ORIGINAL PAPER

DOI: http://dx.doi.org/10.15403/jgld-5282

The Rate of Burnout Syndrome in A Tertiary Gastroenterology University Center in Romania

Mihaela Dranga[1,2], Stefan Chiriac[1,2], Carol Stanciu[2], Cristina Cijevschi Prelipcean[2], Sergiu Timofeiov[1,3], Anca Trifan[1,2]

1) Grigore T. Popa University of Medicine and Pharmacy Iași;
2) Institute of Gastroenterology and Hepatology, St. Spiridon Emergency Hospital, Iași;
3) 3rd Surgical Unit, St. Spiridon Emergency Hospital, Iasi, Romania

Address for correspondence:
Stefan Chiriac
Grigore T. Popa University of Medicine and Pharmacy Iași, Institute of Gastroenterology and Hepatology, St. Spiridon Emergency Hospital, Iași, Romania
stefannchiriac@yahoo.com

Received: 09.10.2023
Accepted: 29.12.2023

ABSTRACT

Background & Aims: The burnout syndrome (BOS) is commonly seen in healthcare professionals, particularly in physicians who are exposed to a high level of stress at work and has a negative impact on the medical activity. Physicians with BOS manifest a negative attitude, a reduction in compassion at work, and suboptimal patient care experiences. These all can lead to absenteeism, poor performance and more frequent medical errors. We aimed to assess the level of BOS in a tertiary gastroenterology university center in Romania.
Methods: This observational study involved 40 physicians from a tertiary gastroenterology university center. An online questionnaire assessed the presence of BOS using the Maslach Burnout Inventory.
Results: A total of 40 physicians responded to the questionnaire. The prevalence of overall BOS of 87.5%. In terms of high burnout, 15 doctors (37.5%) had emotional exhaustion, 10 doctors (25%) had depersonalization, and 30 doctors (80%) scored low for personal achievement. Men presented more frequently emotional exhaustion and women lower personal achievement scores, but there was no significant statistical difference. No significant relationship was found between marital status or the number of children and BOS. We identified multiple risk factors associated to BOS, the most important one being strict internal regulations.
Conclusions: Physicians presented an increased risk for BOS. The high rate of BOS among physicians found in our study requires careful attention. Further studies aiming to identify other factors that contribute to BOS and to identify measures to combat this syndrome are necessary.

Key words: professional burnout – gastroenterologists – Romania – emotional exhaustion – depersonalization – personal accomplishment.

Abbreviations: BOS: burnout syndrome; DP: depersonalization; EE: Emotional exhaustion; IQR: interquartile range; MBI: Maslach Burnout Inventory; PA: personal accomplishment; SD: standard deviation.

INTRODUCTION

Burnout syndrome (BOS), first described by Freudenberger in 1974 [1], is defined as the response to long-term stress at work, characterized by a state of physical, mental, and emotional exhaustion that reduces the sense of personal fulfillment and professional [2]. Burnout syndrome can affect employees in all areas of activity.

Burnout syndrome in doctors is an under-recognized and under-reported problem. The incidence of BOS among health professionals varies between countries, from 25% to 75%, depending on different areas of specialization and work units [3]. Burnout syndrome may affect more than 60% of family physicians and at least one third of gastroenterologists [4]. Studies have shown that it is more common in younger doctors, in those who perform procedures with a high degree of risk, and in those who face conflicts in their private lives [2]. Recognizing BOS is extremely important because physicians' burnout can be associated with increased rates of depression, alcohol and drug abuse, difficult relationships with work colleagues as well as medical errors [5].

The causes of BOS are multiple: provided care around the clock, patients becoming vulnerable or needy, health care constantly changing, development of new technologies, and caring for critically ill patients. Moreover, there are also workplace-related causes for BOS, such as limited time, limited resources, and reduced staff as well as personality-related causes such as low self-esteem, need for approval, perfectionism, impatience.

The consequences are numerous and have a major impact on the performance of healthcare personnel. The physician will manifest a negative attitude, reduction in compassion at work, and suboptimal patient care experiences. The conversation with the patient can become brief. These all can lead to absenteeism, poor performance, and more frequent medical errors [6].

Burnout syndrome in the field of gastroenterology is an under-researched phenomenon. So far, only a few studies have dealt with this topic. Considering these observations, we aimed to assess the rate of BOS in a tertiary gastroenterology university center and to identify the factors associated with BOS aiming to limit their influence on the quality of work.

METHODS

We conducted an observational study involving 40 physicians from a tertiary gastroenterology university center. An online questionnaire assessed the presence of BOS using the Romanian version of the Maslach Burnout Inventory (MBI) to assess BOS which is used in the majority of studies [7]. The MBI has been validated on a sample of 1190 Romanian healthcare professionals by Bria et al in 2014 [8]. The MBI questionnaire contains 22 items, was specially designed to measure burnout in workers, and represents the "gold standard" in this field. Each scored on a seven-point scale from "0 – never" to "7 – every day". The MBI questionnaire was designed to evaluate the three defining components of burnout syndrome, namely "emotional exhaustion" (EE) (nine items) which measures exhaustion at work, "depersonalization" (DP) (five items), which measures emotional distance to others and loss of empathy, and "personal accomplishment" (PA) (eight items), which measures competence and a positive attitude towards work. Emotional exhaustion is considered elevated at a value of minimum 27, DP score DP is considered high at minimum 10, whereas PA is low for a value below or equal to 33. Additionally, we asked the participants to identify what they considered to be potential factors leading to burnout. The answers were used to develop the list of factors that contributed to burnout.

Statistical analysis

IBM Statistical Package for Social Sciences (SPSS) version 22.0 was used to perform the statistical analysis. The Kolmogorov–Smirnoff test was used to assess the distribution of the continuous variables. Thus, variables with parametric or nonparametric distribution were expressed as mean ± standard deviation (SD) or as median (interquartile range, IQR), respectively. Categorical variables were expressed as frequency as well as percentage; subsequently, the Chi-square or Fischer's test was used for their analysis. Statistical significance was considered for a p-value of less than 0.05.

Ethical Considerations

The study performed was a service evaluation. Thus, there was no requirement for ethical approval.

RESULTS

A total of 90 invitations were delivered, and 40 responses were received. The response rate was 44.4%. Sociodemographic data are shown in Table I. The overall prevalence of BOS, according to a positive score in at least one of the three domains of MBI, was 35 (87.5%). Fifteen participants had a positive score for BOS in the EE domain, 10 respondents in the DP domain, and 32 gastroenterologists in the reduced PA domain.

Table I. General group characteristics

Characteristic	N (%)
Gender (man:woman:undisclosed)	9:27:4 (22.5:67.5:10)
Age (median, IQR)	30 (27-37)
Professional status	
Senior doctor	18 (45)
Junior doctor	3 (7.5)
Resident	19 (47.5)
Endoscopy type	
Diagnostic	27 (67.5)
Diagnostic and interventional	13 (32.5)
Relationship status	
Single	5 (12.5)
Cohabitation	14 (35)
Married	21 (52.5)
Children	
No children	24 (60)
1 child	14 (35)
2 children	2 (5)
Weekly hours spent with patients	
36-45	29 (72.5)
46-50	3 (7.5)
>50	8(20)
Weekly hours spent on call	
<24	2 (5)
48	17 (42.5)
72	14 (45)
>72	4 (10)
Relation with colleagues	
Poor	1 (2.5)
So and so	4 (10)
Fair	12 (30)
Good	17 (42.5)
Very good	6 (15)
Weekly alcohol consumption (units)	
< 1 unit/week	13 (32.5)
1-2 units/week	16 (40)
3-4 units/week	4 (10)
5-6 units/week	7 (17.5)
Daily coffee consumption (cups)	
Do not drink coffee	1 (2.5)
1-2 cups/day	27 (67.5)
3-4 cups/day	7 (17.5)
> 4 cups/day	5 (12.5)
Personal accomplishment	
Score (mean ± SD)	25.8 ± 7.96
Respondents presenting low personal accomplishment (n,%)	32 (80)
Emotional exhaustion	
Score (median, IQR)	22.5 (18-35)
Respondents presenting emotional exhaustion (n, %)	15 (37.5)
Depersonalization	
Score (median, IQR)	7 (3-11.2)
Respondents presenting depersonalization (n,%)	10 (25)
Burnout	35 (87.5)

Table I (continued)

Preferred burnout coping mechanism	
Playing sports	5 (12.5)
Reading	5 (12.5)
Spending time with family	25 (62.5)
Playing video games	4 (10)

IQR: interquartile ratio; SD: standard deviation.

Table II presents the results of the univariate analysis of BOS-associated factors. Univariate analysis found strict internal regulations to be a risk factor for burnout with an odds ratio (OR) of 1.294 for a 95% confidence interval (CI) between 1.032-1.623, although it did not reach statistical significance p=0.056.

Table II. Analysis of the factors that contribute to burnout

Factor	N (%)	OR	CI	P
Increased bureaucracy	31 (91.2)	1.181	0.662-2.105	0.431
Lack of respect in collegial relationships	16 (47.1)	1.150	0.914-1.448	0.363
Chronic patients with frequent admissions	19 (55.9)	1.086	0.847-1.393	0.647
Strict internal regulations	17 (50)	1.294	1.032-1.623	0.056
Critical patients	15 (44.1)	1.135	0.905-1.423	0.305
Inadequate medicolegal protection	12 (35.3)	1.091	0.869-1.369	0.452
Unhappy about the long program	9 (26.5)	1.200	1.023-1.408	0.248
Not mentioned	8 (23.5)	1.026	0.783-1.344	0.676
Vulnerable patients with multiple needs	8 (23.5)	1.026	0.783-1.344	0.676
Changes in patients' management protocol	7 (20.6)	1.185	1.021-1376	0.350
Complications following endoscopy	6 (17.6)	1.143	0.150-8.728	0.650
Unhappy about low salary	6 (17.6)	1.179	1.020-1361	0.412
Low autonomy in decision-making	3 (8.8)	1.161	1.019-1.324	0.655
New technologies	2 (5)	1.156	1.018-1313	0.757

OR: odds ratio; CI: confidence interval.

The characteristics of the participants with and without burnout are presented in Table III.

The analysis of the repartition of BOS according to the sex of the participants is illustrated in Table IV.

In the subgroup of participants without burnout, most were women while 20% chose not to disclose their sex. Surprisingly, all of the men presented burnout according to the defined criteria. However, there was no statistical significance noted (p=0.061) (Fig. 1).

Most of the participants without burnout were in the 51-60 years of age interval. In the burnout subgroup, there was a predominance of gastroenterologists in the 25-30 years of age interval. There was no statistical significance between specific age groups regarding the occurrence of BOS (Fig. 2).

Table III. The characteristics of the burnout and no burnout subgroups

	Burnout, N=35	No burnout, N=5	p
Sex (man: woman: undisclosed)	9:23:3 (25.7:65.7:8.6)	0:4:1(0:80:20)	0.370
Age (median, IQR)	30 (27-33.7)	54 (33-57.7)	0.503
Professional status, n (%)			0.235
Senior doctor	14 (40)	4 (80)	
Junior doctor	3 (8.6)	0	
Resident	18 (51.4)	1 (20)	
Endoscopy type, n (%)			0.123
Diagnostic	22 (67.5)	5 (100)	
Diagnostic and interventional	13 (32.5)	0	
Relationship status, n (%)			0.665
Single	5 (14.3)	0	
Cohabitation	12 (34.3)	2 (40)	
Married	18 (51.4)	3 (60)	
Children, n (%)			0.077
No children	23 (65.7)	1 (20)	
1 child	10 (28.6)	4 (80)	
2 children	2 (5.7)	0	
Weekly hours spent with patients, n (%)			0.024
36-45	24 (68.6)	5 (100)	
46-50	3 (8.6)	0	
>50	8 (22.6)	0 (60)	
Weekly hours spent on call, n (%)			0.158
<24	1 (2.9)	1 (33.3)	
48	16 (47.1)	1 (33.3)	
72	13 (38.2)	1 (33.3)	
>72	4 (11.8)	0	
Relation with colleagues, n (%)			0.455
Poor	1 (2.9)	0	
So and so	4 (11.4)	0	
Fair	11 (31.4)	1 (20)	
Good	13 (37.1)	4 (80)	
Very good	6 (17.1)	0	
Weekly alcohol consumption (units), n (%)			0.644
< 1 unit/week	11 (31.4)	2 (40)	
1-2 units/week	14 (40)	2 (40)	
3-4 units/week	3 (8.6)	1 (20)	
5-6 units/week	7 (20)	0	
Daily coffee consumption (cups), n (%)			0.675
Do not drink coffee	1 (2.9)	0	
1-2 cups/day	23 (65.7)	4 (80)	
3-5 cups/day	7 (20)	0	
> 4 cups/day	4 (11.4	1 (20)	
Preferred burnout coping mechanism, n (%)			0.619
Playing sports	5 (14.7)	0	
Reading	4 (11.8)	1 (20)	
Spending time with family	21(61.8)	4 (80)	
Playing video games	4 (11.8)	0	

IQR: interquartile ratio.

The highest burnout rates were found in junior doctors and residents, respectively. Senior doctors presented the lowest rate of burnout. However, there were no statistically significant differences between professional status and the presence of BOS (Fig. 3).

Table IV. Analysis of the distribution of low personal accomplishment, emotional exhaustion, and depersonalization according to sex

	Men N=9	Women N=27	Undisclosed N=4	p
Low personal accomplishment, n (%)	7 (77.8)	22 (81.5)	3 (75)	0.938
Emotional exhaustion, n (%)	5 (55.6)	9 (33.3)	1 (25)	0.423
Depersonalization, n (%)	4 (44.4)	6 (22.2)	0	0.196

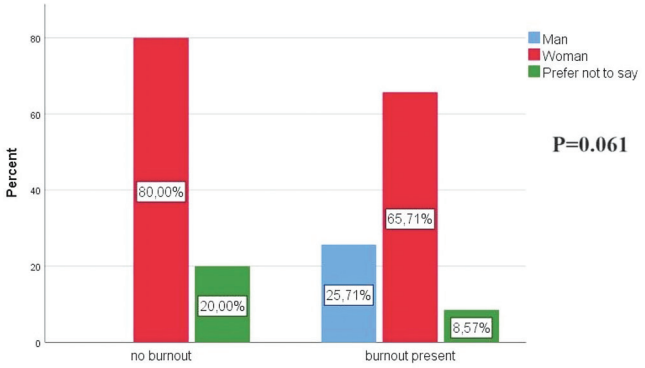

Fig. 1. Analysis of burnout according to gender.

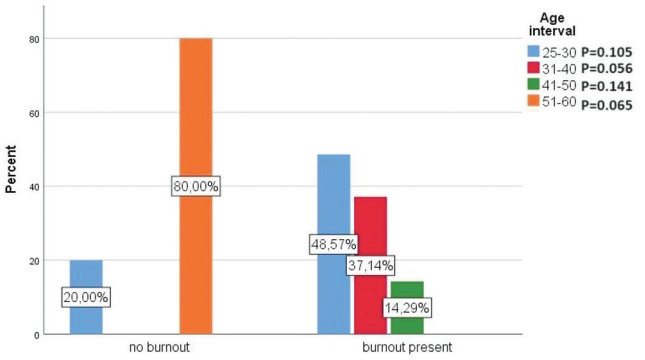

Fig. 2. Analysis of burnout according to age interval.

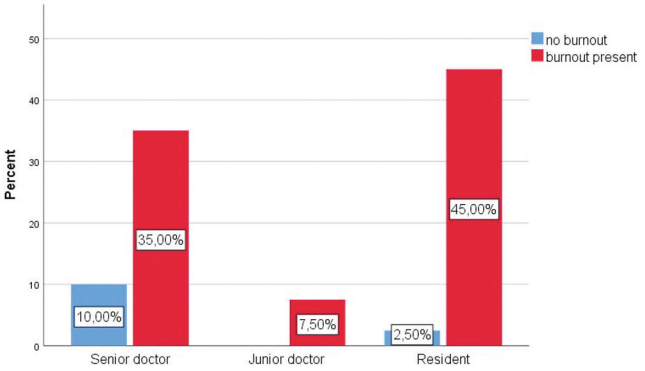

Fig. 3. Analysis of burnout according to professional status.

DISCUSSION

Gastroenterology is a distinct specialty of internal medicine focused, in addition to the treatment and care of patients on a wide variety of pathologies, on high-risk procedures that require extensive training. The vast majority of gastroenterologists perform procedures with a potential risk of complications that involve a certain risk for the development of adverse events but also for misdiagnosis as well as missed diagnosis. In essence, this field can be compared to surgery in terms of interventions. All of these factors contribute to an increased level of burnout in this specialty. The previously reported rates of BOS varied from 25% to 75% [9]. The prevalence of BOS reported in the USA reached 54% [10] while in South Korea BOS was found in 64.4% of the participants [11]. In an older study published by Soler et al. 16.6% of gastroenterologists had high EE, 27.7% high DP, and 53.9% low PA [12]. In a recent systematic review, Ong et al. [13] found an EE rate of 25.7%, a DP rate of 25.6%, and low PA of 45.1%. However, different results were obtained when analyzing 232 medical professionals from Turkey, in a study conducted in 2019; the authors reported low rates of PA in 97.8% of cases, EE in 40.5% of respondents, and DP in 20.7% [9].

Our study reported a higher prevalence of overall BOS of 87.5%. In our study, 37.5% experienced EE, 25% of participants had DP, and 80% presented low PA. This increased rate of BOS can be explained by the fact that by comparison to other published reports, our study was carried out in the period after the COVID-19 pandemic, which changed the paradigms and the way of relating to patients. Human interactions were more difficult and the reduced contact with patients was more accentuated, as it involved sometimes reduced time in the room of the patient, and the use of mandatory barriers such as facial masks. Also, the interventions were more difficult and time-consuming, owing to the special patient and medical personnel circuits, and the need for constant use of personal protection equipment [14]. In addition, there was a continuous change in patient management protocols that required constant attention and adaptability from the medical personnel.

The prevalence of BOS according to gender is very controversial. Most studies identified a higher prevalence of BOS in women [15-18]. Women may have additional stressors at home that challenge work-life balance when compared to men and may find it challenging to perform in a historically male-dominated field. However, in a literature review of 15 studies reporting gender differences in burnout during medical training, none of the studies reviewed reported a higher risk of BOS in women [19]. There was also a longitudinal study that found a greater increase in burnout in men compared with women over one year [20]. In our study, BOS was found to be higher in men than in women (100% in men, 85% in women), and no significant relationship was found between marital status or the number of children and burnout. In particular, in our study, all men who responded to the questionnaire showed BOS. In both sexes, BOS was diagnosed primarily in

the setting of low PA, followed by EE, and DP, respectively. When comparing the distribution of the categories according to gender, women presented higher percentages of low PA while men had higher EE and DP rates.

Regarding the rate of BOS according to age, studies have reported that younger age was frequently associated with a higher frequency of BOS [21, 22]. During the residency, physicians must acquire the necessary knowledge and skills required to carry out their subsequent activities in good conditions. This implies an increased volume of work, continuous medical education, and the acquisition of certain skills necessary for performing specific procedures. Previous studies cited as a major risk factor for BOS the lack of patient communication skills and the increased stress related to the ability to perform endoscopy concerning the difficulties in establishing a correct diagnostic and performing therapy [23]. Adaptation to working conditions can appear even later in the career as adjusting to the work environment properly can take time. Studies conducted by the American Society for Gastrointestinal Endoscopy (ASGE) showed that junior gastroenterologists reported an increased level of stress related to endoscopic practice compared to seniors [24]. In another survey conducted by the American Gastroenterological Association (AGA), among 639 gastroenterologists, young gastroenterologists, and residents demonstrated markedly high rates of burnout compared to senior gastroenterologists [25]. Similar results were obtained in a survey including 1021 gastroenterologists conducted by the American College of Gastroenterology (ACG). Forty-nine percent of the respondents reported burnout; moreover, younger age was associated with a significantly increased risk for BOS [26]. Our findings are in accordance with these previously published studies. We found that there was a predominance of gastroenterologists in the 25-30 years of age interval who suffered from BOS. Moreover, most of the participants without burnout were in the 51-60 years of age interval.

Several studies found an association between environmental factors and BOS. Numerous data show that being single was significantly associated with higher incidences of burnout [27-29]. On the opposite side, having children was associated with lower rates of burnout [28, 29]. However, our study did not demonstrate any association between marital status, the presence of children, and BOS.

Dedication to providing care for patients is usually associated with an increased workload. The physicians may detract from personal and professional activities that promote and maintain wellness to ensure the best care for the patients. Usually, they feel compelled to prioritize professional duties over time and energy spent on personal well-being. That may lead to an unbalanced work-life balance, including childcare issues, interruption in family activities, and lack of time spent with the spouse or partner. All these factors can contribute to BOS [17]. Most studies showed that BOS was associated with an increased workload [31-33]. All studies used self-report measures to identify worked hours. A study including gynecologists from Pakistan found that working 50–60 hours per week was associated with lower burnout than working over 80 hours per week [32]. A large survey study conducted by the American College of Surgeons that assessed the root causes of burnout in 7,905 surgeons identified a strong correlation between the relationship between burnout and the number of hours worked per week [33]. Our study also confirmed the data from the literature. The high weekly number of hours spent with patients was strongly associated with BOS. Surprisingly, the number of on-call hours performed in a month did not have a significant impact on the occurrence of BOS.

Studies have shown that BOS can lead over time to abusive behavior such as an increased consumption of alcohol and drugs [5]. The National Institute on Alcohol Abuse and Alcoholism defines it as more than 14 drinks per week for men and 7 drinks per week for women. Our study contradicts data from the literature. None of the responding doctors exceeded the amount of 7 drinks per week. In addition, a third of the physicians did not consume alcohol at all.

The factors identified in our study that contribute to BOS are multiple and concern both the direct activity with patients and are also related to the workplace. These factors may be addressed to reduce burnout in tertiary care units. Univariate analysis found strict internal regulations to be the most important risk factor for burnout in our study.

Our study had some limitations. One of the primary limitations was the relatively small number of participants. This could lead to a reduced statistical power and low generalization of the results in the broad population. Secondly, the study was conducted in a single center, and thus the results, although showing valuable insights should be interpreted with caution when considering the extrapolation to the heterogenous population of Romania. Future research should be based on multicenter studies including a large number of practitioners in order to overcome these limitations.

CONCLUSIONS

Physicians present an increased risk for burnout, relative to workers in other fields. The high rate of BOS among gastroenterologists found in our study requires careful attention. Further studies aiming to identify other factors that contribute to burnout as well as measures to combat this issue are necessary. Professional societies should get involved in studying the factors that generate BOS among physicians as well as identifying solutions to reduce these factors.

Conflicts of interest: None to declare.

Authors' contribution: M.D. and A.T conceived and designed the study. S.C. collected data and performed the statistical analyses; C.S. and C.C.P. revised the manuscript. S.T. analysed the data. All authors critically revised the manuscript, approved the final version to be published, and agree to be accountable for all aspects of the work.

REFERENCES

1. Freudenberger HJ. Staff Burn-Out. J Soc Issues 1974;90:159–165. doi:10.1111/j.1540-4560.1974.tb00706.x
2. Maresca G, Corallo F, Catanese G, Formica C, Lo Buono V. Coping Strategies of Healthcare Professionals with Burnout Syndrome: A

Systematic Review. Medicina (Kaunas) 2022;58:327. doi:10.3390/medicina58020327
3. Chati R, Huet E, Grimberg L, Schwarz L, Tuech JJ, Bridoux V. Factors associated with burnout among French digestive surgeons in training: results of a national survey on 328 residents and fellows. Am J Surg 2017;213:754-762. doi:10.1016/j.amjsurg.2016.08.003
4. Dyrbye LN, Varkey P, Boone SL, et al. Physician satisfaction and burnout at different career stages. Mayo Clin Proc 2013;88:1358-1367. doi:10.1016/j.mayocp.2013.07.016
5. Lacy BE, Chan JL. Physician Burnout: The Hidden Health Care Crisis. Clin Gastroenterol Hepatol 2018;16:311-317. doi:10.1016/j.cgh.2017.06.043
6. Rodrigues H, Cobucci R, Oliveira A, et al. Burnout syndrome among medical residents: A systematic review and meta-analysis. PLoS One 2018;13:e0206840. doi:10.1371/journal.pone.0206840
7. Maslach C, Jackson SE, Leiter M. The Maslach burnout inventory. In: Zalaquett CP, Wood RJ, editors. Evaluating Stress: A Book of Resources. 3rd ed. Scarecrow Press; Lanham, MD: 1997.
8. Bria M, Spânua F, Baban A, Dumitrascu DL. Maslach Burnout Inventory – General Survey: Factorial validity and invariance among Romanian healthcare professionals. Burnout Research 2014;1:103-111. doi:10.1016/j.burn.2014.09.001
9. Güler Y, Şengül S, Çaliş H, Karabulut Z. Burnout syndrome should not be underestimated. Rev Assoc Med Bras (1992) 2019;65:1356-1360. doi:10.1590/1806-9282.65.11.1356
10. Barnes EL, Ketwaroo GA, Shields HM. Scope of burnout among young Gastroenterologists and practical solutions from gastroenterology and other disciplines. Dig Dis Sci 2019;64:302–306. doi:10.1007/s10620-018-5443-3
11. Jang ES, Park SM, Park YS, Lee JC, Kim N. Work-life conflict and its health effects on Korean Gastroenterologists according to age and sex. Dig Dis Sci 2020;65:86–95. doi:10.1007/s10620-019-05842-w
12. Soler JK, Yaman H, Esteva M, et al; European General Practice Research Network Burnout Study Group. Burnout in European family doctors: the EGPRN study. Fam Pract 2008;25:245-265. doi:10.1093/fampra/cmn038
13. Ong J, Swift C, Bath M, et al. The prevalence of burnout, risk factors, and job-related stressors in gastroenterologists: A systematic review. J Gastroenterol Hepatol 2021;36:2338–2348. doi:10.1111/jgh.15488
14. Chiriac S, Stanciu C, Cojocariu C, et al. The Impact of the COVID-19 Pandemic on Gastrointestinal Endoscopy Activity in a Tertiary Care Center from Northeastern Romania. Healthcare (Basel) 2021;9:100. doi:10.3390/healthcare9010100
15. Elmore LC, Jeffe DB, Jin L, Awad MM, Turnbull IR. National survey of burnout among US general surgery residents. J Am Coll Surg 2016;223:440–451. doi:10.1016/j.jamcollsurg.2016.05.014
16. Lindeman B, Petrusa E, McKinley S, et al. Association of burnout with emotional intelligence and personality in surgical residents: can we predict who is most at risk? J Surg Educ 2017;76:e22–e30. doi:10.1016/j.jsurg.2017.11.001
17. Salles A, Wright RC, Milam L, et al. Social belonging as a predictor of surgical resident well-being and attrition. J Surg Educ 2019;15:370–377. doi:10.1016/j.jsurg.2018.08.022
18. Kuerer HM, Eberlein TJ, Pollock RE, et al. Career satisfaction, practice patterns and burnout among surgical oncologists: report on the quality of life of members of the Society of Surgical Oncology. Ann Surg Oncol 2007;14:3043–3053. doi:10.1245/s10434-007-9579-1
19. Thomas NK. Resident burnout. JAMA 2004;292:2880–2889. doi:10.1001/jama.292.23.2880
20. Lebares CC, Braun HJ, Guvva EV, et al. Burnout and gender in surgical training: A call to re-evaluate coping and dysfunction. Am J Surg 2018;216:800–804. doi:10.1016/j.amjsurg.2018.07.058
21. Barnes EL, Ketwaroo GA, Shields HM. Scope of Burnout Among Young Gastroenterologists and Practical Solutions from Gastroenterology and Other Disciplines. Dig Dis Sci 2019;64:302–306. doi:10.1007/s10620-018-5443-3
22. Adarkwah CC, Labenz J, Birkner B, et al. Work satisfaction and burnout risk of gastroenterologists in Germany: results of a nationwide survey. Z Gastroenterol 2020;58:960–970. doi:10.1055/a-1176-2344
23. Keswani RN, Taft TH, Coté GA, Keefer L. Increased levels of stress and burnout are related to decreased physician experience and to interventional gastroenterology career choice: findings from a US survey of endoscopists. Am J Gastroenterol 2011;106:1734–1740. doi:10.1038/ajg.2011.148
24. DeCross AJ. The Current State of Professional Burnout. In: Gastroenterology. AGA Perspect 2017.
25. Burke C, Surawicz CM, Oxentenko AS, et al. A national survey of burnout in gastroenterologists: 2017 Naomi Nakao Gender-Based Research Award. Am J Gastroenterol 2017;112:S593. doi:10.1038/ajg.2017.308
26. Zheng H, Shao H, Zhou Y. Burnout among Chinese adult reconstructive surgeons: incidence, risk factors, and relationship with intraoperative irritability. J Arthroplasty 2018;33:1253–1257. doi:10.1016/j.arth.2017.10.049
27. Contag SP, Golub JS, Teknos TN, et al. Professional burnout among microvascular and reconstructive free-flap head and neck surgeons in the United States. Arch Otolaryngol Head Neck Surg 2010;136:950–956. doi:10.1001/archoto.2010.175
28. Iorga M, Socolov V, Muraru D, et al. Factors influencing burnout syndrome in obstetrics and gynecology physicians. BioMed Res Int 2017;2017:9318534. doi:10.1155/2017/9318534
29. Shetty SH, Assem Y, Khedekar RG, et al. Indian Orthopaedic surgeons are less burned out than their Western colleagues. J Arthrosc Joint Surg 2017;4:1–7. doi:10.1016/j.jajs.2017.03.005
30. Qureshi HA, Rawlani R, Mioton LM, Dumanian GA, Kim JYS, Rawlani V. Burnout phenomenon in US plastic surgeons: risk factors and impact on quality of life. Plast Reconstr Surg 2015;135:619–626. doi:10.1097/PRS.0000000000000855
31. Elmore LC, Jeffe DB, Jin L, et al. National survey of burnout among US general surgery residents. J Am Coll Surg 2016;223:440–451. doi:10.1016/j.jamcollsurg.2016.05.014
32. Waheed K, Liaqat N, Ejaz S, et al. Burnout among gynaecological residents in Lahore, Pakistan: a cross-sectional survey. J Pak Med Assoc 2017;67:1318-1322.
33. Shanafelt TD, Balch CM, Bechamps G, et al. Burnout and career satisfaction among American surgeons. Ann Surg 2009;250:463-471. doi:10.1097/SLA.0b013e3181ac4dfd