Jurnal Psikologi Teori dan Terapan (JPTT)
2026, Vol. 17, No.01, 29-36
p-ISSN: 2087-1708; e-ISSN: 2597-9035
doi: https://doi.org/10.26740/jptt.v17n01.p29-36

Prevalence of Burnout Among Post Graduate Medical Residents Studying in Medical Colleges of Delhi

Kumar Dharmendra Singh[1], Yatin Talwar*[2], Aditi Mehra[3], Akanksha Singh[4], Rajni Bagga[5]

[1]All India Institute of Medical Sciences Raebareli, India, [2]Faculty of Medicine and Health Sciences, SGT University, India, [3]Government Medical College, Amritsar, India, [4]King George's Medical University, Lucknow, India, [5]National Institute of Health & Family Welfare, Delhi, India

Corresponding author:

*Yatin Talwar
Drtalwaryatin@gmaill.com

Article History

Submitted : September 23th, 2025

Final Revised : February 14th, 2026

Accepted : February 15th, 2026

Abstract

Background: Burnout is a significant psychological concern among postgraduate medical residents owing to high workload demands, long working hours, and emotional strain associated with clinical responsibilities. Persistent burnout may negatively affect residents' well-being and their professional performance**. Objective:** This study aimed to examine the level of burnout among postgraduate medical residents and explore differences based on selected demographic characteristics**. Method:** A quantitative cross-sectional design was employed involving postgraduate medical residents from a teaching hospital. Data were collected using the Maslach Burnout Inventory–Human Services Survey (MBI-HSS). Statistical analysis was conducted using descriptive statistics and independent samples *t*-tests to examine the differences in burnout dimensions across groups**. Results:** The findings indicated that residents experienced moderate to high burnout levels, particularly in emotional exhaustion and depersonalization. Significant differences were observed across the selected demographic variables. **Conclusion:** Burnout remains a prevalent issue among postgraduate medical residents, highlighting the need for institutional and psychological interventions to promote mental well-being and sustainable professional functioning of residents.

Keywords: Burnout; emotional exhaustion; mental health; occupational stress; postgraduate medical residents.

Abstrak

Latar Belakang: Burnout merupakan permasalahan psikologis yang signifikan pada residen kedokteran pascasarjana akibat tuntutan beban kerja yang tinggi, jam kerja panjang, serta tekanan emosional dalam praktik klinis. Kondisi burnout yang berkepanjangan dapat berdampak negatif pada kesejahteraan dan kinerja profesional residen. **Tujuan:** Penelitian ini bertujuan untuk mengkaji tingkat burnout pada residen kedokteran pascasarjana serta menelaah perbedaan burnout berdasarkan karakteristik demografis tertentu. **Metode:** Penelitian ini menggunakan desain kuantitatif potong lintang dengan melibatkan residen kedokteran pascasarjana dari rumah sakit pendidikan. Pengumpulan data dilakukan menggunakan Maslach Burnout Inventory–Human Services Survey (MBI-HSS). Analisis data meliputi statistik deskriptif dan uji *t* independen untuk menguji perbedaan dimensi burnout antar kelompok. **Hasil:** Hasil penelitian menunjukkan bahwa residen mengalami tingkat burnout sedang hingga tinggi, terutama pada dimensi kelelahan emosional dan depersonalisasi, dengan perbedaan yang signifikan pada beberapa variabel demografis. **Kesimpulan:** Burnout pada residen kedokteran pascasarjana masih menjadi isu penting yang memerlukan perhatian melalui intervensi institusional dan psikologis.

Kata Kunci: Burnout; kelelahan emosional; kesehatan mental; residen kedokteran; stres kerja

Introduction

Medical education is widely recognized as one of the most demanding academic curricula worldwide. Numerous studies have shown that the intensive nature of medical training may lead to detrimental psychological consequences among trainees, including medical students, interns, and postgraduate residents. High levels of stress experienced during medical training often progress into burnout, a condition that poses serious risks to both personal well-being and professional functioning of the trainee.

According to the World Health Organization's *International Classification of Diseases* (10th revision), burnout is defined as a "state of vital exhaustion". Burnout is commonly conceptualized as a psychological syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach & Goldberg, 1998). Burnout as a persistent, negative, work-related state of mind marked by exhaustion, distress, reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviors at work. This psychological condition typically develops gradually and may remain unrecognized for extended periods.

Among postgraduate medical residents, burnout has been shown to impair professional effectiveness by reducing attention, concentration, decision-making capacity, and the ability to establish effective physician–patient relationships (Pastore et al., 1995). In addition, burnout has been associated with adverse outcomes such as substance use, interpersonal difficulties, depression, anxiety, and an increased risk of suicidal behaviors. Over the past decades, burnout among medical residents and physicians has received growing attention at both the international and national levels. A survey conducted among postgraduate residents at the University of Calgary reported that more than half of the participants met the criteria for burnout, primarily due to an excessive workload (Kassam et al., 2015). Similar trends have been observed in studies conducted in developed countries (Ramirez et al., 1996).

In the Indian context, recent studies have reported a moderate-to-high prevalence of burnout among postgraduate medical residents. Research conducted in tertiary care centers in Kerala and Mumbai documented substantial levels of burnout and occupational stress among residents (Ratnakaran et al., 2016; Sahasrabuddhe et al., 2015). Despite these findings, empirical research examining burnout among postgraduate medical residents in India remains limited, particularly in large metropolitan settings. Delhi, as a major urban and academic hub, presents unique occupational and psychosocial stressors that may further exacerbate residents' vulnerability to burnout. Recent reports of increased psychological distress and suicide among medical trainees highlight the need for systematic investigations.

Given that burnout not only impairs residents' mental health but also threatens the quality of healthcare delivery and patient safety, further research is warranted. Therefore, the present study aimed to assess the prevalence of burnout and identify work-related factors associated with burnout among postgraduate medical residents in medical colleges in Delhi.

Method

Before data collection, ethical considerations were addressed by informing all participants of the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses. Written informed consent was obtained from each participant before participation, and the respondents were assured that they could withdraw from the study at any time without any consequences.

Sample or Population

This cross-sectional study was conducted at two major government medical colleges in Delhi, along with their associated tertiary care hospitals. A total of 200 postgraduate medical residents were included in the study, with 100 residents recruited from each institution using simple random sampling. Residents from both clinical and nonclinical specialties were included to ensure the representation of diverse working environments and training demands. The inclusion criteria comprised all postgraduate medical residents who consented to participate in this study. Residents enrolled in diploma courses, those unwilling to participate, and those who remained unavailable despite three consecutive follow-up visits were excluded from the study.

Data Measurement

Data were collected using three structured instruments. Socio-demographic information was obtained using the Kuppuswamy Socio-demographic Scale, which provided details on participants' age, sex, marital status, religion, family type, monthly household income, and accommodation type. These variables were used to describe the background characteristics of the study population.

Work-related factors were assessed using a semi-structured questionnaire developed and pretested by the investigators to ensure clarity, reliability, and face validity. The questionnaire included items related to

weekly duty hours, workload satisfaction, perceived work burden due to staff shortages, exposure to critically ill or fatal cases, doctor–patient ratio, clarity of professional roles, availability of rewards and recognition, frequency of workplace conflicts, perceived safety, and access to basic facilities, such as essential drugs, consumables, lockers, and rest areas. Academic and professional pressures, including expectations to maintain updated medical knowledge and clinical competence, patient-related demands, and the regularity of stipend disbursement, were also assessed.

Burnout was measured using the Maslach Burnout Inventory–Human Services Survey (MBI-HSS, 1996), a standardized instrument consisting of 22 items across three dimensions: emotional exhaustion, depersonalization, and personal accomplishment. Responses were recorded on a 7-point Likert scale ranging from "never" to "every day," allowing for the quantification of the frequency and intensity of burnout symptoms.

Data Analysis

All collected data were coded and analyzed using the Statistical Package for the Social Sciences (SPSS), version 23.0. Descriptive statistics, including means, standard deviations, frequencies, and percentages, were used to summarize the sociodemographic characteristics, work-related variables, and burnout scores across the three dimensions. Inferential analysis was conducted using independent samples *t*-tests to examine the differences between the groups. A significance level of $p < .05$ was adopted for all the statistical tests.

Result

A cohort of 200 resident doctors was analyzed to determine the prevalence of burnout and its associated factors. The sample was characterized by a majority of male participants (58.5%), individuals aged 26–30 years (74.0%), and those who were unmarried (88.0%). Most residents lived off campus (64.0%) and belonged to nuclear families (58.5%). The overall prevalence of burnout was high, with 58.5% and 66.5% of the participants reporting moderate-to-high emotional exhaustion (EE) and depersonalization (DP), respectively. Furthermore, a reduced sense of personal accomplishment (PA)—a key indicator of burnout—was found at low-to-moderate levels in 48% of residents and at a high level in 52%. The detailed associations of sociodemographic and work-related factors with burnout subscales are presented in Tables 1 through 3 below.

Table 1. Socio-demographic variables with three sub-scales of burnout

No.	Socio –demographic variables		N	%	Burnout								
					Emotional Exhaustion			Depersonalisation			Personal Accomplishment		
					Mean	S.D.	t/f value	Mean	S.D.	t/f value	Mean	S.D.	t/f value
1.	Age	21-25 year	45	22.5%	23.96	14.253	3.081*	11.24	7.401	0.43*	33.16	8.118	2.953*
		26-30 Year	148	74%	20.66	12.240		10.95	7.004		29.70	9.242	
		31-35 Year	7	3.5%	12.00	6.351		10.29	4.923		34.00	13.000	
2.	Gender	Male	117	58.5%	21.5	12.40	0.291	11.08	6.98		31.15	9.60	0.878
		Female	83	41.5%	20.52	13,20		10.87	7.07		29.90	8.68	
3.	Religion	Hinduism	183	91.5%	20.98	12.524	1.462	10.87	6.853	0.899	30.63	9.294	1.064
		Islam	9	4.5%	27.11	17.331		14.00	10.062		33.67	7.583	
		Other	8	4%	16.88	10.426		10.25	6.840		27.13	9.280	
3.	Marital status	Unmarried	176	88%	21.49	12.743	1.450	11.22	6.972	1.606	30.69	9.203	0.068
		Married	24	12%	18.17	12.384		9.29	7.190		30.17	9.640	
4.	Family structure	Single	51	25.5%	24.29	11.409	2.299	12.78	6.363	3.248*	28.88	9.801	2.427
		Nuclear	117	58.5%	19.75	12.857		9.97	6.897		30.62	9.160	
		Joint	32	16%	20.91	13.634		11.88	7.869		33.44	8.072	
5.	Staying in hostel	Yes	72	36%	21.94	11.210	0.501	12.13	6.766	2.980	31.17	9.447	0.379
		No	128	64%	20.62	13.509		10.35	7.087		30.33	9.134	
6.	Type of accommodation	Rented	89	44.5%	20.91	13.560	0.326	10.30	6.970	1.490	29.25	8.701	2.219
		Own	39	19.5%	19.95	13.543		10.46	7.440		32.79	9.723	
		Hostel	72	36%	21.94	11.210		12.13	6.766		31.17	9.447	

Note: *Significance at $p < 0.05$ level

Table 1 presents the relationship between sociodemographic characteristics and the three burnout subscales. Age was significantly associated with emotional exhaustion and personal accomplishment, with younger residents reporting higher levels of emotional exhaustion. Gender differences were not statistically significant across the burnout dimensions. Family structure was significantly associated with depersonalization, with higher mean scores observed among residents living alone. Other sociodemographic variables, including religion, marital status, place of stay, and type of accommodation, did not show statistically significant differences across most burnout subscales.

Table 2. Distribution and range of burnout among residents

Subscale of MBI	**Category of Burnout**		
	Low	**Moderate**	**High**
Emotional Exhaustion (EE)	83 (41.5%)	57 (28.5%)	60 (30%)
Depersonalisation (DP)	67 (33.5%)	53 (26.5%)	80 (40%)
Personal Accomplishment (PA)	44 (22%)	52 (26%)	104 (52%)

Table 2 illustrates the distribution of burnout severity across the three dimensions of the Maslach Burnout Inventory (MBI). A considerable proportion of residents reported moderate to high levels of Emotional Exhaustion and Depersonalization. In contrast, more than half of the participants reported high levels of reduced Personal Accomplishment, indicating a substantial perception of diminished professional efficacy among residents. Overall, the findings reflect a high prevalence of burnout across multiple dimensions in the study's population.

Table 3. Work-related factors significantly associated with burnout subscales

Work-Related Factor	Category	Emotional Exhaustion (EE)	Depersonalization (DP)	Personal Accomplishment (PA)
Shortage of senior doctors/consultants	Yes	Higher *	NS	NS
Overburdened due to staff shortage	Yes	Higher **	Higher **	NS
Stressed by patient/attendant demands	Yes	Higher **	Higher **	NS
Face conflict at workplace	Yes	Higher **	Higher **	NS
Role is clearly defined	No	NS	NS	Lower *
Satisfied with duties	No	Higher **	Higher **	

Note: NS = Not Significant.;*Significant at $p < 0.05$; **Significant at $p < 0.01$

Table 3 summarizes the work-related factors that were significantly associated with burnout dimensions. Factors such as staff shortages, excessive workload, stress due to patient and attendant demands, and workplace conflicts were significantly associated with higher levels of Emotional Exhaustion and Depersonalization. Lack of role clarity was significantly associated with lower Personal Accomplishment scores. These findings indicate that specific occupational stressors are differentially related to burnout subscales.

Jurnal Psikologi Teori dan Terapan (JPTT)
2026, Vol. 17, No.01, 29-36
p-ISSN: 2087-1708; e-ISSN: 2597-9035
doi: https://doi.org/10.26740/jptt.v17n01.p29-36

Table 4. Relationship of work profile variables with three subscales of Burnout

No.	Work profile variables		N	Burnout								
				Emotional Exhaustion			Depersonalisation			Personal Accomplishment		
				Mean	S.D.	t/f value	Mean	S.D.	t/f value	Mean	S.D.	t/f value
1.	Is your role in the ward clearly defined	Clearly defined	134	20.69	12.572	-0.646	10.60	6.991	-1.109	31.54	9.215	1.955*
		Not defined	66	21.92	13.062		11.77	7.031		28.79	9.061	
2.	Are you satisfied with your duties	Yes	133	17.69	11.367	0.147	9.67	6.804	0.987	30.98	9.351	0.397
		No	67	27.85	12.629		13.61	6.708		29.94	9.023	
3.	Shortage as per senior doctors/consultant- patients ratio	Yes	109	22.77	11.899	2.056*	11.83	7.035	1.857	30.40	9.306	-0.379
		No	91	19.09	13.423		9.99	6.881		30.90	9.189	
4.	Overburdened due to staff shortage	Yes	125	24.86	12.087	5.845	12.41	7.113	3.818	30.45	8.627	-0.359
		No	75	14.81	11.228		8.63	6.184		30.93	10.217	
5.	Feel rewarded or recognised	Yes	106	20.21	12.246	-1.048	10.33	6.818	-1.417	30.82	9.824	0.310
		No	94	22.10	13.220		11.73	7.180		30.41	8.565	
6.	Does death/critical condition of your patient cause	Cause stress	171	21.41	12.475	0.848	11.37	6.918	1.895	30.59	8.783	-0.146
		No stress	29	19.24	14.149		8.72	7.230		30.86	11.725	
7.	Do you feel that during your residency period you have to require high level of skill & knowledge	Yes	172	23.39	15.657	-1.031	11.03	6.935	0.195	28.43	11.449	1.363
		No	28	20.72	12.185		10.75	7.570		30.99	8.809	
8.	Stressed due to demand made by patient and attendant?	Cause stress	110	25.75	11.691	6.253	13.19	6.893	5.224	29.89	10.557	1.027
		No stress	90	15.40	11.599		8.30	6.191		31.24	7.988	
9.	Due to workload, do you face any conflict at the workplace?	Yes	133	23.14	11.946	3.287**	12.33	6.717	3.949	29.75	11.102	0.961
		No	67	17.03	13.302		8.33	6.859		31.08	8.142	
10.	Regular and adequate supply of drug and consumables	Yes	135	19.42	11.607	1.298	10.23	6.666	1.063	30.93	9.519	0.669
		No	65	21.90	13.182		11.36	7.163		30.00	8.646	
11.	Security provisions in hospital	Satisfied	89	20.15	13.746	-0.945	10.15	7.085	-1.530	31.29	8.447	-1.127
		Not satisfied	111	21.86	11.835		11.67	6.904		29.81	10.117	
12.	Hospital provide facilities like changing room with bed and locker	Yes	133	21.07	12.736	-0.043	10.86	6.930	-0.356	31.48	8.975	1.848
		No	67	21.15	12.773		11.24	7.207		28.94	9.569	

Note: *significance at p<0.05; **significance at p< 0.01

Jurnal Psikologi Teori dan Terapan (JPTT)
2026, Vol. 17, No.01, 29-36
p-ISSN: 2087-1708; e-ISSN: 2597-9035
doi: https://doi.org/10.26740/jptt.v17n01.p29-36

Table 4 presents the relationship between detailed work profile variables and the burnout dimensions. Residents who reported dissatisfaction with their duties, perceived staff shortages, and felt overburdened due to inadequate staffing demonstrated significantly higher mean scores for Emotional Exhaustion and Depersonalization. Exposure to patient and attendant demands and workplace conflicts related to workload were also associated with significantly higher burnout scores. Differences in Personal Accomplishment were less pronounced across most work profile variables, although lower scores were observed among residents reporting unclear roles and limited workplace support.

Discussion

The present study demonstrated that burnout is a prominent issue among postgraduate medical residents, with particularly elevated levels of Emotional Exhaustion and Depersonalization. This pattern aligns with prior research indicating that residents are at heightened risk of psychological strain due to prolonged clinical responsibilities and intense emotional demands (Dyrbye et al., 2014). Emotional Exhaustion reflects the depletion of emotional resources, a hallmark of burnout among healthcare trainees, which has been associated with fatigue, increased stress, and reduced capacity for sustained engagement in patient care tasks.

Consistent with previous findings, work-related factors such as perceived staff shortages, high duty hours, role ambiguity, and workplace conflicts were significantly associated with higher levels of burnout, especially in the domains of Emotional Exhaustion and Depersonalization (Prins et al., 2007; Rodrigues et al., 2018). The job demands-resources model posits that when job demands, such as workload and role stress, exceed available resources, the risk of burnout increases (Bakker & Demerouti, 2017). In the context of postgraduate training, insufficient staffing and intense clinical workloads operate as chronic stressors that erode residents' emotional resilience and contribute to maladaptive coping behaviors, which may manifest as depersonalized interactions.

Reduced Personal Accomplishment was also observed in a substantial proportion of residents, suggesting that many participants experienced diminished confidence and perceived efficacy in their professional roles. This is consistent with evidence that sustained exposure to stress without sufficient positive feedback or recognition undermines self-efficacy and professional satisfaction. Residents struggling with persistent emotional exhaustion may view themselves as less effective, which can compound feelings of inadequacy and contribute to a worsened well-being.

The implications of these findings extend beyond individual distress to healthcare delivery and patient safety. Burnout among residents has been linked to an increased risk of medical errors, reduced empathy, and poorer patient outcomes (Halbesleben & Rathert, 2008). Moreover, the significant associations between work stressors and burnout dimensions underscore the need for systemic interventions that emphasize workload management, staffing adequacy, and organizational support. Interventions aimed at enhancing communication, clarifying roles, and improving supervision have been shown to mitigate burnout and improve occupational well-being in healthcare settings (Shanafelt et al., 2017).

The limitations of this study include its cross-sectional design, which precludes causal conclusions, and reliance on self-report measures that may be influenced by social desirability or reporting bias. Future research employing longitudinal designs and multicentre samples would strengthen the understanding of burnout trajectories and causal pathways. Additionally, a qualitative exploration of residents lived experiences may enrich our understanding of how specific stressors contribute to burnout over time.

Conclusion

This study demonstrated that a substantial proportion of postgraduate medical residents experience moderate to high levels of burnout, particularly affecting their academic functioning, physical health, and psychosocial well-being. The findings indicate that burnout among residents is not merely an individual concern but a systemic issue with potential consequences for healthcare delivery and patient-care quality. The presence of significant work-related stressors underscores the importance of early identification and targeted interventions to mitigate burnout during postgraduate medical training in India. Future research should adopt longitudinal and multicenter designs to explore causal relationships further and examine the direct impact of burnout on patient safety and clinical outcomes.

Recommendation

Based on the findings of this study, a multilevel approach is recommended to address burnout among postgraduate medical residents:

- **Policy Level:** Strengthening human resources for health, increasing healthcare funding, revising postgraduate medical curricula, establishing legal support mechanisms, and developing centralized mental health helplines for healthcare professionals are recommended.
- **Institutional and Academic Levels:** Ensuring adequate staffing, enforcing duty-hour regulations, improving workplace safety, providing essential medical supplies and rest facilities, implementing recognition and reward systems, establishing wellness centers, offering structured leave policies, and conducting psychosocial screening at the time of residency entry.
- **Resident Level:** Promoting structured mentorship programs, providing training in soft skills and emotional intelligence, encouraging participation in recreational and cultural activities, and creating platforms for peer support and sharing coping strategies are all important.

Acknowledgment

The author would like to express sincere gratitude to the dean, faculty members, and postgraduate medical residents of the participating medical colleges in Delhi for their cooperation and support throughout the data collection process.

References

Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273–285. https://doi.org/10.1037/ocp0000056

Dyrbye, L. N., West, C. P., Satele, D., Boone, S., Tan, L., Sloan, J., & Shanafelt, T. D. (2014). Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. *Academic Medicine, 89*(3), 443–451. https://doi.org/10.1097/ACM.0000000000000134

Halbesleben, J. R. B., & Rathert, C. (2008). Linking physician burnout and patient outcomes: exploring the dyadic relationship between physicians and patiens. *Health Care Management Review, 33*(1), 29–39. https://doi.org/10.1097/01.HMR.0000304493.87898.72

Kassam, A., Horton, J., Shoimer, I., & Patten, S. (2015). Predictors of well-being in resident physicians: A descriptive and psychometric study. *Journal of Graduate Medical Education, 7*(1), 70–74. https://doi.org/10.4300/JGME-D-14-00022.1

Maslach, C., & Goldberg, J. (1998). Prevention of burnout: New perspectives. *Applied and Preventive Psychology, 7*(1), 63–74. https://doi.org/10.1016/S0962-1849(98)80022-X

Maslach, C., Jackson, S. E., & Leiter, M. P. (1996). *Maslach Burnout Inventory manual* (3rd ed.). Consulting Psychologists Press.

Pastore, F. R., Gambert, S. R., Plutchik, A., & Plutchik, R. (1995). *Empathy training for medical students* (Unpublished manuscript). New York Medical College.

Prins, J. T., Hoekstra-Weebers, J. E. H. M., van de Wiel, H. B. M., Gazendam-Donofrio, S. M., Sprangers, F., Jaspers, F. C. A., & van der Heijden, F. M. M. A. (2007). Burnout among Dutch medical residents. *International Journal of Behavioral Medicine, 14*(3), 119–125. https://doi.org/10.1007/BF03000182

Ramirez, A. J., Graham, J., Richards, M. A., Cull, A., & Gregory, W. M. (1996). Mental health of hospital consultants: The effects of stress and satisfaction at work. *The Lancet, 347*(9003), 724–728. https://doi.org/10.1016/S0140-6736(96)90077-X

Ratnakaran, B., Prabhakaran, A., & Karunakaran, V. (2016). Prevalence of burnout and its correlates among residents in a tertiary medical center in Kerala, India: A cross-sectional study. *Journal of Postgraduate Medicine, 62*(3), 157–161. https://doi.org/10.4103/0022-3859.184274

Rodrigues, H., Cobucci, R., Oliveira, A., Cabral, J. V., Medeiros, L., Gurgel, K., Souza, T., Gonçalves,A. K., & Costa, L. R. (2018). Burnout syndrome among medical residents: A systematic review and meta-analysis. *PLoS ONE, 13*(11), e0206840. https://doi.org/10.1371/journal.pone.0206840

Sahasrabuddhe, A. G., Suryawanshi, S. R., & Bhandari, S. R. (2015). Stress among doctors doing residency: A cross-sectional study at a tertiary care hospital in the city of Mumbai. *National Journal of Community Medicine, 6*(1), 21–24. https://doi.org/10.18203/2394-6040.ijcmph20220720

Shanafelt, T. D., Bradley, K. A., Wipf, J. E., & Back, A. L. (2002). Burnout and self-reported patient care in an internal medicine residency program. *Annals of Internal Medicine, 136*(5), 358–367. 10.7326/0003-4819-136-5-200203050-00008

Shanafelt, T. D., Hasan, O., Dyrbye, L. N., et al. (2017). Changes in burnout and satisfaction with work-life integration. *Mayo Clinic Proceedings, 92*(9), 1293–1315. https://doi.org/10.1016/j.mayocp.2017.07.012