing pandemic situation. Also, as reported by Gong et al.³³, the perceived anxiety and stress caused by the Covid-19 restrictions were positively correlated with FoMO, problematic smartphone use, and mental health problems (depression, anxiety, stress) among students.

As for the factors associated with FoMO, it was observed that students who lived in student housing were 1.58 times more likely to have FoMO when compared to those who lived with their parents or guardians. Scientific literature has shown that social isolation can increase feelings of loneliness and the use of social media, which in turn can influence FoMO. A study carried out with young adults from three countries (Italy, Argentina and the United Kingdom) at the beginning of the pandemic found a positive relationship between the use of social networks and FoMO, mediated by loneliness³⁴. Therefore, it is possible that students living in student housing experienced more loneliness and FoMO than those living with parents or guardians, who could offer more emotional and social support. Another study carried out with North-American university students showed that FoMO was related to socioeconomic status, being higher among those with lower family income¹². Thus, there is a hypothesis that students who lived in student housing also faced more financial difficulties than those who lived with their parents or guardians, which may have increased FoMO.

Another factor that was associated with the high prevalence of FoMO among medical students was the presence of symptoms of depression during the pandemic. Students with symptoms of depression were twice as likely to experience FoMO when compared to those without symptoms. Studies have found a positive correlation between depression and FoMO, suggesting that people with symptoms of depression are more likely to experience FoMO than the ones without these symptoms^{35,36,37}. Furthermore, depression symptoms can be a mediator between some loneliness behaviors, affecting one's mental health, so that non-self-determined loneliness (such as social avoidance and isolation) can activate FoMO³⁵.

The incessant search by university students for constant participation in social activities, combined with the fear of missing opportunities aggravated by social isolation, caused a feeling of inadequacy, stress and dissatisfaction, contributing

to the manifestation of depression symptoms^{36,38,39}. This relationship suggests that FoMO may play an important role in compromising one's mental health, and vice versa, highlighting the need for a careful and balanced approach to social participation and the emotional well-being of individuals^{40,41}.

Although the study is addressing an important aspect, which is the "fear of being left out" among medical students at a federal public university, in one of the Brazilian states that suffered the most from the consequences of the Covid-19 pandemic, and which may have influenced the high prevalence of FoMO and associated factors, it is important to mention the limitations of this study. Among the limitations, the characteristic of epidemiological surveys stands out, since some items of the questions that comprised the data collection instrument may have been misinterpreted and/or misunderstood or even received distorted answers, since the collection was based on self-administered questionnaires.

It is also important to mention the fact that the instrument, at the time of the survey, had not been validated for the Brazilian population, and a free translation of the original instrument was used for the data collection. However, we sought to minimize this measurement bias by conducting a pilot study, which allowed testing the instrument and evaluating its viability and usefulness for collecting the information necessary to answer the objectives proposed herein. Furthermore, the research instrument used here is not sufficient to confirm diagnoses of mental problems. Another limitation concerns the fact that the sample was not randomized, which allows selection bias, especially if we consider that people with mental health problems could be less likely to answer the questionnaire, leading to the underestimation of the problem addressed here, which already has high values.

However, some strengths of this study should be mentioned. This research is of great scientific importance, as it addresses an important and neglected subject, which is the mental health of medical students, especially in the context of the Covid-19 pandemic in the state of Amazonas. Moreover, the result of this study provides an analysis of the prevalence of FoMO and its association with social factors and health status of individuals who, in the future, will be the professionals who will take care of the population's health. Therefore, this study can help to guide health care given the prevalence and factors associated with the outcome investigated herein.

CONCLUSION

This study showed that a considerable number of medical students at the assessed federal public university had high FoMO during the Covid-19 pandemic, and that social factors (living in student housing) and health status (presence

of symptoms of depression during the Covid-19 pandemic), were shown to be predictors of the fear of missing out. The results highlight the importance of addressing psychosocial issues in educational environments, as in the case of Medical Schools, especially at challenging times such as the Covid-19 crisis. By identifying that living in student housing and depression symptoms were factors associated with FoMO, the study directs attention to crucial areas of intervention. These findings offer a solid basis for implementing strategies aimed at emotional support and promoting well-being, contributing to a more holistic and healthy approach in the training of future medical professionals, who, after graduation, will take care of the population's health. However, for an even deeper and more effective understanding, ongoing in-depth research is encouraged in this dynamic field of great relevance for the mental health of students, especially in public universities.

AUTHORS' CONTRIBUTIONS

Daniel Brendon Melo Henriques Seabra, Glenda Ribeiro da Silva Oliveira and Ruan Angel Silva e Silva participated in the study design, collection, analysis and interpretation of data, writing and critical review of the manuscript, and approval of the final version. Ronilson Ferreira Freitas participated in the study design, data analysis and interpretation, critical review of the manuscript and approval of the final version.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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