BURNOUT SYNDROME AMONG NURSES AT A MILITARY MEDICAL ACADEMY IN SERBIA

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SUMMARY

Objectives: Healthcare workers are the professional group at higher risk of burnout than others. It is the underlying reason for medical errors and the general decrease in quality of patient care and is related to poor patient-healthcare worker relationships. Healthcare workers who work with military personnel have specificities compared to healthcare workers who work only with civilians.

Methods: A cross-sectional study among 171 nurses at the Military Medical Academy was conducted. The questionnaire consisted of items regarding socio-demographic and socioeconomic characteristics, lifestyle characteristics, workplace environment, workplace stress, strategies of stress management, symptoms and signs of workplace-related stress, and the Serbian version of the Maslach Burnout Inventory.

Results: The prevalence of burnout was 46.2%. The multivariate logistic regression analysis showed that the burnout was associated with stating that they would not choose the same profession again (OR = 4.54, 95% CI: 1.53–14.50) and with not being interested in the work (OR = 4.86, 95% CI: 1.58–14.92).

Conclusion: The prevalence of burnout is relatively high among nurses at the Medical Military Academy in Belgrade and is associated with factors in the work environment.

Key words: burnout, health care, military health care, nurses

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INTRODUCTION

Burnout syndrome is associated with exposure to prolonged stress and frustration at work, characterized by exhaustion of physical or emotional strength (1, 2). Its features include distress, reduced work efficiency, decreased motivation, and dysfunctional attitudes and behaviours toward work (3). Burnout is common among people who care for others, such as teachers and social and healthcare workers (4), and results as a consequence of conflict between intentions and the reality of a job (3).

Healthcare workers are the professional group at higher risk of burnout than others (2). This is due to emotionally demanding patient contacts, constant dealing with death and illness, work overload, and time pressure (5). Healthcare workers face long working hours, lack of social support and shift work, all present risk factors for burnout (2, 5). Specialty choice, practice setting, lack of work-life balance, risk of malpractice suits, characteristics of treated patients, and methods healthcare workers use to deal with death influence the likelihood of development of burnout as well (6). Burnout is associated with alcohol and drug misuse, suicidal ideas, insomnia, and many physical symptoms, like neck and back pain (2, 7). Today it is the underlying reason for medical errors and the general decrease in quality of patient care (2). It also affects the healthcare worker-patient relationship (8). Another characteristic of burnout is that it is self-perpetuating because of inadequate coping mechanisms (3).

The most widely used categorization of symptoms of burnout recognizes three dimensions of it: emotional exhaustion, depersonalization and low personal accomplishment (4). Many studies examined the prevalence of burnout among healthcare workers. A study done in the US showed that almost three-quarters of surgical or internal medicine residents are faced with burnout (6). Among specialists, the burnout rate is over 50% (8). The prevalence of burnout is also high among physicians in the UK, and one study showed that almost one-third of them had burnout (4). Healthcare workers' burnout also influences patients' adherence to prescribed therapy, trust in healthcare workers, and satisfaction (6).

Previous studies have focused chiefly on organizational characteristics that lead to burnout, while personal characteristics have been neglected (9). Research on protective and risk factors can help create specific preventive interventions for burnout (10). Studies on socio-demographic characteristics report contrasting results, with some reporting that burnout prevalence decreases with age (10), while others showed the opposite (11). There are also differences between genders in burnout levels, with females having more emotional exhaustion and males more depersonali-

zation (9). Studies have shown that married individuals have a higher prevalence of burnout than unmarried ones (9), while those with children have a higher prevalence of emotional exhaustion (12). Organizational characteristics associated with burnout are workload, insufficient reward, job insecurity, and absence of fairness (13).

Serbia has faced years of political instability, war conflict, economic transition, and, lately, decreases in the personal income of healthcare workers in the public sector due to strict fiscal consolidation measures (14). These factors have been associated with the aging population and rise in the prevalence of chronic non-communicable diseases, which create more workload. On the other hand, there was a significant 'brain drain' with not only young physicians and nurses migrating to Western European countries but also specialists with years of experience (14).

There are differences between healthcare workers depending on the setting they work in, acute or chronic care hospitals, or different specialties (12). Military healthcare workers present a group with a higher risk of burnout (12), compared to other healthcare workers, due to high job requirements, but also altruistic military philosophy and stigma associated with working in mental health services.

The studies on burnout among healthcare workers in South-Eastern Europe are mostly done on a homogenous population working only in one medical area. However, the results show a high prevalence of burnout in these populations. For example, a study done among nurses working with terminally ill patients in Croatia showed the prevalence of burnout to be as high as 25% (15). The prevalence of burnout syndrome in Serbia has been studied on a sample of anaesthesiologists in teaching hospitals in Belgrade, which showed that the prevalence of burnout syndrome among the study population was higher than among anaesthesiologists in other European countries, it was 6.34% (14). The prevalence of burnout among 210 haemodialysis nurses was 42.9% (16).

The military healthcare system is partially integrated into the Serbian healthcare system. Since 2012 the Military Medical Academy, teaching hospital of the military healthcare system in Serbia, has been a part of the civilian public healthcare system. This has led to an increased workload and diversification of patients treated in the facility (17).

The aim of our study was to examine the prevalence of burnout syndrome among military healthcare workers as well as factors associated with the development of burnout syndrome among this specific population group.

MATERIALS AND METHODS

We conducted a cross-sectional study between 15 October and 30 December 2016 at the Military Medical Academy of Serbia. The study included 171 nurses from surgical and internal departments.

Questionnaire

The instruments used contained 58 questions regarding socio-demographic and socioeconomic characteristics, lifestyle characteristics, workplace environment, workplace stress, strategies of stress management, symptoms and signs of workplace-related stress, and the Serbian version of Maslach Burnout Inventory – Human Services Survey (16, 18), with 22 items divided into three scales, for determination of burnout domains: emotional exhaustion, depersonalization and low personal accomplishment. Details on the Serbian version of the Maslach Burnout Inventory – Human Services Survey are published elsewhere (16, 18).

The participants were asked to fill in the questionnaire during the day of the research at their department. All participants received oral information about the research, its processes and its aims and gave oral consent for participation.

Participants were divided into two groups based on a score in the Maslach burnout questionnaire: with burnout and without burnout. All participants with scores > 27 in emotional exhaustion and/or more than 10 for depersonalization or more than 40 on low personal accomplishment were considered to have burnout.

The Ethical Committee of the Serbian Military Medical Academy consented to the research on 12 October 2016.

Statistical Analysis

Results are presented as count (%), mean (standard deviation) or median (25–75th percentile). Pearson's chi-square test, chi-square test for trend (Cochran-Armitage test), t-test, and Mann-Whitney U test were used for group comparison. Logistic regression was used to assess independent factors associated with burnout. All p-values less than 0.05 were considered significant. All data were analysed using SPSS 20 (IBM Corp.) statistical software.

RESULTS

Seventy-nine out of 171 participants (46.2%) were classified as having burnout. The average age of all study participants was 35.75 ± 9.81, with a minimum of 20 and a maximum of 58 years. There were more female participants (87.1%).

Participants with and without burnout differed significantly in average age (37.82 ± 9.82 vs. 33.97 ± 9.50, p = 0.010) and in the percentages of participants owning an apartment (50.6% vs. 33.7%, p = 0.025).

The general characteristics of patients regarding burnout are presented in Table 1.

More than 90% (90.2%) of the participants without burnout stated that they would choose the same profession again, compared to 59.5% of the participants with burnout. Participants with burnout had tenured contracts in significantly higher percentage (83.5% vs. 62.0%, p = 0.002), had significantly more years of work experience (14.84 ± 9.80 years vs.10.50 ± 9.25 years, p = 0.009), and years of work at the current department (11.91 ± 9.53 years vs. 8.35 ± 8.13 years, p = 0.008). The characteristics of the current job are presented in Table 2.

Burnout was associated with stress, isolation, considering that close persons suffer, family time, time with friends and time for their own needs, feeling depressed or in a bad mood, hobbies, and not being interested in work (Table 3).

The average score on emotional exhaustion was 20.23 ± 13.85, on depersonalization 2.73 ± 4.51, and low personal accomplishment 37.27 ± 9.68.

Table 1. *General characteristics of patients and burnout (N = 171)*

		Burnout		p-value
		Yes (N = 79) n (%)	No (N = 92) n (%)	
Gender	Male	10 (12.7)	12 (13.0)	0.940[a]
	Female	69 (87.3)	80 (87.0)	
Age (years), mean (SD)		37.82 (9.82)	33.97 (9.50)	**0.010**[b]
Own apartment	Yes	40 (50.6)	31 (33.7)	**0.025**[a]
	No	39 (49.4)	61 (66.3)	
Living with someone	Yes	28 (35.4)	38 (41.3)	0.432[a]
	No	51 (64.6)	54 (58.7)	
Self-supporting	Yes	30 (38.0)	26 (28.3)	0.177[a]
	No	49 (62.0)	66 (71.7)	
Education	Secondary	50 (63.3)	61 (66.3)	0.874[c]
	College	11 (13.9)	13 (14.1)	
	Faculty	18 (22.8)	18 (19.6)	
Smoking	Yes	40 (50.6)	35 (38.0)	0.098[a]
	No	39 (49.4)	57 (62.0)	
Children	No	35 (44.3)	55 (59.8)	0.246[c]
	1	21 (26.6)	17 (18.5)	
	2	20 (25.3)	17 (18.5)	
	3+	3 (3.8)	3 (3.3)	

[a]Pearson's chi-square test; [b]t-test; [c]chi-square test for trend (Cochran-Armitage test)

Table 2. *Current job and burnout (N = 171)*

		Burnout		p-value
		Yes (N = 79) n (%)	No (N = 92) n (%)	
Managing position	Yes	66 (83.5)	83 (90.2)	0.194[a]
	No	13 (16.5)	9 (9.8)	
Chose the department where works	Yes	17 (21.5)	18 (19.6)	0.752[a]
	No	62 (78.5)	74 (80.4)	
Would choose the same profession if had a choice	Yes	47 (59.5)	83 (90.2)	**< 0.001**[a]
	No	32 (40.5)	9 (9.8)	
Secure position	Yes	35 (44.3)	49 (53.3)	0.243[a]
	No	55 (55.7)	43 (46.7)	
Work in shifts	Yes	50 (63.3)	62 (67.4)	0.574[a]
	No	29 (36.7)	30 (32.6)	
Night shifts	Yes	51 (64.6)	63 (68.5)	0.588[a]
	No	28 (35.4)	29 (31.5)	
Contract status	Tenured	66 (83.5)	57 (62.0)	**0.002**[a]
	Fixed-term contract	13 (16.5)	35 (38.0)	
Years of work experience, mean (SD)		14.84 (9.80)	10.95 (9.25)	**0.008**[b]
Years of work at the current department, mean (SD)		11.91 (9.53)	8.35 (8.13)	**0.009**[b]
Overtime (hours), mean (SD)		10.35 (6.54)	9.26 (4.90)	0.473[b]

[a]Pearson's chi-square test; [b]Mann-Whitney U test

Table 3. *Stress management strategies (N = 171)*

		Burnout		p-value[a]
		Yes (N = 79) n (%)	No (N = 92) n (%)	
Stress	Yes	67 (84.8)	50 (54.3)	**< 0.001**
	No	12 (15.2)	42 (45.7)	
Talking with family members	Yes	54 (73.0)	55 (70.5)	0.736
	No	20 (27.0)	23 (29.5)	
Talking with friends	Yes	53 (71.6)	45 (57.7)	0.073
	No	21 (28.4)	33 (42.3)	
Talking with colleagues	Yes	51 (68.9)	54 (69.2)	0.967
	No	23 (31.1)	24 (30.8)	
Isolation	Yes	12 (16.2)	3 (3.8)	0.011
	No	62 (83.8)	75 (96.2)	
Considering that close persons suffer	Yes	38 (48.1)	19 (20.7)	**< 0.001**
	No	41 (51.9)	73 (79.3)	
Having enough time with family	Yes	14 (17.7)	47 (51.1)	**< 0.001**
	No	65 (82.3)	45 (48.9)	
Having enough time with friends	Yes	9 (11.4)	42 (45.7)	**< 0.001**
	No	70 (88.6)	50 (54.3)	
Having enough time for self	Yes	11 (13.9)	40 (43.5)	**< 0.001**
	No	68 (86.1)	52 (56.5)	
Feeling depressed	Yes	30 (38.0)	14 (15.2)	**0.001**
	No	49 (62.0)	78 (84.8)	
Feeling in a bad mood	Yes	55 (69.6)	22 (23.9)	**0.001**
	No	24 (30.4)	70 (76.1)	
Time for hobbies	Yes	21 (26.6)	48 (52.2)	**< 0.001**
	No	58 (73.4)	44 (47.8)	
Not interested in work	Yes	51 (64.6)	15 (16.3)	**< 0.001**
	No	28 (35.4)	77 (83.7)	

[a]Pearson's chi-square test

The multivariate logistic regression analysis showed that the burnout was associated with stating that they would not choose the same profession again (OR = 4.54, 95% CI: 1.53–14.50) and with not being interested in the work (OR = 4.86, 95% CI: 1.58–14.92). The multivariate logistic regression analysis with burnout as an outcome variable is shown in Table 4.

DISCUSSION

Our study showed that almost half of the nurses at the Military Medical Academy in Belgrade have burnout, similar to the study done among haemodialysis nurses in Serbia (16) and among Japanese healthcare workers, where burnout was more than 40% (19). The reported prevalence of burnout among nurses varies significantly between 10% and almost 80%. However, the majority of the studies which examined burnout among nurses were focused on nurses in the high-stress environment. In our study, burnout was associated with not wanting to choose the same profession if given a chance and not being interested in the job. Some country-specific factors may influence the prevalence of burnout, as the country has gone through long periods of financial insecurities, wars, and sanctions, which all negatively influence the overall resilience of the working population (20). Additionally, some of these factors may have had a more significant influence on the personnel working in the military healthcare system, especially since they are working with active military members (17).

The average scores for emotional exhaustion and depersonalization were lower than in the studies of US Army healthcare personnel and US military orthopaedic surgeons (21, 22) compared to our study. However, some physicians in the US study have been deployed, unlike nurses in our research, who work with military personnel but were not in war zones. On the other hand, our participants had higher scores in the low personal accomplishment domain, possibly due to the economic situation and low salaries for the nurses in Serbia's public healthcare system. The average score on the emotional exhaustion scale for our participants was 20.23, similar to the average score on the emotional exhaustion scale of the haemodialysis nurses in Serbia (16). Our participants had similar average scores on depersonalization and low personal accomplishment scale as the haemodialysis nurses (16).

Table 4. *Logistic model with burnout as dependent variable (backward method)*

	OR (95% CI)
Age (years)	1.09 (0.96–1.22)
Own apartment	
Yes	1.0 (reference category)
No	1.34 (0.51–3.50)
Would choose the same profession if had a choice	
Yes	1.0 (reference category)
No	**4.54 (1.53–13.50)**
Contract status	
Tenured	1.0 (reference category)
Fixed-term contract	0.47 (0.16–1.36)
Years of work experience	0.94 (0.82–1.09)
Years of work at the current department	0.98 (0.90–1.08)
Stress	
Yes	1.96 (0.62–6.22)
No	1.0 (reference category)
Isolation	
Yes	2.75 (0.58–13.01)
No	1.0 (reference category)
Considering that close persons suffer	
Yes	0.66 (0.23–1.89)
No	1.0 (reference category)
Having enough time with family	
Yes	1.0 (reference category)
No	1.86 (0.67–5.17)
Having enough time with friends	
Yes	1.0 (reference category)
No	1.70 (0.47–6.13)
Having enough time for self	
Yes	1.0 (reference category)
No	0.88 (0.24–3.16)
Feeling depressed	
Yes	1.44 (0.54–3.82)
No	1.0 (reference category)
Feeling in a bad mood	
Yes	1.25 (0.39–4.01)
No	1.0 (reference category)
Time for hobbies	
Yes	1.0 (reference category)
No	0.64 (0.24–1.70)
Not interested in work	
Yes	**4.86 (1.58–14.92)**
No	1.0 (reference category)

Participants who stated that they would not choose the same job again had more than four times higher likelihood for burnout in our study. This result could be associated with the level of job satisfaction. Those with higher job satisfaction would be the ones who would, if given the opportunity, choose the same career again, as shown in a study of US surgical oncologists (23). These results are further supported by showing an almost five times higher likelihood of burnout among nurses who stated that they are not interested in their work. The association of these two variables with burnout, along with the lack of association of burnout with workplace characteristics or socio-demographic and socioeconomic characteristics, shows that the above-mentioned job satisfaction and job engagement may have a protective influence on burnout.

Many effects of shift work have been reported in previous studies, which potentially influence the quality of patient care (24, 25), and some have reported that burnout prevalence is higher among nurses with rotating shifts compared to nurses with fixed shifts (2, 26). On the other hand, some studies reported the opposite, that rotating shifts have a positive influence both on job satisfaction and on overall psychological well-being (27, 28). However, the shift work and the work in night shifts were not associated with burnout in our study.

The strength of this study is that it was the first study on burnout conducted among the personnel of the Military Medical Academy in Belgrade, which was not so long ago included in the civilian healthcare system. Due to the specificities of the military system on the one hand and the civilian public health sector on the other, the healthcare workers in the Military Medical Academy had to adapt to both systems. The main limitation of the study is its cross-sectional design, which does not allow the establishment of a causal relationship between the variables.

CONCLUSION

The study has shown that the nurses in the Military Medical Academy have a relatively high prevalence of burnout symptoms. Those who would not choose the same job again and have low interest in work have a higher likelihood of burnout. Unlike previous studies, which showed the social characteristics and the workplace environment to be strongly associated with burnout, our results indicate that the indicators of job satisfaction are the most important for the prediction of burnout. The managers in the healthcare system and especially in the military healthcare system, may need to improve the approach to the job satisfaction assessment and address the issues that may be shown after these assessments.

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Conflicts of Interest

None declared

Authors' Contribution

JT – preparation of the manuscript and data analysis; DN – data collection and idea for the research; IS – review of the manuscript final version and data analysis; MP – data collection and analysis; ZTS – preparation and revision of the manuscript, final revision of data analysis. All authors have agreed with the final version of the article.

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