

SPECIAL ARTICLES

What is the role of sleep in physician burnout?

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The occurrence of physician burnout is widespread among clinicians and academic faculty, who report indicators such as low quality of life and poor work-life balance. Chronic insufficient sleep, whether due to extended work hours, circadian misalignment, or unrecognized sleep disorders, is a critically important risk factor for burnout that is overlooked and under-studied, and interventions to promote healthy sleep may reduce burnout susceptibility among attending physicians. While strategies to reduce burnout among resident and attending physicians have been under-evaluated, evidence suggests a need to address burnout at both individual and organizational levels. Solutions have been offered that are applicable to many stakeholders, including employers; payers; licensing and certification boards; state and federal regulatory agencies; and physicians and researchers. As more studies are undertaken to evaluate how these approaches impact burnout, two questions need to be addressed: (1) What is the role of sleep in the crisis of burnout, specifically among attendings, who are particularly under-studied? (2) Is restoration of healthy sleep the fundamental mechanism by which burnout interventions work? It is essential for key stakeholders to consider the role of sleep, sleepiness, and sleep disorders in order to optimize any efforts to mitigate the present crisis in physician burnout, particularly among attending physicians, an understudied group.

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INTRODUCTION

Dr. Herbert Freudenberger first applied the term “burnout” in 1974 to describe a syndrome of exhaustion, emotional lability, increased stress reactivity, cynicism, professional inefficacy, and social isolation that he observed in the volunteer staff of a free clinic operating in the then drug-ridden East Village of New York City. He attributed these symptoms to “excessive demands on energy, strength, or resources” in the workplace.¹ Building on Freudenberger’s work, Dr. Christina Maslach defined burnout as a syndrome involving an individual’s response to ongoing stressors in the workplace, driven by three variables: (1) overwhelming exhaustion, (2) cynicism and detachment, and (3) a sense of ineffectiveness and lack of accomplishment.² Maslach described burnout as contagious, with the negative emotions of one physician spreading to colleagues and beyond.³ The Maslach Burnout Inventory (MBI), developed in 1981, remains the most commonly used tool to rate the presence and degree of burnout.^{4,5} Shorter versions are available for research purposes.⁶ Some have called for more precise language and tools in defining and studying burnout, arguing this is central to identifying causes and effective solutions to mitigate burnout. Terms encompassing an evolution in experience, from “moral distress,” resulting from a clash between personal values and

institutional constraints; to “moral residue,” the accumulated, unresolved emotional and psychological conflicts associated with such distress; and “moral injury,” a state of erosion of the clinician’s moral framework, have been promulgated more recently.⁷

The occurrence of burnout is widespread, as the vast majority of both clinicians and academic faculty report experiencing indicators of burnout, including: low quality of life, poor work-life balance, reduced emotional resilience, conflict at home regarding work, conflicting attitudes toward patients, poor approach to self-care, and variable health care delivery.⁸ While the sheer magnitude of recent prevalence estimates is alarming, approaching 45–50%, another source of concern is that physicians at the midpoint of their careers, who have been practicing for 11–20 years, have the greatest risk of burnout and early exit from the profession.⁹

While some risk factors for physician burnout may vary between men and women,¹⁰ chronic insufficient sleep is a critical risk factor for burnout that has been grossly overlooked.^{11,12} Extended work hours, circadian misalignment, and other unrecognized sleep disorders contribute to insufficient sleep, and interventions to promote healthy sleep may reduce the susceptibility to burnout among both attending physicians and practicing physicians in nonacademic settings.

GAPS IN KNOWLEDGE

There is a lack of data regarding the role of sleep challenges in the genesis and perpetuation of burnout, particularly in attending physicians. Similarly, data regarding potential sleep-related strategies to mitigate the prevalence and impact of burnout in various physician populations are incomplete. Although the prevalence of burnout is thought to decrease with increasing autonomy, administrative support, and professionally meaningful engagement, robust studies focused on sleep among attending physicians do not exist. While having face validity, the distinct value of interventions that promote healthy sleep—such as improving circadian alignment in work shifts, limiting duty hours to promote sleep health, and reducing workload to reduce cognitive burden and sleep drive—remains incompletely characterized.

Arising largely from studies of medical trainees, the bulk of available evidence suggests that burnout should be addressed at both individual and organizational levels.^{13,14} This evidence is limited by short follow-up time, narrow scope of interventions, limited availability of randomized controlled trials, limited data regarding organizational solutions, and lack of generalizability across specialties and organizations.^{15–17} Most interventions have been implemented at an individual level, including mindfulness, stress management training, communication skill training and self-care, and sometimes sleep health training.^{16–18} Other, still less-supported approaches, include peer support and attention to career fit.^{19,20} Studies of organization-level strategies are limited. Most have focused on duty-hour limits for physicians-in-training, which may reduce burnout rates.^{21,22}

Reducing duty hours increases the time available for sleep among housestaff, a group known to experience chronic, severe sleep deprivation. The optimum degree of reduction in duty hours, the actual impact of such reduction on sleep, and whether the impact on sleep reduces burnout and improves patient outcomes is not well-defined for physicians at any career stage.

KEY CONSIDERATIONS

The health care delivery system may contribute to the occurrence of burnout by generating demand on work hours, thereby infringing on the opportunity to sleep. Some of these demands include the need for excessive documentation; continuing medical education requirements; debt burden, leading to moonlighting or extended shifts to generate additional income; and a pervasive culture of undervaluing sleep. Accordingly, health systems have recognized that an effective approach to reduce burnout should include interventions from multiple stakeholders, including employers; payers; licensing and certification boards; state and federal regulatory agencies; and physicians and researchers.

Employers

According to a 2019 survey by the American Medical Association, employed physicians now outnumber independent physicians for the first time.²³ The portion of employed physicians

has risen 6 percentage points since 2012. The age distribution of employed physicians is skewed, with nearly 70% of physicians under 40 years of age categorized as employees, compared with 38% of physicians 55 years and older.

As such, physician burnout can be considered a concern for employers, who have a stake in retaining a stable and productive workforce.²⁴ Some employers have undertaken interventions including: (1) the appointment of chief wellness officers to implement systemic responses to improve physician wellness^{25,26}; (2) integrating physician wellness into a platform devoted to patient safety, recognizing the interrelatedness of physician well-being, patient safety and quality outcomes²⁵; and (3) offering peer support, resources for wellness, mental health care, and other mechanisms for wellness. Additional interventions can directly impact sleep duration and circadian alignment. These include limiting compensation that incentivizes extended work hours; offering flexibility and autonomy in scheduling; and reducing the need to engage with electronic health records during off-hours.²⁷

A critical need exists to build partnerships between employers and sleep and circadian researchers to produce clear and accurate estimates of the scope of the problem of insufficient, poorly timed, or disordered sleep in contributing to the epidemic of burnout among employed physicians, particularly those who have completed training. The roles of sleep education, sleep quality, sleep health and sleep disorders as mediators in the success or failure of specific interventions deserve evaluation.

Payers

Excessive documentation required for reimbursement increases work burden,^{28,29} limits sleep opportunity through longer work hours, and increases the homeostatic drive for sleep related to prolonged cognitive demand. Partnerships with provider groups could inform innovative, efficient models of care that optimize patient outcomes while also considering the potential impact on sleep and downstream burnout.

Licensing and certification boards

Demand on physician time related to continuing medical education and maintenance of certification requirements has been linked to burnout.³⁰ These activities are often undertaken during nonworking hours, infringing on the opportunity for, or timing of, sleep, while also increasing cognitive demand outside of traditional working hours. Tracking when physicians are engaging in these activities, how long they are spending on them, and whether such activities lead to insufficient sleep or circadian misalignment related to online completion of these activities in evening hours, could help determine whether these requirements are contributing to burnout through effects on sleep.

Regulatory agencies

Debt burden has been a disincentive for new physicians entering the field, worsening the national physician shortage. The degree to which high debt contributes to extended work hours through secondary appointments and moonlighting, resulting in insufficient sleep, and whether policies to ease debt burden could

impact burnout by mitigating insufficient sleep due to long work hours, has not been studied.

Physicians and researchers

A longstanding culture of undervaluing sleep among physicians underpins the burnout crisis. Whether physician-level interventions reduce burnout through their impact on sleep should be a key area of focus. Education and training programs to prioritize sleep during off-duty hours, optimization of circadian alignment, and recognition of the symptoms of insufficient sleep and sleep disorders are all deemed to have importance. Along these lines, a recent intervention was proposed to reduce burnout through increased access to health care professionals trained to diagnose and treat existing sleep disorders.¹¹ As this field of study progresses, there is a need for investigations into how such sleep-focused interventions impact burnout, and how individual characteristics such as sex, age, race, practice setting, specialty, shift work, longevity, educational debt, and other relevant variables impact these approaches.

DISCUSSION

Sleep deprivation has been at the core of medical education since the turn of the 20th century, when “resident” physicians lived in the hospital and provided care for patients 24 hours a day, 7 days a week.³¹ By the 1970s, evidence linking sleep deprivation to medical errors began to accumulate,³² and in 1984 it finally rose to national attention upon the unfortunate death of 18-year-old Libby Zion. Ms. Zion’s death was attributed, in part, to a medication error made by a sleep-deprived resident.³³ The lawsuit that followed eventually shaped the work-hour regulations adopted by the Accreditation Council for Graduate Medical Education in 2003, which restricted duty hours among residents to 80 hours per week. Much data linked extended shift lengths and weekly duty hours to greater risk of serious medical and diagnostic errors,³⁴ motor vehicle crashes,³⁵ and needle-stick injuries.³⁶ These findings were summarized in a report by the Institute of Medicine, which is now the National Academy of Medicine.³⁷

Healthy sleep is essential for individual health and well-being, optimal performance, and public safety. While variability exists in individual resilience to acute and chronic sleep loss, physicians—including both trainees, who have been studied as a group, and attending physicians, who have been largely ignored—are no less susceptible than the general population to the negative consequences of insufficient sleep. Physicians at any career stage may experience sleep deprivation, irregular sleep patterns, and circadian misalignment due to extended work hours, night shifts, and on-call duty. Therefore, the physical, cognitive, and emotional effects of chronic insufficient sleep could contribute to burnout at any career stage. That the role of sleep in the incidence of physician burnout and the mitigation of such burnout poses more questions than answers is a call to action, since interventions to reduce physician burnout may be most effective when strategies to promote healthy sleep are included.

Research priorities should evaluate such interventions and aim to (1) quantify the impact of sleep loss, circadian misalignment and sleep disorders on burnout; (2) determine the efficacy of institutional interventions to mitigate burnout by assessing sleep as a modifier, such as promoting autonomy in scheduling to enhance circadian alignment; implementing duty-hour limitations; reducing cognitive demand by eliminating nonessential tasks; improving meaningful engagement by limiting documentation needs; providing debt relief; and consolidating continuing medical education and maintenance of certification requirements; (3) evaluate the effectiveness of direct sleep-related countermeasures on burnout; and finally, (4) evaluate the impact of improving sleep quality and quantity on physician burnout and related patient outcomes.

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DISCLOSURE STATEMENT

The authors constitute the 2018–2019 AASM Public Safety Committee.