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Burnout syndrome among employees in a clinical center in Montenegro during COVID-19

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Abstract. – OBJECTIVE: Burnout syndrome occurs as a result of the influence of stressors in the workplace. The chronic disproportion between the demands placed on the worker and the resources available to fulfill the demands makes a significant contribution to the development of this syndrome. The occurrence of burnout syndrome has been shown to occur in a wide range of jobs, and it is taking on epidemic proportions among healthcare workers. So far, there have been no large-scale studies dealing with burnout syndrome in healthcare workers in Montenegro.

SUBJECTS AND METHODS: The research was conducted as a cross-sectional study. All full-time employees of the Clinical Center of Montenegro who participated in the treatment of patients with COVID-19 during 2020 and 2021 were included in the research. Questionnaires used in the research were: a general questionnaire for collecting socio-demographic data, a questionnaire for the assessment of burnout syndrome at work - Maslach Burnout Inventory and a COVID-19 stress scale.

RESULTS: The prevalence of burnout syndrome was 16.8% among employees who were engaged around COVID-19 patients. Predictors of burnout syndrome identified were occupation (nurses/technicians have a 2.8 times higher chance of burnout syndrome than doctors as a reference category), confirmed COVID-19 infection (subjects with confirmed COVID-19 infection have more than 2 times higher chance for burnout syndrome), higher CSS scores (subjects with high CSS score have a 3% higher chance of developing burnout syndrome).

CONCLUSIONS: In order to reduce losses due to reduced productivity of employees and prevent long-term detrimental consequences on the mental health of employees, evidence-based preventive measures are needed.

Key Words:
Burnout syndrome, COVID-19, Healthcare workers, Montenegro.

Introduction

The COVID-19 pandemic started in China in December 2019 and has quickly spread to the entire world. This pandemic has been especially challenging for many healthcare workers (HCWs) as they have dealt with an increasing number of patients in need of treatments and insecurities regarding the novelty of the virus, but in many countries, they also faced the lack of personal protective equipment (PPE) use and even higher workload and decrease in staffing as a consequence of many of them being infected with the virus[1]. Additionally, healthcare professionals faced longer shifts, disruption of sleep patterns, disruption of an overall work-life balance, and fear of exposing family members to the severe acute respiratory distress coronavirus 2 (SARS-CoV-2)[2]. Due to the novelty of the virus and the lack of valid information, there have been challenges in communication between the scientific community and healthcare professionals working in the healthcare system and there has commonly been a lack of updated information both on the virus and on the disease[2]. The challenges the health care professionals faced could have led to the higher likelihood of the development of different mental health issues, mainly burnout syndrome[1,3-5].

Burnout syndrome is a significant problem in modern workplace environments and its prev-

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alence has increased substantially during the COVID-19 pandemic[6]. Burnout syndrome has been included in the International Classification of Diseases 11th version (ICD-11) and has been conceptualized as a result of chronic stress at the workplace that has not been managed successfully. According to the ICD-11 definition, it is characterized by three dimensions: emotional exhaustion, depersonalization and low personal accomplishment[1,7,8].

The literature data showed great heterogeneity in the prevalence of burnout, due to considerable disagreement in the health literature on what precisely constitutes burnout and how it is measured[9]. A recent systematic review and meta-analysis[10] on burnout among HCWs during COVID-19 included thirty observational studies and showed that almost half of the healthcare workers experienced burnout during the pandemic. In the studies that were encompassed, non-frontline COVID-19-exposed healthcare personnel also experienced burnout. In addition, as the results of this study showed there was a gradient in the prevalence of total burnout, emotional exhaustion, and lack of personal accomplishment, further studies on burnout in low and lower-middle-income countries were suggested. Therefore, the aim of this study was to fill the gap in the existing literature and to examine the prevalence of burnout syndrome among healthcare workers in a Clinical Centre in Montenegro, as well as determine factors associated with burnout syndrome during the COVID-19 pandemic.

Subjects and Methods

The cross-sectional study was conducted between July and October 2021. The study included all full-time employees in a Clinical Centre in Montenegro. All employees of KC Montenegro who meet the inclusion criteria and have agreed to participate were included in the research. The exclusion criteria were being away from work for more than 12 months, multiple job changes during the past 5 years, and the existence of psychological or physical trauma prior to the study. After arriving at the department, the participants were informed about the research objectives and asked to sign a consent form for participation in the study. Upon giving consent, the participants were provided with paper questionnaires.

The instrument used was a questionnaire, specifically designed for the purposes of this study and contained sections on sociodemographic characteristics, work environment characteristics, COVID-19 work and exposure, Maslach burnout inventory and COVID-19 stress scale (CSS).

The section on socio-demographic characteristics included questions on participants' sex, age, marital status, and lifestyle characteristics (alcohol consumption, smoking habits and sedative use). The section on work environment characteristics referred to the occupation, duration of employment, overtime and work in shifts, as well as the type of contract (fixed-term *vs.* tenure). The section on COVID-19 work and exposure contained questions on the type of work with COVID-19 patients (occasional or continuous or no work), attitudes toward PPE, the influence of the pandemic on finances, COVID-19 vaccination and infection status.

For the assessment of burnout syndrome, the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) was used[4]. This questionnaire contains 22 items that measure three domains of burnout: emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA). The scoring was done in accordance with the manual for use of the questionnaire[11]. Based on the scores on these three scales and on the instructions for scoring, participants were classified into two groups: with and without burnout syndrome. The participants were classified in terms of their burnout level using the Maslach Burnout Inventory (MBI), which discerns three dimensions of burnout: high level of emotional exhaustion, high level of depersonalization and reduced sense of accomplishment[12].

The COVID-19 stress scale was used to examine distress associated with the pandemic. The questionnaire contains 34 items in which the answers are presented on a 5-point Likert scale (0 - not at all/never to 4 - very/almost always)[13]. The Maslach Burnout Inventory and COVID-19 stress scale (CSS) have been validated in the Serbian context[14,15].

Statistical Analysis

Statistical analyses were performed using the methods of descriptive and analytical statistics. The differences between the categorical variables were examined using the Fisher test and Hi-square test, and the differences in numerical variables were examined using *t*-test and Mann-Whitney test. The normality was examined using the Kolmogorov-Smirnov test. Logistic regression with burnout syndrome as an outcome variable was used as the method for analyzing bi-

Table I. Characteristics of the participants with and without burnout syndrome.

Characteristics	Burnout syndrome N (%)	No burnout syndrome N (%)	*p*-value
Sex			
Male	14 (33.3%)	92 (35.8%)	
Female	28 (66.7%)	165 (64.2%)	0.757
Age, mean±sd	39.7±10.5	37.4±11.6	0.297
Marital status			
Single	20 (47.6%)	112 (43.6%)	
Married	15 (35.7%)	125 (48.6%)	
Divorced	7 (16.7%)	20 (7.8%)	0.101
Alcohol consumption	14 (33.3%)	48 (18.7%)	0.030
Smoking	25 (59.5%)	124 (48.2%)	0.175
Use of sedatives	1 (2.4%)	8 (3.1%)	1.000

nary outcomes and potential predictors. All analyses were done using the Statistical Package for Social Sciences (SPSS 22.0; IBM Corp., Armonk, NY, USA). All *p*-values lower than 0.05 were considered significant.

Results

The study included a total of 299 participants, predominantly females (193-64.5%), with an average age of 37.7±11.4 years (range 18 to 65). More than half of the participants were nurses (160-53.5%), just over one quarter were doctors (83-27.8%) and other occupations made up around one-fifth of the participants (18.7-56%).

The average score of the MBI-HSS scale for emotional exhaustion was 23.5±12.1 (high EE - 122-40.8%; medium - 81-27.1%; low - 96-32.1%), of the depersonalization scale, 7.8±7.0 (high DE - 79-22.4%; medium - 67-22.4%; low - 153-51.2%) and for the personal accomplishment scale, the average score was 31.6±10.8 (high PA - 88-29.4%; medium - 76-25.4%; low - 135-45.2%). The prevalence of burnout syndrome was 14% (42 participants).

Participants with burnout reported alcohol consumption in a significantly higher percentage. The social and lifestyle characteristics of the participants with and without burnout syndrome are presented in Table I.

Participants with burnout syndrome had significantly longer employment years, compared to participants without burnout syndrome (16.1±10.1 *vs.* 12.3±103 years, p=0.014). The employment and work environment characteristics of the participants in both groups are presented in Table II.

Characteristics of COVID-19 pandemic-associated variables in both groups are presented in Table III. Participants with burnout syndrome had a significantly higher frequency of occasional work with COVID-19 patients (31.0% *vs.* 17.9%, p=0.049), significantly higher COVID-19 infection frequency (61.9% *vs.* 44.4%, p=0.035), and significantly higher CSS score (42.8±24.0 *vs.* 28.1±20.8, p<0.001).

The multivariate logistic model included predictors that were significant in univariate analyses and that are known from other studies to be predictors of burnout syndrome. The multivariate model was statistically significant (p<0.001) (Hosmer and Lemeshow Test p=0.186; Nagelkerke R^2=0.18. AUC=0.76). There was no multicollinearity between the predictors. Residuals of the model are approximately normally distributed.

Multivariate logistic regression analysis with burnout syndrome as an outcome variable showed that being a nurse (OR: 2.77, 95% CI: 1.04-7.38), having confirmed COVID-19 infection (OR: 2.08, 95% CI: 1.02-4.26) and CSS score (OR: 1.03, 95% CI: 1.01-1.05) was associated with burnout syndrome. The results of the multivariate logistic regression analyses are shown in Table IV.

Discussion

This study aimed to examine the prevalence of burnout syndrome among HCWs working in a

Table II. Employment and work environment characteristics.

Characteristics	Burnout syndrome N (%)	No burnout syndrome N (%)	*p*-value
Occupation			
Doctor	6 (14.3%)	77 (30.0%)	
Nurse	25 (59.5%)	135 (52.5%)	
Other	11 (26.2%)	45 (17.5%)	0.083
Employment in years, median (range)	16.0 (1.0-40.0)	9.0 (1.0-47.0)	**0.014**
Shifts			
Only one	9 (21.4%)	40 (15.6%)	
Two (morning and afternoon)	7 (16.7%)	43 (16.7%)	
12-hour shift	18 (42.9%)	111 (43.2%)	
Morning+nights (24 h)	8 (19.0%)	63 (24.5%)	0.750
Working overtime	11 (26.2%)	80 (31.3%)	0.509
Contract			
Fixed term	5 (11.9%)	61 (23.8%)	
Tenure	37 (88.1%)	195 (76.2%)	0.085

Table III. COVID-19 exposure.

Characteristics	Burnout syndrome N (%)	No burnout syndrome N (%)	*p*-value
COVID-19 work	35 (83.3%)	208 (80.9%)	0.712
COVID-19 work			
Continuous or not at all	29 (69.0%)	211 (82.1%)	**0.049**
Occasional	13 (31.0%)	46 (17.9%)	
Adequate PPE			
Completely disagree	1 (2.4%)	7 (2.7%)	0.647
Disagree	8 (19.0%)	63 (24.5%)	
Agree	27 (64.3%)	147 (57.2%)	
Completely agree	6 (14.3%)	40 (15.6%)	
Enough knowledge on COVID-19			
Completely disagree	3 (7.1%)	13 (5.1%)	
Disagree	5 (11.9%)	70 (27.2%)	0.810
Agree	24 (57.1%)	92 (35.8%)	
Completely agree	10 (23.8%)	82 (31.9%)	
Pandemic influence on finances			
Completely disagree	13 (31.0%)	46 (18.0%)	
Disagree	11 (26.2%)	80 (30.9%)	0.087
Agree	14 (33.3%)	86 (33.6%)	
Completely agree	4 (9.5%)	45 (17.6%)	
Quarantined	27 (64.3%)	156 (60.9%)	0.680
COVID-19 infection	26 (61.9%)	114 (44.4%)	0.035
Compliance with vaccination recommendations			
Completely disagree	5 (12.2%)	27 (10.5%)	0.380
Disagree	2 (4.9%)	23 (9.0%)	
Agree	17 (41.5%)	73 (28.5%)	
Completely agree	17 (41.5%)	134 (52.0%)	
CSS score, median (range)	43.5 (2.0-122.0)	24.0 (0.0-76.0)	**<0.001**

PPE: personal protective equipment; CSS: COVID-19 stress scale.

Clinical Center in Montenegro, and to the best of our knowledge, is the largest study on burnout in this population in Montenegro.

Our results showed that 14.0% of the participants experienced burnout syndrome. The pre-pandemic reported prevalence of burnout syndrome among healthcare workers varies between 15.4%[16] and 85.1%[13]. A systematic review[17], which investigated burnout syndrome among physicians during the pandemic, identified vari-

ous levels of burnout syndrome that ranged from 14.7 to 90.4%. Similarly, a study[18] that aimed to systematically review the studies on burnout among nurses during the pandemic demonstrated that four out of seven articles reviewed reported that nurses experienced a moderate level of burnout, while three articles reported high levels of burnout among nurses. Although the prevalence of burnout in our study was lower in comparison to other studies, it is still concerning as one in seven HCWs had scores on MBI-HSS indicative of burnout syndrome. Additionally, more than two-thirds of the participants had scores indicative of moderate or high emotional exhaustion. The lack of skills and especially the possibility to balance personal and work life during the pandemic can lead to the development of emotional exhaustion, which was present in such a high percentage among our participants. During the pandemic, there has commonly been a deficit in material and human resources, so the differences between the work requirements and available resources could also lead to the development of burnout[19]. Although the overall prevalence of burnout syndrome itself was not as high in our study, high emotional exhaustion may be the initial presentation of it, and the longer duration of the pandemic can eventually lead to a higher frequency of burnout itself.

Our study also showed that nurses had almost three times higher likelihood for burnout compared to physicians, which is in accordance with the previously reported results. For example, a recent survey[20] that investigated coping with COVID-19 found that 50% of physicians and even 60% of nurses experienced burnout. Furthermore, a recent study[21] found high rates of burnout among all clinicians during the pandemic, while nurses were identified as clinicians at particularly high risk for developing burnout. It is considered that a higher likelihood for burnout among nurses is associated with prolonged patient contact, expectations to be patient, caring, empathetic, frequent lack of resources, and additional work obligations such as administrative work[22,23]. Additionally, some individual factors, such as lack of coping skills and resilience, can also be associated with burnout syndrome among nurses. These factors can be influenced by preventive interventions; further studies among nurses in Montenegro are necessary in order to examine if these individual factors truly influence burnout and in which percentage[22].

In our study, another factor associated with burnout syndrome was the longer duration of employment. In contrast to our results, a study[24] that examined sociodemographic and occupational factors associated with burnout among frontline healthcare workers showed that burnout was the highest among those with fewer years of experience. Furthermore, a Spanish multicenter study[25] also confirmed that the low number of years of experience was more often associated with the tendency to develop burnout.

People with confirmed COVID-19 infection have more than 2 times higher chance for burnout syndrome, which is consistent with previous findings[26,27]. The pandemics and epidemics are known for their association with stress and anxiety, especially among HCWs who are not only affected by the outbreak and a high number of patients but are also commonly facing changes in protocols and usual work routines.

Table IV. Univariate and multivariate logistic regression analyses with burnout syndrome as an outcome variable.

	Univariate logistic regression		Multivariate logistic regression	
Variable	**OR (95% CI)**	***p*-value**	**OR (95% CI)**	***p*-value**
Occupation				
Doctor (reference)	-	-	-	-
Nurse	2.38 (0.93-6.05)	0.069	2.77 (1.04-7.38)	0.041
Other	3.14 (1.09-9.06)	0.035	2.57 (0.84-7.85)	0.098
Employment in years	1.03 (1-1.06)	0.030	1.03 (0.99-4.71)	0.085
COVID-19 work (occasional *vs*. not at all or continuous)	2.06 (0.99-4.26)	0.052	2.16 (0.99-4.71)	0.054
COVID-19 infection	2.04 (1.04-3.98)	0.037	2.08 (1.02-4.26)	0.044
CSS score	1.03 (1.01-1.05)	<0.001	1.0 (1.01-1.05)	<0.001

CSS- COVID-19 stress scale; OR-Odds Ratio; CI-Confidence Interval.

Limitations of the Study

Despite the fact that this is the largest study on the topic of burnout syndrome in Montenegro conducted in the largest tertiary healthcare institution in the country, some limitations need to be mentioned. Firstly, as we used a self-reporting questionnaire in data collection, self-reporting bias cannot be excluded. Secondly, nearly two-thirds of the study sample consisted of women, and this disparity in gender distribution could have potentially impacted the findings of the study. It is evident that the overrepresentation of female participants indicates a potential sampling bias. Finally, a cross-sectional study design enabled us to establish the causal relationship between the variables. Therefore, future longitudinal research is needed to resolve this problem.

Conclusions

This study showed that one in seven HCWs in the largest tertiary health care center in Montenegro experienced burnout syndrome during the COVID-19 pandemic. The existence of burnout syndrome among employees was associated with being a nurse, reported COVID-19 infection and higher CSS scores. In order to reduce losses due to reduced productivity of employees and to prevent detrimental long-term consequences on the mental health of employees, evidence-based preventive measures are needed.

Conflict of Interest

The authors declare that they have no conflict of interests.

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Ethics Approval

The study was approved by the Ethical Committee of the Clinical Centre of Montenegro (No. 03/01-10292/1).

Informed Consent

An informed consent form was obtained from the participants before participating in the study.

Availability of Data and Materials

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Authors' Contributions

Dragana Backović, Dragana Jovanović: conception and design of the study; Zoran Bukumiric: analysis and interpretation of data; All authors: drafting the article and making critical revisions related to the relevant intellectual content of the manuscript.

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