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Prevalence of common mental disorders in university students during the COVID-19 pandemic

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Objective: to verify the prevalence of common mental disorders among college students of a public Higher Education institution in southern Piauí, during the COVID-19 pandemic. **Methodology**: This is a cross-sectional and descriptive-exploratory study, with 303 college students. Data were collected through online instruments, one about the sociodemographic and school profile and the Self-Report Questionnaire. The associations between categorical variables were tested using Pearson's chi-square test and Fisher's exact test, with a 5% significance level. **Results**: the prevalence of psychological distress was 58.7%. We observed a predominance of symptoms of common mental disorders in female, young, single individuals. A greater predominance of anxious depressive mood symptoms was verified, in which most complained of feeling nervous, tense, or worried. **Conclusion**: the suspicion of psychological distress is high among college students and, therefore, actions to minimize the impacts on the mental health of this population are necessary.

Descriptors: Mental Disorders; Students; Mental Health; Pandemic; COVID-19.

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Prevalência de transtornos mentais comuns em universitários durante a pandemia da COVID-19

Objetivo: verificar a prevalência de transtornos mentais comuns entre os estudantes universitários de uma instituição de Ensino Superior pública do sul do Piauí, durante a pandemia da COVID-19. **Metodologia:** trata-se de estudo transversal e descritivo-exploratório, com 303 estudantes universitários. Os dados foram coletados por meio de instrumentos *online*, sendo um sobre o perfil sociodemográfico e escolar e o *Self-Report Questionnaire*. As associações entre as variáveis categóricas foram testadas por meio do teste qui-quadrado de Pearson e Exato de Fisher, com nível de significância de 5%. **Resultados:** a prevalência de sofrimento psíquico foi de 58,7%. Observou-se a predominância de sintomas de transtornos mentais comuns em indivíduos do sexo feminino, jovens e solteiros. Verificou-se um maior predomínio de sintomas de humor depressivo ansioso, em que a maioria apresentou a queixa de sentir-se nervoso, tenso ou preocupado. **Conclusão:** a suspeição para o sofrimento psíquico se encontra elevada entre os estudantes universitários e, por isso, são necessárias ações que minimizem os impactos na saúde mental dessa população.

Descritores: Transtornos Mentais; Estudantes; Saúde Mental; Pandemias; COVID-19.

Prevalencia de trastornos mentales comunes en estudiantes universitarios durante la pandemia de COVID-19

Objetivo: verificar la prevalencia de trastornos mentales comunes entre estudiantes universitarios de una institución pública de educación superior en el sur de Piauí, durante la pandemia de COVID-19. **Metodología:** se trata de un estudio transversal y descriptivo-exploratorio con 303 estudiantes universitarios. Los datos fueron recolectados a través de instrumentos en línea, uno sobre el perfil sociodemográfico y escolar y el Cuestionario de Autoinforme. Las asociaciones entre variables categóricas se probaron mediante la prueba de chi-cuadrado de Pearson y la prueba exacta de Fisher, con un nivel de significación del 5%. **Resultados:** la prevalencia de malestar psicológico fue de 58,7%. Se observó un predominio de síntomas de trastornos mentales comunes en individuos del sexo femenino, jóvenes y solteros. Hubo un mayor predominio de los síntomas del estado de ánimo ansioso depresivo, en los que la mayoría se quejó de sentirse nervioso, tenso o preocupado. **Conclusión:** la sospecha de malestar psicológico es alta entre los estudiantes universitarios y, por lo tanto, se necesitan acciones para minimizar los impactos en la salud mental de esta población.

Descriptores: Trastornos Mentales; Estudiantes; Salud Mental; Pandemias; COVID-19.

Introduction

Mental suffering includes anxiety, depression, and somatic symptoms, and is currently considered a serious public health problem since it is one of the main causes of disability in the world[1]. In addition, mental suffering increases the risk of other mental health problems[2].

Compared to the general population, college students present high levels of mental suffering[2], because when they enter university they have a greater stress load related to the need for greater autonomy and responsibility[3]. Studies carried out with undergraduate students have demonstrated a prevalence of this condition, of 13.9% and 34.0%, respectively[2,4].

With the pandemic of the new coronavirus, the etiologic agent of Coronavirus Disease-2019 (COVID-19), physical and mental problems such as stress, depression, and anxiety have increased dramatically in various population groups, among them, students[5]. Students are believed to be among the most affected, due to uncertainties, especially, regarding education and career, as verified in a study with American students, in which 59% of respondents experienced high levels of psychological impact[6], as well as in a survey with college students in Bangladesh, in which about 97% of them were considerably anxious due to the current epidemic[7].

Given this, it is believed that it is necessary to know the prevalence of Common Mental Disorders (CMD) in the university population during the pandemic of COVID-19. Thus, this study had as a research question: "What is the prevalence of Common Mental Disorders (anxiety, depression, and psychosomatic disorders) among undergraduates of a public university in southern Piauí, during the pandemic of COVID-19?", and as an objective to verify the prevalence of CMTs among college students of a public higher education institution in southern Piauí, during the pandemic of COVID-19.

Methodology

This is a cross-sectional, descriptive-exploratory study, with a quantitative approach, carried out with undergraduate students of a Higher Education Institution (HEI) in the south of the state of Piauí, which has 11 undergraduate courses, six of which are undergraduate (Biological Sciences, Physical Education, Geography, History, Languages/Portuguese and Pedagogy) and five are undergraduate (Administration, Accounting, Computer Science, Law, and Nursing).

For the composition of the sample, we chose stratified random probability sampling proportional to obtain representatives from all the undergraduate courses offered by the HEI. The population of regularly enrolled undergraduate students at the time of collection was 899, and the sample was calculated taking into account the equation for finite population, the confidence level of 95%, and the margin of error of 5%, which comprised 270 participants. An additional 10% was added to avoid losses, so 305 questionnaires were answered, however, two students declined to participate, so the final sample was composed of 303 students.

Were included students enrolled in their respective courses and regularly attended classes. Were excluded students under the age of 18, those who did not have access to the internet, equipment, and tools necessary to access the online questionnaire, and those who, after two attempts, did not answer the questionnaire.

Data collection occurred between July and September 2021, remotely. For that, we used an online questionnaire, which consisted of two instruments, one about the sociodemographic, school, and health profile of college students and the other, the Self-Reporting Questionnaire (SRQ-20), validated in Brazil[8], which assesses the mental state of common non-psychotic disorders, through 20 questions with dichotomous answers, four related to physical symptoms and 16 to psycho-emotional disorders. The questionnaire was sent via messaging application. The material sent contained, as an attachment, an invitation to participate in the research, objectives, purposes, as well as the content of the data collection instrument and other information about the research, the Informed Consent Form (ICF) in Portable Document Format (PDF), and the link to access the online form. The link, initially, gave access to the ICF, and, only with the agreement to participate, the student had access to the study questionnaire. Notably, the participant's signature occurred through digital authentication, and after completion, a copy of the TCLE was sent by e-mail to each participant.

Data were exported from the online questionnaire to the Statistical Package for the Social Sciences (SPSS) software, version 20.0, for statistical analysis. Univariate analyses were performed through simple descriptive statistics, relative and absolute frequency, mean, and standard deviation. For bivariate analysis, the chi-square test and Fisher's exact test were used, with a significance level of $p \leq 0.05$ and a confidence interval of 95%. For the suspicion of common mental disorders (CMD), a total score equal to or lower than seven was used as the cutoff point for the negative case and equal to or higher than eight as positive screening[9].

In addition to Resolution No 466/12, of the National Health Council, this research followed the standards recommended by the Circular Letter No. 01/2021, of the National Research Ethics Committee, which establishes procedures applicable to research in a virtual environment. The research project

was evaluated by the Research Ethics Committee of the State University of Piauí and approved under opinion No 4.800.274, on June 23, 2021.

Results

The prevalence of suspicion of CMT in the study population was 58.7%. It is noteworthy that women (65.6%) had higher suspicion than men (42.9%).

Table 1 shows that the majority were female, under 21 years of age, single, brown, had a paid job, with an income of up to one minimum wage, practiced some religion, and lived with someone. Regarding the association between the SRQ-20 classification and the sociodemographic profile, we found that only the variables "gender" (<0.001) and "marital status" (0.05) showed a statistically significant association. It is pointed out that women and singles had higher percentages of positive screening for CMT symptoms, as well as those with lower age, income, and who performed paid activities.

Table 2 shows that there was no significant statistical association between the variables: course, term, and academic performance index. The Law course showed the highest percentage of students with positive screening for CMT symptoms, as well as students with an academic performance index higher than eight.

Table 1 - Sociodemographic profile of students and the association between the Self-Reporting Questionnaire (SRQ-20) classification. Floriano, PI, Brazil, 2021

Variables	*Self-Reporting Questionnaire* (SRQ-20)				p-valor
	Negative		Positive		
	n=125	%	n=178	%	
Gender					
Female	73	58.4	139	78.1	**<0.001***
Male	52	41.6	39	21.9	
Age (years)					
Until 21	34	27.2	85	32.0	0.216*
22 to 25	55	44.0	36	47.8	
More than 25	36	28.8	11	20.2	
Marital status					
Married	19	15.2	11	6.2	**0.050†**
Single	95	76.0	152	85.4	
Divorced	1	0.8	3	1.7	
Stable union	10	8.0	12	6.7	
Race and/or color					
White	15	12.0	31	17.4	0.609†
Black	43	34.4	54	30.3	
Brown	64	51.2	89	50.0	
Yellow	3	2.4	4	2.2	
Paid activity					
Yes	81	64.8	123	69.1	0.432*
No	44	35.2	55	30.9	
Income					
Up to 1 minimum salary	50	61.7	83	67.5	0.399*
More than 1 minimum salary	31	38.3	40	32.5	
Practice any religion?					
Yes	103	82.4	133	74.7	0.113*
No	22	17.6	45	25.3	
What religion?					
Catholic	73	70.9	95	72.5	0.592†
Evangelical	27	26.2	35	26.7	
Spiritist	2	1.9	-	-	
Other	1	1.0	1	0.8	
Lives alone					
Yes	4	3.2	13	7.3	0.127*
No	121	96.8	165	92.7	

*p-value = Qui-square test; †p-value = Fisher's Exact Test

Table 2 - Association between the Self-Reporting Questionnaire (SRQ-20) classification and the students' school profile. Floriano, PI, Brazil, 2021

Variables	*Self-Reporting Questionnaire* (SRQ-20)				p-valor*
	Negative		Positive		
	n=125	%	n=178	%	
Course					
Administration	13	10.4	18	10.1	0.106
Life Sciences	2	1.6	12	6.7	
Computation	5	4.0	5	2.8	
Accounting	20	16.0	12	6.7	
Law	8	6.4	24	13.5	
Physical Education	13	10.4	19	10.7	
Nursing	15	12.0	15	8.4	
Geography	14	11.2	17	9.6	
History	8	6.4	15	8.4	
Letters/Portuguese	13	10.4	22	12.4	
Pedagogy	14	11.2	19	10.7	
Period					
1-3	40	32.0	61	34.3	0.724
4-7	57	45.6	74	41.6	
8-10	28	22.4	43	24.1	
Academic Performance Index					
< 7	1	0.8	3	1.7	0.696
7 to 8	34	28.1	54	31.0	
> 8	86	71.1	117	67.2	

*p-value = Fisher's Exact Test

Table 3 shows that the variables "health status in the past 12 months" (<0.001) and "regular physical activity" (<0.001) were significantly associated statistically. It is noteworthy that students who reported having a health status in the past 12 months neither bad nor good, as well as those who did not practice regular physical activity, showed higher percentages of positive screening for CMT symptomatology.

Table 4 shows that there was no significant statistical association between the variables. It can be seen that students who had fear of picking up COVID-19 had a higher percentage of positive screening for CMT symptomatology.

Table 5 shows the predominance of the symptom category anxious depressive mood, with 78.9% highlighting the complaint of feeling nervous, tense, or worried. As for the decrease in vital energy, 59.7% of the participants said they had difficulty making decisions, 58.7% had difficulties performing their daily activities with satisfaction, and 50.2% get tired easily. Regarding somatic symptoms, 45.5% stated that they sleep poorly. Regarding depressive thoughts, 48.5% stated that they have lost interest in things.

Table 3 - Association between the Self-Reporting Questionnaire (SRQ-20) classification and students' health status. Floriano, PI, Brazil, 2021

Variables	*Self-Reporting Questionnaire* (SRQ-20)				p-valor*
	Negative		Positive		
	n=125	%	n=178	%	
State of health in the last 12 months?					
Very bad	-	-	14	(7.9)	**<0.001**
Bad	4	(3.2)	41	(23.0)	
Neither bad/Nor good	28	(22.4)	69	(38.8)	
Good	69	(55.2)	50	(28.1)	
Very Good	24	(19.2)	4	(2.2)	
Any comorbidities or chronic diseases?					
Yes	20	(16.0)	26	(14.6)	0.739
No	105	(84.0)	152	(85.4)	
Exercise regularly?					
Yes	80	(64.0)	76	(42.7)	**<0.001**
No	45	(36.0)	102	(57.3)	

*p-value = Qui-square test

Table 4 - Classification of the Self-Reporting Questionnaire (SRQ-20) according to the data on COVID-19 of the students. Floriano, PI, Brazil, 2021

Variáveis	*Self-Reporting Questionnaire* (SRQ20)				p-valor
	Negative		Positive		
	n=125	%	n=178	%	
Are you afraid of catching COVID-19?					
Yes	101	(80.8)	154	(86.5)	0.180*
No	24	(19.2)	24	(13.5)	
Have you been diagnosed with COVID-19?					
Yes	39	(31.2)	43	(24.2)	0.174*
No	86	(68.8)	135	(75.8)	
Have you had any complications or sequelae?					
Yes	5	(4.0)	16	(9.0)	0.092*
No	120	(96.0)	162	(91.0)	
Have you had COVID-19 reinfection?					
Yes	4	(3.2)	1	(0.6)	0.164†
No	121	(96.8)	177	(99.4)	

*p-value = Qui-square test; †p-value = Fisher's exact test

Table 5 - Data from the Self-Reporting Questionnaire (SRQ-20). Floriano, PI, Brazil, 2021

Variables	*Self-Reporting Questionnaire* (SRQ-20)			
	Yes		No	
	n	%	n	%
Factor I - Anxious depressive mood				
Feel nervous, tense, or worried?	239	78.9	64	21.1
Are you easily frightened?	147	48.5	156	51.5
Have you been feeling sad lately?	176	58.1	127	41.9
Have you been crying more than usual?	96	31.7	207	68.3
Factor II - Decreased vital energy				
Do you get tired easily?	152	50.2	151	49.8
Do you have trouble making decisions?	181	59.7	122	40.3
Do you find it difficult to carry out your daily activities with satisfaction?	178	58.7	125	41.5
Do you have difficulty thinking clearly?	114	37.6	189	62.4
Do you have difficulties at work (is your work hard, does it cause you suffering?)	45	14.9	258	85.1
Do you feel tired all the time?	149	49.2	154	50.8
Factor III - Somatic symptoms				
Do you have unpleasant sensations in your stomach?	115	38.0	188	62.0
Do you have a lack of appetite?	81	26.7	222	73.3
Do you have frequent headaches?	135	44.5	168	55.5
Do you sleep poorly?	138	45.5	165	54.5
Do you have poor digestion?	96	31.7	207	68.3
Do you have tremors in your hands?	80	26.4	223	73.6
Factor IV - Depressive thoughts				
Have you lost interest in things?	147	48.5	156	51.5
Are you unable to play a useful role in your life?	61	20.1	242	79.9
Do you feel like a worthless, useless person?	75	24.8	228	75.2
Have you had thoughts of ending your life?	31	10.2	272	89.8

Discussion

The prevalence of CMT suspicion found was higher than that found in studies in other settings[3-4,10-11]. It is noteworthy that this may have occurred because the data were collected during the pandemic of COVID-19, and thus were interpreted as an adaptive response[12]. For it is known that at the onset of emergency events, such as a pandemic, the mental health of students is affected since fear is an instinctive and basic response for humans[13].

A higher predominance of CMT symptoms was observed in female, young, and single individuals, which corroborates other studies[3,14]. American research points out that being female and younger, as well as having other characteristics were risk factors for higher levels of psychological impact during the pandemic among college students[6]. It is noteworthy that there was a significant statistical difference in the variables of gender and marital status.

The predominance of women in the cases of suspicion of CMT, when compared to men, also resembles

other studies[14-17]. Women have a greater predisposition to the development of emotional disorders, because they work a multi-job day[15], as well as due to hormonal influences, neuronal aspects related to mood and anxiety that are different between males and females, gender-related stressful aspects[10,15], besides the multiple roles played by women, which makes it difficult to reconcile between academic, domestic and work tasks[10].

In this study, young people were more prevalent among the suspects for CMT, which corroborates with other surveys[3,14]. Young academics are more vulnerable to CMT because they live a time of transitions and demands during college life, between professionalizing cycle and work[3]. Regarding marital status, national studies found similar data, in which most individuals suspected of having CMT were single[14,17]. The fact of not having a partner was also found as a risk factor for psychological distress in an integrative review study[18].

The brown race was highlighted in this study as to the suspicion of symptoms of CMT, a fact that is in agreement with the research composed of 115 medical students from Bahia[15]. Moreover, this finding is similar to another national study, which showed a higher prevalence in black and brown people than in white people[19].

Regarding paid work, the findings are similar to a study developed with Nursing students, in which 78.7% of students who had paid work showed positive screening for CMT[3]. The loss in quality of life and mental health of students who have professional activity is related to the fact of an overloaded routine, which impairs rest and leisure activities[10].

Students with low income showed greater suspicion of CMT in this study, a finding found in another research[20]. The existence of adverse socioeconomic conditions can contribute to psychological suffering, especially when associated with gender discrimination[18].

Living with parents represents an important tool in the protective support network[21]. Although most students in this study stated that they did not live alone, a greater suspicion of CMT was observed in this population. This may be related to the university routine, which can cause illness due to a set of factors[17].

The Law course had a significant value for positive CMT, as well as a survey conducted with college students, in which the majority (16.4%) with suspicion for CMT was from this course[17]. It is noteworthy that there are few studies with students outside the health context, which makes comparison difficult, as well as the need to conduct such studies, given the high rates of students from other areas[17].

As for students in the intermediate periods of the courses, we observed a higher predominance of positive screening for CMT. In research with 88 nursing students, there was a higher suspicion of CMT among seventh and third-period students, respectively[10]. A study highlights that the correlation between depressive symptoms and the course period is controversial in the literature[22].

Students with an Academic Performance Index (ARI) higher than eight showed greater suspicion for CMT compared to the others. It is believed that this may be related to the fact that students with better ARI are more dedicated to academic activities and, therefore, have reduced time for leisure, which acts as a protective factor, consequently, in emotional damage, fatigue, and sleep disturbances[17]. Furthermore, the pressures constantly demanded from the students during college life lead them to compete for perfect grades and résumés, generating physical and mental exhaustion, not to mention that many works to ensure their livelihoods, being overloaded[23].

The variables, health status in the last 12 months and practice of physical exercises regularly, showed statistically significant differences. It is noteworthy that most students did not assess their health status well, showing greater suspicion for CMT. In research with primary care workers, an association between CMT and quality of life was observed, in which the health status, regular, bad, and very bad, was predominant[24].

Students who did not practice any physical activity had a higher suspicion of CMT. Although no statistical relationship was found between habitual Physical Activity Level (PAL) and CMT, a study states that inactive students were more likely to be associated with CMT[25]. The absence of physical activity is considered a risk factor for CMT since regular physical activity can reduce stress levels and thus protect the health of individuals[18].

The participants in this research stated that they were afraid of contracting COVID-19, as well as research with Medical students, which can cause implications for mental illness[14]. The significant fear among university students may explain the increased levels of anxiety, and stress in healthy people, and the exacerbation of symptoms in those with pre-existing psychiatric disorders during the pandemic[26].

Considering the verification of the most prevalent symptoms and signs of CMT, it is possible to notice, in factor I - anxious depressive mood, the predominance of the fact that students feel anxious, tense, or worried, corroborating findings from other studies[3,11]. Such aspects may impact the student's life, considering that higher levels of anxiety can lead to cognitive impairment, such as reduced attention, memory, concentration, and reasoning, which ends up causing impairment in overall performance[22].

Regarding factor II, about a decrease in vital energy, students most often reported difficulties in making decisions, as well as difficulty to perform their activities

with satisfaction and fatigue easily, which corroborates a study conducted in another context[3].

As for factor III, about somatization, students reported sleeping poorly and having frequent headaches as the most frequent answers. These data are similar to a cross-sectional study with 130 residents of a university hospital in Rio de Janeiro[11]. Similar results regarding the predominance of somatic symptoms were scored by scholars, who highlighted that bad sleep and headaches are three times more likely to be associated with CMT, because they are influential symptoms that compromise health, besides contributing negatively to the appearance of tensions, emotional and physical health problems[3].

Regarding factor IV, about depressive thoughts, the students most often reported having lost interest in things, which is in line with results found in a survey of 130 residents of a university in Rio de Janeiro[11].

The limitations of this study are related to the difficulty of collecting data during the pandemic period since it was not possible to have face-to-face contact with the study participants, which may have compromised the information mentioned.

Conclusion

The pandemic of COVID-19 has been substantially affecting the mental health of college students. Female students, single, with self-reported health status as neither good/bad, bad and very bad, and those who did not practice physical exercises regularly were determinant for the development and intensification of stress, and symptoms of anxiety, depression, anguish, and loneliness, i.e., presented a higher predominance of suspicion for CMT.

The results reinforce the need for humanized mental health care, as well as the creation of strategies and integral lines of care aimed at health promotion and adequate coping with the current context in which they live and minimizing the psychosocial impacts caused by the pandemic COVID-19 in this population segment.

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