

Emotional Distress, Burnout and Sense of Safety During the COVID-19 Pandemic in Teachers After the Reopening of Schools

Daniel Pankowski^{1,2}, Ewa Pisula², Kinga Wytrychiewicz-Pankowska^{1,2}, Iwona Nowakowska³, Anna Banasiak⁴, Milena Markiewicz², and Aleksandra Jórczak-Kopeć²

¹ Faculty of Psychology, University of Economics and Human Sciences in Warsaw, Warsaw, Poland

² University of Warsaw, Faculty of Psychology, Warsaw, Poland

³ The Maria Grzegorzewska University, Institute of Psychology, Warsaw, Poland

⁴ Jan Długosz University, Faculty of Social Sciences, Częstochowa, Poland

ABSTRACT

The COVID-19 pandemic is having a significant impact on people's psychological well-being and mental health. This study aimed to identify factors linked to emotional distress, burnout and sense of safety in teachers related to the reopening of Polish schools after lockdown, remote work, and the holiday period between March and August 2020. A total of 1,286 teachers from different educational institutions participated in the online study. A set of questionnaires was used to measure depressive and anxiety symptoms, sense of safety, fear of coronavirus, emotion regulation strategies, resilience, and burnout. Sociodemographic, COVID-19- and work-related variables were also controlled. Path analysis showed that emotion regulation strategies had both direct and indirect (via FCV-19 and resilience) effects on the severity of depressive symptoms, anxiety, burnout and sense of safety. These results are discussed in the context of both possible risk and protective factors for teachers' well-being. Possible systemic solutions or therapeutic interventions that may be beneficial for this group are also discussed.

KEYWORDS

COVID-19 pandemic
anxiety
depressive symptoms
safety
teachers

INTRODUCTION

The COVID-19 pandemic led to fundamental changes in daily routines, reduced movement, and impoverished social interactions as well as the health sector and global economy (Abu et al., 2021; Khan et al., 2020; Lima et al., 2020). Numerous studies have indicated that there has been an alarming increase in emotional distress (i.e., depressive and anxiety symptoms; emotional distress, ED) during the COVID-19 pandemic (Koutsimani et al., 2019; Wytrychiewicz et al., 2020). For most people, the pandemic situation has been completely novel and has generated great uncertainty about health, finances, and the future. Such a situation may also affect the sense of safety (SoS), defined as a state in which physical, material, or moral threats are under control, giving one a sense of being protected from danger (Welanders et al., 2004). SoS is also understood as the belief that it is possible to deal with the threats one currently faces (Bar-Tal, 2000).

Teachers are among the professional groups working under significant pressure during the COVID-19 pandemic. They either worked under a strict hygiene regime, if the teaching was being done in a classroom, or taught remotely. Often, they had to flexibly combine both of these forms of work. Remote teaching generated a lot of challenges, as many teachers were unfamiliar with it and the novel tasks associated with it, and some lacked access to the necessary technologies (See et

al., 2020). Teachers experienced a lot of personal insecurity due to the inability to plan how they would work in the coming months. As previous studies have shown, uncertainty regarding work conditions and work safety play an important role in an individual's well-being and may lead to poorer self-rated health (Burgard, et al., 2009). All of this could have contributed to increased ED and SoS in teachers.

Another factor that should also be considered when analyzing the psychological situation of teachers during the pandemic is burnout. Burnout is defined as a state of chronic stress leading to exhaustion and disengagement from work (Bakker et al., 2014; Bakker & de Vries, 2021; Demerouti et al., 2011). During the pandemic, teacher burnout increased (Sokal et al., 2020), which could be related, among others, to an increase in the severity of depressive symptoms in this professional group (Karakose, et al., 2022).

The literature has highlighted that certain psychological factors can be considered antecedents of ED, burnout, or SoS. According to the

Corresponding author: Daniel Pankowski, Faculty of Psychology, University of Economics and Human Sciences in Warsaw, Warsaw, Poland; Faculty of Psychology, University of Warsaw, Warsaw, Poland.

Email: d.pankowski87@gmail.com

translational theory (Lazarus & Folkman, 1984), similar external demands lead to different responses in different people and to varying degrees of exposure to ED. Important factors influencing an individual's level of psychological distress include sociodemographic variables (i.e., gender, age, marital status, having children, etc.), stressor characteristics (i.e., type of stressor, predictability, duration, intensity, etc.), and personal resources (i.e., coping abilities, emotion-regulation strategies, resilience, social support, financial situation, etc., e.g., Fernández et al., 2020; Prout et al., 2020). Previous studies have pointed out that emotion regulation ability can also predict these different phenomena (Bakker & de Vries, 2021; Jackson-Koku & Grime, 2019; Schäfer et al., 2017). Emotion regulation strategies are defined as conscious or unconscious efforts that influence the experience, expression, duration, and magnitude of emotions (Gross, 1998). According to emotion regulation theory, the ability to regulate one's emotions is crucial for an individual's mental health (Gross, 2015). Emotion suppression and rumination have been shown to harm psychological well-being during the COVID-19 pandemic (Low et al., 2020), while cognitive-emotional regulation has been shown as conducive to better coping with challenges during the lockdown (Cruz et al., 2020). Data obtained from groups of teachers indicate that the regulation of emotions is related, among others, to the level of burnout or job satisfaction (Brackett et al., 2010; Ghanizadeh & Royaei, 2015).

The return of students to schools after the lockdown was expected to be a return to normality. The reopening of schools had obvious benefits, such as the participation of children and adolescents in direct social interactions, freeing the parents of the youngest students from childcare duties so that they could return to work, and, in the case of teachers, returning to preferred and better-known forms of working with students. However, the return of students to schools was also associated with much concern about the increased risk of COVID-19, the uncontrolled development of the pandemic, and the challenges of working while maintaining strict hygiene standards (Pelaez & Novak, 2020), which may have led to increased fear of COVID-19 (FCV-19; Can et al., 2022). Previous studies have shown that FCV-19 is associated with lower self-efficacy (Yenen & Çarkit, 2021) and a higher risk of developing PTSD symptoms (Kukreti et al., 2021) among teachers. Earlier studies also suggested a relationship between FCV-19 and burnout symptoms such as emotional exhaustion in other professional groups, such as healthcare workers (Karagöl et al., 2022). Also, a meta-analysis by Erbiçer et al. (2021) indicated a strong relationship between FCV-19 and anxiety and a moderate relationship between FCV-19 and depression.

Current models of stress and coping indicate that teachers who experience resource shortages and excessive demands are at risk of burnout and health problems (McCarthy et al., 2006). The literature indicates that resilience may mediate the relationship between emotion regulation and ED, SoS, and burnout (Cai, et al., 2017; Polizzi & Lynn, 2021). Resilience, defined as a personality trait constituted by a person's ability to cope with stressful situations (Smith et al., 2008), plays an important role in reducing the negative mental consequences of stressful events (Luthar et al., 2000). The role of resilience as a protective factor in the COVID-19 pandemic situation has been confirmed in

several studies. Higher resilience scores are associated with lower levels of worry about the consequences of COVID-19, while lower scores are associated with greater difficulty in coping with the emotional challenges of the pandemic (Killgore et al., 2020). Research conducted in a group of teachers showed that resilience plays an important protective role in terms of stress and burnout (Richards et al., 2016).

The present study took into account modifiable factors which, in the long term, may translate into the possibility of developing effective interventions that can be used with teachers. In our analyses, we focused on whether the level of resilience and FCV-19 could mediate the relationship between emotion regulation and ED, SoS, and burnout. Previous studies have shown that many teachers have experienced increased intensity of stress, anxiety, and depressive symptoms during the pandemic (Li et al., 2020). However, existing studies do not explain what factors may be responsible for such a high intensity of ED, SoS, and burnout, especially in the specific situation of teachers and students returning to school education. Also, little is known about protective factors. In spite of this, it is yet unknown: (a) which factors may have contributed to the increase in the level of ED, SoS, and burnout in teachers in the pandemic situation and (b) which factors may have a protective role.

THE CURRENT STUDY

In Poland, as in many other European countries, kindergartens and schools were closed in March 2020 and operated via remote learning. In schools, this lasted until the end of the school year (June 2020). After the holiday break, from September 1, 2020, schools returned to on-site teaching. However, due to the significant increase in infections and death rate, remote teaching was reinstated in November 2020.

The current study aimed to assess the prevalence of ED symptoms and burnout in Polish teachers in the first weeks after the reopening of schools. The second aim was to evaluate a model in which FCV-19 and resilience mediate the relationship between emotion regulation and ED, SoS, and burnout in this professional group.

MATERIALS AND METHODS

Participants and Procedure

The current study was conducted from September, 10th to October, 10th 2020. Participants were Polish-speaking teachers working in different types of educational facilities. The study was carried out via an online survey and was prepared using Qualtrics. The participants were recruited through direct emails to school principals, teachers, and teacher associations all over the country, as well as through advertisements on Facebook groups dedicated to education. Some participants were also recruited through the snowball sampling method – respondents invited other teachers to participate. The only exclusion criteria were being aged under 18 years old and not being an active teacher in the 2020/21 school year. The study was anonymous, all participants participated voluntarily and provided informed consent. They were

not remunerated for filling out the set of surveys. The study materials and protocol were approved by the Research Ethics Committee at the Faculty of Psychology, University of Warsaw.

The study sample consisted of 1,286 participants (112 males, 1174 females) with a mean age of 43.83 ($SD = 9.38$) years (range: 20–70; only five participants were under 24 years and three were above 65 years of age). Detailed sociodemographic characteristics and descriptive statistics are presented in Table 1.

MEASURES

The variables used in the study were:

Sociodemographic Variables. The participants' gender (male/female/other), age (in years), relationship status, whether or not they have children, place of residence, subjective assessment of their family's economic situation, general health status, and chronic illnesses were measured.

COVID-19-Related Variables. The participant's COVID-19 diagnosis, having significant others at high risk of COVID-19, COVID-19

TABLE 1.

Demographic Characteristics of the Sample

Variable		N	%
Sex	Female	1174	91.3
	Male	112	8.7
Relationship status	In a stable relationship (marriage, civil partnership)	1028	76.9
	Single/ other	258	20.1
Place of residence	Village	301	23.4
	Small town (up to 20,000 inhabitants)	218	17.0
	Medium-sized city (from 20 to 99 thousand inhabitants)	282	21.9
	Large city (from 100,000 to 500,000 inhabitants)	287	22.3
	Very large city (over 500,000 inhabitants)	198	15.4
Children		965	75.0
Chronic illnesses		499	38.8
Family's financial situation	Very bad	9	.7
	Bad	17	1.3
	Rather bad	110	8.6
	Rather good	578	44.9
	Good	483	37.6
Workplace – type (a)	Very good	89	6.9
	Mainstream	1011	78.6
	Integrative/with integration departments	165	12.8
	Special	153	11.9
	Therapeutic	46	3.6
Workplace – type (b)	Hospital	9	.7
	Care facility	86	6.7
	Kindergarten	262	20.4
	Primary school	825	64.2
	High school	157	12.2
Workplace – type (c)	Vocational/trade school	104	8.1
	Technical school	126	9.8
	Psychological/pedagogical counselling centre	17	1.3
	Educational centre	47	3.7
	Public	1174	91.3
Years of professional experience in teaching	Private	95	7.4
	Social	15	1.2
	Catholic or run by another religious institution or community	36	2.8
	0–5 years	160	12.4
Form of employment	6–10 years	174	13.5
	11–15 years	198	15.4
	16–20 years	213	16.6
	>20 years	540	42.0
Form of employment	Contract of mandate	1128	87.7
	Contract of specified duration	158	12.3
	Contract of indefinite duration	5	.4

TABLE 1.

Demographic Characteristics of the Sample (Cont.)

Variable	N	%
Managerial function	168	13.1
COVID-19 screening performed	142	11.0
COVID-19 detected	12	0.9
Having been quarantined in the past	67	5.2
Currently in quarantine	25	1.9
Close person at risk of severe COVID-19	36	2.8
COVID-19 diagnosis among close persons	530	41.2
Facility size		
Up to 299 students/pupils/preschoolers	668	51.9
300–600 students/pupils/preschoolers	374	29.1
Over 600 students/pupils/preschoolers	244	19.0
Number of students taught		
Up to 20	297	23.1
21–40	303	23.6
41–60	119	9.3
61–80	137	10.7
81–100	148	11.5
over 100	282	21.9

Note. N = number of observations; M = mean; SD = standard deviation.

diagnosis among significant others, personal acquaintance with someone who has suffered from COVID-19, being quarantined because of positive test results or diagnosed with COVID-19 (now or in the past) were measured.

Work-related Variables. Years of professional experience teaching, size of the educational institution in which the teacher works, whether they perform a managerial function at the school, the form of employment (contract of mandate, on a contract for an indefinite period, or with a permanent position), approximate number of preschoolers/students with whom the teacher works, self-assessment of preparedness for remote work with students, subjective assessment of the cooperation of parents, and the assessment of the institution's preparedness for work during the COVID-19 pandemic were measured.

Patient Health Questionnaire – 9 (PHQ-9). A nine-item depression module from the full Patient Health Questionnaire (PHQ). The respondents' score can range from 0 to 27, as each item's score ranges from 0 (*not at all*) to 3 (*nearly every day*; Spitzer et al., 1999; Polish version by the MAPI Institute; www.phqscreeners.com). Cut-off scores were adopted by Kroenke et al. (2001). Cronbach's α for the global score in the present study was .91.

General Anxiety Disorder – 7 (GAD-7). A self-report questionnaire that allows for the rapid detection of Generalized Anxiety Disorder (Spitzer et al., 2006; Polish version by the MAPI Institute; www.phqscreeners.com). Participants indicated whether they have been affected by anxiety-related problems over the past two weeks by answering seven items on a four-point scale ranging from 0 (*not at all*) to 3 (*nearly every day*). Cut-off scores were adopted by Spitzer et al. (2006). Cronbach's α for the global score in the present study was .95.

Safety Experience Questionnaire. A nine-item, self-report, two-dimensional measure to assess SoS and the level of beliefs about safety

(these two constructs form two separate subscales; Klamut, 2019). For the current study, only the SoS subscale (five items) was of interest. The participants answer on a scale from 1 (*totally disagree*) to 5 (*totally agree*). The score was computed as the sum of scores on all items. Cronbach's α for the SoS subscale was .88 in this study.

The Oldenburg Burnout Inventory (OLBI). A scale to measure occupational burnout symptoms (Demerouti et al., 2003; Polish adaptation: Baka & Basińska, 2016). This tool consists of 16 statements concerning one's attitude toward one's work and the feelings associated with it. It allows the assessment of two aspects of professional burnout: disengagement from work and exhaustion. The respondent responds to these statements on a four-point scale from 1 (*I agree*) to 4 (*I disagree*). Cut-off scores were adopted by Baka and Basińska, (2016). Cronbach's α in the present study was .80 for the disengagement from work scale, .866 for the exhaustion scale, and .84 for the global score.

The Difficulties in Emotion Regulation Scale – Short Form (DERS-SF). A self-report measure developed to examine difficulties in the ability to regulate emotions (Kaufman et al., 2015; Polish experimental version by Paweł Holas). It is an 18-item version of the DERS (Graz & Roemer, 2004). Participants rate how often statements such as "I feel at ease with my emotions" apply to them on the following scale: 1 (*almost never*), 2 (*sometimes*), 3 (*about half the time*), 4 (*most of the time*), and 5 (*almost always*). The subscales assess six dimensions of difficulties (three items in each subscale): strategies (limited access to emotion regulation strategies, $\alpha = .81$), non-acceptance (lack of acceptance of one's emotions, $\alpha = .83$), impulse (difficulties with impulsive reactions associated with emotions, $\alpha = .91$), goals (difficulties with undertaking goal-oriented behaviors, $\alpha = .88$), awareness (limited awareness of one's own emotions, $\alpha = .64$), and clarity (limited clarity

about emotional states, $\alpha = .65$). Cronbach's α for the global score in the present study was .89.

Fear of COVID-19 Scale (FCV-19S). A unidimensional scale measuring levels of COVID-19-related fear (Ahorsu et al., 2020; Polish translation: Pisula & Nowakowska, 2020). It consists of seven items and is scored on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The general score was computed as the sum of all items. The higher the score, the greater the fear of COVID-19. Cronbach's α in the present study was .91.

The Brief Resilience Scale (BRS). A tool for measuring resilience – the ability to return to one's normal or initial emotional state after a difficult event (Smith et al., 2008; Polish experimental version by Paweł Holas). The scale includes six questions to which the respondent answers on a scale from 1 (*completely disagree*) to 5 (*completely agree*). Cronbach's α for the global score in the present study was .88.

STATISTICAL ANALYSIS

First, descriptive statistics (frequencies, means, and *SDs*) were calculated. Assessment of the strength of the relationship between the results on the different questionnaires was performed with partial correlations in which the sociodemographic variables were controlled for (for the list of sociodemographic variables, see the Methods section). Incidence rates of depressive symptoms, anxiety, and burnout (Baka & Basińska, 2016) were analyzed using frequencies.

First, all cases with missing data were removed ($N = 161$). Then, descriptive statistics were prepared in the form of frequencies, means, and *SDs*. In the next step, the confirmatory factor analysis (CFA) of the tools used in the study was performed. These calculations allowed for the derivation of the statistically strongest weighting combination of the individual variables in each category to form a latent variable in structural equation modelling (SEM). Confirmatory factor analytic

models were applied and tested in a stepwise manner for each of the five latent variables separately and after grouping (e.g., ED as a combination of depressive symptoms and anxiety). First, individual parameters within each of the construct models (e.g., factor loadings) were evaluated for significance at the $p < .05$ level. Minor adjustments were applied to the models to arrive at a final factor structure for each of the analyzed constructs. Subsequently, SEM was carried out using the latent variables identified in the first step. The overall objective of the modeling was to develop a relatively parsimonious representation of the information that would maximize the model fit while judiciously utilizing available degrees of freedom. The IBM SPSS 28 and AMOS 27 program was used for the calculations.

RESULTS

Descriptive statistics of the variables used in the study are presented in Table 2.

The table of partial correlations between the indicators measured by the tools used in the study is provided in the Supplementary Material (Table S1). Frequencies of the clinically significant cases of depression, anxiety, and burnout according to cut-off scores are presented in Table 3.

The data in Table 3 suggest that the incidence of ED and burnout was alarmingly high in the analyzed group. The next step was to conduct a CFA of all variables that were included in the tested models (Supplementary Material, Table S2).

In the case of the intensification of depressive symptoms and anxiety, it was decided to prepare separate models, without taking into account only a single factor (ED). The same was done in the case of burnout: models in which all items were treated as a single factor were tested, but only when two factors were taken into account and indi-

TABLE 2.
Descriptive Statistics of Continuous Variables Within the Sample

Variable	<i>M</i>	<i>SD</i>	Range
Assessment of the institution's preparedness for work in the pandemic (1 = <i>not prepared at all</i> , 10 = <i>fully prepared</i>)	5.56	2.51	1–10
Assessment of parental cooperation (1 = <i>very bad</i> , 10 = <i>very good</i>)	6.56	2.14	1–10
Assessment of preparation for remote work (1 = <i>not prepared at all</i> , 10 = <i>fully prepared</i>)	6.22	2.37	1–10
FCV Global Score	18.23	5.75	7–35
OLBI Lack of Commitment	17.20	4.57	8–32
OLBI Exhaustion	19.56	5.15	7–32
BRS	3.01	0.35	1–4.83
DERS-SF Strategies	1.93	0.86	1–5
DERS-SF Non-acceptance	2.07	0.95	1–5
DERS-SF Impulse	1.73	0.84	1–5
DERS-SF Goals	2.46	1.01	1–5
DERS-SF Awareness	3.31	0.91	1–5
DERS-SF Clarity	1.77	0.68	1–5
PHQ Global Score	7.46	6.56	0–27
GAD Global Score	6.96	6.14	0–21
Sense of Safety	16.80	3.87	5–25

Note. *M* = mean, *SD* = standard deviation, OLBI = Oldenburg Burnout Inventory, FCV = Fear of COVID-19, DERS-SF = Difficulties in Emotion Regulation Scale - Short Form, BRS = Brief Resilience Scale, PHQ = Patient Health Questionnaire, GAD = General Anxiety Disorder.

TABLE 3.

Frequency of Depressive Symptoms, Anxiety, and Burnout

	N	%
Depressive symptoms		
No depression	547	42.5
Mild	314	24.4
Moderate	209	16.3
Moderately severe	131	10.2
Severe	85	6.6
Anxiety		
None	555	43.2
Mild	353	27.4
Moderate	180	14.0
Severe	198	15.4
Exhaustion		
Low	277	21.5
Moderate	541	42.1
High	468	36.4
Disengagement from work		
Low	469	36.5
Moderate	598	46.5
High	219	17.0

vidual items were removed from the scales, the model's fit estimates was significantly improved. The analyses also showed that the FCV-19S was characterized by average parameters: an exploratory factor analysis was performed and the scree plot was checked, which clearly suggested one factor as the best solution (data not shown). In the case of the DERS, the results clearly showed that the clarity scale significantly reduced the parameters of the model, and therefore, it was decided to remove it.

In the next step, a path analysis was performed for the following dependent variables: depressive symptoms, anxiety, exhaustion, disengagement from work, and sense of safety. For each of the models, the solutions were assessed and a number of solutions were tested, first using the significance level of regression weights and then the model fit parameters. The best model fit parameters are presented in Supplementary Material (Table S3).

In the model in which the severity of depressive symptoms was the dependent variable, it was found that emotion regulation has both an indirect (through FCV-19 and resilience) and a direct effect. However, the beneficial effect of resilience was very weak in this case.

The model focusing on the severity of anxiety symptoms was characterized by similar dependencies between the variables, with smaller direct impact of emotion regulation than that of depressive symptoms, and a greater effect of FCV-19 (see Figure 1).

In the case of exhaustion (burnout dimension), both an indirect (through FCV-19 and resilience) and a direct effect of emotion regulation have also been observed. However, for this dependent variable, the effect of FCV-19 was small, and resilience played a more important role than in the case of the severity of depressive symptoms and anxiety.

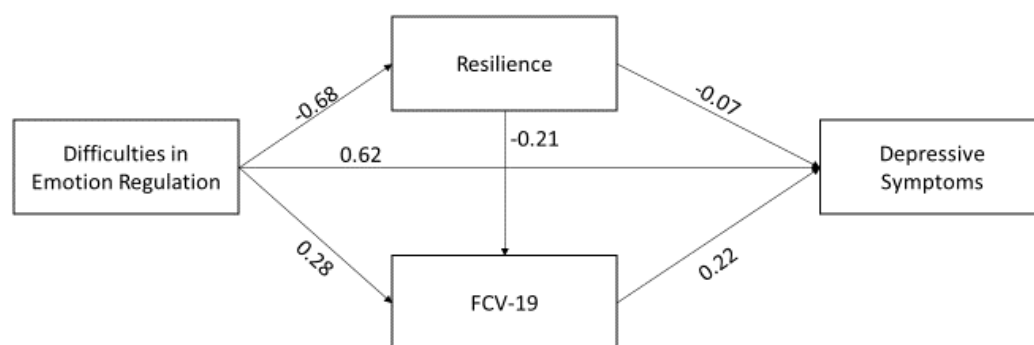
The model prepared for the dependent variable of disengagement from work (burnout dimension) was characterized by a lower effect of resilience, with emotion regulation playing a slightly more important role than in the case of exhaustion (see Figure 4).

In the case of SoS, the FCV-19 effect was found to be the largest, with emotion regulation playing a lesser role than for other dependent variables.

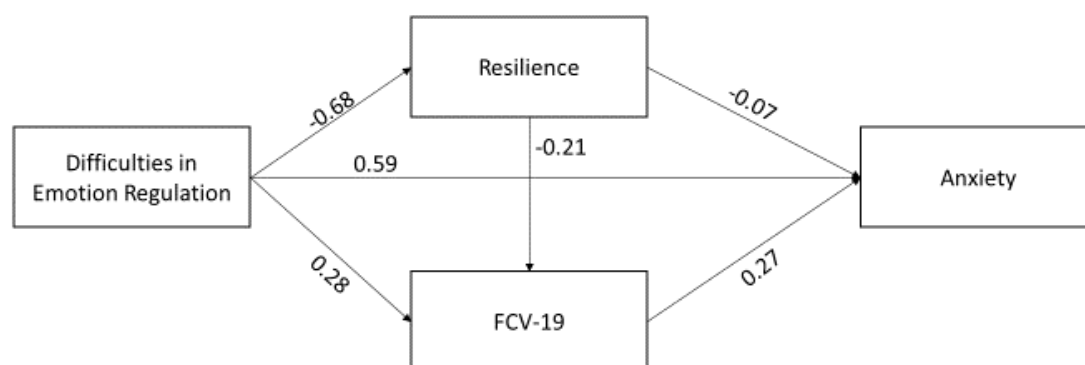
For all dependent variables, a similar pattern of paths was observed: emotion regulation strategies had both direct and indirect (via FCV-19 and resilience) effects on the severity of depressive symptoms, anxiety, burnout, and sense of safety.

DISCUSSION

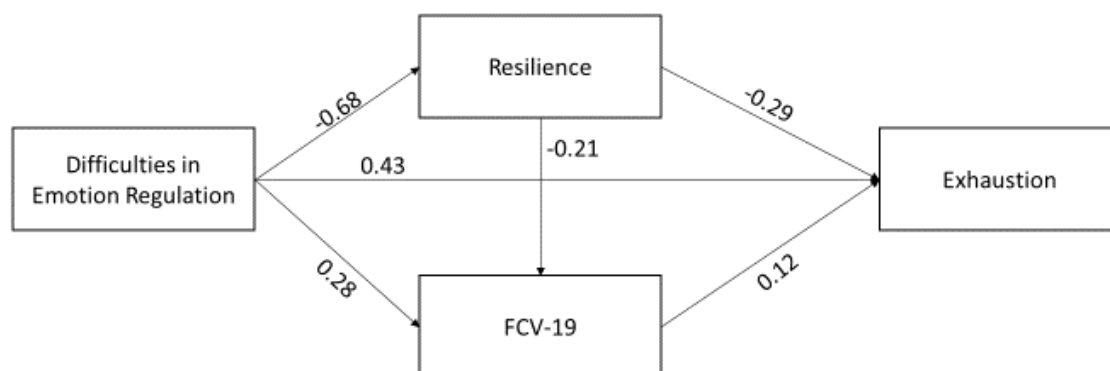
The current study aimed to assess the prevalence of clinically significant depressive symptoms, anxiety, and burnout during the COVID-19 pandemic in Polish teachers after the reopening of schools. Subsequently, analyses focused on the evaluation of models in which FCV-19 and resilience mediated the relationship between emotion regulation and the level of ED, burnout, and SoS in Polish teachers. The study was conducted during the COVID-19 pandemic as schools were reopening after the spring lockdown and summer holidays in 2020.

**FIGURE 1.**

Depressive Symptoms: Path Analysis. FCV-19 = Fear of COVID-19.

**FIGURE 2.**

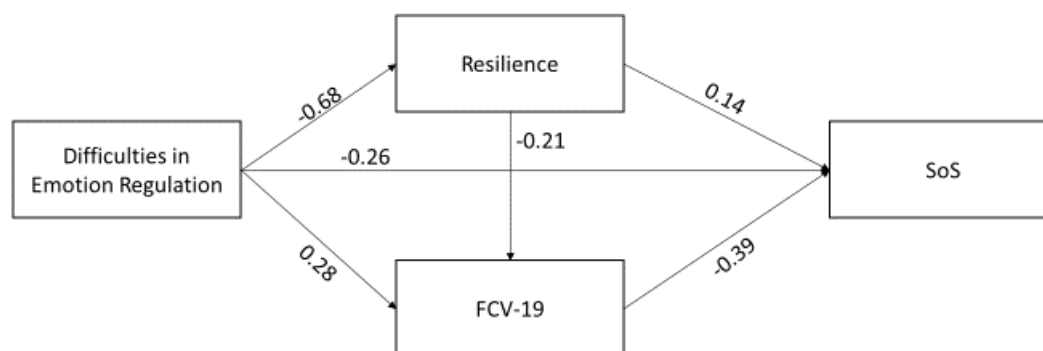
Anxiety: Path Analysis. FCV-19 = Fear of COVID-19.

**FIGURE 3.**

Exhaustion. FCV-19 = Fear of COVID-19.

**FIGURE 4.**

Disengagement from Work. FCV-19 = Fear of COVID-19.

**FIGURE 5.**

Sense of Safety. FCV-19 = Fear of COVID-19.

Data show that as many as 40% of teachers were burned-out in Western countries before the pandemic, and burnout symptoms are an important predictor of teachers' mental health (Burić et al., 2019). During the lockdown, social interactions were significantly diminished (Venkatesh & Edirappuli, 2020). Thus, important social protective factors against burnout and ED were less available. Our results indicate that the level of burnout in this occupational group may have become much higher during the COVID-19 pandemic. At least moderate exhaustion was observed in 78.5% of the sample, while at least moderate disengagement from work in 63.5%. The results indicating a clinically significant intensification of anxiety and depression symptoms are also alarming: about 1/3 of the participants declared at least a moderate level of depressive and anxiety symptoms. Many researchers emphasize that adaptive emotion regulation strategies are among the strongest protective factors against negative mental health outcomes (Schäfer et al., 2017). The data collected in the current study suggest that difficulties in emotion regulation may both directly and indirectly (through FCV-19 and resilience) contribute to the deterioration of teachers' mental health. It is especially visible in the case of depressive symptoms and anxiety, as well as in both dimensions of burnout. FCV-19, a factor specific to the pandemic, was another variable associated with ED, burnout, and SoS among the teachers in our study. The rapid spread of COVID-19 may have caused teachers to fear for their own safety and that of persons close to them as well as raise concerns about the financial security of their families. This is confirmed in analyses where FCV-19 had the strongest impact on SoS out of all the dependent variables. In addition, FCV-19 was also observed to have the smallest effect on burnout. This may suggest the persistent nature of this type of difficulty. The results may indicate that burnout was only partially exacerbated by the pandemic. Regardless of the cause, there is an urgent need to take various types of actions to reduce this problem (see also Table 3 for prevalence rates). Due to the uncertain situation disturbing their sense of safety in many areas of life, strengthening the resilience of teachers seems crucial. It can be observed that resilience plays an important role, especially in exhaustion, SoS, and disengagement from work. It also plays a smaller role in ED. This result of our study is par-

tially in line with previous research, which suggests that the initial level of resilience plays a protective role in the development of depressive and anxiety symptoms (Sheerin et al., 2018). Our analyses also suggest that resilience may have a protective role against FCV-19 in teachers.

In sum, the incidence of ED and burnout is alarmingly high. Further analyses identified potential factors that may play an important role in their reduction, improving psychological well-being. Structural equation modeling indicated that emotion regulation was both directly and indirectly (via FCV-19 and resilience) related to the severity of depressive symptoms, anxiety, burnout, and SoS. The data allow us to identify foundations for targeted interventions that could support teachers and benefit their emotional well-being. In this particular situation, apart from the identification of specific difficulties, it seems justified to focus on strengthening skills related to the regulation of emotions. Such proposals would include therapeutic activities (e.g., Mindfulness Based Stress Reduction training; MBSR) that have been shown to be effective in improving the functioning of people suffering from anxiety, emotional exhaustion, and diminished mental well-being (Matiz et al., 2020). MBSR plays a role in affect regulation (Jimenez et al., 2010) and is also considered a predictor of hope and professional burnout (Ender et al., 2019). However, it is worth remembering that such solutions like MBSR should be implemented together with systemic solutions so that it will be possible to have a more comprehensive impact on ED, burnout levels, and SoS in teachers.

Strengths/Limitations of the Study and Further Directions

Due to the use of an online survey and a variety of ways to reach the respondents, it was possible to collect data from a sample of teachers all throughout Poland. However, this could have excluded people with difficulties in accessing computers or the internet. The main limitation was the cross-sectional nature of the collected data, which prevented drawing of any conclusions about causality. We could not determine if the changes had occurred during the pandemic and/or after returning to schools. An additional limitation could be the cultural and situational context: due to many factors, the course of the pandemic and

the restrictions implemented have been different in different countries. In future studies, it would be worth conducting a similar study in cooperation with researchers from other countries and carrying out repeated measurements due to the changing situation of the pandemic.

ACKNOWLEDGEMENTS

We are extremely grateful to the Me, the Teacher Foundation, and all organizations, associations, and principals of educational institutions for their help in collecting data and all teachers who took part in the study.

This study was supported by a grant from the University of Warsaw.

The authors have no competing interests to disclose.

Approval was obtained from the ethics committee of University of Warsaw. The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

Informed consent was obtained from all participants upon enrollment.

Consent for publication was obtained along with the consent to participate in this study.

Author contributions: Daniel Pankowski: conceptualization, data curation, formal analysis; resources; writing – original draft, writing – review and editing. Ewa Pisula: conceptualization, investigation, project administration, resources; supervision; writing – original draft, writing – review and editing. Kinga Wytrychiewicz-Pankowska: conceptualization, investigation, resources, writing – original draft, writing – review and editing. Iwona Nowakowska: conceptualization, investigation, resources, writing – original draft, writing – review and editing. Anna Banasiak: conceptualization, investigation, resources. Milena Markiewicz: investigation, resources. Aleksandra Jórczak-Kopeć: investigation, resources.

DATA AVAILABILITY

For the data set related to the paper, please contact the authors.

REFERENCES

- Abu, N., Gamal, A. A. M., Sakanko, M. A., Mateen, A., Joseph, D., & Amaechi, B. O. O. (2021). How have COVID-19 confirmed cases and deaths affected stock markets? Evidence from Nigeria. *Contemporary Economics*, 15(1), 76–100.
- Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2020). The fear of COVID-19 scale: Development and initial validation. *International Journal of Mental Health and Addiction*, 20, 1537–1545. <https://doi.org/10.1007/s11469-020-00270-8>
- Baka, Ł., & Basińska, B. A. (2016). Psychometryczne właściwości polskiej wersji oldenburgskiego kwestionariusza wypalenia zawodowego (OLBI). *Medycyna Pracy*, 67(1), 29–41. <https://doi.org/10.13075/mp.5893.00353>
- Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD–R approach. *Annual Review of Organizational Psychology and Organizational Behavior*, 1(1), 389–411. <https://doi.org/10.1146/annurev-orgpsych-031413-091235>
- Bakker, A. B., & de Vries, J. D. (2021). Job Demands–Resources theory and self-regulation: New explanations and remedies for job burnout. *Anxiety, Stress, & Coping*, 34(1), 1–21. <https://doi.org/10.1080/10615806.2020.1797695>
- Bar-Tal, D. (2000). *Shared beliefs in a society: Social psychological analysis*. Sage Publications.
- Burgard, S. A., Brand, J. E., & House, J. S. (2009). Perceived job insecurity and worker health in the United States. *Social Science & Medicine*, 69, 777–785. <https://doi.org/10.1016/j.socscimed.2009.06.029>
- Burić, I., Slišković, A., & Penezić, Z. (2019). Understanding teacher well-being: A cross-lagged analysis of burnout, negative student-related emotions, psychopathological symptoms, and resilience. *Educational Psychology*, 39(9), 1136–1155. <https://doi.org/10.1080/01443410.2019.1577952>
- Cai, W. P., Pan, Y., Zhang, S. M., Wei, C., Dong, W., & Deng, G. H. (2017). Relationship between cognitive emotion regulation, social support, resilience and acute stress responses in Chinese soldiers: Exploring multiple mediation model. *Psychiatry Research*, 256, 71–78. <https://doi.org/10.1016/j.psychres.2017.06.018>
- Can, G., Candemir, G., & Satıcı, S. A. (2022). Emotion regulation and subjective wellbeing among Turkish population: The mediating role of COVID-19 fear. *Current Psychology*, 1–10. <https://doi.org/10.1007/s12144-022-03771-y>
- Cruz, M. F., Rodríguez, J. Á., Ruiz, I. Á., López, M. C., de Barros Camargo, C., Rosas, F. D., ... & Simón, E. J. L. (2020). Evaluation of the Emotional and Cognitive Regulation of young people in a lockdown situation due to the Covid-19 pandemic. *Frontiers in Psychology*, 11, 565503. <https://doi.org/10.3389/fpsyg.2020.565503>
- Demerouti, E., Bakker, A. B., Vardakou, I., & Kantas, A. (2003). The convergent validity of two burnout instruments: A multitrait-multimethod analysis. *European Journal of Psychological Assessment*, 19(1), 12–23. <https://doi.org/10.1027/1015-5759.19.1.12>
- Demerouti, E., & Bakker, A. B. (2011). The job demands-resources model: Challenges for future research. *SA Journal of Industrial Psychology*, 37(2), 1–9. <https://doi.org/10.4102/sajip.v37i2.974>
- Ender, Z., Saricali, M., Satıcı, S. A., & Eraslan-Capan, B. (2019). Is mindful awareness effective on hope, burnout and self-efficacy among school counsellors in Turkey? *British Journal of Guidance & Counselling*, 47(6), 712–726. <https://doi.org/10.1080/03069885.2018.1458072>
- Erbilci, E. S., Metin, A., Çetinkaya, A., & Şen, S. (2021). The relationship between fear of COVID-19 and depression, anxiety, and stress: A meta-analysis. *European Psychologist*, 26(4), 323–333. <https://doi.org/10.1027/1016-9040/a000464>
- Fernández, R. S., Crivelli, L., Guimet, N. M., Allegri, R. F., & Pedreira, M. E. (2020). Psychological distress associated with COVID-19 quarantine: Latent profile analysis, outcome prediction and mediation analysis. *Journal of Affective Disorders*, 277, 75–84. <https://doi.org/10.1016/j.jad.2020.08.001>

- org/10.1016/j.jad.2020.07.133
- Ghanizadeh, A., & Royaei, N. (2015). Emotional facet of language teaching: Emotion regulation and emotional labor strategies as predictors of teacher burnout. *International Journal of Pedagogies and Learning*, 10(2), 139–150. <https://doi.org/10.1080/22040552.2015.113847>
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, 26, 41–54. <https://doi.org/10.1023/B:JOBA.0000007455.08539.94>
- Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2(3), 271–299. <https://doi.org/10.1037/1089-2680.2.3.271>
- Gross, J. J. (2015). Emotion regulation: Current status and future prospects. *Psychological Inquiry*, 26(1), 1–26. <https://doi.org/10.1080/1047840X.2014.940781>
- Jackson-Koku, G., & Grime, P. (2019). Emotion regulation and burnout in doctors: A systematic review. *Occupational Medicine*, 69(1), 9–21. <https://doi.org/10.1093/occmed/kqz004>
- Jimenez, S. S., Niles, B. L., & Park, C. L. (2010). A mindfulness model of affect regulation and depressive symptoms: Positive emotions, mood regulation expectancies, and self-acceptance as regulatory mechanisms. *Personality and Individual Differences*, 49(6), 645–650. <https://doi.org/10.1016/j.paid.2010.05.041>
- Karakose, T., Yirci, R., & Papadakis, S. (2022). Examining the associations between COVID-19-related psychological distress, social media addiction, COVID-19-related burnout, and depression among school principals and teachers through structural equation modeling. *International Journal of Environmental Research and Public Health*, 19(4), 1951. <https://doi.org/10.3390/ijerph19041951>
- Kaufman, E. A., Xia, M., Fosco, G., Yaptangco, M., Skidmore, C. R., & Crowell, S. E. (2015). The difficulties in emotion regulation scale short form (DERS-SF): Validation and replication in adolescent and adult samples. *Journal of Psychopathology and Behavioral Assessment*, 38, 443–455. <https://doi.org/10.1007/s10862-015-9529-3>
- Karagöl, A., & Kaya, Z. T. (2022). Healthcare workers' burn-out, hopelessness, fear of COVID-19 and perceived social support levels. *The European Journal of Psychiatry*, 36(3), 200–206. <https://doi.org/10.1016/j.ejpsy.2022.01.001>
- Khan, A., Khan, N., & Shafiq, M. (2021). The economic impact of COVID-19 from a global perspective. *Contemporary Economics*, 15(1), 64–76.
- Killgore, W. D. S., Taylor, E. C., Cloonan, S. A., & Dailey, N. S. (2020). Psychological resilience during the COVID-19 lockdown. *Psychiatry Research*, 291, 113216. <https://doi.org/10.1016/j.psychres.2020.113216>
- Klamut, R. (2019). Two-factor model of safety experience - theoretical assumptions and empirical verification: Safety Experience Questionnaire. *Polskie Forum Psychologiczne*, 24(3), 308–323.
- Koutsimani, P., Montgomery, A., & Georganta, K. (2019). The relationship between burnout, depression, and anxiety: A systematic review and meta-analysis. *Frontiers in Psychology*, 284. <https://doi.org/10.3389/fpsyg.2019.00284>
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606–613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- Kukreti, S., Ahorsu, D. K., Strong, C., Chen, I. H., Lin, C. Y., Ko, N. Y., ... & Pakpour, A. H. (2021). Post-traumatic stress disorder in Chinese teachers during COVID-19 pandemic: Roles of fear of COVID-19, nomophobia, and psychological distress. *Healthcare*, 9(10), 1288. <https://doi.org/10.3390/healthcare9101288>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Li, Q., Miao, Y., Zeng, X., Tarimo, C. S., Wu, C., & Wu, J. (2020). Prevalence and factors for anxiety during the coronavirus disease 2019 (COVID-19) epidemic among the teachers in China. *Journal of Affective Disorders*, 277, 153–158. <https://doi.org/10.1016/j.jad.2020.08.017>
- Lima, C. K. T., de Medeiros Carvalho, P. M., Lima, I. D. A. S., de Oliveira Nunes, J. V. A., Saraiva, J. S., de Souza, R. I., ... & Neto, M. L. R. (2020). The emotional impact of Coronavirus 2019-nCoV (new Coronavirus disease). *Psychiatry Research*, 287, 112915. <https://doi.org/10.1016/j.psychres.2020.112915>
- Low, R. S. T., Overall, N., Chang, V., & Henderson, A. M. E. (2020). Emotion regulation and psychological and physical health during a nationwide COVID-19 lockdown. *Emotion*, 21(8), 1671–1690. <https://doi.org/10.1037/emo0001046>
- Luthar, S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71(3), 543–562. <https://doi.org/10.1111/1467-8624.00164>
- Matiz, A., Fabbro, F., Paschetto, A., Cantone, D., Paolone, A. R., & Crescentini, C. (2020). Positive impact of mindfulness meditation on mental health of female teachers during the COVID-19 outbreak in Italy. *International Journal of Environmental Research and Public Health*, 17(18), 6450. <https://doi.org/10.3390/ijerph17186450>
- McCarthy, C. J., & Lambert, R. G. (2006). Helping teachers balance demands and resources in an era of accountability. In: R. Lambert & C. J. McCarthy (Eds.) *Understanding teacher stress in an age of accountability* (pp. 215–226). Information Age Publishing.
- Pelaez, M., & Novak, G. (2020). Returning to school: Separation problems and anxiety in the age of pandemics. *Behavior Analysis in Practice*, 13(3), 521–526. <https://doi.org/10.1007/s40617-020-00467-2>
- Pisula, E., & Nowakowska, I. (2020). Skala Lęku przed Koronawirusem FCV-19S (Ahorsu i in., 2020) – polskie tłumaczenie. <https://doi.org/10.17605/OSF.IO/39JR8>
- Polizzi, C. P., & Lynn, S. J. (2021). Regulating emotionality to manage adversity: a systematic review of the relation between emotion regulation and psychological resilience. *Cognitive Therapy and Research*, 45(4), 577–597 <https://doi.org/10.1007/s10608-020-10186-1>
- Prout, T. A., Zilcha-Mano S., Aafjes-van Doorn K., Békés V., Christman-Cohen I., Whistler K., Kui T., Di Giuseppe, M. (2020).

- Identifying predictors of psychological distress during COVID-19: A machine learning approach. *Frontiers in Psychology*, 11, 3063. <https://doi.org/10.3389/fpsyg.2020.586202>
- Richards, K. A. R., Levesque-Bristol, C., Templin, T. J., & Graber, K. C. (2016). The impact of resilience on role stressors and burnout in elementary and secondary teachers. *Social Psychology of Education*, 19(3), 511–536. <https://doi.org/10.1007/s11218-016-9346-x>
- Schäfer, J. Ö., Naumann, E., Holmes, E. A., Tuschen-Caffier, B., & Samson, A. C. (2017). Emotion regulation strategies in depressive and anxiety symptoms in youth: A meta-analytic review. *Journal of Youth and Adolescence*, 46(2), 261–276. <https://doi.org/10.1007/s10964-016-0585-0>
- See, B. H., Wardle, L., & Collie, P. (2020). Teachers' wellbeing and workload during Covid-19 lockdown.
- Sheerin, C. M., Lind, M. J., Brown, E. A., Gardner, C. O., Kendler, K. S., & Amstadter, A. B. (2018). The impact of resilience and subsequent stressful life events on MDD and GAD. *Depression and Anxiety*, 35(2), 140–147. <https://doi.org/10.1002/da.22700>
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15(3), 194–200. <https://doi.org/10.1080/10705500802222972>
- Sokal, L., Trudel, L. E., & Babb, J. (2020). Canadian teachers' attitudes toward change, efficacy, and burnout during the COVID-19 pandemic. *International Journal of Educational Research Open*, 1, 100016. <https://doi.org/10.1016/j.ijedro.2020.100016>
- Spitzer, R. L., Kroenke, K., & Williams, J. B. W. (1999). Patient Health Questionnaire Study Group. Validity and utility of a self-report version of PRIME-MD: the PHQ Primary Care Study. *JAMA*, 282, 1737–1744. <https://doi.org/10.1001/jama.282.18.1737>
- Spitzer, R. L., Kroenke, K., Williams, J. B., Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, 166(10), 1092–1097. <https://doi.org/10.1001/archinte.166.10.1092>
- Venkatesh, A., & Edirappuli, S. (2020). Social distancing in COVID-19: what are the mental health implications? *BMJ*, 369, m1379. <https://doi.org/10.1136/bmj.m1379>
- Welander, G., Svanström, L., & Ekman, R. (2004). *Safety promotion: An introduction*. Karolinska Institutet.
- Wytrychiewicz, K., Pankowski, D., Jasiński, M., & Fal, A. M. (2020). Commentary on COVID-19 situation in Poland: Practical and empirical evaluation of current state. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(5), 542–545. <https://doi.org/10.1037/tra0000676>
- Yenen, E. T., & Çarkit, E. (2021). Fear of COVID-19 and general self-efficacy among Turkish teachers: Mediating role of perceived social support *Current Psychology*, 1–9. <https://doi.org/10.1007/s12144-021-02306-1>

RECEIVED 08.08.2022 | ACCEPTED 17.02.2023

TABLE S1.
Partial Correlations (with Sex and Age Controlled) Between Continuous Variables

	OLBI Lack of Engagement	OLBI Exhaustion	OLBI Global Score	BRS	DERS SF Strategies	DERS SF Non- acceptance	DERS SF Impulse	DERS SF Goals	DERS SF Awareness	DERS SF Clarity	DERS SF Global Score	PHQ Global Score	GAD Global Score	Sense of Safety
FCV-19S	.31***	.39***	.38***	.05	.39***	.31***	.21***	.29***	.09***	.31***	.38***	.47***	.43***	-.49***
OLBI Disengagement from work		.74***	.93***	.07*	.50***	.31***	.37***	.43***	-.02	.34***	.46***	.58***	.48***	-.47***
OLBI Exhaustion			.94***	.06*	.61***	.41***	.42***	.56***	-.01	.42***	.58***	.70***	.61***	-.55***
OLBI Global Score				.07*	.60***	.39***	.43***	.53***	-.01	.41***	.56***	.68***	.59***	-.55***
BRS					.08**	.08**	.10***	.08**	-.01	.13***	.10***	.04	.12***	.03
DERS SF Strategies						.64***	.63***	.71***	.06*	.57***	.86***	.68***	.64***	-.48***
DERS SF Non-acceptance							.56***	.61***	.05	.52***	.81***	.51***	.51***	-.30***
DERS SF Impulse								.58***	-.01	.45***	.76***	.43***	.41***	-.26***
DERS SF Goals									-.11***	.43***	.84***	.57***	.54***	-.39***
DERS SF Awareness										-.12***	.28***	.07*	-.09**	-.03
DERS SF Clarity											.65***	.49***	.46***	-.33***
DERS SF Global Score												.65***	.64***	-.43***
PHQ-9 Global Score													.82***	-.56***
GAD-7 Global Score														-.57***

Note. FCV-19S = Fear of COVID-19 Scale, OLBI = The Oldenburg Burnout Inventory, BRS = The Brief Resilience Scale, DERS SF = The Difficulties in Emotion Regulation Scale - Short Form, PHQ-9 = Patient Health Questionnaire-9, GAD-7 = Generalized Anxiety Disorder-7.

* $p < .05$; ** $p < .01$; *** $p < .001$

TABLE S2.

Confirmatory Factor Analytic Results for the Development of Latent Variables

Latent Variable	χ^2	<i>p</i>	GFI	CFI	TLI	RMSEA
Anxiety (GAD)	230.403	< .001	0.952	0.974	0.961	0.11
Depressive symptoms (PHQ)	365.979	< .001	0.935	0.948	0.93	0.099
Emotional distress (PHQ + GAD)	1561.447	< .001	0.845	0.914	0.901	0.104
Burnout 1 factor	1342.133	< .001	0.854	0.86	0.839	0.096
Exhaustion (OLBI)*	114.027	< .001	0.975	0.973	0.96	0.075
Disengagement from Work (OLBI)*	106.543	< .001	0.973	0.957	0.929	0.092
Sense of Safety	49.365	< .001	0.985	0.986	0.972	0.083
Fear of COVID-19	1264.965	< .001	0.746	0.803	0.704	0.264
Resilience (BRS)	288.143	< .001	0.92	0.931	0.886	0.155
Difficulties in emotion regulation*	52.92	< .001	0.985	0.984	0.969	0.086

Note. GAD = Generalized Anxiety Disorder-7, PHQ = Patient Health Questionnaire-9, OLBI = Oldenburg Burnout Inventory, BRS = Brief Resilience Scale, * = with deleted items: Exhaustion: item 16, Disengagement from Work: items 13 and 15, Difficulties in emotion regulation: awareness.

TABLE S3.

Summary of the Models and Associated Goodness-of-Fit Indices

Dependent variables	χ^2	<i>df</i>	<i>p</i>	Normed χ^2 value	CFI	TLI	AIC	BIC
Depressive symptoms	2825.656	318	< .001	8.886	0.888	0.876	2945.656	3255.213
Anxiety	2458.191	269	< .001	9.473	0.906	0.895	2660.191	2949.111
Exhaustion	2309.233	269	< .001	8.585	0.894	0.882	2421.233	2710.153
Disengagement from work	2272.829	246	< .001	9.239	0.884	0.87	2380.829	2659.431
Sense of safety	2259.836	224	< .001	10.089	0.89	0.875	2363.836	2632.119