IZKUŠNJE UČITELJEV S STRESOM MED POUČEVANJEM NA DALJAVO: IZKUŠNJE, PRIDOBLJENE V ČASU PANDEMIJE COVID-19

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Povzetek Namen: Veliko je govora o tem, kako so se študenti soočali s študijem na daljavo v času pandemije COVID-19 in kaj jim je povzročalo stres. Manj pa je raziskav, ki govorijo o tem, kako so se z izzivi soočali predavatelji in asistenti v slovenskem visokem šolstvu. Namen raziskave je bil ugotoviti, s kakšnimi izzivi so se soočali, kako so doživljali stres in kaj so najbolj pogrešali. Metodologija: Raziskava je potekala med 27. 5. 2021 in 27. 8. 2021 v spletnem okolju 1KA. Povabilo za udeležbo v raziskavi smo razposlali na vse slovenske visokošolske zavode. Skupaj je dobilo povabilo 112 zavodov. Odzvalo se je 30 zavodov. V celoti je anketo izpolnilo 85 respondentov. Rezultati: Ugotovljeno je bilo, da so pred pandemijo zaposleni imeli dobre izkušnje z uporabo interneta in da so bili dobro računalniško pismeni. Večinoma so tudi bili vešči dela preko oddaljenega imeli Z dostopa. Mani izkušeni pa so e-učenjem, videokonferencami in izdelavo video gradiv. Obseg dela se jim je povečal, saj je študentom potrebno dati več nasvetov, kot če bi jih dajali fizično v pisarni. Ugotavljamo pa, da se jim sam stres ni bistveno povečal. Čeprav je zaznati določene dejavnike, ki izhajajo iz učenja in dela na daljavo, motiviranja študentov in pomoči študentom pri oblikovanju samozavesti pri pripravi in izvajanju video prezentacij.

Ključne besede: predavatelji, e-predavanja, COVID-19, delo od doma, stres.



DOI https://doi.org/10.18690/um.fov.3.2022.77 ISBN 978-961-286-583-2

SLOVENIAN PROFESSORS' EXPERIENCE OF STRESS DURING COVID-19 AND INDUCED DISTANCE TEACHING

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Abstract Purpose: Lots of research has been published about the impact of COVID-19 pandemic on education, students in particular. However, little is known about the challenges and stress that Slovenian professors and assistant professors experienced during and after the lockdown, which is what this survey aims to address. Methodology: The survey was created in the 1KA survey platform and carried out between 27 May 2021 and 27 August 2021. We invited 120 higher education institutions to participate in the survey, out of which 30 responded. As a result, a total of 85 respondents were surveyed. Results: The results indicated that Slovenian professors and assistant professors were well versed with digital technology before the COVID-19 pandemic. Most of them were well equipped with digital skills and had experience with remote access, however, they had less experience with e-learning, video-conferencing and preparing video contents. During e-learning their work overload increased and they were putting in longer hours. Students demanded more instructions and guidance on distance learning, in terms of motivation, engagement and in developing confidence to give good multimedia presentation. However, despite all these, we have seen no significant increase in stress levels in professors and the majority of them felt able to cope with stress in a functional way.

Keywords: professors, COVID-19, remote work,

e-learning,

stress.

DOI https://doi.org/10.18690/um.fov.3.2022.77 ISBN 978-961-286-583-2



1 Introduction

On 31 December 2019, the WHO was informed of several pneumonia cases of unknown cause in the Chinese city of Wuhan. The coronavirus has hit societies around the world hard and the countries continue to recommend their citizens to stay at home as much as possible. The countries have also imposed restrictions on social activities, whereas the severity of restrictions varies among countries (World Health Organization, 2020). In Slovenia, the restrictions were introduced on 13 March 2020, whereas the infectologists called for measures to restrict public life. All EU member states have adopted similar measures to those in Slovenia and are gearing up for a potential further spread of the virus. Slovenia has, on a proposal from infectologists, already taken the following measures: (1) closure of educational institutions, (2) restrictions on border crossings with Italy, (3) restrictions on public life, (4) work from home (Government Communication Office, 2020).

At the point of writing of the present article, many studies have been done on the topic of telework during the COVID-19 epidemic. More recent studies focus on the research on the impact of distance learning (Di Domenico et al., 2020), whereas other works explore more along the lines of the impact of telecommuting on productivity (Okubo, 2020), internet security (Abukari & Bankas, 2020) and also the experiences of teleworking (Baert et al., 2020).

Little is known about factors that contributed to difficulties of teachers to ensure continuation of instruction, when most teaching was conducted from home (Klapproth et al., 2020). And that is exactly the purpose of our research. Namely, we would like to explore how academic staff experience working from home and stress. Major barriers limiting teachers' ability to use and integrate technology into classrooms are lack of resources, time, and support (e.g., Pittman & Gaines, 2015). Ample studies have shown that teachers are prone to experience stress when they feel a lack of support and time when teaching students (e.g. (Kyriacou, 2001; Oddo, 1997; Pithers & Soden, 1998; Travers & Cooper, 1996; Walker, 2007). In addition, teachers are also likely to experience stress if they have to use technology for which they do not feel competent enough (Al-Fudail & Mellar, 2008). During the lockdown, both conditions certainly applied. Stressors outside of work can also play a key role, such as socio-demographic factors or coping strategies. Carver with partners distinguished between different styles of coping with stress, which could be

either active or functional on the one hand or could impede activity and hence be dysfunctional on the other hand (Carver et al., 1989).

The current study aimed at closing the gap between what is already known about stressors affecting teachers' remote teaching practices, and how teachers overcame the stress during the COVID-19 imposed lockdown in Slovenia.

2 Theoretical background

2.1 Lectures and tutorials

If we look closely at the purpose of the job description of Lecturer, we see that their duty and responsibility is "To design, develop and produce learning and teaching material and deliver either across a range of modules or within a subject area. Lecturers will ensure the efficient and effective delivery of teaching programs in accordance with the University's strategy, policy and procedures, contribute to activities that influence leading-edge practice, and may also undertake research activity".

Yet, in most universities, lecture classes usually carry large enrolments, and this militates against active engagement and discussion (Bouhnik & Marcus, 2006). Moreover, class sizes are unlikely to diminish given government policies on wider access (Boyle & Nicol, 2003). In response to this dilemma, a growing number of teachers have, in recent twenty years, been searching for ways of making large classes more interactive (Bligh, 1998; MacGregor et al., 2000). Teaching methods that promote interaction and discussion are known to benefit learning (Boyle & Nicol, 2003).

One of the most important factors relating to e-learning is the element of interaction (Moore, 2001; Picciano, 2002). Interaction in the context of distance learning has traditionally been divided into the following three categories, as introduced by Moore (Moore, 1989): (a) Interaction with content; (b) interaction with the instructor; and (c) interaction with the students. A fourth category of interaction should be identified, considered, and analysed in the context of e-learning. This fourth category, which we refer to as interaction with the system, plays an important role in the learning process in general, and in the e-learning process.

Distance learning enables interactive learning, but at the same time increases the volume of work. Combined with working from home, however, this increases stress.

2.2 Organisation of work and teleworking

The phenomenon is not new. The economic crisis in 2008 is considered a reason that justifies this delay, although teleworking was originally attributed to the oil crisis of the 1970s (Tavares, 2015). At the time of COVID-19, we were witnessing a resurgence. Information technology (IT) was the main tool to support companies in their administrative and operational activities. In the light of the current situation, it is crystal clear that different forms of a network organisation will assert themselves more significantly in the future (modular network, virtual network/organisation, etc.). The importance of physical structure is reduced; therefore, virtual organisation enables flexibility and responsiveness. It is mainly based on information and telecommunication technology but also on the work where physical movement is required. Virtual teams represent a new development stage of teamwork as they enable the members of a norganisation, time and space. Virtual organisation, which uses virtual teams in its activities, is only one of the possible modern organisational forms (Raspor & Nežič, 2020).

There are advantages and disadvantages to telecommuting. Telework facilitates flexibility and a strong work–family balance while reducing the environmental impacts of mobility (Belzunegui-Eraso & Erro-Garcés, 2020). Although it has benefits, the implementation of teleworking practices across Europe, and in particular in the case of home-based telework, is moving more slowly than expected (Aguilera et al., 2016; Baruch & Nicholson, 1997; ILO, 2017; Peters et al., 2009). However, COVID-19 also accelerated this process in the economy, as well as in the non-economy and education.

A Brazilian study among public servants showed advantages of teleworking (Filardí et al., 2020): such as better quality of life, work-family balance, greater productivity and flexibility, the possibility of creating standard metrics, better assessment of the workload, and reduction of costs, stress, commuting time, as well as less exposure to violence. As for disadvantages, the study identified elements such as non-adaptation, lack of communication and connection with the company, psychological

problems, lack of infrastructure and control of the teleworker. The research concludes that teleworking requires a management model that makes it more adherent to the public sphere (Filardí et al., 2020).

It follows from a German study that teachers' digital skills should be developed, schools should be better equipped with the necessary computer hard- and software and more research on psychological factors contributing to teachers' willingness to use technologies for remote teaching in the pandemic and beyond should be done (Klapproth et al., 2020).

2.3 Tension between work and private life

Mastering distance teaching imposed by the COVID-19 pandemic was challenging for many teachers (Klapproth et al., 2020). The main points of home-based telework are the blurred lines between work and non-work. But when it comes to telework during the COVID-19, the conditions are not the same as for teleworking under normal circumstances. More precisely, during this coronavirus period, the workers have to fulfill many tasks other than work assignments. So, the individuals who work remotely are in a tough position. Teleworking is heavily encouraged not only by employers but also by the authorities with its recommendations. Hence, remote work is not the workers' choice as they are forced to work in such a way. Consequently, telecommuting might be experienced differently than when it is chosen freely (World Health Organization, 2020).

"Nowadays, we tend to aim to create balance between family and work responsibilities. Broader researches indicate that people who are aware of the balance between work and life roles are more satisfied with life and report on better physical and mental health" (Haar, Russo, Sune, & Olliver-Malateere, 2014; Kopitar, 2020).

For example, schools and teachers became increasingly dependent on digital tools for both teaching and communication processes (Klapproth et al., 2020). Whereas for some teachers, using the internet, communicating via social-media channels or using video-conference tools did not pose a real problem, other teachers might experience remote teaching as a burden (Quezada et al., 2020). Depending on their (technical) skills some teachers may have perceived the situation as positive, whereas

others considered it as irrelevant. Moreover, others may have perceived it as negative and stressful (Drossel et al., 2019). If the latter is the case, it can be a potential stressor and might in turn result in the experience of stress and lower well-being (Skaalvik & Skaalvik, 2018)

Thus, some adjustment will be needed in the future. Hallin suggested: (1) A necessary adjustment to a digital way of working has been made. (2) Digital communication is used to supplement the usual need for physical social interaction, and it helps to do so, but is not as socially fulfilling as regular social interactions. (3) The coronavirus outbreak has had a negative impact on social life within and outside of work. (4) The boundaries have become more blurred. (5) It is easier to structure the day to meet personal needs and goals. (6) The workdays are less varied. (7) The feelings of uncertainty regarding the future. (8) The COVID-19 epidemic has had personal negative effects and has caused negative emotions in people. (9) A new insight has been gained, especially when it comes to viability of digital solutions, and adaptations to personal habits has been made (Hallin, 2020).

2.4 Stress

If in classical organizations staff management plays a very important role in the organization of work, not so in education. The manager must know how to organise work, make a fair distribution of work, recognise potential conflict situations and prevent them before breaking out (Tajnšek, 2020). Professors are autonomous in their work. They must adhere to the schedule and curriculum.

Excessive requirements lead to stressful situations because a worker is no longer capable of dealing with them. The situation even becomes worse if a worker is not able to admit it. However, insufficient requirements can also be stressful for a highly qualified worker as he or she can feel superfluous, overlooked and useless.

Deep-rooted gender norms on division of roles in the household, with reference to telecommuting, may aggravate gender inequality in relation to housework and care for children. More exactly, an employee working from home can spend too much time on domestic work and childcare and it can come to multitasking, reduction in the quality of mother's work and in an increase of their stress in connection to their husbands (Lyttelton et al., 2020). Among those who prefer to telecommute, women

are more likely to prefer teleworking for the sake of family responsibilities, stress reduction and having more time for themselves, whereas men often prefer telecommuting to get more work done (Mokhtarian et al., 1998). Certainly, distribution of work among family members and a detailed schedule that includes activities are important for stress reduction.

Indeed, stress has become a major concern since the COVID-19 outbreak (Oducado et al., 2021). It follows from a German study that the vast majority of them experienced technical barriers, but most of them felt able to cope functionally with the stress (Klapproth et al., 2020).

A study reported that the COVID-19 pandemic has affected the well-being of teachers concerning their profession (Alves et al., 2021). Nevertheless, stress is already a concern among teachers even before the pandemic. Despite being known as a noble profession, teaching has a long history of periods of discontent and crises (Alves et al., 2021).

At the level of Slovenian higher education institutions, there are no in-depth studies that would establish the authenticity of stress before COVID-19. However, such studies are for low-income countries (like in Ethiopia, Macedonia and the Philippines (Alves et al., 2021). However, more than ever, recent studies reported an increased level of stress compared to levels before the pandemic (Di Fronso et al., 2020; Liu et al., 2021).

3 Methods

Our research analyses the situation among professors in Slovenia during the COVID-19 crisis and lockdown. We focused on an individual perception of the problem and consequential stress levels experienced by the individual. We examined their internal barriers, strategies, and expectations in correlation with distance learning. Our primary assumption is that lockdown induced a higher stress level due to a lack of preparation, knowledge, and support for this kind of learning.

3.1 Research Instrument

The research was based on a survey questionnaire; it was the 1ka online survey, submitted on 27 May 2021. It was up and running between 27 May 2021 and 27 August 2021.

The participants were asked to share some personal information such as gender, work status, age, and to answer questions related to the impact of the distance learning during COVID-19 pandemic on stress. The questionnaire was sent to 160 addresses: universities, higher education institutions and higher vocational colleges.

We collected our data using an online questionnaire based on seven-point Likert scale. Participants were asked to express their agreement with statements where »1« is used for »I strongly disagree« while »7« means »I strongly agree«. So all items were positively worded.

The data was statistically analysed and tested using SPSS.

3.2 Demographic data

Our study included 85 Slovenian professors, 41 males and 43 females. The participant's age structure is presented in table 1. Many of them are teaching in two or more institutions. More precisely, 53% or 62%. 75% of respondents are teaching in a private institution, while 25% work in universities.

Our participants have different levels of experience. Therefore, participants' experiences and their structure according to academic titles is displayed in table (Table 1: Demographic data).

	Frequency	Percent				
Participants age groups						
< 25 years old	1	1%				
26–40 years old	16	19%				
41-60 years old	56	66%				
> 61 years old	12	14%				
Sum	85	100%				
Participant's experiences						
Less than 3 years	9	11%				
3–10 years	17	20%				
more than 10 years	59	69%				
Sum	85	100%				
Participant structure based on the academic title						
Professor	9	11%				
Associate Professor	9	11%				
Assistant Professor	21	25%				
Senior Lecturer	13	15%				
Lecturer	26	31%				
Lector	1	1%				
Teaching Assistant	5	6%				
Sum	84	100%				

Table 1: Demographic data

3.3 Hypotheses

H1: Females perceived more often stress caused by COVID-19 pandemic.

H2: Having more experience with using online tools lowers stress perception levels.

H3: Higher self-confidence in using digital tools reduces stress perception level.

4 Results

In this section, we use histograms to display our results. All units on the horizontal axis are in Likert points (average). All histograms have error bars based on one standard deviation interval, positive and negative.

We measured participants' level of experiences with the most frequently used distance learning tools before COVID-19 crisis. Seven Likert items were used in the measurement scale. Results are displayed in figure 1. All professors are confident with using the internet in general. They are also familiar with MS Office tools, which was expected. However, we can see that the level of expertise with producing e-contents and e-learning is low, with a wide standard deviation interval. We tested the reliability of our measurement scale with Cronbach's Alpha test, which resulted in a high score of 0.876, which significantly exceeds the recommended 0.7 level (Hair Jnr et al., 2010).



Figure 1: Participant's experience with distance learning tools

We assessed lecturers' self-confidence in using two-way electronic communication channels during pandemic periods (figure 2). All participants feel a high level of competence. In addition, we noticed a relatively narrow standard deviation interval, which could lead us to conclude that all participants were forced to master digital tools to continue with their activities online. Displayed three items are used to measure an individual's self-confidence level in using digital tools. The scale reliability is confirmed with the Cronbach Alpha value of 0.872.



Figure 2: Self-assessed confidence level in using digital tools

Participants stress level was assessed with the nine-item Likert scale. Items measurements are gathered in figure 3. Cronbach Alpha value of 0.896 confirmed the scale reliability. Its value never falls under 0.878 when tested for individual item deletion, which demonstrates the scale's integrity (Pallant, 2001). All our questions were positively worded, so all inter-item correlations are positive and are higher than 0.4.



Figure 3: Stress level items

We used T-test for independent samples for comparing stress levels in male and female participants. The result was insignificant, so we could not confirm the gender-based difference and we rejected first hypotheses. The T-test result is shown in table 4.

		Levene's Equality of		t-test for Equality of Means						
						Sig. (2-	Mean	n Std. Error	95% Confidence Interval	
		F	Sig.	t	df	tailed)		Difference	Lower	Upper
Stress level	Equal variances	0,716	0,400	1,048	80,000	0,298	0,325	0,310	-0,292	0,941
	Equal variances			1,045	77,830	0,299	0,325	0,311	-0,294	0,943

Table 4: Independent samples stress levels T-test between genders

To test the relations between stress levels, experience with using online tools and self-assessed confidence level in using digital tools, we built a linear regression model with stress level as our dependant variable. The regression model results are gathered in Table 5. We concluded that prior experience using online tools does not significantly impact individuals' stress level perception (r=0.436). We rejected our hypothesis H2. However, the self-assessed confidence level in using digital tools does show a highly significant impact on stress levels (B=-0.461, r=0.002), which strongly supports our hypothesis H3. The lower the confidence level, the higher the stress level is. However, we must report the relatively low R-square of 0.114, which leads us to conclude that additional research to build a more complex regression model is required.

Table 1: Linear	correlation model
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		Unstandardized Coefficients		ed Coefficient		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	5,594	0,783		7,144	0,000
	experience with using online tools	0,086	0,110	0,092	0,784	0,435
	self-assessed confidence level in using digital tools	-0,461	0,147	-0,369	-3,143	0,002

5 Future research directions and conclusion

The most widespread measure of teacher stress has been the use of self-report questionnaires (Kyriacou, 2001), which was also our research strategy. However, the drawback of this strategy is that it is not based on self-assessment or self-evaluation.

Based on theoretical background we assume (H1: Females perceived more often stress caused by Covid-19 pandemic.) that women experience more stress than men. This is largely due to the family responsibilities of women, such as domestic work and childcare. This was also proven to be true and confirmed by other studies (Lyttelton et al., 2020). However, with our research we have not been able to confirm that. This implies that further research should be done in line with the division of domestic work between partners, co-organization, etc. Out second hypothesis assumes that (H2: Having more experience with online tools lowers stress perception levels.) those who have more experience with using online tools experience less stress when working online. Our findings do not confirm that hypothesis. Our results suggest that working online alone generates high level of stress in teachers. Furthermore, that level of stress grows when teachers have low digital literacy, in particular when they have to use technology for which they do not feel competent enough. Later was confirmed by our third hypothesis (H3: Higher self-confidence).

Since disease outbreaks can have mental health consequences, this study explored the perceived stress level among licensed professional teachers in Slovenia. To the researchers' knowledge, this study is among the first attempts to assess the stress of pandemic among Slovenian professional teachers. The result of this survey could serve as baseline data to investigate if stress level grows over time, in conjunction with the development of the COVID-19 pandemic.

This research findings on teacher stress suggests six directions for future research: (i) monitoring the extent to which particular educational new methods of work are generating high levels of teacher stress; (ii) exploring why some teachers are able to successfully adapt to the work, whilst others are not; (iii) clarifying the nature of the stress process; (iv) assessing the effectiveness of particular intervention strategies to reduce teacher stress; (v) exploring the impact of teacher-pupil interaction and classroom climate on teacher stress (vi) how virtual learning environment and working from home affect stress.

Acknowledgements

We thank all the schools that were willing to share the survey among employees and all the respondents who completed the surveys and thus contributed to the creation of this contribution.

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