



What Is Underlying Resident Burnout in Urology and What Can Be Done to Address this?

Jonathan Fainberg¹ · Richard K. Lee¹

© Springer Science+Business Media, LLC, part of Springer Nature 2019

Abstract

Physician burnout—a constellation of depersonalization, emotional exhaustion, reduced feelings of personal attachment, and a low sense of accomplishment—is a term that has been around since the 1980s. Burnout rates among residents and fellows are higher than medical students, attending physicians, and age-matched college graduates, with rates ranging from 40–80% of trainees across subspecialties. Unfortunately, burnout among residents and trainees has been linked to lower scores on in-service examinations for internal medicine residents as well as poorer overall health and exercise habits. The purpose of this review is to quantify the extent of burnout among urology residents and examine effective techniques and measures to prevent burnout and practically what can be done to combat this growing epidemic.

Keywords Physician burnout · Urology resident

Introduction

Physician burnout, defined as a constellation of depersonalization, emotional exhaustion, reduced feelings of personal attachment, and a low sense of accomplishment, is a term that has been utilized since the 1980s [1]. More recently, it has gained notoriety for the negative effects it portends to both physicians and their patients, as burnout has been linked to physician depression, suicidality, increased risk of medical errors and cost, and decreased patient satisfaction. [2, 3, 4, 5••]

Manuscript

Medical training and the associated long work hours, the stressors of patient care, and a demanding schedule

negatively impact quality of life (QOL) and cause burnout [6, 7]. Burnout rates among residents and fellows are higher than age-matched college graduates, medical students, and attending physicians, with rates ranging from 40–80% of trainees across subspecialties [8, 9]. Unfortunately, burnout among residents and trainees has been linked to lower scores on in-service examinations for internal medicine residents as well as poorer overall health and exercise habits [10, 11].

Urology is not exempt from this problem with some of the highest reported rates of physician burnout. From 2011 to 2014, reported burnout rates among practicing urologists increased from 41.2 to 63.6% [12]. An AUA survey of practicing urologists in 2016 reported burnout rates of 41.3% in urologists under 65 years of age, linking increasing work hours and younger age to higher burnout rates [13••]. Recently, a study of over 4700 US resident physicians placed urology at the top, with a burnout rate of 63.8%—higher than any specialty surveyed [14•]. This problem is not unique to the USA; a recent survey of 158 European urology residents from France, Belgium, Spain, and Italy found burnout rates of 43% among these trainees [15••].

A variety of factors have been implicated in leading to resident burnout. Institutional factors, such as access to mental health services and formalized mentorship, have been linked to lower burnout rates, although the data is

This article is part of the Topical Collection on *Education*

✉ Richard K. Lee
ril9010@med.cornell.edu

Jonathan Fainberg
Jsf9006@nyp.org

¹ Department of Urology, Weill Cornell Medicine, 525 E68th Street Starr 900, New York, NY 10065, USA

far from compelling [16••]. Others point towards lack of exercise as a cause of burnout, given the positive benefits of regular exercise on mental health and disease prevention are well understood [17]. Despite this hypothesis, however, a contemporary study that implemented an incentivized resident and fellow exercise program found no change in burnout rates [18]. Work-related stress contributes to burnout although interventions focusing on improving communication, stress management techniques, and workshops on breathing and meditation have not proven effective in reducing burnout rates, as measured by the Maslach Burnout Inventory [19••, 20, 21, 22, 23].

The most frequently cited cause of burnout is work hours. A recent survey of 211 US urology residents reported burnout rates of 38% overall; however, among residents reporting burnout, 44% reported working > 80 h/week which was significantly higher than their non-burnt out counterparts (24%). Additionally, three or more weekend calls a month significantly increased the risk a resident would experience burnout [24••]. As such, work-hour limits, specifically the Accreditation Council for Graduate Medical Education (ACGME) initiation of duty-hour restrictions in 2003 and 2011, have been studied as it relates to resident burnout. Two studies looked at the 2003 work-hour limits and found no change in burnout rates among internal medicine residents [25, 26]. Similarly, protected sleep periods had no effect on burnout rates [27]. When stratifying based on the sub-symptoms of burnout, a survey of 58 surgical residents found the 2003 duty-hour restrictions reduced their emotional exhaustion [28], which was confirmed in two separate studies of over 100 internal medicine residents. [29, 30] Two studies looked at the 2011 duty-hour restrictions. The first found no change in burnout among internal medicine and pediatrics residents; nevertheless, the second, which surveyed 36 general surgery residents, reported decreased overall burnout scores [31, 32].

While these data appear paradoxical, there are a few factors that have been associated with decreased burnout rates across subspecialties. Formal mentorship has been linked to lower rates of burnout in a variety of studies [33]. Access to mental health services, though not explicitly linked to lower burnout rates, is an obvious necessity in any well-run residency program. Reading outside of medicine has been shown to be predictor against burnout, even when controlling for work hours and other institutional factors [34]. Additionally, individual personality traits can predispose or protect one from burnout. In a Dutch study of 1231 residents across medical specialties, for example, both surgical and medical residents scoring high on “neuroticism” reported more burnout while “extraverted” surgical residents appeared protected from burnout [35•]. These findings remained significant after controlling for autonomy at work, quality of life, gender, and hours spent working overtime.

The negative impact of resident burnout cannot be overstated at the present time. One third of urology residents surveyed would not choose urology again if given the choice. The vicious cycle of burnout continues to churn: burnout leads to a poor quality of life, lack of exercise, and decrease in self-care including physical health maintenance and deterioration of personal relationships, which in turn leads to isolation and more burnout [36]. Dissatisfaction leads to a lack of enthusiasm and leadership, with many intelligent trainees choosing to forgo a career in academic urology, or medicine as a whole, after witnessing or speaking with a burned out physician. In urology, a resident experiencing burnout is much less likely to take a job in academic medicine. This is also the case in general surgery, where residents experiencing burnout were much more likely to choose a job in private practice over academia, citing the lack of control of their schedules in residency [37]. Most importantly, physician burnout leads to worse patient outcomes and a decrease in patient satisfaction. A 2018 meta-analysis found that physician burnout is associated with an increased risk of patient safety incidents (OR 1.96), poorer quality of care due to decreased professionalism (OR 2.31), and reduced patient satisfaction (OR 2.28), all of which were statistically significant [38].

Conclusion

As academic urologists, we owe it to our field to treat this burnout epidemic with a renewed focus. Low-cost interventions, such as a structured mentorship program for residents, have the potential to both decrease burnout and improve departmental culture. Allowing residents more control over their schedules can improve work-life balance. Similarly, institutional support of protected time for personal activities such as reading or exercise can lead to higher quality of life scores. Finally, anonymous access to mental health resources must be available for trainees who are experiencing depression or suicidality, while decreasing the departmental stigma associated with asking for help represent critical steps to take.

Compliance with Ethical Standards

Conflict of Interest Jonathan Fainberg and Richard Lee each declare no potential conflicts of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

References

Papers of particular interest, published recently, have been highlighted as:

- Of importance
- Of major importance

1. Maslach C, Jackson SE, Leiter MP, Schaufeli WB, Maslach SRL. Burnout inventory. Palo Alto, CA: Consulting Psychologists Press; 1986.
2. Tawfik DS, Profit J, Morgenthaler TI, Satele DV, Sinsky CA, Dyrbye LN, et al. Physician burnout, wellbeing, and work unit safety grades in relationship to reported medical errors. *Mayo Clin Proc.* 2018;93:1571–80.
3. Shanafelt TD, Balch CM, Bechamps G, Russell T, Dyrbye L, Satele D, et al. Burnout and medical errors among American surgeons. *Ann Surg.* 2010;251:995–1000.
4. Wurm W, Vogel K, Holl A, Ebner C, Bayer D, Mörkl S, et al. Depression-burnout overlap in physicians. *PLoS One.* 2016;11:e0149913.
- 5.•• Panagioti M, Geraghty K, Johnson J, et al. Association between physician burnout and patient safety, professionalism, and patient satisfaction: a systematic review and meta-analysis. *JAMA Intern Med.* 2018;178:1317–30 **Well done review of the literature as burnout relates to errors, professionalism and patient satisfaction.**
6. Campbell J, Prochazka AV, Yamashita T, Gopal R. Predictors of persistent burnout in internal medicine residents: a prospective cohort study. *Acad Med.* 2010;85(10):1630–4.
7. Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. *Ann Intern Med.* 2002;136(5):358–67.
8. Shanafelt TD, Boone S, Tan L, Dyrbye LN, Sotile W, Satele D, et al. Burnout and satisfaction with work-life balance among US physicians relative to the general US population. *Arch Intern Med.* 2012;172(18):1377–85.
9. Dyrbye LN, West CP, Satele D, Boone S, Tan L, Sloan J, et al. Burnout among US medical students, residents, and early career physicians relative to the general US population. *Acad Med.* 2014;89(3):443–51.
10. West CP, Shanafelt TD, Kolars JC. Quality of life, burnout, educational debt, and medical knowledge among internal medicine residents. *JAMA.* 2011;306(9):952–60.
11. Hull SK, DiLalla LF, Dorsey JK. Prevalence of health-related behaviors among physicians and medical trainees. *Acad Psychiatry.* 2008;32(1):31–8.
12. Shanafelt TD, Hasan O, Dyrbye LN, Sinsky C, Satele D, Sloan J, et al. Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014. *Mayo Clin Proc.* 2015;90:1600–13.
- 13.•• North AC, McKenna PH, Sener A, et al. Burnout in urology—findings from the 2016 AUA Annual Census. *Urol Pract.* 2018;5:489–94 **Important data on burnout from a large 2016 survey.**
- 14.• Dyrbye LN, Burke SE, Hardeman RR, Herrin J, Wittlin NM, Yeazel M, et al. Association of clinical specialty with symptoms of burnout and career choice regret among US resident physicians. *JAMA.* 2018;320:1114–30 **Interesting analysis of burnout symptoms by specialty.**
- 15.•• Marchalik Daniel, Goldman Charlotte C., Carvalho Filipe F. L. et al. Resident burnout in USA and European urology residents: an international concern. *BJU Int* 2019 (1-8). **Important data regarding both US and European residents in Urology.** Very interesting.
- 16.•• Daniel Marchalik MD, MA, Jacob Brems MD, Ariel Rodriguez MS, John H. Lynch MD, Jamie Padmore DM, Lambros Stamatakis MD, Ross Krasnow MD, MPH, The impact of institutional factors on physician burnout: a national study of urology trainees. *Urology* (2019). **Increasingly recognized are institutional factors that affect burnout rates. This paper dives into the details of this issue.**
17. Laskowski ER, Lexell J. Exercise and sports for health promotion, disease, and disability. *PM R.* 2012;4(11):795–6.
18. Weight CJ, Sellon JL, Lessard-Anderson CR, Shanafelt TD, Olsen KD, Laskowski ER. Physical activity, quality of life, and burnout among physician trainees: the effect of a team-based, incentivized exercise program. *Mayo Clin Proc.* 2013;88(12):1435–42.
- 19.•• Busireddy Kiran R, Ren Vicky, Miller Jonathan A, et al. Efficacy of interventions to reduce resident physician burnout: a systematic review. *Journal of Graduate Medical Education, June 2017* (294–301). **One of the most important analyses on burnout interventions and efficacy. Fantastic table displaying the interventions and outcomes.**
20. Bragard I, Etienne AM, Merckaert I, Libert Y, Razavi D. Efficacy of a communication and stress management training on medical residents' self-efficacy, stress to communicate, and burnout: a randomized controlled study. *J Health Psychol.* 2010;15(7):1075–81.
21. Milstein JM, Raingruber BJ, Bennett SH, et al. Burnout assessment in house officers: evaluation of an intervention to reduce stress. *Med Teach.* 2009;31(4):375–8.
22. Ospina-Kammerer V, Figley CR. An evaluation of the Respiratory One Method (ROM) in reducing emotional exhaustion among family physician residents. *Int J Emerg Ment Health.* 2003;5(1):29–32.
23. McCue JD, Sachs CL. A stress management workshop improves residents' coping skills. *Arch Intern Med.* 1991;151(11):2273–7.
- 24.•• Daniel M, Goldman CC, Carvalho Filipe FL, et al. Resident burnout in USA and European urology residents: an international concern. *BJU Int.* 2019(1–8). **Recent survey of resident burnout in urology demonstrates it is an international concern.**
25. Bar-Sela G, Lulav-Grinwald D, Mitnik I. “Balint group” meetings for oncology residents as a tool to improve therapeutic communication skills and reduce burnout level. *J Cancer Educ.* 2012;27(4):786–9.
26. Barrack RL, Miller LS, Sotile WM, Sotile MO, Rubash HE. Effect of duty hour standards on burnout among orthopaedic surgery residents. *Clin Orthop Relat Res.* 2006;449:134–7.
27. Shea JA, Bellini LM, Dinges DF, Curtis ML, Tao Y, Zhu J, et al. Impact of protected sleep period for internal medicine interns on overnight call on depression, burnout, and empathy. *J Grad Med Educ.* 2014 Jun;6(2):256–63.
28. Hutter MM, Kellogg KC, Ferguson CM, Abbott WM, Warshaw AL. The impact of the 80-hour resident workweek on surgical residents and attending surgeons. *Ann Surg.* 2006;243(6):864–71 discussion 871–865.
29. Goitein L, Shanafelt TD, Wipf JE, Slatore CG, Back AL. The effects of work-hour limitations on resident well-being, patient care, and education in an internal medicine residency program. *Arch Intern Med.* 2005;165(22):2601–6.
30. Gopal R, Glasheen JJ, Miyoshi TJ, et al. Burnout and internal medicine resident work-hour restrictions. *Arch Intern Med.* 2005;165(22):2595–2600.
31. Ripp JA, Bellini L, Fallar R, Bazari H, Katz JT, Korenstein D. The impact of duty hours restrictions on job burnout in internal medicine residents: a 3-institution comparison study. *Acad Med.* 2015;90(4):494–9.
32. Lindeman BM, Sacks BC, Hirose K, Lipsett PA. Multifaceted longitudinal study of surgical resident education, quality of life, and patient care before and after July 2011. *J Surg Educ.* 2013;70(6):769–76.

33. Daniel Marchalik MD, MA , Jacob Brems MD , Ariel Rodriguez MS ,John H. lynch MD , Jamie Padmore DM, Lambros Stamatakis MD, Ross Krasnow MD, MPH, The impact of institutional factors on physician burnout: a national study of urology trainees. *Urology* (2019).
 34. Daniel M, Goldman CC, Carvalho Filipe FL, et al. Resident burnout in USA and European urology residents: an international concern. *BJU Int*. 2019(1–8).
 35. Prins David J, van Vendeloo Stefan N, Brand Paul LP, et al. The relationship between burnout, personality traits, and medical specialty. A national study among Dutch residents. *Medical Teacher*. 2019;41(5):584–90 **Personality traits are inherent to who gets burned out. This paper quantified the personalities that are predisposed to burnout in medical or surgical subspecialties.**
 36. Alexandrova-Karamanova A, Todorova I, Montgomery A, Panagopoulou E, Costa P, Baban A, et al. Burnout and health behaviors in health professionals from seven European countries. *Int Arch Occup Environ Health*. 2016;89:1059–75.
 37. Elmore LC, Jeffe DB, Jin L, Awad MM, Turnbull IR. National survey of burnout among US general surgery residents. *J AmColl Surg*. 2016;223:440–51.
 38. Panagioti M, Geraghty K, Johnson J, et al. Association between physician burnout and patient safety, professionalism, and patient satisfaction [published online September 4, 2018]. *JAMA Intern Med*:E1–E14.
- Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.