Perspective: **Resident Physician Wellness: A New Hope**

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Abstract

Residency training is a challenging period in a physician's career owing to a multitude of stressors perhaps not previously encountered. In some cases, these stressors may culminate in a state of burnout. In response, much has been written about the issues of personal wellness during residency training. Recently, duty hours reform has been the major focus of addressing resident wellness; however, this intervention has established little benefit and has created unintended negative consequences. Alternatively, an emerging solution may be the implementation of resident wellness programs into residency training. Such programs are defined by a combination of active and passive initiatives targeting the various domains of physical, mental, social, and intellectual wellness. In contrast to duty hours reform, resident wellness programs are generally free from controversy and have been shown to improve resident wellness and enhance empathy.

This article highlights the salient causes of burnout as it applies to present-day resident physicians and the patient care they provide. Moreover, in the wake of the controversy surrounding duty hours reform, a novel approach to resident wellness involving structured resident wellness programs is discussed. Specifically included are the fundamental components of a wellness program, the advantages held over duty hours reform, methods to evaluate program efficacy, and the current evidence to support these initiatives. Formal wellness curricula, including an evaluative process, should be an integral component of physician training. These programs represent a new hope in the solution to the long-debated issue of burnout and wellness during residency training.

Wellness, or *well-being*, is a vague term with an increasing presence in both society and medicine. In 1948, the word appeared in the definition of *health* in a publication from the World Health Organization: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."[1] More than 60 years later, a 2009 article echoed a similar holistic definition to explain the concept of wellness: "We use the term wellness to capture the complex and multifaceted nature of physicians' physical, mental, and emotional health and wellbeing."[2]

If personal well-being is measured on a continuum, then wellness and burnout may represent opposing poles of the scale. Burnout is defined as "a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment" typically associated with workplace stress.[3] In some cases, burnout is associated with depression, marital discord, substance use, hypertension, or myocardial infarction.[4] Together, these features of burnout could represent those of a patient in need. Perhaps more concerning is when they also affect the doctor.

Residency training can provide remarkable gratification despite its forays into the sickness, sadness, suffering, and death of patients.[5] However, the title of a 2002 editorial, "Who is sicker: Patients—or residents?" suggests that the health of residents may also be compromised.[6] A growing body of evidence identifies residency training as the nadir of personal wellness in a physician's career. Compared with faculty or medical students, residents score significantly lower in measures of exercise, sleep, seatbelt use, and overall wellness.[7] Resident burnout has been well established using the standard Maslach Burnout Inventory tool.[3] The high prevalence and relative consistency of burnout across the breadth of residency training programs is quite remarkable: internal medicine, 76%[8]; obstetrics–gynecology, 90%[9]; pediatrics, 74%[10]; otolaryngology, 86%[11]; and family medicine, 27%.[12] Moreover, studies consistently demonstrate higher burnout scores for residents compared with faculty.[13–16] Clearly, the rigors of training have been shown to affect the well-being of resident physicians. More intriguing questions are why this occurs and how we can respond.

Burnout and Stressors During Residency Training

Why are so many residents burnt out? Perhaps the most publicized and debated factor centers on resident duty hours. First, evidence does correlate resident burnout with the number of hours worked.[16] Second, long hours have been linked to the impressive physical demands of residency training. Of Canadian residents working 69 hours (range 55–106 hours) per week, 21% developed ketonuria and 100% demonstrated an arrhythmia or heart rate abnormality.[17] Of note, the hours spent studying medicine in the library while "off duty" are rarely included in the analysis of a resident's workweek.

Long work hours, however, are only one facet contributing to resident burnout. Over the course of their training, residents experience a reduction in low-fat meals, sleep hours, exercise, family interactions, and attendance at significant events.[18] Furthermore, sleep deprivation has been associated with depression onset,[19] and the stress of training has been linked to resident suicides.[20] In

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the general population, the 12-month prevalence of any mood disorder is 9.5%.[21] By comparison, studies from 1984,[22] 2002,[23] and 2006[19] consistently demonstrate a depression prevalence of 27% to 30% within 12 months of residency training. Thus, an expanding body of literature indicates that resident physicians, like the patients they treat, may also experience personal sickness, sadness, suffering, and death.

Unlike residents of the past, medical school graduates today carry a massive financial burden. In the United States, the median education debt of indebted medical school graduates jumped nearly eightfold from 1984 ($20,000)[24] to 2010 ($158,996).[25] Similarly, in Canada, a large survey revealed an average graduating debt of $158,728 in 2007.[26] Of note, the magnitude of this debt increase is well beyond that of inflation increase[27] or interest rate decline.[28] Most concerning, however, is that increasing financial debt has been shown to correlate with residents' self-reports of increasing cynicism and depression[29] as well as suicidal ideation.[30]

Personal and professional relationships may be affected during residency. In 1988, 46% of residents reported concerns that their current relationship would not survive the stress of residency training.[31] In 2009, a large study demonstrated significant sexual dysfunction and a decline in relationship quality during residency.[32] Female residents in particular may struggle with balancing a family life, the role strain of being mislabeled a nurse, and the delicate application of authority over female ancillary staff.[33]

The Effects of Resident Wellness or Burnout on Patients

Paramount to this discussion is the impact of wellness on patient care. Residents suffering from depression report making medication errors 6.2 times more often than nondepressed residents.[10] Burnt-out residents have been identified as being significantly more likely to provide suboptimal patient care[8] or commit medical errors.[34,35] Examples include ordering restraints without evaluating an agitated patient and feeling guilty about how a patient was treated.[8] Similar issues of suboptimal patient care by exhausted, poorly supervised residents were thought to play a major role in the highly publicized death of 18-year-old Libby Zion in 1984.[36] Public outcry regarding the circumstances of her death ignited a revolution in resident working conditions.

Some will argue that present-day burnt-out residents are "too soft" and simply lack a degree of intestinal fortitude. However, the patients on the receiving end of medical errors would likely disagree. Indeed, patient care is a critical factor in this argument. Regardless of our individual opinions toward resident well-being, one cannot refute that patient care has been adversely affected by resident burnout; and to that end, solutions to this issue must be presented.

Addressing the Issues

Duty hours reform

To date, the most contested, publicized, and nationally recognized approach to addressing resident wellness has focused on duty hours limitation. In 2003, U.S. national limitations on resident duty hours were introduced with the intent of improving resident well-being, education, and patient care.[37] These limitations were followed by more aggressive recommendations in 2007.[38] In Canada, provincial resident associations followed suit with upgraded duty hours guidelines and a cry for further changes in 2010.[39] Beyond North America, limits on working hours for junior doctors in Europe were restricted to a maximum workweek of 56 hours in 2007 and subsequently to 48 hours in 2009.[40]

Yet, are duty hours limitations efficacious? Subjective data do indicate a perceived improvement in resident quality of life[41]; however, this benefit is curbed by a perceived negative impact on education and patient care.[42,43] More objective data indicate that duty hours limitations have not led to improvements in sleep hours, work hours, medication errors, depression, injuries, or education.[44] With respect to burnout, studies conducted under reformed duty hours guidelines have yielded mixed results.[44,45] The majority of surveyed faculty members report a negative effect on resident patient care and education since duty hours limitations began.[46] Commentary such as "the pendulum has swung too far, and you're actually doing more harm than good" serve as a caution to aggressive duty hours reform.[42] Likewise, residents themselves have lobbied against further hour limitations, citing concern that this reform will compromise their training.[47] As such, fewer hours may result in additional years of training being incorporated into residency programs.[42,48] Others have warned that further limitations will worsen emergency department overcrowding and ultimately compromise patient safety.[48] Moreover, duty hours regulations in the United States have resulted in little or no improvement in inpatient mortality[49,50] or patient safety.[51] In Europe, studies on the outcomes of duty hours reform have yielded no conclusions because of poor report quality and conflicting results.[52] Thus, despite good intentions, duty hours limitations have produced little concrete benefit and have created many unintended negative consequences. Like many things in medicine, duty hours must be carefully titrated to strike a balance between resident wellness, patient safety, and quality education.

Resident wellness programs

Some have suggested that efforts to address burnout should expand beyond duty hours regulations.[12,46] A new hope is the implementation of formal wellness curricula into resident training programs. A resident wellness program (RWP) provides many advantages over duty hours restrictions. First, such programs are generally without controversy and may foster interactions between residents and faculty. Second, they are flexible and thus allow initiatives to be tailored to individual resident populations. Third, they provide an arena for support and the education of resident wellness issues. Fourth, they can avert a crisis situation by identifying a struggling resident at an early stage in his or her troubles. Finally, they do not conflict with patient care. Accordingly, many authors have plainly expressed a need for programs that address issues of resident stress and burnout.[2,32,53] Others have lamented the lack of curricula to address the psychological hurdles of medical training with respect to the emotions of the patient, the student, and the role model or educating physician.[54]

What are the key components of an RWP? First, a wellness program should provide a safe office for residents to express their grievances. Indeed, 46% of residents feared being labeled a "troublemaker" if they raised concerns or complained about the residency program.[32] Thus, a confidential environment provides a refuge where the impetus for change can be discussed.[55] Second, burnout prevention can be achieved by an RWP that has an ongoing surveillance of its residents. A proactive approach may include mandatory, regular, one-on-one meetings with residents to uncover symptoms of depression, burnout, or substance use. Third, an RWP can employ lectures, workshops, or exercises to actively educate residents about the pitfalls of burnout and the habits of wellness.[56,57] Topics may include strategies to cope with long work hours, diet and exercise, shift work practices, financial planning, sleep disturbance, chemical dependence, women's issues, relationships, and personal safety. In 2009, the Royal College of Physicians and Surgeons of Canada published a comprehensive, case-based, CanMEDS[58]-oriented guideline to many of these topics. This booklet[59] offers a wealth of practical solutions and is an invaluable resource for any RWP educator or administrator. Fourth are initiatives that target domains of physical, mental, social, intellectual, and community wellness.[60] Examples may include gym access, resident retreats, social outings, mentoring, and charitable donations.[60–62] Ideally, an RWP should comprise a mix of passive (safe office) and active (meetings, workshops, outings) strategies. Passive-only programming (e.g., only providing a Web site) may fail to recognize or engage a struggling resident. Researchers have thus identified the need to focus on active rather than passive learning in wellness curricula development.[63]

Are RWPs efficacious? First, evidence indicates that residents are highly receptive to wellness curricula.[57] Furthermore, participation in wellness sessions has been correlated with higher empathy and wellness scores as well as reduced anxiety and depression.[64,65] Likewise, residents involved in stress management workshops have demonstrated reductions in burnout scores.[66,67] Currently, studies of comprehensive RWP efficacy are scant. Two robust programs targeting medical students have shown significant improvements in well-being and learning environment[63] with remarkable participation and satisfaction.[60] Fortunately, a 2006 article provided a rapid, reliable, and valid tool for measuring resident wellness.[68] This survey, the Brief Resident Wellness Profile (BRWP), provides objective wellness data and should be used to evaluate any new RWP.

In 2008, the Department of Emergency Medicine at the University of Alberta incorporated a novel RWP into its residency training program. This two-tiered program features both faculty- and resident-derived initiatives. The groundwork for the faculty-derived program began in 2005 when staff physicians recognized a paucity of support available to residents during a stressful period. Today, this program provides one-on-one, confidential, biannual meetings between a resident and a designated faculty wellness mentor. Meetings are informal in nature but do serve as an opportunity to screen for features of impairment and explore a resident's ability to maintain domains of physical, mental, financial, and social wellness. Faculty initiatives have also included wellness-related lectures at mandatory department grand rounds. Recently, clear efficacy of the faculty-derived program was demonstrated using the BRWP and SF-8 tools. Key results include significant improvements in both resident wellness and physical health scores.[69]

The advantage of a resident-derived RWP is that the initiatives can be developed by a member of the target audience. At the University of Alberta, the resident-derived component serves to eliminate guesswork from faculty and erase any potential generation gap.[70,71] This program serves approximately 30 residents ranging from postgraduate years one to five. To date, a single resident has been the chief founder and operator of the program. This chief composes two to four wellness initiatives per month that are advertised to the group via e-mail and postings in the resident lounge at the hospital. Successful initiatives in the University of Alberta program have been both isolated and longitudinal in nature and are targeted at the various domains of wellness listed above. Examples include 24-hour access to bottled water or sports drinks (physical wellness), community charitable donations such as Christmas gifts for children of low-income families, a nonmedical library (mental wellness), a bulletin board to promote coupons, sales, or tax tips (financial wellness), and regular outings to live sporting and music events (social wellness). Although data are pending to support our resident-derived program, feedback from both residents and faculty has been overwhelmingly positive.

Closing Remarks

Residents represent a group of physicians with an alarming prevalence of fatigue, depression, relationship strain, and financial debt, all of which may culminate in a state of burnout. Recent efforts to address this issue have focused largely on duty hours reform—an intervention with no demonstrable benefit to patients, mixed results in well-being and burnout, and strong concerns of a negative impact on education. Residency training demands a massive amount of learning in a finite period of time. Arguably, long hours and sleepless nights are needed to gain enough clinical experience to become a medical expert. Thus, duty hours limitations themselves have limits, and periods of stress are to be expected among trainees. In this environment, some residents will excel, some will falter, and many will fall somewhere in between. Comprehensive RWPs represent a new hope to counteract the stress of training whether a resident struggles or thrives. Existing programs are well attended, efficacious, and free from debate; however, further research is needed to clearly establish their benefit. Such research should focus on the interest in RWPs among various resident groups, the perception of staff physicians toward these programs, and the efficacy of the various components of wellness curricula.

Residency will never be an easy endeavor, but there are new avenues to make the journey a little brighter. Perhaps, while training residents to become good doctors, we can also train them to flourish in the process.

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