

Unmasking Burnout in Romanian Primary Care: Implications for Healthcare Careers and Well-Being in Pandemic Times

Ioana SILISTRARU ¹Oana OLARIU ²Anamaria CIUBARA* ³Ștefan ROȘCA ⁴Doina AZOICĂI ⁵Anisia-Iuliana ALEXA ⁶Florentina SEVERIN ⁷Pusica ZAINEA ⁸Lucreția ANGHEL ⁹Radu DĂNILĂ ¹⁰Ioan-Adrian CIUREANU ¹¹

¹ Lucian Blaga University of Sibiu, Sibiu, Romania, Department of Sociology, Journalism, Communication and Public Relations, ORCID ID:

<https://orcid.org/0000-0002-0086-578X>,

ioana.silistraru@ulbsibiu.ro

² Dunărea de Jos University of Galați, Galați, România, School of Medicine and Pharmacy, Clinical Department, ORCID ID: <https://orcid.org/0000-0001-5714-8856>, oo105@student.ugal.ro

³ Dunărea de Jos University of Galați, Galați, România, School of Medicine and Pharmacy, Clinical Department, ORCID ID: <https://orcid.org/0000-0003-0740-3702>, anamaria.ciubara@ugal.ro

⁴ Dunărea de Jos University of Galați, Galați, România, School of Medicine and Pharmacy, Medical Department, stefan.rosca@ugal.ro

⁵ Grigore T. Popa University of Medicine and Pharmacy, Iași, School of Medicine, Department of Preventive Medicine and Interdisciplinarity, doina.azoicai@umfiasi.ro

⁶ School of Medicine, Grigore T. Popa University of Medicine and Pharmacy, Iași, 2nd Surgical Department, anisia-iuliana.alex@umfiasi.ro

⁷ School of Medicine, Grigore T. Popa University of Medicine and Pharmacy, Iași, 2nd Surgical Department, florentina-s-severin@umfiasi.ro

⁸ Dunărea de Jos University of Galați, Galați, România, School of Medicine and Pharmacy, Medical Department, pusipusi67@yahoo.com

⁹ Dunărea de Jos University of Galați, Galați, România, School of Medicine and Pharmacy, Medical Department, anghel_lucretia@yahoo.com

¹⁰ Grigore T. Popa University of Medicine and Pharmacy, Iași, School of Medicine, Surgical Department, radu.danila@umfiasi.ro

¹¹ Grigore T. Popa University of Medicine and Pharmacy, Iași, School of Medicine, Medical Informatics and Biostatistics Department, ORCID ID:

<https://orcid.org/0000-0002-9689-8569>,

adrian.ciureanu@umfiasi.ro

Abstract: *This cross-sectional study investigates primary care physicians' intentions to change occupations and the presence of burnout in Romania in the pandemic. The research was carried out using an updated version of the MBI-Human Services Survey for Medical Personnel - MBI-HSS (MP) questionnaire. Our sample group consisted of 95 Romanian family doctors, of which 85 were female and 10 were male. 70.58% of female respondents reported having a high level of emotional Exhaustion, while 100% of male participants reported having the same raised levels of Exhaustion. 50% of men and 34.11% of women reported significant levels of Depersonalization, whereas 41.17% of female respondents indicated the lowest levels of Depersonalization.*

Regarding personal accomplishment, 40% of men and 27.05% of women indicated they had high levels of P.A. Based on statistical analysis, there is no significant correlation between gender and burnout dimensions, indicating that primary care physicians are at risk for burnout regardless of gender. The study also looked at an inclination to switch to a different medical speciality because of burnout. Of the participants, 55.78% said they would opt for the same specialisation again, 29.47% said they were unsure, and 33.68% said they would not choose the same medical profession again if given the chance. According to the findings, there appears to be a positive correlation between Depersonalization and the intention to change careers. Specifically, higher Depersonalisation scores were associated with a higher probability of considering changing careers. Emotional Exhaustion and personal achievement, however, did not substantially correlate with changing professions.

Keywords: *burnout; primary care physicians; COVID-19; mental health; healthcare.*

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Introduction

Recently, the healthcare sector has faced unprecedented challenges, with the COVID-19 pandemic placing a great burden on healthcare professionals worldwide (Barello et al., 2020; Claponea et al., 2022; Dillon et al., 2022). The primary care setting, in particular, has been under significant strain as healthcare providers have had to face the work demands of unknown dimensions (Kelly et al., 2022; Sifri et al., 2022). One of the critical issues emerging from this crisis is burnout among healthcare providers, including primary care physicians (Kuriyama et al., 2022; Seda-Gombau, 2021). Burnout is an intricate and multifaceted phenomenon characterised by Emotional Exhaustion, Depersonalisation, as well as the absence of Personal Accomplishment. It has been studied in healthcare contexts, and its prevalence and impact have gained substantial attention even before the pandemic (Amanullah, 2017; Bullock et al., 2017; Chohan, 2020; Jambrak et al., 2014; Jin, 2015).

The current cross-sectional research looks at the occurrence of burnout in a sample group of Romanian primary care healthcare providers while the COVID-19 pandemic was unfolding (Luca et al, 2022). The study employed the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) customised for primary care (MBI-HSS(MP)) to assess 3 core burnout aspects: Emotional Exhaustion, Depersonalisation, and Personal Accomplishment. Our study involved a voluntary, anonymous survey administered to 95 Romanian family doctors. The survey was conducted in the English language, facilitated by the Mind Garden platform, based on authorisation obtained in September 2021. The survey was structured to collect demographic data, including age and gender. It was directed to understand the intention of primary care physicians to change their medical speciality or leave their medical career based on their experiences lived amidst COVID-19. The adapted instrument questions were included in the MBI-HSS(MP) instrument for preserving the subscales' psychometric properties.

Given the established prevalence of burnout among medical professionals within the pandemic, especially in primary care, this study aimed to examine the specific challenges encountered by family healthcare providers in Romania. The pandemic has severely impacted Romania's healthcare system, and it must be addressed to understand primary care physicians' burnout experiences to promote their well-being and ensure the successful delivery of healthcare services. The study also places ethical considerations at the forefront, with participants being fully informed of the

study's purpose and offered the freedom to withdraw at any point while we collected the data.

The findings in the present research shed light on the burnout experiences of Romanian primary care physicians and their intentions regarding their medical careers. The results indicate that burnout, particularly Emotional Exhaustion and Depersonalisation, significantly correlates to changing professions. These findings underscore the relevance of addressing burnout in healthcare settings, particularly in primary care, to retain healthcare professionals and ensure the continued delivery of quality care.

While gender-based differences were examined, the study found that gender did not significantly influence the distribution of burnout categories among primary care healthcare providers. This highlights that burnout challenges are universal and affect both male and female healthcare providers similarly. In conclusion, this study sheds light on the volume of occurrences of burnout among Romanian primary care physicians during the COVID-19 healthcare crisis. The results suggest a need for targeted interventions to address burnout and its potential impact on career decisions in healthcare. This study adds to the growing the sum of knowledge on burnout in healthcare and stresses the need of supporting primary care providers during difficult times.

Materials and Methods

Study design

We used an MBI-HSS(MP) adapted online instrument to assess three burnout aspects, described as Emotional Exhaustion, Depersonalisation, and the sense of Personal Accomplishment in our cross-sectional design research. The questionnaire was distributed to 95 Romanian family doctors as the study was voluntary and anonymous. The questionnaire was administered in accordance with the authorization letter obtained by Mrs Oana Olariu from Mind Garden on September 26th 2022.

We ran the licenced survey in English using the Mind Garden platform because we assessed that our sample group had no concerns or intercultural impediments to using English as in the original version of the instrument. To eliminate the chance of responses being sent multiple times, data was collected using a licenced form link with unique access. After the members of the research group access the survey link, they were informed of the purpose of the data collection, their participation was voluntary, and complete anonymity was ensured.

In addition to inquiring about age and gender, the questionnaire asked if respondents intended to change their career or specialization considering their work experience during the COVID-19 crisis. To make use of the full psychometric properties of the subscales, the adapted questionnaire items were placed at the end of the original form.

The MBI-HSS(MP) instrument was used to assess the sample group's level of personal accomplishment and frequency of suffering emotional exhaustion and depersonalization while working in a pandemic scenario. It has been documented in the literature that burnout is a concern for healthcare professionals around the world, its frequency and depth must be investigated, particularly in the stressful setting of family medicine practise. In the sample group, burnout is characterised by the following subscales: Depersonalization (example scale item: "I don't really care what happens to some patients"), Personal Accomplishment (example scale item: "I have accomplished many worthwhile things in this job"), and Emotional Exhaustion (example scale item: "I feel emotionally drained from my work."). Both subscales measure the degree to which respondents feel stressed out at work. To compute the average scores for each group's frequency, the Likert scale was used, using response categories as follows: 0 means never; 1 means once or twice a year or fewer; for the Emotional Exhaustion, Depersonalization, and Personal Accomplishment subscales, 2 implies once a month or less; 3 denotes a few times a month; 4 denotes once a week; 5 corresponds to a few times a week; and 6 denotes every day.

IBM SPSS Statistics v.26 was used to generate the bivariate correlations and descriptive statistics. 0.05 was used as the significance level (α) for the Chi-squared test. Additionally, we performed a linear regression analysis in which the intention to change careers is the dependent variable and the burnout aspects of personal accomplishment (PA), depersonalization (D), and emotional exhaustion (EE) are the independent variables. The traditional threshold of $p < 0.05$ was used as the significance level.

Participants and settings

The study was based on replies from 95 respondents, Romanian family healthcare providers, 85 female (89.47%) and 10 male (10.52%), with a mean age for female respondents of 51.59, and a mean age of male respondents 45.02 (Table 1).

Table 1. Demographics of the sample group

	Mean age	CI		Std. dev.	Std. Er.	Mi n	Ma x	Q2 5	Q7 5
		- 95%	+95 %						
F 85 (89.47%)	51.95	49.8 1	54.08	9.90	1.07	26	69	45	60
M 10 (10.52%)	45.20	38.9 6	51.43	8.71	2.75	27	55	40	53
All	51.24	49.2 1	53.27	9.96	1.02	26	69	44	60

Data Collection

Our study data was gathered in November 2021 using the MBI-HSS(MP) platform-based customised questionnaire Mind Garden to determine how frequently respondents in our group of primary care healthcare providers will report Emotional Exhaustion, Depersonalization, and low levels of Personal Accomplishment while working during the pandemic crisis. Previous recent studies suggest that burnout is prevalent in medical students (Aebischer et al., n.d.; Alsoufi et al., 2020; Byrnes et al., 2020; Silistraru et al., 2021, 2022), healthcare personnel (Claponea et al., 2022; Lele et al., 2023; Xiao et al., 2022) and specifically in primary care medical providers (Kelly et al., 2022; Kuriyama et al., 2022; Sifri et al., 2022) during the COVID-19 pandemic, we specifically analysed information collected from the Romanian family healthcare system, which has been severely impacted during COVID-19.

Ethical considerations

By clicking on the licenced questionnaire, each participant was provided with information about the study's objectives and provided the option to stop from replying to the questions at any point during the data collection process.

Results

Our study results suggest that 95 Romanian primary care physicians self-reported different stages of burnout and exploration of professional change after the COVID-19 crisis. The data collected through the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) and the Medical

Personnel (MP) scale assessed the burnout aspects: Emotional Exhaustion (EE), Depersonalization (D) and Personal Accomplishment (PA).

The participants' burnout experiences suggest a high level of Emotional Exhaustion both in female (70.58%) and male participants (100%), with a high level of Depersonalization in half of the male participants (50%) and over one-third of the female respondents (34.11%). By comparison, the lowest grade of Depersonalization is self-reported in 41.17% of the female participants. However, female respondents reported a low level of Personal Accomplishment (54.11%), whereas 40% of the male respondents reported high levels of Personal Accomplishment.

The chi-square values in our data set assess the statistical significance of the relationship between gender and burnout within each subscale (EE, D and PA); the values for the three subscales suggest that gender is of no statistical significance in the distribution of burnout categories among primary care healthcare providers in our sample group (Table 2).

Table 2. Subscales scores by gender.

Subscale		F	M	chi-square	Total
EE	High	60 (70.58%)	10 (100.00%)	0.136	70 (73.68%)
	Moderate	15 (17.64%)	0 (0.00%)		15 (15.78%)
	Low	10 (11.76%)	0 (0.00%)		10 (10.52%)
D	High	29 (34.11%)	5 (50.00%)	0.415	34 (35.78%)
	Moderate	21 (24.70%)	3 (30.00%)		24 (25.26%)
	Low	35 (41.17%)	2 (20.00%)		37 (38.94%)
PA	High	23 (27.05%)	4 (40.00%)	0.646	27 (28.42%)
	Moderate	16 (18.82%)	2 (20.00%)		18 (18.94%)
	Low	46 (54.11%)	4 (40.00%)		50 (52.63%)

Emotional Exhaustion (EE)

Of the female participants, 70.58% (60 women) reported having severe emotional exhaustion, followed by 17.64% (15 women) with moderate exhaustion and 11.76% (10 women) with low exhaustion. Ten male participants, or 100% of the group, reported feeling emotionally exhausted. Among those polled, 73.68% indicated high emotional exhaustion, 15.78% showed moderate emotional exhaustion, and 10.52% reported low emotional exhaustion. There appears to be no statistically significant difference in the distribution of Emotional Exhaustion categories between males and females in this sample, according to the results of the chi-squared test on the EE domain. The chi-square value of 0.136 is relatively low, and data does not offer strong evidence to indicate that gender plays a pivotal role in the likelihood that primary care physicians fall into one of the three Emotional Exhaustion subscales: high, moderate, and subsequently low-level. Both male and female respondents are equally distributed among these categories.

Depersonalisation (D)

The general characteristics of depersonalization (D) include cynicism and alienation from patients. The findings showed that 5 participants, or 50% of the sample, were male and 29 participants, or 34.11% of the sample, were female. Depersonalization was noted at high levels by 34.11% (29 respondents) of the female participants, moderate levels by 24.70% (21 respondents), and low levels by 41.17% (35 respondents). Of the participants who were male, five percent indicated high levels of depersonalization, three percent reported moderate levels, and two percent reported low levels. As far as their profession and patients, 35.78% of participants indicated high levels of depersonalization, moderate levels reported 25.26%, and 38.94% reported low levels. The value of the chi-squared test was 0.415 to suggest that gender does not have a pivotal impact in the distribution of burnout categories related to Depersonalization among our respondents' group.

Personal Accomplishment (PA)

The individuals' assessment of own competence and capacity for successful job performance is referred to as the Personal Accomplishment (PA) dimension. In our sample group, 27.05% of female primary care physicians fall into the high-level or Personal Accomplishment category, whereas 40% of the male respondents suggest they have a high level of PA.

In total, 28.42% of the respondents report a high level of PA, 18.94% a moderate level and 52.63% a low level of Personal Accomplishment. The chi-squared test value is 0.646 in this sample, suggesting that gender does not significantly influence the distribution of Personal Accomplishment categories. Both male and female healthcare providers are similarly distributed among the "High," "Moderate," and "Low" Personal Accomplishment categories. For all 3 dimensions (Emotional Exhaustion, Depersonalisation, and Personal Accomplishment), reported chi-square values suggest that gender is not statistically significant in explaining the distribution of burnout categories. In our sample group, both female and male Romanian primary care physicians are similarly distributed among the different categories within each burnout dimension. These findings suggest that burnout challenges are universal, regardless of gender, in our dataset.

Expressing intentions to shift careers in relation to burnout characteristics.

Using MBI-HSS(MP), we evaluated our sample group's desire to change occupations in our research on burnout among Romanian primary care medical providers. Changing professions is a critical factor because it demonstrates how burnout can influence career decisions in the medical sector, particularly for primary care doctors. Respondents in our research group were asked three questions during the questionnaire completion process: would they select the same medical specialty again if given the chance?; were they unsure about choosing it again? Would they avoid the medical field entirely?

53 respondents (55.78%) in our sample group indicated that, given the chance of choosing again, they would select the same speciality. There were 53 participants in total; 45 were women and 8 were men. All individuals who answered "yes" had a mean age of 48.98 ± 9.47 years; the mean age for females was a little higher at 49.73 ± 9.44 years, and the mean age for males was 44.75 ± 9.08 years. Of the respondents, 28 individuals, or 29.47% of the total, expressed uncertainty about whether they would select the same specialisation again. There were five males and twenty-three females among the 28 participants. The mean age of all respondents who were unsure of their choice was 49.32 ± 8.79 years; the mean age of females was 49.60 ± 9.28 years, and the mean age of men was 48.00 ± 6.78 years. Thirty-two participants, or 33.68% of the total participants, indicated that they would not select the same medical specialty if given the opportunity to do so again. There were 32 respondents in total; 27 were women and 5 were men. All

individuals who answered "no" had an average age of 48.00 ± 9.77 years; the mean age of females was 49.14 ± 9.45 years, while the mean age of males was 41.80 ± 10.13 years. According to our findings, a significant number of participants intended to change careers as a result of burnout. This was particularly noticeable in Table 3, which revealed a positive link between the intention to change medical specialisation and the scores of the Emotional Exhaustion and Depersonalization subscales.

Based on the responses from our respondents' group, it appears that Emotional Exhaustion (EE) has a statistically significant positive correlation ($r = 0.215$, $p = 0.036$) with changing profession. This means that primary care physicians who experience higher levels of EE are more likely to consider changing to a different specialty. Similarly, data on Depersonalization (D) subscale suggest the presence of relevant correlation to change profession ($r = 0.286$, $p = 0.005$), with statistical significance. The correlation between Personal Accomplishment and the intention to change one's profession is not statistically significant ($p = 0.241$). The negative correlation ($r = -0.121$) suggests that there is no significant relationship between Personal Accomplishment and the thought of changing profession due to burnout.

Table 3. Burnout subscales and the desire to switch careers correlation.

		EE	D	PA	Career change
EE	Pearson Correlation	1	.717**	-.562**	0.215*
	Sig. (2-tailed)		.000	.000	0.036
	N	95	95	95	95
D	Pearson Correlation	.717**	1	-.703**	0.286**
	Sig. (2-tailed)	.000		.000	0.005
	N	95	95	95	95
PA	Pearson Correlation	-.562**	-.703**	1	-.121
	Sig. (2-tailed)	.000	.000		.241
	N	95	95	95	95
Change of profession	Pearson Correlation	.215*	.286**	-.121	1
	Sig. (2-tailed)	.036	.005	.241	
	N	95	95	95	95

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Our findings show a significant positive correlation with Depersonalization (D) and the intention to change one's career, as indicated by the coefficients of the linear regression model that was conducted. The

standardised coefficient (Beta) of 0.370 and a significant p-value of 0.030 suggest that as Depersonalization increases, the intention to change the current profession also tends to increase. Emotional Exhaustion (EE) and Personal Accomplishment (PA) do not have statistically significant implications regarding the desire to change profession among our respondents in the group of Romanian primary care physicians, as the non-significant p-values of 0.778 and 0.256, respectively, suggest (Table 4).

Table 4. The association between subscale predictors and changing careers

Model		Unstandardised Coefficients		Standardised	t	Sig.
		B	Std. Error	Beta		
1	Constant	-.079	.376		-.209	.835
	EE	.002	.006	.041	.283	.778
	D	.026	.012	.370	2.207	.030
	PA	.008	.007	.161	1.143	.256

Discussions

The findings of our study, which looked at burnout among Romanian primary care healthcare workers in the context of the COVID-19 crisis, revealed a significant component of burnout's impact: how it affects career intentions in the healthcare industry. Exploration of career goals, as expressed in the desire to choose the same medical specialisation or an other profession entirely, provides useful information into the effects of burnout on the career decisions of healthcare workers. These career goals can be examined through a gender perspective, as well as in the context of the specific burnout components of Emotional Exhaustion, Depersonalization, and Personal Accomplishment. A considerable proportion of participants in our research reported having intentions to change their medical speciality or leave the medical field entirely, suggesting the level of burnout experienced by primary care healthcare providers in Romania during the pandemic. It is worth noting that these intentions were not dispersed evenly across participants. The majority (55.78%) said they would pick the same medical specialisation again if given a chance, while 29.47% were unsure, and 33.68% said they would not choose the same speciality again. This diversity in reactions benefits from further investigation.

Most of those questioned mentioned their intention to stay in their present medical speciality. Despite the difficult circumstances presented by the pandemic, this group of primary care providers displayed resilience in the face of burnout. Various things may influence their decision to stay in

their chosen field. These persons may have developed coping methods or support structures to help them negotiate the emotional and professional pressures of their roles. Furthermore, intrinsic motivations, a strong sense of purpose, and a commitment to patient care may influence their decision to stay in their current specialisation. This result is consistent with prior studies' results suggesting the relevance of intrinsic desire in maintaining a medical career (Dyrbye et al., 2010, 2021; Ryan & Deci, 2000; Shanafelt et al., 2022)(Dyrbye et al., 2017; Shanafelt et al., 2009).

Those who reported needing more certainty about their professional aspirations (29.47%), on the other hand, maybe in the early stages of burnout or are more likely to seek different paths, potentially due to a perceived lack of support or severe stress. These healthcare practitioners constitute a group that medical organisations should monitor closely and engage with to understand their unique needs and concerns better. Support, stress reduction, and professional development opportunities may assist these individuals in making better-informed career decisions and negotiating the obstacles associated with burnout (Asghar, 2021; Ghahramani, 2021; Lin, 2021; Panagioti et al., 2017).

The percentage of respondents (33.68%) who stated that they intend to change their medical speciality is the most concerning part of our findings. This group is of particular concern since they may be more prone to burnout (Shanafelt et al., 2009, 2016). This goal is substantially associated with higher Emotional Exhaustion and Depersonalisation subscale scores. Emotional Exhaustion, characterised by emotions of being overwhelmed and worried, may be a motivating factor for changing medical specialisations. Individuals suffering from emotional Exhaustion may view their present job path as unsustainable due to the emotional toll it entails. Depersonalisation, a lack of enthusiasm and connection to patients adds to the desire to change professions (Guthier, 2020; Shanafelt et al., 2016; Wallace et al., 2009).

Our study does not reveal a significant correlation between Personal Accomplishment and the intention to change professions. This could be due to the complexity of the Personal Accomplishment dimension, which pertains to one's perception of competence and achievement at work (Guthier, 2020; Maslach, 2001). It may be less directly associated with changing careers than Emotional Exhaustion and Depersonalization. Finally, our findings highlight the multidimensional effect of burnout on career plans among Romanian primary care healthcare practitioners. According to the statistics, burnout, as manifested by Emotional Exhaustion and Depersonalization, has a considerable impact on the intention to change

medical specialisations. Recognising early signs of burnout, implementing interventions that promote emotional well-being, and offering support to healthcare personnel can all help mitigate the potential demise of experienced experts and ensure the sustainability of healthcare systems.

Conclusions

The study's findings emphasise the need to manage burnout in healthcare settings, particularly primary care in Romania. The impact of burnout on healthcare practitioner career plans is of significant concern, and understanding the specific burnout components that contribute to these goals is essential. However, based on our sample group data, gender does not appear to be a differentiating factor in burnout. To ensure the continuous delivery of quality healthcare services, healthcare organisations must employ initiatives to reduce burnout, provide emotional support, and promote well-being among primary care physicians.

References

- Aebischer, O., Weilenmann, S., David, G., & Marie, M. (n.d.). Physical and psychological health of medical students involved in the COVID-19 response in Switzerland. *Swiss Medical Weekly*, 7.
- Alsoufi, A., Alsuyhili, A., Msherghi, A., Elhadi, A., Atiyah, H., Ashini, A., Ashwieb, A., Ghula, M., Ben Hasan, H., & Abudabuos, S. (2020). Impact of the COVID-19 pandemic on medical education: Medical students' knowledge, attitudes, and practices regarding electronic learning. *PloS One*, 15(11), e0242905.
- Amanullah, S. (2017). Are burnout prevention programs for hospital physicians needed? *Asian Journal of Psychiatry*, 26, 66–69. <https://doi.org/10.1016/j.ajp.2017.01.009>
- Asghar, M. (2021). Assessing the mental impact and burnout among physicians during the COVID-19 Pandemic: A developing country single-center experience. *The American Journal of Tropical Medicine and Hygiene*, 104, 2185–2189. <https://doi.org/10.4269/ajtmh.21-0141>
- Barello, S., Palamenghi, L., & Graffigna, G. (2020). Burnout and somatic symptoms among frontline healthcare professionals at the peak of the Italian COVID-19 pandemic. *Psychiatry Research*, 290, 113129.
- Bullock, G., Kraft, L., Amsden, K., Gore, W., Wimsatt, J., Prengle, R., Ledbetter, L., Covington, K., & Goode, A. (2017). The prevalence and effect of burnout on graduate healthcare students. *Canadian Medical Education Journal*, 8(3), e90-108. <https://doi.org/10.36834/cmej.36890>

- Byrnes, Y. M., Civantos, A. M., Go, B. C., McWilliams, T. L., & Rajasekaran, K. (2020). Effect of the COVID-19 pandemic on medical student career perceptions: A national survey study. *Medical Education Online*, 25(1), 1798088. <https://doi.org/10.1080/10872981.2020.1798088>
- Chohan, L. (2020). Occupational burnout and depression among paediatric dentists in the United States. *International Journal of Paediatric Dentistry*. <https://doi.org/10.1111/ipd.12634>
- Claponea, R. M., Pop, L. M., Iorga, M., & Iurcov, R. (2022). Symptoms of burnout syndrome among physicians during the outbreak of COVID-19 Pandemic—A systematic literature review. *Healthcare*, 10(6), 979.
- Dillon, E. C., Stults, C. D., Deng, S., Martinez, M., Szwerinski, N., Koenig, P. T., Gregg, L., Cobb, J. K., Mahler, E., & Frosch, D. L. (2022). Women, younger clinicians, and caregivers' experiences of burnout and well-being during COVID-19 in a US healthcare system. *Journal of General Internal Medicine*, 1–9.
- Dyrbye, L. N., Massie, F. S., Eacker, A., Harper, W., Power, D., Durning, S. J., Thomas, M. R., Moutier, C., Satele, D., Sloan, J., & Shanafelt, T. D. (2010). Relationship between burnout and professional conduct and attitudes among US medical students. *JAMA*, 304(11), 1173. <https://doi.org/10.1001/jama.2010.1318>
- Dyrbye, L. N., Satele, D., & West, C. P. (2021). Association of characteristics of the learning environment and US medical student burnout, empathy, and career regret. *JAMA Network Open*, 4(8), e2119110. <https://doi.org/10.1001/jamanetworkopen.2021.19110>
- Ghahramani, S. (2021). A Systematic review and meta-analysis of burnout among healthcare workers during COVID-19. *Frontiers in Psychiatry*, 12. <https://doi.org/10.3389/fpsy.2021.758849>
- Guthier, C. (2020). Reciprocal effects between job stressors and burnout: A continuous time meta-analysis of longitudinal studies. *Psychological Bulletin*. <https://doi.org/10.1037/bul0000304>
- Jambrak, J., Deane, F. P., & Williams, V. (2014). Value motivations predict burnout and intentions to leave among mental health professionals. *Journal of Mental Health*, 23(3), 120–124.
- Jin, M.U. (2015). Burnout and its related factors in Korean dentists. *International Dental Journal*, 65 1, 22–31. <https://doi.org/10.1111/idj.12142>
- Kelly, E. L., Cunningham, A., Sifri, R., Pando, O., Smith, K., & Arenson, C. (2022). Burnout and commitment to primary care: Lessons from the early impacts of COVID-19 on the workplace stress of primary care practice teams. *The Annals of Family Medicine*, 20(1), 57–62. <https://doi.org/10.1370/afm.2775>
- Kuriyama, A., Shikino, K., Moriya, M., Sadohara, M., Nonaka, S., Nagasaki, K., Nishimura, Y., Matsuo, T., Muramatsu, K., & Makiishi, T. (2022). Burnout,

- depression, anxiety, and insomnia of internists and primary care physicians during the COVID-19 pandemic in Japan: A cross-sectional survey. *Asian Journal of Psychiatry*, 68, 102956. <https://doi.org/10.1016/j.ajp.2021.102956>
- Lele, K., McLean, L. M., & Peisah, C. (2023). Beyond burnout I: Doctors health services and unmet need. *Australasian Psychiatry*, 31(2), 139–141.
- Lin, Y.-Y. (2021). COVID-19 Pandemic Is Associated with an Adverse Impact on Burnout and Mood Disorder in Healthcare Professionals. *International Journal of Environmental Research and Public Health*, 18. <https://doi.org/10.3390/ijerph18073654>
- Luca, L., Ciubara, A. B., Antohe, M. E., Peterson, I., & Ciubara, A. (2022) Social media addiction in adolescents and young adults-psychoeducational aspects. *Archiv Euromedica*, 12, Special Issue, DOI 10.35630/2022/12/psy.ro.16
- Maslach, C. (2001). What have we learned about burnout and health? *Psychology & Health*, 16(5), 607–611.
- Panagiotti, M., Panagopoulou, E., Bower, P., Lewith, G., Kontopantelis, E., Chew-Graham, C., Dawson, S., van Marwijk, H., Geraghty, K., & Esmail, A. (2017). Controlled Interventions to Reduce Burnout in Physicians: A Systematic Review and Meta-analysis. *JAMA Internal Medicine*, 177(2), 195–205. <https://doi.org/10.1001/jamainternmed.2016.7674>
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 54–67.
- Seda-Gombau, G. (2021). Impact of the COVID-19 Pandemic on burnout in primary care physicians in Catalonia. *International Journal of Environmental Research and Public Health*, 18. <https://doi.org/10.3390/ijerph18179031>
- Shanafelt, T. D., Balch, C. M., Bechamps, G. J., Russell, T., Dyrbye, L., Satele, D., Collicott, P., Novotny, P. J., Sloan, J., & Freischlag, J. A. (2009). Burnout and Career Satisfaction Among American Surgeons. *Annals of Surgery*, 250(3), 463–471. <https://doi.org/10.1097/SLA.0b013e3181ac4dfd>
- Shanafelt, T. D., Mungo, M., Schmitgen, J., Storz, K. A., Reeves, D., Hayes, S. N., Sloan, J. A., Swensen, S. J., & Buskirk, S. J. (2016). Longitudinal Study Evaluating the Association Between Physician Burnout and Changes in Professional Work Effort. *Mayo Clinic Proceedings*, 91(4), 422–431. <https://doi.org/10.1016/j.mayocp.2016.02.001>
- Shanafelt, T. D., West, C. P., Dyrbye, L. N., Trockel, M., Tutty, M., Wang, H., Carlasare, L. E., & Sinsky, C. (2022). Changes in Burnout and Satisfaction With Work-Life Integration in Physicians During the First 2 Years of the COVID-19 Pandemic. *Mayo Clinic Proceedings*, 97(12), 2248–2258. <https://doi.org/10.1016/j.mayocp.2022.09.002>

- Sifri, R., Cunningham, A., Arenson, C., & Silverio, A. (2022). Taking the pulse of primary care teams: Provider and staff wellness and burnout in a large primary care network. *Practice Management and Organisation*, 2789. <https://doi.org/10.1370/afm.20.s1.2789>
- Silistraru, I., Ciureanu, A. I., Ciubara, A., & Olariu, O. (2021). Prevalence of burnout in medical students in Romania during COVID-19 pandemic restrictions (preliminary data). *Arhiv Euromedica*, 11(5), 12-15. <https://doi.org/10.35630/2199-885X/2021/11/5.3>
- Silistraru, I., Olariu, O., Ciubara, A., Roșca, Ș., Roșca, R. O., Stanciu, S., ... & Ciureanu, I. A. (2022). Burnout and online medical education: Romanian students in lockdown and their residency choices. *International Journal of Environmental Research and Public Health*, 19(9), 5449
- Wallace, J. E., Lemaire, J. B., & Ghali, W. A. (2009). Physician wellness: A missing quality indicator. *The Lancet*, 374(9702), 1714–1721. [https://doi.org/10.1016/S0140-6736\(09\)61424-0](https://doi.org/10.1016/S0140-6736(09)61424-0)
- Xiao, Y., Dong, D., Zhang, H., Chen, P., Li, X., Tian, Z., Jing, Z., & Zhang, S. (2022). Burnout and well-being among medical professionals in China: A national cross-sectional study. *Frontiers in Public Health*, 9, 2336.