

## Wellness Review 2020, Part 2

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### Abstract

**Introduction:** This article comprises Part 2 of the Journal of Wellness review of 2020 wellness literature (July – December). In this review, JWellness editors continue the goal of offering a cohesive summary of recent publications within the wellness domain. We summarize new science and resilience initiatives published outside of JWellness that seek understanding of either burnout and its prevention or thriving in the medical community.

**Methods:** From the interval of 01 July – 31 Dec 2020, PubMed was queried for empirical research studies, review articles, and editorials in accordance with the following algorithm: an article was required to have two delineating keywords, each from a separate grouping. The first identified medical professionals in either the title or the abstract: (“clinical professionals,” “physicians,” or “caregivers”), and the other identified a wellness-related keyword in the title: (“wellness,” “burnout,” “resilience,” or “resiliency”).

**Literature in Review:** A total of 234 articles resulted. The list for inclusion was then narrowed to sixty-three articles plus one that was hand-picked. Recent literature into physician wellness, burnout and resilience continues to focus heavily on COVID-19. Well-researched topics include burnout surveillance, proposals for and small investigations into resilience, multiple studies attempting to differentiate characteristics that predispose to burnout, and the impact of the pandemic. Less has been written on leadership, financial wellness, and sustainable resilience-building initiatives. We note relatively few control-measured interventional studies—the majority of which remain small in endeavor and short in duration, limiting generalizability.

**Conclusion:** Recent literature into physician wellness, burnout and resilience focuses heavily on COVID-19. Many workplace / organizational factors negatively influence wellness: cumbersome EHRs, cultures not focused on socialization and self-compassion, and high physician task load. We express optimism regarding future interventional studies of burnout mitigation and resilience enhancement.

### INTRODUCTION

Welcome to Part 2 of the Journal of Wellness review of 2020 wellness literature (01 July – 31 December). In this review, JWellness editors continue the goal of bringing a cohesive awareness of recent publications within the wellness domain. We summarize new science and resilience initiatives published outside of JWellness that seek understanding of either burnout and its prevention or thriving in the medical community.

### METHODS

The first author performed a search within PubMed for empirical research studies, review articles, and editorials in accordance with the following algorithm: an article was required to have two delineating keywords, each from a separate grouping. The first grouping identified medical professionals in either the title or the abstract: (“clinical professionals,” “physicians,” or “caregivers”), and the other identified a wellness-related keyword in the title: (“wellness,” “burnout,” “resilience,” or “resiliency”).

From the interval of 01 July – 31 Dec 2020, 234 articles resulted. This list was reduced to 162 on a first pass for relevancy, reducing studies that detailed information primarily about informal (family) caregivers, proposed future studies (but not yet underway), and single country COVID-19-related wellness / burnout data originating outside the United States (global / multicountry studies were included). These 162 articles underwent deeper investigation into methods and

salient points to arrive at a list of significant articles additive to the current body of literature, focusing on medical professional caregivers. Sixty-three articles taken from this collection, with one hand-picked article, were included in this review.

### LITERATURE REVIEW

Recent literature into physician wellness, burnout and resilience continues to focus heavily on effects of COVID-19. Less has been written on leadership, financial wellness, and sustainable resilience-building initiatives. We note relatively few control-measured wellness outcomes from interventions, with the majority of interventions remaining small in endeavor and short in duration, limiting generalizability. Well-researched topics include burnout surveillance, proposals for and small investigations into wellness / resilience, and the impact of COVID-19, thus comprising the majority of this review. We have therefore divided this review into the following sections: thriving, wellness outcomes in healthcare providers, COVID-19 and provider wellness, and general literature on burnout.

#### Thriving

In a cross-sectional study of 5,445 US physicians, resilience among physicians was found to be higher than that of the general employed population ( $p < 0.001$ ); those with higher resilience scores had lower overall burnout (each 1-point increase in the 2-item Connor-Davidson Resilience

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Scale (range 0-8) was associated with a 36% lower chance for overall burnout ( $p < 0.001$ ) [1]. Interestingly 29% of the physicians with the highest possible resilience score (392 / 1350) still had burnout, implying that a significant portion of burnout likely remains inherent to the clinical and administrative environment despite the highest of possible resilience (i.e., the environment sometimes could simply be too toxic to be overcome by even the strongest among us) [1]. Baden (2020) warns not to assign uneven responsibility to individuals:

“Resilience is not enough... resilience is a double-edged sword. The implication can be that physicians need only take good care of themselves to be able to handle the stresses. Worse, if they are suffering, they may be perceived by others or themselves as weak and responsible for their own plight and recovery. In fact, burnout is borne of systems issues that afflict the individual and in turn the system as a whole” [2].

Resilience however remains a major component of the solution, and does indeed correlate with decreased burnout in recent studies [3, 4], while appearing to decrease distress in biopsychosocial dimensions [5]. Not surprisingly, emergency providers (with no significant difference measured between physicians and APP's) had higher job retention with better wellness markers [6]. Researchers have found positive associations between resilience and a variety of factors: family support [7], residency support [7], male gender [7], professional autonomy [7], moral courage [8]; and negative associations with: increasing age [9, 10] and being single or divorced [10]. Less burnout is seen among those with higher emotional intelligence and mindfulness [3], higher empathy and social support [11], higher self-compassion (e.g., not being overtly self-critical) [12, 13], and greater concern for others [12].

The last six months have seen multiple curricular proposals for wellness and resilience building [14–19]. In an assessment of integrative resilience tips to embrace during public health crises (eg. COVID-19), Wald (2020) recommends a 12-point system to overcome increasing demands. The topic areas include: a holistic view, a calm mind, general awareness, relationships, healthy habits, reflective writing, appreciative inquiry, moral resilience, certain academic considerations, an optimization of system culture, trauma-informed care, and the encouragement of the act of seeking help if needed [14]. In another approach, Shaniuk (2020) draws a reference to The Seven Spiritual Works of Mercy (counsel the doubtful, instruct the ignorant, admonish the sinner, comfort the sorrowful, forgive injuries, bear wrongs patiently, and pray for the living and the dead) as a foundation for teaching physicians to uplift students during this particularly trying time [19].

In multiple papers, creative writing was emphasized for its potential in therapeutic self-fulfillment [20] as well as resiliency [14]. This includes everything from gratitude journaling to humanity submissions with peer-reviewed journals [14]. “Reflective writing in health professions... support[s] emotional processing, understanding of self and others, meaning-making, and resilience” [14].

## Interventions

A large meta-analysis of randomized control trials (RCTs) from Cochrane evaluated 44 RCTs of healthcare professionals that compared any form of psychological intervention to foster resilience, hardiness, or post-traumatic growth [21]. Compared with controls, the review found very-low certainty evidence that resilience training led to higher levels of resilience, decreased depression, and lowered stress / stress perception (with little or no evidence that there was an effect on anxiety, well-being or quality of life) [21]. The overall conclusion of the investigation, that resilience training may improve resilience and resilience factors, as well as lower levels of depression and stress, is tempered by the lack medium- and long-term data to draw definitive conclusions. Furthermore,

the interventions that exist are heterogeneous in nature and restricted to certain geographical distributions [21].

In an analysis of 62 healthcare professionals and students, Johnson et al. (2020) demonstrated a resilience coaching intervention (a workshop and one-to-one session to overcome healthcare based challenges) that resulted in higher confidence, knowledge and resilience ( $p < 0.001$ ) [22]. Additionally, another small initiative evaluating physicians at Harvard's primary teaching hospital used a six week yoga program to cultivate wellness and demonstrated 2-month statistically significant improvements in resilience, interpersonal disengagement, and mindfulness [23].

To discuss changes in the professional environment that seem to foster work-place resilience, improvements in peer support systems and work cultures to allow for meaningful interpersonal connections and mentorship programs are recommended—and in recent studies are at least attributable to high physician utilization and perceived importance [24, 25].

From an academic standpoint, Randel et al. (2020) evaluated half-day resident didactic sessions (vs. noon conference model) and found significant improvements in academic satisfaction, perceived value of the curriculum, understanding of medical literature, and reading outside of work [26]. Additionally the academic half-day model showed significant improvements in lecture attendance [26]. In another recent investigation, academic performance was associated with higher academic lecture attendance.; regardless of call schedule, students with > 90% attendance scored higher in both midterms and final exams ( $p = 0.002$ ;  $p = 0.001$ ) [27]. Although call shift seemed not to dramatically lessen performance of the most resilient / dedicated students, less call was associated with overall higher lecture attendance, generally improved academic performance and lower burnout [27].

Lastly, a 6-month curriculum that emphasized well-being, empathy, compassion, stress physiology, humanities, and mindfulness for 27 interns demonstrated an emotional exhaustion decrease of 3.65 points for each wellness session attended ( $p = 0.007$ ). Researchers found a measurable increase in personal accomplishment ( $p = 0.001$ ) and empathic concern ( $p = 0.066$ ) [28]. Correspondingly, in a review of 43 articles on the relationship of physician burnout with physician personal and professional outcomes, emotional exhaustion had the greatest overall impact [29], further supporting targeted wellness / resilience curricula.

## COVID-19

A total of 2,707 healthcare professionals from 60 countries were evaluated for burnout trends in the setting of COVID-19 [30]. Burnout, overall measured at 51%, was higher in high-income countries. The increase in burnout rates from previously reported numbers were attributed to increases in workload, time pressure, job stress, and limited organizational support [30]. Another review supported the observation that the introduction of COVID-19 has heightened existing challenges that already physicians faced (e.g., increasing workload) [31]. Interestingly, however, exposure to COVID-19 itself did not necessarily lead to increased burnout [31]. Another review of 37 studies of COVID-19 and healthcare worker wellness found consistent reports of stress, anxiety, and depressive symptoms [32]. These negative symptoms were compounded by inadequate support and overall uncertainty [33].

None of these findings of increased stress, anxiety and depressive symptoms come as a surprise; large-scale natural disasters / pandemics are typically associated with significant increases in mental health disorders among healthcare providers [34]. Some argue that the expected ramifications will nevertheless be worse for COVID-19 (in light of already high baseline physician burnout rates) [34]. Early interventions may mitigate the foreseeable mental health impacts on providers [34]. In order to optimize the psychological resilience

of healthcare professionals working during the pandemic, organizations and individuals must prioritize sleep, positive emotions, and life satisfaction [35].

A survey of 154 Mayo Clinic hospitalists in four states showed that the COVID-19 pandemic resulted in lower global well-being, emotional support, and greater anxiety and social isolation [36]. Fifty-five Pennsylvania based emergency providers attested to feelings of lost control ( $p = 0.001$ ), decreased (work) happiness ( $p = 0.001$ ), increased sleep latency ( $p = 0.001$ ), increased dread ( $p = 0.04$ ), increased stress outside of work ( $p < 0.0001$ ), and greater concern for both their personal and family health ( $p < 0.0001$ ) [37].

EM providers (including both US-based physicians and APPs) were followed during the COVID-19 pandemic for a period of 4 weeks in a longitudinal prospective study. Three interesting trends emerged:

1. Women were nearly twice as likely as men to report feelings of isolation,
2. Working part-time carried twice the risk of burnout (seeming to argue against increased workload driving these trends), and
3. Provider well-being actually improved over the four-weeks ( $p = 0.01$ ), but burnout did not significantly change ( $p = 0.39$ ) (38). This latter finding suggests that as providers became acquainted with SARS-CoV-2, fear and task saturation likely subsided to some level.

Dinibutun (2020) showed in a cross-sectional survey of 200 physicians that burnout level of physicians who were actively involved in COVID-19 treatment experienced lower burnout than physicians who were not actively treating these patients [39]. This could indicate multiple undercurrents, one of which is that those involved in the pandemic directly may feel a greater sense of purpose; or possibly media driven fears were reproached by reality that was less in magnitude than what was anticipated.

## Burnout

Although certain specialties seem more predisposed toward burnout, the phenomenon remains pervasive. A meta-analysis of data collected from nearly two thousand emergency physicians demonstrated a high prevalence of burnout: approximately 40% experienced high levels of emotional exhaustion and depersonalization [40].

A UK based study of 165 doctors from a trauma center demonstrated that 93% of all specialties had either moderate or high levels of burnout [41]. Surgeons had highest levels of burnout, followed by emergency medicine [41]. Work-related factors appeared to contribute more to burnout than patient-related or doctor-patient issues [41]. In 108 cardiothoracic surgery trainees from 76 institutions, researchers found a high prevalence of burnout (~50%), regret (25%), and depression (40%) [42].

From the primary care perspective, 158 residents from 12 family practice programs were followed over the course of their residency. Burnout levels peaked after the first year of training, but remained high through graduation [43]. Emotional intelligence measured lower at graduation than at the start of residency [43]. In the only recent study performed specifically on pharmacy residents, burnout among trainees (74.4%) was similar to or worse than practicing clinicians (physicians and pharmacists) [44].

In Canadian emergency medicine (EM) physicians ( $n = 384$ ), 86.1% met at least one of the criteria for burnout, and 14.3% had contemplated suicide during their career (5.9% had actively considered suicide in the past year) [45]. Physicians with any indication of depression were 44 times more likely to suffer from burnout [45]. In a survey of Canadian EM residents, 62% met the threshold for burnout and a staggering 14% contemplated suicide during their training [46]. This high rate of suicidality among physicians may be even worse

specifically for female providers [47].

Data from 1,354 US physicians in a cross-sectional study illuminate the relationship of burnout and depression: depression (but not physician burnout) is directly associated with suicidal ideation; also, burnout (and not depression) was associated with self-reported medical errors [48]. Physician burnout, in addition to its association with medical error, adversely affected patient-provider communication in primary care visits [49]. Few studies evaluated destructive behaviors, however in a large study of 656 orthopedic surgery residents, 61% met criteria for hazardous alcohol use, and 52% met criteria for burnout [50].

## Special Considerations

### Work Environment

In a 48 study meta-analysis of resident physicians (over 36,000 physicians), trainee work demands were associated with an almost threefold increase in the odds for burnout [51]. Additional factors included concerns about patient care (OR, 2.35), poor work environment (OR, 2.06), and poor work-life balance (OR, 1.93) [51]. This large data set demonstrates that the majority of the most significant factors were institutionally associated (as was the case in other studies [41]) implying the need for organizational interventions to mitigate burnout [51].

In a survey of 1,305 internal medicine physicians and residents, burnout correlated with lack of work control ( $p < .001$ ) and documentation time pressure ( $p = .002$ ). Alternatively, job satisfaction was associated with professional values aligning with those of clinical leaders, and efficient teamwork [52]. Among US general surgery residents, burnout rates by hours worked indicated that a stark 100% of those working  $\geq 80$  hours per week experienced burnout [47].

In an evaluation of 603 Midwest nurses, adverse events at work were positively associated with nurse burnout; however, this association varied based on work environment. The deleterious effects of adverse events were attenuated when safety climate perceptions were higher, and amplified when nurses exhibited high levels of interpersonal identification within their working group [53].

### Sleep

In a cross-sectional survey of 11 academic centers (7,700 attendings and 7,257 residents), investigators studied interactions of sleep related impairment and burnout. This study noted significant direct relationships between sleep impairment with interpersonal disengagement ( $p < .001$ ), work exhaustion ( $p < .001$ ), and overall burnout ( $p < .001$ ), and a negative relationship with professional fulfillment ( $p < .001$ ). Moderate to high sleep deprivation also conferred increased odds of self-reported clinically significant medical error [54].

### Race

A study of 4,424 US based physicians looked into the racial impact on burnout. The adjusted odds of burnout were lower in Asian physicians, Hispanic physicians, and Black physicians compared with non-Hispanic white physicians. Black physicians were more likely to report satisfaction with work-life integration than white physicians. They found no differences in depressive symptoms or career satisfaction by ethnicity [55].

### Gender

In the aforementioned survey of 1,305 internists, the odds of burnout in women were 56% higher compared than in men [52]. Women also had 61% lower odds of having a joyful workplace, 61% less chance of having a manageable work pace (including EMR-related stress), and 39% lower odds for experiencing a supportive work environment [52]. In the previously mentioned meta-analysis of over 36,000 resident

physicians, multiple personal factors correlated with burnout: poor mental or physical health, female sex, financial worries, and low self-efficacy [51].

Among US general surgery residents, females were 2.7 times more likely to report burnout and nearly twice as likely to report contemplating suicide compared to males [47]. A different study that observed higher negative impact on women attributed the effect size to extraneous influences beyond gender [56]. In this investigation of 3,603 US physicians, females reported a higher prevalence of burnout than male physicians in both academic environments (50.7% vs. 38.2%,  $p < .0001$ ) as well as private practice (48.1% vs. 40.7%,  $p = .001$ )—but these gender differences in rates of burnout were found to be related to practice setting and other differences in physicians' personal and professional lives, rather than gender itself [56].

### Location

Researchers studied the urban/rural dynamic in 2,740 family practice physicians. While burnout was more common in younger and female FPs, no differences existed between rural and urban settings in job satisfaction, practice environment, workload, and job stress. Individually, each of these characteristics was associated with burnout [57]: “This suggests there is nothing unique about rural practice that predisposes to burnout and that a common pathway to reduce burnout may exist” [57]. Among 81 US general surgery residents, 89.5% of university-hospital affiliated and 95.2% of community teaching hospital affiliated residents attested to burnout. After adjustment, those at community centers showed a nearly fifteen times greater likelihood of burnout [47].

### Marital Status

Editors noted a trend reviewing recent literature (including multiple recent prior publications not included in this review) that marital status seems to protect against burnout among both physicians and pharmacists [10, 44]. Interestingly, in orthopedic surgeons, being single or divorced was individually associated with drug use in the past year [50].

### Age

Contrary to other studies on burnout and age which indicate a disadvantage with advancing years [58], Canadian EM Physicians aged 30 – 39 were nearly four times more likely to suffer from burnout than those in their 40s [45]. A similar positive trend occurred in Australian physicians [59]. A potential explanation involves the self-selective nature of our profession, in that more resilient physicians may persist longer in the profession. Alternatively, non-American healthcare professionals may prioritize the wellbeing and longevity of elder physicians.

### Task Load

Harry et al. (2020) deciphered a dose response relationship between physician task load (measured by the National Aeronautics and Space Administration (NASA) Task Load Index (TLX) and burnout [60]. For every 10% decrease in task load, there was a corresponding 33% lower odds of experiencing burnout ( $p < 0.0001$ ) [60]. The specialties with the highest task load scores were consistent with those with high levels of overall burnout in other literature: emergency medicine, urology, anesthesiology, general surgery subspecialties, radiology, and internal medicine subspecialties [60].

### Electronic Health Record (EHR)

An evaluation of 848 US physicians found that the EHR clearly impacted burnout. A strong association was observed between EHR usability and workload (more favorable usability equated to less workload), and both outcomes were

associated with the odds of burnout [61].

In another evaluation specifically assessing the influence of EHR on burnout of physicians and those in training, 74.5% (155/208) of those who reported burnout symptoms identified the EHR as a contributor [62].

Among 128 rheumatologists, dissatisfaction with the EHR was associated with a 2.86-times increased likelihood of burnout (also increasing this rate was lack of exercise and extended work hours) [63]. A survey of 288 pediatric residents indicated that the EHR was the most frequent source of distress, wherein the most common complaint was, “having excessive documentation requirements that compromise patient care” [64].

## CONCLUSION

Recent literature into physician wellness, burnout and resilience focuses heavily on the aftermath of COVID-19, with multiple studies attempting to differentiate characteristics and resilience mechanisms that predispose to burnout. Characteristics putting healthcare professionals at particular risk of burnout include female gender and unmarried status. Many workplace / organizational factors influence wellness; cumbersome EHRs, cultures not focused on socialization and self-compassion, and high physician task load are consistently predictive of burnout. We note a paucity of research over the last six months on leadership, financial wellness, and sustainable / longitudinal resilience-building initiatives. We also note an insufficient amount of control-measured wellness outcomes from interventions. However, we express optimism regarding resilience-based interventions and potential for burnout mitigation and resilience enhancement.

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