

The Burnout Conundrum: Nature Versus Nurture?

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From my training in epidemiology, I know that incidence and prevalence rates vary enormously according to both the disease detection methods and definitions used and the selection bias for differing populations. These problems are present when we attempt to study the prevalence and effects of interventions on well-being, resilience, and burnout in medical trainees and practicing physicians.

Take the example of primary biliary cirrhosis (PBC), a progressive inflammatory liver disease diagnosed through clinical criteria. It was my impression that this was a frequently occurring disease when I trained at Yale University, home of world-renowned hepatologist, Dr. Gerald Klatskin. I saw patients with this disease nearly every week, and it was always high on my list of differential diagnoses. Only after leaving Yale did I realize that this condition is not common. PBC prevalence rose from 1 to 10 cases per million before 1986 to 400 cases per million after 1986; this change is not attributed to an actual increase in incidence, but rather to greater awareness and detection.¹ PBC disease is attributed to environmental triggers interacting with a genetically vulnerable person; thus, host and environmental factors are both important.¹

This is also likely the case for resilience and burnout in physicians.

In This Issue

Several research articles and accompanying commentaries in this issue of the *Journal of Graduate Medical Education (JGME)* discuss wellness and burnout in graduate medical trainees.²⁻⁶ The systematic review by Raj² notes that a clear operational definition of well-being during residency training does not exist. As a result it will be difficult for program directors to identify residents with compromised well-being or study interventions that promote wellness. Raj and many others have pointed out that well-being, or resilience under stress, is not simply the opposite of burnout, which is also defined variously. The best-known definitions of the burnout syndrome are submeasures of the Maslach Burnout Inventory: high emotional exhaustion, high depersonalization (feeling detached or cynical about patients), and sense of low personal accomplishment.⁷

Most of the studies reported in Raj's systematic review² were short term and used a variety of self-reported scales to measure well-being and associated factors. In addition, survey response rates varied, with many responses not reported or reported as less than 30%; this suggests response bias and makes statements of prevalence suspect. Various factors, both resident characteristics and environmental attributes, appear to be associated with wellness (TABLE). The few wellness intervention studies identified by Raj²—faculty consultations, hospital gym access, and strengthening coping mechanisms—were associated with minimal or no improvements in wellness measures.

In another article in this issue, Cohen-Katz et al³ report the effects of a 6-year comprehensive transformation in a family practice residency to promote wellness; there were no changes in quantitative measures. Qualitative analysis of focus groups and advising sessions revealed that residents recognized the new culture, and many appreciated the changes.³ From the Raj² review and this intervention study, we may conclude that promotion of wellness during residency will not be easy.

In both of the wellness commentaries, the authors emphasize a continuum from residency into practice, and that dissatisfaction with practice and burnout are important issues for many physicians, particularly frontline primary care physicians.^{5,6} Can 3 to 7 years of graduate medical education effectively prepare physicians for current and future sources of stress? This is especially relevant when we take into account current practice challenges, such as increasing documentation pressures, electronic health records, meaningful use, and patient open access to records; risk management issues; decreased time with patients; and less control over work in large institutional practices versus physician-run practices.⁸ Most likely, “best practices” for maintaining physician satisfaction and wellness will require a blend of selecting resilient students for medical school, nurturing coping skills throughout training, and working for changes that support high quality of care and work satisfaction during and after graduation. A recent example of the latter is the overwhelming reaction to the American Board of Internal Medicine's intrusive, costly, and perhaps irrelevant requirements for the Maintenance of Certification program, which were also a source of stress. A groundswell of protest by physicians produced

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TABLE
Factors That May Be Associated With Resident Well-Being^a

Host-Related	Environment-Related	Both
Pursuit of and achieving goals	Opportunities for learning	Sense of autonomy and control
Increased confidence, mastery	Positive feedback	Positive relationships with colleagues
Exercise	More time away from work	More sleep
Time in nature		
Being in a relationship		
Spirituality		
Family social supports		
“Grit”		

^a Table derived from Raj.²

changes in the Maintenance of Certification process and content.

Can clinicians and educators work together in a similar fashion to improve future training and practice environments?

Host Factors

Albeit rare, longitudinal studies are essential to tease apart the effects of host versus environmental factors. A United Kingdom study⁹ of applicants applying to 5 medical schools followed nearly 1700 students (starting at the ages of 17–18) over 12 years with a 63% response rate. In this study, physician approaches to work were predicted by their study habits and learning styles before medical school, and remained consistent from application to medical school through the last year of the study. Personality traits that were present 5 or more years earlier predicted perceptions of stress, burnout, and work satisfaction. Stress was greatest in individuals with high neuroticism scores, low extraversion scores, low conscientiousness scores, and preference for surface learning (versus deep learning) approaches. Perceptions of high stress and workload were relatively stable over time in individuals, and correlated better with the individual than with work characteristics: “Stress is not a characteristic of jobs but of doctors, different doctors working in the same job being no more similar in their stress and burnout than different doctors in different jobs.”⁹ The authors concluded that approaches to work are predicted by earlier measures of study habits and learning styles, whereas stress, burnout, and work dissatisfaction are predicted mainly by personality traits.

Studies with Stanford University undergraduates by McGonigal¹⁰ find that personal beliefs about stress and its effect on performance are also important factors to consider when reacting to stressful situations. Thus, how do we integrate training about handling stress into already overcrowded residency curricula?

Environmental Factors

Many cross-sectional studies¹¹ have examined factors associated with stress and burnout during residency training. Limitations of intervention studies include small and highly selective populations (eg, volunteers), variable implementation of interventions, weak designs, outcome measures without supporting evidence, and low response rates.^{11,12} Factors associated with resident work satisfaction include collegial relations with attending physicians, continuity of care, autonomy, work encouraging professional growth, and work group loyalty.^{13,14}

In comparison, a national physician survey⁸ found that the strongest factor associated with career satisfaction, work-life balance, and lack of burnout was having control over one’s schedule and hours worked, regardless of specialty. This may explain in part medical student surveys¹⁵ in which preference for a controllable lifestyle explained 55% of the variability in US medical student specialty preference, after controlling for income, work hours, and years of training required.

In a third article in this issue, Ey et al⁴ describe 10 years of experience with an institutional wellness program that includes team workshops, individual counseling, and psychiatric evaluations and treatment referrals. After several years of operation, 25% of residents used the services and provided high satisfaction ratings. For program directors and deans looking for solutions in the absence of clear definitions and proven interventions, the approach “If you build it, they will come” may be a plausible starting place.

In Conclusion

Medicine clearly is a stressful occupation; although fortunately not as stressful as work in the military, social services, customer call centers, or as prison officers, police, teachers, and taxi drivers.^{16,17} *JGME* editors would like to see more longitudinal studies

and research that compares survey-derived criteria for wellness and burnout with in-person interviews. We encourage qualitative studies that explore the relationships among personality traits, resilience, burnout, work satisfaction, and the environment during residency and beyond.

Many young adults may be attracted to medicine because its challenges promise ongoing stimulation, yet these challenges also produce stress. Although they find it initially appealing, residents may “opt out” of medicine unless we select, nurture, and support trainees so that they can thrive amid the roller coaster highs and lows of modern health care.

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