CHAPTER SIXTEEN

Positive and Negative Aspects of University Students' Experiencing the COVID-19 Pandemic in Slovenia

Alenka Polak & Polona Gradišek

ABSTRACT

The COVID-19 pandemic has severely affected all areas of our lives, including the area of education. The higher education study process in Slovenia was suddenly changed from face-to-face to online teaching and distance learning in Spring 2020. A sample of 204 first-year university students from different educational programmes participated in a mixed-method study about their experiencing of the COVID-19 pandemic. Of these first-year students, 104 were from the academic year 2019-2020, and 100 were from 2020-2021. They completed the Positive and Negative Affect Schedule (PANAS) for measuring their positive and negative emotionality before and during the pandemic. They also described the positive and negative changes they had experienced during the pandemic. Results showed that during the pandemic, students have experienced lower positive and higher negative affect than before. They experienced several positive and negative changes in the following areas: relationships and contacts with other, mental health and personality changes, organization and time management, learning, physical activity and sports, and finances. Students perceived both positive and negative changes in all categories, indicating that the pandemic itself has had a significant influence in both negative and positive ways. It is important for university teachers to consider the emotional dimension in higher education during challenging times such as this, and to help students develop resilience.

Keywords: university students, higher education, COVID-19 pandemic, experiencing, emotionality, positive change, negative change

INTRODUCTION

The COVID-19 pandemic, declared in March 2020 (WHO, 2020), has severely affected all aspects of our lives. It represents the largest collective trauma the world has faced in a generation (Eisenbeck et al., 2021). The disease itself is not the sole factor in this, there is also the reality of public health regulations that have infringed on normal daily life to varying degrees throughout the crisis. After the initial outbreak, authorities in many countries ordered people to avoid physical contact with each other and to not leave their homes if not necessary. This involved suddenly moving many jobs and most education to online platforms to prevent spreading the virus, and several daily routines were banned such as travelling, and large public events or gatherings (Cicha et al., 2021).

Millions have died from COVID-19 worldwide, and many more have suffered significant prolonged illness that has caused lasting damage to their health. But aside from the direct effects of infection with the SARS-CoV-2 virus, the pandemic has also adversely affected the health and well-being of many people due to other factors related to the pandemic. Several studies have reported a decline in mental health in general population, including increased levels of depression (Bueno-Notivo et al., 2021), psychological distress (Qiu et al., 2021), and anxiety (Zhao et al., 2020; Wu et al., 2021). In a meta-analysis of previous research on the psychological impact of other dangerous diseases (e.g., SARS, Ebola, etc.), Brooks et al. (2020) emphasized that measures for preventing the spread of the disease, such as lockdowns, can lead to significant negative psychological consequences including post-traumatic stress symptoms, negative affect and anger. The researchers also pointed out that lockdown, the loss of familiar routines, and reduction of social and physical contact with others can often lead to boredom, frustration, and feelings of isolation (Brooks et al., 2020).

COVID-19 Pandemic and Higher Education Students

The impact of COVID-19 has been particularly severe in the education sector, including higher education. After the outbreak became a pandemic in early 2020, this led to a sudden shift in instruction from face-to-face to online classes. Both teachers and students were unprepared for such a change (Gradišek & Polak, 2021) and both had to adapt to a new reality (Cicha et al., 2021). It has been argued that the teaching modality which was offered as a result of the transition to online platforms due to the COVID-19 pandemic, cannot be called "online learning" but is better described as "emergency remote teaching" (Iglesias-Pradas et al., 2021). As a response to a crisis, emergency remote teaching entails a temporary shift of instruction, which would otherwise be delivered using face-to-face or hybrid courses, to fully remote solutions.

Numerous studies have been conducted around the world to analyse the impact of the pandemic on university students. Although young and generally not among the specific risk groups for COVID-19, they have nonetheless experienced dramatic effects of the pandemic, with severe changes to their daily lives (Aristovnik et al., 2020). Younger age has also been identified as a risk factor for poor psychological functioning during the pandemic (Eisenbeck et al., 2021).

In Slovenia, several areas of university education students' lives were affected by the pandemic. Their academic work and lives were affected by the sudden shift to online lectures, which forced students to reorganize their learning and face challenges with their motivation to learn; libraries were closed, limiting access to study literature; exams were conducted online, etc. Social life was also severely affected, as they could not meet their friends, colleagues or relatives, there were no social gatherings, student dormitories were closed and many students had to move back in with their parents. Lost jobs resulted in financial problems for many students. All of these changes threatened the mental health of higher education students.

Studies from different countries report similar findings regarding these impacts on academic life (e.g., Kamarianos et al., 2020; Elmer et al., 2020), study process (Ruhalahti et al., 2021), exam experience (Gradišek & Polak, 2021; Stradiotova et al., 2021), social life (e.g., Liu et al., 2020), personal financial situation (e.g., Cao et al., 2020) and mental health (e.g., Cao et al., 2020; Elmer et al., 2020; Liu et al., 2020). However, some positive changes in students' habits have also been observed, such as healthier eating habits, more exercise (Di Renzo et al., 2020) and more attention to personal hygiene (Pan, 2020).

Positive and Negative Affect/Emotionality

Positive affect (PA) and negative affect (NA) represent two dominant dimensions of affective structure (Thompson, 2007; Watson et al., 1988): High scores of PA represent the extent to which an individual experiences pleasurable engagement with the environment (i.e., feels enthusiastic, active, and alert and is in a state of high energy and full concentration), while low scores reflect sadness and lethargy (Crawford & Henry, 2004; Watson et al., 1988). High scores of NA represent subjective distress and unpleasant engagement (i.e., negative mood states such as anger, nervousness, guilt, and fear), whereas low scores reflect calmness and serenity (Crawford & Henry, 2004; Watson et al., 1988).

Positive and negative affect represent affective *state* dimensions, but are associated with the corresponding affective *trait* dimensions of positive and negative emotionality, so they can be used to describe individual differences in positive and negative emotional reactivity (Watson et al., 1988). It has also been argued that PA and NA should be renamed *positive activation* and *negative activation*, as they are defined primarily by the *activation* of positively and negatively valenced affects (Crawford & Henry, 2004; Watson et al., 1999). Although the terms might suggest they are opposites, whether PA and NA are orthogonal or correlated dimensions remains controversial (Thompson, 2007). It is well established empirically that PA and NA, as measured by the PANAS, are distinct (Watson et al., 1988) but moderately

negatively correlated dimensions and thus are relatively independent (Crawford & Henry, 2004; Thompson, 2007).

Anxiety and depression are distinct phenomena, but it is difficult to distinguish between these two constructs by empirical means. The Tripartite Model of Anxiety and Depression (Clark & Watson, 1991) assumes that there is a common factor of negative affectivity in both, and that there are specific components in each that allow for differentiation—physiological hyperarousal in the case of anxiety, and low PA (i.e., anhedonia) in the case of depression (Crawford & Henry, 2004). In clinical samples, the 20-item PANAS with its 10-item PA and NA subscales has been shown to be effective in distinguishing between depression from anxiety (Crawford & Henry, 2004). Some studies suggest that lower scores on PA are specifically related to depression rather than anxiety, and higher scores on NA are highly associated with both anxiety and depression (Crawford & Henry, 2004; Jolly et al., 1994).

Aims of the Study

The aims of this study were (1) to investigate the self-perceived emotionality (i.e., positive and negative affect) of Slovenian first-year students before and during the COVID-19 pandemic; and (2) to analyse the perceived negative and positive changes in students' everyday lives resulting from the specific circumstances of the pandemic at the time of students' participation in the study (June-July 2020 or June-July 2021).

METHOD

Participants

Participants comprised 204 first-year university students of various study programmes in the academic years 2019-2020 and 2020-2021. The vast majority of participants were female students ($n_{\text{male}} = 3$, $n_{\text{female}} = 201$), reflecting the typical gender structure in Slovenian faculties of education. The average age of the participants was 19.68 years (SD = .73). Student

participants from the 2019-2020 academic year were grouped as subsample 1 and those from 2020-2021 were grouped as subsample 2.

Subsample 1 (SS1) consisted of 104 students who were enrolled in the first year of the following study programmes in the academic year 2019-2020: preschool education (n = 45), social pedagogy (n = 25), special and rehabilitation pedagogy (n = 25), speech and language therapy and deaf education (n = 9). When the SS1 students participated in the study, there was the first wave of COVID-19 in Slovenia. These students participated in face-to-face courses from October 2019 to March 11, 2020, when course delivery was suddenly changed to the online format. At the time of participation (June-July 2020), they were finishing their courses and preparing for their first online exams at the university. Subsample 2 (SS2) consisted of 100 students who were enrolled in the first year of the following study programmes in the academic year 2020-2021: preschool education (n = 59), social pedagogy (n = 28), special and rehabilitation pedagogy (n = 10), speech and language therapy and deaf education (n = 3). SS2 students attended university courses in person only during the first two weeks of October 2020 before the study process again shifted to the online format in response to the second wave of the pandemic. They had previous experience with remote emergency instruction in Spring 2020 when they had attended high school. At the time of participation in the present study (June-July 2021), they were finishing their courses, which had been delivered in the online format for most of the academic year. They had already had some experience with online exams during the first semester of the academic year.

Instruments

The Positive and Negative Affect Schedule (PANAS, Watson et al., 1988) is a 20-item questionnaire with two 10-item subscales: positive and negative affect, which can be described as general mood dimensions. Participants are asked to rate the extent to which they have experienced certain emotions within a given time period on a 5-point Likert scale ranging from

1 (“very slightly or not at all”) to 5 (“very much”). Different time-frames were used with the PANAS. In the current study, participants were asked to rate the experiencing of specific emotions during the pandemic (at the time of the participation in the study) and before the pandemic (describing past experience retrospectively). Reliability coefficients were satisfactory: before the pandemic α = .84 (PA) and α = .86 (NA) and during the pandemic α = .89 (PA) and α = .89 (NA).

Students were also asked to evaluate perceived positive and negative changes as the consequence of the pandemic with the following open-ended survey item: *Please, describe negative and positive changes that have occurred in your life due to the pandemic on different areas of life, such as relationship with family members, partner, friends; health, eating, finances, organization and time management, leisure time etc.*

Procedure

The study was conducted in two consecutive academic years, 2019-2020 and 2020-2021. First-year students were invited by their lecturers (the authors of the present paper) to complete an online survey about their experience of the COVID-19 pandemic. Data were collected in June-July 2020 for SS1, and in June-July 2021 for SS2.

Participation in the study was voluntary. Students identified themselves with the student identification number, as the questionnaire was part of the internal evaluation process of the course held by the authors of this paper at the end of the semester. However, the data were treated anonymously.

Data Analysis

Data were analysed using IBM SPSS Statistics version 22. Differences between the two samples were analysed using the *t*-test for independent samples. We compared positive and negative emotionality (before the pandemic, during the pandemic) using the *t*-test for paired

samples. Differences in frequencies between subsamples in the qualitative analysis were calculated using the chi-square test of independence. We analysed the results of each subsample separately because they could not be compared directly given that the circumstances of the pandemic were different in each period of data collection. Responses to the open-ended questions were analysed qualitatively using the content analysis method, with some first-order categories already suggested, and others identified based on student responses.

RESULTS

Positive and Negative Emotionality of Students

We first examined students' positive and negative emotionality, using the PANAS to measure positive and negative affect of students before and during the pandemic. When interpreting the results of SS1 and SS2, it is important to keep in mind that the data were collected at two different points in time at which the circumstances of the pandemic were different.

Table 1

Positive affect (PA) of students before and during the pandemic

		n	*M*	*SD*	*t*	*p*
SS1 2019-2020	Before the pandemic	104	3.46	0.47	6.81	<.01
	During the pandemic	104	3.10	0.63		
SS2 2020-2021	Before the pandemic	100	3.62	0.52	4.60	<.01
	During the pandemic	100	3.35	0.60		

Table 1 shows the positive affect of students in both subsamples before and during the pandemic. In both subsamples, average positive affect was higher before the pandemic than during the pandemic. In SS2, the average positive affect was higher than in SS1 both before the pandemic, $t(202) = -2.32$, $p = .02$, and during the pandemic, $t(202) = -2.96$, $p < .01$.

Table 2

Negative affect (NA) of students before and during the pandemic

		n	*M*	*SD*	*t*	*p*
SS1 2019-2020	Before the pandemic	104	2.48	0.55	-5.12	<.01
	During the pandemic	104	2.79	0.73		
SS2 2020-2021	Before the pandemic	100	2.78	0.62	-5.37	<.01
	During the pandemic	100	3.06	0.71		

Table 2 shows the negative affect of students in both subsamples before and during the pandemic. The results show that in both samples, students' average negative affect was lower before the pandemic compared to during the pandemic. Students in SS2 reported higher average negative affect both before the pandemic, $t(202) = -3.66$, $p < .01$, and during the pandemic, $t(202) = -2.66$, $p < .01$, compared to students from SS1.

Negative and Positive Changes – Results of Qualitative Analysis

We asked students to answer an open-ended question to describe negative and positive changes that occurred in their lives due to the epidemic in different life domains, such as relationship with family members, partner, friends, health, eating, finances, organization and time management, and leisure time. These suggestions were used as keywords to direct their reflections. Based on the suggested keywords and students' responses we identified several first-order categories (Tables 3 and 4).

First, we analysed the students' perceived negative changes. In average, each of the participants listed approximately two negative changes. *F%* were calculated regarding the number of participants in each subsample.

Table 3

The results of qualitative analysis of negative changes experienced by the students

1st Order Categories	2nd Order Categories	SS1* (f%)	SS2* (f%)
Relationships and contacts with others	Less socializing with friends	19.23	13.00
	Conflicts, poor relationships with friends and family	15.38	25.00
	Alienation or end of friendship	8.65	7.00
	Less time spent with a partner	3.85	1.00
	Break up of a romantic relationship	2.88	2.00
	Less socializing with family members	2.88	1.00
	Missing of socializing (concerts, parties)	1.92	7.00
	No face-to-face contacts	1.92	3.00
	Lower motivation for socializing	0.00	3.00
Mental health and personality changes	Irritability, impatience, unstable mood, nervousness	11.53	5.00
	Uncertainties about the future, overthinking about COVID-19, fear	9.61	6.00
	Perceived symptoms of anxiety and depression, panic attacks	5.77	9.00
	Laziness, passiveness	5.77	5.00
	Feelings of guilt for not being useful	1.92	2.00
	Sleep disturbances	1.92	1.00
	Negative self-concept, less self-confidence, shyness	2.88	3.00
	Helplessness, pessimism	0.96	4.00
	Deterioration of social skills	0.96	0.00
Time management and organization	Organization problems	14.42	0.00
	Boredom, no hobbies	4.81	7.00
	Too little routine	1.92	0.00
	Too much sleep	1.92	0.00
	Too much routine	0.96	0.00
	Too much cleaning at home	0.00	1.00
Learning	Lack of study motivation	8.65	8.00
	Concentration problems	2.88	3.00

	Procrastination	1.92	1.00
	Poor studying habits	2.88	1.00
	No respect for study obligations within family	1.92	0.00
Finances	No personal (student) income	13.46	14.00
	Loss of parents' jobs, lower family income	1.92	0.00
Addictive behaviour	Computer overuse	4.81	6.00
	Mobile phone overuse	4.81	2.00
	TV watching overuse	0.96	2.00
	Marijuana smoking	0.00	1.00
	Playing computer games	0.00	1.00
Eating habits	Unhealthy eating	4.81	5.00
	Gaining weight	3.85	6.00
	Unorganized meals	1.92	11.00
Personal space and freedom	Lack of personal space at home	5.77	3.00
	No trips or travels	1.92	0.00
	Online meetings of family members at the same time	0.00	1.00
Physical activity and health	Less physical activity/sports	3.85	7.00
	Physical fatigue/lack of energy	0.96	2.00
	Consequences of recovered COVID-19 (headache etc.)	0.00	3.00
	No organized sports trainings	0.00	3.00
	Worsening vision	0.00	4.00
	Back pain	0.00	2.00
No changes	No perceived negative changes	6.73	13.00

**Note*. SS1 = subsample 1, SS2 = subsample 2

Most responses to negative changes in both subsamples were related to relationships and contacts with other people. Students reported socializing less with their friends (nearly one-fifth of SS1 students), partners, and family members. Conflicts and poor relationships were particularly evident in SS2, where 25% of students mentioned this problem. Some relationships were ended—both friendships and romantic relationships. Students missed socializing and

face-to-face contacts. There were no statistically significant differences between the subsamples in this category.

Mental health and personality changes was the second most frequently mentioned 1st order category. Students reported perceiving mood swings, such as irritability, impatience and nervousness (twice as often in SS1 as in SS2, although not statistically significant). Fear and overthinking about COVID-19 were also present, as were perceived symptoms of anxiety, depression, and panic attacks, which were slightly more common in the SS2 (but not significantly so). They also noted other personality changes, such as laziness, passivity, helplessness, pessimism, negative effects on their self-concept and social skills. There were also no statistically significant differences between the subsamples in this category. Students also reported having problems with time management and organization—but almost exclusively among SS1. Organization problems occurred in SS1 and were not at all present in SS2, $\chi^2(1, N = 204) = 15.57$, $p < .001$. Other problems were related to feelings of boredom and routine. No other problems significantly differed between subsamples.

In the area of learning, students lacked motivation to learn during the distance learning, had problems concentrating and struggled with procrastination. Personal finances were affected as there was no possibility of personal income for the students (about 14% in both subsamples), and some SS1 students even reported that their parents lost their jobs. Some addictive behaviours occurred, such as excessive use of computers, mobile phones and TV.

Eating habits were negatively affected, and many students gained weight. Disorganized meals were much more common in SS2 than SS1, $\chi^2(1, N = 204) = 7.04$, $p = .01$.

Students' sense of freedom was impaired, as they reported lacking personal space at home and were missing outings and travel. Some students reported being less physically active than before the epidemic, feeling tired and lacking energy, and reporting some health problems,

such as back pain and worsening vision. Some of the students from SS2 also felt consequences after having contracted and recovered from COVID-19.

Table 4

The results of qualitative analysis of positive changes experienced by the students

1st Order Categories	2nd Order Categories	SS1* (f%)	SS2* (f%)
Relationships and contacts with others	More time with family	29.81	24.00
	Better relationships with family members	26.92	28.00
	Better relationship with a romantic partner	15.38	5.00
	More quality time with friends	8.65	11.00
	New insights about relationships, selection, reconnection	7.69	14.00
	More time with a romantic partner	0.96	5.00
	Less family gatherings	0.96	2.00
	More time for different relationships	0.00	4.00
Physical activity and health	More physical activity, sports	27.88	17.00
	More outdoor activities, more time spent in nature	21.15	24.00
	Healthier lifestyle	10.58	6.00
	More sleep	8.65	5.00
	Better hygiene habits, more cleaning	2.88	4.00
Time management and organization	Better time management and organization	19.23	24.00
	More free time for hobbies, new hobbies	13.46	26.00
	More relaxed lifestyle	8.65	9.00
	No wasting time on transport to university	2.88	12.00
Mental health and personality changes	More (time for) self-care and self-reflection, meditation	26.92	40.00
	Feeling good	1.92	1.00
	More tolerance and flexibility	0.96	3.00
	More self-confidence and assertiveness	0.96	9.00
	Less stress	0.96	3.00
	Better concentration	0.00	1.00
	Better emotional regulation	0.00	1.00

Learning	Mastering new skills - cooking, gardening, crocheting	6.73	1.00
	Better time management and organization of studies	3.85	8.00
	More time for reading	2.88	1.00
	Learning new languages (foreign or sign language)	0.96	1.00
	On-line workshop, ICT skills	0.96	1.00
Finances	Less expenses - more savings	12.50	9.00
	Having student jobs	1.92	7.00
	No shopping - no wasting money	0.00	4.00
Eating habits	Better organization of meals, regular drinking of water	7.69	8.00
	Cooking by themselves	2.88	2.00
No changes	No perceived positive changes	0.96	2.00

**Note*. SS1 = subsample1, SS2 = subsample2

Table 4 shows the analysis of the positive changes that students indicated in their responses to the open-ended question. In average, each of the participants listed approximately three positive changes. Differences between the subsamples were calculated; only significant results are reported below.

Almost every student mentioned positive changes related to the category of relationships and contacts with others. Students reported spending more time with family (nearly 30% in SS1 and 24% in SS2) and improved relationships with family members (more than a quarter of both subsamples). Significantly more students from SS1 reported improved relationships with a romantic partner, $\chi^2(1, N = 204) = 5.95$, $p = .02$. Students gained new insights about relationships, reconsidered existing relationships, and reconnected with some people. Students in SS2 reported having more time for other relationships more often than SS1 students, $\chi^2(1, N = 204) = 4.24$, $p = .04$.

During the pandemic, most students became more physically active and participated in more sports than before. More than one-fifth of students in both subsamples reported being

active outdoors and spending more time in nature. Several students indicated that their lifestyle had become healthier, that they slept more and developed better hygiene habits.

Positive changes were perceived in terms of better time management and organization. Students had more time for hobbies and discovered new hobbies, especially in SS2 which reported this significantly more than SS1, $\chi^2(1, N = 204) = 5.08$, $p = .02$. Some students developed a more relaxed lifestyle. Not wasting time on transport to university was another positive change reported in both subsamples, but more so among SS2 students, $\chi^2(1, N = 204) = 6.22$, $p = .01$.

More than a quarter of students from SS1 and 40% of students from SS2 reported taking more time for self-care, self-reflection, and mediation during the pandemic; the difference between the subsamples was close to significance, $\chi^2(1, N = 204) = 3.92$, $p = .05$. Reported positive changes included feeling good, increased tolerance and flexibility, and increased self-confidence and assertiveness—the latter significantly more so in SS2 than in SS1, $\chi^2(1, N = 204) = 7.07$, $p = .01$. In the area of learning, students acquired and developed new skills and competences, improved their study time management and organization. In the area of finances, some students reported spending/wasting less money in SS2, but not in SS1, $\chi^2(1, N = 204) = 4.24$, $p = .04$. Finally, 8% of students from both subsamples reported improved meal organization.

DISCUSSION

In the present study, we investigated the positive and negative effects of the COVID-19 pandemic in two subsamples of first-year university students in Slovenia.

First, we analysed the positive and negative affect of students before and during the pandemic. In both subsamples, students experienced positive affect to a greater extent before the pandemic than during it. In contrast, they experienced higher levels of negative affect during the pandemic than before it. These findings were expected given the negative impact of

the pandemic on the mental health of students (e.g., Arslan et al., 2021; Cao et al., 2020; Elmer et al., 2020) and the general population (e.g., Bueno-Notivo et al., 2021; Eisenbeck et al., 2021; Qiu et al., 2021). The effects of prolonged stress from the pandemic were evident in the higher negative affect of students in the subsample 2 during the pandemic than in subsample 1. High negative affect generally reflects subjective distress and unpleasant engagement (Crawford & Henry, 2004; Watson et al., 1988), as evidenced by the numerous perceived negative experiences related to the pandemic (Table 3).

Relationships and Contacts with Others

Most of the recognized negative and positive changes perceived by students fell into the category of "relationships and contacts with others" (Tables 3 and 4). Perceived negative changes were related to both the quality and quantity of relationships. "Less socializing with friends" was somewhat more characteristic of students in SS1, who had just experienced their first lockdown in spring 2020 a few months before participating in the study. On the other hand, "more conflicts and poor relationships" were more frequently mentioned by the SS2 students. Students in SS2 may have perceived more of long-lasting effects of the pandemic, which at that point had been present for more than a year with multiple preventive measures, lockdowns, and other restrictions. All of these likely had a negative impact on relationships, leading to more conflicts and a deterioration of relationships.

It is interesting to note that students listed more positive than negative changes in terms of relationships, such as spending more time with family or with a partner. Despite being forced by health authorities to stay home, spending time with family members or partners was seen as positive, even in the case where students had to move back in with their parents. It is possible that the students managed to maintain their contacts and relationships despite the restrictions on physical contact imposed by the authorities and communicated via telephone, email, social media or video calls, as recommended by the WHO (2020).

Mental Health and Personality Changes

Students recognized several negative changes in their mental health or personality due to the pandemic, especially SS1 students. However, these changes were self-reported and not diagnostically determined observations based on objective criteria, so their reliability is limited. Similar to the findings of Arslan et al. (2021), students in our study reported experiencing panic attacks, anxiety, depression, sleep disturbances, etc., suggesting deterioration in the mental health of Slovenian students from the pandemic. However, students also recognized several positive changes in terms of their mental health, especially in SS2. It seems that these students successfully adjusted to the "new reality" by using their adaptability and resilience.

In a Slovenian study, Kavčič et al. (2021) found that resilience was the crucial factor for promoting good psychological functioning during the COVID-19 pandemic in people aged 18 to 27, which was also the age group of our participants. Although resilience was not directly measured in our study, it could contribute to students' positive adjustment, as resilience has been empirically identified as an important protective factor, required for individuals to respond adaptively in stressful situations in the Slovenian context (Zager Kocjan et al., 2021). The importance of developing resilience is also highlighted by the American Psychology Association (APA, 2012), which suggests developing resilience to promote mental health, for example by building and prioritizing social relationships, taking care of physical health, practicing mindfulness, yoga and meditation, and other activities.

Another interesting finding related to participants' mental health is that they reported spending more time on self-care, self-reflection, and meditation. This reflects the students' need to develop their emotional competencies, which significantly predicted positive psychological functioning during the pandemic in another Slovenian study (Kozina et al., 2021). More autoreflexive activities and focus on self-care were also enabled by the particular social circumstances caused by limited physical contact and a less structured daily routine for

students (transportation, course schedule, and other activities), compared to before the epidemic. Similarly, Munk et al. (2020) found that during the pandemic, (1) resilient participants were less likely to suffer from a mental disorder and (2) a coping style focused on positive situational aspects was associated with a lower risk of depression. Therefore, resilience training might be a useful starting point to deal with the negative effects of COVID-19 on students' mental health.

Some students in our study reported that they developed some addictive behaviours, such as excessive use of computers, mobile phones or TV. However, these were not frequent—less than we expected, in fact, as social media and smartphone were one of the only possible communication channels during the lockdown. However, it is possible that students did not evaluate their own computer/social media/mobile phone use critically enough to recognize some elements of addictive behaviour.

Organization and Time Management

Students reported problems with organization and time management, particularly those in SS1. This was to be expected as the daily routine was heavily affected by students being required to learn from home. Flaudias et al. (2020, p. 6) emphasize that "reduced social contact and disruptions to daily routines might increase negative affect, such as the stress due to the need to reorganize work and familial commitments," which was also observed in our study, where students' average negative affect was higher during the pandemic than beforehand. Loss of daily routine was also identified as a negative factor in the learning process in a Finnish study (Ruhalathi et al., 2021), and organizational issues were the most frequently mentioned problem related to the distance learning in another Slovenian study (Gradišek & Polak, 2021).

Students recognized several positive changes in terms of organization and time management, especially students in SS2 who reported having more time for various hobbies and saving time from not needing to commute to school. Although there were no organized

leisure activities, students recognized their need to be active. Maintaining a regular routine and schedule or creating new ones, such as regular exercising, singing, painting, or engaging in other activities was also recommended by the WHO (2020).

Learning

Students did not mention studying or learning-related matters very much (Tables 3 and 4). They mainly recognized a decrease in motivation to learn and concentration problems. Students from SS2 had more experience with online education than students from SS1, who were unexpectedly confronted with the sudden change from face-to-face teaching to the remote emergency teaching (Iglesias-Pradas et al., 2021), but differences were only found in a slightly higher number of mentions in SS2 regarding better time management and organization of learning. Students from SS1, on the other hand, reported having more new hobbies and competences (e.g., cooking, gardening, crocheting), which was systematically promoted to the public by national authorities and institutions such as WHO (2020) during the first lockdown in March 2020.

Some of the students mentioned a lack of contact with fellow students (this was categorized as relationships and contacts with others), which was also observed in the aforementioned Finnish study (Rutalahthi et al., 2021). Social interactions with fellow students are crucial for successful integration of first-year students (Mohamedhoesein & Crul, 2018), and the students in our study were deprived of this during the pandemic.

Lifestyle and Health

From the students' responses regarding their lifestyle and health, it appears that the students have improved their physical activity, or at least have become more aware of its importance. Students mentioned more positive than negative changes in their physical activity: almost a third of students in SS1 mentioned exercising more and one in five students from SS2

mentioned spending more time in nature. More physical activity among students could be a response to the amount of time students spent sitting in front of computers, as well as the impact of various campaigns promoting the importance of physical activity for healthy living (for example, the WHO [2020] published recommendations for regular exercise, engaging in healthy activities and healthy eating). In addition, various sports activities were offered in an online format, such as yoga, Pilates or aerobics online classes for workout at home.

Students recognized some positive and negative changes related to their eating habits during the pandemic as well. Negative changes were mainly related to unhealthy eating, weight gain, and disorganized meals (especially in SS2). An unhealthy lifestyle has also been observed in other studies (e.g., Flaudias et al., 2020; Ruhalahti et al., 2021), implying that the stress and physical social isolation associated with lockdown could increase the risk of problematic eating behaviours, especially among individuals with pre-existing symptoms or concerns about eating disorders (Flaudias et al., 2020). On the other hand, students from our study reported developing some healthier eating habits, such as cooking for themselves, taking more time to eat in between classes, and drinking more water. Some similar findings were observed in a study by Di Renzo et al. (2020), who found some positive changes in the eating habits and physical activity of Italian students.

Finances

Despite few mentions by the students in our study, we know that personal finances were affected by the pandemic in Slovenia. For example, 22,267 new unemployed people were registered in March and April 2020, which was 123 % more than the year before. There were also 457.2 % more surplus workers in the two months than in 2019, mainly from the hospitality, tourism, transport, trade, and commerce sectors (ZRSZ, 2020). Slovenian students were eligible to apply for financial aid of €150 in May 2020 (ŠOS, 2020), and in January 2021 all students enrolled in higher education programs received financial aid of €150 (PKP7, 2021).

CONCLUSIONS

The present study showed that Slovenian students of educational study programmes perceived both positive and negative changes due to the COVID-19 epidemic. Perceived changes were mainly related to relationships and social contacts with others, mental health and personality changes, and organization and time management. The most commonly perceived positive changes were in the areas of relationships and physical activity/health, implying that the pandemic has positively contributed to raising awareness of the importance of (1) social contact and the quality of relationships between people and (2) physical activity and time in nature. Both positive relationships (Peterson, 2006) and physical activity (Richards et al., 2015; Marques et al., 2016) are important factors contributing to peoples' well-being.

Perceived negative changes related to students' mental health were not very common, but they need to be addressed. In our sample, students self-reported some symptoms of panic attacks, anxiety, and depression. Although not diagnostically measured, particular attention needs to be paid offering professional psychological support or other sources of support (e.g., peer or tutor support) to students at risk. Students in SS2 reported fewer psychological problems, which may be explained by more knowledge of COVID-19, more experience of the epidemic in general, the availability of effective vaccines, and experience of pandemic-related lifestyle changes. Students in SS2 had more structured online instruction, which likely contributed to a newly established daily routine and gave students a greater sense of psychological safety.

The highest negative affect was measured in SS1, which can be explained by the "shock-effect" with the onset of the pandemic in March 2020. From one day to the next, these students were confronted with significant changes in their life circumstances, the situation was new and unknown, and there was a lack of information about the COVID-19. Moreover, people in Slovenia were confronted daily with shocking news from the neighbouring country Italy,

which spoke about thousands of deaths and uncontrollable situation in hospitals. Eventually, strong negative emotions of students from the beginning of the pandemic stabilised over time, which was reflected in a slightly lower negative affect of students in SS2 during the pandemic, compared to SS1.

Based on our research findings, some educational conclusions emerge in relation to the student population. University teachers should be aware of their important role in student well-being during such difficult and mostly frustrating times. First-year students face two distinct transitions at once: a developmental transition between late adolescence and emerging adulthood, and a transition of educational levels from upper secondary school to university and are therefore even more prone to challenges. University teachers can help students establish a daily routine during online instruction and support them by regularly checking in and providing constructive feedback. In addition, university teachers should be supportive and understand students' negative emotional states that are related to either the learning process or the pandemic (e.g., by being encouraging, empowering, optimistic and not frightening before exams). They could use humour and relaxation techniques during classes to increase student motivation and engagement.

Although the COVID-19 pandemic has claimed millions of lives worldwide and has even been called the greatest collective trauma in a generation (Eisenbeck et al., 2021), according to the results of our study, it has not had a completely negative impact on university students' lives. Since spring 2020, students have perceived several positive changes in the areas of social relationships, physical activity, time management and mental health. However, it is important to keep in mind that the participants of the study represent a specific group of students with individual differences in socioeconomic status, family situation, social network, housing, (mental) health, resilience, etc. University teachers should be aware of the complexity of factors that influence students' mental health and well-being. As teachers, we can contribute

to this with our positive attitudes towards students by maintaining positive and supportive communication, being clear about our requirements, and offering support to enhance students' learning potential. An important part of our professional activity is also to raise awareness and promote their resilience.

Some limitations of the study must be acknowledged. Pre-pandemic positive and negative affect were measured retrospectively, which means that the results measured could be biased. We could draw more conclusions from our results if we had the data on students' mental health or positive and negative affect measured contemporaneously before the pandemic. Also, the results from the two subsamples cannot be directly compared because the circumstances of the COVID-19 pandemic were different (i.e., a sudden onset of the pandemic in the SS1 and more than a year of experience with the pandemic in SS2). Nevertheless, comparing the results from both subsamples reveals interesting aspects of the perceived impact of the pandemic at two different time points in a comparable population. Moreover, we used a convenience sampling: participants were students of educational study programs at the Faculty of Education, University of Ljubljana, almost all of whom were female. Therefore, the results cannot be generalized on the world-wide student population. In future research, positive and negative changes could be measured using a more structured and psychometrically precise questionnaire based on the presented results and conclusions.

REFERENCES

APA (2012). *Building your resilience.* Retreived on 23 September 2021 from https://www.apa.org/topics/resilience

Aristovnik, A., Keržič, D., Ravšelj, D., Tomaževič, N., & Umek, L. (2020). Impacts of the COVID-19 pandemic on life of higher education students: A global perspective. *Sustainability, 12*(20), 8438. https://doi.org/10.3390/su12208438

Arslan, G., Yıldırım, M., & Zangeneh, M. (2021). Coronavirus anxiety and psychological adjustment in college students: Exploring the role of college belongingness and social media addiction. *International Journal of Mental Health and Addiction, 2021.* https://doi.org/10.1007/s11469-020-00460-4

Brooks, S. K., Webster, R. K., Smith, L.E., Woodland, L., Wessely, S., & Greenberg, N. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet, 395*(10227), 912–20. https://doi.org/10.1016/S0140-6736(20)30460-8

Bueno-Notivo, J., Gracia-García, P., Olaya, B., Lasheras, I., Lopez Anton, R., & Santabarbara, J. (2021). Prevalence of depression during the COVID-19 outbreak: A meta-analysis of community-based studies. *International Journal of Clinical and Health Psychology, 21*(1). https://doi.org/10.1016/j.ijchp.2020.07.007

Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research, 287*, 112934. https://doi.org/10.1016/j.psychres.2020.112934

Cicha, K., Rizun, M., Rutecka, P., & Strzelecki, A. (2021). COVID-19 and higher education: First-year students' expectations toward distance learning. *Sustainability, 13,* 1889. https://doi.org/10.3390/su13041889

Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology, 100,* 316–336. https://doi.org/10.1037/0021-843X.100.3.316

Crawford, J., R. & Henry, J. D. (2004). The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British Journal of Clinical Psychology, 43,* 245–265. https://doi.org/10.1348/0144665031752934

Di Renzo, L., Gualtieri, P., Pivari, F., Soldati, L., Attinŕ, A., Cinelli, G., Leggeri, C., Caparello, G., Barrea, L., Scerbo, F., Esposito, E., & De Lorenzo, A. (2020). Eating habits and lifestyle changes during COVID-19 lockdown: An Italian survey. *Journal of Translational Medicine, 18,* 229. https://doi.org/10.1186/s12967-020-02399-5

Eisenbeck et al. (2021). An international study on psychological coping during COVID-19: Towards a meaning-centered coping style. *International Journal of Clinical and Health Psychology, 22*(1), 100256. https://doi.org/10.1016/j.ijchp.2021.100256

Elmer, T., Mepham, K., & Stadtfeld, C. (2020). Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. *Plos One, 15*(7), e0236337. https://doi.org/10.1371/journal.pone.0236337

Flaudias, V., Iceta, S., Zerhouni, O., Rodgers, R. F., Billieux, J., Llorca, P. M., Boudesseul, J., de Chazeron, I., Romo, L., Maurage, P., Samalin, L., Bègue, L., Naassila, M., Brousse, G., & Guillaume, S. (2020). COVID-19 pandemic lockdown and problematic eating behaviors in a student population. *Journal of Behavioral Addictions, 9*(3), 826–835. https://doi.org/10.1556/2006.2020.00053

Gradišek, P., & Polak, A. (2021). Insights into learning and examination experience of higher education students during the Covid-19 pandemic. *Journal of Contemporary Educational Studies, 72*(138), 286-307.

Iglesias-Pradas, S., Hernández-García, Á., Chaparro-Peláez, J., & Prieto, J. L. (2021). Emergency remote teaching and students' academic performance in higher education during the COVID-19 pandemic: A case study. *Computers in Human Behavior, 119,* 106713. https://doi.org/10.1016/j.chb.2021.106713

Jolly, J. B., Dyck, M. J., Kramer, T. A., & Wherry, J. N. (1994). Integration of positive and negative affectivity and cognitive content specificity: Improved discrimination of anxious and depressive symptoms. *Journal of Abnormal Psychology, 103,* 544–552. https://psycnet.apa.org/doi/10.1037/0021-843X.103.3.544

Kamarianos, I., Adamopoulou, A., Lambropoulos, H. & Stamelos, G. (2020). Towards an understanding of university students' response in times of pandemic crisis (COVID-19). *European Journal of Education Study,* 7, 20–40. http://dx.doi.org/10.46827/ejes.v7i7.3149

Kavčič, T., Avsec, A., & Zager Kocjan, G. (2021). Psychological Functioning of Slovene Adults during the COVID-19 Pandemic: Does Resilience Matter? *Psychiatric Quarterly, 92,* 207–216. https://doi.org/10.1007/s11126-020-09789-4

Kozina, A., Vidmar, M., Veldin, M., Pivec, T., & Peras, I. (2021). The role of emotional competencies in psychological responding to COVID-19 pandemic. *Psihologija, (00),* 6-6. http://dx.doi.org/10.2298/PSI200723006K

Liu, X., Liu, J., Zhong, X (2020). Psychological state of college students during COVID-19 epidemic. *Lancet Preprints.* Available at SSRN 3552814. https://dx.doi.org/10.2139/ssrn.3552814

Marques, A., Peralta, M., Martins, J., Catunda, R., Gaspar de Matos, M., & Saboga Nunes, L. (2016). Associations between physical activity and self-rated wellbeing in European adults: A population-based, cross-sectional study, *Preventive Medicine, 91,* 18–23. https://doi.org/10.1016/j.ypmed.2016.07.021

Mohamedhoesein, N. & Crul, M. (2018). The relationship between first year students' interaction, basic psychological needs and academic success. *American Journal of Educational Research, 6*(12), 1702–1709. http://dx.doi.org/10.12691/education-6-12-17

Munk, A. J. L., Schmidt, N.M., Alexander, N., Henkel, K., & Hennig, J. (2020) Covid-19—Beyond virology: Potentials for maintaining mental health during lockdown. *PLoS One 15*(8), e0236688. https://doi.org/10.1371/journal.pone.0236688

Pan, H. (2020). A glimpse of university students' family life amidst the COVID-19 Virus. *Journal of Loss and Trauma, 25*(6–7), 594–597. https://doi.org/10.1080/15325024.2020.1750194

Peterson, C. (2006). *A primer in positive psychology*. Oxford University Press.

Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., & Xu, Y. (2020). A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: Implications and policy recommendations. *General Psychiatry, 33,* e100213. http://dx.doi.org/10.1136/gpsych-2020-100213

Richards, J., Jiang, X., Kelly, P., Chau, J., Bauman, A., & Ding, D. (2015). Don't worry, be happy: Cross-sectional associations between physical activity and happiness in 15 European countries. *BMC Public Health, 15*(1), 53–53. https://doi.org/10.1186/s12889-015-1391-4

Ruhalahti, S., Lehto, T., Saarinen, S., & Katto, L. (2021). Identifying higher education first-year students reported experiences studying during the pandemic. *European Journal of Education Studies, 8*(8). http://dx.doi.org/10.46827/ejes.v8i8.3831

ŠOS (2020). *Razpis za denarno pomoč študentom* [Call for applications for financial aid for students]. Retrieved on 17th September 2021 from https://www.studentska-org.si/sos-z-organizacijskimi-oblikami-sos-objavlja-razpis-za-denarno-pomoc-studentom-zaradi-posledic-ukrepov-proti-sirjenju-covid-19/

PKP7 (2021). *Sedmi paket za umilitev posledic epidemije* [The 7th package for mitigation of consequences of epidemic]. Retrieved on 17 September 2021 from https://www.gov.si/teme/koronavirus-sars-cov-2/odpravljanje-posledic-epidemije/sedmi-paket-ukrepov-za-omilitev-posledic-epidemije-pkp7/

Stradiotova, E., Nemethova, I., & Stefancik, R. (2021). Comparison of on-site testing with online testing during the COVID-19 pandemic. *Advanced Education*, 73-83. http://dx.doi.org/10.20535/2410-8286.229264

Thompson, E. R. (2007). Development and validation of an internationally reliable short-form of the Positive and Negative Affect Schedule (PANAS). *Journal of Cross-cultural Psychology, 38*(2), 227–242. https://doi.org/10.1177%2F0022022106297301

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scale. *Journal of Personality and Social Psychology, 54(*6), 1063–1070. https://doi.org/10.1037//0022-3514.54.6.1063

Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations and psychobiological evidence. *Journal of Personality and Social Psychology, 76,* 820–838. https://psycnet.apa.org/doi/10.1037/0022-3514.76.5.820

WHO (2020). *Mental health and psychosocial considerations during the COVID–19 outbreak.* Retrieved on 23 September 2021 from https://www.who.int/docs/default-source/coronaviruse/mental-health-considerations.pdf

Zager Kocjan, G., Kavčič, T., & Avsec, A. (2021). Resilience matters: Explaining the association between personality and psychological functioning during the COVID-19 pandemic. *International Journal of Clinical and Health Psychology, 21*(1), 100198. https://doi.org/10.1016/j.ijchp.2020.08.002

Zhao, H., He, X., Fan, G., Li, L., Huang, Q., Qiu, Q., Kang, Z., Du, T., Han, L., Ding, L., & Xu, H. (2020). COVID-19 infection outbreak increases anxiety level of general public in China: involved mechanisms and influencing factors. *Journal of Affective Disorders, 276,* 446–452. https://doi.org/10.1016/j.jad.2020.07.085

Wu, S., Zhang, K., Parks-Stamm, E. J., Hu, Z., Ji, Y., & Cui, X. (2021). Increases in anxiety and depression during COVID-19: A large longitudinal study from China. *Frontiers in Psychology, 12,* 706601. https://doi.org/10.3389/fpsyg.2021.706601

ZRSZ (2020). *Vpliv epidemije SARS-CoV-2 na trg dela v Sloveniji* [Impact of the SARS-CoV-2 on labour market in Slovenia]. Retrieved on 23 September 2021 from https://www.ess.gov.si/_files/13330/Analiza_vpliva_epidemije_SARS-CoV-2_na_trg_dela.pdf