







# Stress perceived by nursing students in the face of the COVID-19 pandemic and associated factors: a cross-sectional study

*Estresse percebido pelos estudantes de enfermagem frente à pandemia de COVID-19 e fatores associados: estudo transversal*

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## ABSTRACT

**Objective:** to assess the stress perceived by nursing students in the face of the COVID-19 pandemic and identify associated factors. **Methods:** cross-sectional study involving undergraduate nursing students from a university in the state of Rio de Janeiro. Data collection was carried out online, from October to November 2020, using the Perceived Stress Scale (PSS), in the version adapted for use in Brazil. Fisher's Exact test and Student's t test were used, with p-value < 0.05. **Results:** 146 nursing students participated. The mean perceived stress score was 22.3 (SD ± 5.3), with a higher score for males (p = 0.001). The most prevalent stressors were related to the University and studies; to Isolation and social distancing, and to emotional aspects. There was an association between studying up to the fifth period and stressors related to the university and studies (p = 0.020) and information about COVID-19 (p = 0.003). Stressors related to financial factors were associated with a perceived decrease in income (p = 0.000). **Conclusion:** the perceived stress of students in the face of the COVID-19 pandemic was moderate, with greater intensity in males, and stressors were associated with the stage of the course until the fifth period and a decrease in income.

**Descriptors:** Stress, Psychological; Students, Nursing; COVID-19.

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## RESUMO

**Objetivo:** avaliar o estresse percebido pelos estudantes de enfermagem frente à pandemia da COVID-19 e identificar os fatores associados. **Métodos:** estudo transversal, envolvendo estudantes da graduação em enfermagem de uma universidade do Rio de Janeiro. A coleta de dados foi realizada *online*, entre outubro e novembro de 2020, utilizando a *Perceived Stress Scale* (PSS) adaptada para uso no Brasil. Utilizaram-se os testes Exato de Fisher e t de Student, com p-valor < 0,05. **Resultados:** participaram 146 estudantes. O escore médio de estresse percebido foi 22,3 (DP ± 5,3), com pontuação maior para o sexo masculino (p = 0,001). Fatores estressores mais prevalentes foram relacionados à Universidade e aos estudos; ao Isolamento e ao distanciamento social, e a aspectos emocionais. Houve associação entre estar cursando até o quinto período e fatores estressores relacionados à universidade e aos estudos (p = 0,020) e à informação sobre a COVID-19 (p = 0,003). Estressores relacionados a fatores financeiros foram associados a percepção de diminuição da renda (p = 0,000). **Conclusão:** o estresse percebido em estudantes frente à pandemia de COVID-19 foi moderado, com maior intensidade no sexo masculino. Fatores estressores estavam associados à etapa do curso até o quinto período e diminuição da renda.

**Descritores:** Estresse Psicológico; Estudantes de Enfermagem; COVID-19.

## INTRODUCTION

The Coronavirus Disease 19 (COVID-19), considering its transmissibility characteristics, demanded emergency measures to contain and prevent contagion. These include social distancing and isolation, which have been recommended by government authorities. These measures, in association with the pandemic context caused by the disease, the shortage of personal protective materials, the fear of being infected and dying, in addition to financial losses, may have contributed to the triggering of symptoms of stress in the general population<sup>(1-2)</sup>.

In addition, given the need for social distancing, Ordinance No. 343 of the Ministry of Education and Culture of Brazil, published on March 17, 2020, determined the suspension of face-to-face classes in higher education as a measure to ensure the containment and prevention of COVID-19<sup>(3)</sup>. Thus, universities had to find new ways to maintain teaching and productivity within the new reality brought about by remote teaching in the pandemic context<sup>(4)</sup>.

In nursing, remote teaching proved to be challenging, as this course gives priority to face-to-face contact, considering its nature, and has an extensive practical workload that is necessary and mandatory for the training of students<sup>(5-6)</sup>. Research carried out in Brazil found that 19.2% of nursing students had psychological distress during the pandemic period. They had common mental disorders related to fear of COVID-19, intensified family life and feelings of loneliness<sup>(7)</sup>.

Due to the pandemic, the fear of contamination during practice activities and internships, the disruption of the study routine, the postponement of tasks and the uncertainty of graduation generated negative feelings such as insecurity, fear, mood swings and a sense of loss more frequent when compared to normal periods. Such factors, associated with social distancing, contribute to a greater vulnerability of students to stress<sup>(8)</sup>.

Stress can be considered a psychophysiological phenomenon, with possibilities of becoming a triggering or

aggravating element for various diseases and pathological conditions. It is characterized by responses to situations that are closely related to anxiety, which may or may not be everyday; it can be of short or long duration and present different phases: alert for defense or flight response; resistance, with adaptive mechanisms, and exhaustion, understood as the exhaustion of the individual<sup>(9)</sup>.

Several symptoms are due to stress, including physical ones, such as dyspnea, tachycardia, tremors. In addition, there are psycho-emotional symptoms, such as concentration difficulties, irritability and emotional instability that can even interfere with the learning process<sup>(9)</sup>.

Studies carried out during the COVID-19 pandemic indicate that the factors associated with student stress were related to age<sup>(10-11)</sup>, the number of children, the number of people living in the house and social isolation<sup>(11)</sup>.

Although the literature directly or indirectly addresses stress among nursing students during the pandemic period, local and regional investigations are still needed to identify the distribution and different factors associated with perceived stress, to expand the understanding of this topic.

Identify new evidence, which seeks to understand perceived stress, and its multiple relationships, can collaborate with the development of projects for better planning and coping with new pandemics in a more assertive way, with a preventive character and promoting the mental health of students. From this, this study aims to assess the stress perceived by nursing students in the face of the COVID-19 pandemic and associated factors.

## METHODS

### Type of study

Cross-sectional study that followed recommendations from Strengthening the Reporting of Observational studies in Epidemiology (STROBE).

## Study location

The research was developed at a public university in the state of Rio de Janeiro.

## Study participants

Regularly enrolled students from the undergraduate nursing course, attending between the first and tenth period of graduation, were included in the research. Exclusion criteria were having suspended or inactive enrollments during the study period and being under 18 years of age.

The sample calculation was performed considering 234 undergraduates regularly enrolled in 2020, 95% confidence level and 5% sampling error, obtaining a minimum sample of 146 students.

## Data collection

Data collection was carried out from October to November 2020, that is, a little more than six months after the onset of COVID-19 pandemic in Brazil, in a scenario with 5,224,362 cases and 153,675 deaths were recorded in the country<sup>(12)</sup>. During this period, social distancing and isolation measures were strongly recommended and schools and universities remained closed.

The recruitment of students took place through the dissemination of the research and sending a Google Forms link, which contained the invitation to participate in the study and the Free and Informed Consent Form (FICF) to express the decision and two data collection instruments.

The material was sent to groups and private contacts of the WhatsApp. Students who agreed to participate checked the option “I have read and I agree” before accessing the forms. We highlight the application of the filter question to exclude those under 18 years of age. Data collection was completed when the minimum representative sample was reached.

The first instrument referred to the characterization of participants and stressors. The characterization questions were: age; sex; marital status; did you move to another city when you started your university studies?; home state; is your home located in the same municipality as the university campus?; do you consider that there was a drop in family income during the pandemic?; who do you live with when you are studying at university?; period in progress before the suspension of classes at the university; do you work during the pandemic?; do you have a scholarship?; do you have a link with research or extension projects?; do you carry out extracurricular activities remotely during the pandemic?.

To identify the stressors, the following questions were asked: What factors do you consider as stressors in this period of distancing? The response options were varied for the students to choose, with the option “other” making it possible to describe the factor considered a stressor. Then, the responses were categorized as follows: related to university and studies,

related to isolation and social distancing, related to illness and infection by coronavirus, emotional factors, financial factors and factors related to information in the pandemic.

The second instrument was the version of the Perceived Stress Scale (PSS) with cross-cultural adaptation to Brazilian Portuguese – Escala de Estresse Percebido (EEP), which was validated in the country among different groups of the population of both sexes and among university students<sup>(13)</sup>, whose internal consistency was evaluated with Cronbach's Alpha coefficient ( $\alpha = 0.83$ ), which is an instrument considered adequate and capable of measuring the degree of perception of stressful situations. PSS was chosen for this study, considering that it verifies the perception of stress from the identification of its causative agents, its physical or psychological signs and from the general analysis of stress, regardless of its causative agent<sup>(13)</sup>.

The instrument consists of 14 questions, in which seven have a positive meaning (items 4, 5, 6, 7, 9, 10 and 13) while the other items have a negative meaning (1, 2, 3, 8, 11, 12, and 14). The answers are organized on a Likert-type scale ranging from 0 to 4 points, with 0 = never; 1 = rarely; 2 = sometimes; 3 = often; 4 = always. The total score ranges from zero to 56 points. The classification of perceived stress is obtained by inverting the score of the positive sense items, that is, 0 = 4, 1 = 3, 2 = 2, 3 = 1 and 4 = 0. Negative items are added directly. For this study, the stress ranking was based on the following values: zero to 19 points indicates a low level of stress, between 20 and 39 points a moderate level of stress and above 40 points a high level of stress<sup>(10)</sup>.

## Data analysis procedure

The collected data were entered into an spreadsheet of Excel software\* (Microsoft Office, developed in the United States of America and processed in the IBM® SPSS program, version 21), and analyzed using descriptive statistics with measures of central tendency (mean, median, minimum and maximum) and dispersion (standard deviation). The Shapiro-Wilk test was used to verify the normality of the data. Fisher's exact test was used to associate the independent variables of the participants' characterization and the variables dependent on the stressors (yes or no). Student's t test and ANOVA were used to compare the mean PSS scores and individual variables.  $P < 0.05$  was considered.

## Ethical procedures

The research was submitted and approved (CAAE: 37507420.5.0000.8160, opinion number 4.271.846) by the Research Ethics Committee (REC) and complied with the ethical principles and norms of research involving human beings.

## RESULTS

All 146 (100.0%) undergraduate nursing students participated in the study, 128 (87.7%) were female, with a mean age of 22 years (SD  $\pm$  4.0, Minimum 18, Maximum 49) and 127 (87.0%) declared single.

Of the total number of participants, 91 (62.3%) moved to another city when starting their studies at the University, 59 (40.4%) lived with their parents or relatives and 96 (65.8%) lived in the same municipality as the University. In addition, 92 (63.0%) did not work during the pandemic and 99 (67.8%) reported a drop in family income during the pandemic period.

Regarding the graduation period, 96 (65.8%) attended between the first and fifth period before the beginning of the pandemic, 68 (46.6%) had a student scholarship, 77 (52.7%) were linked to research and extension projects, and 96 (65.8%) carried out extracurricular activities remotely during the pandemic.

Regarding perceived stress (Table 1), 59 (40.4%) reported having always felt unable to control important things, 63 (43.2%) claimed to always feel nervous or stressed, 67 (45.9%) reported that they were always thinking about the things they had to do and 49 (33.6%) always felt that difficulties were accumulating, in the last month.

**Table 1.** Frequency distribution of undergraduate students' answers (n=146) for the Perceived Stress Scale, Rio de Janeiro, Brazil, OCT/NOV 2020

PSS items	Never	Rarely	Some-times	Often	Always
"In the past month, how many times have you..."	n (%)	n (%)	n (%)	n (%)	n (%)
1. got upset because of something that happened unexpectedly?	2 (1.4)	10 (6.8)	46 (31.5)	49 (33.6)	39 (26.7)
2. felt unable to control important things in your life?	0 (0.0)	9 (6.2)	36 (24.7)	42 (28.7)	59 (40.4)
3. felt nervous or stressed?	0 (0.0)	4 (2.7)	24 (16.4)	55 (37.7)	63 (43.2)
4. successfully dealt with day-to-day problems and annoyances?	4 (2.7)	29 (19.9)	57 (39.0)	40 (27.4)	16 (11.0)
5. felt that you were dealing effectively with the important changes that were?	12 (8.2)	37 (25.4)	64 (43.9)	25 (17.1)	8 (5.4)
6. felt confident in your abilities to deal with your personal problems?	11 (7.5)	53 (36.3)	49 (33.6)	27 (18.5)	6 (4.1)
7. felt that things were your way?	31 (21.2)	62 (42.6)	39 (26.7)	10 (6.8)	4 (2.7)
8. realized that you couldn't handle all the things you had to do?	6 (4.1)	12 (8.2)	38 (26.0)	49 (33.6)	41 (28.1)
9. felt that you were able to control the irritations in your life?	19 (13.0)	48 (32.9)	44 (30.2)	27 (18.5)	8 (5.4)
10. felt that you were in control of things?	47 (32.2)	46 (31.5)	43 (29.5)	6 (4.1)	4 (2.7)
11. irritated by things that happened that were out of your control?	2 (1.4)	11 (7.5)	36 (24.7)	51 (34.9)	46 (31.5)
12. found yourself thinking about the things you had to do?	0 (0.0)	9 (6.2)	32 (21.9)	38 (26.0)	67 (45.9)
13. were you able to control the way you spend your time?	19 (13.0)	46 (31.5)	51 (34.9)	21 (14.4)	9 (6.2)
14. felt that difficulties were piling up so much that you could not overcome them?	8 (5.4)	21 (14.4)	27 (18.5)	41 (28.1)	49 (33.6)

Among the respondents, 47 (32.2%) never felt they were in control of things, 53 (36.3%) almost never felt confident in their abilities to deal with their personal problems. 62 (42.6%) rarely felt that things were going their way/their way

and 48 (32.9%) rarely felt able to control the irritations in their life in the last month.

The average of points obtained in the PSS was 22.3 (SD  $\pm$  5.3, Minimum 12, Maximum 44), considered, in

this research, as a moderate level of stress. Only one (0.7%) nursing student had a high level of stress, with a score of 44 points.

During the period of social distancing, 139 (95.2%) participants reported feeling stressed, pointing as cause of perceived stress factors related to: a) university and studies (n = 138/94.5%) as excessive demands, having to study on the computer and interruption of the study routine prior to social isolation; b) isolation and social distancing (n = 144/98.6%) such as not being able to leave the house and not being able to see friends and family, in addition to being away from face-to-face study or work activities; c) to illness and infection by coronavirus (n = 51/34.9%) such as illness and death of relatives or close friends by COVID-19; d) emotional (n = 125/85.6%), such as fear and insecurity for the uncertain future; e) financial (n = 75/51.4%), such as difficulties and

drop in income and f) related to information on the pandemic (n = 77/52.7%), such as lack of reliable information about the virus and excess of news about the pandemic in the media.

The period in the undergraduate course showed an association with several stressors: those related to university and studies (p = 0.020), financial aspects (p = 0.014) and information about COVID-19 (p = 0.003). Financial factors also showed statistical significance when associated with a drop in family income during the pandemic (p = 0.000). That is, financial factors are perceived as stressors in undergraduates who considered that there was a drop in family income (Table 2).

In the comparison between the mean scores of the PSS and the individual and student variables, only gender showed an association with statistical significance (p = 0.001), with higher scores for perceived stress in males (Table 3).

**Table 2.** Relationship between student characteristics and factors considered stressors by nursing students, Rio de Janeiro, Brazil, OCT/NOV 2020

Variables	Factors considered stressors					
	A	B	C	D	E	F
	p-value	p-value	p-value	p-value	p-value	p-value
Female gender	0.257	1.000	0.296	0.725	0.318	0.129
Single marital status	0.364	1.000	0.153	0.157	0.098	0.221
Reside in the same municipality as the university campus	0.716	1.000	0.366	0.457	0.603	0.081
Living with parents or relatives when studying at university	0.961	0.666	0.280	0.059	0.359	0.276
Not working during the pandemic	0.710	0.531	0.591	0.627	0.305	1.000
Consider that there was a drop in family income during the pandemic	1.000	0.542	0.854	0.615	0,000	0.596
Attend up to the fifth period of graduation before the suspension of classes	0.020	0.547	0.857	0.140	0.014	0.003
Not having a scholarship at the institution	0.473	0.499	0.603	0.640	0.189	0.245
Have a link with research or extension projects	0.066	0.222	0.862	1.000	0.740	0.320
Carrying out extracurricular activities remotely during the pandemic	0.474	0.556	0.527	0.682	0.861	0.432

**Legend:**

- (A) – Factors related to the University and studies;
- (B) – Factors related to Isolation and social distancing;
- (C) – Factors related to illness and infection by coronavirus;
- (D) – Emotional factors;
- (E) – Financial factors;
- (F) – Factors related to information in the pandemic.

**Table 3.** Comparison between the Perceived Stress Scale score and the student's characteristics (n= 146), Rio de Janeiro, Brazil, OUT/NOV 2020

Variables	n	Average score	CI 95%	SD	Test value	p Value
<b>Sex</b>						
Male	18	26.2	22.9-29.5	6.6	t=-3.51	0.001
Female	128	21.7	20.9-22.6	4.8		
<b>Test value</b>						
Single	127	22.1	21.1-23.0	5.4	F= 2.31	0.102
Married	15	23.2	20.9-25.4	3.9		
Other	4	27.5	22.9-32.1	2.8		
<b>Lives in the municipality of the university campus</b>						
Yes	96	22.2	20.3-23.1	5.6	t= -0.31	0.754
No	50	22.5	20.6-24.2	4.6		
<b>People you live with during the period you are studying at the University</b>						
Alone	27	21.9	19.9-24.1	5.1	F= 0.24	0.869
With parents or relatives	59	22.4	21.1-23.7	5.0		
Students' residence	30	21.9	19.6-24.2	6.2		
Other	30	22.9	19.0-24.9	5.1		
<b>Works during the pandemic</b>						
Yes	54	22.9	20.6-24.7	5.4	t= 1.07	0.283
No	92	21.9	20.1-22.9	5.2		
<b>Considers that there was a fall in family income during the pandemic</b>						
Yes	99	21.7	19.9-22.8	5.6	t= -1.94	0.054
No	47	23.5	21.5-24.9	4.3		
<b>Period of the course in which he was enrolled before the suspension of classes at the University</b>						
1 <sup>o</sup> - 5 <sup>o</sup> period	96	21.7	20.7-22.7	4.9	t= -1.94	0.053
5 <sup>o</sup> - 10 <sup>o</sup> period	50	23.5	21.8-25.1	5.8		
<b>Has some kind of scholarship in the Institution</b>						
Yes	68	22.6	21.3-23.9	5.5	t= 0.67	0.499
No	78	22.0	20.8-21.1	5.0		
<b>Has links with research or extension projects</b>						
Yes	77	22.0	20.8-23.1	5.0	t= -0.79	0.430
No	69	22.6	21.3-24.0	5.5		
<b>Conducts extracurricular Activities remotely during the pandemic</b>						
Yes	96	22.4	21.4-23.4	5.0	t= 0.32	0.745
No	50	22.1	20.4-23.8	5.7		

**Note:** Statistical Test: Student's t test and Anova; CI – confidence interval; SD – standard deviation.

## DISCUSSION

The mean EEP score showed a moderate level of stress among nursing students in the context of the COVID-19 pandemic, which is close to the results found in another study conducted with nursing students that identified an average of

29.3 points, using the same scale, however in a period prior to the pandemic<sup>(14)</sup>.

However, an investigation conducted in Poland in the pandemic period involving 254 nursing students using EEP also identified moderate levels of perceived stress<sup>(15)</sup> consistent with the findings of the present investigation.

In view of these results, it would be possible to assume that there were no changes between stress levels before and during the pandemic among students, but these findings should be interpreted sparingly, since they do not refer to the same population. It is necessary to conduct studies on the mental health of students with greater constancy, to monitor the trend and evolution, and not only in periods of health crises or any other nature.

The predominant profile of undergraduate nursing students from the university campus of the state of Rio de Janeiro, which composed this research, is characterized by young, single women who have changed cities, live alone or with people who do not make up their family nucleus. These characteristics can be potentiating the difficulties faced in undergraduate studies, as shown in a study conducted with nursing students, which pointed out female gender, median age of 20 years, family distance, financial and emotional problems as influential factors in development of negative feelings and stress<sup>(16)</sup>.

In line with the results, a study conducted at a public university in the south of the country found that the participants were mostly single (72%), with a mean age of 25 years and did not work (73%)<sup>(17)</sup>. Although the majority of the participants in this study did not work and also consider the fall in family income during the pandemic period, these aspects did not influence the mean scores of the EEP, in contrast to the findings of an investigation conducted at a Nursing School in Spain, which revealed high levels of stress in students with difficulties economic problems, emotional and family problems<sup>(16)</sup>. In this Spanish study, students who already had economic and family problems had their conditions aggravated, as the days of confinement extended. In this sense, it was observed that such students, with financial problems, presented the highest levels of stress, what was not identified in this investigation.

Considering the gender variable, the findings differ from the literature. Study that evaluated perceived stress, using the version of 10 items from EEP, in 656 participants, demonstrated a higher degree of stress in females<sup>(18)</sup>. These levels, in the pandemic context, are justified since women experience the burden of work and domestic activities<sup>(18)</sup>. In the present study, it is noteworthy that the reduced number of male participants may have diverted the mean obtained in the EEP for this group, with the occurrence of outlier score.

The search for extracurricular experiences has gained prominence and participants have demonstrated engagement in academic activities, including those remotely. This data deserves special attention, considering that the high demand for activities and overload were also cited as stress generators, in another study conducted with nursing students<sup>(19)</sup>.

Regarding the items of the EEP that identify aspects contributing to stress, another investigation conducted

with nursing students in a period prior to the COVID-19 pandemic, using the EEP, also identified the moderate level of stress and also found high response percentages in them items of the scale, highlighting how many times in the previous month, the individual thought about the things he had to do<sup>(14)</sup>.

The feeling of always or often not being able to cope and think about things they had to do, were the most frequent among students and such findings are related to a behavior of procrastination, common behavior among students in the condition of social isolation<sup>(20)</sup>. The difficulty of concentration in performing activities can also contribute to the procrastination and perception of stress, including low student income, as pointed out in a survey conducted with students from the nursing technical course, also in the pandemic context<sup>(20)</sup>.

The ever-present nervousness or stress may be related to the pandemic period since the literature published during the COVID-19 pandemic suggests that this specific context generated deleterious effects on the mental health of university students<sup>(21)</sup>. Moreover, the feeling of lack of control, accumulation of difficulties and lack of overcoming is convergent with the data of a study conducted in the pandemic period, with 656 medical students from several Brazilian universities, in which 18.6% reported feelings of inability to play a useful role in their lives, in addition to 62.8% presenting signs of psychic suffering. These aspects draw attention, due to the possible consequences harmful to health that these feelings can generate<sup>(22)</sup>.

Regarding the often feeling upset by something that happened unexpectedly and irritated by situations that were out of control, it is highlighted that the moment in which the research was conducted imposed emergency and unexpected situations such as: loss of family members, financial problems and experience of traumatic situations that affect the emotional balance of students<sup>(3)</sup>. The pandemic period may have contributed to the feeling of lack of control, since several measures, especially those related to socialization restriction, were attributed to the entire Brazilian population.

It is noteworthy that despite the present research having found a significant association between some factors that cause stress and being in the fifth period, another study, which involved students in the health area, found that there was no difference during training<sup>(23)</sup>.

It is evident that measures of distancing and social isolation were necessary, but they can also be considered as potential triggers of psychic disorders, since they could impact on academic achievement and feelings related to one's own ability to learn. In this aspect, the concern with school dropout was real, and its causes may be related to the accumulation of tasks and the lack of routine for studies,

associated with feelings of anxiety, demotivation and stress<sup>(24)</sup>, as pointed out in the present study.

The level of moderate stress among students implies institutional investment in essential actions that promote and encourage stress control among nursing students themselves, such as the practice of physical exercises, the proper hours of sleep, leisure activities such as dance, music and movie. Such measures may also contribute to the increase in stress levels found during the data collection period. Among the possible strategies to promote the mental health of students, psychosocial and psychological support is as a way to relieve stress. Thus, it is essential to be able to have specialized professionals who promote active listening of students to know their individual needs, as well as the appropriate therapy for each case.

The limitation of the study is considered the unequal proportion between male and female participants; however, it is noteworthy that this is a characteristic of nursing courses, which have, mainly, female students.

### Contributions to practice

Identifying the level of stress and potential stressors in nursing undergraduates generates subsidies for the development of care programs in universities for the prevention and proper management of stress among students, especially mental health care, since the findings point to a level moderate stress among the population studied. Thus, higher education institutions need to implement methodologies for tracking mental health problems in students, including stress, continuously to direct prevention and treatment actions for identified cases.

It is worth mentioning that nursing has a potential for innovation for stress management that is configured by the use of integrative and complementary practices in health, such as acupuncture, floral therapies, phytotherapy, art therapy, music therapy and aromatherapy, which are even already applied in the study scenario.

### CONCLUSION

The present research contributed to the identification of the moderate level of perceived stress in nursing students during the most critical phase of the pandemic, in which there was the inclusion of teaching strategies in digital media and remote teaching. Moreover, it was identified that the factors related to the University and studies, the financial aspect and information in the pandemic were associated with some individual characteristics of nursing students for the occurrence of stress.

It is noteworthy that, in the context of this research, in students of an undergraduate course of extensive workload, in which there is a limitation in the time for leisure activities,

the signs of stress may be worrisome, since that they tend to consider it as an inherent characteristic of their academic training, which must be overcome by them, corroborating the training of health professionals who neglect the care of themselves before the care of the other. Thus, it is evident the need for the elaboration, implementation and maintenance of institutional programs aimed at promoting the mental health of students, with the management of stress, to mitigate the effects of the COVID-19 pandemic and even facilitate the coping of new pandemics.

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