Stress Resilience and Self–Care of University Students in the Conditions of Digitalization

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Abstract: Numerous studies highlight the urgency of building higher stress resilience among university students. In the age of digitalization, it is crucial to recognize higher levels of stress among students in academia. This is essential to build higher stress resilience in conditions of uncertainty to ensure a more efficient educational process. This study explores factors fostering psychological resilience in the era of digitalization. The research methodology includes quantitative methods such as the Student Stress Resilience Scale (Connor-Davidson Resilience Scale, CD-RISC-25, 2003) and focus group interviews with students from one regional university. The study concludes that optimism and vitality in stressful situations were the determining factors for promoting stress resilience among University students. The students with a more optimistic outlook on situations or challenges were better equipped to cope with stressors and enhance their stress resilience through their optimism and vitality.

Keywords: Performance stress resilience, higher education, digitalization, self-care strategies.

Introduction

In addition to the existing challenges in education, the COVID-19 pandemic created new and unforeseen shocks, such as the transition to the digitalization of the educational process and transition of remote learning. On April 1, 2020, the number of students who had to continue their studies at home reached 1.598 billion worldwide in 194 countries. Higher education in Latvia also underwent significant changes, heading its transition to an online format of the educational process. The pandemic has introduced significant changes in the organization of the learning process to an online format in Zoom, McTeams, and other electronic platforms; from closed libraries to a digital communication format and different online assessment methods. Numerous studies were carried out about the impact of the pandemic on the daily life of universities. According to Aristovnik et al. (2020), the current research studies are focusing mainly on students' daily lives in the early stages of the pandemic and comprise small-scale studies covering only certain aspects of life. Among many studies, the most popular were related to students' mental health conditions. The university's faculty members had to transform materials and methods into a new format that was relevant and suitable for an online format (Fernandes Crus et al., 2020). Changes in higher education were pushed and their implementation was accelerated under the influence of new circumstances. The pandemic exposed universities to a global experiment that started with the introduction of an online learning format. Some obstacles and challenges were identified in the process of this transition (Marinoni et al., 2020; Mishra et al., 2020; Petrova & Tairov, 2022). Among them was a lack of availability of appropriate infrastructure for students, as well as a wide range of technical problems related to the Internet connection (Carolan et al., 2020). The isolation of university lecturers during the pandemic was a major challenge in designing study courses, trying to find an optimal balance between student-cantered teaching and the challenges of virtual practice by promoting student involvement in the learning process and ensuring their interaction in an online environment (Carolan et al., 2020). On a global scale, due to the pandemic, universities had to re-organize their activities to an online format.

The Impact of Digitalization on University Students Since the Beginning of The Pandemic

The pandemic accelerated the digitalization of learning process, which had already been set as one of the priorities in the Latvian and European strategic documents and regulations. Following the

Organization Development Journal
Volume 43, Issue 3, 2025

ISSN: 0889-6402
http://www.odjournal.org//

"Latvian Guidelines for Digital Transformation until 2027" (2021), higher education had to ensure a high-quality study process, research, and availability of study resources in the environment, by the use of digital platforms and modern tools and promoting digital literacy of university lecturers. In the "Latvian Development Guidelines for 2021-2027" (2021), digitalization of the educational process, modernization of ICT infrastructure, and acquisition of digital skills, digital security, and innovation were defined as important aspects of Latvian education, to meet the need of contemporary youth. Latvia's national reform program strategy "Europe 2020" (2010) also aims at creating an ecosystem of digitalization.

During the pandemic, university lecturers improved their competence to work remotely in providing online learning process for students. Both students and university faculty members have mastered new learning platforms. Shahzad et al. (2021) point out that the digitization of the learning process radically changed the traditional model of education and contributed to the transition towards contemporary forms of learning. The pandemic contributed to the reorientation of the study process towards technology-based learning by encouraging students to use variety of websites, learning portals, video conferencing, mobile apps, and countless free access sites. Digitization contributed to technological progress in higher education institutions, expanding the use of interactive learning methods that encouraged students' involvement in the study process. The post-pandemic education system was oriented towards finding the balance to a post-industrial society and economy, which required a more individualized approach towards students by taking into account their needs and expectations (OECD, 2021). Digitization also involves social dimension, restructuring areas of social life through digital communication with the help of media infrastructures (Brennen & Kreiss, 2014).

The transition to an online format has raised many questions about the quality of education (Sahu, 2020). Digitization of the study process in higher education institutions has been discussed by the scientists for the past fifteen years, and many higher education institutions already have made a transition to the digital process long before the beginning of the pandemic, but for many higher education institutions it was a new necessity caused by the Covid-19 pandemic. Digitization of the learning process contributed to the emergence of new learning concepts and learning models, such as "e-learning-3.0", characterized by openness, cooperation, and collective wisdom, while traditional lecture format was replaced by other forms, such as discussions, case studies, problem analysis, brainstorming, interaction and feedback. Significant changes also took place in the organization of the study process from standardized to individual educational approaches, allowing students to participate actively in the knowledge-creating and self-regulated learning process. The transition from a standardized assessment system to an individualized assessment system was based on such criteria as: the ability to solve personally assigned tasks, critical thinking, learning, and working with a large amount of information (Jarmusevica et al, 2019). A rapid re-planning of the learning environment took place – by abandoning the standard university environment (auditorium, library, computer room) to hybrid spaces that combined digital, mobile, virtual, online, social, and physical spaces. New experimental patterns of interaction were created by taking into account the educational needs of students after graduation, as well as responding responsively to new educational demands (Lonka & Cho, 2015). So far, there is very little research on the extent to which digital technologies are not limited to the transmission of information, but also involve people's values, beliefs, behaviors, emotions, and feelings and their anxiety, boredom, discomfort, and stress. Cicha et al. (2021) refer to the governmental efforts to introduce digitization of the study process of higher education institutions by many universities that have been facing countless difficulties. The difficulties were related to the lack of infrastructure and the lack of experience of lecturers to work in a digital format that affected the quality of education (Kusel et al., 2021). In the United States, one of the consequences of the pandemic was a dropout rate of students' enrolments up to 15%. By turning to the distance learning format, Universities had to reduce tuition fees. The Dutch higher education system experienced a large dropout of international students due to the pandemic. A study by Polish scientists indicates that students were initially skeptical of the new learning format, but soon appreciated the new digital tools and the advantages of the distance learning format (Cicha, 2021).

The greatest difficulties were caused with those study courses, the acquisition of which required work in laboratories and technical support. The studies, conducted in many parts of the world, mostly covered the experience of students in the early stages of the pandemic and the peculiarities of their adaptation to the new conditions. According to research, among the biggest challenges that students were facing during the pandemic was a lack of psychological resilience.

Among the emotions experienced by the students during the pandemic were boredom, anxiety, frustration, anger, hopelessness, shame, as well as mild or severe depressive symptoms (Islam et al., 2020). The study by Islam et al, (2021) covered the opinion of 30,383 students from 62 countries. It was found that during the pandemic, students from disadvantaged families with limited resources and unstable financial situations faced the greatest difficulties with the availability of quality study environments at home (Piettro et al., 2020).

Innovative technological solutions enabled universities to meet the needs of students (McHaney, 2011). Digitization facilitated the formation and expansion of networks, which provided new networks of cooperation within educational institutions, as well as between organizations, by overcoming the limitations of traditional forms of cooperation (Castells, 2011). Digitization also increased instant access to knowledge. Thus, universities must support and promote learning and the use of the latest digital pedagogical approaches by academic staff in practice, as well as their readiness to accept and implement new innovative solutions to ensure the use of new technological platforms and tools. Digitization of higher education is a very dynamic field, so universities need to ensure that the existing e-learning strategies are still compatible with the latest strategic approaches in the learning process. The process of digitization in universities should not be attributed only to the study process, as it should be seen only as one of many components of the digital transformation of universities.

The university's environment can be seen as a complex adaptive system, characterized by self-organizing behavior and non-linearity, which prevents predicting the behavior of the system and providing students with more self-determination and self-directed learning opportunities as compared to the traditional educational system (Holland, 1996). During the paradigm shift, reforms in education require a re-evaluation of existing education models. To understand an online learning environment, it must be seen as an adaptive system, where all the elements of the system exist in their dynamic interaction. Online learning environments have all the characteristics of complex systems, such as nonlinearity, feedback, networking, and hierarchy (Holland, 1998). Self-organization can be considered the most important feature of a system, which contributes to the emergence of a more global structure that develops as a result of multiple interactions (Heilighen, 2008). Moreover, all components of the system can be viewed in the perspective of adaptive and evolutionary development (Wells, 2013). The online learning environment has the potential to organize interdisciplinary learning because it is oriented towards overcoming the fragmentation of knowledge by pushing the boundaries of rigid academic disciplines (Lawrence & Despres, 2004). Due to the characteristics of the online environment, such as non-linearity and reflexivity, it offers opportunities to achieve a higher level of transdisciplinarity. One of the characteristics of a complex adaptive system is flexibility. Participants in remote online environments are constantly looking for resources to respond to new shocks and challenges, thus developing higher stress resilience (Eppel, 2012). Complexity theory predicts the emergence and development of new systems, realities and new trajectories (Scott, Woolcott, Keast & Chamberlain, 2018).

The pandemic has offered to view the role of the student as a knowledge co-creator and a researcher. The transition should be smooth, by taking into account the complexity and heterogeneity of students' experience. Students who have obtained education in a traditional educational environment as consumers of ready-made knowledge should be offered a more flexible transition to a new system. Students' roles cannot be defined by placing the curves at one pole, but respecting their evolutionary development (Dusi & Huisman, 2020) for the promotion of greater stress resilience. According to Rotenberg and Arshavski (as cited in Pipere, 2005), an individual's ability to adapt to new circumstances is determined by their activity. This activity helps to mobilize all forces in overcoming new obstacles and difficulties. Activity provides the organism with resources to overcome difficulties. The changes caused by the pandemic in the transition to remote forms of education created many challenges for students, and also gave students more autonomy and increased opportunities for a self-directed learning.

Defining Stress Resilience

Stress is an integral part of any person's life. Everyone experiences stress when facing new challenges or situations. Kolesnikova and Sudraba (2019) describe stress as "an interactive and dynamic construct that reflects the continuous interaction between the organism and the environment that affects physical, mental and social health" (Kolesnikova and Sudraba, 2019, as cited in Martinsone

& Sudraba, 2019, 165). Stress causes physiological changes that manifest as mental, emotional, behavioral and cognitive responses to the stressor.

Bradford Cannon wrote about homeostasis - the body's ability to return to a state of equilibrium after stress. Similarly, Aron Anonovsky believed that to overcoming stressful situations is person's ability to continuously restore balance and achieve a sense of coherence (Anotonovsky, 1979). The balance is formed by the cognitive understanding of the situation, and the ability to find resources to solve the situation.

Individuals with high-stress resilience display high results in the following criteria: control, passion, and accepting challenges (Piper, 2005). Individuals with a high internal locus of control believe that they can change and influence the new situation or circumstances and usually perceive the new situation as a challenge and can find the necessary resources to deal with the situation. Thus, any new and unusual situation is perceived as an opportunity rather than a threat. Stress and anxiety are normal responses to a situation that is perceived as threatening and unpredictable. Possible stress-related reactions may include changes in concentration, irritability, anxiety, insomnia, decreased productivity, and interpersonal conflict.

The concept of "stress resilience" is a social construct and can be seen as a dynamic concept in the system of social relations. Stress resilience therefore includes social competence and problem-solving skills. Resilience should be seen as a dynamic term, an individual's ability to organize his/her activities in challenging circumstances. It is a result of both personal and professional attitudes and is socially constructed (Gy & Day, 2007). The term includes personal, professional, and situational factors. An individual may show resilience to stress in everyday situations but is unable to practice it in crises. Gy & Day (2007) have outlined three scenarios that describe an individual in crisis: in the first scenario, all three dimensions (personal, professional, and situational) are in balance; in the second scenario (one of the two dimensions is in balance, but one is characterized by moderate bifurcations that the individual can manage it in a controlled manner, and the third scenario reflects intense fluctuations/bifurcations than the individual cannot cope with without external help/influence. Not only major events in people's lives but also changes in the everyday situations caused by these events could be considered stress-causing factors (Lazarus, 1993).

In the scientific literature, stress resistance is defined differently by different scientists, although the unifying factor in all definitions is the individual's adaptive and integrative ability to adapt and function in new, complex and threatening conditions.

Table 1. Definintion Of Stress Resilience

Nr.	Sources	Explaining stress resilience
1.	Southwick, S. M& Charney, D.S (2012)	Stress resilience as a dynamic, evolving concept: as a process, as an outcome, that changes during a person's life, depending on available resources and context. Emphasis is placed on the identification of determinants that contribute to stress resilience.
	Connor & Davidson, 2003; Wagnald & Young, 1993; Vella & Pai, 2019	Stress resilience as a personality trait and the ability to adapt to threatening and dangerous situations.
2.	Masten, 2021.	Stress resilience as a characteristic of a dynamic system an individual to adapt to new situations; an interdisciplinary view of stress resilience. The ability to work in a team with social partners that prepares individuals to overcome crisis or stress.
3.	Panter-Brick, C. & Eggerman, M. (2012); Panter-Brick, C. (2014)	Stress resilience is related to the resources available to the individual and his/her capacity to use them in a stressful situation; an interdisciplinary perspective.
4.	Bonano, G. A. & Diminich, E.D. (2013)	Stress resilience as a life-long trajectory for healthy holistic functioning of the individual.
5.	Southwick & Charney (2012)	Ability to adapt to stressful situations and continue normal psychological functioning.
6.	Staroverky (2012)	Personality traits that contribute to the development of stress resilience, such as optimism, altruism, moral compass, faith and spirituality, humour, good role models, social support from peers and family, the ability to leave one's comfort zone and set a

		purpose in your life that helps you to overcome obstacles and difficulties.
7.	Wu et al., (2013); Alvord et al., (2016).	A holistic view that includes genetic, developmental, and psychological factors that determine the development of psychological resilience. An individual's behavioural, cognitive, and emotional abilities to manage change and crisis.
8.	Burt & Paysnick (2012); Werner (2012); Colby & Shiften (2013).	The importance of the social aspect: positive family relationships, peer relationships, supportive adults, and self-discipline contribute to the development of stress resilience. Social support from adults, peers, and a healthy and supportive environment helps to cope with stressors. Availability of social support.
9.	McRae et al. (2012).	The importance of cognitive factors: the ability to control negative thoughts by replacing them with positive ones.

The American Psychological Association (2019) defines psychological resilience as a successful adaptation process in the face of adversity, trauma, tragedy, threat, and other significant stressors such as family and relationship problems. Stress resilience can be defined as the ability to adapt to stressful situations and continue normal psychological functioning (Southwick & Charney, 2012). Deasy at al (2014) define stress resilience as a person's ability to maintain balance in a stressful situation. Zelčāne & Pipere (2023) argue that stress resilience can be viewed both as a personality trait and as a dynamic process resulting in a positive outcome (Rutter, 2006). In many definitions proposed by scientists, the unifying factor is positive adaptation and the ability to function in difficult conditions. Many scientists refer adaptation to new and complex conditions both to personality characteristics and treat it as a phenomenon characterizing the process. Many scientists refer it to adaptation as both a process and an outcome (Hiebel et al., 2021). Recent research puts an emphases on the integrative nature of stress resilience, viewed as a contextual concept (Ungar, 2021). An individual's psychological stress resilience is influenced by biological, psychological, social, and ecological factors, which can manifest themselves in different ways, such as maintaining individual well-being, recovering from adversity and achieving homoeostasis, or even experiencing personal growth (Ungar, 2021).

There is no uniform definition of stress resilience. Saroversky (Staroverky, 2012) points to a set of qualities that contribute to the development of stress resilience, such as optimism, altruism, moral compass, faith and spirituality, humor, good role models, social support from peers and family, the ability to leave the comfort zone and set a goal in one's life that helps to overcome failures and any difficulties. Rampe (2010) defines ten aspects of stress resilience based on positive psychology. They are optimism that promotes positive action, acceptance of the situation, focusing on a possible solution, taking responsibility for one's life, overcoming the role of victim, building support networks, and building a flexible strategy to solve problems.

Recent research identifies mechanisms involving genetic, developmental, and psychological factors that determine the development of psychological stress resilience (Wu et al., 2013). From the perspective of developmental psychology, severe events in childhood negatively affect stress responses, creating long-term impairments. Factors, such as positive family relationships, peer relationships, supportive adults, and self-discipline contribute to the development of stress resilience (Burt & Paysnick, 2012). Stress resilience and its effects on student well-being can reduce depressive symptoms, (Smith & Yang, 2017). Many studies indicate that individuals who possess flexible thinking have strong stress management skills and adequate self-esteem (Szanton & Gill, 2010). Resilient students demonstrate such critical qualities in higher education as confidence and self-determination. Resilient and resourceful students possess the behavioral, cognitive, and emotional capacities to manage change and crisis (Alvord et al., 2016). Students with flexibile thinking have a more positive outlook on life and they see bright side of every situation.

In the higher education, students face a myriad of challenges, ranging from micro stressors such as academic demands, and financial challenges, to macro stressors such as a new study environment and new demands (Kummaraswamy, 2013). Carver et al., (2010) indicate that optimists have lower levels of hopelessness and they do not use avoidance strategies in stressful situations. Among the resources for coping with stressful situations are social support from adults, peers, a healthy and supportive environment, and religious beliefs that help cope with stressors (Werner, 2012).

Among the psychological factors that affect one's stress resistance and stress tolerance are cognitive processes, personality traits, optimism, as well as coping mechanisms for stressful situations. Optimism is associated with students' expectations to reach good results, active use of stress-coping strategies, and the availability of greater social support (Colby & Shiften, 2013). Friends and family members also play a crucial role in promoting students' resilience (Kozina, 2020). Among other resilience factors, are cognitive factors such as the ability to control one's negative thoughts by replacing them with positive ones (McRae et al., 2000).

Methodology

Participants

The research sample consists of students enrolled in various specialties who voluntarily agreed to participate in the survey (n=200). The student sample consists of undergraduate students. 40% of first-year students (n=81) and 37% of fourth-year students (n=74) participated in the survey. 1st and 4th year students are exposed to additional stress because it is related to the beginning and end of a new study year. The beginning of studies in a new environment is associated with difficulties of adaptation, and new requirements, while the fourth year of studies is related to final exams and writing first scientific work. 89% of the participants were women and only 11% were men, which is the smallest group of students in the university, so the gender criterion was not considered in the search for significant relationships. The average age of study participants Mean=38 years, SD=12.4

Instruments

In the first stage of the study, the participants were invited to take part in focus group interviews. For this study, four online focus group interviews were conducted with the university students (n=28) about the stressors they were facing in the online learning process and the self-care strategies they were practicing. Before conducting focus group participants, the researchers obtained participants' informed consent. Participants were asked to share their experiences with typical stressors during the online learning process, as well as self-care strategies they used to overcome stress. After conducting the focus group, a thematic analysis was carried out. In the second stage of the study, the stress resilience scale (Connor - Davidson Resilience Scale, CD-RISC-25, Connor & Davidson, 2003) was used. The Connor-Davidson scale is designed to measure stress resilience. The research was conducted voluntarily and anonymously, the data was analyzed granting participants confidentiality. In the first stage, focus group interviews were conducted in ZOOM format. The statistical data processing program SPSS (Statistical Package for Social Sciences) version 23.0 was used. The following methods of statistical data analysis were used: Cronbach's alpha coefficient (α) to check the reliability of indicators and internal consistency of criteria, t-test (Student's test) to compare the average indicators of two independent groups, Pearson's correlation coefficient (r-Pearson) to would find statistically significant differences between two independent samples (1st and 4th-year students). 200 students from one regional university agreed to participate in the study voluntarily.

Results and Discussions

The authors used Connor - Davidson Resilience Scale, CD-RISC-25 (2003) stress resilience scale. The scale (CD-RISC) consists of 25 statements and respondents were asked to rate each statement on a scale (1-4). Higher scores reflect greater stress resilience. The CD-RISC scale has been translated into many different languages and has been used in studies with large and diverse samples, including adolescents, the elderly, university students, representatives of different ethnic groups and cultures, and selected professional or sports groups. Several versions of the scale exist, but only three scales, CD-RISC-2, CD-RISC-10, and CD-RISC-25 have been authorized and valid for the public use. The authors used a 25-statement scale (CD-RISC-25).

By the use of the Connor - Davidson Resilience Scale, a factor analysis was carried out, where three factors were found out which students consider as the most effective factors in coping with stress:

1) **receptivity and purposefulness in overcoming stress** (Undertaking leadership in solving problems, ability to think clearly in stressful situations, ability to control one's life, strong sense of purpose, ability to cope with problems, perception of oneself as a strong person, strong sense of purpose;

2) **optimism and vitality in stressful situations** (Doing things according to conscience, no matter what happens, feeling proud of one's achievements, becoming stronger in stressful situations)

3) **flexibility in stressful situations** (Success offers confidence to endure new challenges, to use humor, the ability to endure shock and illness, to work to achieve goals, to perceive support in relationships, the ability to adapt to changes, brave acceptance of failures).

The majority of respondents were 1st and 4th year students. A comparison of Mean values was carried out by comparing students who have just begun their studies in a new learning environment in the 1st year and the students for whom this was the last year.

Factor analysis allows the authors to conclude that the level of vitality and optimism of first-year students in stressful situations is lower than average, and or the fourth-year students it is higher than average. The T-test was carried out in two independent groups of respondents (1st and 4th-year students), indicating that optimism and vitality in stressful situations were determining factors for promoting stress resilience. This means that students who had a more optimistic view of the situation or difficulties were able to cope with stressors much more easily and were able to increase their stress resilience. A T-test showed that the score of optimism and vitality is p=0.002

1.Table Factors Reflecting Stress Resilience

	Year of studies			**t-tests**		
		M	**SD**	**t**	**df**	**Sig. (2-tailed)**
Receptivity and purposefulness in overcoming stress	1st year	0,04	0,9	,213	153	,832
	4th year	0	1,1			
Optimism and vitality in stressful situations	1st year	-0,24	0,94	-3,083	153	,002
	4th year	0,24	1,01			
Flexibility in stressful situations	1st year	-0,02	0,97	,912	153	,363
	4th year	-0,17	1,07			

The purpose of the focus group interviews was to find out students' stress resilience and their self-care strategies. The interview was recorded and transcribed. Regarding the identity of the respondent and the research data, strict confidentiality was observed by obtaining informed consent from the participants.

Before conducting focus group interviews, the respondents were informed about the expected duration of the interview and the audio recording, as well as about the ethical aspects of data collection. The authors ensured the respondent's 'authentic self-representation.' Since the study process has been taking place in the e-environment during the pandemic, it was a usual environment for the interview of the respondents. The interview was conducted during the time suitable for the respondents, so the respondents could devote their undivided attention to the conversation. The authors started by informing the respondents about the purpose of the interview, created a positive atmosphere, signed informed consent, as well as granted anonymity and confidentiality for the voluntary participation. Before the interview, the authors informed the respondents about the goals of the interview and asked for permission to record the interview. For the interview, the authors chose open-ended questions to obtain broader and more detailed answers, used questions about the participants' experiences and feelings, and also used additional questions. The interview also included demographic indicators, information about the participants' education (program, year of study), behavioral aspects (what they do to cope with stress), respondents' opinions (thoughts about factors that cause stress). In the interview, the author avoided closed questions, tried not to interrupt the speaker. The interviewees kindly and willingly gave answers to all the questions asked, as this was an engaging topic for them.

Four focus group interviews allowed to identified the stressors that were the most frequently mentioned by students. Among them were: ignorance, feeling of loneliness, inability to communicate, inability to cope with all work, procrastination, inability to combine work with studies.

Among the most widely adapted coping strategies used by university students were cognitive problem-solving strategies and social support (maintaining connections with friends and families and

maintaining social networks). Promoting social connection is one of the most important strategies in coping with stress, as loneliness and social isolation make this crisis more difficult to overcome.

In the focus group interviews with students, the following self-care strategies in stressful situations were distinguished: avoidance, seeking comfort in food, seeking help from others, taking control over one's everyday life, and physical activities to reduce tension. The students have mentioned family and socialization with friends as one of the most topical strategies. As a second self-care strategy, students have mentioned physical activities, because after the pandemic, students with a sedentary lifestyle were looking for opportunities for physical activities.

Table 2 Students' Coping Strategies in Post-Pandemic

Problem-solving strategies		
Strategy		**Examples from the interviews with students**
1	Confronting strategies	"I didn't give up, I sustained, even when it seemed like I wouldn't be able to finish the session"
2.	Problem-solving strategies	"To complete the semester's work, I tried to plan it more carefully, so that I could deal with everything more successfully"
Emotions-based strategies		
1.	Distancing	"Even though I faced many problems, I tried not to take anything close to heart, but was focusing on the health of my family members"
2.	Self-control	"I tried to control my emotions, however worried I was about many things related to both the information I receive from the media and the lack of time to complete all the work on time" "I was in stress when entering the university, whether I would cope with my studies (new learning environment, new technologies), but I calmed myself down, read my notes, focused on the learning process."
3.	Social support-seeking strategies	"Even on the worst days, when I was in a really bad mood, I knew I could always call my girlfriend and talk about everything." "My family was always there for me when I was having a hard time: both in studies and in connection with the lockdown"
4.	Undertaking responsibility of one's life and everyday reality	"I was clearly aware that no one would do my work and organize my life instead of me, so during the pandemic I tried to be the boss of my everyday life, instead of letting life leading me" "In parallel with my studies, I undertook a job to earn a living, I did housework, I took care of myself and my well-being, and I also took responsibility for my pet."
5.	Avoidance of problems	"Sometimes I try to postpone doing staff related to my studies and do many other useless things."
6.	Psychological well being	The practice of forgiveness, gratitude "I sometimes give a treat for myself something nice." "I did various practical exercises, including colouring mandalas. I Sometimes I use this method to reduce stress, it helps and it works. Sometimes doing puzzles is helpful for me. By doing this, the thought of how to solve the situation of the given moment comes to mind."

Self-care strategies practiced by the students during the pandemic includes physical, social, recreational activities, and spiritual practices. The most frequently mentioned were physical activities (regular walking, training in the fresh air, online yoga, aerobics classes, gardening, walking in the forest). Some older students have also mentioned spiritual practices such as meditation and yoga. Many students were undertaking professional training in parallel with their studies (attended courses in the e-environment, have learned new skills in informal education programs in digital learning environment). In order to better organize their everyday life, many students had to acquire time

management skills. Recreational activities were also often mentioned by the students, such as vi sauna procedures, fishing, going to the forest with family and friends.

Limitations of Research

Among the limitations of the study is the participation of students from one regional higher education institution, therefore the results cannot be applied to the situation in all higher education institutions. Also, the small sample of research respondents (n=200) does not allow to generalize the research results. The largest group of respondents was comprised of women, which is typical gender ratio in the university for the students of the surveyed specialties, namely nursing and education program students, who have comprised the research sample. Another limitation was the low response rate in completing the questionnaire, as it was distributed on an e-platform. Nevertheless, the sample consists of (n=200) participants, which is a sufficient sample to test the statistical data.

Conclusions

The study indicates that 28% of first-year students evaluated their stress resilience as high and 23% as slightly above average, while only 9% of fourth-year students evaluated their stress resilience as high and 31% as above average. This shows that in the post pandemic situation many students have adapted successfully to the new situation, although it is important to be aware of the possibilities of higher education in preparing students for complicated reality in order to promote greater stress resilience in relation to the new work and study environment.

The level of stress resilience of first-year students in stressful situations is lower than average, but for the fourth-year students it is higher than average. The T-test (Student's criterion) in two independent groups of respondents (1st and 4th year students) allows one to conclude that optimism and vitality in stressful situations were the determining indicators for promoting stress resilience for the fourth year students. This means that students who had a more optimistic view of the situation, were able to cope with stressors much more easily and were able to increase their stress resilience, with an index of optimism and vitality p=0.002.

Higher education should promote self-care skills of students, which includes more than the acquisition of knowledge about self-help strategies and stress resilience. Student well-being and stress resilience must become a priority in higher education, given the ongoing concerns about students' level of stress and depression, both due to the effects of the pandemic and the economic crisis.

A holistic approach is essential in promoting stress resilience, which respects students' own experiences, as well as fosters implementing transformative learning approaches in teaching. Scientists recommend teaching students preventive self-help strategies to promote their well-being and higher stress resilience. Students should be offered a self-assessment to identify priority areas for more effecient use of strategies in promoting conscious self-care.

For the further studies on stress resilience the focus should be on a comprehensive and multidimensional measurement of stress, including different components of stress (behavioural, emotional, cognitive, physical stress, and alienation) to get a more comprehensive picture rather than measuring a general level of stress resilience.

REFERENCE

Alvord, M.K., Rich, B.A., & Berghorst, L.H. (2016). Resilience interventions. PA handbook in psychology. In APA Handbook of Clinical Psychology: Psychology and Health (pp.505-519). NY: American Psychological Association.

Aristovnik, A., Keržic, D., Ravšelj, D., Tomaževic, N., & Umek, L. (2020). Impacts of the Covid - 19 pandemic on life of higher education students: A global perspective. Sustainability, 12, 8438.

Barnett, M.L., Cashore, B., Henriques, I., Husted, B.V., Panwar, R. & Pinkse, J. (2021). Reorient business case for corporate sustainability. Stanford Social Innovation, Review, 35-39.

Bonano, G. A., & Diminich, E.D. (2013). Annual research review: Positive adjustment to adversity-Trajectories of minimal-impact and emergent resilience. Journal of Child Psychology and Psychiatry, 54, 378-401.

Brennen, S., & Kress, D., (2014). Digitalization and digitalization – culture digitally. Available: http://culturedigitally.org/2014/09/digitalization-and-digitization/

Burt, K.B., & Paysnick, A.A. (2012). Resilience in the transition to adulthood. Developmental Psychopathology, 24, 493-505

Carolan, C., Davies, C. L., Crookes, P., McGhee, S., & Rox-Burgh, M. (2020). COVID 19: Disruptive impacts and transformative opportunities in undergraduate nurse education. Nurse Educational Practice, 46, 102807. doi: 10.1016/j.nepr.2020.102807

Carver, C.S., & Scheier, M.E., & Segerstrom, S.C. (2010). Optimism. Clinical Psychological Review, 30, 879-889.

Castells, M. (2011). The Rise of Network Society. (2nd Edition). London: Willey- Blackwell.

Cicha, K., Rizun,M., Rutecka, P., & Stzelecki, A. (2021). COVID-19 and higher education: First year students' expectation towards distance learning, Sustainability, 13, 1-19.

Colby, D.A., & Shiften, K. (2013). Optimism, mental health, and quality of life: a study among breast cancer patients. Psychological Health Medicine, 18, 10-20.

Connor, K.M., & Davidson, J.R. (2003). Development of a new resilience scale: The Conor Davidson Resilience Scale (CD-RISC). Depression and Anxiety, 18(2), 76-82.

Deasy, D., Coughlan, B., Pironom, J., Journan, D., & Mannix-McNamara, P. (2014). Psychological distress and coping amongst higher education students: A mixed method inquiry. Plos One, 9(12) e115193

Dusi, D., & Huisman, J. (2020). It's more complex than it seems! Employing the concept of consumption to grasp the heterogeneity and complexity of student roles in higher education. Higher Education, 81, 935–948

Europa 2020 (2010). https://www.eesc.europa.eu/lv/sections-other-bodies/other/europe-2020-steering-committee

Eppel, E. (2012). What does it take to make surprises less surprising? The contribution of complexity theory to anticipation in public management. Public Management Review, 14(7), 881-902

Fernandes- Cruz, M., Alaverez-Rodriges, J., Avalos, -Ruiz, I., Cuevas-Lopez, M., De Barros-Camargo, C., & Diaz-Rosas, F et al, (2020). Evaluation of the emotional and cognitive regulation of young people in a lockdown situation due to the Covid pandemic. Frontiers in Psychology, 11, 565503. doi: 10.3389/fpsyg.2020.565503

Govindarajan, V., & Srivastava, A. (2020). A post pandemic strategy for US higher education. Retrieved from https://hbsp.harvard.edu/inspiring-minds/a-post-pandemic-strategy-for-u-s-higher-ed

Gy, Q., & Day, C. (2007). Teachers' resilience: A Necessary condition for effectiveness. Teaching and Teacher Education, 23, 1302–1316.

Heylighen, F. (2008). Complexity and self-organization. In M.J. Bates & M.N. Maack (Eds.), Encyclopaedia of Library and Information Sciences, 2, (pp. 1215-1224), Oxford: Taylor and Francis.

Hiebel, N., Rabe, M., Maus, K., Peusquencs, F., Radbruch, L., & Geiser, F.(2021). Resilience in adult health science revisited. A narrative review synthesis of process- oriented approached. Frontiers in Psychology, 12, 659395.

Holland, J. H. (1996). Hidden order: How adaptation builds complexity. New York: Basic Books.

Holland, J. H. (1998). Emergence: From chaos to order. Oxford University Press.

Islam, M. A., Barna, S.D, Rainham, H., Khan, M.N,. & Housan, M.T, (2020) Depression and anxiety among university students during COVID 19 pandemic among university students in Bangladesh: A web based cross sectoral survey, Plos One, 15, e0238162.

Jarmusevica, V., Ilisko, D., Badjanova, J., Jukss, V., & Petrova, M. (2019). Educating citizens for integrating the strategy of corporate social responsibility for sustainable regional development: the case study. Proceedings of EDULEARN19 Conference 1st-3rd July 2019, Palma, Mallorca, Spain, ISBN 978-84-09-12031-4, pp. 10449; 10454, doi: 10.21125/edulearn.2019.2633

Kozina, A. (2020). School-based prevention of anxiety using the 'My friends' emotional resilience program: Six month follow-up. International Journal of Psychology, 55, 70-77.

Kummaraswamy, N. (2013). Academic stress, anxiety and depression among college students. A brief review. International Review of Social Sciences and Humanities, 5(1), 135-143.

Küsel, J., Martin, F., & Markic, S. (2021). University students' readiness for using digital media and online learning - comparison between Germany and the USA. Educational Science, 10, 313.

Latvijas digitālas transformācijas pamatnostādes līdz 2027.gadam (2021). [Latvia's digital transformation guidelines until 2027] Retrieved from https://www.varam.gov.lv/sites/varam/files/content/files/digitalas-transformacijas-pamatnostadnes-_2021-27.pdf

Latvijas attīstības pamatnostādnes 2021- 2027. gadam" (2021). [Latvia's development guidelines for 2021-2027]" Retrieved from https://likumi.lv/ta/id/324332-par-izglitibas-attistibas-pamatnostadnem-20212027-gadam

Lawrence, R. J., & Despres, C. (2004). Futures of transdisciplinarity. Futures, 36(4), 397-405.

Lazarus, R.S. (1993). From psychological stress to the emotions: The history of changing outlooks. Annual Review of Psychology, 44, 1-21.

Lonka, K., & Chio, V. (2015). Innovative schools: Teaching and learning in a digital era. EU: Brussels

Marinoni, G., Van't Land. H., Jensen, T (2022). The impact of Covid-19 on Higher Education around the world. IAU Global Survey Report. https://www.iau-aiu.net/IMG/pdf/2022_iau_global_survey_report.pdf

Martinsone, K., & Sudraba, V. (2019). Veselības psiholoģija.[Health psychology] Rīga : Rīga Stradiņa Universitāte.

Masten, A.S. & Monn, A.R (2015). Resilience in children and families: A call for integrated science, practice, and professional training. Family Relations, 64 (1), 5-21.

Mc Haney, R. (2011). The new digital shortline: How web 2.0 and millennials are revolutionizing higher education. Sterling: Stylus Publishing.

Mcrae, R.R., Costa, P.T., Ostendorg, F., Angleitner, A., Hrebickova, M., Avia, M.D., Sanz, J., Sanchez-Bernardos, M., Kusdil, M.E., Woodfield, R., Saunders, P.R., & Smith, P.B. (2000). Nature over nurture: Temperament, personality, and life span development. Journal of Personality and Social Psychology, 78(1), 173-186.

Mishra, L., Gupta, T., Shree, A., (2020). Online teaching learning in higher education during lockdown perion of COVID-19 pandemic. International Journal of Educational Research,1,100012. 10.1016/j.ijedro.2020.100012

OECD (2021). Educational Policy Outlook 2021. Shaping response and resilient education in a Changing World (2021). https://read.oecd-ilibrary.org/education/education-policy-outlook-2021_75e40a16-en.

Panter-Brick, C. (2014). Health, risk, and resilience: Interdiscipilnary concepts and applications. Annual Review of Anthropology, 43, 431-448.

Panter-Brick, C., & Eggerman, M., (2012), Understanding culture, resilience, and mental health: The production og hope. In M. Ungar (Ed)., The social ecology of resilience: A handbook of theory and practice (pp. 269-286), NY: Springer.

Pietro, G., Biagi, F., Costa P., Karpiński, Z., & Mazza, J. (2020). The likely impact of COVID-19 on education: Reflections based on the existing literature and recent international datasets. EU: JRC Technical Report. doi:10.2760/126686.

Petrova, M., & Tairov, I. (2022). Solutions to manage smart cities' risks in times of pandemic crisis. Risks, 10, (12) 240. https://doi.org/10.3390/risks10120240

Rampe, M. (2010). Der R-faktor. Hamburg & Norderstedt.

Rutter, M. (2006). The promotion of resilience in teh face of adversity. In A. Clarle-Stewart & Dunn, J. (Ed)., Families court in child and adolescent development (pp.26-52). Cambridge University Press.

Sahu, P. (2020). Closure of Universities due to Coronavirus disease 2019. (COVID-19): Impact on education and mental health of students and academic staff, Cureus, 12(4), e-7541.

Scott, A., Woolcott, G., Keast, R., & Chamberlain, D. (2018). Sustainability of collaborative networks in higher education research projects. Why complexity? Why not? Public Management Review, 20(7), 1068-1087. doi:10.1080/14719037.2017.1364410

Smith, G. & Young., F. (2017). Stress, resilience and psychological well-being in Chinese undergraduate nursing students. Nurse Education Today, 49, 90-95.

Shahzad, A., Hassan, R., Armeny, A., Hussain, A. & Lodhi, R.N. (2021). Effects of Covid-19 in e-learning on higher education institution students: the group comparison between male and female. Quality and Quantity, 55, 805-826.

Southwick, S. M., & Charney, D.S (2012). The science of resilience: implications for the prevention and treatment of depression. Science, 338, 79-82.

Staroversky, I. (2012, October 1). What is resilience? 10 critical characteristics of resilience. Counseling & Psychotherapy.https://staroversky.com/blog/what-is-resilience-10-critical-characteristics-of-resilience

Szanton, S.L., & Gill, J.M. (2010). Facilitating resilience using a society- to - cells framework: A Theory of nursing essentials applied to research and practice. Advances in Nursing Science, 33(4), 329-343.

Ungar, M. (2021). Modeling multisystemic resilience: Connecting biological, psychological, social and ecological adaptation in contexts of adversity. In M. Ungar (Ed.), Multisystemic resilience: Adaptation in contexts of change (pp.6-31), Oxford University Press.

Vella, S., & Pai, N. (2019). A theoretical review of psychological resilience: Defining resilience and resilience research over the decades. Archives of Medicine and Health Sciences, 7(2),233-239.

Wagnald, G. M., & Young, H.M. (1993). Development and psychometric evaluation of the resilience scale. Journal of Nursing Measurement, 1(2),165-178

Wells, J. (2013). Complexity and sustainability. UK: Routledge.

Werner, E.E (2012). Children and war: risk, resilience, and recovery. Developmental Psychopathology, 24, 553-558.

Wu, G. Feder, A., Cohen, H., Kim., J.J., Calderon, S., Charney, D.S. &Mathe, A. (2013). Understanding resilience. Frontiers of Behavioral Neuroscience, 7, 10.

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