

## EXPERIENCES AND PREDICTORS OF STRESS AMONG PRESCHOOL TEACHERS AND TEACHERS IN CROATIA DURING THE COVID-19 PANDEMIC

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*The aim of this study was to examine the experiences of stress among among preschool and school teachers during teachers during the COVID-19 pandemic, as well as to examine the predictive value of teachers' individual characteristics, causes of stress, coping strategies and social support, for the way in which they experience stress, job burnout and for what they hope for regarding the future. The online questionnaire was applied on sample of 491 school teachers and 316 preschool teachers. The results showed that both school and preschool teachers experienced the highest level of stress during the first wave of the COVID-19 pandemic, and that the level of stress experienced during the pandemic was higher than before the pandemic. Preschool teachers perceived common causes of stress more intensely than some specific causes related to the COVID-19 pandemic, while the opposite was true for teachers. Individual characteristics of preschool and school teachers, causes of stress, coping strategies and social support prove to be related to the levels of stress, job burnout and hope for the future, but the predictive values (i.e., significant predictors), differ depending on the criterion and the group of respondents. The results indicate a positive contribution of self-efficacy, coping strategies and social support to the experience of stress among preschool teachers and teachers alike during the COVID-19 pandemic.*

**Keywords:** stress experience, COVID-19 pandemic, preschool teachers, teachers

## 1. Introduction

The emergence of the COVID-19 disease globally brought unexpected health, economic, social, emotional, and educational changes (Hong *et al.*, 2021; Ozamis-Etxebarria *et al.*, 2021; Thu *et al.*, 2020). The closure of educational institutions in March, April and May 2020 which took a place during the first wave of the COVID-19 disease, was one of the most widespread restrictions for preventing the spread of COVID-19, both in Croatia and around the world (Ozamis-Etxebarria *et al.*, 2021; Sheikh *et al.*, 2020; Van Lancker and Parolin, 2020).

Due to the nature of epidemiological situation and the closure of educational institutions educational work was conducted online, with preschool teachers and teachers in general finding themselves faced with new challenges at work. Along with the COVID-19 pandemic, the 21st century was arguably marked by another kind of pandemic – the stress pandemic. Namely, according to Fink (2016, 3), the World Health Organization referred to stress as the “health pandemic of the 21st century”. In contemporary literature, it is possible to find a variety of definitions when it comes to concept of stress. Stress is most often defined as a certain psychological and/or physiological reaction to particular (internal and/or external) stressors (Fink, 2016; Havelka, 1998), a certain relationship that exists between the individual self and their environment, and which is conditioned by certain characteristics of the environment itself and the person who reacts to it in a certain way (Lazarus and Folkman, 2004). It has been proven that stress negatively affects the entire human health, including diseases of the cardiovascular system and the locomotor system, often resulting in fear, anxiety and depression (Fink, 2016; Sharpley *et al.*, 2019).

Long-term stress at the workplace tends to result in the so-called burnout, which has been confirmed by numerous studies (e.g., Gil-Monte, 2011; Silva *et al.*, 2015). Research (Leiter *et al.*, 2014; Silva *et al.*, 2015; Smetackova *et al.*, 2019) has also shown that a significant number of teachers suffer from burnout syndrome caused by the complexity and numerous challenges of the teaching job itself. When it comes to Croatian setting, the studies have shown that burnout in teaching has been more pronounced in men (Domović *et al.*, 2010), and that teachers with longer work experience tend to feel a higher level of alienation and exhaustion (Domović *et al.*, 2010; Slišković *et al.*, 2016).

Humanity has been under the influence of various challenging times and global crises before, in which an individual was often forced to ask themselves essential questions about their future, but also about the future of humanity. In this context, Erikson's model of generativity, as a concept of the individual's permanent contribution and concern for younger generations, laid the foundation for McAdams and de St. Aubin's elaboration of the construct of generativity, which contains seven interconnected components, among which is faith in the value of human action as the basis of hope for the future and trust in people (Tucak Junaković, 2009, 672; 2010, 39). Hope for the future implies that we believe life to be inherently good and worth living. We believe that human actions and efforts have meaning, they are not in vain; we are optimistic about future and the hope that we experience is connected with life satisfaction (Tucak Junaković, 2010) and the resilience that helps us endure difficult and challenging situations (Prijetelj and Roje Đapić, 2020).

## 2. Stress in the teacher profession

There is no doubt that we are increasingly exposed to stress in today's modern age, which reflects on the work of both school and preschool teachers. Namely, the work of teachers in general is becoming more and more demanding and more complex, and as a consequence, the examination of stressors when it comes to their work is becoming increasingly interesting for researchers. Numerous studies around the world (Bolton, 2015; Darmody and Smyth, 2011; Roeser *et al.*, 2014; Ryan *et al.*, 2017; Skaalvik and Skaalvik, 2015), but also in Croatia (Boljat, 2020; Klarin and Nenadić-Bilan, 2004; Sindik and Pavlović, 2016; Živčić-Bećirević and Smojver Ažić, 2005) have already shown that the work of preschool teachers and teachers in general was very demanding and stressful even before the COVID-19 pandemic. Research has also shown that both school and preschool teachers who are more exposed to stress at work tend to be less satisfied with their work, more frequently absent from work, less dedicated to their work, and more often tend to think about leaving their profession (OECD, 2020a; Skaalvik and Skaalvik, 2015; 2016; Živčić-Bećirević and Smojver Ažić, 2005). Previous research (Skaalvik and Skaalvik, 2007; 2014) revealed that

social support from colleagues at work, as well as teachers' self-efficacy and the use of problem-oriented coping strategies were protective factors in the prevention of teacher stress and burnout. In other words, teachers who have greater social support from their colleagues, higher levels of self-efficacy, and who rely on problem-oriented coping strategies, estimate their stress experiences at work to be lower and appear more satisfied with their work, which also negatively correlates with teacher burnout (Leiter *et al.*, 2014; Skaalvik and Skaalvik, 2007; 2014; Smetackova *et al.*, 2019).

Previous research (Beara and Jerković, 2015; Bolton, 2015; Harnsen *et al.*, 2018; OECD, 2020b; Ravalier and Walsh, 2018; Šimić Šašić *et al.*, 2011) suggests that the most common stressors in the work of teachers are related to children's behavior (students' poor attitude towards work, their rude behavior and lack of motivation, children's demanding behavior, children who endanger themselves or other children, their aggressive behavior etc.), relationships with colleagues, relations with the administration, working conditions (low possibility of advancement, insecurity of employment, inadequate wages, lack of professional support, large number of children in the class/group), cooperation with parents and certain additional workloads (too much documentation, or, - generally too much work), as well as the professional social circumstances (poor funding in education, degradation of the profession and the value system, interventions by competent authorities, law regulations).

Furthermore, previous research conducted among Croatian preschool teachers (Klarin and Nenadić-Bilan, 2004; Sindik and Pavlović, 2016; Živčić-Bećirević, Smojver-Ažić, 2005) and school teachers (Buljan Flader and Hrpka, 2007; Foro, 2015; Pavičić Dokoza *et al.*, 2020) has revealed that preschool teachers and teachers in general experience the most stressful aspects of children's behavior, interpersonal relationships, working conditions and cooperation with parents. Živčić-Bećirević and Smojver-Ažić (2005) found that, when it comes to preschool teachers, the length of service relates to their perception of interpersonal relationships and working conditions as a source of stress. Thus, preschool teachers with more work experience (between 19 and 27 years) tend to perceive interpersonal relationships as more stressful than preschool teachers with less work experience (between

10 and 18 years), while preschool teachers with the most seniority perceive working conditions as more stressful than preschool teachers with less seniority (Živčić-Bećirević and Smojver-Ažić, 2005). On the other hand, Foro (2015) did not find statistically significant differences in the sources of teachers' stress with regard to seniority, but she did find that parents' education affects the way stressful situations are handled.

### **3. Research findings on the influence of the pandemic on stress in educational and teaching work**

Research conducted in different parts of the world shows that the emergence of the COVID-19 has increased the intensity of stress among preschool teachers (Hong *et al.*, 2021; Ozamiz-Etxebarria *et al.*, 2021; Vargas Rubilar and Oros, 2021) and teachers in general (Casimiro Urcos *et al.*, 2020; Jakubowski and Sitko-Dominik, 2021; Klapproth *et al.*, 2020; Košir *et al.*, 2020; Oducato *et al.*, 2021; Ozamiz-Etxebarria *et al.*, 2021; Vargas Rubilar and Oros, 2021). Argentinian research (Vargas Rubilar and Oros, 2021) showed that 62.1% of preschool teachers experienced moderate or high stress levels during the first wave of the COVID-19 pandemic, while American research (Casimiro Urcos *et al.*, 2020) showed that the same circumstances – closing of schools and the implementation of online classes – resulted in teachers experiencing high stress levels. Klapproth *et al.* (2020) found that with the onset of the COVID-19 pandemic, German teachers mostly experienced moderate amount of stress, and the majority of teachers cited excessive workload, internet connectivity, lack of technological equipment and students' lack of motivation as additional causes of stress. In the context of Serbia, subjective overload with regard to online teaching was shown to significantly and positively correlate with the perceived stress (Beara *et al.*, 2021). An international study (Alzueta *et al.*, 2020) conducted among 59 countries around the world showed that, since the start of the pandemic, women generally experienced higher stress levels and anxiety compared to men, and this also applied to women in educational and teaching professions. Namely, research conducted in China (Hong *et al.*, 2021), Germany (Klapproth *et al.*, 2020), Poland (Jakubowski and Sitko-Dominik, 2021), Slovenia (Košir *et al.*, 2020) and Spain (Ozamiz-Etxebarria *et al.*, 2021) has indicated that gender, age, length of service,

education and parental status relate to the stress experiences among both school and preschool teachers during the COVID-19 pandemic where a woman experienced a greater work-related stress compared to their male colleagues. Moreover, Ozamiz-Etxebarria *et al.* (2021) found that during the first wave of the COVID-19, as far as Spanish school and preschool teachers are concerned, the highest stress levels were experienced by people over 47 years old, as well as young preschool teachers and teachers (from 23 to 35 years old). This might be explained by the fact young people and the women find it difficult to balance out their workload and family matters, whereas where it comes to teachers with more seniority in the profession, the work might exert greater mental and physical exhaustion. When it comes to Germany, during the first wave of the COVID-19 disease, secondary school teachers experienced a greater amount of stress compared to primary school teachers (Klaproth *et al.*, 2020). Furthermore, some studies (Hong *et al.*, 2021; Košir *et al.*, 2020; Jakubowski and Sitko-Dominik, 2021) have indicated that teachers who were also parents of preschool and school-age children reported greater stress levels due to balancing between work and private life, i.e., working from home at a time when they had to take on the responsibility of caring for and raising their own children who also could not go to kindergarten or school due to lockdown.

The findings of the Croatian research conducted by Boljat (2020) among 2,829 school teachers during the first and second wave of the COVID-19 disease showed that with the onset of the pandemic, teachers reported an extension of their working hours, an increase in workload, constant availability to students, insufficient time for personal and family matters. This research also showed that secondary school teachers experienced higher amounts of stress compared to primary school teachers. The author also argued that gender, education and length of service were related to the stress experiences when it comes to teacher profession, finding that women, secondary school teachers, teachers with 6 to 15 and those with 16 to 30 years of service experienced greater causes of stress (Boljat, 2020). Beara *et al.* (2021) have also established that the perceived stress level in teachers negatively correlated with age. On the other hand, the COVID-19 pandemic enabled families to spend more time together, thus providing each other with greater sup-

port and coping more effectively with additional stress (Jakubowski and Sitko-Dominik, 2021; Stanley and Markman, 2020).

#### 4. Research

The aim of this research was to examine the experiences of stress among school teachers and preschool teachers during the COVID-19 pandemic and to examine the predictive value of some of their individual characteristics, causes of stress, coping strategies and social support in explaining the stress experiences, job burnout and hopes for the future.

We set the following research problems:

1. Examining the stress levels experienced by school and preschool teachers before the pandemic, during the first wave and during the COVID-19 pandemic in its entirety.
2. Examining the sources of stress, job burnout, coping strategies, self-efficacy, social support and hopes for the future in preschool teachers and school teachers.
3. Examining the predictive value of some individual characteristics of preschool and school teachers (age, seniority, vocational training, self-efficacy), causes of stress, coping strategies and social support in explaining the stress experiences, job burnout and hope for the future.

After taking into account the theoretical background and the results of previous studies, we set the following hypotheses:

H1: During the COVID-19 pandemic, the stress experiences among teachers and preschool teachers increased.

H2: A additional causes of stress related to the COVID-19 pandemic might be more pronounced, as well as burnouts at work, while assessments of effective coping with stress, self-efficacy, social support and hope for the future should be lower.

H3: Individual characteristics, causes of stress, coping strategies and social support are significant predictors of stress experience, job burnout and hope for the future (e.g., we expect that older teachers and preschool teachers, and teachers with lower self-efficacy will experience higher stress levels).

## 5. Methodology

### 5.1. Sample

The research was conducted on 807 participants in total, 316 of which were preschool teachers and 491 were either primary or secondary school teachers. Out of 316 preschool teachers, 99.1% were women, and 0.9% were men.<sup>1</sup> The majority of preschool teachers (73.1%) held post-secondary education degree, 38.0% of which completed a two-year study, and 35.1% completed a three-year study. 36.1% preschool teacher was aged between 20 and 35, 45.6% was aged between 36 and 50, while 18.4% of the teachers were older than 51 years old. Out of 491 primary and secondary school teachers, 90.2% were women and 9.8% were men. 25.3% were aged 20 to 35, 47.8% were aged 36 to 50, and 26.9% were 51 or older. The vast majority of teachers (91.4%) held a university degree, 82.5% of which had completed a five-year study, while 9.2% had a master's or doctorate in science. 56.1% of respondents worked in primary school, and 43.9% in secondary school.

### 5.2. Measuring instruments

1. *The questionnaire of socio-demographic characteristics* measured the respondents' gender, age, length of service, county of residence and level of education. The question pertaining to the age of respondents was categorized into three classes (*20-35 years; 36-50 years; 51 and older*). When it comes to the length of service, the respondents were offered 4 types of answers (*1 to 5 years; 6 to 15 years; 16 to 25 years; 26 years or more*). The question pertaining to the level of education covered 4 different options (*two-year study; three-year study: baccalaureate; graduate study: master of profession; postgraduate study: master's or doctorate of science*). For each of the questions, respondents were able to choose only one of the answers presented to them.
2. *The stress levels at work before, during the first wave and during the COVID-19 pandemic in its entirety*; we measured the stress lev-

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<sup>1</sup> The gender variable was not included in data processing due to small number of men across samples.



els with three statements, and respondents assessed their stress levels at work before the COVID-19 pandemic, during the first wave and in general during the COVID-19 pandemic.

3. *The scale of causes of stress at the work of preschool teachers* (Živčić-Bećirević and Smojver-Ažić, 2005) originally contained 35 items. For the purposes of this research, we used the 28-item scale. For each item offered, preschool teachers had to assess the extent to which the work situations described to them were stressful, on a Likert-type scale (where 1 represented – *not stressful at all* and 5 was – *very stressful*). The total result was formed as a general assessment of the stressfulness of preschool teacher's work. All statements had satisfactory factor saturations, and the internal reliability of the scale (Cronbach alpha type) was 0.91.
4. *The scale for measuring sources of teacher stress* (Boyle *et al.*, 1995; as cited in Mikulandra and Sorić, 2004), originally consisted of 25 items (statements such as *Large classes – with too many students*) to which we added two items (*Lack of communication with parents; Lack of information about professional meetings, lack of professional literature and continuous education*). For each statement, the teachers had to assess (1 – *not stressful at all*; 5 – *very stressful*) to what extent the work situations described to them were stressful. The total score was formed as a general assessment of teaching job stressfulness; all statements had satisfactory factor saturations, and the internal reliability of the scale (Cronbach alpha type) was 0.92.
5. *The scale for measuring additional causes of stress during the COVID-19 pandemic* was constructed for the purposes of this research and consists of 9 items (e.g., *Working from home*) related to specific causes of stress for preschool teachers and teachers, i.e. – their workload during the COVID-19 pandemic. For each statement, the preschool teachers and school teachers had to assess the extent to which the work situations described to them were stressful (1 – *not stressful at all*, 5 – *very stressful*). The scale showed a one-factor structure (the 1st statement in the sample of teachers did not have satisfactory saturation, so it was excluded from the total score), while the reliability of the scales was 0.88 (for the sample of preschool teachers) and 0.87 (for the sample of school teachers).

6. *Oldenburg burnout questionnaire* (Demerouti and Bakker, 2008; as cited in Burić and Slišković, 2018), consisted 16 items and measures of alienation (e.g., *It happens more and more often that I talk about my work in a negative way*) and exhaustion (e.g., *I usually feel worn out and tired after work*). Respondents had to assess the extent to which they agreed with the statements provided on a 5-point scale (1 – *I do not agree at all*, 5 – *I completely agree*). The two-factor structure of the questionnaire was confirmed, and the reliabilities were 0.81 and 0.85 (when it comes to preschool teachers) and 0.79 and 0.83 (school teachers).
7. *Endler and Parker Coping with Stressful Situations Questionnaire* (CISS) (Endler and Parker, 1990; as cited in Sorić and Proroković, 2002), consisted of 48 items and evaluated problem-focused coping (*I plan my time better*), emotion-focused coping (*I am preoccupied with worries and problems*) and avoidance (*I watch TV*). Respondents had to assess to what extent they agreed with the statements provided on a 5-point scale (1 – *I do not agree at all*, 5 – *I completely agree*). In this research, the three-factor structure of the questionnaire was confirmed, although the statement *I go to a parties* was omitted due to epidemiological measures at the time and the statements *I tend to change the order depending on my priorities* and *I disconnect and avoid the situation did not have satisfactory factor saturations*. The reliability coefficients of the subscales were 0.85, 0.88 and 0.81 for the sample of preschool teachers, and 0.87, 0.89 and 0.80 for sample of school teachers.
8. *Social support scale* (Macdonald, 1988; as cited in Ivanov and Penezić, 2010), for our research purposes we only used the subscale Emotional support of family and friends, which contained 14 particles (statements such as *I am very close to my family*). Respondents had to declare to what extent they agree with the statements provided on a 5-point scale (1 – *I do not agreed at all*, 5 – *I completely agree*). The scale revealed a one-factor structure with the reliability core of 0.88 (for preschool teachers) and 0.91 (for school teachers).
9. *Colleague and management support scale* (Skaalvik and Skaalvik, 2017; as cited in Boljat, 2020), incorporated 9 items measuring relations with colleagues and the administration (e.g., *I can always*

get quality help from my colleagues in educational matters) and cooperation in the kindergarten/school (*Teachers/Preschool teachers in my school/kindergarten share a common perception of goals and methods of school/kindergarten development*). Respondents had to assess the extent to which they agreed with the statements presented on a 5-point scale (1 – *I do not agree at all*, 5 – *I completely agree*). The scale revealed a two-factor structure with the reliability coefficients amounting to 0.88 and 0.87 for the sample of preschool teachers, and 0.91 and 0.90 for sample of school teachers.

10. *General self-efficacy scale* (Schwarzer *et al.*, 1997; as cited in Ivanov and Penezić, 2002) contained 10 items related to respondents' beliefs about their own general self-efficacy (e.g., *I am sure that I can successfully resolve unexpected situations*). Respondents had to declare to what extent they agreed with the statements presented on a 5-point scale (1 – *It does not apply to me at all*, 5 – *It completely applies to me*). The scale showed a one-factor structure with reliability scores of 0.90 for the sample of preschool teachers and 0.92 for the sample of school teachers.
11. *Scale of hope for the future of humanity* (McAdams and de St. Aubin, 1992; as cited in Tucak Junaković, 2010) consisted of 8 items (*Life is basically good and worth living*) where the respondents were asked to assess to what extent they agreed with the statements on a 5-pointed scale (1 – *I do not agree at all*, 5 – *I completely agree*). The scale showed a one-factor structure and reliability coefficient scores of 0.87 for the sample of preschool teachers and 0.89 for the sample of school teachers.

### 5.3. Procedure

The research was conducted through an anonymous online questionnaire, during June and July 2021, among teachers and preschool teachers from all over Croatia. The first wave of the COVID-19 pandemic covered the period from March to June 2020. Stress assessment during the pandemic covered the period from June 2020 until June 2021. The questionnaires were distributed within 49 closed groups hosted on the social network Facebook, or via e-mail addresses of kindergartens

and primary and secondary schools operating across Croatia, and we even shared it on websites or via closed Viber and Whats App groups among teachers and preschool teachers. Naturally, the survey was first approved by the principals of kindergartens, primary and secondary schools, as well as the administrators of the requisite Facebook groups. The conducted research has the approval of the Ethics Committee of the University of Zadar.

## 6. The results

Table 1 outlines the arithmetic mean (M), ranges and standard deviation (SD) of all variables measured on the sample of preschool teachers and school teachers. Given that no statistically significant differences were found between preschool teachers and school teachers in the observed variables (except for the assessment of specific causes of stress related to COVID-19, which was estimated to be statistically significantly higher by primary school teachers;  $M_{ps} = 3.91$ ,  $M_{ss} = 3.74$ ,  $t = 2.13$ ,  $p=0.03$ ), we have decided to classify them within the same group.

**Table 1.** Indicators of descriptive statistics (preschool teachers, N=316; school teachers, N=491); for school teachers coefficients are in parentheses

Variables	M	SD
Stress before the COVID-19 pandemic	3,34 (2,89)	1,03 (0,96)
Stress during the first wave of the COVID-19 pandemic	4,14 (4,19)	1,02 (1,02)
Stress during the COVID-19 pandemic	4,08 (3,92)	0,95 (0,96)
Causes of stress	3,54 (3,24)	0,62 (0,67)
Additional causes of stress during the COVID-19 pandemic	3,36 (3,83)	0,90 (0,82)

Problem-focused coping	3,87 (3,83)	0,49 (0,51)
Emotion-focused coping	2,91 (2,90)	0,69 (0,69)
Avoidance	3,21 (3,03)	0,68 (0,65)
Relations with colleagues and management	3,61 (3,64)	0,95 (0,96)
Cooperation in kindergarten	3,35 (3,32)	1,09 (1,09)
Social support	4,56 (4,38)	0,49 (0,63)
Alienation	2,35 (2,45)	0,79 (0,74)
Exhaustion	2,93 (2,85)	0,75 (0,76)
Self-efficacy	4,03 (3,97)	0,59 (0,63)
Hopes for the future of humanity	4,24 (4,01)	0,65 (0,73)

From Table 1, it can be seen that preschool teachers and school teachers estimate the stress experiences to be the highest during the first wave of the COVID-19 pandemic compared to times before the pandemic and during the pandemic itself, that is, the stress levels experienced by preschool teachers and school teachers was higher after the COVID-19 pandemic has set in. A series of t-tests showed that all differences were statistically significant except for preschool teachers' assessments of the experience of stress during the first wave and during the COVID-19 pandemic in general (t-test results: preschool teachers

(1. and 2.  $t = -12.26$ ,  $p = 0.00$ ; 1. and 3.  $t = -12.49$ ,  $p = 0.00$ ; 2. and 3.  $t = 1.23$ ,  $p=0.22$ ); teachers (1. and 2.  $t = - 26.28$ ,  $p = 0.00$ ; 1. and 3.  $t = -23.06$ ,  $p = 0.00$ ; 2. and 3.  $t = 8.04$ ,  $p = 0.00$ ). Preschool teachers perceived common causes of stress as more stressful than some specific causes related to the COVID-19 pandemic, while the opposite was true for teachers (preschool teachers:  $t = 4.09$ ,  $p = 0.00$ ; teachers:  $t = - 17.50$ ,  $p=0.00$ ). Preschool teachers and school teachers relied on problem-focused and avoidance-based coping mechanisms the most, whereas emotion-focused coping was employed the least. Based on arithmetic means, we can conclude that both school and preschool teachers experienced moderate to relatively high social support (mostly in terms of family and friends), relatively high level of self-efficacy and hope for the future, and a relatively low to moderate levels of job burnout.

During the pandemic, the most common source of stress for school teachers was the evaluation of student achievement during online classes, constant availability during online classes, student engagement during online classes, etc. On the other hand, for the vast majority of preschool teachers, the most stressful situations were those in which a child was injured or in which a child endangered themselves or other children, too many children in the group, aggressiveness of children or parents, etc.

In order to determine the connection between all relevant variables in the research on a sample of preschool teachers and school teachers, Pearson’s correlation coefficients were calculated, and the results are shown in Table 2 below.

**Table 2.** Pearson correlation coefficients between all relevant variables in the research on the sample of preschool teachers (N=316) and school teachers (N=491); for school teachers coefficients are in parentheses

Variables	Stress before the COVID-19 pandemic	Stress during the first wave of the COVID-19 pandemic	Stress during the COVID-19 pandemic	Alienation	Exhaustion	Hope
Age	<b>0.12*</b> (0.02)	<b>0.13*</b> (0.04)	0.09 (-0.01)	-0.05 <b>(-0.10*)</b>	0.05 (-0.05)	-0.08 (-0.04)

Length of service	<b>0.12*</b> (0.02)	<b>0.15*</b> (0.05)	<b>0.13*</b> (0.03)	-0.01 (-0.08)	0.08 (-0.04)	0.04 (-0.01)
Education	-0.01 <b>(0.12*)</b>	0.01 (0.01)	0.08 (0.04)	0.03 <b>(0.10*)</b>	-0.03 (0.02)	0.09 (-0.01)
Causes of stress	<b>0.50*</b> <b>(0.48*)</b>	<b>0.34*</b> <b>(0.44*)</b>	<b>0.52*</b> <b>(0.56*)</b>	<b>0.31*</b> <b>(0.33*)</b>	<b>0.37*</b> <b>(0.47*)</b>	-0.01 (-0.08)
Sources of covid stress	0.25* (0.25*)	0.41* (0.56*)	0.49* (0.60*)	0.25* (0.10*)	0.27* (0.24*)	-0.07 (0.01)
Problem-focused coping	0.02 (0.02)	0.10 (0.09)	0.06 (0.09)	<b>-0.18*</b> <b>(-0.27*)</b>	<b>-0.24*</b> <b>(-0.26*)</b>	<b>0.25*</b> <b>(-0.25*)</b>
Emotion-focused coping	0.30* (0.33*)	0.22* (0.25*)	0.32* (0.40)*	0.40* (0.28*)	0.50* (0.44*)	-0.21* (-0.18*)
Avoidance	-0.04 (0.04)	0.08 (0.05)	-0.02 <b>(0.10*)</b>	-0.10 (-0.06)	-0.09 <b>(-0.10*)</b>	<b>0.27*</b> <b>(0.18*)</b>
Relations with colleagues and management	-0.13* (-0.28*)	-0.15* (-0.17*)	-0.21* (-0.22*)	-0.34* (-0.32*)	-0.26* (-0.33*)	0.19* (0.25*)
Cooperation in kindergarten/school	<b>-0.14*</b> <b>(-0.33*)</b>	-0.09 <b>(-0.15*)</b>	<b>-0.18*</b> <b>(-0.19*)</b>	<b>-0.36*</b> <b>(-0.33*)</b>	<b>-0.27*</b> <b>(-0.33*)</b>	<b>0.15*</b> <b>(0.25*)</b>
Social support	0.01 (-0.07)	0.01 (0.04)	-0.04 (0.03)	-0.26* (-0.26*)	-0.19* (-0.27*)	0.50* (-0.37*)
Self-efficacy	-0.07 <b>(-0.12*)</b>	0.05 (-0.01)	-0.01 (-0.04)	<b>-0.31*</b> <b>(-0.38*)</b>	<b>-0.33*</b> <b>(-0.38*)</b>	<b>0.39*</b> <b>(0.29*)</b>

\*  $p < 0.05$ 

The age and working experience of preschool teachers appear to be weakly related to the stress experiences before and during the pandemic, while the education of preschool teachers was not significantly related to any of the research variables. Causes of stress (the general ones and those specifically related to COVID-19) and emotion-focused coping strategies exhibited a moderate association with the stress experiences before and during the COVID-19 pandemic and job burnout. Problem-focused coping was negatively related to job burnout. As far

as relationships with colleagues are concerned, they tend to associate with all variables. Social support, cooperation in kindergarten/school, and self-efficacy seem to correlate moderately with job burnout, and additionally, cooperation in kindergarten correlated with the stress experiences before and during the pandemic. When it comes to hopes for the future, they showed a negative correlation with emotion-focused coping, and a positive one with problem-focused coping, avoidance, relationships with colleagues, cooperation in kindergarten, social support and self-efficacy of preschool teachers.

The school teachers' age was related to alienation, and the teacher's education was related to the stress experiences before the pandemic and alienation. Causes of stress (the general ones and those specifically related to COVID-19) and emotion-focused coping strategies showed a moderate association with the stress experiences before and during the COVID-19 pandemic, as well as and job burnout. Problem-focused coping was negatively related to job burnout and positively related to hope for the future. Avoidance as a coping strategy was weakly, but positively, related to the stress experiences during the pandemic and hopes for the future, and negatively related to exhaustion. Relationships with colleagues and cooperation at school were moderately negatively associated with the stress experiences before the COVID-19 pandemic and with job burnout, while the association was weaker when it comes to the stress experiences during the pandemic, and positive when it comes to hopes for the future. Social support negatively correlated with burnout and positively to hope for the future, while self-efficacy is negatively and weakly related to the stress experiences before the pandemic, and moderately with job burnout and hopes for the future.

In order to answer the third research problem, we conducted a stepwise regression analysis with (see Table 3 and Table 4) with individual characteristics of preschool teachers/teachers (age, education, self-efficacy), causes of stress, coping strategies and social support as predictors, and experiences of stress, job burnout and hopes for the future as criterion variables.



**Table 3.** Results of stepwise regression analyzes for the stress experiences, job burnout and hopes for the future as criterion variables on the sample of preschool teachers (final step, N=316)

<b>Experiences of stress before the COVID-19 pandemic</b>				
Predictors	$\beta$	t	p	
Age	0.10	2.14	0.03	R=0.52, R <sup>2</sup> =.27,
Causes of stress	0.43	8.32	0.00	F <sub>(3,312)</sub> =38.45,
Emotion-focused coping	0.14	2.64	0.01	P=0.00
<b>Experiences of stress during the first wave of the COVID-19 pandemic</b>				
Causes of stress	0.19	3.21	0.00	R=0.44, R <sup>2</sup> =.19,
Sources of covid stress	0.31	5.33	0.00	F <sub>(2,313)</sub> =37.08,
				P=0.00
<b>Experiences of stress in general during COVID-19 pandemic</b>				
Causes of stress	0.33	6.12	0.00	R=0.59, R <sup>2</sup> =.35,
Sources of covid stress	0.28	5.27	0.00	F <sub>(4,311)</sub> =42.42,
Emotion-focused coping	0.14	2.64	0.01	p=0.00
Self-efficacy	0.10	2.00	0.05	
<b>Alienation</b>				
Causes of stress	0.16	3.09	0.00	
Problem-focused coping	-0.13	-2.70	0.01	R=0.55, R <sup>2</sup> =.30,
Emotion-focused coping	0.27	5.20	0.00	F <sub>(5,310)</sub> =26.50,
Cooperation in kindergarten	-0.23	-4.60	0.00	p=0.00
Social support	-0.13	-2.66	0.01	
<b>Exhaustion</b>				
Causes of stress	0.21	4.21	0.00	R=0.60, R <sup>2</sup> =.36,
Problem-focused coping	-0.23	-4.92	0.00	F <sub>(4,311)</sub> =43.84,
Emotion-focused coping	0.39	7.93	0.00	p=0.00
Cooperation in kindergarten	-0.12	-2.64	0.01	
<b>Hopes for the future</b>				
Emotion-focused coping	-0.10	-1.97	0.05	R=0.56, R <sup>2</sup> =.31,
Avoidance	0.15	2.88	0.00	F <sub>(4,311)</sub> =35.52,
Social support	0.35	6.91	0.00	p=0.00
Self-efficacy	0.22	4.21	0.00	

The results show that age, assessment of general causes of stress and emotion-focused coping constitute significant predictors of stress experiences before COVID-19. When it comes to the stress experiences during the first wave, significant predictors were both and general causes of stress and those specifically related to COVID-19, and for the stress experiences during the pandemic, relevant predictors additionally included emotion-focused coping and self-efficacy. The aforementioned predictors explain from 19% to 35% of the variance of the criterion variables. Variables such as causes of stress and problem and emotion focused coping strategies, cooperation in kindergarten and social support (alienation), had predictive value for job burnout (alienation and exhaustion). These sets of predictors explained 30% and 36% of the criterion variance. Finally, emotions-focused coping, avoidance, social support and self-efficacy were all predictors of hopes for the future in preschool teacher; they explained approximately 31% of the criterion variance.

**Table 4.** Results of stepwise regression analyzes for the stress experiences, burnout and hope for the future as criterion variables on the sample of teachers (final step, N=491)

<b>Experiences of stress before the COVID-19 pandemic</b>				
Predictors	$\beta$	t	P	
Education	0.12	3.10	0.00	R=0.53, R <sup>2</sup> =.28,
Causes of stress	0.37	8.43	0.00	F <sub>(4,486)</sub> =48.17,
Emotion-focused coping	0.13	3.11	0.00	P=0.00
Cooperation in school	-0.17	-4.28	0.00	
<b>Experiences of stress during the first wave of the COVID-19 pandemic</b>				
Causes of stress	0.16	3.67	0.00	R=0.60, R <sup>2</sup> =.35,
Sources of covid stress	0.46	10.77	0.00	F <sub>(4,486)</sub> =66.65,
Problem-focused coping	0.10	2.55	0.01	P=0.00
Cooperation in school	-0.10	-2.54	0.01	

<b>Experiences of stress in general during COVID-19 pandemic</b>				
Education	0.08	2.01	0.04	R=0.68, R <sup>2</sup> =.46,
Causes of stress	0.25	5.22	0.00	F <sub>(6,484)</sub> =68.16,
Sources of covid stress	0.39	9.47	0.00	p=0.00
Problem-focused coping	0.08	2.20	0.03	
Emotion-focused coping	0.14	3.73	0.00	
Relations with colleagues and menagement	-0.10	-2.21	0.03	
<b>Alienation</b>				
Education	0.10	2.50	0.01	R=0.53, R <sup>2</sup> =.28,
Age	-0.08	-2.14	0.03	F <sub>(6,484)</sub> =31.48,
Causes of stress	0.25	6.34	0.00	p=0.00
Cooperation in school	-0.14	-3.29	0.00	
Social support	-0.15	-3.53	0.00	
Self-efficacy	-0.27	-6.39	0.00	
<b>Exhaustion</b>				
Age	-0.08	-2.23	0.03	R=0.61, R <sup>2</sup> =.37,
Causes of stress	0.32	7.65	0.00	F <sub>(6,484)</sub> =47.25,
Emotion-focused coping	0.21	4.86	0.00	p=0.00
Cooperation in school	-0.10	-2.33	0.02	
Social support	-0.11	-2.98	0.00	
Self-efficacy	-0.21	-5.07	0.00	
<b>Hopes for the future</b>				
Problem-focused coping	0.13	2.78	0.01	R=0.44, R <sup>2</sup> =.19,
Emotion-focused coping	-0.12	-2.76	0.01	F <sub>(5,485)</sub> =23.03,
Avoidance	0.09	2.02	0.04	p=0.00
Relations with colleagues and menagement	0.15	3.41	0.00	
Social support	0.23	5.10	0.00	

School teachers' stress experiences before the pandemic were explained by the level of education, their approximation of causes of stress, emotion-focused coping, and collaboration at school. Their stress experiences, during the first wave of pandemic were explained variables such causes of stress (both general and specific ones), problem-focused coping and collaboration at school, whereas when it comes

to pandemic in general, the relevant predictors included causes of stress (both general and specific ones), problem and emotion-focused coping, their assessments of colleague relationships quality and the school administration. These aforementioned sets of variables explained from 28% to 46% of the criterion variance. Job burnout was predicted by age, causes of stress, school cooperation, social support and self-efficacy, as well as education (alienation) and emotion-focused coping (exhaustion); all together explaining roughly 28% and 37% of the criterion variance. Finally, hopes for the future were predicted by problem and emotion-focused coping, avoidance, peer relationships, and social support, this set of variables explained 19% of the criterion variance.

## 7. Discussion

The results of the research indicate that Croatian preschool teachers and school teachers tend to be exposed to moderate stress levels at their workplace. The emergence of the COVID-19 pandemic in Croatia had an increasing effect on the stress levels in the teacher profession in general, when which corresponds to findings of other studies conducted around the world (Casimiro Urcos *et al.*, 2020; Hong *et al.*, 2021; Jakubowski and Sitko-Dominik, 2021; Klapproth *et al.*, 2020; Košir *et al.*, 2020; Oducato *et al.*, 2021; Ozamis-Etxebarria *et al.*, 2021; Vargas Rubilar and Oros, 2021). Both school and preschool teachers mostly experienced high stress levels during the first phase of the COVID-19 pandemic. We found that the emergence of the COVID-19 has led to a statistically significant increase in the stress levels in both preschool and school teaching work, and thus confirmed our initial hypothesis.

The results further show that during the COVID-19 pandemic, the biggest causes of stress for preschool teachers were the usual causes of stress, such as children's behavior, working conditions, relations with colleagues and management, which also aligned well with previous Croatian research (Klarin and Nenadić-Bilan, 2004; Sindik and Pavlović, 2016; Živčić-Bećirević and Smojver Ažić, 2005). School teachers, on the other hand, perceived causes of stress specifically related to the COVID-19 pandemic as more stressful, such as additional workloads, constant availability to students induced by the transition to an online mode of work, the impossibility of balancing between private

and work-related obligations and fact that work frustrations reflected onto their private life, which corresponds to findings from across the world and Croatia alike (see Boljat, 2020; Hong *et al.*, 2021; Košir *et al.*, 2020; Jakubowski and Sitko-Dominik, 2021). Even during the pandemic, preschool teachers and teachers experienced relatively low levels of alienation at work, but they also experienced slightly higher, moderate levels in terms of exhaustion. Furthermore, they rated problem-oriented coping and self-efficacy relatively highly. They received the most support from family and friends and the least from colleagues in kindergarten/school. Finally, both preschool and school teachers showed relatively high hopes for the future. In the end, the second hypothesis seems to have been only partially confirmed.

Considering the data from previous research (Alzueta *et al.*, 2020; Boljat, 2020; Hong *et al.*, 2021; Klapproth *et al.*, 2020; Ozamiz-Etxebarria *et al.*, 2021), it could be expected that older teachers and preschool teachers with more seniority generally experience higher stress levels at work. Our research showed that older preschool teachers and preschool teachers with more years in service experienced higher stress levels before and during the pandemic (with the exception of age and stress experiences which were not related during the pandemic in general), while as far as school teachers are concerned, we did not find a connection between the stress experiences and age or work experience, which could mean that the stress experiences was the same due to higher estimates of specific causes of stress during the pandemic regardless of the age/experience of the teacher. Considering the findings of previous studies done in Croatia (Domović *et al.*, 2010; Slišković *et al.*, 2016), it could also be expected that length of service of school and preschool teachers would be related to job burnout. However, we found significant correlations only between age and alienation on the sample of school teachers, that is younger teachers experienced greater alienation. The results of the research on the relationship between teacher seniority and job burnout were not conclusive; some studies did not establish differences, some found that older teachers were more susceptible to burnout and explained this in relation to the exhaustion process (Domović *et al.*, 2010), and some found that younger teachers were more susceptible to burnout, justifying it with the lack of coping strategies among younger teachers (Brewer and Shepard, 2004). Likewise, inconsistent research

results were also found in the relationship between the level of education and the stress experience. In our research, it was determined that a higher level of education was associated with greater stress experience and greater alienation before the pandemic, but only among teachers. It is possible that teachers with higher education had more professional responsibilities or felt that they were not paid enough for their work and therefore experienced a higher level of stress and alienation. As expected, the assessment of the causes of stress, both general ones and specifically, related to COVID-19, were found to have a positive mild to moderate correlation with the stress experiences before and during the pandemic, as well as with job burnout. Furthermore, we also expected that coping strategies and the level of social support would be related to the stress experiences, job burnout and hopes for the future. Our research, agreed with the previous ones (see Leiter *et al.*, 2014; Skaalvik and Skaalvik, 2007; 2014; Smetackova *et al.*, 2019), and it showed that preschool teachers and teachers who had greater social support, better relations with colleagues and the administration, greater cooperation in kindergarten/school, higher levels of self-efficacy and who relied on the problem coping strategies more frequently, assessed the stress experiences of work-related stress as lower, and the same goes for potential job burnout, whereas they had greater hopes for the future. On the other hand, school and preschool teachers who relied on emotion-focused coping more often, who had worse cooperation in kindergarten/school, worse relationships with colleagues at work, and lower social support experienced greater causes of stress and demonstrated a higher degree of job burnout. Interestingly, teachers who used problem avoidance strategies more often experienced less stress during the COVID-19 pandemic, expressed less exhaustion and had greater hopes for the future. Considering the stated, the third hypothesis also seems to have been only partially confirmed.

As for the significant predictors of the stress experiences, stress was experienced more strongly before and during the pandemic by preschool teachers who overestimated the causes of stress (both general and specific ones), as well as those who used emotion-focused coping strategies more often, older preschool teachers and preschool teachers with higher assessments of self-efficacy. These relationships between the variables were expected, except for the relationship between the

stress experiences during the pandemic and self-efficacy. The relationship between these two variables was not statistically significant, but self-efficacy was related to the assessment of the source of stress and emotion-focused coping (negatively), hence possibly resulting in suppression effect. Higher job burnout was experienced by preschool teachers who overestimated general causes of stress, as well as those who used more emotion-focused coping and less problem-focused coping strategies, and those who experienced less quality cooperation in kindergarten and less social support (alienation). Greater hopes for the future were expressed by preschool teachers who used emotion-focused coping strategies less, as well as those who used avoidance more frequently as a coping strategy, and had better social support and higher self-efficacy.

When it comes to school teachers, a greater stress experience before and during the pandemic was experienced by teachers who also highly assessed causes of stress, who relied on problem and emotion-focused coping strategies more often, who estimated their relations with colleagues and administration to be worse, and finally, and teachers with a higher level of education (before and during the pandemic). It is possible that teachers with higher levels of education had more professional obligations, which resulted in higher assessments of stress. Problem-oriented coping was not related to the stress experiences, but it turned out to be (positively) related to the assessment of cooperation in school and relations with colleagues and the administration, which again might be explained by potential suppression effects. Higher job burnout was experienced by younger teachers, as well as those who assessed general causes of stress highly, who experienced worse cooperation at school, social support, and finally, teachers who displayed lower self-efficacy. Teachers with higher levels of education experienced additional alienation, and teachers who mostly used emotion-focused coping strategies experienced exhaustion. Teachers who used problem-focused coping and avoidance, teachers who maintained better relationships with colleagues and administration and had better social support, as well as those who used less emotion-focused coping strategies, experienced greater hopes for the future.

## 8. Conclusion

The results of our study show that the emergence of the COVID-19 pandemic in Croatia had an increasing effect on the stress levels in both school and preschool teaching profession. The level of stress experienced by both groups was highest during the first wave of the pandemic compared to the times before and during the pandemic. Individual characteristics of school and preschool teachers, their causes of stress, coping strategies and social support have proven to be related to the stress experiences and job burnout, as well as hopes for the future. Nevertheless, when it comes to their predictive value (i.e., significant predictors), it tends to differ depending on the criterion variables and depending on the group of respondents.

The research provides an insight into stress experiences among preschool teachers and teachers during the COVID-19 pandemic (in the Croatian setting), and it contributes to the understanding of the relationship between the stress experiences during the pandemic and some individual characteristics (age, education, self-efficacy), causes of stress, coping strategies and social support. The research showed that, as far as school and preschool teachers are concerned, the primary protective factors in stress prevention were self-efficacy, coping strategies and social support from family and friends, as well as support from colleagues at work. Research results present relevant information in view of policies and practices that concern mental health protection planning for both preschool and school teachers.

Future research should address the level of cooperation between educational institutions, families, and local communities before and during the COVID-19, as well as to examine teachers' attitudes about the impact of the pandemic on their daily lives in more detail, especially in terms of balance between private and work matters.

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## ISKUSTVA I PREDIKTORI STRESA KOD ODGOJITELJA I NASTAVNIKA TIJEKOM COVID-19 PANDEMIJE

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*Cilj istraživanja bio je ispitati iskustva stresa kod odgojitelja i nastavnika tijekom COVID-19 pandemije te ispitati prediktivnu vrijednost nekih osobnih obilježja odgojitelja/nastavnika, izvora stresa, strategija suočavanja i socijalne podrške u objašnjenju doživljaja stresa, sagorijevanja na poslu i nade u budućnost. Online upitnik primijenjen je na uzorcima od 491 nastavnika i 316 odgojitelja. Rezultati su pokazali da su odgojitelji i nastavnici najvišu razinu stresa doživljavali tijekom prvog vala pandemije korona virusa te da je razina doživljenog stresa tijekom pandemije veća nego prije pandemije. Odgojitelji uobičajene izvore stresa doživljavaju snažnijim nego specifične izvore stresa vezane za pandemiju korona virusa, dok je kod nastavnika obrnuto. Osobna obilježja odgojitelja/nastavnika, izvori stresa, strategije suočavanja i socijalna podrška povezani su s razinom stresa i sagorijevanjem na poslu te nadom u budućnost, ali se prediktivna vrijednost odnosno značajni prediktori razlikuju ovisno o kriteriju i skupini ispitanika. Rezultati ukazuju na pozitivan doprinos samoeфикаsnosti, strategija suočavanja i socijalne podrške u doživljaju stresa kod odgojitelja i nastavnika tijekom pandemije korona virusa.*

**Ključne riječi:** *doživljaj stresa, pandemija koronavirusa, odgojitelji, nastavnici*