

SPECIAL ARTICLES

Sleep, fatigue and burnout among physicians: an American Academy of Sleep Medicine position statement

Binal S. Kancherla, MD¹; Raghu Upender, MD²; Jacob F. Collen, MD³; Muhammad Adeel Rishi, MD⁴; Shannon S. Sullivan, MD⁵; Omer Ahmed, MD⁶; Michael Berneking, MD⁷; Erin E. Flynn-Evans, PhD, MPH⁸; Brandon R. Peters, MD⁹; Fariha Abbasi-Feinberg, MD¹⁰; R. Nisha Aurora, MD, MHS¹¹; Kelly A. Carden, MD, MBA¹²; Douglas B. Kirsch, MD¹³; David A. Kristo, MD¹⁴; Raman K. Malhotra, MD¹⁵; Jennifer L. Martin, PhD^{16,17}; Eric J. Olson, MD¹⁸; Kannan Ramar, MD¹⁸; Carol L. Rosen, MD¹⁹; James A. Rowley, MD²⁰; Anita V. Shelgikar, MD, MHPE²¹; Indira Gurubhagavatula, MD, MPH^{22,23}

¹Department of Pediatrics, Division of Pediatric Pulmonology, Texas Children's Hospital - Baylor College of Medicine, Houston, Texas; ²Department of Neurology, Division of Sleep Medicine, Vanderbilt Medical Center, Nashville, Tennessee; ³Pulmonary, Critical Care and Sleep Medicine Service, Walter Reed National Military Medical Center, Bethesda, Maryland; ⁴Department of Pulmonology, Critical Care and Sleep Medicine, Mayo Clinic, Eau Claire, Wisconsin; ⁵SleepEval Research Institute, Palo Alto, California; ⁶Department of Medicine, Division of Pulmonary, Critical Care and Sleep Medicine, New York University School of Medicine, New York, New York; ⁷Concentra, Inc., Grand Rapids, Michigan; ⁸Fatigue Countermeasures Laboratory, Human Systems Integration Division, NASA Ames Research Center, Moffett Field, California; ⁹Sleep Disorders Center, Virginia Mason Medical Center, Seattle, Washington; ¹⁰Sleep Medicine, Millennium Physician Group, Fort Myers, Florida; ¹¹Department of Medicine, Rutgers Robert Wood Johnson Medical School, New Brunswick, New Jersey; ¹²Saint Thomas Medical Partners - Sleep Specialists, Nashville, Tennessee; ¹³Sleep Medicine, Atrium Health, Charlotte, North Carolina; ¹⁴University of Pittsburgh, Pittsburgh, Pennsylvania; ¹⁵Sleep Medicine Center, Washington University School of Medicine, St. Louis, Missouri; ¹⁶Veteran Affairs Greater Los Angeles Healthcare System, North Hills, California; ¹⁷David Geffen School of Medicine at the University of California, Los Angeles, California; ¹⁸Division of Pulmonary and Critical Care Medicine, Center for Sleep Medicine, Mayo Clinic, Rochester, Minnesota; ¹⁹Department of Pediatrics, Case Western Reserve University, University Hospitals - Cleveland Medical Center, Cleveland, Ohio; ²⁰Wayne State University, Detroit, Michigan; ²¹University of Michigan Sleep Disorders Center, University of Michigan, Ann Arbor, Michigan; ²²Division of Sleep Medicine, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania; ²³Corporal Michael Crescenz VA Medical Center, Philadelphia, Pennsylvania

Physician burnout is a serious and growing threat to the medical profession and may undermine efforts to maintain a sufficient physician workforce to care for the growing and aging patient population in the United States. Burnout involves a host of complex underlying associations and potential for risk. While prevalence is unknown, recent estimates of physician burnout are quite high, approaching 50% or more, with midcareer physicians at highest risk. Sleep deprivation due to shift-work schedules, high workload, long hours, sleep interruptions, and insufficient recovery sleep have been implicated in the genesis and perpetuation of burnout. Maladaptive attitudes regarding sleep and endurance also may increase the risk for sleep deprivation among attending physicians. While duty-hour restrictions have been instituted to protect sleep opportunity among trainees, virtually no such effort has been made for attending physicians who have completed their training or practicing physicians in nonacademic settings. It is the position of the American Academy of Sleep Medicine that a critical need exists to evaluate the roles of sleep disruption, sleep deprivation, and circadian misalignment in physician well-being and burnout. Such evaluation may pave the way for the development of effective countermeasures that promote healthy sleep, with the goal of reducing burnout and its negative impacts such as a shrinking physician workforce, poor physician health and functional outcomes, lower quality of care, and compromised patient safety.

Citation: Kancherla BS, Upender R, Collen JF, et al. Sleep, fatigue and burnout among physicians: an American Academy of Sleep Medicine position statement. *J Clin Sleep Med.* 2020;16(5):803–805.

INTRODUCTION

The American Academy of Sleep Medicine (AASM) is a professional society that advances sleep health and enhances sleep care to improve lives. The AASM advocates for policies that recognize that sleep is essential to health.

Most recent estimates of physician burnout are quite high, approaching 50%.^{1,2} Data regarding potential causes of physician burnout remain limited.^{3,4} Burnout worsens with high work demands and reduced control of schedules.⁵ Factors that have been identified include: stress arising from increasing bureaucratic tasks, including lengthy requirements for documentation using unwieldy electronic health records and interactions with third-party payers regarding coverage for medical services^{6,7}; strained doctor-patient relationships^{8,9}; concerns

about malpractice suits¹⁰; need to meet requirements for continuing medical education and maintenance of certification^{11,12}; and financial stressors.¹³

In addition to these factors, sleep deprivation is a key risk factor for burnout.^{12,14} Sleep deprivation can result from night shifts and rotating shift work,^{15,16} prolonged work hours due to scheduling or high workload,¹⁷ interrupted sleep while on-call,¹⁸ moonlighting to address debt, concurrent primary sleep disorders,¹⁹ and insufficient recovery sleep.²⁰ One recent study of 959 health care employees reported that one third screened positive for at least one sleep disorder, including insomnia (17%), obstructive sleep apnea (14%), and shift work sleep disorder (11%).¹⁹ Screening positive for a sleep disorder was associated with a 4-fold increased odds of burnout (odds ratio 3.78, 95% confidence interval 2.52–5.67).

POSITION

It is the position of the AASM that physician burnout is a significantly underappreciated public safety issue, and sleep loss is often overlooked as a contributing factor. A pressing need exists to evaluate the roles of sleep disruption, sleep deprivation, and circadian misalignment in physician well-being and burnout, as well as to evaluate the effectiveness of potential countermeasures.

DISCUSSION

Sleep researchers and sleep health advocates maintain that extended work hours are not only detrimental to patient safety, but they contribute to chronic sleep deprivation, mood dysregulation, and burnout in residents.²¹ Extended working hours are not unique to residents and often continue posttraining, due to a combination of service needs and a culture within the attending physician community that places the needs of the profession above work-life balance. Many attending physicians have traditionally viewed the ability to function under sleep-deprived states as a sign of endurance. With the advent of electronic health records, remote access to work computers, and telemedicine technologies, including applications that promote mobile medicine, many attending physicians work well beyond traditional working hours to ensure that electronic correspondences regarding patient care receive timely responses. The frequency and amount of time spent on such activity, as well as the extent to which long work hours impact attending physicians' sleep practices, health care delivery, and overall well-being have not been studied adequately. Additionally, circadian misalignment due to shift work can contribute to a state of fatigue and burnout.²²

While past studies focused on the general impact of duty hours, more recent studies evaluated the specific role of burnout among residents, finding that burnout leads to lower in-training exam scores, regret regarding career choice, and diminished resilience.^{23–25} The impact of long-term burnout in attending physicians and the role of sleep deprivation are poorly understood. A reduction of the workforce in the health care sector via early retirement can impact access to care while imposing additional strain on attending physicians who remain in the workforce. The magnitude of this crisis is grossly underestimated, especially because the attending physicians most at-risk of burnout who seek early exit from the profession are the same physicians who are peaking professionally and should be moving forward to lead the profession through advocacy, leadership, and education. Some risk factors for physician burnout may also differ between men and women.²⁶

CONCLUSIONS

As our health systems have focused on enhancing patient experience, improving population health and reducing costs,²⁷ burnout of physicians has grown to epidemic proportions, posing a central threat to achieving this “triple aim.” Improving

the work life of attending physicians is not optional, but essential.^{28–30} A fundamental shift in thinking about the essential role of sleep in providing adequate rest and recovery is needed if we are to address the epidemic of burnout among attending physicians. In recalling Hippocrates, who once stated, “Everything in excess is opposed to nature,” we must also address physician duty hours and responsibilities while taking measures to understand and address the issue of the central role of sleep in contributing to burnout. We also must be aware that burnout can affect other health care professionals who are members of the clinical sleep team. Before we can heal others, we must first heal ourselves.

REFERENCES

1. Rotenstein LS, Torre M, Ramos MA, et al. Prevalence of burnout among physicians: a systematic review. *JAMA*. 2018;320(11):1131–1150.
2. Shanafelt TD, Hasan O, Dyrbye LN, 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(12):1600–1613.
3. Dyrbye LN, Trockel M, Frank E, et al. Development of a research agenda to identify evidence-based strategies to improve physician wellness and reduce burnout. *Ann Intern Med*. 2017;166(10):743–744.
4. West CP, Dyrbye LN, Erwin PJ, Shanafelt TD. Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis. *Lancet*. 2016;388(10057):2272–2281.
5. Southwick FS, Southwick SM. The loss of a sense of control as a major contributor to physician burnout: a neuropsychiatric pathway to prevention and recovery. *JAMA Psychiatry*. 2018;75(7):665–666.
6. Dyrbye LN, West CP, Burriss TC, Shanafelt TD. Providing primary care in the United States: the work no one sees. *Arch Intern Med*. 2012;172(18):1420–1421.
7. Shanafelt TD, Dyrbye LN, Sinsky C, et al. Relationship between clerical burden and characteristics of the electronic environment with physician burnout and professional satisfaction. *Mayo Clin Proc*. 2016;91(7):836–848.
8. McCue JD. The effects of stress on physicians and their medical practice. *N Engl J Med*. 1982;306(8):458–463.
9. Meier DE, Back AL, Morrison RS. The inner life of physicians and care of the seriously ill. *JAMA*. 2001;286(23):3007–3014.
10. Myers MF. Physician impairment: is it relevant to academic psychiatry? *Acad Psychiatry*. 2008;32(1):39–43.
11. Bertges Yost W, Eshelman A, Raoufi M, Abouljoud MS. A national study of burnout among American transplant surgeons. *Transplant Proc*. 2005;37(2):1399–1401.
12. Vela-Bueno A, Moreno-Jimenez B, Rodriguez-Munoz A, et al. Insomnia and sleep quality among primary care physicians with low and high burnout levels. *J Psychosom Res*. 2008;64(4):435–442.
13. Royce TJ, Davenport KT, Dahle JM. A burnout reduction and wellness strategy: personal financial health for the medical trainee and early career radiation oncologist. *Pract Radiat Oncol*. 2019;9(4):231–238.
14. Stewart NH, Arora VM. The impact of sleep and circadian disorders on physician burnout. *Chest*. 2019;156(5):1022–1030.
15. Lockley SW, Barger LK, Ayas NT, et al. Effects of health care provider work hours and sleep deprivation on safety and performance. *Jt Comm J Qual Patient Saf*. 2007;33(Suppl 11):7–18.
16. Matsumoto K. Sleep patterns in hospital nurses due to shift work: an EEG study. *Waking Sleeping*. 1978;2:169–173.
17. Åkerstedt T, Arnetz BB, Anderzen I. Physicians during and following night call duty—41 hour ambulatory recording of sleep. *Electroencephalogr Clin Neurophysiol*. 1990;76(2):193–196.
18. Torsvall L, Åkerstedt T. Disturbed sleep while being on-call: an EEG study of ships' engineers. *Sleep*. 1988;11(1):35–38.

19. Quan SF, Weaver MD, Barger LK. Interim findings from a sleep health and wellness program to reduce occupational burnout. *Sleep*. 2019;42(suppl_1):A401.
20. Baldwin DC Jr, Daugherty SR, Ryan PM, Yaghmour NA. What do residents do when not working or sleeping? A multispecialty survey of 36 residency programs. *Acad Med*. 2012;87(4):395–402.
21. McHill AW, Czeisler CA, Shea SA. Resident physician extended work hours and burnout. *Sleep*. 2018;41(8).
22. Bagheri Hosseinabadi M, Ebrahimi MH, Khanjani N, Biganeh J, Mohammadi S, Abdolahfard M. The effects of amplitude and stability of circadian rhythm and occupational stress on burnout syndrome and job dissatisfaction among irregular shift working nurses. *J Clin Nurs*. 2019;28(9-10):1868–1878.
23. Dyrbye LN, Burke SE, Hardeman RR, et al. Association of clinical specialty with symptoms of burnout and career choice regret among US resident physicians. *JAMA*. 2018;320(11):1114–1130.
24. Mendelsohn D, Despot I, Gooderham PA, Singhal A, Redekop GJ, Toyota BD. Impact of work hours and sleep on well-being and burnout for physicians-in-training: the Resident Activity Tracker Evaluation Study. *Med Educ*. 2019;53(3):306–315.
25. West CP, Shanafelt TD, Kolars JC. Quality of life, burnout, educational debt, and medical knowledge among internal medicine residents. *JAMA*. 2011;306(9):952–960.
26. National Academy of Medicine. Gender-Based Differences in Burnout: Issues Faced by Women Physicians. <https://nam.edu/gender-based-differences-in-burnout-issues-faced-by-women-physicians/>. Accessed February 10, 2019.
27. Berwick DM, Nolan TW, Whittington J. The triple aim: care, health, and cost. *Health Aff (Millwood)*. 2008;27(3):759–769.
28. Bodenheimer T, Sinsky C. From triple to quadruple aim: care of the patient requires care of the provider. *Ann Fam Med*. 2014;12(6):573–576.
29. National Academies of Sciences Engineering and Medicine. *Taking Action Against Clinician Burnout: A Systems Approach to Professional Well-Being*. Washington, DC: The National Academies Press; 2019.
30. Shanafelt TD, Noseworthy JH. Executive leadership and physician well-being: nine organizational strategies to promote engagement and reduce burnout. *Mayo Clin Proc*. 2017;92(1):129–146.

ACKNOWLEDGMENTS

The board of directors thanks the AASM staff members who assisted with the development of this position statement.

SUBMISSION & CORRESPONDENCE INFORMATION

Submitted for publication February 21, 2020

Submitted in final revised form February 24, 2020

Accepted for publication February 24, 2020

Address correspondence to: Indira Gurubhagavatula, MD, MPH, Division of Sleep Medicine, Perelman School of Medicine, University of Pennsylvania, 3624 Market St, Suite 205, Philadelphia, PA 19104; Tel: (630) 737-9700; Fax: (630) 737-9790; Email: gurubhag@penmedicine.upenn.edu

DISCLOSURE STATEMENT

This position statement was developed for the AASM board of directors by the AASM Public Safety Committee. It is published as an advisory that is to be used for educational and informational purposes only.