BURNOUT SYNDROME OF NURSES/TECHNICIANS IN THE COVID-19 PANDEMIC AT UNIVERSITY CLINICAL HOSPITAL MOSTAR

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ABSTRACT

Introduction: Burnout syndrome results from chronic stress at work combined with ineffective coping with stress. Medical workers belong to the occupations with the highest percentages of burnout syndrome, which has been further increased by the crisis caused by the COVID-19 pandemic.

Objective: To identify the symptoms and risk factors for the development of burnout syndrome in nurses/technicians during the COVID-19 pandemic.

Subjects and methods: A prospective study was conducted with a survey for symptoms and risk factors for the development of burnout syndrome among nurses/technicians of the University Clinical Hospital (UCH) Mostar in the COVID wards, during the COVID-19 pandemic, in July and August of 2021. A survey questionnaire specially created for this research was used, and data analysis was performed in the program SPSS.

Results: All nurses and technicians felt exhaustion while working in the COVID wards, they were worried about infecting their family members, and the vast majority had severe headaches and were irritable. Most of the respondents had demanding working hours, were overloaded with work and insufficiently informed about this new disease. However, most nurses/technicians did not show serious symptoms such as anxiety, concentration problems, high blood pressure, emotional exhaustion, depression, or suicidal thoughts. Almost everyone experienced a sense of belonging to the team and good mutual communication.

Conclusion: The research indicates a significant risk of burnout syndrome among nurses and technicians while working with COVID-19 patients. Therefore, it is very important to recognize the development of this syndrome in time, and to develop a strategy for prevention, treatment, and rehabilitation of these persons.

Keywords: nurses/technicians, burnout syndrome, COVID-19, healthcare system.

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INTRODUCTION

Coronavirus-2 (SARS-CoV-2) is a new virus that appeared at the end of 2019 in Wuhan, China, and is recognized as the cause of an epidemic of severe pneumonia. Today, this coronavirus disease is called COVID-19 and has spread in the form of a pandemic on a global level (1, 2). The disease is transmitted mainly by droplets, but also by touching contaminated surfaces and by the feco-oral route (2,3). The spectrum of symptomatic infection with SARS-CoV-2 ranges from mild to critical clinical conditions, including acute respiratory distress syndrome (ARDS), acute renal failure, heart failure, or fatal outcome (4,5). Most patients experience mild symptoms and have a good prognosis (6).

Burnout syndrome results from chronic stress at work combined with ineffective coping with stress (7). Chronic workload-related stress is often treated as depression or left untreated (8). Symptoms include difficulty concentrating, irritability, insomnia, muscle pain, dizziness and palpitations (9). For a diagnosis, symptoms must be present for at least two weeks, with significant suffering and reduced ability to work, excluding other diagnoses or abuse of psychoactive substances (9).

Stages of burnout syndrome:

- Work enthusiasm: strong energy, unrealistic expectations, job satisfaction.
- Stagnation: awareness of inability to cope with workload, feeling of frustration, communication problems.
- Emotional withdrawal: isolation from colleagues, physical symptoms such as headaches and insomnia.
- Apathy: loss of motivation, minimal engagement, loss of self-confidence and communication problems (9, 10).

Research shows that medical workers are exposed to a much higher level of stress at the workplace compared to the general population under normal circumstances, and are exposed to a higher risk of psychosomatic diseases (10, 11). Nevertheless, a person exposed to stress still uses various strategies to cope with stress, has the will and motivation to fight, but when the burnout syndrome occurs, the person feels a great loss of motivation, no longer wants to go to work, psychological and somatic complaints intensify and has feeling as if there is no more strength to fight (12). Health care workers, nurses and doctors belong to the professions with the highest percentages of burnout syndrome, which was further increased by the crisis caused by the pandemic of the disease COVID-19 (13, 14). Front-line medical staff are under increased psychological

burden during the pandemic, with higher levels of stress, anxiety and depression than second-line medical staff.

In 2020, in the United States, 54% of nurses and technicians had burnout syndrome (15). Nurses are exposed to psychosocial risks that can impair both psychological and somatic health due to stressful conditions, and prolonged stress can lead to burnout syndrome. An important protective factor against psychosocial risks is emotional intelligence, which is associated with physical and psychological health, job satisfaction, increased commitment to work and reduced burnout (16).

Since the review of previous research systematically indicates an increase in the symptoms of burnout syndrome during the COVID-19 pandemic, the main goal of this research is to identify the symptoms and risk factors for the occurrence of burnout syndrome in nurses/technicians of the UCH in Mostar who worked in the COVID wards, during this pandemic.

SUBJECTS AND METHODS

A prospective study was conducted with a survey for symptoms and risk factors for the occurrence of burnout syndrome, which was completed by 60 nurses/technicians of UCH Mostar who worked on the COVID wards, during the COVID-19 pandemic, in July and August of 2021. A survey questionnaire specially created for this research was used with a set of questions that included basic information about healthcare workers, such as demographic characteristics (age, gender, profession, workplace, work experience in the profession, work in the COVID department, having recovered from SARS-CoV-2 infection), then questions about the symptoms that appeared among the respondents and are related to burnout syndromes (insomnia, anxiety, problems with concentration, fatigue, irritability, headache, increased blood pressure, emotional exhaustion). At the end of the questionnaire, there were questions about risk factors for the occurrence of burnout syndrome (was there enough equipment for personal protection, were they sufficiently informed about this new disease, were they overloaded with work, did they have a sense of belonging to the team, was there good communication between employees, were the working conditions difficult and demanding working hours, and enough time for rest). The survey was conducted by a person outside the research team to ensure anonymity, and the researcher did not participate in the survey process.

Statistical analysis

Statistical software SPSS (Statistical Package for Social Sciences) for Windows (version 17.0, SPSS Inc. Chicago, Illinois, USA) was used for statistical data processing. Category variables were presented by descriptive statistics in the form of frequency and percentage, while continuous variables were presented as arithmetic mean and standard deviation.

RESULTS

Table 1 shows the basic descriptive parameters for the age and length of service of the respondents. Out of a total of 60 respondents, the youngest was 21 and the oldest 45. The average age was 28.70 (SD ± 6.515) years. The length of service of the respondents ranged from one year to 23 years. The average length of service was 6.02 (SD±5.770) years.

Table 1. - *Descriptive parameters for the age and work experience of the respondents*

	N	Minimum value	Maximum value	Average deviation	Standard. deviation
Age	60	21	45	28.70	6.515
Length of service	59	1	23	6.02	5.770

Figure 1 shows the distribution of respondents by gender. In this research, there were more women (76.67%) than men (23.33%).

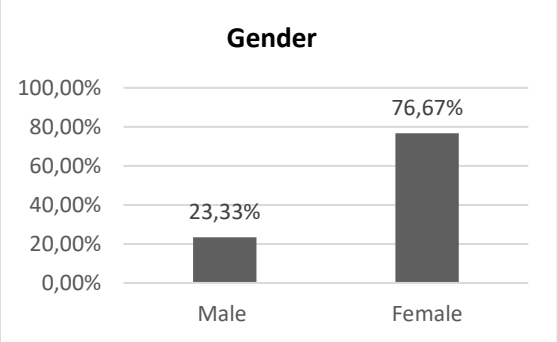

Figure 1. - *Respondents gender*

Figure 2 shows that the largest percentage of respondents had a secondary education (81.67%) followed by a higher education (16.67%), while the least number of respondents had a university education (1.67%).

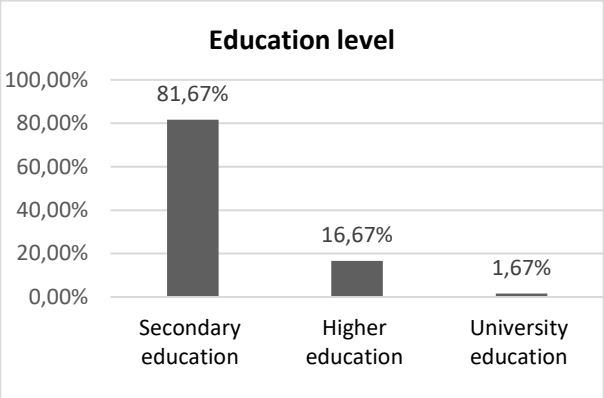

Figure 2. - *Education level of respondents*

The respondents were employees of different hospital departments. Graph 3. clearly shows that the highest percentage of respondents was from the infectious department (44.07%), followed by respondents from the surgery department (16.95%), while the representation of respondents from the internal medicine department (1.69%) and sterilization (1.69%) was very small. Representation of other respondents was 8.47% from the otorhinolaryngology department, 6.78% from the psychiatry department, and equally (5.08%) from the urology and neurosurgery departments, and equally (3.39%) from the gynecology department (3.39%), ophthalmology (3.39%) and pulmonology (3.39%) (Figure 3).

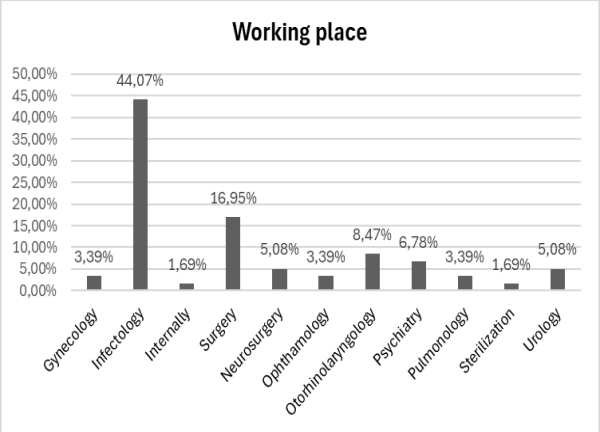

Figure 3. - *Respondents' workplaces*

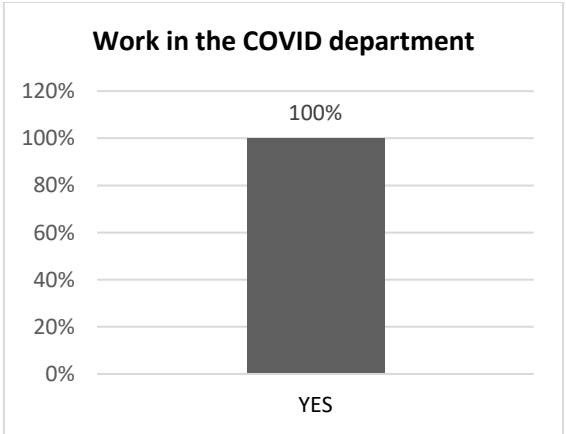

Figure 4. - *Representation of work in the COVID department*

Despite their primary departments, all respondents in this research worked in the COVID department (Figure 4).

Most respondents (65%) had already recovered from a SARS-CoV-2 infection, while the remaining 35% had not yet been infected (Figure 5).

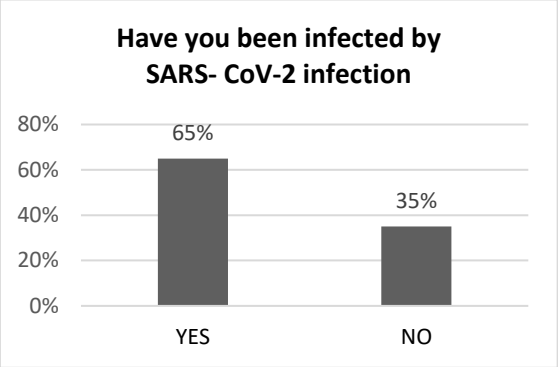

Figure 5. - *Representation of recovery from SARS-Cov-2 infection*

Burn-out syndrome symptoms

Table 2 shows the results of the frequency analysis of respondents' responses to questions related to the symptoms of burnout syndrome while working in the COVID ward. Namely, all respondents felt tired while working with COVID-19 patients and all were worried about infecting their family members. The vast majority (91.7%) had a headache, and 60% of them were irritable. Slightly less than half of the respondents (48.3%) had insomnia or were emotionally exhausted (41.7%). Furthermore, about 1/3 of nurses and technicians were anxious (36.7%) or had problems with concentration (33.3%) or had elevated blood pressure (28.3%). Only a small number (16.7%) of respondents were depressed, and almost no one thought about suicide.

Table 2. - *Frequencies of responses to questions related to symptoms of burnout syndrome while working in the COVID department*

The presence of symptoms of burnout syndrome while working in the COVID ward	Yes		No		I don't know	
	f	%	f	%	f	%
insomnia	29	48.3	31	51.7	0	0
anxiety	22	36.7	36	60.0	2	3.3
Concentration problems	20	33.3	37	61.7	3	5.0
tiredness	60	100.0	0	0	0	0
irritability	36	60.0	17	28.3	7	11.7
headache	55	91.7	3	5.0	2	3.3
Elevated blood pressure	17	28.3	20	33.3	23	38.3
emotional exhaustion	25	41.7	35	58.3	0	0
concern about the transmission of infection to members of their family	60	100.0	0	0	0	0
depression	10	16.7	49	81.7	1	1.7
Suicide thoughts	1	1.7	59	98.3	0	0

Risk factors associated with burnout syndrome

Table 3 shows the results of the frequency analysis of respondents' responses to questions related to risk factors for burnout syndrome while working in the COVID department. Most respondents (81.7%) had demanding working hours, were overloaded with work (63.3%), had difficult working conditions (60%), and they were not sufficiently informed about this new disease (57.6%). In contrast, a very high percentage of respondents while working in the COVID department had a sense of belonging to a team (95%), good communication among employees (91.7%) and sufficient equipment for personal protection (93.3%).

Table 3. - *Frequencies of responses to questions related to risk factors for burnout syndrome while working in the COVID ward*

The presence of risk factors for burnout syndrome while working in the COVID ward	Yes		No		I don't know	
	f	%	f	%	f	%
there was not enough equipment for personal protection	20	33.3	36	60.0	4	6.7
I was not informed enough about this new disease	34	56.7	23	38.3	3	5.0
I was not sufficiently informed about the procedures related to the patient	23	38.3	36	60.0	1	1.7
I was overwhelmed with work	38	63.3	21	35.0	1	1.7
There was no fairness	19	31.7	35	58.3	6	10.0
I had a feeling of belonging to a team	57	95.0	1	1.7	2	3.3
there was good communication between the employees	55	91.7	3	5.0	2	3.3
we had difficult working conditions	36	60.0	19	31.7	5	8.3
I had demanding working hours	49	81.7	11	18.3	0	0
there was not enough time to rest	25	41.7	35	58.3	0	0

DISCUSSION

Burnout syndrome, gradually developing as a result of long-term professional stress, represents a challenge for medical personnel. Caring for patients with different needs often requires a lot of effort and patience. Working with serious diseases further increases the burden, as medical staff not only take care of the physical health of patients, but also provide important psychological support (15, 16). Overtime, common in medical professions, often leads to neglect of personal life and needs. Night work can have a negative effect on psychophysical health, which is aggravated by constant stress and the high demands of the job. The cumulative process of burnout syndrome develops slowly, with initial warning symptoms, and years of work can pass before serious psychological and emotional problems manifest, often resulting in a loss of motivation to work (17, 18). Previous research indicates that nurses and technicians who have worked with COVID-19 patients experience burnout syndrome more often than those who have no contact with these patients (19). Our study, focused only on nurses and technicians in the COVID department of UCH Mostar, suggests similar results, but we cannot compare them with certainty to those working in other departments, since in this study we did not survey nurses and technicians who worked in other departments. Analysis of risk factors shows that working hours, work overload, difficult working conditions and lack of information about the disease are associated with burnout syndrome (19). Our respondents emphasized the feeling of belonging to the team, good mutual

communication and sufficient equipment for personal protection as protective factors. The review of other studies (19-22) shows variations in the association of burnout syndrome with age, gender and length of service. Our study with the majority participation of women (76.67%) does not reveal significant differences in the burnout syndrome between the sexes. However, the average age of 28.70 years and working experience of 6.02 years are possible limitations that affect the results. Our results do not confirm a statistically significant correlation between burnout syndrome and length of work with COVID-19 patients, but this may be a consequence of the limited number of subjects and the specific conditions of the pandemic (19).

CONCLUSION

Research indicates a significant risk of burnout syndrome among nurses and technicians while working with COVID-19 patients. Therefore, it is very important to recognize the development of this syndrome in time, and to develop a strategy for prevention, treatment, and rehabilitation of these persons.

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SINDROM SAGORIJEVANJA MEDICINSKIH SESTARA/TEHNIČARA U PANDEMIJI COVID-19 U SVEUČILIŠNOJ KLINIČKOJ BOLNICI MOSTAR

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SAŽETAK

Uvod: Sindrom sagorijevanja proizlazi iz kroničnog stresa na poslu uz neučinkovito suočavanje sa stresom. Medicinski radnici pripadaju zanimanjima koja imaju najveće postotke sindroma sagorijevanja, što je dodatno povećano krizom koju je izazvala pandemija COVID-19.

Cilj**:** Prepoznati simptome i čimbenike rizika za razvoj sindroma sagorijevanja kod medicinskih sestara/tehničara tijekom pandemije COVID-19.

Ispitanici i metode**:** Provedeno je prospektivno istraživanje s anketom za simptome i čimbenike rizika za razvoj sindroma sagorijevanja među medicinskim sestrama/tehničarima Sveučilišne kliničke bolnice (SKB) Mostar na COVID odjelima, tijekom pandemije COVID-19, u srpnju i kolovozu 2021. godine. Korišten je anketni upitnik namjenski sačinjen za ovo istraživanje, a analiza podataka izvršena je u SPSS programu.

Rezultati: Sve medicinski sestre i tehničari su tijekom rada na COVID odjelima osjećali umor, bili su zabrinuti da ne zaraze članove svoje obitelji, a velika većina je imala izraženu glavobolju te su bili razdražljivi. Većina ispitanika imala je zahtjevno radno vrijeme, bili su pretrpani poslom i nedovoljno informirani o ovoj novoj bolesti. Ipak, većina medicinskih sestara/tehničara nije pokazivala ozbiljne simptome poput anksioznosti, koncentracijskih problema, visokog krvnog tlaka, emocionalne iscrpljenosti, depresije ili suicidalnih misli. Gotovo svi su doživljavali osjećaj pripadnosti timu i dobru međusobnu komunikaciju.

Zaključak: Istraživanje ukazuje na značajan rizik od sindroma sagorijevanja među medicinskim sestrama i tehničarima u SKB Mostar tijekom rada s COVID-19 pacijentima. Stoga je vrlo važno na vrijeme prepoznati razvoj ovog sindroma, te razviti strategiju prevencije, liječenja i rehabilitacije tih osoba.

Ključne riječi: medicinske sestre/tehničari, sindrom sagorijevanja, COVID-19, zdravstveni sustav.

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