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Mental Health and Coping Strategies in Undergraduate Students During COVID-19 Pandemic

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Abstract

Since the outbreak of the COVID-19 pandemic by the World Health Organization in early 2020, different research has been designed to understand how mental health can be impacted by the pandemic. This study has focused on possible coping strategies developed by the university population in response to social distancing. This study aimed to identify if there was a relation between the coping strategies adopted by undergraduates during the social distancing caused by the COVID-19 pandemic and symptoms of depression, anxiety, and stress. The sample consisted of 503 undergraduates between 17 and 62 years old (M = 23.82; SD = 7.56) who answered an online form containing a questionnaire of sociodemographic data, a coping strategies scale, and the DASS-21 scale. Descriptive analyses (means and standard deviations) and Mann-Whitney U test and Kruskal-Wallis test were performed to verify the relationship and differences in the constructs investigated by gender, Higher Education Institution (HEI) (private, public, and community), age groups, social distancing, etc. In parallel, Spearman's analysis was performed to determine the correlation between symptoms of depression, anxiety, and stress, and coping strategies and a chi-square test to check the association between income and educational status at the time of data collection. The results indicate a correlation between symptoms and some coping strategies, differences in symptoms, and strategies employed according to gender, work status, and religious practice.

Keywords Psychological adjustment · Pandemic · Depression · Anxiety · Stress · Coping

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Introduction

The World Health Organization (WHO) announced the new coronavirus and COVID-19 pandemic on March 11 (World Health Organization 2020). In Brazil, the first official case was identified on February 26, 2020 (Ministério da Saúde 2020c) and the number of cases throughout the Brazilian territory increased exponentially. In December, over 6,500,000 cases and 175,000 deaths were recorded because of COVID-19 (Ministério da Saúde 2020b), placing the country at the top of the epidemic, next to the United States. Among the measures adopted by the Brazilian government to stop the virus advance is social distancing (Ministério da Saúde 2020a).

The main objective of social distancing is to reduce the speed of virus transmission to avoid the overload on health services. This distancing can be achieved in three ways: Extended Social Distancing (ESA), Selective Social Distancing (SSD), and total lockdown (lockdown; Ministério da Saúde 2020a). The most adopted measure in the national territory has been the ESA, although each state and, in some cases, each city, influences to define the measure considered most appropriate considering the local reality of virus spread and the different markers throughout 2020, as the socioeconomic elements. Although the scientific and medical community is joining efforts in proposing and evaluating treatments, and the production of vaccines and their availability will probably start in 2021, the social distancing is still, in Brazil, the best way to face the virus.

The two sorts of social distancing aim to extend the path of the disease and decrease the peak of contagion, proving effective in combating the disease, since it can reduce the number of patients who need a health system with limited resources. Therefore, by isolating and decreasing contact with other people, a reduction in the rate of virus contagion is expected, keeping the number of cases within the limit manageable by the Brazilian health system. This practice is being known as the pandemic "flattening of the curve" (Ministério da Saúde 2020a). Among the most direct activities affected by these measures are educational, from basic to higher education. Throughout the country, classes were suspended from March 2020, and some institutions restarted face-to-face activities in the second half of the year. Some Higher Education Institutions (HEIs) chose to keep teaching and research activities in the online model, while others, mainly the federal ones, suspended teaching activities. The Ministry of Education (2020), through Ordinance No. 544 of 16 June 2020, authorized, "on an exceptional basis, the replacement of in-person classes, in regularly authorized courses, by teaching activities using digital educational resources, information and communication technologies or other conventional methods, by higher education institutions [...] until December 31 of 2020."

Social distancing can affect mental health, increasing symptoms of depression, anxiety, and stress (de Duarte et al. 2020; Wang et al. 2020a). Although several groups belong to a greater risk group for developing symptoms, at the same time the health of the university population has been receiving more attention in many research, from those dedicated to screening psychopathological symptoms, to those focused on university adaptation and on hosting in this stage of academic life. These surveys indicate that undergraduate students already suffer from depression, anxiety, and stress more than other populations in ordinary times (Ariño and Bardagi 2018; Gomes et al. 2020; Maia and Dias 2020) and, for this reason, are possibly being affected even more during

the pandemic. These elements are associated with specific circumstances of social distancing, such as the classroom class interruptions, the use of specific learning tools of distancing teaching methods, and uncertainties resulting from this period when some academic calendars were suspended, and others were maintained with adaptations to new demands.

National studies conducted in the pandemic context have addressed the general population as well as specific situations that may be causing different consequences as a result of the measures taken during this period, potentially increasing its severity (Ornell et al. 2020; Pereira et al. 2020; Schmidt et al. 2020). Studies with undergraduates during the pandemic have focused mainly on mental health (Chang et al. 2020; González-Jaimes et al. in press), and the comprehension of knowledge and behaviors associated with the pandemic (Gallè et al. 2020; Modi et al. 2020), as well as educational strategies in response to these challenges (Scorsolini-Comin 2020). Other studies also identified the growth in symptoms of stress, depression, and anxiety, and highlighted the coping strategies developed by this population (Nurunnabi et al. 2020). A study by Salman et al. (2020), for example, conducted with 1134 young Pakistanis, revealed that among the most widely used strategies are religiousness and spirituality, followed by greater acceptance, self-distraction, and active confrontation, suggesting the existence of individual ways to respond to the pandemic challenges imposed. Research by Rogowska et al. (2020) with 914 Polish university students emphasized the prevalence of confrontation strategies focused on emotion. In a study of 244 Israeli nursing students, strategies also connected with emotion were reported, such as maintaining humor and greater resilience (Savitsky et al. 2020).

In the face of adverse situations such as the pandemic, it is common to adopt coping strategies, that is, actions that promote adaptations and ways to respond to the challenges experienced at this time. Coping is a combination of strategies used by people to adapt to a stressful event or period (Antoniazzi et al. 1998). For Folkman and Lazarus (1985), the coping models can be divided into two: those focused on the problem and those focused on emotion. Both coping strategies are used in the face of a stressful situation, but their use may vary in terms of effectiveness. Studies have highlighted the use of coping strategies, a consecrated concept in the psychological literature, by different populations (Guo et al. 2020; Wang et al. 2020b), especially focused on the problem (Gerhold 2020). Regarding the pandemic context, studies have highlighted its usage by different populations (Guo et al. 2020; Wang et al. 2020b), especially focused on the problem (Gerhold 2020).

Studies addressing coping strategies in previous epidemic events, such as the H1N1 pandemic in 2009, showed that individuals with a high intolerance to uncertainty were more likely to perceive the pandemic as threatening and more likely to use coping strategies focused on emotions (Taha et al. 2014). Research conducted with university students during the 2003 epidemic of Severe Acute Respiratory Syndrome (SARS) emphasizes that coping was a fundamental mechanism against the negative impact of stressors on overall perceived health (Main et al. 2011). Besides, showed that people used fewer active strategies (focused on problems) and more avoidable coping strategies (focused on emotions) in reaction to stressors related to SARS (Gan et al. 2004).

Strategies in the aftermath of the pandemic can be understood adaptively, especially regarding the educational environment, such as remote activities replacing on-site activities. The pandemic is a global health issue, and published studies have been

conducted at different times and in different scenarios throughout 2020. Besides, the results of international research with undergraduates are still being disclosed (Nurunnabi et al. 2020; Rogowska et al. 2020; Salman et al. 2020). Thus, there is a need for research that can present general and specific overviews on the pandemic impact on mental health (Maia and Dias 2020; Ornell et al. 2020; Schmidt et al. 2020). From this perspective, there is a need to develop Brazilian studies to compose a list of knowledge related to the theme of mental health of undergraduates in the context of the COVID-19 pandemic.

Based on this gap in contemporary literature, this study aimed to verify if there is a correlation between the coping strategies used by undergraduates during social distancing due to the pandemic and symptoms of depression, anxiety, and stress. Also, the study investigated the relation and differences in the symptoms and strategies used, according to the student's sociodemographic characteristics. It is expected, from this investigation, to contribute to the production of knowledge concerning the psychological repercussions of the social distancing resulting from the COVID-19 pandemic, and concerning the undergraduates coping strategies.

Method

Design

Quantitative, cross-sectional, and correlational study.

Participants

Five-hundred three undergraduate students participated in the study, 81% female, aged 17 to 62 years (M = 23.82; SD = 7.56), all residing in Brazil. Forty-eight percent attended public universities, 48% private universities, and 4% community-based universities. Most of the students (30%) declared a family income of two to four minimum wages (until US$ 805.55), and 28% income of until two minimum wages (US$ 402.77). Besides, 30% of them had a job, among them 47% were working remotely during the pandemic. Regarding religiosity/spirituality, 51% of the sample said to practice some religion, being the main Catholic (23%), followed by spiritism religion (12%).

Concerning social distancing, 16% reported being in total distancing, 73% in partial distancing, going out only to buy basic items such as food, hygiene items, and medications. Among the undergraduates in partial distancing, 30% indicated leaving home once a week, 20% twice, and 10% three times a week. Also, only 3% reported symptoms of COVID-19, with 2% testing and less than 1% positive for the virus. Regarding residency, 72% of them lived with two to four people, and among these people, 59% belong to the risk group for COVID-19, that is, elderly people and/or those with chronic diseases.

Instruments

Sociodemographic data questionnaire: specifically developed for the present study with questions concerning the participants' characterization, such as gender, age, education

level, socioeconomic, labor, and educational situation, and information about social distancing degree.

Inventory of Coping Strategies (IEC): adapted for Brazil by Savóia et al. (1996). The instrument, in its original version, was built by Folkamn and Lázarus (1985), based on the authors' understanding of coping. The Brazilian version is composed of 66 items, distributed in 8 factors (Factor 1—confrontation, Factor 2—distancing, Factor 3—self-control, Factor 4—social support, Factor 5—acceptance of responsibility, Factor 6—escape, Factor 7—problem-solving, and Factor 8—positive reevaluation). Respondents should indicate what they did in a certain situation according to a classification ranging from 0 to 3 (0—I did not use this strategy, 1—I used a little, 2—I used a lot, and 3—I always used). In this study, the situation was described as "social distancing due to Covid-19." The instrument has good psychometric properties, having a general Cronbach's alpha of 0.88.

Depression, Anxiety and Stress Scale—Short Form (DASS-21): the original version was built by Lovibond and Lovibond (1995) and validated for the Brazilian adult population by Vignola and Tucci (2014) to measure the symptoms of anxiety, depression, and stress in adults. The scale is based on the tripartite model that gathers the symptoms of anxiety and depression in three basic structures. The first is defined by the presence of negative affection, such as depressed mood, insomnia, discomfort, and irritability, which are nonspecific symptoms and can be included in both depression and anxiety. The second is composed of specific symptoms for depression (anhedonia, absence of positive affection). The last structure refers to the specific symptoms of anxiety (somatic stress and hyperactivity). By filling in the instrument, the participants indicate how much they experience each of the symptoms described during the last week (previous week) on a Likert scale of 4 points, which is based on the tripartite model that groups the symptoms of anxiety and depression into three basic structures. The scores are determined by the sum of the 21 items scores. Cronbach's alpha values are 0.90 for depression, 0.86 for anxiety, 0.88 for stress, and 0.95 for the total of the three subscales. In the current study, the general Cronbach's alpha was 0.95, being 0.89 for depression, 0.88 for anxiety, and 0.89 for stress, which can be considered good psychometric properties.

Procedures

Data Collection

The collection was conducted online through the Google Forms tool. The link to fill out the form was sent to Brazilian higher education institutions and research groups through social networks (Facebook, WhatsApp, Twitter, and Instagram) and e-mails with an invitation to participate in the research. The invitations included a brief description of the survey and the link to answer the online form. The collection occurred between May 10 and June 20, 2020. The consent of the volunteers was given through the Free and Informed Consent (TCLE), which was also available in a pdf link. The research was approved by an Ethical Research Committee, recognized by the National Health Council (CNS).

Data Analysis

At first, normality tests (Kolmogorov-Smirnov and Shapiro-Wilk) were performed, and the normal distribution of data was not found. Thus, non-parametric statistics were used. Then, descriptive analyses (frequency, means, standard deviations) were performed to investigate the students' profile and the variables investigated. After this analysis, Mann-Whitney or Kruskal-Wallis tests were used to verify differences in the variables by gender, type of institution (private, public, community), religious practice, and level of social distancing. Besides, Spearman correlation analyses were performed to verify the correlation between symptoms of depression, anxiety, and stress and coping strategies with participants' variables, considering a 95% confidence interval. The effect size test was performed, considering the $Z/\sqrt{N}$ calculation (by pairs), and the following parameters were used in the statistically significant results: null or minimal effect size (value 0.00–0.10), weak (value 0.11–0.25), moderate (value 0.30–0.49), and strong (0.50) (Cohen 1988), considering $p < 0.05$. The magnitude of the correlation was classified as weak (< 0.3), moderate (0.3 to 0.59), strong (0.60 to 0.99), or perfect (1.0; Levin and Fox 2004). The correlations found were interpreted from the scientific literature of the field, considering specifically the COVID-19 pandemic context.

Results

A Spearman correlation was performed to check if there is a relation between coping strategies, family income, and symptoms of depression, anxiety, and stress (Table 1). The constructs were also correlated to the participants' age. Results indicate positive correlations ranging from weak to moderate magnitudes among some variables and symptoms, as well as the negative and weak correlation among some variables, such as age and family income. Higher household income, for example, was significantly associated with lower levels of stress, anxiety, and depression, although considered weak magnitude correlations.

The correlation analysis between symptoms of depression, anxiety, and stress with sociodemographic variables indicated statistically significant results, but with weak effect size (Table 2).

When comparing groups of undergraduates from different types of Higher Education Institutions (G1—public, G2—private, or G3—community), the results indicated differences between public and private, and undergraduates from public institutions had higher scores on depression symptoms than those studying at private institutions, with an effect size of 0.18. When the depression symptoms were analyzed regarding the studying situation (G1—continue studying, G2—partially studying, G3—do not continue studying), there was a statistically significant difference between G1 and G2, with the second group showing more symptoms (effect size 0.16), and between G1 and G3, with the third group showing more symptoms (effect size 0.20). Furthermore, there was a statistically significant difference in the symptoms of depression concerning social distancing: those in total distancing reported more symptoms than those who are not doing distancing (effect size 0.26).

The results of the association between anxiety and study situation revealed that there were statistically significant differences between those who continue studying (G1) and

Table 1 Correlation between symptoms, CSI factors, age, and participants' income

	Depression	Anxiety	Stress	Age	Family income
CSI 1. Confrontation	0.21**	0.33**	0.35**	− 0.10*	0.04
CSI 2. Distancing	0.07	0.09*	0.08	− 0.01	− 0.03
CSI 3. Self-control	0.28**	0.30**	0.26*	− 0.05	− 0.05
CSI 4. Social support	− 0.04	0.16**	0.16**	− 0.10	0.08
CSI 5. Acceptance of responsibility	0.32**	0.43**	0.41**	− 0.16*	− 0.05
CSI 6. Escape	0.59**	0.51**	0.62**	− 0.25**	− 0.04
CSI 7. Problem-solving	− 0.27**	0.01	− 0.04	0.12*	0.08
CSI 8. Positive reevaluation	− 0.33**	− 0.01	− 0.07	0.21**	0.10*
CSI Total	0.17**	0.37**	0.37**	− 0.04	0.02
Age	− 0.14**	− 0.14**	− 0.20**	-	-
Family income	− 0.12**	− 0.12**	− 0.10**	-	-

$*p \leq 0.05$, $**p \leq 0.01$

those who do not continue studying (G3), with the third group having more symptoms (effect size 0.12). Concerning stress symptoms, there were statistically significant differences between G1 and G2, with the first group having more symptoms (effect size 0.10) and between G1 and G3, with the third group having more symptoms (effect size 0.12).

The chi-square test was used to investigate the association between family income (G1—income of until 2 minimum wages, G2—income of 2 to 4 minimum wages, and G3—income of 4 or more minimum wages) and studying status (G1—continue studying, G2—partially studying, G3—do not continue studying). The results indicate that there are no statistically significant differences between the groups ($p = 0.09$). Analyses with coping strategies were also performed. Table 3 indicates the minimum and maximum values, as well as means and standard deviations in coping strategies by factors. In general, the most used coping strategies were escaping, followed by self-control and positive reevaluation, and the least used strategies are acceptance of responsibility and confrontation.

The Mann-Whitney U test (when comparing two groups) and the Kruskal-Wallis test (three groups) were performed to verify differences in coping strategies employed according to sociodemographic and social distancing characteristics (Table 4). Some results were statistically significant, but with weak effect size.

By type of HEI (G1—public, G2—private, G3—community), there were statistically significant differences in Factor 4—social support, the private institution group (G2) reached higher scores in the use of social support strategy comparing with G3, with effect size 0.20. Besides, G2 used this type of coping strategy more than the G1, with an effect size of 0.15. Undergraduates students from the public (G1) and private (G2) groups also presented statistically significant differences in Factor 8—Positive Reevaluation. Students from private institutions used this type of strategy more than the others (effect size of 0.15).

The results also indicated that there were statistically significant differences between the participants who continue studying (G1) and those who do not continue studying

Table 2 Differences of DASS-21 values by groups

			Mean rank	Test	Effect size
DASS-21 Depression	Gender	Female (N = 407)	254.51	U = 16,072.000	-
		Male (N = 90)	224.08		
	Type of HEI	Public (N = 241)	279.06	H(2) = 16.208**	0.18
		Private (N = 242)	226.18		
		Community (N = 20)	238.33		
	Are you still studying?	No (N = 61)	309.36	H(2) = 21.540**	0.16 and 02.0
		Yes (N = 322)	230.29		
		Partially (N = 120)	281.09		
	Social distancing level	None (N = 44)	201.81	H(2) = 9.194**	0.26
		Partial (N = 367)	250.53		
		Total (N = 92)	281.88		
	Do you work?	Yes (N = 151)	193.87	U = 17,798.000**	0.13
		No (N = 285)	231.55		
	Do you currently need to leave home to work?	Yes (N = 103)	95.22	U = 4452.000	-
		No (N = 93)	102.13		
	Do you practice any religion?	Yes (N = 254)	232.36	U = 26,633.500**	0.14
		No (N = 249)	271.04		
DASS-21 Anxiety	Gender	Female (N = 407)	260.64	U = 13,575.500**	0.17
		Male (N = 90)	196.34	H(2) = 3.191	-
	Type of HEI	Public (N = 241)	263.78		
		Private (N = 242)	242.13		
		Community (N = 20)	229.43		
	Are you still studying?	No (N = 61)	285.96	H(2) = 7.217*	0.12
		Yes (N = 322)	239.52		
		Partially (N = 120)	268.22		
	Social distancing level	None (N = 44)	217.63	H(2) = 3.265	-
		Partial (N = 367)	252.76		
		Total (N = 92)	265.42		
	Do you work?	Yes (N = 151)	201.90	U = 19,011.000*	0.09
		No (N = 285)	227.29		
	Do you currently need to leave home to work?	Yes (N = 103)	95.13	U = 4442.000	-
		No (N = 93)	102.24		
	Do you practice any religion?	Yes (N = 254)	252.09	U = 31,601.000	-
		No (N = 249)	251.91		
	Gender	Female (N = 407)	259.72	U = 13,950.500**	0.16

Table 2 (continued)

			Mean rank	Test	Effect size
DASS-21					
Stress					
		Male (*N* = 90)	200.51		
	Type of HEI	Public (*N* = 241)	264.60	H(2) = 3.569	-
		Private (*N* = 242)	239.68		
		Community (*N* = 20)	249.25		
	Are you still studying?	No (*N* = 61)	284.16	H(2) = 7.983*	0.10 and 012
		Yes (*N* = 322)	271.75		
		Partially (*N* = 120)	238.55		
	Social distancing degree	None (*N* = 44)	221.52	H(2) = 2.466	-
		Partial (*N* = 367)	256.90		
		Total (*N* = 92)	247.04		
	Do you work?	Yes (*N* = 151)	206.75	U = 19,743.000	-
		No (*N* = 285)	224.73		
	Do you currently need to leave home to work?	Yes (*N* = 103)	96.46	U = 4579.000	-
		No (*N* = 93)	100.76		
	Do you practice any religion?	Yes (*N* = 254)	252.85	U = 31,407.500	-
		No (*N* = 249)	251.13		

HEI Higher Education Institution

*$*p \leq 0.05$, $**p \leq 0.01$

(G3), with the first group employing more strategies in Factor 4—Social Support than the second group, with effect size 0.15. Moreover, G1 also uses this factor more than G2, with an effect size of 0.14. There were differences in Factor 6—Escapes between those who continue studying (G1) and those who partially studying (G2): those who partially studying use the strategy more, with effect size 0.13. Moreover, those who continue studying use more the strategy of Factor 7—Problem-solving, than G3, with effect size 0.15. Finally, there were differences in Factor 8—Positive Reassessment, between G2 and G3: those who partially studying used more such strategy, with effect size 0.20. Finally, those who continue studying (G1) use more the strategies of Factor 8—Positive Reassessment than those who do not continue (G3), with effect size 0.16.

Regarding the level of social distancing (G1—none, G2—partial distancing, and G3—total distancing), there were differences in Factor 3—self-control between those who practice partial distancing (G2) and those who practice total distancing (G3), with those who are in total distancing using this strategy more than those who are in partial distancing. Those who are in partial distancing (G2) indicated to use more the strategy of Factor 6—Escape in comparison with G1, with effect size 0.14. There were also differences, about this factor, between those who are not in social distancing (G1) and those who are in total distancing (G3), with G1 using more the strategy of fight and

Table 3 Means and standard deviations in the total CSI scores and by factors

	Minimum	Maximum	Mean	SD
CSI 1. Confrontation	0	16	6.22	3.08
CSI 2. Distancing	0	17	7.82	3.14
CSI 3. Self-control	0	21	10.28	3.67
CSI 4. Social support	0	18	9.05	3.92
CSI 5. Acceptance of responsibility	0	12	5.32	2.86
CSI 6. Escape	0	24	12.02	4.75
CSI 7. Problem solving	0	18	8.26	3.84
CSI 8. Positive reevaluation	0	21	10.10	4.56
Total CSI	18	122	69.06	17.92

escape than those who are not in distancing, with effect size 0.16. Finally, there were differences between G2 and G3 concerning Factor 8—positive reevaluation, with the partial distancing group employing more the strategy than the total distancing group.

Discussion

The results of this study stimulate some important insights, although this is a recent and constantly changing context. Until now, there is no proven effective treatment for COVID-19, so social distancing strategies are the most recommended to contain the advances of contagion and the consequent overload of specialized health services, while the development of vaccines and a scientifically validated drug protocol are underway.

Contemporaneity and transience are two characteristics that must be considered in the analyses performed here to portray an unprecedented moment whose dimension may be altered because the pandemic is still occurring, which may interfere in the way to understand the scenario on screen. Thus, there is a need to contribute with a specific portrait, which should be followed in the short, medium, and long term, possibly with longitudinal outlines.

The first aspect to be discussed refers to the positive correlation, although of weak magnitude, between some coping strategies and the symptoms of depression, anxiety, and stress, indicating that the strategies are not always the best ones to face the situation of social distancing.

The outcomes also pointed out that the younger the age, the greater the use of coping strategies, acceptance of responsibility, and escape. Thus, there seems to be an effect of cognitive growth associated with age, allowing the emergence of strategies considered more positive, such as acceptance of responsibility.

In this context, the acceptance of responsibility was also associated with psycho-pathological symptoms. Assuming responsibility in this context can be a factor that arouses anxiety and stress in students, even though this is a widely recognized strategy associated with positive outcomes in situations considered complex. Taking responsibility can be a way to confront situations more openly and engagingly, which can

Table 4 Differences in the IEC values by factors according to sociodemographic data

Sociodemographic variables	1	2	3	4	5	6	7	8
Gender								
F (N = 407)	254.41	249.93	249.02	261.85**	260.72**	259.88**	254.65	258.15***
M (N = 90)	224.52	244.78	248.92	190.89	196.01	199.81	223.46	207.60
Test				$U = 13{,}085.500$	$U = 13{,}545.500$	$U = 13{,}888.000$		$U = 14{,}589.000$
Effect size				0.19	0.17	0.16		0.14
Type of HEI								
Public (N = 241)	264.12	260.67	263.96	233.79	260.26	267.09	240.44	230.23
Private (N = 242)	241.52	244.82	244.82 238.18	276.91	244.43	238.20	264.48	273.42
Community (N = 20)	232.73	234.38	275.13	170.00**	244.13	237.15	240.20	255.08**
Test				$H(2) = 17.36$				$H(2) = 10.72$
Effect size				0.20 e 0.15				0.15
Are you still studying?								
No (N = 61)	236.40	248.31	247.06	210.25**	237.25	280.34**	203.51**	196.65***
Yes (N = 322)	255.30	251.02	245.71	269.06	248.57	236.14	264.21	260.47
Partially (N = 120)	251.08	256.50	271.40	227.45	268.71	280.15	243.90	257.42
Test				$H(2) = 12.97$		$H(2) = 10.69$	$H(2) = 9,49$	$H(2) = 10.15$
Effect size				0.15 e 0.14		0.13	0.15	0.20 and 0.16
Social distancing level								
None (N = 44)	221.56	270.25	270.25 252.15**	204.95	207.32	187.66**	262.93	271.89*
Partial (N = 367)	252.50	248.01	241.37	255.05	255.54	252.29	250.35	258.61
Total (N = 92)	264.56	259.19	294.33	262.32	259.24	281.61	253.36	216.10
Test			$H(2) = 9.83$			$H(2) = 12.49$		$H(2) = 7.23$

Table 4 (continued)

Sociodemographic variables	1	2	3	4	5	6	7	8
Effect size			0.15			0.14 and 0.16		0.12
Do you work?								
Yes (N = 151)	206.83	202.90	189.04	215.33	198.58	185.21	217.74	228.16
No (N = 285)	224.68	226.76	234.11**	220.18	229.05*	236.14**	218.91	213.38
Test			U = 17,068.500		U = 18,510.000	U = 16,490.000		
Effect size			0.17		0.12	0.19		
Do you currently need to leave home to work?								
Yes (N = 103)	90.92	98.22	102.50	90.18	94.99	91.70	93.80	92.93
No (N = 93)	106.90*	98.81	94.07	107.72*	102.39	106.03	103.71	104.67
Test	U = 4008.500			U = 3932.500				
Effect size	0.14			0.15				
Do you practice any religion?								
Yes (N = 254)	255.60	256.11	244.05	265.63	254.46	244.82	268.19	292.31
No (N = 249)	248.33	247.81	260.11	238.10*	249.49	259.32	235.48**	210.88**
Test				U = 28,161.00			U = 27,510.500	U = 21,384.000
Effect size				0.10			0.11	0.28

1, confrontation; 2, distancing; 3, self-control; 4, social support; 5, acceptance of responsibility; 6, escape; 7, problem-solving; 8, positive reevaluation

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$*p \leq 0.05$; $**p \leq 0.01$

promote the adoption of more adaptive and healthy behaviors. A similar aspect was reported in the study of Salman et al. (2020), with young Pakistanis. The opposite of this ability seems to come close to situations in which escape is a form of reaction and confrontation, which also can be associated with psychopathological symptoms.

The results also indicate that the lower the family income is, the greater the use of the positive reevaluation strategy and the higher the scores on the symptoms of depression, anxiety, and stress. Studies have indicated the influence of income on mental health (de Duarte et al. 2020; Marinho Alves and Rodrigues 2010) even in undergraduates, suggesting that the lower the income is, the lower the mental health is (Nogueira and Sequeira 2017). Considering the panorama of limited resources, especially materials, that people with lower income may face, the viable alternative, in the face of a problem, is to re-evaluate it more positively. Even so, structural and financial conditions may overload the person, causing as one of the consequences, the appearance or increase of symptoms of depression, anxiety, and stress.

The findings also indicated statistically significant differences between genders: the female gender achieved higher scores in symptoms of depression and anxiety than the male gender. Although there is a large disparity in the number of respondents and the reference contexts, the results are corroborated by previous studies (Gomes et al. 2020; González-Jaimes et al. in press; Nogueira and Sequeira 2017; Salman et al. 2020; Wang et al. 2020a, b). A population survey conducted in Germany during the pandemic found that women were more concerned about COVID-19 than men (Gerhold 2020). The presence of more depression and anxiety symptoms in the female public may be linked to the role of gender. A population survey conducted in Germany during the pandemic found that women were more concerned about COVID-19 than men (Gerhold 2020). The presence of more symptoms of depression and anxiety in the female public may be linked to the role of gender. Masculinity may be negatively associated with seeking treatment (Wong et al. 2017), indicating that men may have more difficulty recognizing, accepting the symptoms, and seeking help. These aspects may even interfere with how men answer self-applicable tools.

Also, symptoms of depression and anxiety were more prevalent among undergraduates who do not work compared to those who do. In the current scenario of uncertainties and financial crisis due to the pandemic, having a job can be a source of security for certain people since it guarantees some income. A recent study on the impact of the pandemic has identified that low income is associated with higher mental health damage (de Duarte et al. 2020). Also, individuals who have maintained their work routine have continued to socialize, which can contribute to the management of symptoms of depression and anxiety that social distancing can trigger.

Regarding religiosity/spirituality, undergraduates who practice some religion presented lower scores in depression symptoms than those who do not practice it. These findings corroborate the scientific literature (de Souza et al. 2008). Religious engagement can be a protective factor since it enables a community experience that can be a source of satisfaction and expansion of the meaning of life. A study conducted in Pakistan revealed that strategies focused on elements of religiosity and spirituality were the most frequent among students throughout the pandemic (Salman et al. 2020).

Undergraduates who are not religious use more the strategy of accepting responsibility, differing from the retrieved literature, which points that greater religiosity/spirituality is usually associated with the strategy of conflict resolution (Fleury et al.

2018). Institutional engagement in some religions may require specific responsibilities, especially in a developmental phase that coincides with entry into adulthood. The absence of such belonging can also be an invitation to take more responsibility for one's own life and, therefore, in the context of the pandemic. The literature points out that greater religiosity/spirituality was commonly associated with the strategy of conflict resolution, which differs from this study's results (Fleury et al. 2018).

Another important aspect to be highlighted is the differences between students from public and private institutions. Students from public universities were more susceptible to depressive symptoms. Overall, undergraduates from public institutions usually belong to a lower socioeconomic status. Therefore, knowing that income has an impact on mental health (de Duarte et al. 2020; Marinho Alves and Rodrigues 2010; Nogueira and Sequeira 2017), such a result is not unexpected.

Undergraduates of private institutions employed more social support strategies and positive reassessment to face the pandemic and the study in this context of social distancing. Pro-social and cognitive coping strategies are associated with fewer mental problems (Guo et al. 2020). Furthermore, in some cases, young people choose to move to another city and even state to enter a public institution, which takes them away from their social support network. Greater social support for undergraduates from private institutions during the pandemic may give them more conditions to understand their study experience in distancing due to the greater comfort and protection. This may have triggered positive aspects concerning this pandemic experience.

Hence, social support was relevant for the maintenance of the studies, corroborating results of previous surveys (Soares et al. 2019). This social support may be related both to the support offered by educational institutions in a formal way, as well as to the support of colleagues, family members, and other people who may be, directly or indirectly, related to the educational activities carried out during the pandemic. Due to the pandemic, this social support may also have emerged as a necessity, as diverse adjustments had to be undertaken for the continuity of educational activities, (e.g., technical adaptations, hours of study, and the teaching characteristics), as well as for satisfying the needs caused by the pandemic.

This analysis is also justified by the fact that the students who continued their studies used further conflict resolution strategies during their study time during the pandemic. This strengthens the fact that the pandemic brought the need for different adjustments for the maintenance of student activities, such as time management, creation of routine studies, study flexibility, contact with new didactic strategies, and the need for a more personal study organization, following the recommended distancing. Adapting to these needs and resolving emerging conflicts in this context is a response that can be useful not only for the continuation of studies at this time but also as a developmental invitation, as reinforced by literature (Soares et al. 2019). This scenario can provide greater maturity in students, increase autonomy and development of important skills for the teaching-learning process, and future preparation for the labor market and career development.

As a result of social withdrawal, students began to study more individually, receiving social support through synchronous and asynchronous communication, but still a less collective study was prevalent. This process of greater withdrawal may have promoted a major adoption of the self-control strategy in the sample (Santoya Montes et al. 2018). Thus, to face the routine of studies and the challenges triggered by the teaching and learning processes' maintenance, self-control was used as a resource capable of

promoting higher self-knowledge, expanding the possibilities of more prudent decision making and with higher chances of positive resolution of possible conflicts.

The capacity for self-control is also associated with better management of emotions, behaviors, and attitudes, and is an important index of emotional maturity to be considered in this stage of development. Thus, self-control can be a strategy of confrontation quite evoked in the context of social distancing, promoting a necessary reflection to face the challenges of this specific moment. Self-control can also be a resource to be better explored in different situations. Strategies focused on managing emotions were also reported in the studies by Rogowska et al. (2020), conducted in Poland, and Savitsky et al. (2020), in Israel.

Another important result was that undergraduates who are not studying during the pandemic because of the interruption of in-person classes and the non-adoption of online studies show more anxiety. This anxiety can be explained by the fact that they are far from teaching activities, increasing thinking about the return to presential activities, the replacement of classes, the progress of didactic schedules, and previous planning, among other aspects. Anxiety seems to be an expected reaction in these young adults through a scenario of unpredictability combined with the interruption of daily activities.

Somehow, the performance of remote activities seems to diminish students' anxiety related to the return to classroom teaching, although it also causes higher stress because several changes had to be made to maintain the teaching and learning activities. Therefore, interrupting studies can trigger major anxiety, but maintaining these activities can cause stress. It is believed that this stress may also be related to the instabilities created by the pandemic (Gallè et al. 2020; Wang et al. 2020b) since it is not possible to predict how and when they return to classroom teaching in educational institutions will take place, since this is one of the sectors with the highest risk of contagion.

The correlations between some strategies and other variables have shown that the female gender is prone to employ more strategies such as acceptance of responsibility, conflict resolution, and escape. The use of the first two strategies can indicate greater maturity of female students by prioritizing the identification of problems and engaging in problem-solving. Although there is not enough data to associate this greater maturity with the period of the pandemic, an explanatory hypothesis can be made: possibly these girls also play different roles within the family, and the pandemic has interrupted the need for maintenance of studies and support in the domestic environment, demanding the development of strategies that can be more effectively related to the pursuit of daily activities such as the study.

Finally, it is important to note that discussions on coping strategies need more dialogue with the literature. In a still incipient production context, many correlations and associations are supported by hypotheses that need to be discussed at the interface with other studies, possibly ongoing. As an exploratory effort, the analyses developed in this study may be relevant in presenting a first portrait of how these undergraduates can cope with the scenario that has caused different sorts of changes.

Final Considerations

The results of this study make it possible to conclude that the pandemic seems to affect the undergraduates unanimously. However, some factors are important in this discussion.

Characteristics such as female gender, lower-income, studying at a public university, not practicing any religion, and not working revealed more significant levels of depression, as well as students in social distancing. Coping strategies also correlated to some variables such as age, gender, and type of educational institution (i.e., public, or private). Taken together, these results indicate that the variables investigated and highlighted here should be included in the planning of interventions for undergraduates in a crisis, such as the pandemic that is currently being faced worldwide.

The results presented and discussed here should be considered from the macro-social context. The management of the pandemic by national authorities is questionable, to say the least. Criticisms are being made for the lack of an effective plan to confront and contain the spread of the virus (Prado 2020). Lack of knowledge about the pandemic and its control (Gallè et al. 2020) and lack of accurate health information (Wang et al. 2020b) are associated with major mental health damage. Hence, such a macrosocial panorama combined with the graduation season, often characterized by intense changes and uncertainties, may put undergraduates at risk for symptoms of depression, anxiety, and stress, as well as for adopting ineffective coping strategies. However, closeness to colleagues and interpersonal relationships can be protective factors against depression, which should be analyzed from other elements in the context of the pandemic.

Thus, social support and a positive re-evaluation of the experience may allow these students to face this illness, which seems to have been more expressive in students from private institutions, possibly with educational structures more adapted to the maintenance of teaching and learning processes in a social distancing context. The maintenance or not of didactic activities seems to have an ambivalent effect: on the one hand, the interruption of studies proved to be more associated with anxiety symptoms, but on the other hand, the maintenance of these activities was correlated with increased stress. Therefore, focus on coping strategies can be an important and adaptive response in this context. Those who remained active in the studies had to develop a broader repertoire of social support, using more conflict resolution strategies. Equally, students in distancing education made more use of self-control.

Thus, the pandemic seems to have allowed the students to learn how to handle conflict from social support anchored in collectivity and self-control. So, effective social support and the ability to manage one's own emotions seem to have been adaptive and positive answers in coping with the complex situations arising from the COVID-19 pandemic.

It is important to emphasize that these strategies do not refer exclusively to situations associated with a university education, but to the entire interactive context involving other important scenarios, especially the domestic environment. Investing efforts in interventions that can be carried out remotely and with a focus on this interactive group seems to be a pertinent recommendation because of the results achieved. As an equivalent response to the challenges faced by these young people, it is possible to call on the support of teachers and managers to expand social support networks at this time, investing efforts in spaces and welcoming strategies connected to teaching facilities (Scorsolini-Comin 2020).

This study has limitations. The predominantly female sample profile and the higher participation of students from the southern region of the country may not represent the totality of undergraduates from the diverse Brazilian context. During the pandemic, some factors may impact the perceptions of undergraduates regarding the effects of

social distancing, and the expectation for the gradual reopening of different segments such as educational: differences in state and municipal laws, availability of health systems, death records, and confirmed cases in different regions.

It is also relevant to consider that the data collection was carried out online, which may have selected only undergraduates with internet access (via computer or smartphone), although the sample is composed of people from different social classes. Another aspect to be considered is the period of data collection—the first six months of 2020. Although this period was similar to that reported in international studies (Maia and Dias 2020; Rogowska et al. 2020; Savitsky et al. 2020), in the second half of the year there were observed important changes that may interfere in the discussion of the results, such as the resumption of some presential activities at universities, the imminence of a second wave of contagion in November and December in Brazil, and the extended effect of quarantine, directly impacting the young people.

Regarding the development phase presented by most respondents, age may be associated with the adoption of better strategies for conflict management. The results of this study indicate that older undergraduates avoid confrontation strategies, engaging the relational context responsible for social support networks. Moreover, they are associated with a more individualized context, possibly strengthened by the need for distancing, which offers the opportunity to take a closer look at these inner elements. Therefore, the strategies discussed in this research suggest investments both collective and individual; for this reason, it is important to build a university culture of cooperation allied to the need for emotional maturity, which demands distinct but complementary efforts. The pandemic must be a contextual variable to be considered as it resounds in these two movements, which should be better investigated in future studies.

Declarations

Informed Consent   Additional informed consent was obtained from all individual participants for whom identifying information is included in this article.

Conflict of Interest   The authors declare that they have no conflict of interest.

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