

REVIEW ARTICLE

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Burnout, Depression, and Diminished Well-Being among Physicians

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THERE IS GROWING CONCERN ABOUT THE WELL-BEING OF PHYSICIANS and the consequences of poor well-being for physicians themselves, their patients, and the broader health care system. Diminished well-being among physicians has been characterized through several constructs, including acute and chronic stress, trauma, moral distress, moral injury, the second victim syndrome, burnout, and depression, and is associated with poor outcomes for physicians and the patients they treat. In this review, we discuss, first, the development of the two most commonly studied constructs, burnout and depression, and their application to physicians; second, the progress in improving well-being in specific physician populations; third, the utility of system- and individual-level interventions to improve physician well-being; and finally, the critical next steps to facilitate progress in the coming years.

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A BRIEF HISTORY OF THE CONSTRUCT OF BURNOUT

In the 1970s, two psychologists, Freudenberger and Maslach, drew from their clinical observations and independently developed the modern concept of burnout. Freudenberger personally experienced and observed among his colleagues the development of emotional exhaustion in response to intensive work to improve the lives of persons in disadvantaged populations amid a difficult and unchanging environment.¹ Maslach similarly observed that people in the helping professions (helping professionals) in interpersonal roles became emotionally drained over time, which led to detachment from and negative feelings toward the people they were trying to help.²

Freudenberger's and Maslach's concept of burnout quickly gained mainstream cultural popularity. The term was used to describe a wide range of emotional symptoms across persons experiencing a variety of work-related and other stressors. The term even entered the popular music lexicon, with Bob Dylan, Neil Young, and others using burnout to describe societal unrest and disillusionment. The concept of burnout resonated strongly with highly educated helping professionals, who felt that they were working to improve lives but that their efforts were hindered by bureaucracy.

PHYSICIANS AND BURNOUT

Over the past 15 years, burnout has gained resonance as a term to describe poor well-being among physicians.³ Like the helping professionals whom Freudenberger and Maslach observed, physicians often enter medicine to help others but increas-

ingly find that an excessive workload, administrative burdens, and the profit motives of insurance and pharmaceutical companies and health care systems are intractable barriers to improving patients' lives in the ways the physicians had envisioned.⁴ Physicians often have to shoulder heavy responsibility but increasingly are limited by low autonomy and low decisional authority, a combination that is particularly stressful.⁴ Poor well-being among physicians results in an enormous burden on individual physicians, through career and family consequences, poor health, and, most tragically, suicide.⁵⁻⁷ Physicians' distress also affects the health care system through diminished quality of care, medical errors, high physician turnover, and attrition from the medical field.⁵⁻⁷

Both in the broader population and among physicians, the concept of burnout has helped raise awareness of the challenges to physician well-being and entrenched systemic problems. The use of the term "burnout" to capture a wide range of symptoms has also helped to build community and catalyze collective calls for reform. Even before the term was applied broadly to physicians, however, the lack of consensus on a definition of burnout was a barrier to understanding the prevalence and drivers of distress and implementing effective reforms.⁸ Partially because of its imprecise definition, burnout was not seen as a rigorous diagnosis that accurately indicated a prognosis or called for specific interventions.⁹ The Maslach Burnout Inventory (MBI) was developed, in part, to bring more rigor to the construct of burnout and has become the most widely used tool to assess burnout. However, the ambiguity and definitional problems that impede the colloquial understanding of burnout have carried over to research and to the more formal construct of burnout provided through the MBI. Although the MBI was conceptualized to preferentially capture the effects of workplace stress, nonwork stressors and individual factors, such as personality, contribute to burnout substantially, and their contribution is similar to that for other emotional constructs.^{10,11} Furthermore, a meta-analysis of longitudinal studies has shown that burnout increases workplace stress much more than workplace stress increases burnout, a finding that further calls into

question the validity of the burnout construct.¹² The MBI measures burnout through three distinct components: emotional exhaustion, depersonalization, and depleted sense of personal accomplishment. Emotional exhaustion, the core component of the MBI concept of burnout, maps relatively well to the popular concept of burnout and to other inventories that assess burnout.¹³ However, the emotional exhaustion component of the MBI does not correlate strongly with the other two components of the MBI (depersonalization and reduced sense of personal accomplishment), which raises concerns that the MBI concept of burnout is not a unitary construct.¹⁴ Furthermore, the MBI measures the three components separately and along a continuum, and the developers explicitly warn against using cutoffs or combining the scores for the three components to identify burnout.¹⁴ As a result, the MBI has perpetuated the definitional ambiguity of burnout, which makes it difficult to estimate prevalence, identify causal factors, and evaluate the efficacy of interventions.⁸

With no clear consensus on the definition, researchers using the MBI to assess burnout in physicians have constructed dozens of different criteria to identify burnout in study participants. The often-cited statistic that approximately 50% of U.S. physicians meet criteria for burnout is based on a physician-reported emotional exhaustion score of at least 27 or a depersonalization score of at least 10 (on a scale from 0 to 54 and 0 to 30, respectively, with higher scores indicating greater burnout).¹⁵ In contrast to the studies that used either an emotional exhaustion score or a depersonalization score alone, nine studies used scores on all three components of the MBI: an emotional exhaustion score of at least 27, a depersonalization score of at least 10, and a personal accomplishment score of 33 or below (on a scale ranging from 0 to 48, with lower numbers indicating greater burnout). These studies reported a much lower prevalence of burnout, between 2.2 and 11.8%.¹⁶⁻²⁴ Overall, a systematic review of 182 studies of burnout in physicians identified 142 different definitions of burnout, even though most studies used the MBI. Not surprisingly, the prevalence of burnout reported in the studies varied widely, from 0 to 80.5%.²⁵

A BRIEF HISTORY OF THE
CONSTRUCT OF MAJOR DEPRESSION

Along with burnout, the other major construct that has been used to measure physician distress is depression. Major depression is a common psychiatric disorder, characterized by low energy and mood, loss of pleasure, sleep and appetite problems, and thoughts of death. The modern concept of depression originated during the late 1700s with the diagnostic formulation of melancholia.²⁶ In the 1950s, the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) helped to operationalize diagnostic criteria for psychiatric disorders, including depression, with the most recent revisions, the third, fourth, and fifth editions (DSM-3, DSM-4, and DSM-5), emphasizing the importance of clinical usefulness and reliability in diagnostic criteria.^{26,27} Substantial heterogeneity persists within DSM diagnostic categories, as shown by the fact that hundreds of different combinations of symptoms can result in a diagnosis of major depressive disorder.²⁸

In response to the concerns about this heterogeneity and other weaknesses of the DSM approach, efforts such as the National Institute of Mental Health Research Domain Criteria²⁹ and the Hierarchical Taxonomy of Psychopathology³⁰ offer complementary tools to understand psychopathology more dimensionally; these tools cut across diagnostic categories. Although important questions remain with regard to the classification of psychiatric disorders, the progress over time has resulted in a general consensus on how to diagnose depression and how to measure depressive symptoms dimensionally, which facilitates accurate assessments of the prevalence of depression in different populations, trends in prevalence over time, and the efficacy of interventions.³¹

The correlation between dichotomous classifications of burnout and depression varies, depending on which definition of burnout is used. However, continuous measures of symptom scores for depression and burnout are highly correlated, which indicates extensive overlap between these constructs.^{11,32} The primary objection to focusing on depression rather than burnout has been the concern that depression is an

inappropriate label for most cases of physician distress because prominent symptoms occur in the context of a dysfunctional workplace.³³ Underlying this concern is the implicit assumption that depression, by definition, places the root cause of the problem within the individual, not the environment.^{33,34} However, this framing is inconsistent with the modern definition of depression and has the unintended consequences of increasing stigma around mental health and discouraging physicians in distress from seeking treatment. In the DSM framework that predominates in modern psychiatry, depression is diagnosed on the basis of a constellation of depressive symptoms, regardless of whether the symptoms occur in response to an environmental stressor.³⁵ In fact, most episodes of depression occur in response to stress, and persons who have depressive symptoms in response to stress do not differ meaningfully with regard to personality traits,³⁶ recovery,³⁷ or genetic susceptibility to depression³⁸ from those who have depression outside stressful situations. Thus, the presence of a major stressor, such as practicing medicine, is consistent with the development of depressive symptoms and a diagnosis of major depression.

At the current stage in the effort to improve physician well-being, there is broad awareness of the problem and consensus on a need for reform. The key next steps for progress are to identify drivers of diminished physician well-being, track changes in its prevalence with precision, and develop, evaluate, and implement effective interventions. In the history of applying the concept of burnout in populations outside medicine, the lack of consensus on the definition of burnout has inhibited movement from the stage of increased awareness of the problem to effective action. Given the lack of consensus on the definition of burnout in medicine and concerns about the validity of the construct, rigorous studies that focus on the assessment of depressive symptoms and depression are more likely to facilitate progress than studies focused on burnout. However, because of the extensive overlap between the constructs, we discuss causes and interventions on the basis of data from studies of depression and studies of burnout.

 IMPLICATIONS OF RESEARCH ON
WELL-BEING AMONG RESIDENTS

Resident physicians are probably the group in whom well-being among clinicians has been studied most intensively. Substantial progress has been made in understanding the well-being of resident physicians, and findings from these studies can inform approaches to well-being among physicians in general. Furthermore, since residents are just entering the practice of medicine, research on well-being in this group can better inform preventive approaches.

On average, the prevalence of depression among physicians in training increases by a factor of five or six during residency as compared with the prevalence before residency. Approximately 25 to 30% of physicians screen positive for depression at any given time during training.³⁹ The strongest and most consistent underlying factor associated with depression among resident physicians has been long work hours. A study that emulated a target trial showed that, with the start of residency, the increase in depressive symptoms among residents who had worked 90 or more hours in the previous week was nearly three times as high as that among residents who had worked a 40-to-45-hour schedule, a finding that supports the conclusion that a heavy workload is a strong causal factor in diminished well-being.⁴⁰ Other factors associated with depression in residents include barriers to mental health treatment, medical errors, and insufficient sleep.^{39,41}

With recognition of the drivers of poor well-being among residents, residency training programs, institutions, national organizations, and individual residents have targeted these factors for reform through a public health approach to prevention and treatment.⁴² Over the past 15 years, work hours have been reduced by approximately 8 hours per week. In addition, the proportion of resident physicians who receive mental health treatment and the duration of sleep among residents have increased, and the quality of the learning environment has been enhanced.⁴¹ Improvements in these factors are probably the major drivers of improved well-being among residents, with a reduction in work hours having the largest effect.⁴⁰ Although restrictions that cap the maximum shift length or maximum work hours can be effective, restrictions that do

not meaningfully reduce the actual workload and work hours appear to have minimal effects on well-being, and in some cases, the effects are counterproductive.⁴³ Overall, the prevalence of depression among resident physicians is still high, but the progress in addressing depression is encouraging, and the success of efforts to improve work conditions, the use of mental health treatment, and quality of life provides a road map for the prevention of depression among all physicians.

 INTERVENTIONS TO IMPROVE
WELL-BEING FOR PHYSICIANS
IN PRACTICE

The public health framework for improving well-being has not been applied as consistently for physicians in practice as it has been for residents. However, multiple sources of data indicate that workload is also a primary factor in driving poor well-being among physicians in practice and that meaningful reductions in workload should also be a primary target in efforts to improve their well-being. For instance, the proportion of physicians reporting at least one symptom of burnout decreased from 45.5% in 2011 to 38.0% in 2020, with the decrease in burnout corresponding to a decrease in work hours.⁴⁴ Furthermore, in the broader population, workload is the strongest and most consistent factor associated with burnout.⁴⁵

Interventions designed to improve well-being in the general physician population can broadly be split into two categories: those that target the health care system and those that target the individual. In part because they are more complex and resource-intensive, interventions targeting systems have been less commonly implemented and assessed than those targeting individuals.⁴³ System-level interventions designed to improve physician well-being have varied in complexity and proximal targets, but many of the most promising ones have targeted workload. Among the most straightforward interventions is the addition of nonphysician team members to complete tasks previously completed by physicians. With the inordinate amount of time physicians spend on documentation, the electronic health record (EHR) is a clear and important target for reducing administrative workload. The use of scribes to reduce the EHR workload for physi-

icians has consistently been found to substantially improve productivity and physician satisfaction.^{46,47} Similarly, the addition of clerical support has consistently been shown to improve physician well-being.⁴⁸ A cluster-randomized trial of an intervention that reassigned tasks from physicians to medical assistants, nurses, and physician assistants showed a significant reduction in burnout scores among physicians.⁴⁹ In contrast, changes in clinical workflows that increased the amount of EHR work for physicians did not reduce, and in some cases increased, burnout.⁴³

More complex health care system interventions designed to improve physician well-being have also been assessed. Interventions that have targeted clinical workflow through quality improvement and communication show promise.⁴³ Similarly, interventions designed to eliminate inefficiencies and low-value work may be beneficial.⁵⁰ Additional work is needed to identify which of these types of system-level interventions is most effective for each individual practice.⁵⁰

Leadership and culture around physician well-being have also been promising targets of system-level interventions. For example, over the past 5 years, many health care organizations have appointed chief wellness officers to improve clinician well-being through changes in leadership and culture. Broad, subjective factors such as these are particularly challenging to study through conventional observational research because of the elevated risk of confounding and reverse causation. Thus, high-quality randomized controlled trials, studies that emulate trials, or other causal inference approaches are needed to assess which interventions focused on leadership and culture, such as appointment of a chief wellness officer, are effective.

An encouraging area of research aimed at reducing physician workload is the incorporation of large language models to reduce physicians' burden of documentation.⁵¹ EHR implementation initially held promise to reduce that burden, but the focus on billing and tracking over physician well-being has resulted in the opposite effect in most clinical settings. Care must be taken to ensure that the implementation of artificial intelligence applications is accomplished in a manner that maximizes well-being and follows the principles of fairness to avoid bias.

In addition to system-level interventions, several individual-level interventions designed to improve physician well-being have been developed. Many of the studies evaluating these interventions had relatively small samples, lacked active control groups, or did not include follow-up beyond the duration of the intervention, factors that limited the conclusions that could be drawn from the data.⁵² The largest category of studies assessed mindfulness-based interventions, with meta-analyses of these studies identifying a small but significant positive effect on physician well-being.⁵³ A smaller number of studies have assessed professional coaching, keeping a gratitude journal, exercise, yoga, and building social connections among colleagues. These studies show promise but preclude definitive conclusions.^{54,55} Extensive data from the general population indicate that mindfulness-based therapies, cognitive behavioral therapy, and exercise are moderately effective in preventing and treating depression,⁵³ which suggests that these interventions are likely to be effective among physicians. Given the variations in practice settings, schedules, and specialties, more work is needed to determine which type of intervention may be most effective for a given physician.⁵⁶

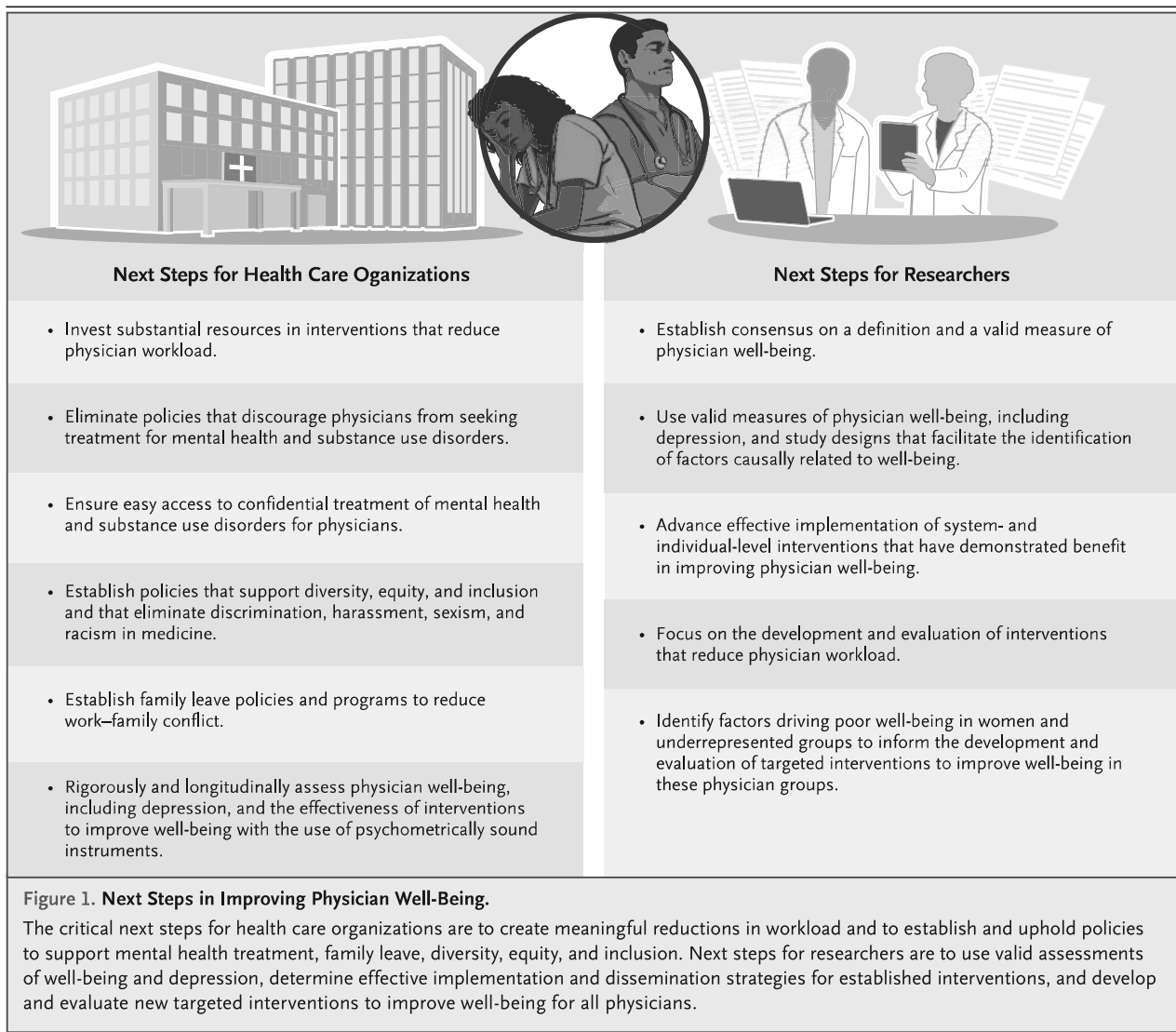
WELL-BEING AMONG PHYSICIANS IN UNDERREPRESENTED GROUPS

Women physicians and physicians from racial and ethnic groups that are underrepresented in medicine face distinctive stressors that affect well-being.⁵⁷⁻⁶¹ These groups of physicians are also underrepresented in leadership positions, where decisions on how organizations address well-being are made.⁶² The evidence supporting interventions that reduce workload and provide additional support for physicians generally also applies to women physicians and those who are members of underrepresented racial or ethnic groups. However, additional targeted reforms and interventions are needed to support well-being in these physician groups.

The prevalence of depression, burnout, and suicidality is higher among female physicians than among male physicians.⁶³⁻⁶⁵ Sexual harassment and work-family conflict are substantially more common among female physicians than among male physicians, and female physicians

also encounter effects of sex discrimination, such as receiving lower pay than their male colleagues; these experiences are associated with poorer well-being and attrition from the workforce.⁶³⁻⁶⁵ Sexual harassment is pervasive in medicine, with up to half of female faculty and staff members reporting having been harassed.⁶³ Harassment is commonly perpetrated by both coworkers and patients.⁶⁶ Policies that hold perpetrators accountable, minimize hierarchical structures, and provide informal and formal reporting options should be implemented broadly in medicine.⁶³⁻⁶⁵

Work–family conflict refers to the negative effect of work on family life. Within 6 years after completion of training, almost three quarters of women physicians report reducing their work hours to part-time or considering part-time work because of work–family conflict.^{67,68} Coronavirus disease 2019 (Covid-19) exacerbated sex disparities in work–family conflict and depression between female physicians with children and male physicians with children.⁶⁹ Policies that support high-quality child care, flexible schedules, and family leave are critical for reducing burnout and depression and retaining women in medicine.^{57,70}



Similarly, interventions that reduce pay disparities and support career advancement among women physicians should be implemented broadly.⁷¹

Members of underrepresented racial or ethnic groups make up a substantially smaller proportion of physicians than of the general population. Physicians who are members of underrepresented racial or ethnic groups encounter increased interpersonal and institutional discrimination as compared with colleagues who are not members of such groups,^{72,73} and these experiences are associated with increased depression.⁷⁴ Studies comparing the prevalence of burnout among physicians who are members of underrepresented racial or ethnic groups and those who are not have yielded mixed results, with some studies showing an increased prevalence of burnout among physicians in underrepresented groups and other studies showing no difference in the prevalence of burnout.⁵⁸ Further studies that have larger samples and use valid, consistent definitions of well-being are needed to elucidate the contributors to burnout and depression among physicians in underrepresented groups and to develop targeted interventions.

SUMMARY AND PATH FORWARD

Distress, in its various forms, is high across physician populations. The construct of burnout has played an important role in describing poor well-being among physicians in health care systems and highlighting the need for action. However, for the next phase of efforts to improve physician well-being, it is critical to accurately measure differences in well-being among practice settings and over time and to assess and compare the effects of interventions and reforms. Unless a consensus measure of burnout emerges, depression is a more effective construct for studies of physician well-being going forward.

In parallel, we need to determine how best to implement, disseminate, and scale system- and individual-level interventions with demonstrated effectiveness in improving physician well-being. The system-level interventions that target work hours and workload have moderate-to-large effects. Implementation of these interventions should be prioritized, with future research fo-

cused on identifying the most effective interventions for specific clinical settings. Broadly, it is clear that our current health care system requires too few workers to carry out too much work. Most effective workload interventions will require an initial investment to reduce the workload for individual physicians. This investment is necessary, and data suggest that it will have long-term value through increased productivity, reduced turnover, and increased quality of care. Over the longer term, it is critical to increase the pipeline of new physicians in medicine.

Other reforms with strong evidence include the elimination of policies that discourage physicians from seeking treatment for mental health or substance use disorders and the implementation of policies that improve access to treatment. Furthermore, policies and programs that improve parental and caregiving leave and increase access to child care should be implemented to reduce work–family conflict. Policies that support diversity, equity, and inclusion and that target sexism and racism in medicine are also necessary. Several other factors, including the clinical environment and characteristics of leadership and communication, have been associated with clinician well-being. Before implementation, more evidence is needed to identify whether interventions that target these factors are effective, especially when implementation would direct resources away from other opportunities such as reducing physician workload. Though individual-level interventions have a smaller overall effect than system-level interventions, there is evidence to support interventions at the individual level. Specifically, mindfulness-based stress reduction and cognitive behavioral therapy should be made available to all physicians (Fig. 1).

Over the past 15 years, progress has been made in raising awareness about physician well-being and improving well-being in specific populations, including physicians in training. There is a clear pathway for investing in and implementing established interventions and developing new interventions to improve well-being for all physicians. These measures will also have the effect of improving the health and well-being of patients.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

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