

# Burnout among Orthopedic Residents

Sanjeevi Bharadwaj<sup>1</sup>, Naveen Jeyaraman<sup>2,3</sup>, Madhan Jeyaraman<sup>2,3</sup>, Ashok Shyam<sup>4</sup>

## Learning Point of the Article:

The article underscores the critical need for comprehensive support systems and well-organized mentorship to mitigate burnout among orthopedic surgeons, emphasizing the importance of physical activity, mental health support, and a strong family unit in reducing burnout risks and improving overall well-being.

## Introduction

Burnout can be defined as the combination of signs and symptoms concerning a particular professional activity involving mental, physical, and emotional exhaustion with a lack of self-worth or personal accomplishment, along with dissociated personality disorder [1]. Freudenberger described burnout as a collection of psychological signs and symptoms due to prolonged, continuous response to work-induced interpersonal stress [2,3]. Burnout has been found to be responsible for clinical errors by healthcare practitioners, thereby resulting in adverse patient outcomes and patient dissatisfaction [1,4]. Burnout rates among surgeons seem to be high, as shown by a study conducted by the American College of Surgeons, according to which 40% of surgeons experience burnout due to sleep-deprived overwork, followed by 28–30% of surgeons struggling with depression, leading to poor mental and emotional quality of life [1,4]. This stress due to burnout and sleep-deprived overwork has become a serious health hazard to healthcare professionals [3]. This has also resulted in increased stress on economic resources due to the increased cost of employing another surgeon at twice the average salary [5].

## Rate of Burnout among Orthopedic Surgeons

A recent study performed in the UK has shown some of the highest incidences of burnout among orthopedic surgeons, with around 22% of the orthopedic surgeons experiencing burnout [6,7]. Thompson et al. showed an overall rate of 22% burnout rates, especially among those who were employed in hospitals [7,8]. In a multinational cohort survey study, Mir et al. estimated the relative risk rate of burnout among surgeons as 0.93% in the United States, followed by 1.23% in Canada, 1.22% in New Zealand, and 1.04% in the UK [9].

## Risk Factors

These can be personal, residential, and professional risk factors [7]. Evidence shows the incidence of reduced burnout after surgeons were exposed to physical activities and health optimization efforts [6-8,10-12]. However, according to a study by Thompson et al., only 31% of the surgeons were meeting the standards recommended by the Centres for Disease Control and Prevention physical exercise guidelines and were less likely to experience burnout [7,8]. Alcohol abuse and substance abuse were found to increase the risk of burnout with increased risks of depersonalization burnout disorders [7,12-14]. Emotional

## Author's Photo Gallery



Dr. Sanjeevi Bharadwaj



Dr. Naveen Jeyaraman



Dr. Madhan Jeyaraman



Dr. Ashok Shyam

<sup>1</sup>Department of Trauma and Orthopaedics, Wye Valley, National Health Service Trust, Hereford, United Kingdom,  
<sup>2</sup>Department of Orthopaedics, ACS Medical College and Hospital, Dr. MGR Educational and Research Institute, Chennai, Tamil Nadu, India,  
<sup>3</sup>Department of Regenerative Medicine, Agathisha Institute of Stemcell and Regenerative Medicine (AISRM), Chennai, Tamil Nadu, India,  
<sup>4</sup>Department of Orthopaedics, Sancheti Institute for Orthopaedics and Rehabilitation, Pune, Maharashtra, India.

### Address of Correspondence:

Dr. Madhan Jeyaraman,  
Department of Orthopaedics, ACS Medical College and Hospital, Dr MGR Educational and Research Institute, Chennai, Tamil Nadu, India.  
**E-mail:** madhanjeyaraman@gmail.com

Access this article online

Website:  
[www.jocr.co.in](http://www.jocr.co.in)

DOI:  
<https://doi.org/10.13107/jocr.2025.v15.i09.5994>

Submitted: 13/06/2025; Review: 26/07/2025; Accepted: August 2025; Published: September 2025

DOI: <https://doi.org/10.13107/jocr.2025.v15.i09.5994>

© The Author(s). 2025 Open Access. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted use, distribution, and non-commercial reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated.



exhaustion was also found to have a profound risk factor effect on burnout resulting from career choice regrets thereby leading to burnouts, whereas the presence of active hobbies with regular engagements with a mental health support team has been found to reduce the rates of emotional exhaustion and in turn burnouts [7,8,10,13,15-17]. It has also been shown in recent studies that burnout rates are found to be less likely to occur in surgeons with solid family unit support [6-8,11,13,18-20]. Sargent et al. published a study involving 648 patients that showed a direct correlation between a lower incidence of burnout and the presence of supportive parents and family [7,13]. Spending quality time with partners in a relationship is highly fruitful in reducing burnout rates due to a better family support system in place [7,13,15,18,20-22]. Long stressful, unregulated working hours with over-stretched on-call hours result in these residential and family support systems crumbling, thereby increasing the risk of burnout among surgeons and other healthcare professionals [6,7,11,12,16,18,21-26].

However, workplace circumstances surrounding an individual, such as disorganized and improper feedback and mentorship, have also been found to play a major role as one of the risk factors for professional burnout, although it could be very subjective [6,7,11,13,15,21,27]. On the contrary, low incidences of burnout were observed among surgeons who received training with high-quality feedback and an organized mentorship [7,13]. However, recent evidence also supports the fact that burnout rates are more commonly observed among junior trainee surgeons working in the public sector in comparison to the senior surgeons and those working in a mixed private and public healthcare sector [7,10,16-18,20,23,25,28].

Overall, surgical specialties continue to have a higher incidence of burnout, with orthopedic surgery having 58.8% burnout rate, second only to general surgery, which had a burnout rate of 66.7% with urology in third place with an incidence of 40.0% [7].

### Consequences of Burnout

Burnout does have many adverse effects on patients, healthcare professionals, and hospitals, most common of which are compromised patient and team safety, depression, and increased possibility of medical errors [3,4,29]. Compromised patient care and patient and team safety have not only been reported among surgeons but also among other healthcare professionals across specialties [1,30-32]. However, evidence suggests that burnout not only affects the surgeon's professional life but also has a profound impact on his personal life and other

aspects of his family life [1]. This possibly resulted in surgeons carrying the stress of work back home, leading to a domino effect in the family, so much so that similar incidences of psychological stress were observed among the family members of resident surgeons as well [1,13]. There is also evidence of a breakdown in personal lifestyle among surgeons as a direct and consequential result of work burnout [1,33]. Recent evidence also suggests that surgical specialists and surgeons, especially, have experienced widespread burnout rates and career dissatisfaction [1,34]. This increasing rate of burnout may result in instances of worsening team and patient safety with reduced patient satisfaction and outcomes due to unprofessional behaviors of surgeons [7,30,32,35]. Recent evidence suggests the increasing susceptibility of surgeons to losing their temper during surgeries, thereby leading to conflict situations among co-workers, compromising the overall team safety and output of the healthcare system as a whole [7,22,36]. In severe cases, studies have shown instances of suicidal ideation among surgeons as a result of burnout [7,18,37,38].

### Conclusion

Burnouts are common among surgeons, and orthopedic surgeons have high rates of burnouts, second only to general surgeons. Trainee surgeons, especially those who are on the junior rota, seem to be more affected. However, burnout among trainees also seems to have a direct correlation to the mentoring and feedback one gets from their seniors. In some cases, burnout has been found to affect families as well. In the worst-case scenario, surgeons have also been susceptible to violent behavior and have had suicidal ideation. However, the presence of hobbies, a strong family, and partner support has been found to play an important role in alleviating stress levels and the effects of burnout. Although the literature suggests heterogeneity in the findings and inference, we recommend the need for further research in this regard so that it could reduce workplace burnout and, in turn, result in better outcomes and improved team and patient safety, resulting in better patient outcomes and satisfaction.

### Clinical Message

- The article highlights the crucial need for well-organized mentorship and support systems to mitigate burnout among orthopedic surgeons.
- Engaging in physical activities and having mental health support play a vital role in reducing burnout risks and improving the overall well-being of surgeons.
- A strong family support system is essential in minimizing the risk of burnout, highlighting the interconnectedness of personal and professional life for surgeons.

**Declaration of patient consent:** The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given the consent for his/ her images and other clinical information to be reported in the journal. The patient understands that his/ her names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

**Conflict of interest:** Nil    **Source of support:** None

## References

1. Pulcrano M, Evans SR, Sosin M. Quality of life and burnout rates across surgical specialties: A systematic review. *JAMA Surg* 2016;151:970-8.
2. Freudenberger HJ. Staff burn-out. *J Soc Issues* 1974;30:159-65.
3. Rodrigues H, Cobucci R, Oliveira A, Cabral JV, Medeiros L, Gurgel K, et al. Burnout syndrome among medical residents: A systematic review and meta-analysis. *PLoS One* 2018;13:e0206840.
4. 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.
5. Rothenberger DA. Physician burnout and well-being: A systematic review and framework for action. *Dis Colon Rectum* 2017;60:567-76.
6. Nayar S, Acquah F, Kayani B, Vemulapalli K. Burnout in trauma and orthopaedics: A cross-sectional study of surgeons from across the United Kingdom. *Ann R Coll Surg Engl* 2024;106:131-9.
7. Chahal K, Matwala K. A systematic review of the prevalence of burnout in orthopaedic surgeons. *Ann R Coll Surg Engl* 2025;107:61-7.
8. Thompson JC, VanWagner MJ, Spaulding AC, Wilke BK, Schoch BS, Spencer-Gardner LS, et al. A survey of personal health habits, wellness, and burnout in practicing orthopaedic surgeons-are we taking care of ourselves? *J Am Acad Orthop Surg Glob Res Rev* 2023;7:e22-00099.
9. Mir H, Downes K, Chen AF, Grewal R, Kelly DM, Lee MJ, et al. Physician wellness in orthopaedic surgery. *Bone Jt Open* 2021;2:932-9.
10. Ghorashian M, ZareMehrdadi H, Askari J, Abrisham SM, Sobhan MR. The frequency of burnout among Iranian orthopedic surgeons and residents. *Arch Bone Jt Surg* 2022;10:78-84.
11. Ho SW, Kwek EB. Levels of burnout and its association with resilience and coping mechanisms among orthopaedic surgery residents: A single institution experience from Singapore. *Singapore Med J* 2022;63:381-7.
12. Verret CI, Nguyen J, Verret C, Albert TJ, Fufa DT. How do areas of work life drive burnout in orthopaedic attending surgeons, fellows, and residents? *Clin Orthop Relat Res* 2021;479:251-62.
13. Sargent MC, Sotile W, Sotile MO, Rubash H, Barrack RL. Quality of life during orthopaedic training and academic practice: Part 2: Spouses and significant others. *J Bone Jt Surg* 2012;94:e145(1-6).
14. Barrack RL, Miller LS, Sotile WM, Sotile MO, Rubash HE. Effect of duty hour standards on burnout among orthopaedic surgery residents. *Clin Orthop* 2006;449:134-7.
15. Faivre G, Marillier G, Nallet J, Nezelof S, Clement I, Obert L. Are French orthopedic and trauma surgeons affected by burnout? Results of a nationwide survey. *Orthop Traumatol Surg Res* 2019;105:395-9.
16. Bischoff A, Solecruz E, Mainard N, Faivre G, Canavese F. How are French pediatric orthopedic surgeons affected by burnout? Results of a nationwide survey. *Orthop Traumatol Surg Res* 2023;109:103628.
17. Mir H, Downes K, Chen AF, Grewal R, Kelly DM, Lee MJ, et al. Physician wellness in orthopaedic surgery: A multinational survey study. *Bone Jt Open* 2021;2:932-9.
18. Balch CM, Shanafelt TD, Sloan JA, Satele DV, Freischlag JA. Distress and career satisfaction among 14 surgical specialties, comparing academic and private practice settings. *Ann Surg* 2011;254:558-68.
19. Sánchez-Madrid MA, Delgado-Martínez AD, Alcalde-Pérez D. Prevalence of burnout syndrome in orthopedic surgeons in Spain. *Rev Esp Cir Ortop Traumatol* 2005;49:364-7.
20. Yu J, Zou F, Sun Y. Job satisfaction, engagement, and burnout in the population of orthopedic surgeon and neurosurgeon trainees in mainland China. *Neurosurg Focus* 2020;48:E3.
21. Lichstein PM, He JK, Estok D, Prather JC, Dyer GS, Ponce BA, et al. What is the prevalence of burnout, depression, and





substance use among orthopaedic surgery residents and what are the risk factors? A collaborative orthopaedic educational research group survey study. *Clin Orthop Relat Res* 2020;478:1709-18.

22. Zheng H, Shao H, Zhou Y. Burnout among chinese adult reconstructive surgeons: incidence, risk factors, and relationship with intraoperative irritability. *J Arthroplasty* 2018;33:1253-7.

23. Liang S, Zhou W, Zhao Q, Li L. Prevalence and risk factors of burnout among chinese pediatric orthopedic surgeons. *J Pediatr Orthop* 2021;41:e80-4.

24. Morrell NT, Sears ED, Desai MJ, McClelland WB Jr., Chang J, Kakar S, et al. A survey of burnout among members of the american society for surgery of the hand. *J Hand Surg* 2020;45:573-81.e16.

25. Simons BS, Foltz PA, Chalupa RL, Hylden CM, Dowd TC, Johnson AE. Burnout in U.S. Military orthopaedic residents and staff physicians. *Mil Med* 2016;181:835-9.

26. Somerson JS, Patton A, Ahmed AA, Ramey S, Holliday EB. Burnout among united states orthopaedic surgery residents. *J Surg Educ* 2020;77:961-8.

27. Martyn TL, Savage E, MacLean SB. An assessment of burnout in New Zealand orthopaedic resident medical officers. *N Z Med J* 2022;135:11-21.

28. Kollias CM, Okoro T, Tufescu TV, Wadey V. Distress in orthopedic trainees and attending surgeons: A Canadian national survey. *Can J Surg* 2020;63:E190-5.

29. IsHak WW, Lederer S, Mandili C, Nikravesh R, Seligman L, Vasa M, et al. Burnout during residency training: A literature review. *J Grad Med Educ* 2009;1:236-42.

30. Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. *Ann Intern Med* 2002;136:358-67.

31. Firth-Cozens J, Greenhalgh J. Doctors' perceptions of the links between stress and lowered clinical care. *Soc Sci Med* 1997;44:1017-22.

32. West CP, Huschka MM, Novotny PJ, Sloan JA, Kolars JC, Habermann TM, et al. Association of perceived medical errors with resident distress and empathy: A prospective longitudinal study. *JAMA* 2006;296:1071-8.

33. Dodson TF, Webb AL. Why do residents leave general surgery? The hidden problem in today's programs. *Curr Surg* 2005;62:128-31.

34. Campbell DA Jr., Sonnad SS, Eckhauser FE, Campbell KK, Greenfield LJ. Burnout among American surgeons. *Surgery* 2001;130:696-705.

35. Kuerer HM, Eberlein TJ, Pollock RE, Huschka M, Baile WF, Morrow M, 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;14:3043-53.

36. Hall LH, Johnson J, Watt I, Tsipa A, O'Connor DB. Healthcare staff wellbeing, burnout, and patient safety: A systematic review. *PLoS One* 2016;11:e0159015.

37. 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;172:1377-85.

38. Fred HL, Scheid MS. Physician burnout: Causes, consequences, and (?) cures. *Tex Heart Inst J* 2018;45:198-202.

**Conflict of Interest:** Nil

**Source of Support:** Nil

**Consent:** The authors confirm that informed consent was obtained from the patient for publication of this case report

#### How to Cite this Article

Bharadwaj S, Jeyaraman N, Jeyaraman M, Shyam A. Burnout among orthopedic residents. *Journal of Orthopaedic Case Reports* 2025 September;15(9):07-10.