TITLE: Do no harm: the implications of physician burnout

AUTHORS: Hasan Hawilo, Elise Quint

DEPARTMENT: Clinical Procedures

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ABSTRACT

Physician wellness and burnout have long been important topics in Canadian health care. Though burnout presents in various occupations, physicians experience unique professional challenges that predispose them to experience burnout. Elements inciting this chronic condition are introduced early in medical education, reinforced during residency training, and poorly addressed during clinical practice. Substantial evidence demonstrates that burnout has significant and undesirable impacts on patient outcomes and care delivery. Physician quality of life and well-being as well as health care spending are also negatively impacted by burnout. However, there is an ongoing need to apply these research results in the clinical setting. Currently, research suggests that individual, cultural, and organizational factors play a role in the development and maintenance of burnout. Best practices to prevent burnout and manage its effects, including interventions during medical education and greater work autonomy, are required to address barriers to wellness at each of these levels.
“In no relationship is the physician more often derelict than in his duty to himself.” – Sir William Osler.

WHAT IS PHYSICIAN BURNOUT?

Burnout is a chronic syndrome characterized by three interrelated features. The first is emotional exhaustion and it refers to an inability to give care at the psychological level as a response to a mentally, physically, and emotionally taxing work environment.\(^2,3\) Emotional exhaustion is the principal feature of burnout.\(^4\) Maslach et al. and others have suggested that emotional exhaustion sets off the burnout cascade leading to the second characteristic, depersonalization.\(^3,4\) Depersonalization involves negative and often callous attitudes towards one’s patients,\(^2\) as well as a general emotional detachment from one’s work.\(^5\) The final aspect is a decreased sense of personal accomplishment, particularly concerning one’s care for clients.\(^2\)

Symptoms of burnout can present physically (e.g., insomnia, headaches, GI upset) as well as psychologically (e.g., irritability, decreased concentration).\(^6\) These features of physician burnout, which are suggested to correlate with a negative outlook on work as well as a lack of work-life control and social support,\(^3\) may conspire to create a cycle that ultimately erodes the burnt-out clinician’s identity.

Burnout is well-documented among a variety of non-health care professionals (including air traffic controllers and assembly line workers),\(^7\) and health care professionals, including nurses,\(^8\) medical students,\(^9,10\) medical residents,\(^11-13\) and physicians.\(^14,15\) While anyone may be at risk of burnout, physicians experience unique challenges associated with their professional lives, such as the patient deaths, medical errors, and malpractice lawsuits that predispose them to experience emotional exhaustion.\(^16\) As described by Mackinnon and Murray, rates of physician
burnout appear to be higher than in any other profession, with rates of Canadian physician burnout previously reported at up to 45.7%.15

WHY DOES PHYSICIAN BURNOUT MATTER?

Though physicians experience burnout at the individual level, the real-world implications of burnout manifest as a negative influence on physician wellness, patient care, and hospital infrastructures.

Physician Wellness. A recent study of Austrian physicians (N=6,351) found that the risks of a physician experiencing depression are closely correlated with the severity with which they experience burnout, from an OR=2.99 for mild burnout (95% CI 2.21–4.06) to an OR=92.78 for extreme burnout (95% CI 62.96–136.74).17 Indeed, the overlap between burnout and depression is substantial.17,18 However, a growing body of evidence suggests that differentiating between physician burnout and depression is difficult,17,18 and points to a need for stronger theoretical foundations and comprehensive diagnostic criteria. Besides depression, physician burnout is associated with an increased prevalence of suicidal ideation,10,13 alcohol abuse and dependence,19,20 as well as decreased career satisfaction.21 As posited by Sir William Osler,1 increased physician stress and burnout may play a role in cardiovascular disease, as well as the development of inflammatory conditions.22

Patient Care. Given the direct impact of front-line physicians’ decisions on patient well-being and mortality, it should be unsurprising that depressed and burnt-out residents and physicians are at an increased risk of committing medical errors,23-25 as well providing suboptimal care.25 For instance, Shanafelt and colleagues demonstrated that for each 1-point increase in self-reported emotional exhaustion on a 55-point scale, US surgeons (N=7,905) were
at a 5% increased risk of performing a surgical error.\textsuperscript{23} The impact of physician burnout on medical errors is especially significant from a clinical standpoint, given that medical errors harm an estimated 1 in 18 hospital patients.\textsuperscript{26} Furthermore, perceived and actual medical errors involve substantial psychological distress for physicians and predict an increased rate of future self-perceived errors.\textsuperscript{24,27,28} Thus, physician burnout and medical errors may interact reciprocally, wherein burnout is both the cause and effect of errors.\textsuperscript{24}

*Health Care System.* The interaction between physician burnout and health care extends beyond physician and patient health outcomes and impacts hospital spending. Besides harming work productivity, physician burnout is strongly correlated with reduced work hours.\textsuperscript{29,30} In fact, in Dewa and colleagues’ 2014 study of Canadian physicians, researchers estimated that the cost of physician burnout (in terms of early turnover and retirement, combined with reduced work hours) to be Can$213.1 million. Therefore, physician burnout could be a primary quality and performance indicator of health care organizations.\textsuperscript{31}

**PHYSICIAN BURNOUT: CONTRIBUTING FACTORS & THEIR SOLUTIONS**

*The Job Demands-Resources Model.* Physician burnout is increasingly being understood as a product of organizational factors of hospital culture, rather than stemming from the individual level.\textsuperscript{3,16,25,31} The job demands-resources (JDR) model of burnout conceptualizes burnout as developing due to discrepancies between job demands (factors that involve physical or psychological costs) and job resources (factors that counteract demands and promote personal well-being).\textsuperscript{3} When applied to physician burnout, the demands-resources paradigm carries significant implications. For example, according to the JDR model, excessive work hours represents a job demand that increases the risk of burnout.\textsuperscript{3} When researchers investigated rates
of burnout in PGY1 residents before and after restrictions on the number of hours worked per week, they found a reduction in survey-reported burnout by 34%.

Indeed, as predicted by the JDR model, research has demonstrated that increased workload and hours, as well as productivity-based rewards, were associated with burnout. Conversely, when researchers implemented interventions that reduced resident work hours, reduced physician’s administrative tasks (such as decreased electronic medical record entry), increased leadership from a physician’s immediate supervisor, and improved autonomy over work hours and schedule, physicians experienced decreased rates of burnout. Therefore, hospitals are encouraged to urgently adopt strategic interventions addressing the demands and resources of the JDR model.

**Burnout as an Economic Issue.** Since January 2018, 10% of Ontario patients have waited 41 hours to access emergency medical care, and the need for long-term solutions to address hospital bed shortages continues to rise. There is, therefore, a clear economic incentive to find and implement cost-saving strategies. Given the huge annual cost of physician burnout, one significant way to improve health care delivery and spending is to effectively combat this issue. Physicians and researchers have suggested that framing physician burnout as a system-level problem with fiscal implications may incentivize health care institutions to find effective solutions. Furthermore, approaching this issue as an economic problem that affects all health care workers minimizes potential conflict between physicians and their health care organizations.

**Gender Discrepancy in Burnout.** Female physicians and medical students are at an increased risk of experiencing burnout. Researchers have emphasized the role that discrimination and the absence of adequate workplace support play in the increased professional
stress that female physicians experience.\textsuperscript{38,39} Other research points to the gender imbalance in work-family conflict, wherein women are expected to spend more combined time with family and at work.\textsuperscript{38,40} Given that half of all Canadian physicians will be women by 2030,\textsuperscript{41} greater research investigating the gender disparity in physician burnout is warranted.

\textit{The Stigma of Physician Wellness.} Though the label of burnout is perceived with less social stigma than depression,\textsuperscript{18} there exists an overarching cultural barrier to physician wellness within the medical profession.\textsuperscript{42} As discussed by Fältholm, as compared with the general population, physicians are disinclined to acknowledge personal illness, citing social pressures to portray health to colleagues.\textsuperscript{42} Furthermore, research suggests that physicians are less likely to seek medical help for their illnesses and will often resort to self-treatment; this is particularly concerning when considering that approximately two-thirds of physicians self-treated their self-reported mental disorders, often relying on self-prescribed medication.\textsuperscript{43} Therefore, a broad cultural shift in physicians’ expectations and interpretations of illness in themselves and their colleagues may be needed to address and treat physician burnout adequately.

\textit{Interventions During Medical Education.} Given that the seeds of physician burnout are planted during pre-clinical years, and that medical students are more likely to disengage from health-promoting habits as they transition into their first year,\textsuperscript{44} interventions to target burnout must begin early in medical education. That is, by identifying and developing protective practices and stress-relief strategies during pre-clerkship years, students create a healthful foundation upon which they can rely on. Inadequate sleep and exercise have been independently associated with physician burnout;\textsuperscript{45,46} promising research has demonstrated that self-care strategies, including meditation,\textsuperscript{47} team-based physical exercise,\textsuperscript{48} and self-care lectures and group discussions can serve as effective interventions to improve medical student stress and
Therefore, medical schools and institutions should take active measures to promote and encourage medical student and physician well-being.

**CONCLUSION**

As described by Spickard et al, the physician’s Hippocratic Oath to do no harm is a lifelong work that begins with oneself. Medical students and physicians must take charge of their wellness, and are responsible for doing all that they can to maintain their mental and physical well-being. However, as the evidence continues to mount that physician burnout is also impacted by institutional factors and other considerations beyond the individual, innovative individual and organizational strategies to combat burnout, promote engagement, and build resilience are required.

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