University students' resilience and perceived difficulties during the Covid-19 pandemic: a pilot study in Serbia

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Abstract: *Attending university is a stressful life period due to various factors and since the beginning of 2020 coping with the pandemic in many different aspects of life has been an additional challenge for students. Research on resilience, a personality characteristic that enables coping with different stressors successfully, is on the rise. Therefore, the main goal of this paper is to examine the resilience of university students as well as to gain insights into students' perceptions of difficulties they experienced during the pandemic period. The sample comprised of 180 university students from 18 to 49 years old (M=22.82, SD=4.72), from different faculties of the University of Kragujevac, Serbia. Female students constituted a majority in this sample with 74.4%, and 80% of participants were bachelor students. The results show that students currently display a medium level of stress and resilience, with female students reporting higher levels of perceived stress (t(178)=2.42, p<0.01), whereas male students reported higher levels of resilience (t(178)=2.10, p<0.05). The correlation between resilience and perceived stress was negative and strong (r=-0.51, p<0.001). Students did not report high levels of experienced obstacles during the pandemic, and they were troubled the most by their emotions and general mood, studying and preparing for exams, and communicating and hanging out with friends.*

Keywords: *university students; psychological resilience; perceived stress; Covid-19.*

1. INTRODUCTION

The health, well-being and employability of university students are key considerations within higher education and in response, interest in student resilience is on the rise [1]. Attending university is usually a stressful period in students' lives due to various of reasons. Since the beginning of 2020 when COVID-19 has been declared as a global pandemic [2], coping with pandemic can be added to that list of challenges. The COVID-19 brought about a lot of challenges for education process and all parties involved, and particular attention was given to the educational process itself, usage of information technology in teaching and learning, and the way in which students were coping [3]. Some of the studies on COVID-19

effects on mental health provide suggestions for improvement of protective factors, one of which being resilience [4]. Resilience, a personality characteristic that moderates the negative effects of stress and promotes adaptation, has been associated with increased psychological well-being [5]. For this reason, it is important to study the ways in which this characteristic is connected with stressful reactions in student population.

In this paper insights on university students' resilience will be analyzed through previous research review, and empirical findings on resilience and perceived difficulties during Covid-19 pandemic of students at University of Kragujevac will be presented.

2. RESILIENCE AND STUDENT WELLBEING DURING COVID-19 PANDEMIC

2.1. Psychological resilience and student well-being

There are diverse definitions of resilience one of which describes resilience as a set of traits, an outcome, or a dynamic process that involves exposure to stress or adversity, followed by successful adaptation [5]. One of the best-known definitions describes resilience as an "ability to cope

with difficulties and recover from stress" [6]. A resilient person is ready for positive adaptation and functioning despite prolonged exposure to stressors and disadvantages [7]. Hence resilience is "one's ability to manage stressors and maintain adaptive functioning across all domains of life" [7].

Globally, stress is a well-recognized feature of the life of undergraduate students [8]. Attending university is a particularly stressful time for students due to unique emergent stressors such as changes of the environment, loss or diminishment of social support networks, academic pressures, development of peer relationships, and financial management [5]. Resilience and stress go hand-in-hand and managing different stressors successfully becomes the fingerprint of resilience. The intertwined relation between stress and resilience is best described in this quote: "*Resilience is nurtured, developed, and mobilized in times of stress*" [9].

Although some of the first approaches conceived resilience as a personal trait, recent studies show that resilience is more of a process than a personality trait and that the dynamic and that developmental process involves skills that can be learned [10].

Previous research indicates that a successful adjustment to university is not only related to resilience, but is also the result of modifiable psycho-social factors including peer connectedness, feelings of belonging to the university and perceived social support [11].

2.2. Students' coping during the COVID-19 pandemic

There are numerous studies on students' stress and coping during the COVID-19 pandemic. The ongoing COVID-19 pandemic can be characterized as a universal and chronic stressor affecting people worldwide and across all sections of society [12], students being one of the important populations affected by it.

In a study that investigated stress, anxiety, depression and coping strategies during the COVID-19 pandemic, it was determined that mental health problems were particularly present in participants who were 20-30 years old, single, and university educated [13]; and it appears that besides the general concern regarding COVID-19, these groups were worried about their career and job prospects. A longitudinal cohort study was conducted in the UK, in which the participants (university students) completed an online survey twice before the pandemic, and twice during the UK "lockdown". The findings showed that the pandemic had a negative impact on the university students' mental health [14]. During the "lockdown" mental well-being and physical activity of the UK students decreased, while the perceived stress and the time spent sedentarily increased. A

positive association was found between the perceived stress and sedentary behaviour.

Jordan students were also suffering from several challenges during the lockdown, mainly the feeling of anxiety, not having a device to attend the online classes, not having a separate room to study at home, and Internet connectivity issues [15]. The vast majority of the surveyed students have never attended online courses before the pandemic and almost half of the surveyed students have spent less time studying than the time spent studying before the pandemic.

Research from Indonesia reveals some insights into the advantages and constraints of online learning that their students perceived during the early stages of the pandemic [16]: comfortable educational environment, time utilization and smooth interaction being identified as the main advantage, while the most frequent complaint was network instability, unilateral interaction and reduced concentration. Despite some very positive online learning experiences, most students in Ireland still prefer in-class learning and feel that the social aspect and the learning benefits from face-to-face interaction with instructors and peers are not fully replicable in the online learning environment [17].

In research on stress and academic functioning of almost a thousand Croatian students [18], four groups of stress sources have been identified: the consequences of isolation represent the strongest stress source, followed by academic stress, the possibility of infection, and family sources of stress. Females experience all sources of stress more intensely than males, and students who changed their residence experience family problems and the consequences of isolation more stressfully than students who live continuously in their families [18].

Research on university students' challenges during the pandemic in Serbia, which was more oriented towards the online learning process, provides some significant findings as well [19]. There are reports of motivation difficulties, with the majority of students reporting a dip in motivation to learn at the beginning of the pandemic in comparison to non-pandemic circumstances [19]. Other research concludes that the effects of online learning are mostly positive, emphasizing that students perceive that the biggest advantage of online teaching is saving time and money, while the biggest disadvantage was a lack of practical work and direct communication [20]. In addition, distance learning is most stressful to those students who think that this type of learning is going to reflect negatively on their exam passing rate and enrollment in the following academic year [20].

In researching stress, anxiety and depression levels of University of Belgrade students, the following data emerged [21]: the results showed that anxiety

and stress were more common in female respondents, while depression was more common in male respondents; the respondents from undergraduate academic studies are more prone to anxious, depressive and stressful manifestation than students of master studies, while depression and stress are significantly present in respondents from doctoral studies than respondents from undergraduate and master studies; students from the field of Social Sciences and Humanities are more prone to anxious manifestation, while depression and stress are approximately equally present in all education areas.

3. RESEARCH

The main goal of this paper is to examine the resilience of university students in Serbia as well as to gain insights into students' perceptions of difficulties they experienced during the pandemic period.

Research question 1: What is the level of resilience and perceived stress among students of the University of Kragujevac?

Research question 2: Is there a correlation between resilience and perceived stress among students of the University of Kragujevac?

Research question 3: Does resilience and perceived stress levels vary regarding socio-demographic characteristics such as sex, age, level of study, study field and studying away from home?

Research question 4: In which area of life did students struggle the most during the pandemic?

Data was collected in June 2022 through an online Google forms questionnaire as a part of wider research on the digital and psychological resilience of the students at the University of Kragujevac within the Erasmus+ project "Enhancing digital and psychological resilience through peer networking in the online environment in times of crises". Informed consent was obtained from all students included in the study and their anonymity was preserved.

The research instrument presented in this paper consists of two psychological scales (Brief Resilience Scale and Perceived Stress Scale), data on participants' sex, age, the level of study, the field of study, etc. and questions on psychological needs or obstacles that students may have experienced, especially during the pandemic.

- BRS – The Brief Resilience Scale [6] was developed to assess the construct of resilience and it consists of six items with a five-point scale (from 1 - low resilience to 5 - high resilience). The metric characteristics of the BRS are confirmed in different populations and different languages [22-24]. In our study, the scale showed satisfactory internal consistency (α=0.80). The level of resilience can be

classified into three categories: low resilience 1.00-2.99; medium resilience 3.00-4.30; high resilience 4.31-5.00 [25].

- PSS – Perceived Stress Scale [26] is a self-reported measure of the degree to which situations in an individual's life are appraised as stressful [27]. It consists of 10 items with five-point scale (from 1 = never to 5 = very often). A higher score indicates higher stress. The PSS-10 has demonstrated adequate metric characteristics that were also evaluated for different populations and different languages [27]. In our study, the Cronbach alpha was 0.72.

Participants/sample: The sample comprised of 180 university students from 18 to 49 years old (M=22.82, SD=4.72), from different faculties of the University of Kragujevac, Serbia. 80% of participants are bachelor's students, 11% master's and 9% PhD students. Female students constituted a majority in this sample with 74.4%. The majority of the participants study in the field of social sciences and humanities (37%), followed by medical disciplines (25%) IT (22%), engineering, natural sciences and technology (15%). 38.3% of participants study in their hometown, while 61.7% study in other cities and towns outside of their hometown.

Statistical analyses included basic descriptive statistical analyses, Pearson's correlation coefficient, t-test and ANOVA analyses. SPSS 21 was used for the statistical analyses.

4. RESULTS AND DISCUSSION

The mean level of perceived stress reported by our students is 21.18 (SD=5.99), and the scores did not significantly deviate from the normal distribution (Table 1). This finding suggests that overall students currently display a medium level of stress (distress) and it calls for further research. Opposite of what was expected considering the timing of data collection (June is traditionally a month of exams in Serbia), that did not influence the levels of stress perception to go higher to a greater extent.

The average score on the Brief Resilience scale indicates a medium resilience level in students (Table 1).

Table 1. *University students' resilience and perceived stress*

	M	**SD**	**Sk**	**Ku**
Perceived Stress Scale	21.18	5.986	-0.02	-0.15
Brief Resilience Scale	3.02	0.748	0.18	-0.27

Sk – skewness, Ku - kurtosis

As expected, the correlation between resilience and perceived stress was negative and strong (r=-0.51, p<0.001), meaning that higher resilience is associated with a decrease in stress perception.

This is in accordance with other research that also confirmed the correlation between resilience and perceived stress [28-30].

In comparing how different subgroups of the participants perceive stress and their resilience ANOVA and t-test were conducted. Female students reported higher levels of perceived stress (M_f=21.72, M_m=19.29, t(178)=2.42, p<0.01), and male students higher levels of resilience (M_f=2.95, M_m=3.21, t(178)=2.10, p<0.05). Other demographic features neither showed significant differences nor correlation with scores on these two scales.

These findings are in accordance with previous research (both during the pandemics and before) that found statistically significant differences in levels of resilience based on students' gender, with male students showing higher resilience levels than did female students [28,31]. Moreover, the majority of these studies did not find differences in relation to other demographic characteristics [28,32].

Lastly, students were asked to give an overall assessment of the potential difficulties they've experienced since the beginning of the pandemic (Table 2). In contrast to BRS and PSS, where they responded by assessing their current state, this following group of questions refers to an integral assessment of students' difficulties during the pandemic period.

Table 2. *University students' experienced obstacles during the pandemic*

	M	**SD**	**Sk**	**Ku**
Attending courses	1.82	1.379	0.14	-1.18
Studying and exam preparation	2.04	1.365	-0.07	-1.20
Communication and relationships with lecturers	1.77	1.341	0.13	-1.24
Communication and relationships with colleagues	1.69	1.346	0.30	-1.06
Communication and hanging out with friends	1.94	1.456	0.07	-1.34
Communication and relationships with family members	1.28	1.414	0.71	-0.85
Love relationship with partner	1.17	1.380	0.82	-0.72
Emotions and general mood	2.16	1.369	-0.10	-1.18
Physical health	1.76	1.331	0.19	-1.13

Students did not report high levels of experienced obstacles during the pandemic, most of their assessments are medium to low (mean values are between 2 and 1, on a 0-4 scale). Students were troubled the most by their emotions and general mood (M=2.16), studying and preparing for exams (M=2.04) and communicating and hanging out with friends (M=1.94). They report the least difficulties

in communication and relationships with family members (M=1.28) and in romantic relationships (M=1.17). Concerns about attending courses, communication and relationships with colleagues and their physical health issues were also low. Younger students reported more difficulties with attending courses (r=-0.22, p<0.01), studying and exam preparation (r=-0.16, p<0.05). Female students reported more difficulties with emotions and general mood than males (t(177)=-2.92, p<0.01).

5. CONCLUSION

This study showed that in mid-2022 students of the University of Kragujevac displayed medium levels of resilience and perceived stress, and they did not report high levels of experienced obstacles during a pandemic. After more than two years of life in the pandemic circumstances' and with the current situation in Serbia regarding the pandemic being under control, it is somewhat not surprising to have these findings. However, this conclusion is not too informative for future practical recommendations. Making the student sample more representative and also tracking levels of perceived stress and resilience through longitudinal research could provide insights into stress and resilience fluctuations within the student population. Moreover, research on retrospective reflection of coping in different stages of pandemic and what contributed to their overall adaptation in a given situation or time period, could provide relevant data for understanding protective factors and risk factors in different stages of pandemic/crises situation.

Finally, some specific gender differences in stress perception and resilience levels, as well as age differences in perceived difficulties during the pandemic, call for further research validation on a more representative student sample. If confirmed, these findings could serve as a basis for guidelines in creating some practical support or training programs.

In terms of study limitations, we should emphasize that the research was conducted using self-evaluation questionnaires which somewhat limit the reliability of the obtained data. Moreover, it is a cross-sectional study, and, some of our results are retrospective in nature.

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