

BURNOUT IN HEALTHCARE PROFESSIONALS DURING COVID-19 PANDEMIC: CORRELATES AND PREDICTORS^a

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Abstract

The research presented in this paper is among the first attempts to research burnout at work in healthcare workers (HCWs) in Serbia during the COVID-19 pandemic. It is designed to examine the level, correlates and predictors of burnout in healthcare professionals of three healthcare institutions in Novi Sad, Serbia, during September 2020. The Copenhagen Burnout Inventory, work burnout scale (CBI-WB) was applied, and a questionnaire designed for research purposes to collect basic demographic data, information on the work environment and on the perception of working conditions, as well as on job satisfaction. The sample includes 133 respondents, 28 males and 105 females, aged 21 to 65. The obtained value on the CBI scale shows that on average subjects had a moderate to high degree of burnout symptoms; and 52.6% can be placed in category with a high level of burnout. Significantly higher values of burnout were registered in the employees in the Clinical Center of Vojvodina than in those in the Institute of Public Health of Vojvodina. Within the final model, which explained 57% of the variance of the criteria and which was statistically significant, predictors of a smaller number of symptoms of work related burnout were higher job satisfaction ($\beta = -.503$, $p < .001$) and less stress response ($\beta = .353$, $p < .001$), which led us to the conclusion that the level of burnout can be lowered by improving working conditions and atmosphere in teams, and by raising overall job satisfaction.

Key words: burnout, healthcare workers, COVID-19.

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ИЗГАРАЊЕ КОД ЗДРАВСТВЕНИХ РАДНИКА ТОКОМ ПАНДЕМИЈЕ КОВИД-19: КОРЕЛАТИ И ПРЕДИКТОРИ

Апстракт

Истраживање представљено у овом раду један је од првих покушаја испитивања изгарања на раду међу здравственим радницима у Србији током пандемије КОВИД-19. Дизајниран је да испита ниво, корелате и предикторе изгарања међу здравственим радницима три здравствене установе у Новом Саду, у Србији, током септембра 2020. Примењен је Копенхаген инвентар, скала изгарања на раду (СВИ-WB) и упитник креиран за потребе истраживања ради прикупљања основних демографских података, информација о радном окружењу и о перцепцији услова рада, као и о задовољству послом. Узорак укључује 133 испитаника, 28 мушкараца и 105 жена, старости од 21 до 65 година. Добијена вредност на скали СВИ показује да су у просеку испитаници имали умерен до висок степен изгарања, а да се 52,6% може сврстати у категорију са високим изгарањем, при чему су значајно веће вредности регистроване међу запосленима у Клиничком центру Војводине него међу онима у Институту за јавно здравље Војводине. У оквиру коначног модела, који је објаснио 57% варијансе критеријума и који је био статистички значајан, предиктори мањег броја симптома изгарања на раду били су веће задовољство послом ($\beta = -.503$, $p < .001$) и мањи стрес на раду ($\beta = .353$, $p < .001$), што нас је довело до закључка да се ниво сагоревања може смањити побољшањем услова рада и атмосфере у тимовима, те повећањем укупног задовољства послом.

Кључне речи: изгарање, здравствени радници, КОВИД-19.

INTRODUCTION

With the onset of the COVID-19 pandemic, healthcare professionals around the world, especially HCWs at the forefront, have experienced varying levels of work stress. Research worldwide shows very different results of stress experienced while working in a healthcare institution during the COVID-19 pandemic, from less than 60% of staff experiencing moderate stress in Wuhan, China at the very beginning of pandemic (Wang et al., 2020, p.1490), to 74.0% in Palestine among frontline HCWs at the same time (Maraqa, Nazzal & Zink, 2020).

Significant differences were noted across job categories for self-reported stress and resilience, with nurses reporting the highest stress scores and younger personnel higher stress and more resilience in some studies (Croghan, Chesak & Adusumalli, 2021).

A review of 14 COVID-19 related studies confirmed an extensive strain on HCWs due to stress, depression and anxiety (Bohlken, Schomig & Lemke, 2020).

The COVID-19 pandemic has placed HCWs in untenable stress while balancing the risk to themselves and others (Greenberg, Docherty & Gnanapragasam, 2020). Stress, which may be caused by physical, mental or emotional factors, has both physical and psychological consequences, e.g. increased allostatic load, fatigue, inattentiveness, mood disorders, addiction issues, job related injuries, and absenteeism (Cool &

Zappetti, 2019). Doctors who keep working despite experiencing signs of burnout are more likely to have decreased work productivity, exhaustion and poor quality of care when compared to their earlier performance. Additionally, it can also increase the economic burden of training and recruiting new staff members when efficient physicians quit due to the inability to handle stress (Patel, Bachu & Adikey, 2018). It was emphasized earlier that future research is indicated to include well-designed randomized controlled trials and standardized measurement tools (Chesak, Cutshall, Bowe, 2019).

During a pandemic, HCWs are among the highest risk (Salazar de Pablo, Vaquerizo-Serrano & Catalan, 2020). They are highly stressed by overtime work, shortage of personal protective equipment (PPE) and training, long-term self-isolation, stigma, high exposure to patients' death, and the risk of infection or death to self and family (Adiukwu, Bytyc & Hayek, 2020).

Direct exposure to the high level of distress during the COVID-19 pandemic seems to increase the risk of professional burnout with adverse outcomes for the whole organization (Patel et al, 2018).

Burnout syndrome is defined as the result of chronic stress in the workplace that has not been successfully resolved. It is characterized by three dimensions: feeling of exhaustion or loss of energy; increased mental distance from the work done or feelings of negativity or cynicism about one's work; and a sense of inefficiency and lack of achievement (Schaufeli, Leiter & Maslach, 2009). In general, the COVID-19 pandemic seemed emotionally draining, but some authors claim that it encouraged HCWs to have a sense of personal achievement due to work and commitment (Jakovljevic, Stojanovic & Nikolic Turnic, 2021).

Some studies show that all three burnout dimensions (personal, work-related, and client-related burnout) were associated with a specific set of covariates, including gender, marriage status, having children 12 years old or younger, education level, years of professional experience, frontline work, health problems and direct contact with infected people (Duarte, Teixeira & Castro, 2020).

The study presented in this paper is among the first attempts to research work burnout among HCW in Serbia. It is designed to examine the level, as well as correlates and predictors of burnout in healthcare professionals.

We examined employees in two health institutions, the Clinical Center of Vojvodina (CCV) and the Institute of Public Health of Vojvodina (IPHV). Although HCWs in these institutions perform different types of work, generally all of them have experienced some changes in working conditions since the beginning of the COVID-19 pandemic. Some, but not all, employees in CCV have been in direct contact with Covid patients. They have worked in Covid wards, called "orange zones" (wards with patients who are suspected, but not yet confirmed, to have

Covid infection) and “red zones“ (wards with patients diagnosed as having Covid infection). In IPHV, employees do not work directly with hospital patients, but the staff includes virologists and epidemiologists, as well as HCWs who have been doing the Covid testing, and had contact with infected sampled materials. In addition, IPHV employees were exposed to increased demands for epidemiological surveys and data processing. They were obliged to report the number of infected individuals and the number of deaths due to COVID-19 on a daily basis, and to maintain relations with the media, in conditions of permanent public pressure. Finally, some of them were facing increased demands for educating population on how to prevent the spreading of the virus. Employees in both institutions were engaged in jobs that they had not done before, with increased workload, night shifts and overtime work, and all tasks were performed with less available staff. Having in mind the aforementioned, we thought it made sense to expect an increased level of burn-out symptoms in HCWs, and this research is an opportunity to check this expectation, and to compare burn-out levels in both institutions.

Objectives of the study were the following:

1. To examine the perception of working conditions (degree of stress during work, atmosphere in the regular work environment, workload during the pandemic, atmosphere in COVID-teams, satisfaction with the leader of the COVID-team);
2. To register general job satisfaction among respondents;
3. To examine the level, as well as correlates and predictors of burnout in healthcare professionals.

METHOD

Description of the research sample - demographic data and work description

The sample consisted of 133 respondents, 28 males (21.1%) and 105 females (78.9%). The age of the respondents ranged from 21 to 65 years, and the average was 41 years (SD = 10.43). The largest number of respondents lives with family - a partner and children (41.4%). Nearly 1/10 of the sample (11.3%) lives alone. The remaining respondents (47.3%) live only with a partner, only with children, with parents or in an extended family.

Most of the respondents are employed at the Clinical Center of Vojvodina/CCV (Klinički centar Vojvodine, KCV), 85 of them (63.9%). Among other respondents, 43 (32.3%) are employed at the Institute of Public Health of Vojvodina/IPHV (Institut za javno zdravlje Vojvodine, IZJZV) and 5 (3.8%) at Healthcare Centers in Novi Sad (Dom zdravlja Novi Sad). HCWs from the Health Centers were included only in the analyzes that were conducted on the entire sample.

A smaller part of the sample consists of medical doctors, 35 of them (26.3%), while the rest are medical technicians, health associates and technical staff (N = 98, 73.7%).

Table 1 shows the tasks performed by the respondents at the time of the survey, and Table 2 shows the workload related to the situation, in terms of increased amount of work and duration of the engagement directly related to the pandemic.

Table 1. Jobs performed during the pandemic

	f	%	f-CCV	f-IPHV
Non - pandemic activities	38	28.6	22	14
Work in Covid zones - the red (N=28) and the orange zone (N=20)	48	36.1	48	0
Other (laboratory, data entry, employee / public education)	47	35.3	15	29
Total	133	100.0	85	43

Table 1 shows an equal number (slightly more than a third) of respondents were engaged in direct work with Covid patients (red and orange zone - 36%), as well as in jobs related to the pandemic that do not involve direct contact with patients (data entry, employee / public education - 35%). A slightly smaller number (29%) did not directly perform tasks related to the pandemic, and among them there are employees in both CCV and IPHV.

Although the respondents who are engaged in the red and orange zones are all employees of CCV, in the last group (category "other") there are also employees of CCV, and not only IPHV, because CCV also has a laboratory service, pharmacy, administrative and technical workers.

Table 2. Workload during the pandemic

	f	%	f-CCV	f-IPHV
I was not engaged in work related to the pandemic	31	23.3	17	13
I was not engaged, but the workload increased due to the pandemic	20	15.0	11	6
Less than three months	35	26.3	25	10
More than three months	47	35.3	32	14
Total	133	100.0	85	49

Instruments

A questionnaire designed for research purposes was used to collect basic demographic data, information on the work environment and on the perception of working conditions, as well as on the job satisfaction. A question regarding job satisfaction was taken from the instrument used in the national employee satisfaction survey (study entitled "Analysis of

employee satisfaction in state health institutions“) conducted annually by the Institute of Public Health of Serbia “Dr Milan Jovanovic Batut“ (Jovanović, 2019, Jovanović & Horozović, 2020). The question was “How tense, stressed or pressured are you when doing your job?”, and the answering scale was five-point with a range of grades from 1 - not at all, to 5 - very much)¹.

The Copenhagen Burnout Inventory, work burnout subscale (Kristensen, Borritz, Villadsen & Christensen 2005; adaptation in Serbian, Berat, Jelić & Popov, 2016) was used to assess burnout at work. The original article by the authors of the scale (Kristensen et al., 2005) lists a number of advantages that this instrument has over the most commonly used Maslach Burnout Inventory (MBI, Maslach & Jackson, 1981). Following the publication of this article, several studies were conducted that have used the CBI and tested its psychometric characteristics. These studies have concluded that the instrument is suitable for stress assessment within different professions and in different parts of the world (Milfont, Denny, Ameratunga, Robinson & Merry, 2008; Biggs & Brough, 2006; Winwood & Winefield, 2004; Yeh, Cheng, Chen, Hu & Kristensen, 2007; according to: Berat et al., 2016). The novel methodological studies found that this inventory (CBI) is a good instrument for investigating work burnout among the HCWs during the outbreak of the COVID-19 epidemic (Talaee, Varahram & Jamaati, 2020).

CBI - WB is a scale for measuring intensity of burnout syndrome. It assesses the degree of physical and mental fatigue and exhaustion that a person experiences related to his/her work. It consists of seven items (eg. “Is your work emotionally exhausting?”), with a five-point response scale (from never/almost never to always). Original scoring was used (the answer never/almost never counted as 0, rarely as 25, sometimes as 50, often as 75 and always as 100), and the total score was obtained as the arithmetic mean of the answers to all seven items. The reliability of the instrument within this study was satisfactory ($\alpha = .895$). In analysing data on burnout, we chose scores of 25 or lower, 25 to 50, and higher than 50, to categorize low, intermediate and high burnout, as it was done in one study where CBI was used (Caesar, Barakat, Bernard & Butler, 2020).

Procedure

The research was conducted during September 2020, about six months since the beginning of the COVID-19 pandemic. The instruments were administered through the Google forms platform, so that respondents did not leave any personal data. The consents of the Ethics Commit-

¹ <https://www.batut.org.rs/download/izvestaji/Analiza%20zadovoljstvo%20zaposlenih%202018.pdf> (p. 40)

tees of the involved institutions were obtained for conducting the research.

RESULTS

Perception of working conditions

Respondents were asked to rate the degree of stress they were exposed to while doing their job. The results are shown in Table 3.

Table 3 Degree of stress when doing work (How tense, stressed or pressured are you when doing your work?)

	f	%	Cumulative %	f-CCV	f-IPHV
Extremely (5)	17	12.8	12.8	16	1
Very much (4)	34	25.6	38.4	26	7
Moderate (3)	64	48.1	86.5	37	25
Little (2)	12	9.0	95.5	4	7
None (1)	6	4.5	100.0	2	3

The average grade of stress was $M = 3.33$ ($SD = .97$), which is close to the theoretical arithmetic mean and corresponds to moderate level of stress. When the employees in CCV ($M = 3.59$) and IPHV ($M = 2.91$) were compared according to the degree of stress, the difference was statistically significant ($t(126) = 4.042$; $p < .001$), indicating that the stress level is higher in employees in CCV. In the categories with high levels of stress, employees in CCV predominate.

It is important to note that almost half of the respondents (48%) are under moderate stress, and that more than 1/3, according to their estimates, experience high stress while doing their work.

When asked about the atmosphere in the regular work environment in the health institution where they are employed, the respondents gave answers shown in Table 4.

Table 4 Assessment of the atmosphere in the regular working environment

	f	%	Cumulative %	f-CCV	f-IPHV
Worst possible (1)	18	13.5	13.5	18	0
Poor (2)	23	17.3	30.8	21	1
Neither bad nor good (3)	50	37.6	68.4	290	19
Good (4)	33	24.8	93.2	13	18
Best possible (5)	9	6.8	100.0	4	5

The average score of the atmosphere in the work environment was $M = 2.94$ ($SD = 1.11$), which is the theoretical mean score on the scale used. When employees in CCV ($M = 2.58$) and IPHV ($M = 3.63$) were compared, the difference was statistically significant ($t(126) = 6.380$; $p < .001$). The atmosphere in the work environment was rated as worst by

employees in CCV. It can be seen that 30% of respondents rate the atmosphere in a regular work environment as the worst possible or as poor, and almost all of them are the employees of CCV.

Respondents were asked how much they are additionally exhausted by engaging in work related to the epidemic. The answers are shown in Table 5.

Table 5 Answers to the question about the workload related to the epidemic

	f	%
More exhausting	62	46.6
Equally exhausting	24	18.0
Less exhausting	4	3.0
I was not engaged	41	30.8

The results show that almost half of the respondents estimate that their work related to the epidemic additionally exhausts them.

The difference between CCV and IPHV employees was not statistically significant (Mann Whitney U = 775,500; p = .431).

The answers to the question about the atmosphere within the teams engaged in epidemic-related work ("COVID-teams") are shown in Table 6.

Table 6 Atmosphere within teams engaged in epidemic-related work

	f	% (Valid %*)	Valid cumulative %
Extremely good (5)	28	21.4 (31.1)	31.1
Mostly good (4)	33	25.2 (36.6)	67.8
Neither good nor bad (3)	17	13.0 (18.8)	86.7
Mostly bad (2)	7	5.3 (7.7)	94.5
Extremely poor (1)	5	3.8 (5.5)	100.0
I was not engaged	41	30.8 -	

* - percentage within the number of respondents who were engaged in jobs related to the epidemic

The table shows that two thirds of the respondents who were engaged in work related to the COVID-19 epidemic assess the atmosphere within COVID-teams as very good or good.

The answers of the employees in CCV and IPHV were compared and it was obtained that the atmosphere is better in the COVID-teams in IPHV (M = 4.36) than in CCV (M = 3.55), and the difference was statistically significant (t(88) = -3.060, p < .01).

The next question refers to the feeling of personal and professional safety provided by the leader of the COVID-team.

Table 7. Answers to the question of how much respondents had a sense of personal and professional support provided by the COVID-team leader

	f	% (Valid %*)	Valid cumulative %
Yes, exceptionally (5)	13	9.8 (14.1)	14.1
Yes, to a significant extent (4)	25	18.8 (27.2)	41.3
Yes, moderate (3)	16	12.0 (17.4)	58.7
Yes, to a lesser extent (2)	12	9.0 (13.0)	71.7
No, not at all (1)	26	19.5 (28.3)	100.0
I was not engaged	41	30.8 -	

* - percentage within the number of respondents who were engaged in jobs related to the epidemic

It can be seen from the table that 40% of the respondents felt sufficiently supported (exceptionally and to a significant extent). Together with those who felt moderately supported, that makes up almost 60%.

In this case also, difference between those employed in CCV and IPHV was statistically significant ($t(88) = -3,401, p < .001$). Respondents engaged in COVID-teams in IPHV ($M = 4.36$) had a greater sense of support than in CCV ($M = 3.56$).

Overall job satisfaction

The last question from this group refers to the global job satisfaction. The task of the respondents was to rate job satisfaction on a five-point scale, where 1 means complete dissatisfaction, and 5 complete satisfaction. The frequencies of individual grades are shown in Table 8.

Table 8 Frequencies of individual job satisfaction ratings

	f	%	Cumulative %	f-CCV	f-IPHV
Very dissatisfied (1)	14	10.5	10.5	14	0
Dissatisfied (2)	23	17.3	27.8	20	2
Neither satisfied nor dissatisfied (3)	42	31.6	59.4	24	16
Satisfied (4)	47	35.3	94.7	24	21
Very satisfied (5)	7	5.3	100.0	3	4

The average grade of job satisfaction was 3.08 ($SD = 1.08$), and a comparison of employees in CCV ($M = 2.79$) and IPHV ($M = 3.63$) showed statistically significant difference ($t(126) = -4.413; p < .001$), indicating greater satisfaction in employees in IPHV.

Then, the percentage of satisfied and very satisfied is 40.6%. The percentage of indifferent in this survey is 31.6%. Finally, nearly 30% of respondents were (very) dissatisfied in this research and almost all of them are employees of CCV.

Burnout in healthcare workers, correlates and predictors

Table 9 shows the basic descriptive data related to burnout at work in HCW.

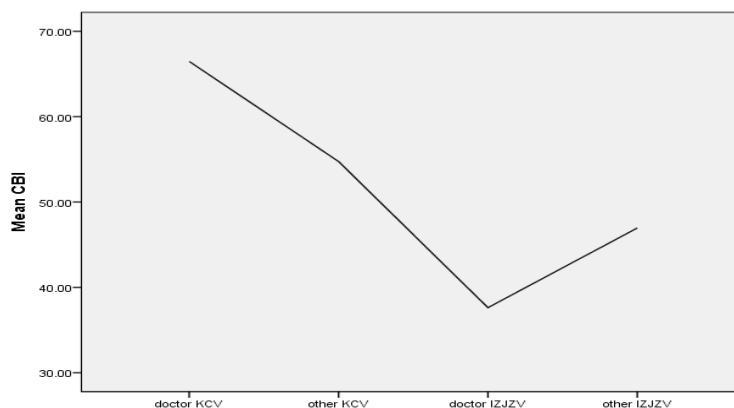
Table 9 Descriptive data on burnout in HCW

N	Min	Max	Mean	SD	Skew.	Kurt.
133	3.57	100.00	52.236	21.748	.087	-.432

The obtained values show that the arithmetic mean, 52.2, is close to the theoretical one, which, having in mind the answer scale, means that on average subjects had a moderate to high degree of burnout symptoms. We obtained the following distribution of participants into the categories: 13% (N = 17) have low, 34.4% (N = 45) have moderate, and 52.6 (N = 69) have high level of burnout.

Statistically significant difference was obtained according to sex of the respondents ($t(129) = 2.072$; $p < .05$), indicating that average burnout was higher in men (M = 59.69) than in women (M = 50.21). (There was no difference in terms of occupation - doctor or other - between men and women.) Statistically significant difference ($t(126) = 3.496$; $p < .01$) was registered between respondents employed in CCV (M = 57.23) and in IPHV (M = 43.62).

Having in mind the large difference obtained between HCWs in CCV and IPHV, four groups were compared: doctors in CCV (N = 18), other employees in CCV (N = 67), doctors in IPHV (N = 15) and other employees in IPHV (N = 27). A statistically significant difference was obtained between these four groups ($F(3) = 6.502$; $p < .01$). The results are presented graphically.

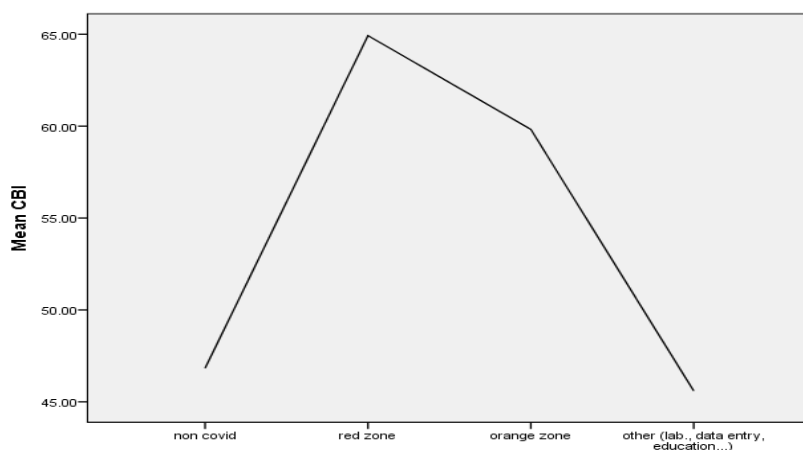


Graph 1. Differences between groups of respondents by place of employment and occupation

Post-hoc analysis (by LSD method) showed that doctors in CCV differ from all other groups and have the highest degree of burnout ($M = 66.47$). The lowest burnout exists in IPHV doctors, but it does not differ statistically significantly from the burnout in other IPHV employees, only in relation to CCV employees (both doctors and others).

Burnout and working conditions

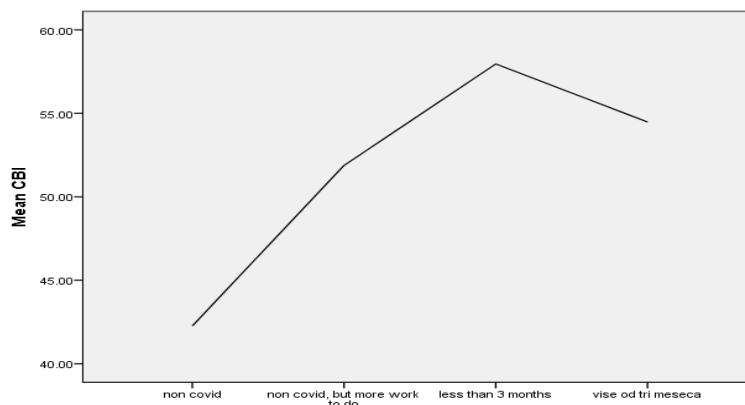
The level of burnout related to engagement in various jobs was examined. Four groups were compared: employees who were not engaged in the COVID-zones ($N = 36$), employees who worked in red zones most of the time ($N = 28$), those who were engaged in orange zones most of the time ($N = 20$) and those who were not in the zones, but were engaged in other pandemic-related jobs ($N = 47$). Statistically significant differences were obtained ($F(3) = 7.058$; $p < .01$). The results are presented graphically.



Graph 2. Differences between respondents engaged in different jobs - zones

Post-hoc tests show that those who were employed in COVID-zones differ statistically significantly from those who were not. There are no differences between employees in the red ($M = 64.92$) and orange zones ($M = 59.82$), nor between those who performed various jobs outside COVID-zones.

Differences were examined among groups of those who did not work in COVID-zones ($N = 30$); did not work, but had an increased workload due to COVID ($N = 19$); those who worked less than three months ($N = 35$); and more than three months ($N = 47$) in COVID-zones. Statistically significant difference was obtained ($F(3) = 3.239$; $p < .05$). The results are presented graphically.



Graph 3. Differences between groups of respondents formed on the basis of the duration of the pandemic-related engagement

Post-hoc analysis shows that those who did not have contact with COVID have fewer burnout symptoms than those who have worked on COVID related matters for less than three months. Other differences were not statistically significant.

Burnout and perception of working conditions

To explore this question, correlations of the score on the burnout scale with the following variables was examined: experience of stress at work, atmosphere in the work environment, workload related to the pandemic, atmosphere within the COVID-team, support by the COVID-team leader and overall job satisfaction. The obtained coefficients are shown in Table 10.

Table 10 Correlations between the examined variables (Spearman ρ)

	Stress at work	Atmosphere	Workload ¹	Atmosphere in a COVID-team ¹	Support ¹	Total satisfaction
Burnout (CBI)	.631**	-.512**	-.034	-.276**	-.381**	-.672**
Stress at work		-.530**	-.265*	-.287**	-.391**	-.552**
Atmosphere			.041	.533**	.581**	.684**
Workload ¹				.157	-.073	.079
Atmosphere in a COVID-team ¹					.622**	.433**
Support ¹						.561**

¹ – to calculate the correlations of these variables with others, a sample of N = 92 subjects was used, i.e. respondents who were not engaged in work related to COVID were excluded

* - p<.05

** - p<.01

The table shows that all the examined variables are related to burnout at work, excluding the experience of workload related to the pandemic. The better the working conditions are assessed (better atmosphere in general and in COVID-teams, greater support by the leader of the COVID-team and greater overall satisfaction), the fewer burnout symptoms appear. The other variables are in medium to high correlations with each other, as well as with the variable total satisfaction.

Predictors of work burnout

In order to examine what the most important factors that predict the occurrence of burnout at work are, and due to high intercorrelations among variables, linear regression, stepwise method, was conducted. It included all variables that were previously shown to be related to work burnout (gender, institution of employment, work in COVID zones, length of pandemic-related engagement, degree of stress at work, atmosphere in the work environment, workload related to the pandemic, atmosphere in COVID-teams, overall job satisfaction).

Within the final model, which explained 57% of the variance of the criteria and which was statistically significant ($F = 86.828$; $p < .001$), only two variables appeared to be significant predictors. This was the *overall job satisfaction* ($\beta = -.503$, $p < .001$) and the *degree of work stress* ($\beta = .353$, $p < .001$). The higher job satisfaction was and the less stress respondents had, the lower was the number of symptoms of work related burnout.

DISCUSSION

The results of our research show that almost half of the respondents (48%) are under moderate stress, and that more than 1/3, according to their estimates, experience high stress while doing their work. Similar number, around 30% of respondents, rate the atmosphere in the regular work environment as the worst possible or as bad. Employees in the clinical-hospital center (CCV) rated stress with higher marks and atmosphere with lower marks than the employees in the institute (IPHV).

It is a rough subjective assessment of stress levels, so it is difficult to compare the results of our research with the results of studies in which different methodologies were used. Some authors report lower stress levels (Wilson et al., 2020), while there are those who registered extremely high stress levels (Hall et al., 2020; Maraqa, Nazzal, Zink, 2020).

The results show that almost half of the respondents who were engaged in work related to COVID-19 estimate that their work related to the epidemic additionally exhausts them, although the majority of them assess the atmosphere within COVID-teams as good and leaders as supportive.

Job satisfaction ratings are at mean levels. Since the question was taken from the instrument used in the national employee satisfaction survey (Jovanović, 2019, Jovanović & Horozović, 2020), a comparison with previous results was possible. It shows that satisfaction ratings are relatively similar to those obtained in 2018 and 2019, indicating that job satisfaction has not changed during the pandemic. In the national surveys, similar percentages were obtained as in this study. In 2018, the percentage of satisfied and very satisfied was 43.3%, while now this percentage is 40.6%. The percentage of indifferent in previous surveys from year to year is about 35%, which is similar to the percentage obtained in this survey, 31.6%. Finally, 30% of respondents were (very) dissatisfied in this research, as well as in the national survey. In both studies, the employees in institutes rated satisfaction with higher marks than the employees in clinical-hospital centers.

The most important result concerns the level of burnout syndrome in the subjects. Descriptive data suggests that on average subjects had a moderate to high degree of burnout symptoms ($M = 52.2$, on the scale from 0 to 100), on the Copenhagen burnout inventory, work burnout scale (CBI). Within the study of the authors of CBI scale (PUMA study, Borritz et al., 2006), average values for 15 different professions were presented. Midwives had the highest score and it was 43.5, which is significantly less than in this study. The average score for the 15 occupations in the original study was 33.0 (doctors and technicians in this study had scores of 29.8 and 37.8). All values presented in the aforementioned study are lower than the average obtained in our research.

More than half (52.6%) of the respondents in our study have high levels of burnout, and only 13% had a low level if we chose scores of 25 or lower, 25 to 50, and higher than 50, to categorize low, intermediate and high burnout, like some authors do (Caesar, Barakat, Bernard & Butler, 2020).

An average, the score similar to one in our research was obtained in a survey conducted during April and May 2020 in the Republic of Serbia. It included 420 HCWs, and the same instrument was used. The average burnout score in this sample was 59.8 (Živanović, Blanuša, Knežević, Stojkov & Javorac, 2020).

The average CBI score in our survey (52.2) was slightly higher than in one of the first studies conducted by the same method, in May 2020, in Singapore (49.2) (Chor, Ng & Cheng, 2020).

All the examined variables concerning the subjective experience of working conditions are related to work burnout, except the experience of workload related to pandemic. The better the working conditions are assessed (better atmosphere in general and in the COVID-team, greater support by leaders of COVID-teams and greater overall satisfaction), the fewer burnout symptoms exist. Variables concerning the subjective experience of working conditions are in medium to high correlations with each

other, as well as with the variable total satisfaction, which indicates that differently formulated questions most likely referred to general subjective experience of job satisfaction in respondents.

Within the final model, only two variables appeared to be significant predictors of burnout. This was the *overall job satisfaction* and the *degree of work stress*. The higher job satisfaction was and the less stress respondents had, the lower was the number of symptoms of work related burnout.

A recent British study found that independent predictors of burnout included being younger, redeployment, exposure to patients with COVID-19, being female and a history of depression (Ferry, Wereski & Strachan, 2021).

A significant contribution of this research is that it demonstrated pattern of differences among HCWs in different institutions.

Differences were observed in almost all examined variables. IPHV employees had lower levels of stress, a better atmosphere in regular working conditions and in COVID-teams, and greater support by team leaders. When it comes to job satisfaction, in this study, as in the national survey conducted in 2018 (Jovanović, 2019) where data show that employees in institutes tend to rate satisfaction with the highest, and employees in clinical-hospital centers with the lowest marks. In 2019, employees in institutes were not in the first place in terms of average job satisfaction, but they rated it higher than employees in clinical-hospital centers (Jovanović, Horozović, 2020). The registered differences are certainly further emphasized due to differences in the organization of work in pandemic conditions.

Differences were registered also regarding burnout in terms of the employees in CCV having a higher degree of burnout, and convincingly the highest – the doctors in CCV.

There are studies that indicate that, although some professionals have a greater responsibility in the management of therapeutic interventions, higher education levels can be a protective factor against stress and hopelessness. In the study conducted during the first two months of lockdown due to the COVID-19 pandemic (Franza, Roberto & Pellegrino, 2020), the group of physicians and psychologists have, in fact, presented higher levels of job satisfaction (compassion, satisfaction) and lower burnout levels compared to other HCWs.

Interestingly, some studies on burnout even before the COVID-19 pandemic indicated that a non-patient-related problem (such as large administrative tasks), as well as human relation issues, were trigger factors for burnout (Verougstraete & Hachimi Idrissi, 2020).

We could conclude, based on the results, that six months after the beginning of the pandemic, moderate to high work burnout of HCWs was recorded. It was more pronounced among the employees of the clinical center and among those who were more engaged in COVID-related jobs. In addition to objective conditions, subjective factors were also signifi-

cant contributors to the severity of burnout. Especially general job satisfaction and assessment of stress at work.

In an attempt to provide answers as soon as possible, one study last year pointed out mobile health (mHealth) tools as promising to facilitate mental health self-management among HCWs. Simple methods such as breathing exercises, biofeedback and mindfulness can be utilized to mitigate acute episodes of stress and anxiety, while telehealth services can be used to enable peer-support and occupational counseling (Sasangohar, Jones & Masud, 2020).

The study of Shah, Chaudhari & Kamrai (2020) focuses on a proposal of firm preventive measures of burnout for HCWs, as follows: empower physicians by providing essential resources, consistent and updated guidelines regularly to staff for managing patients; recruit additional allied healthcare and administrative staff; extend the medical license that is set for renewal; facilitate the setup of telemedicine and telepsychiatry services to address the medical and psychiatric needs; provide support with clear communication from the leadership regarding directives, guidelines and management protocols; restrict excessive workload by scheduling breaks, limit work hours in emergency and intensive care units, and provide regular psychosocial support, essential basic needs, mindfulness sessions, and resilience training; ensure the safety and health of all staff members by the daily screening of vital signs, possible symptoms of infection, and signs of burnout, etc.

Having in mind the level of burnout, we believe that HCWs in their institutions should have permanently available psychological support. However, during the pandemic, that lasted at the time of writing this paper for almost a year and a half, few of them asked for help, according to the information obtained from psychologists working at CCV and IPHV. Therefore, significant data obtained by this research is that the level of burnout can be lowered by improving working conditions and atmosphere in teams, and by raising overall job satisfaction.

The limitations of this research are numerous. It was carried out at one point in time, six months after the start of the pandemic. We have no data on the levels of burnout before the pandemic, nor at the present moment. Furthermore, the participation in the research was voluntary. The link to the questionnaires was sent to a large number of employees, and we received answers from a small number of them. The question that remains open is whether those with lesser or those with higher degree of burnout answered our questionnaire. We hope that the study of this important topic will continue and that the results will be used to create measures aimed at the prevention of burnout in professionals who fight against the COVID-19 virus pandemic every day.

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ИЗГАРАЊЕ КОД ЗДРАВСТВЕНИХ РАДНИКА ТОКОМ ПАНДЕМИЈЕ КОВИД-19: КОРЕЛАТИ И ПРЕДИКТОРИ

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Резиме

Истраживање представљено у овом раду један је од првих покушаја испитивања изгарања на раду међу здравственим радницима у Србији током пандемије КОВИД-19. Дизајниран је да испита ниво, корелате и предикторе изгарања међу здравственим радницима три здравствене установе у Новом Саду, у Србији, током септембра 2020. Циљеви истраживања били су: (1) Испитивање субјективне процене услова на раду (степен стреса приликом обављања посла, атмосфера у редовном радном окружењу, оптерећење послом за време пандемије, атмосфера у ковид тиму, задовољство руководиоцем ковид тима); (2) Испитивање генералног задовољства послом код испитаника и (3) Испитивање нивоа, као и корелата и предиктора изгарања код здравствених радника. Узорак је чинило укупно 133 испитаника, 28 мушког (21.1%) и 105 женског пола (78.9%). Опсег узраста испитаника кретао се од 21 до 65 година, а просечна старост износила је 41 годину (СД=10.43). Већина испитаника су запослени у Клиничком центру Војводине, њих 85 (63.9%). Међу осталим испитаницима 43 (32.3%) су запослени у Институту за јавно здравље Војводине и 5 (3.8%) у Дому здравља Нови Сад. Мањи део узорка чине лекари, њих 35 (26.3%), док су остатак медицински техничари, здравствени сарадници и техничко особље (N = 98, 73.7%). За прикупљање основних демографских података, информација о радном окружењу и о субјективној процени услова на раду, као и задовољства послом коришћен је упитник конструисан за потребе истраживања. За процену изгарања на раду коришћен је Копенхаген инвентар изгарања, скала изгарања на раду (Copenhagen Burnout Inventory, work burnout CBI-WB, Kristensen et al., 2005; адаптација на српски, Попов, 2009). CBI-WB представља скалу за мерење интензитета синдрома сагоревања. Она процењује степен физичког и психичког умора и исцрпљености који особа доживљава у вези са својим послом. На скали од 1 до 5, просечна оцена стреса била је 3,33, просечна оцена атмосфере у радном окружењу 2,94 и просечна оцена задовољства послом 3,08, са значајно већим вредностима међу запосленима у Клиничком центру Војводине него међу онима у Институту за јавно здравље. Добијена вредност на скали CBI показује да су у просеку испитаници имали умерен до висок степен изгарања, а да се 52,6% може сврстати у категорију са високим изгарањем, при чему су значајно веће вредности регистроване међу запосленима у Клиничком центру Војводине него међу онима у Институту за јавно здравље Војводине. У оквиру коначног модела, који је објаснио 57% варијансе критеријума и који је био статистички значајан, предиктори мањег броја симптома сагоревања на послу били су веће задовољство послом ($\beta = -.503, n < .001$) и мањи стрес на раду ($\beta = .353, n < .001$), што нас је довело до закључка да се ниво сагоревања може смањити побољшањем услова рада и атмосфере у тимовима, те повећањем укупног задовољства послом.