

SOME ASPECTS OF PSYCHOLOGICAL FUNCTIONING IN STUDENTS DURING THE COVID-19 PANDEMIC

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Abstract: The aim of this study was to investigate the relationship between certain socio-demographic characteristics (gender, year of study), loneliness, personality traits (extraversion, neuroticism, openness, conscientiousness, agreeableness) and certain aspects of students' psychological functioning (depression, anxiety, stress, life satisfaction) during the COVID-19 pandemic. In addition, the study aimed to identify differences in certain aspects of mental health between male and female students and between students in lower and higher years of study. The study comprised 712 participants, including 563 female and 149 male students. The proportion of first-year students was 27.6%, the proportion of second-year students was 17.8%, the proportion of third-year students was 19.3%, the proportion of fourth-year students was 13% and the proportion of fifth-year students was 19.7%. The survey was conducted in June 2021 using an online questionnaire. The results show that female students have higher levels of anxiety and stress, while male students report higher levels of loneliness. In addition, students in lower years of study reported higher levels of depression, anxiety, stress and loneliness, while students in higher years of study reported higher levels of life satisfaction. A statistically significant positive correlation was found between neuroticism and loneliness with measures of mental health (depression, anxiety and stress), while a negative correlation was observed with life satisfaction. Extraversion and conscientiousness showed a significant negative correlation with measures of mental health and a positive correlation with life satisfaction. In addition, openness was negatively correlated with stress and agreeableness was negatively correlated with depression. As the study found significant differences in the determinants of mental health between lower and upper year students, it is important to ensure the availability of professional support for all students, especially lower year students who are still adjusting to the new living conditions. These findings suggest that strategic priorities need to be set across universities to protect and actively promote students' mental health.

Keywords: COVID-19, personality traits, loneliness, mental health

Field: Social sciences

1. INTRODUCTION

Students are particularly vulnerable to mental health problems (Blanco et al., 2008; Eisenberg et al., 2016) and the COVID-19 pandemic has further worsened their mental health (Cao et al., 2020). Social distancing measures reduced social interaction, while many students lost their jobs or experienced financial difficulties (Doolan et al., 2021). In addition, the transition to online education reduced direct contact with peers, which had a negative impact on academic performance and overall satisfaction. Research during the pandemic shows high levels of anxiety, depression and stress among students (Cao et al., 2020; Wang et al., 2020). French studies show that many students suffered from significant stress and mental health problems (Wathelet et al., 2020). In Croatia, although most students did not have severe problems, a significant percentage reported moderate mental health problems (Vulić-Prtorić et al., 2020). In addition, 7.9% of students had difficulties with online learning (Doolan et al., 2021). Research also show that first-year students experienced the most emotional difficulties during the pandemic, including depression and anxiety due to adapting to study conditions and new circumstances (Doolan et al., 2021; Živčić-Becirević et al., 2007). Loneliness resulting from social isolation has a negative impact on self-esteem and overall life satisfaction and can lead to serious physical and mental health problems (Brajković, 2010). Research shows greater loneliness in students leaving home and increased loneliness during the COVID-19 pandemic (Hwang et al., 2020; Santini et al., 2020). Loneliness is also associated with depression, anxiety and low self-esteem (Mushtaq et al., 2014) and has a negative impact on academic performance. Since entering university represents a significant life change for first-year students, involving an adjustment to new social and emotional challenges, differences in psychological functioning are expected between students in lower and higher years of study. It is hypothesised that lower year students will have higher levels of depression, anxiety, stress and loneliness and lower levels of life satisfaction, while female students will have higher levels of depression, anxiety, stress and loneliness and lower levels of life satisfaction compared to male students. In addition, personality traits such as extraversion,

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conscientiousness, openness and agreeableness are expected to be positively associated with higher life satisfaction and negatively associated with depression, anxiety, stress and loneliness in students of all years of study. In addition, neuroticism and loneliness are expected to be positively correlated with higher levels of depression, anxiety and stress and negatively correlated with life satisfaction.

2. MATERIALS AND METHODS

The final sample consisted of 712 participants, of whom 563 were female students and 149 were male students. 27.6% were first-year students, 17.8% were second-year students, 19.3% were third-year students, 13% were fourth-year students, and 19.7% were fifth-year students. More than half of the students (54.6%) had moved for their studies, the majority were single (53.8%), while 38.6% were in a relationship. During the COVID-19 pandemic, 64.4% reported good health and 63.5% reported an average financial situation. The majority had no fear of infection (69.7%) or death from the coronavirus (69.9%). Peers were moderately or strongly missed by 63.1%, and 79.9% were mostly or completely satisfied with family support. Similarly, 72.3% were satisfied with the support they received from friends. The virtual environment during the pandemic was moderately stressful for the majority (33.9%), while 32.4% categorised the adjustment of academic tasks as moderately stressful. Worrying about family was moderately stressful for most participants (39%). The following measurement instruments were used. Life Satisfaction Scale (SWLS) (Diener et al., 1985): this scale consists of 5 items that participants answered on a 7-point scale. Higher scores indicate greater life satisfaction. Goldberg's Big Five Personality Inventory (IPIP) (Mlačić & Goldberg, 2007): this scale measures 5 personality traits: extraversion, neuroticism, agreeableness, conscientiousness and intellect, with 10 items per dimension. Participants responded on a 5-point scale. Higher scores indicate a stronger personality trait. Short version of the UCLA Loneliness Scale (Lacković-Grgin et al., 2002): this scale measures the level of loneliness with 7 items, and participants responded on a 5-point scale, with higher scores indicating more loneliness. Depression, Anxiety and Stress Scale (DASS) (Reić Ercegovac & Penezić, 2012): the DASS measures depression, anxiety and stress with 42 items (14 per subscale). Participants answered the questions on a 4-point scale, with higher scores indicating a higher symptom level. The study was conducted in June 2021 via an online questionnaire on social media. Approval was obtained from the Ethics Committee of the Faculty of Philosophy in Mostar. Participants were informed about the anonymity and scientific purpose of the data and could withdraw at any time. The instructions were clear and adapted for each scale.

3. RESEARCH RESULTS

Table 1: Descriptive parameters, Kolmogorov-Smirnov test, skewness and kurtosis indices and reliability coefficients for the Extraversion, Emotional Stability, Agreeableness, Intellect and Conscientiousness scales, the Depression, Anxiety and Stress scale, the Loneliness scale and the Life Satisfaction scale (N=712) ($p < .05^*$; $p < .01^{**}$).

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Kolmogorov-Smirnov test</i>	<i>Skewness</i>	<i>Kurtosis</i>	<i>Cronbach α</i>
Extraversion	31.416	8.242	11	50	0.048*	-0.096	-0.524	0.88
Neuroticism	28.252	7.732	11	40	0.041*	-0.019	-0.578	0.85
Agreeableness	41.583	6.134	10	50	0.095*	-0.951	1.316	0.83
Openness	38.133	4.831	21	50	0.062*	-0.275	-0.114	0.70
Conscientiousness	37.456	6.929	14	50	0.073*	-0.461	-0.173	0.83
Depressiveness	10.445	10.867	0	42	0.168*	1.114	0.240	0.95
Anxiety	11.537	9.453	0	42	0.128*	0.921	0.151	0.91
Stress	16.341	11.208	0	42	0.098*	0.466	-0.803	0.94
Loneliness	16.523	6.206	7	35	0.088*	0.468	-0.452	0.81
Life Satisfaction	17.345	4.520	5	25	0.076*	-0.430	-0.393	0.84

Source: Author's research

The agreeableness and life satisfaction scales showed negative skewness, with results skewed towards higher scores, while the depression, anxiety and stress scales showed positive skewness, with results clustered around lower scores. A statistically significant difference was found in anxiety, stress, and loneliness by gender (Table 2); female students had higher levels of anxiety ($M_m=10.18$, $M_f=11.89$, $p<0.05$) and stress ($M_m=14.14$, $M_f=16.92$, $p<0.01$), while male students had higher levels of loneliness ($M_m=17.48$, $M_f=16.27$, $p<0.05$). There were significant differences in depression ($M_1 = 12.64$, $M_2 = 8.52$,

$p < 0.01$) anxiety ($M_1 = 13.54$, $M_2 = 9.58$, $p < 0.01$, stress ($M_1 = 18.13$, $M_2 = 14.80$, $p < 0.01$), loneliness ($M_1 = 17.73$, $M_2 = 15.58$, $p < 0.01$), and life satisfaction ($M_1 = 16.65$, $M_2 = 17.95$, $p < 0.01$) depended on the year; first-year students reported higher of depression, stress, and loneliness, while students in higher years were more satisfied with their lives (codes 1 and 2 refer to the years of study, where 1 represents lower years of study and 2 represents higher years of study). A statistically significant interaction between gender and academic year was found in depression and anxiety. Depression and anxiety scores were significantly lower in male students in higher years compared to female students in higher years, with depression ($M_f = 9.1$, $M_m = 6.28$, $p < 0.05$) and anxiety ($M_f = 10.65$, $M_m = 6.45$, $p < 0.05$).

Table 2: Significant differences in depression, anxiety, stress, loneliness and life satisfaction between male and female students and between students of different years of study using two-way analysis of variance ($p < .05^*$; $p < .01^{**}$)

Source of variability		df	F	p
Gender	Depresiveness	1	0.020	0.888
	Anxiety	1	3.681	0.055*
	Stress	1	7.254	0.007**
	Loneliness	1	4.701	0.030*
	Life Satisfaction	1	2.800	0.095
Year of study	Depresiveness	1	33.516	0.000**
	Anxiety	1	38.483	0.000**
	Stress	1	19.324	0.000**
	Loneliness	1	21.251	0.000**
	Life Satisfaction	1	16.519	0.000**
Interaction	Depresiveness	1	7.496	0.006**
	Anxiety	1	9.164	0.003**
	Stress	1	3.573	0.059
	Loneliness	1	1.208	0.272
	Life Satisfaction	1	2.632	0.105

Source: Author's research

The results showed that neuroticism and loneliness were significantly positively correlated with depression, anxiety and stress and negatively correlated with life satisfaction. Extraversion and conscientiousness showed a significant negative correlation with depression, anxiety and stress and a positive correlation with life satisfaction. Students with higher levels of these traits were more emotionally stable and more satisfied with their lives. Agreeableness was negatively correlated with depression and positively correlated with life satisfaction, while openness was negatively correlated with stress and positively correlated with life satisfaction, but not with depression and anxiety. Female students were more anxious and stressed, but no significant relationship was found between gender and depression or life satisfaction. Higher year students had lower levels of depression, anxiety and stress and higher levels of life satisfaction. In Table 3 the coding system is as follows (Gender 1 = female students, 2 = male students; Year of study 1 = lower years of study, 2 = higher years of study).

Table 3: Correlations between personality traits (neuroticism, extraversion, agreeableness, conscientiousness, openness) and loneliness with measures of depression, anxiety, stress and overall life satisfaction using Pearson's correlation coefficient ($p < .05^*$; $p < .01^{**}$).

	Depresiveness	Anxiety	Stress	Life Satisfaction
Neuroticism	.56**	.59**	.78**	-.34**
Extraversion	-.37**	-.25**	-.28**	.35**
Agreeableness	-.20**	-.05	-.07	.25**
Conscientiousness	-.35**	-.26**	-.22**	.32**
Openness	-.20	-.07	-.10**	.20**
Loneliness	.60**	.43**	.48**	-.40**
Gender (1,2)	-.01	-.74*	-.10**	-.06
Year of study (1,2)	-.19*	-.19**	-.15**	.14**

Source: Author's research

4. DISCUSSIONS

Statistically significant differences in anxiety, stress, and loneliness were found between male and female students. Female students have higher levels of anxiety and stress, while male students are lonelier. No differences were found in depression and life satisfaction. Additionally, first-year students show higher levels of depression, anxiety, stress, and loneliness, while upper-year students have higher levels of life satisfaction. A statistically significant interaction between gender and year of study is present in depression and anxiety, with upper-year male students exhibiting lower levels of these symptoms compared to female students. Numerous studies confirm the association with higher levels of anxiety in women (Costantini & Mazzotti, 2020). Li and Graham (2017) suggest that differences in sex hormones may play a role in women's greater sensitivity to anxiety and stress. Gender differences in loneliness may be caused by the quality of social relationships, with women having better-developed social networks (Gierveld et al., 2009). Although no differences in depression were found, research shows that both male and female students often minimize the symptoms of depression, which can make them harder to identify (Michael et al., 2006). For the pandemic period, this could mean that symptoms of depression might have been interpreted by students as indicators of a COVID-19 infection, given the overlap in certain symptoms (e.g., loss of appetite, fatigue, lack of concentration, etc.). First-year students face greater stress and uncertainties related to transitioning to university (Lacković-Grgin & Sorić, 1995), which was further exacerbated by the COVID-19 pandemic (Doolan et al., 2021). Moreover, higher stress levels in first-year students may be linked to challenges in adapting to academic life and social isolation. Furthermore, a positive correlation was found between neuroticism and loneliness with depression, anxiety, and stress, and a negative correlation with life satisfaction. Extraversion was negatively correlated with depression, anxiety, and stress, and positively correlated with life satisfaction. These correlations confirm previous research which suggests that neuroticism increases sensitivity to stress. There is a positive association between conscientiousness and extraversion and increased life satisfaction, while these traits are negatively associated with depression, anxiety, and stress. On the other hand, agreeableness and openness were not significant correlates of anxiety but were positively correlated with life satisfaction, as confirmed by other studies. People with high openness use coping strategies that reduce stress (Lazarus & Folkman, 2004).

5. CONCLUSIONS

This study provides valuable insights into the psychological functioning of students during the COVID-19 pandemic by examining key dimensions of mental health with a focus on individual differences based on gender and personality traits. The study found associations between personality traits and various aspects of mental health, emphasizing the importance of individual characteristics in coping with stress and adaptation. The study shows statistically significant differences between male and female students in terms of anxiety, stress and loneliness, confirming and complementing previous findings on gender differences in vulnerability to mental health difficulties. The results show that lower year students, including first year students, have higher levels of depression, anxiety, stress and loneliness, while upper year students report higher levels of life satisfaction. These findings point to the particular challenges of the transition to higher education and the importance of supporting first-year students. This study is one of the few to examine the mental health of students from Bosnia and Herzegovina in the context of the pandemic. Based on the findings, the study highlights the need to strengthen student counselling services, promote mental health within the academic community and develop programmes that reduce loneliness and improve student adjustment.

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