

Correlates of Burnout Syndrome among Belgrade Medical Students – A Cross-Sectional Study

Jelena Ilić Živojinović¹, Dušan Backović¹, Ivan Soldatović² and Goran Belojević¹

¹University of Belgrade, Institute of Hygiene and Medical Ecology, Faculty of Medicine

²University of Belgrade, Institute of Medical Statistics and Informatics, Faculty of Medicine

Abstract

Main objective: There are still gaps in the knowledge about the factors that influence burnout among medical students. This study examines the relationship between the length of medical studies, academic achievement, self-estimated health and burnout. Sample: We administered an anonymous questionnaire to 769 second-year and sixth-year medical students (69.2 % females) to collect data on age, sex, length of study, average grade, and self-estimated mental and physical health.

Methods: The students completed the Maslach Burnout Inventory (MBI) on emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA) subscales.

Results: The sophomores experienced a higher level of emotional exhaustion, depersonalization and personal accomplishment compared to the students in the sixth year (MBI scores – EE /29.03±11.02 vs. 23.73±10.91/; DP /16.23±5.95 vs. 13.93±5.82/ PA /32.26±7.18 vs. 30.46±7.91/ respectively, all $p < 0.001$). The poorer self-estimated mental and physical health, in comparison to the period before their studies, was positively related to the scores on EE ($\rho = 0.381$ and 0.257 , respectively) and DP subscales ($\rho = 0.296$ and 0.209 , respectively) and negatively to PA subscale ($\rho = -0.211$ and -0.121 , respectively, all $p < 0.001$). The higher the average grade, the lower depersonalization and the higher personal accomplishment were found among the students ($\rho = -0.094$ and 0.121 , respectively; $p < 0,05$). Low self-estimated health status and poorer academic achievement were the main explanatory factors of a high burnout level in a multiple regression analysis.

Conclusion: The burnout syndrome is more pronounced at the beginning of medical studies compared to the final years. A high level of burnout is mainly influenced by low self-estimated health status and worse academic achievement.

Keywords: burnout; mental health; stress; students

Introduction

Medical students, throughout their training, are continuously exposed to psychosocial stressors that gradually spend their coping resources and can lead to burnout (Dyrbye, Thomas, Huntington, Lawson, Novotny, Sloan & Shanafelt, 2006). The Bologna reform of studying with constant testing and a rigorous curriculum gives rise to pressure and stress of learning and passing exams. Excessive academic workload, increased competition, lack of free time and facing human suffering and death, all contribute to emerging health disorders among medical students (Vyas, Stratton & Soares, 2017). One of these disorders, particularly frequent among medical students, is the burnout syndrome (Fang, Young, Golshan, Moutier & Zisook, 2012).

Burnout is a syndrome of emotional exhaustion, negative feelings and reduced professional accomplishment, that mostly emerges among people who help and support other people. This syndrome was mostly studied among social workers, teachers, lawyers, physicians, nurses and psychologists, the so-called “helping professions” (Backović & Jevtić, 2012; Freudenberger, 1974; Bianchi, Schonfeld & Laurent, 2015). The burnout syndrome is a consequence of a chronic accumulation of work stressors that gradually spend coping resources (Shirom, 2011). Burnout among medical students may have a negative impact on their achievements and future professional development and can lead to the loss of empathy (Thomas, Dyrbye, Huntington, Lawson, Novotny, Sloan, & Shanafelt, 2007) and humanitarian attitudes with a reduction in the professional interest for working with patients (Galan, Sanmartin, Polo & Giner, 2011; Derksen, Bensing & Largo-Janssen, 2013).

Medical studies are among the most demanding ones and symptoms of anxiety and depression are more frequent among medical students compared to aged-matched groups of the general population, or other students (Dyrbye et al., 2006). A study among Belgrade medical students showed that the prevalence of mental disorder was 16.1% during the first year of study, but two years later it increased to 17.5%, while the incidence rate of psychiatric disease was 5.3% (Eric, Radovanović & Jevremović, 1988). A study among American medical students showed that their mental health worsened and the level of burnout rose as the education progressed (Villwock, Sobin, Koester & Harris, 2016). The prevalence rates of burnout among medical students are regularly high, being around 49% in the USA and between 28% and 61% in Australia (Hak, Nikravesh, Lederer, Perry, Ogunyemi & Berstein, 2013).

Several studies reported a significant negative correlation between burnout in medical students and the level of support by family or friends provided on campus (Chang, Eddins-Folensbee & Coverdale, 2012; Lapinski, Yost, Sexton & LaBaere, 2016). More recent studies emphasize the importance of the help provided by colleagues and academic staff, as essential for coping and overcoming stress (Santen, Holt, Kemp & Hemphill, 2010; Dyrbye, Power, Massie, Eacker, Harper, Thomas, Szyldo, Sloan & Shanafelt, 2010). Stress among medical students may be associated with motivation, which is an important contributor to students’ academic achievement (Artino, La Rochelle & Durning, 2010).

Investigations of burnout risk factors are important for focusing anti-stress programs for medical students. We undertake this study to investigate the factors associated with the burnout syndrome among Belgrade medical students at the beginning and at the end of studies. Based on previous investigations, we hypothesize that burnout among medical students is significantly related to the length of studies, academic achievement and self-estimated health.

Methods

Participants and procedures

This cross-sectional study was carried out among second-year and sixth-year students at the School of Medicine, University of Belgrade. They studied under the new Bologna system and had one colloquium per semester for each subject, as well as a large number of laboratory exercises and seminars (weekly hour load in the second year of study is 27.5 hours, and in the sixth year it is 20.5) (Republic of Serbia. Commission for Accreditation and Quality Assurance, 2014). Among 554 second-year students and 468 sixth-year students, the response rate was 70.2% (n=389) and 81.2% (n=380), respectively. The average age was 20.49 ± 0.93 years and 25.26 ± 1.82 years, respectively. The students were recruited during their classes and participation was voluntary and anonymous. A paper set of questionnaires was completed at the beginning of a class and the principal researcher gave the instructions.

Questionnaires

The questionnaire included data on age, gender, length of study, the number of passed exams, average grade (6-10), as well as self-estimated physical and mental health, compared to health status before medical studies (better = 1; without change = 2; worse = 3). Students filled out The Maslach Burnout Inventory Questionnaire (MBI). We used a Likert scale with seven points (from 0 = never to 6 = almost every day) for the MBI. The MBI is a 22-item instrument describing the feelings of a person about his/her job. It consists of three subscales to evaluate each domain of burnout, namely emotional exhaustion (EE), depersonalization (DP) and low personal accomplishment (PA). Scores on each scale can be categorized as low, average or high levels of burnout according to cut-offs detailed in the MBI manual. High EE was defined as scoring ≥ 27 , high DP ≥ 10 , and low PA ≤ 33 (Maslach & Jackson, 1996; Matejić, Milenović, Kisić Tepavčević, Simić, Pekmezović & Jody, 2015).

Statistical Analysis

All analyses were performed using the commercial statistical software SPSS for Windows (version 17), with the significance level set at 0.05. The distribution of categorical variables was investigated with a χ^2 test. To test the significance of differences between the mean values of numeric and ordinal variables we used the Student's t-test and the Mann Whitney U test, respectively. Correlation analysis between categorical

variables was performed with Spearman's correlation test. Multiple regression analysis was performed to identify explanatory factors for a high burnout level.

Results

The distribution of the participating students with regard to gender was similar. The average grade was higher in the final year of study compared to the second year. The percentage of students who estimated their physical and mental health worse than before the studies was about 5% higher among sophomores compared to the sixth year of study, but the difference did not reach statistical significance.

Table 1

Demographic characteristics, academic achievement, and self-assessed health status among Belgrade medical students

Parameter	Second year (n=389)	Sixth year (n=380)	p
Females n (%)	258 (66.3)	274 (72.1)	
Males n (%)	131 (33.7)	106 (27.9)	0.083 ¹
Average grades (6-10)	8.1±0.9	8.3±0.7	<0.001 ²
Self-estimated mental health			
Without change	140 (35.7%)	139 (36.7%)	
Better	51 (13.0%)	65 (17.1%)	0.077 ¹
Worse	201 (51.3%)	175 (46.2%)	
Self-estimated physical health			
Without change	144 (36.6%)	142 (37.4%)	
Better	28 (7.1%)	42 (11.1%)	0.060 ¹
Worse	222 (56.3%)	195 (51.5%)	

¹χ² test; ²Student's t-test

Sophomores had significantly higher mean scores on EE, DP and PA subscales compared to sixth-year students. The percentage of students with low scores on the MBI subscales was higher among sixth-year students compared to sophomores.

Poorer self-estimated mental and physical health in comparison to the period before studies was positively and significantly related to the scores on EE, DP subscales and negatively with PA subscale of the MBI. Length of studies was negatively related to the scores on all three MBI subscales. With a raised number of passed exams, the emotional exhaustion and depersonalization were significantly lowered. The higher the average

grades were, the significantly lower the depersonalization and the higher personal accomplishment were. As their age increased, the students' emotional exhaustion, depersonalization and personal accomplishment were lowered. Personal achievement was lower among female students compared to males (Table 3).

Table 2.

Mean values and distribution of The Maslach Burnout Inventory (MBI) subscale scores among Belgrade medical students

MBI subscales	Second year (n=378)	Sixth year (n=379)	p
MBI- EE score mean±SD	29.03±11.02	23.73±10.91	<0.001 ¹
Low	58 (15.4%)	116 (30.6%)	
Moderate	90 (23.8%)	116 (30.6%)	
High	230 (60.8%)	147 (38.8%)	<0.001 ²
DP mean±SD	16.23±5.95	13.93±5.82	<0.001 ¹
Low	18 (4.7%)	36 (9.5%)	
Moderate	37 (9.7%)	49 (12.9%)	
High	326 (85.6%)	294 (77.6%)	0.002 ²
MBI-Pa score mean±SD	32.26±7.18	30.46±7.91	0.002 ¹
Low	191 (53.5%)	236 (62.3%)	
Moderate	127 (35.6%)	108 (28.5%)	
High	39 (10.9%)	35 (9.2%)	0.0352 ²

¹ Mann Whitney U test

²χ² test

Table 3.

Spearman's correlation coefficients between The Maslach Burnout Inventory (MBI) subscale scores among Belgrade medical students

Explored factors	MBI subscale score		
	Emotional exhaustion	Depersonalization	Personal achievement
Mental health (worse)	0.381**	0.296**	-0.211**
Physical health (worse)	0.257**	0.209**	-0.121**
Length of study (years)	-0.203**	-0.147**	-0.106**
Passed exams (number)	-0.201**	-0.144**	-0.039
Age (years)	-0.196**	-0.170**	-0.125**
Average grades (6-10)	-0.062	-0.094*	0.121**
Sex (male=1; female=2)	0.057	-0.062	-0.090*

* p < 0.05

** p < 0.01

The explanatory factors of the differences in burnout between second-year and sixth-year students were: for high emotional exhaustion – self-estimated physical and mental health and the number of passed exams; for high depersonalization - self-estimated physical and mental health; for low personal achievement - self-estimated physical and mental health and average grade (Table 4).

Table 4

Odds ratio for burnout components among Belgrade medical students in relation to self-estimated health, the length of study, academic achievement, and gender (N= 769) (multiple logistic regression)

Explored factors	HIGH MBI-EE				HIGH MBI-DP				LOW MBI-PA			
	Odds ratio (OR)	95% Confidence interval		p	Odds ratio (OR)	95% Confidence interval		p	Odds ratio (OR)	95% Confidence interval		p
		Lower	Upper			Lower	Upper			Lower	Upper	
Physical Health (per grade; 1= good; 2=without change; 3 =worse)	2.27	1.76	2.93	<0.001	1.52	1.14	2.02	0.004	1.65	1.29	2.10	<0.001
Mental Health (per grade; 1= good; 2=without change; 3 =worse)	1.50	1.13	1.98	0.005	1.40	1.03	1.92	0.034	1.13	0.86	1.48	0.368
Length of studying (per year)	0.96	0.77	1.19	0.696	1.06	0.83	1.34	0.649	1.07	0.86	1.32	0.552
Passed exams (per passed exam)	0.97	0.95	0.99	0.006	1.00	0.98	1.03	0.855	1.00	0.98	1.025	0.743
Age (per year)	1.01	0.81	1.24	0.959	0.87	0.69	1.07	0.181	0.99	0.81	1.21	0.935
Average grades (per grade; 6-10)	1.07	0.85	1.33	0.566	0.85	0.65	1.12	0.256	0.70	0.57	0.88	0.002
Gender (male=1; female=2)	1.13	0.78	1.64	0.508	0.76	0.48	1.20	0.245	1.43	0.10	2.04	0.051

Discussion

We show that the main components of burnout, emotional exhaustion and depersonalization are higher among medical students at the beginning of the studies compared to final years. Low academic achievement and worse self-estimated health compared to health before studies are explanatory factors of a high burnout level.

Dyrbye et al. (2008) conducted a big multi-institutional study among American medical students and confirmed that the prevalence of burnout syndrome is 50% with an increasing trend during studies. These findings are consistent with other studies

which reported significant differences in burnout and quality of life among students at different levels of study (Henning, Krageloh, Hawken, Zhao & Doherty, 2010; Lyndon, Henning, Alyami, Krishna, Zeng & Yu, 2017). Our research showed the opposite results; that is, the risk of developing a burnout syndrome decreased during studying. These findings are contrary to Guthrie et al. (1998), who identified a modest increase in EE scores with each year of study in a sample of medical students from the University of Manchester, UK (Guthrie, Black, Bagalkote, Shaw, Campbell & Creed, 1998). Dyrbye et al. (2016) found that there were 35% – 45% of medical students with a high level of emotional exhaustion, 26% – 38% with a high depersonalization level and 45% – 56% with burnout symptoms (Dyrbye & Shanafelt, 2016).

In our study, the risk of developing emotional exhaustion among second-year students was as high as 60.8%, while for depersonalization it was 85.6%. At the end of the study, this risk was reduced to 38.8% and 77.6%, respectively. It is not usually found in research that emotional exhaustion is more pronounced among freshmen compared to sophomores and the students in higher years of study. A similar study conducted among medical students in Hungary showed that the stage of training (preclinical/clinical) had no influence on emotional exhaustion or reduced academic efficacy, but significantly more frequently the students in clinical training experienced moderate and severe cynicism (38.5 % vs. 61.5%,) (Gyorffy, Birkas & Sandor, 2016). Our findings are also not congruent with the results of recent research among medical students in Spain, where the risk of burnout syndrome doubled among sixth-year medical students compared to the third year of study (Galan et al, 2011). Another recent research also showed that students had an increased risk of developing the burnout syndrome during their studies, which was also accompanied by a reduction in empathy and initial enthusiasm (Elkins, Plante, Germain & Morley, 2017). The explanation of our results may be that as medical students approach their MD diploma, they gain clinical knowledge and skills that may counteract negative feelings of exhaustion and depersonalization (Santen, Holt, Kemp & Hemphill, 2010).

The results of Cecil et al. have shown a negative trend between EE and the year of study, decreasing from the first to the third year, although scores still remained relatively high (Cecil, McHale, Hart & Laidlaw, 2014). Also, over 50% of first-year students reported high levels of EE and over 40% reported low levels of PA. The authors suggest that a high risk of developing burnout very early in their medical training may justify a preventive intervention before burnout becomes established. Depersonalization symptoms from The MBI are more pronounced among Serbian medical students compared to their colleagues from the USA and Germany (Prinz, Hertrich, Hirschfelder & de Zwaan, 2012). The average value on the MBI-DP scale in our study is 15.08 ± 5.99 , which is even two times higher than the corresponding average value among medical students in America (Dyrbye et al., 2008) and in Germany (Prinz et al., 2012) (7.3 ± 5.9 and 7.00 ± 4.99 , respectively).

Our study shows that higher average grades at the end of studying, compared to the initial period, are associated with lower emotional exhaustion and depersonalization. At the very beginning of the study, medical students face a very difficult entrance exam, and after a few months of studying, they take regular colloquia on all subjects. Many studies have dealt with sources of stress among medical students (Stewart, Betson, Marshall, Wong, Lee & Lam, 1995), but it seems that exams are the most important ones (Galan et al., 2011). An examination at XXXX medical schools comprises a written and an oral exam, inducing high-test anxiety (Sparfeldt, Rost, Baumeister & Christ, 2013). Reed et al. have suggested pass/fail grading systems as beneficial for students' mental health because they have noticed that burnout correlated highly with depersonalization, stress, and emotional exhaustion in schools that used a grading scale system (Reed, Shanafelt, Satele, Power, Eacker, Harper, Moutier, Durning, Massie, Thomas, Sloan & Dyrbye, 2011).

Since students in health professions are less likely to seek professional help, our results point to the need for taking appropriate preventive measures at the beginning of medical studies in order to reduce stress. Recent research has shown that enrolment at the beginning of studies is the most important factor for predicting future success in a medical career (Tartas, Walkiewicz, Budzinski, Mojkwicz, Wojcikiewicz & Zdun-Ryzewska, 2016). In our study, the students are more likely to experience burnout if they estimate their own psychophysical health status as poor. McManus et al. suggested that increased levels of stress and poor coping strategies may be key contributors to the development of burnout (McManus, Keeling & Paice, 2004).

Stress reduction programs and stress management skills should be focused on a client-centred therapy or a person-oriented approach, that sees the student as a unique individual and as such takes into account the various facets of quality of life and burnout experienced by students (Lyndon, Henning, Alyami, Krishna, Zeng, Yu & Hill, 2017).

Reduction of the risk of burnout can be expected in appropriate curriculum and exam schedules, as well as by providing academic support to students (Hinen, Bullinger & Kocalevent, 2017, p.4). At some universities, programs have been introduced to provide students with strategies to overcome stress using relaxation techniques (Cok, 2007, p.40).

Conclusion

Contrary to the majority of previous similar studies, we show that burnout syndrome is more pronounced at the beginning of medical studies compared to the final years. Low self-estimated health status and poorer academic achievement are the main explanatory factors of a high burnout level. The limitation of this study is its cross-sectional design that prevents causal reasoning. However, we question the frequent assumption that burnout progresses with the length of medical studies and point to the need for stress reduction programs at the very beginning of studies. More investigations of this topic are needed to resolve the dilemma of whether burnout vulnerability is higher at the beginning or at the end of medical studies.

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Jelena Ilić Živojinović

Institute of Hygiene and Medical Ecology

Faculty of Medicine

University of Belgrade

Dr Subotica 8, 11000 Belgrade, Serbia

[e-mail: jelena.ilic-zivojinovic@med.bg.ac.rs](mailto:jelena.ilic-zivojinovic@med.bg.ac.rs)

Dušan Backović

Institute of Hygiene and Medical Ecology

Faculty of Medicine

University of Belgrade

Dr Subotica 8, 11000 Belgrade, Serbia

[e-mail: dusan.backovic@med.bg.ac.rs](mailto:dusan.backovic@med.bg.ac.rs)

Ivan Soldatović

Institute of Medical Statistics and Informatics

Faculty of Medicine

University of Belgrade

Dr Subotića 15, 11000 Belgrade, Serbia

[e-mail: soldatovic.ivan@gmail.com](mailto:soldatovic.ivan@gmail.com)

Goran Belojević

Institute of Hygiene and Medical Ecology

Faculty of Medicine

University of Belgrade

Dr Subotica 8, 11000 Belgrade, Serbia

[e-mail: goran.belojevic@med.bg.ac.rs](mailto:goran.belojevic@med.bg.ac.rs)

Korelati sindroma izgaranja među beogradskim studentima medicine - studija presjeka

Sažetak

Glavni cilj: još uvijek postoje praznine u znanju o čimbenicima koji utječu na burnout (sindrom izgaranja) među studentima medicine. Ova studija ispituje odnos između duljine medicinskih studija, akademskoga postignuća, samoprocjene zdravlja i izgaranja. Uzorak: Primijenili smo anonimni upitnik među 769 studenata druge godine i šeste godine (69,2 % žena) radi prikupljanja podataka o dobi, spolu, duljini studija, prosječnoj ocjeni i samoprocjeni o mentalnom i tjelesnom zdravlju. Studenti su ispunili Maslach Burnout Inventory upitnik (MBI) o emocionalnoj iscrpljenosti (EE), depersonalizaciji (DP) i osobnim postignućima (PA). Studenti druge godine doživjeli su veću emocionalnu iscrpljenost i depersonalizaciju i niže osobno postignuće u usporedbi sa studentima šeste godine (MBI ocjene - EE /29,03 %, 11,02 nasuprot 16,23 ± 5,95 /; DP / 32,26 ± 7,18 nasuprot 23,73 ± 10,91 / PA / 13,93 ± 5,82 nasuprot 30,46 ± 7,91 / svi $p < 0,001$). Pogoršanje samoprocjene mentalnoga i tjelesnoga zdravlja u odnosu na razdoblje prije istraživanja pozitivno se odnosilo na rezultate na EE ($p = 0,381$ i $0,257$, i potkategorije DP ($p = 0,296$, odnosno $0,209$, respektivno) i negativno na potkategoriju PA ($p = -0,211$, odnosno $-0,121$, svi $p < 0,001$). Što je viša prosječna ocjena, to je bila niža depersonalizacija i viši osobni uspjeh među ispitanim studentima ($p = -0,094$, odnosno $0,121$; $p < 0,05$). Zaljučak: Sindrom izgaranja izraženiji je među studentima prve godine medicine u odnosu na studente završne godine studija. Bolje akademsko postignuće zaštita je od izgaranja, a samoprocjena tjelesnoga i mentalnoga zdravlja visoko je u korelaciji sa simptomima izgaranja.

Ključne riječi: *mentalno zdravlje; sindrom izgaranja; stres; student*

Uvod

Studenti medicine kontinuirano su izloženi psihosocijalnim stresorima tijekom svojega studiranja koji postupno troše njihove resurse za suočavanje s izazovima i mogu dovesti do sagorijevanja (Dyrbie, Thomas, Huntington, Lawson, Novotny, Sloan & Shanafelt, 2006). Bolonjska reforma studija uz stalno testiranje i stroži nastavni plan i program uzrokuju povećanje pritiska i stresa zbog povećane razine učenja i polaganja ispita. Prekomjerna akademska opterećenja, povećana konkurencija, nedostatak slobodnoga

vremena i suočavanje s ljudskom patnjom i smrću, doprinose nastajanju zdravstvenih poremećaja među studentima medicine (Vyas, Stratton & Soares, 2017). Jedan od ovih poremećaja, osobito čest među studentima medicine, je *burnout* sindrom (Fang, Young, Golshan, Moutier & Zisook, 2012).

Sindrom izgaranja čini prisutnost emocionalne iscrpljenosti, negativnih osjećaja i smanjenoga profesionalnoga postignuća, koji se uglavnom pojavljuje među ljudima koji pomažu i podržavaju druge ljude. Ovaj sindrom najviše je proučavan među zaposlenicima socijalne skrbi, učiteljima, pravnicima, liječnicima, medicinskim sestrama i psiholozima, u takozvanim „pomažućim profesijama” (Backović & Jevtić, 2012; Freudenberger, 1974; Bianchi, Schonfeld & Laurent, 2015). Sindrom izgaranja posljedica je kroničnoga nakupljanja stresa na radu koji postupno troše sredstva za suočavanje s istim (Shirom, 2011). Izgaranje među studentima medicine može imati negativan utjecaj na njihova postignuća i budući profesionalni razvoj i može dovesti do gubitka empatije i humanitarnih stavova uz smanjenje profesionalnoga interesa za rad s pacijentima (Galan, Sanmartin, Polo & Giner, 2011; Derksen, Bensing & Largo-Janssen, 2013).

Studiji medicine su među najzahtjevnijima, a simptomi anksioznosti i depresije češći su među studentima medicine u usporedbi sa skupinama opće populacije koji se podudaraju po godinama ili spram drugih studenata (Dyrbye i sur., 2006). Studija među beogradskim studentima medicine pokazala je da je prevalenca mentalnih poremećaja bila 16,1 % tijekom prve godine studija, ali dvije godine kasnije povećala se na 17,5 %, a stopa incidencije psihijatrijskih bolesti iznosila je 5,3 % (Eric, Radovanović & Jevremović, 1988). Studija među američkim studentima medicine pokazala je da se njihovo mentalno zdravlje pogoršava, a izgaranje raste kako napreduje obrazovanje (Villwock, Sobin, Koester & Harris, 2016). Stope prevalencije izgaranja među studentima medicine redovito su visoke i iznosile su oko 49 % u Americi i između 28 % i 61 % u Australiji (Hak, Nikraves, Lederer, Perry, Ogunyemi i Berstein, 2013).

Rezultati nekoliko istraživanja upućuju na značajno negativnoj povezanosti između izgaranja kod studenata medicine i razine pružene potpore u obitelji ili prijatelja u kampusu (Chang, Eddins-Folensbee & Coverdale, 2012; Lapinski, Yost, Sexton & LaBaere, 2016). Novija istraživanja naglašavaju važnost pomoći kolega i akademskoga osoblja kao ključne za suočavanje i prevladavanje stresa (Santen, Holt, Kemp & Hemphill, 2010; Dyrbye, Power, Massie, Eacker, Harper, Thomas, Szyldo, Sloan & Shanafelt, 2010). Stres među studentima medicine može biti povezan s motivacijom koja dosta doprinosi njihovim akademskim postignućima (Artino, La Rochelle & Durning, 2010).

Ispitivanje čimbenika rizika za izgaranje važno je za fokusiranje antistresnih programa među studentima medicine. Ovu studiju poduzimamo kako bismo istražili čimbenike povezane sa sindromom izgaranja među beogradskim studentima medicine na početku i na kraju studija. Na temelju prethodnih ispitivanja postavljamo hipoteze da je izgaranje studenata medicine značajno povezano s duljinom školovanja, akademskim postignućima i samoprocjenom zdravlja.

Metode

Sudionici i postupci

Ova studija presjeka provedena je među studentima druge i šeste godine Medicinskog fakulteta Sveučilišta u Beogradu. Studij se odvijao prema novom bolonjskom sustavu s jednim kolokvijem po semestru za svaki predmet, kao i veliki broj laboratorijskih vježbi i seminara (opterećenja tjednim satima na drugoj i šestoj godini studija su 27,5 i 20,5, respektivno (Republika Srbija, Komisija za akreditaciju i provjeru kvalitete, 2014). Među 554 studenta koji pohađaju drugu godinu i 468 studenata sa šeste godine, stopa odgovora bila je 70,2 % (n = 389) i 81,2 % (n = 380). Prosječna dob bila je 20,49 ± 0,93 godine, odnosno 25,26 ± 1,82 godine. Studenti su ispitivani tijekom nastave, a sudjelovanje je bilo dobrovoljno i anonimno. Tiskani upitnik ispunjen je na početku predavanja, a glavni istražitelj dao je upute.

Upitnici

Upitnik je sadržavao podatke o dobi, spolu, duljini studija, broju položenih ispita, prosječnoj ocjeni (6-10), kao i samoprocjene o tjelesnom i mentalnom zdravlju u odnosu na zdravlje prije medicinskih studija (bolje = 1; bez promjena = 2; gore = 3). Studenti su ispunili upitnik Maslach Burnout Inventory (MBI). Koristili smo Likertovu ljestvicu od sedam stupnjeva (od 0-nikad do 6-skoro svaki dan) za MBI. MBI je instrument s 22 stavke koji opisuje osjećaje osobe prema svome poslu. Sastoji se od tri potklase za procjenu svake domene izgaranja, a to su emocionalna iscrpljenost (EE), depersonalizacija (DP) i niska osobna postignuća (PA). Bodovi na svakoj skali mogu se kategorizirati kao niska, prosječna ili visoka razina izgaranja prema граниčnim vrijednostima koji su detaljno opisani u MBI priručniku. Visoki EE definiran je kao bodovanje ≥ 27 , visok DP ≥ 10 , a nizak PA ≤ 33 (Maslach & Jackson, 1996, Matejić, Milenović, Kisić Tepavčević, Simić, Pekmezović i Jody, 2015).

Statistička analiza

Sve su analize provedene korištenjem komercijalnoga statističkog softvera SPSS za Windows inačice 17 s razinom značajnosti postavljenom na 0,05. Rasprostranjenost kategorijskih varijabli istraživana je χ^2 testom. Kako bismo testirali značajnost razlike između srednjih vrijednosti numeričkih i rednih varijabli, upotrijebili smo Studentov t test i Mann Whitney U test. Analiza korelacije između kategorijskih varijabli provedena je Spearmanovim korelacijskim testom. Provedena je višestruka regresijska analiza radi utvrđivanja faktora koji objašnjavaju visoku razinu izgaranja.

Rezultati

Podjela ispitanih studenata s obzirom na spol bila je slična. Prosječna ocjena bila je viša u posljednjoj godini studija u odnosu na drugu godinu. Postotak studenata koji su procijenili svoje tjelesno i psihičko zdravlje gorim nego prije studija bio je oko 5 % viši među studentima druge godine u odnosu na studente šeste godine studija, ali ta razlika nije dostigla statističku značajnost.

Tablica 1.

Studenti druge godine imali su značajno veće prosječne rezultate na EE, DP i PA potkategoriju u odnosu na studente šeste godine. Postotak učenika s niskim rezultatima na MBI potkategorijama bio je viši među studentima šeste godine u usporedbi sa studentima druge godine.

Tablica 2.

Niži rezultati u samoprocjeni mentalnoga i tjelesnoga zdravlja u odnosu na razdoblje prije studija bili su pozitivno i značajno povezani s rezultatima na EE, DP subskalama i negativno s PA ljestvicom MBI.

Duljina studija bila je negativno povezana s rezultatima na sve tri MBI potkategorije. Povećanjem broja položenih ispita, znatno su smanjene emocionalna iscrpljenost i depersonalizacija. Više prosječne ocjene povezane su sa značajno nižom depersonalizacijom i većim osobnim postignućima. Što su studenti stariji, smanjuje se emocionalna iscrpljenost, depersonalizacija i osobno postignuće.

Tablica 3.

Obrazložni čimbenici razlike u izgaranju između učenika druge i šeste godine bili su: za veliku emocionalnu iscrpljenost - samoprocjenjivanje tjelesnoga i mentalnoga zdravlja i broj položenih ispita; za visoku depersonalizaciju - samoprocjenjivanje tjelesnoga i mentalnoga zdravlja; za niska osobna postignuća - samoprocjenjivanje tjelesnoga i mentalnoga zdravlja i prosjek ocjena (tablica 4).

Tablica 4.

Rasprava

Pokazujemo da je sindrom izgaranja češći među studentima medicine na početku studija u odnosu na završne godine studiranja. Negativni korelati sa sindromom sagorijevanja studenata su samoprocjena tjelesnoga i mentalnoga zdravlja i akademska postignuća.

Dyrbye i sur. (2008) proveli su veliko multiinstitucijsko istraživanje među američkim studentima medicine i potvrdili da je prevalenca sindroma izgaranja 50 % s rastućim trendom tijekom studiranja. Ovi su rezultati u skladu s drugim istraživanjima koja su izvijestila o značajnim razlikama u izgaranju i kvaliteti života između studenata na različitim godinama studija (Henning, Krageloh, Hawken, Zhao & Doherty, 2010; Lyndon, Henning, Alyami, Krišna, Zeng & Yu, 2017). Naše je istraživanje pokazalo suprotne rezultate, dapače rizik od razvoja sindroma izgaranja smanjen je tijekom studiranja. Ovi su nalazi protivni Guthrie i suradnicima (1998) koji su identificirali skromno povećanje rezultata EE sa svakom godinom studija na uzorku studenata medicine s University of Manchester UK (Guthrie, Black, Bagalkote, Shaw, Campbell & Creed, 1998). Dyrbye i sur. (2016) utvrdili su da je bilo 35 – 45 % studenata medicine

s visokom emocionalnom iscrpljenošću, 26 – 38 % s velikom depersonalizacijom i 45 – 56 % sa simptomima izgaranja (Dyrbye & Shanafelt, 2016).

U našem istraživanju rizik od razvijanja emocionalne iscrpljenosti među studentima druge godine bio je čak 60,8 %, dok je depersonalizacija bila 85,6 %; na kraju studija taj je rizik smanjen na 38,8 % odnosno 77,6 %. U istraživanjima se ne nalazi obično da je emocionalna iscrpljenost izraženija među studentima prve godine u usporedbi s onima viših godina. Slična studija provedena među studentima medicine u Mađarskoj pokazala je da faza treninga (pretklinička/klinička) nije utjecala na emocionalnu iscrpljenost ili smanjenu akademsku učinkovitost, ali značajno je više studenata na kliničkom treningu iskusilo umjereni i teški cinizam (38,5 % vs. 61,5 %), (Gyorffy, Birkas & Sandor, 2016). Naši nalazi nisu u skladu s rezultatima nedavnoga istraživanja među studentima medicine u Španjolskoj, gdje se rizik od sindroma izgaranja udvostručio među studentima medicine šeste godine u usporedbi s trećom godinom studija (Galan i sur., 2011). Drugo nedavno istraživanje također je pokazalo da su studenti imali sve veći rizik od razvoja sindroma izgaranja tijekom studija, što je također bilo popraćeno smanjenjem empatije i početnoga entuzijazma (Elkins, Plante, Germain & Morley, 2017). Objašnjenje naših rezultata može biti da dok studenti medicine prilaze svojoj diplomu za MD stječu klinička znanja i vještine koje mogu suzbiti negativne osjećaje iscrpljenosti i depersonalizacije (Santen, Holt, Kemp & Hemphill, 2010). Rezultati Cecil i sur. pokazali su negativan trend između EE i godine studija, smanjujući se od prve do treće, iako su pojedinačni rezultati još uvijek relativno visoki (Cecil, McHale, Hart i Laidlaw, 2014). Također, više od 50 % studenata prve godine izvijestilo je o visokoj razini EE i preko 40 % iskazalo je nisku razinu PA. Autori sugeriraju da visoki rizik od razvoja izgaranja vrlo rano u medicinskom treningu može opravdati preventivnu intervenciju prije nego što se izgaranje uspostavi. Simptomi depersonalizacije od MBI izraženiji su kod srpskih studenata medicine u usporedbi s kolegama iz SAD-a i Njemačke (Prinz, Hertrich, Hirschfelder & de Zwaan, 2012). Prosječne vrijednosti ljestvice MBI-DP u našem istraživanju bile su $15,08 \pm 5,99$, što je neočekivano viša vrijednost od rezultata među studentima medicine u Americi ili Njemačkoj gdje su ove vrijednosti $7,3 \pm 5,9$ (Dyrbye i sur., 2008) i $7,00 \pm 4,99$, zasebne (Prinz i sur., 2012).

Naše istraživanje pokazuje da su više prosječne ocjene na kraju studija u odnosu na početno razdoblje povezane s manjom emocionalnom iscrpljenošću i depersonalizacijom. Na samom početku studija studenti medicine suočavaju se s vrlo teškim prijavnim ispitom, a nakon nekoliko mjeseci studija redovno polažu kolokvije u svim predmetima. Mnoge studije bavile su se raznim izvorima stresa među studentima medicine (Stewart, Betson, Marshall, Wong, Lee & Lam, 1995), ali čini se da su ispiti ipak najvažniji (Galan i sur., 2011). Ispitivanje u medicinskim školama uključuje pismeni i usmeni ispit, što izaziva veliku anksioznost (Sparfeldt, Rost, Baumeister & Christ, 2013). Reed i sur. predložili su sustav ocijenjivanja položio/pao kao korisan za mentalno zdravlje jer su primijetili da je izgaranje visoko povezano s depersonalizacijom, stresom i emocionalnom iscrpljenošću u školama koje koriste standardni gradacijski sustav

ocjenjivanja (Reed, Shanafelt, Satele, Power, Eacker, Harper, Moutier, Durning, Massie, Thomas, Sloan & Dyrbye).

Budući da studenti zdravstvenih struka imaju manje vjerojatnosti da osobno potraže stručnu pomoć, naši rezultati ukazuju na potrebu poduzimanja odgovarajućih preventivnih mjera na početku studija medicine kako bi se smanjio stres. Nedavna istraživanja pokazala su da je angažiranje na početku studija najvažnije za predviđanje budućega uspjeha u medicinskoj karijeri (Tartas, Walkiewicz, Budzinski, Mojkwicz, Wojcikiewicz & Zdun-Ryzewska, 2016). U našoj studiji studenti s visokim rizikom od izgaranja su oni koji procjenjuju vlastiti psihofizički zdravstveni status lošim. McManus, al. sugerira da povećana razina stresa i loše strategije rješavanja problema mogu biti ključni faktori u razvoju izgaranja (McManus, Keeling & Paice, 2004).

Programi za smanjenje stresa i vještine upravljanja stresom trebaju biti usredotočeni na terapiju usmjerenu na klijenta ili na pristup orijentiran na osobu, koji studenta doživljavaju kao jedinstvenu osobu i kao takav uzimaju u obzir različita stajališta kvalitete života i izgaranja koje studenti osobno doživljavaju (Lyndo Henning, Alyami, Krishna, Zeng, Yu & Hill, 2017).

Smanjenje rizika od izgaranja može se osigurati odgovarajućim nastavnim planovima i programima, kao i pružanjem akademske potpore studentima (Hinen, Bullinger & Kocalevent, 2017). Na nekim sveučilištima uvedeni su programi koji studentima pružaju modele strategije za prevladavanje stresa, praćenje mentalnoga zdravlja studenta, kao i obuku za tehnike i vještine opuštanja (Cok, 2007).

Zaključak

Suprotno većini prethodnih sličnih studija, pokazali smo da je sindrom izgaranja izraženiji na početku medicinskih studija u odnosu na završne godine. Samoprocjenjivanje tjelesnoga i mentalnoga zdravlja i akademska postignuća negativno se odnose na izgaranje studenata. Ograničenje ovoga istraživanja je njegov poprečni presjek koji sprječava uzročno zaključivanje. Međutim, dovodimo u pitanje česte pretpostavke da izgaranje napreduje s obzirom na duljinu medicinskih studija i ukazuju na potrebu programa za smanjenje stresa na samom početku studija. Potrebno je više istraživanja o ovoj temi kako bi se riješila dilema je li ranjivost izgaranja veća na početku ili na kraju studija medicine.