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Physician Burnout: The Hidden Health Care Crisis

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Abstract and Introduction

Abstract

Physician burnout is an under-recognized and under-reported problem. Characterized by a state of mental exhaustion, depersonalization, and a decreased sense of personal accomplishment, burnout may affect more than 60% of family practice providers and at least one third of gastroenterologists. Some studies have shown that younger physicians, physicians performing high-risk procedures, and physicians experiencing work-life conflicts are at greatest risk. If unrecognized, the costs to the physician and to the health care system can be enormous because physician burnout is associated with increased rates of depression, alcohol and drug abuse, divorce, suicide, medical errors, difficult relationships with coworkers, and patient dissatisfaction, as well as physician attrition. If properly recognized, appropriate treatments are available. This article presents a case study of a physician suffering from burnout, reviews how burnout is defined, identifies those providers at greatest risk, discusses root causes, and outlines a treatment program.

Introduction

Dr Maria M., a junior attending at an academic medical center in a large Midwestern city, appears distracted as she gathers up her notes and slowly walks to clinic. She has been up all night, once again, performing complicated endoscopic procedures. An emergent endoscopic retrograde cholangiopancreatography for suspected cholangitis ended badly just a few hours earlier with a duodenal perforation. She had been called in shortly after returning home late from work, which meant missing her daughter's fifth birthday party. Her husband, a colorectal surgeon, had arrived home just as she was walking out the door to go back to the hospital. Most nights they do not have dinner together, and most weekends one or the other is on call. This was the fourth night on call this month, and the month was only half over. "Doesn't anybody else take call," she wondered to herself? She debated how she was going to finish her grant, which was barely half-written, and due at the end of the month. The grant was important because it might help with a promotion to assistant professor and also free up some dedicated time for research. As she enters the clinic, the scheduler informs her that clinic has been overbooked because one of her colleagues called in sick again. Funny coincidence, she thought, as it was a Friday and she suspected that her colleague, who had tenure and was much more senior, was just taking another long weekend. She takes a deep breath, tries to ignore the gnawing pain in her upper abdomen and the headache from lack of sleep, glances at her notes, and realizes that the first patient is a fourth opinion for abdominal pain dating back more than 20 years. She throws her notes down on the floor and screams at the scheduler, "This is completely inappropriate! I am sick and tired of seeing patients with chronic abdominal pain. If this happens again I'll make sure you are fired." Her scheduler walks away in tears while Dr M. gathers up her notes, ignoring the stares from staff and colleagues.

The term *burnout* first was used in the psychology literature in 1974 by Herbert Freudenberg[1] during his work with drug addicts. He observed that many of his patients would stare blankly at their cigarettes until they burned out. Burnout is defined as a state of mental exhaustion caused by one's professional life.[2] Burnout frequently is the consequence of high stress combined with high ideals. In the past it was a descriptive disorder; it now is recognized in the recently updated International Classification of Diseases, 10th revision, codes (code Z73.0). Building on the initial work of Freudenberger and Richelson,[2] Maslach and Jackson[3] conceptualized burnout as a 3-dimensional construct involving emotional exhaustion, depersonalization, and reduced personal accomplishment (). Physicians suffering from emotional exhaustion describe feeling overworked, overextended, and may describe a sense of having nothing left to give. For many physicians, the inability to show compassion as a result of emotional exhaustion leads to significant mental distress. The second construct involves a state of depersonalization. Physicians suffering from burnout become unfeeling in response to others. For health care providers, this means a sense of detachment both for patients and other health care providers. Some describe this feature of burnout as a sense of objectification. For example, the hospitalized young woman with an ileocolonic stricture from Crohn's disease becomes *that Crohn's patient*, whereas the middle-aged man with the massive upper gastrointestinal bleed from esophageal varices is reduced to *the bleeder*. The depersonalization aspect strongly may predispose toward negative effects on professionalism. The third construct involves a decreased sense of personal accomplishment. Physicians with burnout feel incompetent, inefficient, and unable to complete tasks. Emotions that frequently accompany burnout may include feeling a lack of control or a lack of satisfaction in their work. In addition, physicians suffering from burnout may believe that they are performing a disproportionate share of the workload or feel underappreciated for those efforts. Physicians suffering from burnout often experience work-life conflict, which only serves to compound the problem further. When you consider these issues and the emotions and feelings reported by physicians suffering from burnout, it calls into question whether burnout is just another form of depression. Although prospective data evaluating physicians are lacking, 1 study compared workers diagnosed with burnout with patients who met the definition of clinical depression. Surprisingly, no differences were noted; the groups were quite similar.[4] Another study examined workers with burnout and applied the clinical definition of depression to these workers and found that 90% of burned

out workers met the clinical definition of depression.[5] Interestingly, many of the typical risk factors for depression in the general population (less education, poor employment, lower socioeconomic status) are not present in physicians. This highlights the importance of other factors (emotional exhaustion, depersonalization, and reduced personal accomplishment) in the development of burnout.

Table 1. Three Key Components of Burnout

Emotional exhaustion
Depersonalization
Decreased sense of personal accomplishment

How Is Burnout Measured?

In the 1980s, Maslach and Jackson[3] developed a questionnaire to measure burnout. The questionnaire has 22 items, divided into 3 sections, each of which focuses on 1 of the 3 critical constructs of burnout. The first section contains a series of questions assessing the construct of exhaustion (fatigue, trouble sleeping, and physical problems). The second section focuses on the construct of depersonalization with a series of questions that focus on detachment, cynicism, negative attitudes, and withdrawal. The third section focuses on a reduction in personal achievement, loss of motivation, and an inability to accomplish goals. Scores are generated for each section to identify people who are at a low level, moderate level, or high level of burnout. The Maslach Burnout Inventory is used widely in research studies of burnout and is not specific to physicians. However, it may be too cumbersome for practical application. One study found that 2 items from the original Maslach Burnout Inventory are highly predictive of determining burnout:[6] "I feel emotionally burned out or emotionally depleted from my work," and "I have become more callous toward people since I took this job."

Those who had reported these feelings several times a week showed a 90% correlation with serious burnout.

Key Stages in the Development of Burnout

The concept of burnout has evolved since first described in 1974 as other researchers have become more interested in this topic. Freudenberger[7] describes 12 phases of burnout. These do not have to follow in the exact order detailed in , although generally the first several items on the list occur before the last few items. In our experience, compassion fatigue is a key marker of burnout, and we have added this to Freudenberger's original list for a total of 13 key stages ().

Table 2. The Development of Burnout: 13 Key Stages

Compulsion to prove oneself
Working harder
Neglecting needs
Displacement of conflicts
Revision of values
Denial of emerging problems
Withdrawal
Behavioral changes
Compassion fatigue
Depersonalization
Inner emptiness
Depression
Collapse

NOTE. Modified from Freudenberger's original review.

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Extent of the Problem

Burnout in physicians has reached alarming levels. One of the largest studies published to date analyzed 7288 physicians identified on the American Medical Association master list.[8] This list was thought to be representative of the 814,000 physician members of the American Medical Association. Twenty-nine percent of the respondents were in primary care, and 16% were employed in a medical subspecialty. Physician respondents were categorized not just by age and sex, but also by career stage, characterized as early (0–10 years of practice), middle (11–20 years of practice), or late in their career (>20 years of practice). The survey found that the highest rates of burnout were in Emergency Room (52%) and Critical Care (50%) physicians. The lowest rates of burnout, which still are concerningly high, were found in psychiatrists (33%) and pathologists (32%). Gastroenterologists reported a 37% rate of burnout. The study also found that high rates of depersonalization were greatest among early career physicians and decreased with age.

Emotional exhaustion was greatest midcareer; perhaps in part because of longer hours and more call responsibilities. Early career providers had the greatest rates of work-life conflicts and the most difficulty resolving work-life conflicts. Not surprisingly then, satisfaction with career choice was lowest during the early career period and increased with age.

These results have been corroborated by other studies showing high rates of physician burnout. One study by Shanafelt et al[9] found that 45% of physicians had experienced at least 1 symptom of burnout, whereas a large online physician study reported that 39.8% of physicians had suffered from burnout.[10] Although these numbers already are quite high, the problem seems to be getting worse. The Maslach Burnout Inventory was used in a survey study of physicians in both 2011 and 2014.[11] Forty-five percent of physicians reported at least 1 symptom of burnout in 2011 compared with 54.4% of physicians in 2014 ($P < .001$). Physicians also reported a significant decrease in work-life balance, with 48.5% of physicians feeling satisfied with their work-life balance in 2011 compared with only 40.9% just 3 years later. It is important to note that this trend was specific to physicians and was not seen in the general population. Although survey data in general may be susceptible to nonresponse bias, these numbers remain concerning and deserve attention.

How Early Does Burnout Begin?

Physicians spend up to a decade (or more) in postsecondary education, often working long and unpredictable hours from the very beginning of training. The study by Dyrbye et al[8] found that depersonalization and work-life conflicts were greatest in physicians early in their career. However, even before that, physicians in training experience burnout: the culture of endurance (just tough it out) seems to be instilled as early as medical school. One study of medical students found that up to 43% of students experience some symptoms of burnout.[12] This high rate is concerning because high rates of burnout may be associated with inappropriate drug use. One study of medical students found that 11% use psychostimulants, a rate much higher than that of the general population.[13] The rates of burnout persist into residency: a study of residents found that 27% to 75% reported some symptoms of burnout, and another study reported that 29% suffered from depression.[14,15]

Who Is Most at Risk?

One study published several years ago found that health care professionals are not only at high risk for developing burnout, but also are at a disproportionately higher risk than other workers in stressful jobs that focus on public service.[16] This is interesting because physicians generally are better educated and compensated than many other workers in service industries, factors that

could seemingly minimize the risk of burnout. The physicians most prone to develop burnout often show personal qualities of idealism, perfectionism, and an intense sense of responsibility. Extreme dedication to providing exceptional patient care may detract from essential personal and professional activities that promote and maintain wellness. Although these are considered positive attributes by patients and coworkers in a field in which devotion and attention to detail are critical, these idealized characteristics may compel the physician to prioritize professional duties disproportionately over time or energy spent on personal wellness.

Physician Burnout: Root Causes

The root cause of physician burnout varies from provider to provider. An overarching theme, however, is that of work stress. Work stress may develop for a number of reasons, including issues at the level of the health care system (shifts in reimbursement or payment models, increasing clerical burden of the electronic medical record), organizational issues (eg, dysfunctional administration, system-wide communication issues), and personal issues. Organizational issues are addressed in the treatment section; individual root causes are reviewed in this section, recognizing that there is an overlap between the 2 areas. A large survey study conducted by the American College of Surgeons used both the Maslach Burnout Inventory and the well-validated quality-of-life questionnaire, Short Form-36, to assess the root causes of burnout in 7905 surgeons.[17] This study identified a strong correlation between the relationship of burnout and the number of hours worked per week. Surgeons who worked fewer than 60 hours per week had a prevalence of burnout of 30%, whereas surgeons who worked 60 to 80 hours per week had a prevalence of burnout of 44%. The highest rate of burnout in surgeons who answered the survey (50%) was seen in surgeons who worked more than 80 hours per week. The next most common root cause for the development of burnout was the presence of conflict between work and home, including the following: child care issues, interruption in family activities, missed family meals, and lack of time spent with a spouse or partner. Burnout was more likely to develop in 2-career families, or when the spouse was also a physician, and was highest yet when a surgeon was married to a surgeon. One easily can imagine how the stress of 2 very demanding careers could lead to burnout in 1, or both, individuals. Other common causes of burnout are listed in .

Table 3. Root Causes of Burnout

Long work hours (highest risk in those who work >80 h/wk)
Work-home conflict
Taking care of sicker, more demanding patients
Pressure to learn new technology
Greater expectations from patients
Shorter, more intense hospital stays
Decreased reimbursement
Increased pressure to produce (increased RVU expectations)
More time spent on administrative tasks rather than patient care
Constantly changing rules (insurance, reimbursement, CME, MOC, and so forth)
Increasing litigious environment
Micromanagement of medical practice by administration, insurers, and governmental agencies
Constantly changing roles (office-based health care transitioning to population-based care)

CME, continuing medical education; MOC, maintenance of certification; RVU, relative value unit.

Physician Burnout: Why Does It Matter?

Burnout affects not only the individual, but also the physician's family, immediate work environment, and the health care system as a whole. Physicians suffering from burnout are more likely to retire early, which may delay or prevent patient access to the most experienced physicians. Burnout also may lead physicians to change jobs, creating the potential for backlog in patient care and costs attributable to turnover or recruitment. Physicians suffering from burnout are more likely to suffer marital or relationship conflicts, creating further work-life stress. In addition, rates of depression, alcohol abuse, drug abuse, and suicide are significantly higher in physicians suffering from burnout. Physicians who are burned out are more likely to have lower patient satisfaction scores, as well as experience an increased association with medical errors. The latter point is highlighted by the American College of Surgeons study,[18] showing that medical errors were associated with longer work hours, more time spent on call, and more time in the operating room. Medical and surgical errors not only may cause patient harm, but also may harm the physician (increased likelihood of a lawsuit), the physician's family (burnout affecting home life), and the physician's

institution. As reimbursements become tied to patient care outcomes, medical errors and quality will have the potential for financial implications. In addition, reporting a medical or surgical error has significant downstream consequences. The American College of Surgeons survey found that reporting an error was associated with a high prevalence of emotional exhaustion, higher rates of depersonalization, and a doubling of depression rates.

Can It Be Prevented?

Preventing burnout is critical because prevention is cheaper, safer, and less likely to have downstream consequences than dealing with burnout once it develops (). The first step is to be self-aware and vigilant about the potential for burnout. Responsible dedicated physicians, pressured into doing more each day, frequently neglect their own needs because they focus first on the needs of their patients. The simple act of recognizing that burnout can occur, especially in physicians most at risk, is a step forward. The next step in preventing burnout seems simple: take care of yourself. This is something that many physicians teach their patients who are caregivers to others. However, the same principle applies to physicians. If they are not mentally and physically healthy, then they will be unable to provide exceptional care to their patients. Proper sleep should be a priority: inadequate rest may impair decision making and increase the risk of medical errors. Exercise should be part of a daily, or near-daily, routine. This can be as simple as taking a long walk at lunch, or after dinner with family or friends. Self-care means staying connected with family and friends. Socializing, laughing, and unwinding routinely will help improve your daily personal life, and also your professional life. Taking vacation time is critical. Multiple studies have shown that vacations result in a recharged individual who is more productive at work upon return. During the vacation, it is important to disconnect from work. That means not answering work e-mail (unless absolutely critical), not taking telephone calls from patients, and not perusing office schedules and patient records. Leave a trusted colleague in charge, change your e-mail and electronic records signature page to an away setting, and focus on recharging.

Table 4. Preventing Burnout

Be self-aware and stay vigilant
Take care of yourself first
Stay connected to family, friends, and co-workers
Exercise
Ensure adequate sleep
Use your vacation time and ensure you disconnect yourself from work
Learn to say no

Treatment and Prevention: Pathways to Success

Addressing physician burnout requires interventions not only on a systemic/organizational level, but also on an individual level; both have been shown to make clinically meaningful reductions in physician burnout.[19] The critical first treatment pathway must take place at an organizational level: organizations must recognize and acknowledge that physician burnout is a potential crisis that threatens the health care system. This crisis might be far greater in magnitude than any changes in health care that might occur with repeal of the Accountable Care Act, or changes in Medicare and Medicaid reimbursement. Organizations must develop and publicize employee assistance programs that are anonymous and managed by health care providers with experience dealing with burned-out physicians. Stress management programs should be readily available and accessible, not only during off hours, but also during the work day. Staff should use scheduled break time to decompress, rather than squeezing in more patients and performing mind-numbing administrative tasks. Supervisors at all levels should be counseled and informed about the symptoms and signs of burnout, and, once recognized, address it immediately in a positive, nonpunitive manner. One study showed that competent leadership that supports the physician workforce reduces stress and is associated with reduced rates of burnout.[20] Regular meetings with staff and leadership should be encouraged to discuss physician goals, hours, administrative tasks, and fairness. Transparency in this process is essential, and leadership should invite and implement physician input into improving aspects that affect workflow. A positive work environment and organizational culture can reduce stress, increase job satisfaction, and thus reduce the prevalence of burnout.

The second treatment pathway focuses on the individual, and this is especially difficult if the burned-out physician either does not recognize the problem or does not participate in the solution. We believe that there are 5 basic tenets to treating physician burnout (); the first 3 of which have been described previously and are adapted from Balch and Shanafelt[16] and Surawicz.[21] The first is to identify and strike a balance between one's personal and professional life. As part of finding this balance, it is important to identify priorities in your professional life and in your personal life. Make a list for each and determine what conflicts exist and how they can be resolved. One essential activity here is to understand and take control of your work schedule with regard to the scheduling of patients and timing of procedures. Being able to control your own work schedule significantly improves the ability to integrate work and life demands effectively. A key factor here, however, is to be realistic. We always are asked to do more, to squeeze in 1 more patient or 1 more procedure, to skip lunch, or stay late. Recognize that by constantly

adding more and more work to your day, you detract from time and energy spent on personal wellness and increase the risk of burnout. Two, shape your own career by identifying stressors. Identify what energizes you: is it patient care, research, or teaching? Then identify what drains you. Are advanced procedures too stressful? If at an academic center, is the chaos of performing in-patient consults too much? Decide if these can be modified for the best. As you review this, decide whether your current job is the best job for you. Do not feel trapped with a job that may have been the right fit years before. Personal situations change, the environment changes, and the health care field constantly is changing. One great advantage about being a physician is that your training makes you portable. The third key tenet is to nurture wellness strategies. Build new relationships and build on existing relationships. This includes not just coworkers and staff, but also family, friends, and neighbors. Research consistently has shown that mental health improves, and the risk of burnout is reduced, when physicians have a strong social network. In addition, the term *self-care* should become your new mantra. Self-care comes in a multitude of forms, but essentially it means taking time out of each day to do something for you. This is not selfish; rather, it is essential to good mental and physical health. This may include exercise, yoga, meditation, listening to music, or going to church. It certainly means taking scheduled vacation time with family or friends. While vacationing, it is essential to become unplugged: many physicians are expected (or expect themselves) to remain constantly available for patient and professional duties. True vacation time means minimizing telephone calls and e-mail. It means letting the office know that you are not reachable and that business issues should be addressed by those in the office. Self-care also may include taking on a new hobby, or resuming an old hobby that you have not enjoyed for years. Remember the pleasure of playing a great game of tennis, hiking in the woods, working in the woodshop, or cooking an amazing dish just for fun? Those activities all can become pleasurable again, and improve your quality of life, if you can create the time.

Table 5. Five Key Principles in Treating Physician Burnout

Learn to balance personal and professional goals
Shape your career and identify stressors
Nurture wellness strategies
Become engaged and/or re-engage
Build resilience

Adding to the earlier discussion, we propose 2 additional treatments for burnout on an individual physician level. The fourth essential tenet involves becoming engaged, or re-engaging. Engagement is characterized by vigor, absorption, and dedication. Engagement is the antithesis of burnout; it is the absence of cynicism. Engagement is the ability to be energized and enthusiastic about your job (and life) again. Recall how amazed you felt with that first case you solved as a medical student or intern. Recall how engaged you felt and how energized you were. A powerful attribute of engagement is that, in the right setting, it can be contagious, dramatically improving the well-being of colleagues, coworkers, friends, and family. Finally, the last tenet in treating (and preventing) physician burnout is to build resilience. Resilience can be defined in a number of different ways: hardiness, strength, tenacity, and resistance. However, a Canadian study of physicians characterized it as a dynamic process incorporating positive attitudes and effective strategies and coping skills.[22]

A recent meta-analysis[23] evaluated controlled interventions to reduce physician burnout both on the organizational level (such as rescheduling shifts, reducing workload, structural changes, or meetings to enhance teamwork) as well as on the physician/individual level (such as mindfulness, stress reduction, education targeting communication skills, exercise, or some combination). The majority of the studies evaluated physician-directed interventions. Interventions overall were associated with small but significant reductions in burnout. The treatment effects of organization-directed interventions were significantly larger than the effects of physician-directed interventions. These findings underscore the argument that "burnout is rooted in the organization coherence of the health care system"[23] and that the scope of the overall burnout problem is unlikely to be addressed completely on an individual physician level. That being said, the collective individual responsibility of each physician to recognize and prevent burnout benefits everyone. The self-aware, balanced, energized, and resilient physician is one who is less susceptible to burnout and one who will become part of the solution by contributing to a positive work environment for his colleagues.

Case Study: Revisited

Dr M., our junior attending, clearly is suffering from burnout. Risk factors for burnout include being an early career physician, performing complicated procedures, work-life conflict (her spouse, whom she rarely sees, is a physician; she missed her daughter's birthday), concerns over an impending deadline, and loss of control regarding her clinic schedule. She realizes that she has taken only 3 vacation days in her first 15 months on faculty. In addition, Dr M. had been pushing herself to meet increasing productivity targets despite an intentional reduction in her clinical schedule during her first year of a new job. After her grant is completed, she vows to schedule a week-long vacation to spend some much-needed time with her family and to set limits at work to maximize time at home with her family.

Conclusions

Physician burnout is an under-recognized health care crisis. Burnout affects physician well-being, effectiveness, productivity, and the ability to provide quality care, and also carries personal consequences for physicians including broken relationships, substance abuse, suicide, and depression. Furthermore, burnout has huge downstream implications on the quality of the overall health care system. Although bigger health care system issues such as fluctuating reimbursement, consolidating medical practices, shift in care-delivery models, and widespread use of electronic medical records may be here to stay, there are organizational and individual factors that contribute to burnout and that can be targeted for treatment. Recognizing issues that contribute to burnout and directing them for interventions can reduce burnout, restore individual well-being, and, ultimately, result in more effective and balanced physicians. Although there are specific personal factors that increase the risk of burnout, ultimately organization-level interventions and supportive leadership are crucial to addressing burnout on a larger scale. The best strategy combines organization and personal responsibility for the growing burnout problem: organizational-level programs systematically may help physicians recognize early signs of burnout, promote health and self-care, and restore well-being.

References

1. Freudenberger H. Staff burnout. J Soc Issues 1974;30:159–165.
2. Freudenberger H, Richelson G. Burn out: the high cost of high achievement, what it is and how to survive it. New York: Bantam Books, 1980.
3. Maslach C, Jackson S. Maslach Burnout Inventory manual. 2nd ed. Palo Alto, CA: Consulting Psychological Press, 1986.
4. Bianchi R, Boffy C, Hingray C, et al. Comparative symptomatology of burnout and depression. J Health Psychol 2013;18:782–787.
5. Bianchi R, Schonfeld IS, Laurent E. Is burnout a depressive disorder: a re-examination with special focus on atypical depression. Intl J Stress Mng 2014;21:307–324.
6. West CP, Dyrbye LN, Sloan JA, et al. Single item measure of emotional exhaustion and depersonalization are useful for assessing burnout in medical professionals. J Gen Intern Med 2009;24:1318–1321.
7. Freudenberger HJ, North G. Women's burnout: howto spot it, how to reverse it, and how to prevent it. Doubleday: 1st edition, 1985.
8. Dyrbye LN, Varkey P, Boone SL, et al. Physician satisfaction and burnout at different career stages. Mayo Clin Proc 2013; 88:1358–1367.
9. Shanafelt TD, Boone S, Tan L, et al. Burnout and satisfaction with work-life balance among US physicians relative to the general US population. Arch Intern Med 2012;172:1377–1385.
10. Medscape Physician Lifestyle report. Available from: http://www.medscape.com/sites/public/lifestyle/2013. Accessed: June 2, 2017.
11. 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;90:1600–1613.
12. Santen SA, Holt DB, Kemp JD, et al. Burnout in medical students: examining the prevalence and associated factors. South Med J 2010;103:758–763.
13. Emanuel RM, Frellsen SL, Kashima KJ, et al. Cognitive enhancement drug use among future physicians: findings from a multi-institutional census of medical students. J Gen Intern Med 2012;28:1028–1034.
14. Ishak WW, Lederer S, Mandili C, et al. Burnout during residency training: a literature review. J Grad Med Educ 2009;1:236–242.
15. Mata DA, Ramos MA, Bansal N, et al. Prevalence of depression and depressive symptoms among resident physicians: a systematic review and meta-analysis. JAMA 2015;314:2373–2383.
16. Balch CM, Shanafelt TD. Combating stress and burnout in surgical practice: a review. Adv Surg 2010;44:29–47.
17. Shanafelt TD, Balch CM, Bechamps G, et al. Burnout and career satisfaction among American surgeons. Ann Surg 2009; 250:463–471.
18. Shanafelt TD, Balch CM, Bechamps G, et al. Burnout and medical errors among American surgeons. Ann Surg 2010; 251:995–1000.
19. West CP, Dyrbye LN, Erwin PJ, et al. Interventions to prevent and reduce physician burnout: a systematic review and metaanalysis. Lancet 2016;388:2272–2281.

20. Shanafelt FD, Gorringe G, Menaker R, et al. Impact of organizational leadership on physician burnout and satisfaction. Mayo Clin Proc 2015;90:432–440.

21. Surawicz CM. Avoiding burnout: finding balance between work and everything else. Am J Gastroenterol 2014;109:511–514.

22. Jensen PM, Trollope-Kumar K, Waters H, et al. Building physician resilience. Can Fam Physician 2008;54:722–729.

23. Panagioti M, Panagopoulou E, Bower P, et al. Controlled interventions to reduce burnout in physicians: a systematic review and meta-analysis. JAMA Intern Med 2017;177:195–205.

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