

# Perceived Stress Among University Students in South-East Serbia During the COVID-19 Outbreak

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## Primary research

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# Abstract

**Background** The COVID-19 pandemic has brought into focus the mental health the student population. The study aimed to analyze the psychological response to the COVID-19 outbreak in terms of perceived stress and its related factors among university students in the southeastern Serbia. The study was conducted during the increasing rate of the coronavirus disease in Serbia.

**Method** A total of 434 students from the public university in South-East Serbia enrolled in the study and completed the measures of socio-demographical data, the Perceived stress scale (PSS-10), the Coping Strategy Indicator (CSI) and the General Health Questionnaire (GHQ-28). The data were analyzed through quantitative and qualitative methods.

**Results** Study findings suggest that the mean perceived stress score was placed to 20.43 ( $\pm 7.67$ ), suggesting that the students showed high stress level during the COVID-19 outbreak. Our model showed that female gender, higher scores on anxiety/insomnia and depression subscales as well as the coping strategy avoidance predicted higher level of perceived stress, while higher scores on social dysfunction were related to the reduced perceived stress scores.

**Conclusion** Besides limitation of the study, findings provided authentic data of stress reactions of students in South-East Serbia during the COVID-19 outbreak. The findings confirm the need to examine the experience of students in states of emergencies and crisis as well as introduce a plan for support programs aimed at preventing a decline in education efficacy in the long run, together with preventing the occurrence of mental disorders.

## Introduction

On March 11th 2020, the World Health Organization (WHO) declared COVID-19 a pandemic[1]. On March 15th, a state of emergency was introduced in Serbia in order to prevent the spread of the infection, and lasted until May 6th 2020. An emergency such as the COVID-19 outbreak can rightly be considered a severe stressor given that, combined with social restrictions, a new and unexpected situation can have serious potential effects on the one's own health and the health of their loved ones[2]. The student population in Serbia faced the sudden disruptions in their academic study, universities closing down, distance learning, reduced social interactions as well as the strict public health measurements (including the stay-at-home orders, quarantine and isolation in order to reduce social contacts). Some papers pointed out that an infectious disease outbreak can represent a significant psychological stressor and lead to unfavorable effects on learning and the overall psychological students' health[3].

Stress can be defined as 'a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his/her resources and endangering his/her well-being' [4]. Stress is associated with negative physical health outcomes and the exacerbation of mental health symptoms and psychological distress[5, 6]. Psychological distress is largely defined as a state of emotional suffering characterized by symptoms of depression and anxiety[7]. These symptoms often

coexist and co-occur with common somatic complaints[8]. It has been established that coping is a key variable in the process of reducing, minimizing or tolerating stress[9]as well as preventing psychological distress[10]. Coping strategies refer to behavioral and cognitive efforts that help reduce the pressure of a stressful situation and are used when its demands exceed individual resources[4].The appraisal literature describes the response or coping process in terms of problem-focused or emotion-focused coping[4], also referred to as *active* and *avoidance* coping styles[11].Active coping is characterized by strategies such as problem-focused coping and is generally associated with more adaptive adjustment whereas passive coping (such as negative self-targeting and avoidance) is represented as a maladaptive strategy when facing stressful situations[12]. Based on the previous experiences with infectious disease outbreaks, a study among 381 undergraduate students suggested that the number of stressors and use of avoidant coping strategies during the 2003 Beijing SARS epidemic predicted psychological symptoms, whereas active coping strategies predicted life satisfaction[13].

Current research of the psychological impact of the COVID-19 pandemic on students is related to Asian and Western samples[14, 15, 16, 17, 18, 19, 20].The main goal of this study was to investigate the psychological response of university students in South-East Serbia to the COVID-19 outbreak in terms of perceived stress and its related factors. The perception of stress, i.e. the degree to which one perceives the situation as being stressful, accounts for the varying responses to potentially stressful events[21]. We explored the association of gender, psychosocial stressors common to COVID-19, coping strategies for dealing with stressful situations and psychological distress levels with levels of perceived stress during coronavirus outbreak.

## Method

The study was approved by the Board of Ethics at the Clinical Centre Nis, University of Nis (i.e. the regulatory Authority providing the guidelines for research and clinical practice).Students at the University of Nis were informed about the purpose of this anonymous survey and invited to participate in the study via social media. Data collection for the study was accomplished by distributing the survey instruments online through Google forms together with an appended consent form. The study was conducted during the increasing rate of COVID-19 cases from 18th May to 1th June 2020.

The participants filled in the demographic information on age, gender and living conditions. They were given a few closed questions (yes/no) about psychosocial stressors common to COVID-19 – infected by SARS-CoV-2, feelings of concern and fear of contracting COVID-19, concern for the health of family members, taking part in volunteer activities to help disabled persons during the coronavirus outbreak. Three main outcome measures were used:

**Perceived Stress Scale (PSS-10)**[22] This scale evaluates the respondents' perceptions of the stress levels they experience in specific situations. The respondents answered 10 questions on how unpredictable, uncontrollable and overloaded they found their lives during the previous month, which was suitable for the current situation with the Corona 19 outbreak. In each case, the respondents were asked how often

they had felt a certain sensation in the previous month. A 5-point Likert scale (ranging from 0="never" to 4="very often") was used to grade the levels of perceived stress. The global PSS score ranges from 0 to 40 with higher scores indicating higher levels of perceived stress. A score ranging from 0–12 would be considered medium-low level of stress; a score between 13 and 19 represents a medium-high level of stress. A score over 20 represents a high level of stress and may have clinical significance.

**General Health Questionnaire (GHQ-28)**[23] Psychological distress levels were measured through the GHQ-28. This 28-item self-administered questionnaire is grouped into four subscales: somatic symptoms, anxiety/insomnia, depression and social dysfunction. The scoring system in this study was the same as the original scoring system, the 4-point Likert scoring method ranging from 0 = "better than usual" to 3= "much worse than usual". The minimum score for the GHQ-28 version is 0, and the maximum is 84. Higher GHQ-28 scores indicate a greater probability of psychological distress. Total scores of 23 or below should be classified as non-psychiatric, while scores  $\geq 24$  indicate the presence of psychological distress or "caseness" but this score is not an absolute cut-off.

**The Coping Strategy Indicator (CSI)**[24] is a 33-item, 3-point self-report rating scale designed to assess three separate, large, heterogeneous fundamental strategies: Problem solving (PS), Seeking social support (SS) and Avoidance (A). Problem Solving involves an instrumental, problem-oriented approach to managing stressors actively. Seeking Social Support relates to the basic human need for human contact in times of forcible restraint and is manifested by actively seeking comfort, help and advice from others. Avoidance involves escape responses, such as physical and/ or psychological withdrawal, for example, through distraction or fantasy. The items of the CSI are scaled on a 3-point Likert scale (1 = "not at all", 3 = "a lot"). These responses indicate whether participants cope by problem solving, seeking social support or avoiding the event. Higher scores on each subscale suggest a higher probability to make use of the associated coping strategy. There are CSI norms established through the initial CSI validation study.

**Data analysis:** SPSS software version 15.0 was used for the statistical data processing. The frequencies of the qualitative features were measured by the  $\chi^2$  test. Upon determining the normal distribution and testing normality using the Kolmogorov-Smirnov test, the values of continuous variables were compared among different modalities using the Student's t-test (For Independent Samples) in the case of normal distribution, or the Mann–Whitney U test in case the distribution deviated from normal. The Spearman's rank correlation coefficient was used to determine the interconnection of continuous parameters. The factors important for the prediction of the PSS score were determined by the univariate and Stepwise multivariate linear regression analysis.

## Results

There were 434 students who completed the questionnaire. SARS-CoV-2 infection was confirmed in 6 respondents (1.38%) and these were excluded from further statistical data processing.

The sample included a statistically relevant difference in the number of female respondents (335, i.e.78.27%) in comparison to male ( $p < 0.001$ ). The average age of the respondents was  $23.81 \pm 5.25$  (range 19–25). The statistically relevant majority, 324 (75.50%) lives with their parents.

Table 1. shows the structure of the respondents by gender, age and the place of residence.

Significantly fewer respondents 71 (16.59%) reported feelings of concern and fear of contracting COVID-19, significantly more respondents 263 (61.45%) had concerns for the health of family members, whereas significantly fewer respondents, 49 (11.45%), participated in any volunteer activities ( $p < 0.001$ ).

Table 3. shows the values of the descriptive parameters for the PSS-10, CSI and GHQ-28 scores among the non-infected respondents ( $n = 428$ ).

Based on the average values on the PSS-10 of  $20.37 \pm 7.62$  (20.00) higher than 20, it is evident that the average level of perceived stress is high because it is close to the value of 20, which defines it as such based on this scale (Table 3).

Based on the average values of the CSI scores, the value of  $25.76 \pm 4.61$  (26.00) on Problem solving is within the expected average of 26, Seeking social support,  $22.15 \pm 5.01$  (22.00), is slightly lower than the expected average of 23.00, whereas the score on Avoidance of  $23.78 \pm 4.20$  (24.00) is significantly above the expected average of 19 (Table 3).

The findings on the GHQ-28 identified that 48.83% of students scored higher or equal to 24 (Table 3). On the GHQ-28, the highest average values were on the Anxiety/insomnia subscale, with the average value of  $8.03 \pm 5.91$  (7.00), closely followed by the Social dysfunction subscale with  $7.99 \pm 3.72$  (7.00). The score on Somatic complaints was significantly lower,  $6.56 \pm 4.75$  (6.00), while the least pronounced was the Depression subscale, with  $3.69 \pm 5.04$  (1.00) (Table 3).

The Student's t-test (For Independent Samples) revealed a significantly higher PPS in female respondents ( $p < 0.01$ ), respondents who expressed a concern for the health of family members ( $p < 0,01$ ) and in students who did not participate in any volunteer activities ( $p < 0.001$ ) (Table 4)

The Spearman's rank correlation coefficient showed a statistically relevant negative and low correlation of the PSS-10 values with Problem Solving ( $\rho = -0.21$ ,  $p < 0.001$ ) as well as a positive and high statistically relevant correlation of PSS with Avoidance ( $\rho = 0.50$ ,  $p < 0.001$ ) were found. There was no relevant correlation between the PSS values and Seeking social support ( $\rho = -0.001$ ,  $p > 0.05$ )

The Spearman's rank correlation coefficient showed a statistically relevant positive and extremely high correlation of the PSS-10 values with Somatic complaints ( $\rho = 0.643$ ,  $p < 0.001$ ) and Depression ( $\rho = 0.645$ ,  $p < 0.001$ ), and an even higher positive correlation with Anxiety/insomnia ( $\rho = 0.763$ ,  $p < 0.001$ ).

The results of the univariate linear regression analysis showed that the higher PSS-10 values were significantly influenced by the overall GHQ-28 scores higher or equal to 24, the overall GHQ-28

questionnaire scores alone, and the scores on its three subscales (somatic symptoms, anxiety/insomnia and depression) as well as the Avoidance subscale on the CSI scale, concern for the health of family members, and the female gender (Table 5)

The overall GHQ-28 questionnaire score higher or equal to 24 increased the PSS-10 score for 8.71 (7.521 – 9.898,  $p < 0.001$ ) in comparison to the respondents with an overall GHQ-28 up to 23. This has the highest influence on the PPS-10 (Table 5).

Female respondents had a 2.659 (0.921 – 4.397,  $p < 0.01$ ) higher PSS scores in comparison to the male ones, whereas the ones with a concern for the health of family members had a 2.459 (0.989 – 3.929,  $p < 0.01$ ) higher PPS scores in comparison to the respondents who expressed no concern for the health of family members (Table 5)

A unit increase on the Somatic complains subscale score led to an increase in the PSS score by 0.983 (0.862 – 1.104,  $p < 0.001$ ); a unit increase on the Anxiety/insomnia subscale score led to an increase in the PSS score by 0.959 (0.877 – 1.040,  $p < 0.001$ ), and on Depression by 0.871 (0.754 – 0.989,  $p < 0.001$ ). A unit increase on the Avoidance subscale led to an increase in the PSS score by 0.880 (0.729 – 1.031,  $p < 0.001$ ) (Table 5).

A unit increase of the overall GHQ-28 score led to an increase in the PSS score by 0.355 (0.319 – 0.392,  $p < 0.001$ )(Table 5)

Volunteering – helping the disabled persons during the COVID-19 pandemic had a statistically relevant influence on lowering the PSS scores by 4.038 (-1.795 – -6.280,  $p < 0.001$ ) compared with the non-volunteers. Apart from volunteering, a statistically relevant influence on lowering the PSS scores had the sub-score Problem-Solving on the CSI questionnaire (its unit increase lowers the PSS score by 0.393 (-0.240 – -0,546,  $p < 0.001$ )) and Social dysfunction, sub-score on the GHQ-28 scale, whose unit increase lowered the PSS-10 score by 0.212 (-0.018 – -0.406,  $p < 0.05$ )(Table 5).

The initial model of multivariate linear regression analysis was formed based on the variables that were shown in the univariate analysis as factors with a significant influence on the PSS scores. By applying the stepwise regression in step 5, an optimal model of the combined influence of the variables on the PSS-10 score was obtained, which consisted of anxiety/insomnia, depression, gender, avoidance and social dysfunction (Table 6). The multiple-correlation coefficient R is 0.783, and the multiple-determination coefficient is 0.613, which means that in the 61.3% of the tested sample, the PSS-10 score variance was determined by the variance of the set of predictor variables found in the final model. The female gender showed to be the most significant factor influencing the increase in the PSS score, followed by anxiety/ insomnia, depression and avoidance, whereas social dysfunction showed to decrease the score we examined (Table 6).

## Discussion

This study aims to evaluate the level of perceived stress and its related factors due to the COVID-19 outbreak among university students in South-East Serbia. The study findings suggest the mean perceived stress score of 20.43 ( $\pm$  7.67), suggesting that students in our study showed a high stress level during the COVID-19 outbreak. Our results are similar to some studies[14, 25].conducted in the world during current pandemic, but also higher than those obtained in others[20]. For example, Sheroun et al.[14] have found that the mean perceived stress score of the college student Nurses in Puna, aged 21–25, was 21.88 ( $\pm$  4.30). Collecting the data about the perceived stress during the COVID-19 epidemic, an internet survey conducted among 2,449 residents in twenty Provinces of China, reports the strongest perceived stress of 23.87 ( $\pm$  6.18) and 48.66% with students who were in the state of health risk stress[25].Son et al. [20]reported the mean PSS score of 18.8 ( $\pm$  4.9) among students, average age 20.7, indicating moderate perceived stress during the outbreak of the coronavirus disease.

Our findings showed that female students were significantly more stressed during the COVID-19 outbreak than the male and that being female significantly predicted higher perceived stress in our sample. Gender differences in the psychological response to the epidemic have been shown in earlier research[3] as well as the recent studies carried out on student population during the COVID-19[15, 16, 26]. Mirowsky and Ros[7] found in their study that gender influences the appraisal process of stressful events in ways that are consistent with the different socialization patterns of males and females.

In the present study, expressing a concern for the health of family members during the COVID-19 outbreak predicted higher levels of perceived stress. Recent studies found that concerns relating to the health of family members have been highly prevalent among the student population during the pandemic[20, 27]. Most of the students in our sample live with parents. Since it is assumed that older people are more likely to have a worse prognosis after a SARS-CoV-2 infection, students may have been more concerned about their parents and other older family members than about themselves. Ding et al.[27] pointed out that students believe their parents have a higher risk of being infected by COVID-19 and that their own risk is lower because the parents have to go to work or take care of the family. Furthermore, the respondents cannot control their parents' behavior [27].

Numerous emotional, physical, and social benefits associated with volunteering have been well documented. Studies have demonstrated that volunteers experience a "helper's high"- a prolonged feeling of calm, reduced stress, and greater self-worth after helping others[28] and that overall life satisfaction is higher among those who volunteer[29]. Our findings indicate accordingly that students involved in volunteering activities helping the disabled persons during the COVID-19 outbreak, experience lower perceived stress than the non-volunteers. In other words, in our sample, volunteering during the actual COVID-19 crisis significantly reduces stress.

Among the three basic models of CSI coping, the study findings show that problem solving was most used in response to COVID-19 emergency, followed by avoidance and seeking social support. Mean scores obtained on the subscale Avoidance are significantly above the expected normative average for CSI. Previous studies during the SARS epidemic (2002–2004) reported that college students used less

active (problem-focused) coping strategies and more avoidant coping strategies in response to SARS-related stressors (which were rated by participants as less controllable) in comparison to daily stressors during the outbreak[30]. The correlation analyses and our model showed that the coping strategy avoidance not only has a significant positive correlation but also serves as a good predictor of the perceived stress. These results are in line with previous studies which reported the negative impact of the avoidance strategy on university adjustment, especially the mental health of students[31, 32], and the existing literature on the relation between coping and response to epidemics[33, 34]. Despite the efficacy and potential benefits derived from employing avoidance coping under specific situations, such as in situations that require immediate and short-term response to threat as well as those that are uncontrollable[4], this coping mechanism is grouped among dysfunctional reactions to stressful situations as it deals with the likelihood with which individuals adopt strategies based on avoidance when they face problematic situations. Regarding the problem-solving strategy, our results show a negative and significant correlation between perceived stress and problem-solving. These results are consistent with other past and current studies on infection disease outbreak indicating that problem solving is an active coping strategy with a psychological impact on stress reduction[13, 33, 34, 35]. Some research during the current coronavirus pandemic among Italian general population has shown that seeking social support was positively related to perceived stress[33], and that higher social support predicted higher levels of stress[34]. In this study, a negative correlation was found between seeking social support and stress levels, but not at the level of statistical significance.

Using the cut-off score of GHQ-28, it was found that 48.83% of students reported psychological distress. This seems to suggest that the students are psychologically healthy in general but a considerable proportion of them have been identified to have a potential to develop psychological problems. Psychological distress analysis using GHQ-28 during the COVID-19 outbreak showed the highest average scores among students on the anxiety/insomnia subscale, followed by social dysfunction and somatization, whereas the lowest average values were recorded on the depression subscale of the GHQ-28. According to Leung et al. large outbreaks of novel or serious infectious diseases are associated with levels of anxiety that may be far greater than the risk of becoming infected or of mortality from infection[35]. Recent studies, which evaluated the mental health of university students during COVID-19 in Spain[16] and China[15, 17] reported anxiety, stress, and depression. Regression analysis indicates that an increase in distress indicators, marked by a GHQ-28 total score higher or equal to 24, together with its three factors including anxiety/insomnia, depression and somatic symptoms lead to a significant increase in the stress level in our sample. Our model showed anxiety/insomnia and depression as strong predictors of perceived stress after controlling other variables, indicating a common mechanism between mental health disorders and stress confrontation. Contrary to the findings in the literature, which indicate a positive association between social dysfunction subscale on the GHQ-28 and perceived stress among student population[36], our research showed that higher scores on the social dysfunction subscale predicted lower perceived stress. The Social dysfunction subscale is comprised of items which indicate engaging in everyday activities like "been satisfied with the way you've carried out your task", "been taking longer over the things you do", where higher values recorded on this subscale suggest

compromised functional abilities of the respondents. A possible explanation of this result may be related to the dramatic situation associated with the COVID-19 pandemic and up to now unseen global reaction to some disease. Namely, soon after the declaration of the pandemic, the University of Nis closed all facilities, suspended classes, exam deadlines and almost all academic obligations. As the student population is under constant pressure to meet the set deadlines and coordinate studies with other obligations[37], it is possible that in the circumstances when “the whole world stopped because of the Corona” students were less satisfied with the way they performed tasks, but at the same time had an external justification for the reduced functional performance, were relieved and under less stress. This result has to be observed with caution as further research is needed to explore it, perhaps with control measures such as years of studying, previous success in studies, perceived self-efficacy etc.

**LIMITATION** There are two major limitations of the study. The study sample was small and the survey included only university students in the southeastern region of Serbia therefore being hardly representative of all Serbia. Recruiting more students from different regions of the country could improve the study results. Also, online assessment may entail data of a lower quality than that obtained by face-to-face interviews.

## Conclusion

Study findings suggest that perceived stress during the COVID-19 outbreak was high among students in South-East Serbia. Our model there showed that female gender, higher scores on anxiety/insomnia and depression subscales on GHQ-28 as well as the coping strategy avoidance predicted higher levels of perceived stress, while higher scores on the social dysfunction subscale reduced stress. The nature of the association between social dysfunction and perceived stress could be the subject of further research. The findings of the study confirm the need to examine the experience of students in states of emergencies and crisis as well as introduce a plan for support programs aimed at preventing a decline in education efficacy in the long run, together with preventing the occurrence of mental disorders. In addition, further studies are needed to determine the effects of the pandemic on the mental health of students in the later stages of the health crisis.

## Abbreviations

**PSS:** Percived stress scale

**CSI:** Coping Strategy Indicator

**GHQ:** General Health Questionnaire

## Declarations

**ETHIC APPROVAL AND CONSENT TO PARTICIPATE**

This study was approved by the Ethics Committee of the Clinical Centre Nis, Serbia (11744/2;5.05.2020) and all procedures were in accordance with the latest version of the Declaration of Helsinki. Informed consent was obtained for all participants.

## **CONSENT FOR PUBLICATION**

Not applicable.

## **AVAILABILITY OF DATA AND MATERIALS**

All data generated or analyzed during this study are included in this published article.

## **COMPETING INTEREST**

The authors declare that they have no competing interest.

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## **AUTHOR CONTRIBUTION**

Jelena Kostic contributed to study design, data analysis and article drafting. Olivera Žikić contributed to study design, data analysis and data interpretation. Vladimir Đorđević contributed to data collection and data analysis. Žilijeta Krivokapić contributed data collection and data analysis. All authors read and approved the final manuscript.

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## Tables

Table 1  
Respondents' structure by gender, age and the place of residence.

Parameter	n	%	p
Gender			
Male	93	21.73%	
Female	335	78.27%	***
Age	23.81 ±5.25 (23.00) [19–25]		
Residence			
Living with the parents	324	75.50%	***
Other	104	24.30%	
Continuous variables are represented as X±SD (Me) [min-max], and the category variables in absolute numbers and percentage *** -p < 0.001 (Pearson's $\chi^2$ test).			

Table 2  
Respondent's answers on psychosocial stressors common to COVID-19

Question and the offered answers	n	%	p
Feelings of concern and fear of contracting COVID-19			
Yes	71	16.59%	
No	357	83.41%	***
Concern for the health of family members			
Yes	263	61.45%	***
No	165	38.55%	
Participation in volunteer activities			
Yes	49	11.45%	
No	379	88.55%	***
The frequency of category variables is represented in absolute numbers and percentage; *** -p < 0.001 (Pearson's $\chi^2$ test)			

Table 3

Descriptive statistic for the PSS-10, CSI and GHQ-28 scores (n = 428)

<b>Scale</b>			
PSS-10	20.37	± 7.62	(20.00)
CSI			
Problem-Solving	25.76	± 4.61	(26.00)
Seeking Social Support	22.15	± 5.01	(22.00)
Avoidance	23.78	± 4.20	(24.00)
GHQ 28			
Somatic symptoms	6.56	± 4.75	(6.00)
Anxiety	8.03	± 5.91	(7.00)
Social dysfunction	7.99	± 3.72	(7.00)
Depression	3.69	± 5.04	(1.00)
GHQ 28 total	26.28	± 14.52	(23.00)
GHQ 28 total (≥24)		209	(48.83%)
Continuous variables are represented as X±SD (Me).			
Qualitative parameters GHQ 28 total (≥24) are shown in frequency and %			
*** -p < 0.001 (Pearson's $\chi^2$ test).			

Table 4

Descriptive parametric statistics for the PSS-10 in relation to the place of residence, feelings of concern and fear of contracting COVID-19, high-risk family members and volunteering

<b>PSS</b>				
Gender				
Male (n = 93)	18.29	±7.19	(19.00)	
Female (n = 335)	20.95	±7.64	(21.00)	**
Living with parents				
Yes (n = 324)	20.30	± 7.71	(20.00)	
No (n = 104)	20.59	± 7.35	(21.00)	
Feelings of concern and fear of contracting COVID-19				
Yes (n = 71)	20.59	±9.21	(23.00)	
No (n = 357)	20.33	± 7.27	(20.00)	
Concern for the health of family members				
Yes (n = 263)	21.32	±7.46	(21.00)	**
No (n = 165)	18.86	± 7.64	(19.00)	
Volunteering during the COVID-19 outbreak				
Yes (n = 49)	16.80	±7.66	(17.00)	
No (n = 379)	20.83	± 7.50	(21.00)	***
Continuous variables are represented as X±SD (Me)				
** - p < 0.01, *** -p < 0.001 (Student's t-test for independent samples)				

Table 5  
Assessment of the impact of factors of interest on the PSS-10 score,  
the results of the univariate linear regression analysis.

Factor	p	B	95% CI for B	
			Lower	Lower
Living with parents	0.7411	-0.284	-1.973	1.405
Female	0.0028	2.659	0.921	4.397
Feelings of concern and fear of contracting COVID-19	0.7902	0.264	-1.684	2.211
Concern for the health of family members	0.0011	2.459	0.989	3.929
Volunteering - helping disabled persons	0.0004	-4.038	-6.280	-1.795
Problem-Solving	0.0000	-0.393	-0.546	-0.240
Seeking Social Support	0.9800	0.002	-0.143	0.147
Avoidance	0.0000	0.880	0.729	1.031
Somatic symptoms	0.0000	0.983	0.862	1.104
Anxiety/insomnia	0.0000	0.959	0.877	1.040
Social dysfunction	0.0325	-0.212	-0.406	-0.018
Depression	0.0000	0.871	0.754	0.989
GHQ-28 Total Score	0.0000	0.355	0.319	0.392
GHQ-28 Total Score $\geq$ 24	0.0000	8.709	7.521	9.898
B – Regression coefficient, CI – trust interval				

Table 6  
 Assessment of the impact of factors of interest on the PSS-10 score, the results of the multivariate linear regression analysis

Factor	p	B	95% CI for B	
			Lower	Upper
Anxiety	0.0000	0.739	0.634	0.843
Depression	0.0000	0.293	0.178	0.408
Social dysfunction	0.0001	-0.241	-0.363	-0.118
Female	0.0007	1.913	0.808	3.017
Avoidance	0.0079	0.174	0.046	0.302
(Constant)	0.0000	9.650	6.585	12.715
B – Regression coefficient, CI – trust interval, R <sup>2</sup> =0.613				