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THE PREVALENCE OF STRESS AND BURNOUT SYNDROME IN HOSPITAL DOCTORS AND FAMILY PHYSICIANS

ZASTUPLJENOST STRESA I SINDROMA SAGOREVANJA NA POSLU KOD LEKARA U BOLNICAMA I PORODIČNIH LEKARA

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Summary

Introduction. Burnout syndrome is the result of chronic emotional stress. It is characterized by high levels of emotional exhaustion and depersonalization, and reduced level of personal accomplishment. The aim of this study was to determine the level of stress and risk for burnout syndrome in doctors employed in health centers and hospitals, and to investigate the impact of socio-demographic characteristics on the level of stress and the occurrence of burnout syndrome. **Material and Methods**. A cross-sectional study was conducted in the period from October 1 to December 31, 2015 in three health centers and in the University Clinical Center of the Republic of Srpska. The survey was anonymous. A socio-demographic questionnaire and a questionnaire for self-assessment of the level of stress and Maslach Burnout Inventory were used as research instruments. Out of 151 doctors included in the study, 49% were family physicians, and 51% were hospital doctors. **Results.** The analysis of responses to questionnaires for self-assessment of stress level revealed that 51.7% of participants had high levels of stress (52.7% of family physicians, 50.6% of doctors working in hospital). A high degree of emotional exhaustion was found in 27.2% of participants (29.7% of family physicians, 24.6% of doctors working in hospital), high depersonalization was found in 23.8% of participants (25.7% of family physicians, 22.1% of doctors working in hospital), a low level of personal accomplishment was found in 39.7% of participants (37.8% of family physicians, 41.6% of doctors working in hospital). No statistically significant difference regarding stress degree, emotional exhaustion and depersonalization and personal accomplishment was found between hospital doctors and family physicians. The physicians aged over 45 years had a significantly ($p = 0.030$) higher level of emotional exhaustion than their younger colleagues. **Conclusion.** This study found that there was a high risk of burnout syndrome in physicians in the Republic of Srpska. Although the exposure to professional stress was higher in family physicians than in hospital doctors, the obtained difference was not statistically significant.

Key words: Burnout, Professional; Stress, Psychological; Physicians; Physicians, Family; Risk Factors; Surveys and Questionnaires; Self-Assessment

Sažetak

Uvod. Sindrom sagorevanja na poslu je posledica hroničnog emocionalnog stresa, a karakteriše ga visok nivo emocionalne iscrpljenosti i depersonalizacije, kao i smanjen nivo lične ispunjenosti. Cilj ovog rada je da se utvrdi nivo stresa i rizik za obolevanje od sindroma sagorevanja na poslu kod lekara zaposlenih u domovima zdravlja i bolnici, te da se ispita uticaj sociodemografskih karakteristika na nivo stresa i nastanak sindroma sagorevanja. **Materijal i metode.** Studija preseka je sprovedena u periodu od 1. oktobra do 31. decembra 2015. godine u tri doma zdravlja i Univerzitetskom kliničkom centru Republike Srpske. Anketiranje je bilo anonimno. Kao instrumenti istraživanja korišteni su sociodemografski upitnik, upitnik za samoprocenu nivoa stresa i *Maslach Burnout Inventory*. U studiji je učestvovao 151 lekar. Lekari porodične medicine su činili 49% ispitanika, a bolnički lekari 51%. **Rezultati.** Analizom odgovora iz upitnika za samoprocenu nivoa stresa nađeno je da je 51,7% imalo visok nivo stresa (52,7% porodičnih lekara, 50,6% lekara u bolnici). Visok stepen emocionalne iscrpljenosti je pronađen kod 27,2% ispitanika (29,7% porodičnih lekara, 24,6% lekara u bolnici), visok stepen depersonalizacije kod 23,8% ispitanika (25,7% porodičnih lekara, 22,1% lekara u bolnici), a nizak stepen lične ispunjenosti kod 39,7% ispitanika (37,8% porodičnih lekara, 41,6% lekara u bolnici). Statistički značajna razlika u pogledu stepena stresa, emocionalne iscrpljenosti i depersonalizacije i lične ispunjenosti nije pronađena između bolničkih i lekara porodične medicine. Lekari starosti preko 45 godina imali su statistički značajno ($p = 0,030$) viši nivo emocionalne iscrpljenosti u odnosu na mlađe ispitanike. **Zaključak.** Ovo istraživanje pokazalo je da postoji visok rizik od nastanka sindroma sagorevanja kod lekara u Republici Srpskoj. Premda je izloženost profesionalnom stresu viša kod lekara porodične medicine, nego kod bolničkih lekara, dobijena razlika nije statistički značajna.

Ključne reči: sindrom izgaranja na poslu; stres, psihološki; lekari; porodični lekari; faktori rizika; ankete i upitnici; samoprocena

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Abbreviations
RS – Republic of Srpska
MBI – Maslach-Burnout Inventory

Introduction

Burnout syndrome is the result of chronic emotional stress experienced by employees; it is characterized by high levels of emotional exhaustion and depersonalization and low levels of personal accomplishment [1]. It is most common among employed persons whose job requires direct contacts with other people [2].

Prolonged exposure to stress is usually the main cause of emotional exhaustion, which is manifested by reduced enthusiasm for work, a sense of helplessness, failure, and fatigue. Depersonalization is described as indifferent approach to patients and negative attitude towards colleagues and profession. Inefficiency, alienation or loss of will for personal achievements are the characteristics of a person who has lost the sense of responsibility for his/her job [3, 4].

The syndrome is recognized worldwide as one of the major causes of psychosocial problems affecting the quality of life of employees in different professions, and the most prevalent one in employees in healthcare, education, and service occupations [5, 6].

Burnout syndrome manifestations are the symptoms of extreme emotional exhaustion, apathy, cynicism and depersonalization, and a strong sense of low self-esteem. The result is a lack of motivation for professional activity, development of mental disorders, primarily depression, and generally reduced quality of life. Physical symptoms of burnout syndrome could be manifested as different problems: insomnia, changes in appetite, fatigue, frequent colds and flu, headaches, gastrointestinal disorders. Psychosocial problems are mostly manifested as mood swings, cynicism and reduced concentration, which negatively affects the quality of work [7, 8]. Common consequences of burnout syndrome are increased consumption of alcohol and drugs, which further adversely affects the quality of work and quality of life [9].

Numerous studies have shown a high prevalence of burnout syndrome among practicing doctors. The results showed that one-third of physicians had symptoms of burnout syndrome during their career [10]. According to research conducted in the United States, 47% of doctors had burnout experience, which was a considerably higher percentage than in the general population [11]. Research in Italy, conducted on a sample of 470 health care workers (220 doctors and 250 nurses) showed a high incidence of stress and risk of developing the burnout syndrome [12]. Studies conducted in Canada and Switzerland have shown that doctors were highly susceptible to develop burnout syndrome [13, 14].

There are limited data about exposure to stress and risk for burnout syndrome among the physicians in the Republic of Srpska (RS). Therefore, the aim of this study was to determine the level of stress and risk for burnout syndrome among doctors employed in primary health care centers and hospitals in RS, and to investigate the impact of sociodemographic characteristics on the stress level and development of burnout syndrome.

Material and Methods

The research was conducted in the period from October 1 to December 31 in three primary health care centers (Prijedor, Doboj and Laktaši) and in the University Clinical Center of the Republic of Srpska (UCCRS) in Banja Luka. A cross-sectional study was done.

The participants in primary health care centers were family doctors, in UCCRS the participants were doctors from the Department of Anesthesiology, Department of Psychiatry, and the Department of Internal Medicine. The researchers distributed the questionnaires to all doctors working in primary health care centers and hospitals where the study was conducted.

Out of 198 distributed questionnaires, 151 questionnaires were completed and returned (the response rate being 76.26%).

The Ethical Committee of the University Clinical Center of the Republic of Srpska in Banja Luka gave written consent for conducting research, while the consent for conducting research in primary health care centers was obtained from the managers of these institutions.

The Questionnaires and Measurements

The survey was anonymous. A socio-demographic questionnaire, questionnaire for self-assessment of the level of stress (Gyrdin, Everly, Dusek) [15] and Maslach Burnout Inventory were used as research instruments [16, 17].

The socio-demographic questionnaire included data on gender, age, place of employment, length of service, marital status, number of children in the family, and education.

The questionnaire for self-assessment of the stress level contained ten questions and included four main factors of overburden (chronic lack of time, excessive responsibility, lack of support and exaggerated expectations of oneself and one's surroundings). The participants could provide the following answers to the offered questions: nearly always (4 points), often (3 points), rarely (2 points), and nearly never (1 point). The total score was the sum and the maximum score was 40. The participants with score between 25 and 40 points were in a state of high stress level, while the participants with the highest total score of less than 25 had stress within normal limits.

The original version of the questionnaire Maslach Burnout Inventory consists of 22 "closed" questions with the following answers: never (0 point), several times a year (1 point), once a month (2 points), several times a month (3 points), once a week (4 points), several times a week (5 points) and daily (6 points). All questions are divided into three sub-scales which are used as indicators for assessing the degree of emo-

tional exhaustion, depersonalization and personal satisfaction. The first sub-scale, which measures the degree of emotional exhaustion, highlights the excessive demands addressed to service providers. The second sub-scale measures the presence of depersonalization characterized by a negative relationship between donors and recipients of services. The third sub-scale measures the level of personal accomplishment. The estimation of emotional exhaustion is based on the answers for 9 questions, and the maximum score is 54 (the sum of points < 17 indicates a low, 18-29 indicates a moderate, and > 30 indicates a high level of emotional exhaustion). Depersonalization is tested using 5 questions and the maximum score is 30 (the sum of points < 5 indicates a low, 6-11 a moderate, > 12 a high level of depersonalization), and personal accomplishment is assessed using the answers for the 8 questions; the maximum score is 48 (the sum of points < 33 indicates a high, 34-39 a moderate, > 40 low level of personal satisfaction).

Statistical analysis was released using the SPSS software package. Descriptive analysis in the form of frequency and percentage was used to check the sample and response to each question individually. The comparison of categorical variables was done by χ^2 test. The level of statistical significance was 5% ($p<0.05$).

Results

Out of 151 physicians included in the study sample, 99 were females (65.6%) and 52 were males (34.4%). The average age of all participants was 41.09 ± 9.7 years. The average age of the participants in primary health care centers was 37.9 ± 9.3 years, while the average age of hospital doctors participating in the study was 44.17 ± 9.2 years. According to their age, the participants were divided into three groups: doctors under 35 years of age (34.4%), those between 36 and 45 years of age (31.8%) and doctors over 45 years of age (33.8%). According to the working place, roughly the same number of the participants was employed in primary health care centers (49.0%) and in hospitals (51.0%). Regarding the institution where the participants were employed, the distribution was as following: 30 medical doctors (MDs) (19.9%) were affiliated with the Primary Health Care Center in Prijedor, 26 MDs (17.2%) with the Primary Health Care Center in Doboj, 18 MDs (11.9%) with the Primary Health Care Center in Laktaši, 33 MDs (21.9%) with the Department of Anesthesiology, 28 (18.5%) MDs worked at the Department of Internal Medicine and 16 MDs (10.6%) worked at the Department of Psychiatry. Most participants were married, and the lowest number of them was widows/widowers. The majority of the participants had no children, and the lowest number of them had three or more children. Regarding the education level, most of them (total 86; 57.9%) were specialists, and the lowest number of the participants was in residency (total 20; 13.2%). As for the length of service, the participants were divided into three groups for the purpose of statistical data analysis. The first group included doctors with the length of service up to 10 years, the second group included doctors with a length of service from 11 to 20 years, and the third group included doctors with 21 or more years of service, the average length of service being 14.05 ± 9.9 years. Hospital doctors had an average length of service of 17.6 ± 10.4 years, while the doctors working in primary health care had an average length of service of 10.4 ± 7.9 years **(Table 1).**

By analyzing the results of the questionnaire for self-assessment of stress level, it is evident that more than half of the participants (total 78; 51.7%) had a high stress level; 52.7% of them were primary care physicians, and 50.6% of them were hospital doctors. The results obtained from the questionnaire Maslach Burnout Inventory (MBI) have shown that 27.2% of the participants (29.7% primary care physicians, and 24.6% hospital doctors) had a high level of emotional exhaustion; 23.8% of the participants (25.7% primary care physicians, and 22.1% hospital doctors) had a high degree of depersonalization; 39.7% of the participants (37.8% primary care physicians, and 41.6% hospital doctors) had a low level of personal accomplishment **(Tables 2 and 3).**

We analyzed the results obtained for the stress level and for all three components of burnout syndrome according to working place. Statistical analysis of the results obtained from the questionnaire for self-assessment of the stress level and from the MBI questionnaire did not show any significant difference even in the incident stress or the components of burnout syndrome between the primary care physicians and hospital doctors. Although not statistically significant, the primary care physicians had a higher stress level, higher degrees of emotional exhaustion and depersonalization, and a lower degree of personal accomplishment than the hospital doctors.

A low stress level was found in 48.3% of participants, while 51.7% of them had a high stress level. Regarding the institution where the participants were employed, there was no significant difference ($p = 0.101$) for the stress level. Although not statistically significant, the highest stress level was reported by the doctors working in the Primary Health Care Center in Prijedor (66.7%) and at the Department of Internal Medicine (60.7%), while the lowest stress level was found among physicians employed in the Primary Health Care Center in Laktaši (27.8%). High levels of emotional exhaustion were found in 27.2% of the participants. There was no significant difference ($p = 0.133$) in the level of emotional exhaustion regarding the institution where the participants were employed. The highest percentage of doctors with a high degree of emotional exhaustion was found among those affiliated with the Primary Health Care Center in Prijedor (36.7%), and the lowest percentage was among those employed at the Department of Psychiatry (18.8%). 23.8% of the participants had a high level of depersonalization. Regarding the level of depersonalization, a statistically significant difference was found among the participants in relation to the institution

Table 1. Socio-demographic data of participants
Tabela 1. *Sociodemografski podaci ispitanika*

Variable *Varijabla*	Primary Health Centers *Domovi zdravlja* n = 74 N (%)	Hospital *Bolnica* n = 77 N (%)	Total *Ukupno* n = 151 N (%)
Gender/*Pol*			
Male/*Muški*	13 (17.57)	39 (50.65)	52 (34.4)
Female/*Ženski*	61 (82.43)	38 (49.35)	99 (65.6)
Age/*Starost*			
Years/*Godine*			
< 36	32 (43.24)	20 (25.97)	52 (34.4)
36 – 45	26 (35.14)	22 (28.57)	48 (31.8)
> 45	16 (21.62)	35 (45.46)	51 (33.8)
Marital status/*Bračno stanje*			
Married//*U braku*	47 (63.51)	51 (66.23)	98 (64.9)
Single/*Neoženjen/neudata*	24 (32.43)	16 (20.78)	40 (26.5)
Divorced/*Razveden/Razvedena*	2 (2.7)	7 (9.09)	9 (6.0)
Widowed/*Udovac/udovica*	1 (1.35)	3 (3.9)	4 (2.6)
Number of children in family/*Broj dece u porodici*			
Childless/*Bez dece*	35 (47.29)	23 (29.87)	58 (38.4)
One child/*Jedno dete*	15 (20.27)	26 (33.77)	41 (27.2)
Two children/*Dvoje dece*	22 (29.73)	23 (29.87)	45 (29.8)
Three or more children/*Troje ili više dece*	2 (2.7)	5 (6.49)	7 (4.6)
Education level/*Obrazovni nivo*			
General practitioner/*Lekar opšte prakse*	22 (29.73)	1 (1.3)	23 (15.2)
Resident/*Na specijalizaciji*	6 (8.11)	14 (18.19)	20 (13.2)
Specialist/*Specijalista*	46 (62.16)	40 (51.95)	86 (57.0)
Subspecialist/*Supspecijalista*		22 (28.56)	22 (14.6)
Length of service/*Radni vek*			
Years/*Godine*			
< 11	42 (56.76)	26 (33.77)	68 (45.0)
11 – 20	22 (29.73)	23 (29.87)	45 (29.8)
> 20	10 (13.51)	28 (36.36)	38 (25.2)

where they were employed (p = 0.017), the highest level of depersonalization being among physicians employed in the Primary Health Care Center in Prijedor (40%), and the lowest percentage of physicians with a high level of depersonalization were employed in the Department of Psychiatry (6.2%). 39.7% of the participants had a low level of personal accomplishment. Regarding the institution where the participants were employed, a statistically significant difference was found (p = 0.037) for the level of personal accomplishment; the highest percentage of low level of personal accomplishment was observed

Table 2. Summarized results on the level of stress, emotional exhaustion, depersonalization, and personal accomplishment (n = 151)
Tabela 2. *Sumarni rezultati nivoa stresa i sve tri komponente sindroma sagorevanja na poslu u grupi svih ispitanika (n = 151)*

Variable *Varijabla*	Level *Stepen*	Number of participants *Broj ispitanika*	Percent of participants *Procenat ispitanika* (%)
Stress *Stres*	Low/*Nizak* High/*Visok*	73 78	48.3 51.7
Emotional exhaustion *Emocionalna iscrpljenost*	Low/*Niska* Moderate/*Umerena* High/*Visoka*	59 51 41	39.1 33.7 27.2
Depersonalization *Depersonalizacija*	Low/*Niska* Moderate/*Umerena* High/*Visoka*	71 44 36	47.1 29.1 23.8
Personal accomplishment *Lična ispunjenost*	High/*Visoka* Moderate/*Umerena* Low/*Niska*	57 34 60	37.7 22.6 39.7

Table 3. Results on the level of stress, emotional exhaustion, depersonalization, and personal accomplishment in relation to employment (n = 151)
Tabela 3. *Nivo stresa, emocionalne iscrpljenosti, depersonalizacije i stepena lične ispunjenosti u odnosu na zaposlenje (n = 151)*

Variable *Varijabla*	Level *Stepen*	Employement/*Zaposlenje*		Pearson Chi-Square *Pearsonov hi kvadrat* $\chi 2$ test	P*
		Primary Health Center *Dom zdravlja* N (%)	Hospital *Bolnica* N (%)		
Stress *Stres*	Low/*Nizak*	35 (47.3)	38 (49.4)	0.064	0.464
	High/*Visok*	39 (52.7)	39 (50.6)		
Emotional exhaustion *Emocionalna iscrpljenost*	Low/*Niska*	30 (40.6)	29 (37.7)	1.138	0.566
	Moderate/*Umerena*	22 (29.7)	29 (37.7)		
	High/*Visoka*	22 (29.7)	19 (24.6)		
Depersonalization *Depersonalizacija*	Low/*Niska*	31 (41.9)	40 (51.9)	1.557	0.459
	Moderate/*Umerena*	24 (32.4)	20 (26.0)		
	High/*Visoka*	19 (25.7)	17 (22.1)		
Personal accomplishment *Lična ispunjenost*	High/*Visoka*	30 (40.5)	27 (35.1)	0.483	0.786
	Moderate/*Umerena*	16 (21.7)	18 (23.3)		
	Low/*Niska*	28 (37.8)	32 (41.6)		

*Statistically significant at $p < 0.05$

among the physicians employed in the Primary Health Care Center in Prijedor (60%), and the highest percentage of the participants with a high level of personal accomplishment were employed in the Primary Health Care Center in Laktaši (61.1%), at the Department of Psychiatry (56.2%) and the Department of Internal Medicine (53.6%) **(Table 4).**

Regarding the gender, there was no significant difference in the stress level and components of burnout syndrome between male and female doctors. Although not statistically significant, women having a high stress level and high degree of emotional exhaustion were more numerous than men, whereas more men had high levels of depersonalization and low personal accomplishment than women. The analysis of results obtained regarding the age has shown a statistically significant difference in the level of emotional exhaustion ($p = 0.030$) among the participants of different age. The largest number of respondents with a high degree of emotional exhaustion

Table 4. Results on the level of stress, emotional exhaustion, depersonalization, and personal accomplishment in relation to institutions (n = 151)
Tabela 4. *Nivo stresa, emocionalne iscrpljenosti, depersonalizacije i stepena lične ispunjenosti u odnosu ustanovu u kojoj ispitanici rade (n = 151)*

Variable *Varijabla*	Level *Stepen*	*Primary Health Centers, Clinics*/Domovi zdravlja, Klinike						Pearson Chi-Square *Pearsonov hi kvadrat* $\chi 2$ test	p*
		Primary Health Center Prijedor *Dom zdravlja Prijedor* N (%)	Primary Health Center Doboj *Dom zdravlja Doboj* N (%)	Primary Health Center Laktaši *Dom zdravlja Laktaši* N (%)	Department of Psychiatry *Klinika za psihijatriju* N (%)	Department of Anesthesiology *Klinika za anesteziju* N (%)	Department of Internal medicine *Interna klinika* N (%)		
Stress *Stres*	Low/*Nizak*	10 (33.3)	12 (46.2)	13 (72.2)	10 (62.5)	17 (51.5)	11 (39.3)	9.203	0.101
	High/*Visok*	20 (66.7)	14 (53.8)	5 (27.8)	6 (37.5)	16 (48.5)	17 (60.7)		
Emotional exhaustion *Emocionalna iscrpljenost*	Low/*Niska*	19 (33.3)	9 (34.6)	11 (61.1)	8 (50.0)	8 (24.2)	13 (46.4)	14.985	0.133
	Moderate/*Umerena*	9 (30.0)	10 (38.5)	3 (16.7)	5 (31.2)	18 (54.5)	6 (21.4)		
	High/*Visoka*	11 (36.7)	7 (26.9)	4 (22.2)	3 (18.8)	7 (21.2)	9 (32.2)		
Depersonalization *Depersonalizacija*	Low/*Niska*	8 (26.7)	10 (38.5)	13 (72.2)	12 (75.0)	12 (36.4)	16 (57.1)	21.643	0.017
	Moderate/*Umerena*	10 (33.3)	11 (42.3)	3 (16.7)	3 (18.8)	12 (36.4)	5 (17.9)		
	High/*Visoka*	12 (40.0)	5 (19.2)	2 (11.1)	1 (6.2)	9 (27.3)	7 (25.0)		
Personal accomplishment *Lična ispunjenost*	Low/*Niska*	18 (60.0)	8 (30.8)	4 (22.2)	4 (25.0)	14 (42.4)	9 (32.1)	19.268	0.037
	Moderate/*Umerena*	6 (20.0)	7 (26.9)	3 (16.7)	3 (18.8)	11 (33.3)	4 (14.3)		
	High/*Visoka*	6 (20.0)	11 (42.3)	11 (61.1)	9 (56.2)	8 (24.2)	15 (53.6)		

* Statistically significant at $p < 0.05$

Table 5. Results on the level of stress, emotional exhaustion, depersonalization and personal accomplishment in relation to gender, age, and length of service (n = 151)
Tabela 5. *Nivo stresa, emocionalne iscrpljenosti, depersonalizacije i lične ispunjenosti u odnosu na pol, starost i dužinu radnog staža (n = 151)*

Variable *Varijabla*	Level *Stepen*	Gender/*Pol*		Pearson Chi-Square *Pearsonov hi kvadrat* $\chi 2$ test	p*
		Male/*Muški* N (%)	Female/*Ženski* N (%)		
Stress *Stres*	Low/*Nizak* High/*Visok*	29 (55.8) 23 (44.2)	44 (44.4) 55 (55.6)	0.231	0.125
Emotional exhaustion *Emocionalna iscrpljenost*	Low/*Niska* Moderate/*Umerena* High/*Visoka*	23 (44.2) 17 (32.7) 12 (23.1)	36 (36.4) 34 (34.3) 29 (29.3)	1.053	0.591
Depersonalization *Depersonalizacija*	Low/*Niska* Moderate/*Umerena* High/*Visoka*	25 (48.1) 14 (26.9) 13 (25.0)	46 (46.5) 30 (30.3) 23 (23.2)	0.197	0.906
Personal accomplishment *Lična ispunjenost*	High/*Visoka* Moderate/*Umerena* Low/*Niska*	16 (30.8) 12 (23.0) 24 (46.2)	41 (41.4) 22 (22.2) 36 (36.4)	1.857	0.395

Variable *Varijabla*	Level *Stepen*	Age/*Dob*			Pearson Chi-Square *Pearsonov hi kvadrat* $\chi 2$ test	p*
		< 35 N (%)	36 to 45 N (%)	≥45 N (%)		
Stress *Stres*	Low/*Nizak* High/*Visok*	23 (44.2) 29 (55.8)	23 (47.9) 25 (52.1)	27 (52.9) 24 (47.1)	0.787	0.675
Emotional exhaustion *Emocionalna iscrpljenost*	Low/*Niska* Moderate/*Umerena* High/*Visoka*	22 (42.3) 20 (38.5) 10 (19.2)	17 (35.4) 21 (43.8) 10 (20.8)	20 (39.2) 10 (19.6) 21 (41.2)	10.688	0.030
Depersonalization *Depersonalizacija*	Low/*Niska* Moderate/*Umerena* High/*Visoka*	20(38.5) 20 (38.4) 12 (23.1)	23 (47.9) 12 (25.0) 13 (27.1)	28 (54.9) 12 (23.5) 11 (21.6)	4.211	0.378
Personal accomplishment *Lična ispunjenost*	High/*Visoka* Moderate/*Umerena* Low/*Niska*	23 (44.2) 11 (21.2) 18 (34.6)	17 (35.4) 13 (27.1) 18 (37.5)	17 (33.3) 10 (19.5) 24 (47.2)	2.682	0.612

Variable *Varijabla*	Level *Stepen*	Length of service/*Dužina radnog staža*			Pearson Chi-Square *Pearsonov hi kvadrat* $\chi 2$ test	p*
		< 10 years *godina* N (%)	11 – 20 years/*godina* N (%)	≥21 years *godina* N (%)		
Stress *Stres*	Low/*Nizak* High/*Visok*	31 (45.6) 37 (54.4)	21 (46.7) 24 (53.3)	21 (55.3) 17 (44.7)	0.986	0.611
Emotional exhaustion *Emocionalna iscrpljenost*	Low/*Niska* Moderate/*Umerena* High/*Visoka*	28 (41.2) 28 (41.2) 12 (17.6)	17 (37.8) 15 (33.3) 13 (28.9)	14 (36.8) 8 (21.1) 16 (42.1)	8.513	0.074
Depersonalization *Depersonalizacija*	Low/*Niska* Moderate/*Umerena* High/*Visoka*	27 (39.7) 25 (36.8) 16 (23.5)	21 (46.6) 12 (26.7) 12 (26.7)	23 (60.5) 7 (18.4) 8 (21.1)	5.476	0.242
Personal accomplishment *Lična ispunjenost*	High/*Visoka* Moderate/*Umerena* Low/*Niska*	27 (39.7) 16 (23.5) 25 (36.8)	19 (42.2) 9 (20.0) 17 (37.8)	11 (28.9) 9 (23.7) 18 (47.4)	2.020	0.732

* Statistically significant at $p<0.05$

were doctors over 45 years of age (41.2%), while a similar percentage of physicians with high levels of emotional exhaustion was observed among the participants up to 35 years of age and between the age of 36 and 45. The highest percentage (42.3%) of the participants who had a low level of emotional exhaustion was among the physicians under 35 years of age. As for the length of service, there was no significant difference in the stress level, emotional exhaustion, and the level of personal satisfaction. The highest stress levels were observed among doctors with the length of service up to 10 years (54.4%), the highest percentage of doctors with a high degree of emotional exhaustion was found among those with the length of service ≥ 21 years (42.1%), the highest level of depersonalization was seen among doctors with the length of service from 11 to 20 years (27.7%), while the lowest level of personal accom-

Table 6. Results on the level of stress, emotional exhaustion, depersonalization and personal accomplishment in relation to marital status and number of children in family (n = 151)
Tabela 6. *Nivo stresa, emocionalne iscrpljenosti, depersonalizacije i lične ispunjenosti u odnosu na bračni status i broj dece u porodici (n = 151)*

Variable *Varijabla*	Level *Stepen*	Marital status/*Bračni status*				Pearson Chi-Square *Pearsonov hi kvadrat* χ^2 test	p*
		Married/ *Oženjen/ udata* N (%)	Single/ *Neoženjen/neudata* N (%)	Divorced/ *Razveden/ razvedena* N (%)	Widowed/*Udovac/udovica* N (%)		
Stress	Low/*Nizak*	43 (43.9)	20 (50.0)	7 (77.8)	3 (75.0)	5.087	0.166
Stres	High/*Visok*	55 (56.1)	20 (50.0)	2 (22.2)	1 (25.0)		
Emotional exhaustion	Low/*Niska*	35 (35.7)	15 (37.5)	6 (66.7)	3 (75.0)	6.605	0.359
Emocionalna	Moderate/*Umerena*	35 (35.7)	15 (37.5)	1 (11.1)	0 (0.0)		
iscrpljenost	High/*Visoka*	28 (28.6)	10 (25.0)	2 (22.2)	1 (25.0)		
Depersonalization	Low/*Niska*	49 (50.0)	14 (35.0)	4 (44.4)	4 (100.0)	12.499	0.052
Depersonalizacija	Moderate/*Umerena*	27 (27.6)	12 (30.0)	5 (55.6)	0 (0.0)		
	High/*Visoka*	22 (22.4)	14 (35.0)	0 (0.0)	0 (0.0)		
Personal	High/*Visoka*	28 (28.6)	23 (57.5)	4 (44.4)	2 (50.0)	12.238	0.057
accomplishment	Moderate/*Umerena*	24 (24.5)	8 (20.0)	2 (22.2)	0 (0.0)		
Lična ispunjenost	Low/*Niska*	46 (46.9)	9 (22.5)	3 (33.4)	2 (50.0)		

Variable *Varijabla*	Level *Stepen*	Number of children in family/*Broj dece u porodici*				Pearson Chi-Square *Pearsonov hi kvadrat* χ^2 test	p*
		Childless *Bez dece* N (%)	One child *Jedno dete* N (%)	Two children *Dvoje dece* N (%)	Three or more children/*Troje i više dece* - N (%)		
Stress	Low/*Nizak*	28 (48.3)	17 (41.5)	25 (55.6)	3 (42.9)	1.799	0.615
Stres	High/*Visok*	30 (51.7)	24 (58.5)	20 (44.4)	4 (57.1)		
Emotional exhaustion	Low/*Niska*					2.119	0.908
Emocionalna	Moderate/*Umerena*	21 (36.2)	16 (39.0)	19 (42.2)	3 (42.9)		
iscrpljenost	High/*Visoka*	22 (37.9)	14 (34.2)	14 (31.1)	1 (14.2)		
		15 (25.9)	11 (26.8)	12 (26.7)	3 (42.9)		
Depersonalization	Low/*Niska*	24 (41.4)	20 (48.8)	24 (53.4)	3 (42.8)	9.336	0.156
Depersonalizacija	Moderate/*Umerena*	15 (25.8)	17 (41.4)	10 (22.2)	2 (28.6)		
	High/*Visoka*	19 (32.8)	4 (9.8)	11 (24.4)	2 (28.6)		
Personal	High/*Visoka*	30 (51.7)	8 (19.5)	16 (35.6)	3 (42.9)	13.194	0.040
accomplishment	Moderate/*Umerena*	11 (19.0)	13 (31.7)	10 (22.2)	0 (0.0)		
Lična ispunjenost	Low/*Niska*	17 (29.3)	20 (48.8)	19 (42.2)	4 (57.1)		

* Statistically significant at $p<0.05$

plishment (47.4%) was observed among the physicians with the greatest length of service ≥ 21 years **(Table 5).**

Regarding the education level, there was no significant difference in the stress level and all three components of burnout syndrome. The highest percentage of physicians with high levels of stress was in the group of doctors-residents (75.0%); the highest percentage (36.4%) of the participants with a high degree of emotional exhaustion was among doctors sub-specialists; the highest percentage (30.4%) with a high degree of depersonalization was among general practitioners; and the highest percentage of the participants with low levels of personal accomplishment was among doctors subspecialists (59.1%).

Regarding the marital status, there was no significant difference in the stress level and all three components of burnout syndrome. However, the highest percentage of physicians with a high stress level (56.1%) and a high level of emotional exhaustion (28.6%) was married, and the largest percentage of physicians with high levels of depersonalization (35.0%) were single. As for the number of children in the family, the participants with one child had a statistically significant ($p = 0.040$) higher level of personal accomplishment. Although not statistically significant, the highest level of stress (58.5%) was observed among the participants with one child in the family, the highest percentage (42.9%) with a high degree of emotional exhaustion was found among those with three or more children, and the highest percentage of participants with a high degree of depersonalization (32.8%) was seen among the doctors without children **(Table 6).**

Discussion

The results of our study showed that just over a half of participants - 78 (51.7%) had a high level of stress, 27.2% of participants had a high degree of emotional exhaustion, 23.8% of participants had a high degree of depersonalization, and 39.7% of participants had a low level of personal accomplishment. No significant differences regarding gender, place of

employment, length of service and marital status were found among the participants from this study sample. The doctors over 45 years of age had a significantly ($p = 0.030$) higher levels of emotional exhaustion than the younger ones and regarding the number of children in the family, the doctors with one child had a statistically significant ($p = 0.040$) highest level of personal accomplishment. Although not statistically significant, the doctors working in health centers had a higher level of stress, emotional exhaustion and depersonalization, a lower degree of personal fulfillment in relation to the doctors employed in hospital.

Results of a study conducted in Brazil are similar to the results of our research. The study involved 191 doctors in primary health care; 43% of participants had a high level of emotional exhaustion, 17% of them had a high level of depersonalization, and 32% of participants had a low level of personal accomplishment [18]. A research on the presence of burnout syndrome was conducted at the hospital in Rijeka; 286 hospital doctors were included. Results of this study showed that the physicians in Rijeka had a higher percentage of emotional exhaustion (43.6%), a greater degree of depersonalization (33.5%) and a higher percentage of low level of personal accomplishment (49.1%) compared to the physicians in our study [19].

A survey conducted in 2010 among 259 doctors in primary health care in the Republic of Srpska showed that 75.3% of participants had a high stress level, 46% of participants had high level of emotional exhaustion, 31.3% of participants had high level of depersonalization, and 22.2% of them had a low level of personal accomplishment [20]. The results of the same survey showed that elderly doctors and doctors with longer service had a significantly higher level of stress and emotional exhaustion in relation to younger doctors and shorter service. Also, we noted in our study that statistically significant highest level of emotional exhaustion was among doctors aged over 45. Our research has shown that surveyed physicians in a lower percentage had high stress levels, but it was also significantly higher percentage of doctors with low levels of personal accomplishment.

Numerous studies were conducted all over the world to estimate the presence of burnout syndrome among family doctors. Results of the research conducted by O'Dea and his associates in Ireland showed that 52.7% of family doctors had a high degree of emotional exhaustion, 31.6% of them had high level of depersonalization and 16.3% had low level of personal accomplishment, while 6.6% of the surveyed doctors had a positive score in all three subscales [21]. Similar results were obtained from the research in Denmark, conducted by Torppa and associates. This research has shown that emotional exhaustion was common among family doctors in Denmark and it was associated with older age, increasing along the length of service, due to the working overload and because of fear of medical errors [22]. Results of research in Denmark showed that the percentage of family doctors suffering from burnout syndrome has been increasing, and that this number in 2012 increased to 5.3% compared to 2.8% noted in 2004 [23]. Results of this study showed that there was no correlation between risk of developing burnout syndrome and older age and length of service.

Research conducted in Colombia, involving 106 family doctors, showed a high overall risk of burnout syndrome among family doctors [24]. Kotb and colleagues in their study, which included 171 doctors, demonstrated that hospital doctors suffered significantly more from burnout than family doctors [25]. In our research, family doctors have higher stress levels and all three components of burnout syndrome in relation to the hospital doctors, but not significantly.

Results of this study showed different results regarding the institution in which doctors were employed. Therefore, the highest stress level was found among doctors working in the Primary Health Care Center in Prijedor, while the lowest stress level was noted among doctors employed in the Primary Health Care Center in Laktaši. The lowest level of emotional exhaustion was noted among the doctors employed in the Primary Health Care Center in Laktaši, at the Department of Psychiatry, and the highest level was noted among doctors in the Primary Health Care Center in Prijedor, at the Department of Internal Medicine. The highest percentage of physicians with a high degree of depersonalization was noted among doctors in the Primary Health Care Center in Prijedor, and the lowest percentage was noted among physicians employed at the Department of Psychiatry. The highest percentage of physicians with high levels of personal accomplishment were employed in the Primary Health Care Center in Laktaši and at the Department of Psychiatry, while the lowest level of personal accomplishment was found among the doctor working in Primary Heath Care Center in Prijedor. Results of this study showed that, in comparison to other doctors, psychiatrists were at lower risk of developing burnout syndrome, while Ferrari and colleagues [26] in their research showed that even doctors, psychiatry residents, were at moderate risk of developing burnout syndrome. The results of this study showed that the most important risk factors for developing burnout and working overload were symptoms of depression and low satisfaction in the workplace. The survey conducted by Tanner and his associates included 763 hospital doctors of different specialties. The results showed that some specialties were more exposed to stress than others, and the highest level of stress was found in internal medicine specialists [27]. Besides, the results of this study showed a high percentage (60.7%) of doctors employed at the Department of Internal Medicine with high stress levels. A survey conducted in Serbia [28], which included 30 general practitioners and 30 psychiatrists, showed a high risk of developing burnout syndrome in both groups of doctors. The exposure to professional stress was slightly higher among the general practitioners than among psychiatrists, but this difference was not statistically significant, that being similar to the results of our research.

The influence of marital status and number of children on the risk of developing burnout syndrome was the subject of much research. Research results for 57 residents of family medicine in the Republic of Srpska showed that there were correlations between gender, marital status and number of children on the occurrence of burnout syndrome [29]; we also have the same results in our research. The research conducted by Martini's et al. [30] did not show that parenting affected the occurrence of burnout syndrome among doctors specializing in family medicine, but Lemkau [31] found that parenthood led to a lower level of depersonalization.

An extensive research conducted in Italy included 182 general practitioners and 148 hospital doctors [32]. The symptoms of emotional exhaustion were observed in 27.5% of the participants (32.4% of general practitioners and 21.2% of hospital physicians). The high degree of depersonalization was noted in 25.6% of the participants (27.4% general practitioners and 22.6% hospital physicians), a low level of personal accomplishment was seen in 12.8% of physicians (13.1% general practitioners, and 12.3% hospital doctors). There were no significant differences on any sub-scale of burnout syndrome between these two groups of doctors. Our results are similar to the results of research conducted in Italy, except in our study a significantly higher percentage of physicians having a low level of personal accomplishment was observed.

The most important risk factors for burnout syndrome development listed in the literature are younger age, male gender, marital status (single) and a few years of work experience [33, 34]. The results of our study showed that gender, marital status and length of service did not have an impact on morbidity of burnout syndrome, while the older age significantly influenced the risk of developing the syndrome.

Self-help and self-care are not a part of the professional training of doctors and generally has a very low place on the priority list of doctors. In Switzerland, 21% of doctors in primary health care did not have a family doctor, and 90% of them were treated by themselves (self-medication) [35]. The study conducted by Cumbria et al. showed that as many as 62.9% of family doctors in Croatia did not have their chosen doctor, but they treated themselves [36]. The doctor deals with problems of his/her patients, so there is little time to deal with one's personal problems.

Our findings can be explained by the characteristics of working in family medicine. Family doctors have direct contact with patients during working hours; they are burdened with a large number of patients with chronic diseases, their social and other problems that they are not always able to solve. Family doctors are commonly expected by their patients to give much more than they could give them, thus the physicians are often led to a state of chronic stress. Family doctors are additionally burdened with extensive administration; they have lower income and "lower" status in relation to the doctors employed in hospitals. Our results and other studies [37] indicate the need to educate physicians about prevention and methods for coping with stress and burnout syndrome.

Conclusion

Findings from our study are similar to those published in the world literature regarding the level of stress and the risk of developing burnout syndrome among physicians. Although not statistically significant, doctors working in health centers had a higher level of stress, emotional exhaustion and depersonalization, a lower degree of personal fulfillment in relation to the doctors employed in the hospital. The age and number of children in the family have a significant impact on the risk of developing burnout syndrome, while gender, length of service, place of employment, education and marital status did not significantly influence the level of stress and burnout syndrome.

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