







Common mental disorders in nursing students during the COVID-19 pandemic and associated factors: a cross-sectional study

Transtornos mentais comuns em estudantes de enfermagem durante a pandemia de COVID-19 e fatores associados: estudo transversal

Trastornos mentales comunes en estudiantes de enfermería durante la pandemia de COVID-19 y factores asociados: estudio transversal

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ABSTRACT

Objective: to estimate the suspicion of Common Mental Disorders (CMD) in nursing students during the COVID-19 pandemic and identify associated factors. **Methods:** an analytical cross-sectional study was carried out between September and December 2021 with a probabilistic sample of 102 undergraduate nursing students from a public university in southern Brazil. A questionnaire was applied containing variables related to sociodemographic characteristics, perceptions about health, COVID-19, social distancing and the Self-Reporting Questionnaire. For analysis, chi-square test and Fisher's exact test were used (p -value < 0.05). **Results:** a prevalence of 64.71% was identified for suspicion of CMD, which was associated with: belonging to the group of lesbian, gay, bisexual, transgender, queer, intersex, asexual, pansexual or other variables of gender identity and/or sexual orientation ($p = 0.002$); having a family member or close person who developed the severe form of COVID-19 ($p = 0.020$); and considering that social distancing had impacts on friendships, relationships and other social interactions ($p = 0.049$). **Conclusion:** during the COVID-19 pandemic, a significant number of students were suspected of having CMD associated with the social and family impacts of the pandemic, but also with gender diversity and/or sexual orientation.

Descriptors: COVID-19; Nursing; Mental Health; Students; Pandemics.

RESUMO

Objetivo: estimar a suspeição de Transtornos Mentais Comuns (TMC) entre estudantes de enfermagem durante a pandemia de COVID-19 e identificar fatores associados. **Métodos:** estudo transversal analítico realizado entre setembro e dezembro de 2021 com uma amostra probabilística de 102 estudantes de graduação em Enfermagem de uma universidade pública do Sul do Brasil. Um questionário foi aplicado contendo variáveis relativas a características sociodemográficas, percepções sobre saúde, COVID-19, distanciamento social e o *Self Report Questionnaire*. Para análise, foram utilizados testes qui-quadrado e exato de Fisher (valor de $p < 0,05$). **Resultados:** identificou-se prevalência de 64,71% para a suspeição de TMC, que se mostrou associada a: pertencer ao grupo de lésbicas, gays, bissexuais, transgêneros, queer, intersexo, assexuais, pansexuais ou outras variabilidades de identidade de gênero e/ou orientação sexual ($p = 0,002$); ter familiar ou pessoa próxima que desenvolveu a forma grave da COVID-19 ($p = 0,020$); e considerar que o distanciamento social teve impactos nas amizades, relacionamentos e demais interações sociais ($p = 0,049$). **Conclusão:** durante a pandemia de COVID-19, parte importante dos estudantes apresentou suspeição de TMC, associada aos impactos sociais e familiares da pandemia,

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mas também à diversidade de gênero e/ou orientação sexual.

Descritores: COVID-19; Enfermagem; Saúde Mental; Estudantes; Pandemias.

RESUMEN

Objetivo: estimar la sospecha de Trastornos Mentales Comunes (TMC) entre estudiantes de enfermería durante la pandemia de COVID-19 e identificar factores asociados. **Métodos:** estudio analítico transversal realizado entre septiembre y diciembre de 2021 con una muestra probabilística de 102 estudiantes de pregrado en enfermería de una universidad pública del sur de Brasil. Se aplicó un cuestionario que contenía variables relacionadas con características sociodemográficas, percepciones sobre salud, COVID-19, distanciamiento social y el Self-Reporting Questionnaire. Para el análisis se utilizaron las pruebas de chi-cuadrado y exacta de Fisher (valor de $p < 0,05$). **Resultados:** se identificó una prevalencia del 64,71% por sospecha de TMC, la cual se asoció con: pertenecer al grupo de lesbianas, gays, bisexuales, transgénero, queer, intersexuales, asexuales, pansexuales u otras variables de identidad de género y/u orientación sexual ($p = 0,002$); tener un familiar o persona cercana que desarrolló una forma grave de COVID-19 ($p = 0,020$); y considerar que el distanciamiento social tuvo impactos en las amistades, relaciones y otras interacciones sociales ($p = 0,049$). **Conclusión:** durante la pandemia de COVID-19, un número importante de estudiantes sospechó de TMC, asociado a los impactos sociales y familiares de la pandemia, pero también a la diversidad de género y/u orientación sexual.

Descritores: COVID-19; Enfermería; Salud Mental; Estudantes; Pandemias.

INTRODUCTION

A global public health crisis occurred in 2019, triggered by the spread of the new coronavirus 2019, which causes severe acute respiratory syndrome, also known as coronavirus disease 2019 (COVID-19). Despite presenting in a mild form in most cases, people belonging to risk groups (such as older adults, those with chronic non-communicable diseases and respiratory diseases) have developed acute respiratory distress syndrome (ARDS) and multiple organ dysfunction (with emphasis on the lung), considered the severe form of the disease, responsible for important morbidity and mortality rates⁽¹⁾.

The impact of the pandemic on populations' daily routine and psychological state has been studied in different contexts. At universities, students had their academic activities adapted to online modality⁽²⁾. Many needed to move, rearrange their lives and give up contact and socializing with their peers. Unexpected isolation and unconventional learning methods have highlighted the implications of the pandemic on undergraduate students' mental health^(2,3).

It is known that this group was vulnerable to depressive symptoms and mood changes due to the pandemic⁽⁴⁾. National and international studies have highlighted the impact of the COVID-19 pandemic on mental health in different countries around the world, with emphasis on the increased incidence of depression, stress, anxiety, loneliness, insomnia, grief, anger and panic^(2,4,5). Furthermore, research revealed that the impact of the pandemic on high school students' mental health in general was felt more intensely by women, those belong-

ing to racial and ethnic minorities, with lower socioeconomic status⁽⁶⁾ and among undergraduate students. Approximately half of those belonging to lesbians, gays, bisexuals, transsexuals, queer, intersex, asexuals and other groups (LGBTQIA+)⁽⁷⁾ had compromised mental health during social isolation, which indicates the importance of individual factors in the way students experience the pandemic.

It is also known that in the health crisis dynamics, often living and acting at the center of these events, students were subject to psychosocial risks. Regarding mental illness linked to the pandemic period, Common Mental Disorders (CMD) stand out, which are characterized by a group of non-psychotic symptoms recognized as depressive mood, anxiety, insomnia, fatigue, irritability, memory deficits and focus, which result in mental illness⁽⁸⁻¹⁰⁾. This set of symptoms has been identified among undergraduate students^(11,12), specifically nursing students^(13,14), which highlights the relevance of this object of study in this population.

The health crisis caused by COVID-19 has highlighted the role of nursing in different media. The pandemic mobilized nursing students to reflect on the tensions involving the working conditions of their category, their ethical, scientific and humanistic commitment in public health crises. Added to this, a significant part of them joined the fight against the pandemic during times of greatest saturation of health services⁽¹⁵⁾. This suggests that these students experienced the events that occurred during the pandemic intensely.

An international literature review study analyzed 205 articles that investigated undergraduate students' mental health in general during the pandemic between

2020 and 2021, and highlighted the high prevalence of mental symptoms in this population, in addition to identifying a set of associated factors (personal, including demographic and gender issues; social, including family and relationship networks; and linked to the pandemic context, such as changes in their life and in academic dynamics). It was observed that 48.7% of these publications referred to research conducted in Asia (Middle East and Far East). An important contingent of published research (46.3%) was concentrated in Europe and North America (46.3%). Africa was the setting for 8% of studies. Oceania and South America (including Brazil) were the setting for only 1.5%⁽¹⁶⁾ of publications.

This expresses a lack of evidence related to the Latin American context, whose economic, social, political and cultural particularities can influence health and mental indicators and associated factors.

Thus, the relevance of this study is justified due to the need to recognize the interface that was established between the COVID-19 pandemic and undergraduate nursing students' mental health. It is known that the suffering experienced by them throughout this period can range from negative feelings, such as worry and fear, to illnesses such as depression, anxiety disorders, somatization and eating disorders⁽¹⁷⁾.

In addition to actions that prevent university dropouts, promote equity in access to education and ensure the quality of the learning process, the university must also pay attention to students' mental health, and, in this regard, the survey of indicators is important to analyze each reality and establish actions that will continue in the post-pandemic period.

Bearing these reflections in mind, this study was based on the following questions: what is the prevalence of suspected CMD in nursing students during the COVID-19 pandemic? What factors are related to these symptoms?

In this regard, the research aimed to estimate suspected CMD in nursing students during the COVID-19 pandemic and identify associated factors.

METHODS

This is an analytical cross-sectional study, the setting of which was a full-time Undergraduate Nursing Course at a federal public Higher Education Institution located in the state of Rio Grande do Sul, Brazil.

The study population was made up of students from the aforementioned course. Students regularly enrolled in the course and who studied at least one subject from March 2020 to December 2021 (criteria that defined students with university experience during the acute

phases of the pandemic) were included. Students who were completely suspended from the course during the data collection period or who were part of research team were excluded.

In December 2021, 22,138,247 cases and 615,570 deaths from COVID-19 were confirmed in Brazil. The largest record of new case notifications in a single day (150,106 cases) occurred on September 18, 2021. At the same time, the data collection period was accompanied by progress in vaccination. By the first week of December 2021, approximately 91% of the target population (around 176.4 million people) had received at least one vaccine dose⁽¹⁸⁾.

Data was collected between September and December 2021. During this period, 209 students were enrolled in the course; ten were in a total lockdown situation; and nine were part of the research team. Therefore, 190 students made up the eligible population.

The sample was estimated based on the sample calculation for prevalence research in a finite population. Considering a population of 190 students, with 50% estimated frequency of CMD, 95% confidence level, 6% margin of error, effect design and cluster 1, a minimum number of 93 participants was estimated.

All students who met the eligibility criteria were invited.

Data collection was carried out online in compliance with the social distancing measures in force at the time. Data were collected through a questionnaire prepared by the researchers, structured into three parts. The first part contained variables relating to student sociodemographic characterization. The second contained questions focused on perceptions regarding health, COVID-19 and social distancing. Finally, the third referred to investigation into suspected CMD.

Suspicion of CMD was investigated using the Self-Reporting Questionnaire (SRQ-20)⁽¹⁹⁾. It is an instrument composed of 20 questions for tracking/screening non-psychotic mental disorders, also known as CMD. The answers to the questions are dichotomized into "yes" or "no", with "yes" scoring one point and "no" not scoring. People who score seven or more are considered to have symptoms suggestive of CMD⁽¹⁹⁾. The symptoms assessed are of a non-psychotic nature, such as insomnia, fatigue, irritability, forgetfulness, difficulty concentrating and somatic complaints.

The questionnaire was created using Google Forms (G Suite® tool, 2018, Google Corp, United States of America). The header summarized the study objectives and eligibility criteria. Subsequently, the Informed Consent was available. By signing their consent, participants were able to access the questionnaire. After completing

all the questions, students could view their answers and confirm them, automatically sending them to the research team.

Data collection was systematized based on a list of names and e-mails provided by the course Coordination. The link to access the questionnaires was made available via individual e-mail to each student who met the eligibility criteria. The emails were forwarded every 15 days systematically between September and December 2021.

The research was also widely publicized on social networks and through messaging applications, with the help of research team. Data were collected by scientific initiation scholarship holders from the Undergraduate Nursing Course, previously trained and supervised by one of the researchers.

The database was automatically generated by Google Forms in a Microsoft Excel spreadsheet (version 2019, Microsoft, United States of America), which was exported to Stata software (version 16.0, StataCorp LLC, United States of America). In this study, the Google Forms tool only allowed participants to send the questionnaire if all variables were filled in; therefore, it was not necessary to deal with missing data.

The data processing and descriptive analysis procedures were carried out by characterization of sociodemographic information as well as health aspects, occurrence of COVID-19 and adherence to social distancing. For qualitative variables, gross and percentage distributions were calculated. For quantitative variables, position measurements (mean and median) and dispersion (standard deviation, interquartile range, minimum and maximum) were calculated. Answers to the SRQ-20 were analyzed considering a cut-off point of 7 points to determine suspicion of CMD⁽¹⁹⁾.

Chi-square test and Fisher's exact test were used to verify the association between suspected CMD (dependent variable) in the studied sample and sociodemographic, health, COVID-19 and social distancing characteristics (independent variables). For associations, a p -value < 0.05 was considered.

The results of this study, duly preserving participants' identity, were shared with the academic community, the Course Board and the institution's Pedagogical Support Center. This research met the ethical precepts established in Resolutions numbers 466, of 12 December of 2012, and 510, of 04 April of 2016, both resolution of the Brazilian National Health Council. The study was registered on *Plataforma Brasil* and approved by the Research Ethics Committee (Certificate of Presentation for Ethical Consideration - in Portuguese, *Certificado*

de Apresentação de Apreciação Ética - CAAE) number 50339521.6.0000.5346).

RESULTS

This study included 102 undergraduate nursing students. Of these, 85.3% ($n = 87$) self-declared female; 14.7% ($n = 15$) self-declared male; 57.8% ($n = 59$) were up to 21 years old; and 42.2% ($n = 43$) were 22 years old or older. Regarding color/race, 79.4% ($n = 81$) self-declared white; 16.8% ($n = 17$) self-declared brown; 2% ($n = 2$) self-declared black; and 2% ($n = 2$) self-declared yellow. Regarding the stage of the course they were in, 58.8% ($n = 60$) reported being between the first and fourth semester; 24.5% ($n = 25$) reported being between the eighth and tenth semester; and 16.6% ($n=17$) reported being between the fifth and seventh semester.

With regard to socio-affective relationships, 58.8% ($n = 60$) reported being single; 25.5% ($n = 26$) reported having a partner and living separately; and 15.7% ($n = 16$) reported having a partner and living together. The majority of the studied sample, 61.8% ($n = 63$), reported that they lived with their parents; 12.7% ($n = 13$) reported living with colleagues or friends; 10.8% ($n = 11$) reported living with a spouse; 7.8% ($n = 8$) reported living alone; 6.9% ($n = 7$) reported living with other people. It was also evident that 19.6% ($n = 20$) reported being LGBTQIAP+ (lesbian, gay, bisexual, transgender, queer, intersex, asexual, pansexual and other variables of gender identity and/or sexual orientation); 6.9% ($n = 7$) reported being not sure about this.

During the pandemic, 52.9% ($n = 54$) reported that they needed to do some paid work; of this portion, 63% ($n = 34$) indicated that the search for a job was a consequence of the pandemic. A portion of the studied sample, 13.7% ($n = 14$), reported having children or family members dependent on care; among these, 61.4% ($n = 8$) indicated that they had help from other people for care, but felt overloaded.

CMD was suspected in 64.71% of participants. According to Table 1, the SRQ-20 items most frequently present were feelings of nervousness, tension or worry (88.2%), feeling tired easily (71.6%) and difficulty enjoying daily activities (67.65%).

Among the sociodemographic characteristics included in the analysis (Table 2), identification with the LGBTQIAP+ community was associated ($p = 0.002$) with suspicion of CMD in the period studied.

Furthermore, associations were sought between suspected CMD and variables related to health, COVID-19 and social distancing. Table 3 shows associations between suspected CMD and: having a family

Table 1 - Characterization of answers obtained in the Self-Reporting Questionnaire (SRQ-20) in undergraduate nursing students (n = 102), Palmeira das Missões, Rio Grande do Sul, Brazil, 2021

Itens	Yes		No	
	f*	%	f*	%
Do you often have headaches?	59	57.84	43	42.16
Is your appetite poor?	26	25.49	76	74.51
Do you sleep badly?	61	59.80	41	40.20
Are you easily frightened?	39	38.24	63	61.76
Do your hands shake?	25	24.51	77	75.49
Do you feel nervous, tense or worried?	90	88.24	12	11.76
Is your digestion poor?	32	31.37	70	68.63
Do you have trouble thinking clearly?	52	50.98	50	49.02
Do you feel unhappy?	65	63.73	37	36.27
Do you cry more than usual?	48	47.06	54	52.94
Do you find it difficult to enjoy your daily activities?	69	67.65	33	32.35
Do you find it difficult to make decisions?	61	59.80	41	40.20
Do you have difficult at work (your work is painful; it causes you suffering)?	13	12.75	89	87.25
Are you unable to play a useful part in life?	17	16.67	85	83.33
Have you lost interest in things?	64	62.75	38	37.25
Do you feel like a useless person, a worthless person?	30	29.41	72	70.59
Has the thought of ending your life been on your mind?	4	3.92	98	96.08
Do you feel tired all the time?	56	54.90	46	45.10
Are you easily tired?	73	71.57	29	28.43
Do you have uncomfortable feelings in your stomach?	38	37.25	64	62.75

Note: *f = frequency.

Table 2 - Association between sociodemographic characteristics and suspicion of CMD among undergraduate nursing students (n = 102), Palmeira das Missões, Rio Grande do Sul, Brazil, 2021

Variables	Common Mental Disorders				p-value
	Present		Absent		
	n*	%	n*	%	
Continue...					
Sex					
Female	59	67.82	28	32.18	0.113 ^a
Male	7	46.67	8	53.33	
Age group					
Up to 21 years	40	67.80	19	32.20	0.444 ^a
22 years or older	26	60.47	17	39.53	
Part of LBGTQIAP+** community					
Yes	18	90.00	2	10.00	0.002 ^b
No	41	54.67	34	45.33	
Not sure	7	100.00	0	0	
Race/color					
White	52	64.20	29	35.80	0.485 ^b
Brown	10	58.82	7	41.18	
Yellow	2	100.00	0	0	
Black	2	100.00	0	0	

Table 2 - Association between sociodemographic characteristics and suspicion of CMD among undergraduate nursing students (n = 102), Palmeira das Missões, Rio Grande do Sul, Brazil, 2021

Conclusion.

Variables	Common Mental Disorders				p-value
	Present		Absent		
	n*	%	n*	%	
Affective relationship					
Single	36	60.00	24	40.00	0.134 ^a
With partner, living separately	21	80.77	5	19.23	
With partner, living together	9	56.25	7	43.75	
Undergraduate course semester					
Between the 2nd and 4th	40	66.67	20	33.33	0.535 ^a
Between the 5th and 7th	9	52.94	8	47.06	
Between the 8th and 10th	17	68.00	8	32.00	
Developed some type of paid work during the pandemic					
Yes	36	66.67	18	33.33	0.660 ^a
No	30	62.50	18	37.50	
Paid work was a consequence of the pandemic					
Yes, job search was a consequence of the pandemic	23	67.65	11	32.35	0.843 ^a
No, job search was not a consequence of the pandemic	13	65.00	7	35.00	
Who they are currently living with					
Parents	44	69.84	19	30.16	0.674 ^a
Colleagues/friends	7	53.85	6	46.15	
Spouse	7	63.64	4	36.36	
Alone	4	50.00	4	50.00	
With other people	4	57.14	3	42.86	
Children or family members who are dependent on care					
Yes	9	64.29	5	35.71	0.972 ^a
No	57	64.77	31	35.23	
Have help from other people to care for their child(ren) or family members dependent on care					
Yes, but even with help there is a feeling of overload	5	62.50	3	37.50	0.123 ^b
Yes, there are people who care for them	4	100.00	0	0	
No help from other people	0	0	1	100.00	

Note: *sample; **lesbian, gay, bisexual, transsexual, queer, intersex, asexual, pansexual and others; ^aChi-square test; ^bFisher's exact test.**Table 3** - Association between health aspects, COVID-19 and social distancing with suspicion of CMD in undergraduate nursing students (n = 102), Palmeira das Missões, Rio Grande do Sul, Brazil, 2021

Continue...

Variables	Common Mental Disorders				p-value
	Present		Absent		
	n*	%	n*	%	
Belong to a risk group for COVID-19**					
Yes	8	80.00	2	20.00	0.287 ^a
No	58	63.04	34	36.96	
Had COVID-19					
Yes	23	71.88	9	28.13	0.306 ^a
No	43	61.43	27	38.57	

Table 3 - Association between health aspects, COVID-19 and social distancing with suspicion of CMD in undergraduate nursing students (n = 102), Palmeira das Missões, Rio Grande do Sul, Brazil, 2021

Conclusion.

Variables	Common Mental Disorders				p-value
	Present		Absent		
	n*	%	n*	%	
Had a family member or close person who developed a severe form of COVID-19					
Yes	30	78.95	8	21.05	0.020 ^a
No	36	56.25	28	43.75	
Had a family member or close person who died from COVID-19					
Yes	23	76.67	7	23.33	0.103 ^a
No	43	59.72	29	40.28	
Family income affected by the pandemic					
Family income was not affected by COVID-19	23	56.10	18	43.90	0.329 ^a
Family income was very affected by COVID-19	12	70.59	5	29.41	
Family income affected by COVID-19 at times	31	70.45	13	29.55	
Complied with social distancing measures throughout the pandemic					
Yes, all the time or most of the time	38	61.29	24	38.71	0.070 ^b
Sometimes yes, sometimes no	28	73.68	10	26.32	
Did not comply with social distancing measures	0	0	2	100.0	
Complied with precautions such as wearing a mask, hand hygiene, supermarket shopping hygiene					
Yes, all the time or most of the time	53	63.10	31	36.90	0.462 ^a
Sometimes yes, sometimes no	13	72.22	5	27.78	
Impacts of social distancing on friendships, relationships and other social interactions with family and friends					
Some impacts on friendships, relationships and other social interactions	39	61.90	24	38.10	0.049 ^a
Strong negative impacts on friendships, relationships and other social interactions	20	83.33	4	16.67	
Had little or no impact on friendships, relationships and other social interactions	7	46.67	8	53.33	
Assessment of the impacts of the pandemic on life in general					
Moderate impacts on my life in general	38	61.29	24	38.71	0.093 ^b
Strong negative impacts on my life in general	27	75.00	9	25.00	
Had little or no impact on my life in general	1	25.00	3	75.00	
Current use of medications or other substances that were not used before the pandemic					
Do not use medications that were not used before the pandemic	42	56.76	32	43.24	0.116 ^b
Yes. Psychoactive drugs (anxiolytics, antidepressants, among others)	9	90.00	1	10.00	
Yes. Analgesics, antipyretics and/or anti-inflammatories	6	85.71	1	14.29	
Yes. Herbal medicines and natural medicines	6	85.71	1	14.29	
Yes. Legal and/or illegal substances	2	100.00	0	0	
Yes. Two or more classes of the medications mentioned above	1	50.00	1	50.00	

Note: *sample; **coronavirus disease 2019; ^aChi-square test; ^bFisher's exact test.

member or close person who developed the severe form of COVID-19 ($p = 0.020$); and considering that social distancing had impacts on their friendships, relationships and other social interactions with family members and friends ($p = 0.049$).

DISCUSSION

Suspicion of CMD was 64.71% in the studied sample. Similar research, which also adopted the SRQ-20 as an instrument during the pandemic period, reveals suspicion of 39.70% among medical students⁽²⁰⁾ and 58.50% among students from different higher education courses⁽¹¹⁾. Even before the pandemic period, a

study already indicated that suspected CMD among Brazilian undergraduate students was significant when compared to the international stage⁽¹²⁾.

Specifically regarding the nursing course in the non-pandemic period, studies showed suspicion between 43.50 and 56.90%^(13,14,21,22). Among health students, nursing students are more likely to suspected CMD⁽¹³⁾. Among different higher education courses, nursing had the second highest rate of suspicion of CMD⁽¹⁴⁾. Therefore, the prevalence found in this study can be considered high when compared to other similar studies.

According to the results obtained, during the pandemic period, the most frequently mentioned feelings were nervousness, tension or worry, tiredness easily and difficulty in enjoying daily activities. These data are similar to those found in research conducted with undergraduate students, in which, when faced with suspicion of CMD, nervousness, tension or worry, tiredness easily, feeling tired all the time and difficulty in making decisions stood out⁽¹¹⁾.

The effects of the pandemic in nursing students were the tendency for increased anxiety, depression, stress, loneliness and social isolation⁽²³⁻²⁵⁾. Some risk factors for psychological symptoms identified were impaired financial situation, satisfaction with life, being exacerbated by changes in daily life and fear of disease⁽²⁶⁾. Regarding the way of learning, stress and concerns were demonstrated with the suspension of clinical activities, distance learning, performance and academic progression^(27,28), which contributes to an understanding of the findings of this study.

The results showed that there was an association between suspected CMD and identifying as part of the LGBTQIAP+ group ($p = 0.002$). A study carried out with undergraduate students showed the association between CMD and sexual orientation, because those declared homosexuals were associated with psychological illness⁽¹⁴⁾.

It is considered that people who experience diversity of gender and/or sexual orientation may have worse mental and physical health outcomes compared to the heterosexual and cisgender population. There are social barriers that increase these inequities (such as discriminatory and exclusion experiences)⁽²⁹⁾, a fact that makes this an important variable in this study.

It is important to point out that identifying as part of the LGBTQIAP+ group in itself signals a vulnerability factor for mental illness in undergraduate students that goes beyond the pandemic issue. In other words, it should be discussed as a variable that influenced students' mental health before COVID-19. A study carried

out with nursing and medical students who identified themselves as part of this group revealed that they experienced a set of challenges related to their sexual and/or gender diversity: 40% identified the existence of prejudices in the academic setting. As a consequence, 20% of the sample studied had already considered dropping out of the course due to challenges related to their gender identity and/or sexual orientation⁽³⁰⁾.

This reinforces the relevance of issues of gender identity and sexual orientation for the young population, and makes it possible to discuss the impact of the pandemic on the lives of students who identify as part of this group or who are in the process of identification. In addition to the elements already described, it is suggested that perhaps social distancing, suspension of on-site teaching and the consequent return of these young people to their maternal homes may have caused a discontinuity in their affective-sexual relationships and lifestyle habits and social expression.

A systematic literature review was carried out on the LGBTQIAP+ population's mental health during the COVID-19 pandemic. The results suggested that financial losses, social isolation and family seclusion worsened this group's mental health, as they were not always accepted in their families, in addition to having lost part of contact with their support group. In some cases, domestic confinement increased their exposure to intrafamily violence⁽³¹⁾. Therefore, in addition to the difficulties historically faced by this population, it can be considered that the pandemic period worsened their vulnerabilities.

Furthermore, there was an association between suspicion of CMD and the "had a family member or close person who developed the severe form of COVID-19" variable. A reflection study considered that the COVID-19 outbreak was accompanied by what was called an "epidemic of fear". During the health crisis, there was great media mobilization about morbidity and mortality due to the disease accompanied by contradictory and imprecise guidelines. Information speed and overload, which weakened the understanding of virus severity and control, generated a climate of insecurity and instability, worsening the population's anxiety and fear^(32,33). It can be considered that this context had a negative impact on the experience of people who went through the serious illness of loved ones.

A literature review study showed that the serious illness and death of people due to COVID-19 had social and mental health repercussions on their families. In these experiences, there is a feeling of pain by the family because family member suffered alone (as patients with COVID-19 lost possibilities of contact with their loved

ones). There were also feelings of guilt and injustice due to the unavailability of effective treatments. People who had the experience of having a family member seriously ill or who died from the disease were more predisposed to mental illness⁽³⁴⁾.

Finally, an association was identified between suspicion of CMD and considering that social distancing had an impact on their friendships, relationships and other social interactions with family and friends. Young adults, in particular, are at a stage of life marked by the construction of autonomy and identity, which is mediated by deep relationships established with other people⁽²⁾.

A study carried out with North American undergraduate students found that around 70 to 80% had their social activities affected during the COVID-19 pandemic, suffering from separation from family and friends, cancellation of celebrations and inability to practice hobbies. The same research showed an increase in conflicts with adults at home, resulting from the increase in time spent together and which could cause or worsen mental disorders⁽⁵⁾.

Considering the social impacts of social distancing and its repercussions on people's health, it is assumed that a challenge for the moment and for the near future will be the promotion of psycho-emotional care measures for the different population groups that have experienced this phenomenon and that will carry, in the post-pandemic period, memories of the adversity, fear and loneliness of the pandemic period⁽³³⁾. These actions to promote mental health and mitigate damage must be sectorized, i.e., focused on characteristics of specific groups. In the case of nursing students, they must take into account the factors associated with their illness, including those presented in this study.

It is suggested that this be promoted, in undergraduate nursing courses, through some devices that seek to involve students in: activities that make them feel welcomed and cared for by the teaching staff and research groups; extension projects, which facilitate their integration into the community and, therefore, strengthen their links with the course; and research projects, which seek to delve deeper into the topic of students' mental health, expanding understanding of associated factors and intervention possibilities.

The role of research groups is reinforced, which, in addition to being devices for science and knowledge production, are places for students to interact with master's students, doctoral students and professors. There must be investment so that these spaces are fraternal, accessible, welcoming, producing bonds, support and opportunities. The availability of spaces that have this

profile at the university will enable students to circulate in more humanized spaces, where academic growth is accompanied by mental health.

This study had the limitation of not exploring variables related to family information about participants' sexual orientation and acceptance of this condition, which could contribute to better understanding suspicion of CMD in this group. Furthermore, the fact that the research took place online may have made it difficult for students with limited internet access to participate. Although the contingent obtained was within the estimated sample size, it is possible that a larger number of participants would have made other statistical analyzes possible. Furthermore, it is important to point out that cross-sectional studies (especially when they employ bivariate statistical analyses) are limited to suggesting associations between variables, which must be considered based on the local context in which they were produced.

In addition to this, it should be noted that the discussion of this study was conducted by approximating the results with similar populations, but with specific characteristics, such as students from other courses, from other countries or from the pre-pandemic period. This must be taken into consideration when interpreting the findings. Finally, it must be considered that the cross-sectional design does not make it possible to determine cause and effect relationships among variables.

Despite these limitations, it is noteworthy that the study contributes to the visibility of the magnitude of the occurrence of suspected CMD in nursing students during the pandemic and the understanding of some specificities of this group.

CONCLUSION

Suspected CMD in nursing students during the COVID-19 pandemic was 64.71%, considered high when compared to other studies carried out in the pre-pandemic and pandemic period. The feelings most mentioned by students were nervousness, tension, worry, tiredness easily, difficulty in enjoying daily activities.

The following factors are associated with suspicion of CMD: identifying as part of the LGBTQIAP+ group; having a family member or close person who developed a severe form of COVID-19; and considering that social distancing has had an impact on friendships, relationships and other social interactions with family and friends.

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Conflict of Interest

None.

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Authors' contributions - CRediT

APFCC: conceptualization; data curation; formal analysis; funding acquisition; investigation; methodology; project administration; resources; software; supervision; validation; visualization; writing – original draft; and writing – review & editing.

JG: conceptualization; data curation; formal analysis; funding acquisition; investigation; methodology; project administration; resources; software; supervision; validation; visualization; writing – original draft; and writing – review & editing.

GKS: validation; visualization; writing – original draft; and writing – review & editing.

CBSRR: validation; visualization; writing – original draft; and writing – review & editing.

KG: validation; visualization; writing – original draft; and writing – review & editing.

LFDS: conceptualization; data curation; formal analysis; funding acquisition; investigation; methodology; project administration; resources; software; supervision; writing – original draft; and writing – review & editing.

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