



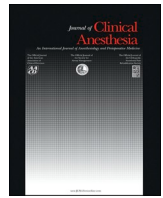
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## Journal of Clinical Anesthesia

journal homepage: [www.elsevier.com/locate/jclinane](http://www.elsevier.com/locate/jclinane)

## Editorial

## Burnout and depression in anesthesiology trainees: A timely assessment to guide a roadmap for change

The COVID-19 pandemic has shed light on the need for systems-based interventions to reduce burnout in physicians, an occupational health phenomenon resulting from excessive work-related stress [1]. Anesthesiologists and critical care physicians are at increased risk of burnout due to the high acuity of the level of patient care in their professions: making quick clinical decisions when managing critically ill patients and leading crisis management responses while providing clinical coverage that requires frequent night shifts and long work hours. At least 50% of anesthesiologists and critical care physicians experience one major dimension of burnout [2,3]. Physician trainees in anesthesiology must learn a large volume of knowledge in addition to developing cognitive and technical skills. In addition, anesthesiology trainees must efficiently integrate themselves into the perioperative team while maintaining adequate communication skills and resilience while working with a variety of personalities. The common pressures of residency led to burnout prior to COVID-19, but the pandemic resulted in unprecedented stress on healthcare professionals, including physician trainees, related to work-life balance, unpredictable schedules, and professional acuity [4].

In a national survey of all anesthesiology trainees, Bui et al. [5] reevaluated the prevalence of burnout and depression in anesthesiology trainees in the United States nearly a decade after their first evaluation in 2013. In addition, the authors desired to investigate the risk factors contributing to burnout and depression among anesthesiology residents utilizing an abbreviated version of the validated Maslach Burnout Inventory to assess job-related burnout. The two questions selected from the assessment previously showed consistency in evaluating the emotional exhaustion and depersonalization dimensions of burnout. Furthermore, the authors included questionnaires to assess for depression, medical errors, family support, work characteristics (eg, work hours), and questions related to the COVID-19 pandemic. The overall rate of high burnout risk for anesthesiology trainees was 24%, lower than the rate of 41% in 2013 despite the survey occurring in February 2021 during the COVID-19 pandemic. In addition, the screening rate for depression was lower: 15% compared to 22% in 2013.

The authors postulated the decrease in rates of high-risk burnout and depression prevalence was related to the efforts of various residency programs to institute the 2014 Accreditation Council for Graduate Medical Education (ACGME) recommendations that included a focus on professionalism with specific attention to maintaining personal, emotional, physical, and mental health. Furthermore, the ACGME recommendations emphasized the importance of trainee well-being as essential to developing a competent and resilient physician [6] and encouraged residency programs to evaluate residents for their well-

being, implement interventions as required, and assess the impact of these interventions on the residents' burnout levels. To remain in compliance with these recommendations, multiple interventions were implemented in training programs, including anesthesiology residency programs, to improve rates of burnout among physician trainees [7]. These interventions ranged from organizational initiatives that targeted duty hours and analyzed workflows to individual-focused strategies like mindfulness-based curricula and cognitive and behavioral interventions [7].

Bui et al. found working more than 70 h a week and overnight calls were independent risk factors for increased odds of burnout and independently associated with depression [5], findings similar to the results shown in 2013. Working longer hours continues to be a common risk factor for burnout and depression. In a systematic review by Chong et al., 5 out of 12 included studies showed prolonged working hours as the precipitating factor for burnout [3]. These findings were similar to a recent survey of members of the American Society of Anesthesiology that found longer working hours were a driver for burnout among anesthesiologists, among other factors [2]. Additionally, Sun et al. found that longer work hours were associated with higher risks of distress and depression [8]. These findings indicate well-being interventions addressing organizational and systems-based factors, such as rescheduling shifts and reducing duty hours and workload, may impact a trainee's well-being more effectively than individual-based interventions such as mindfulness courses and stress-coping strategies [3,7].

Despite the reported reduction in the Bui et al. survey [5], burnout rates in anesthesiology trainees continue to be high and comparable to other specialties. The high burnout rate is concerning due to the association with higher rates of suicide and substance use in the field of anesthesiology. Residency training poses daily challenges that can be distressing. Anesthesiology residency is particularly stressful given the diverse clinical assignments, intense clinical experiences, and need to adapt to high-acuity environments based on the level of training. Although the clinical anesthesiology first year (CA1) initially poses a steep learning curve, many CA1 residents achieve their learning goals during the second half of the training year. However, the clinical anesthesiology second year (CA2) training is challenging given the different subspecialty training during that year [7]. Understanding the stressors during residency training at different levels may be required to guide future well-being interventions. Lisann-Goldman et al. [7] evaluated individual-based well-being interventions focusing on cognitive behavioral therapy and a mindfulness stress reduction strategy. The authors found many barriers to implementing individual-based interventions

<https://doi.org/10.1016/j.jclinane.2022.111034>

Received 23 November 2022; Accepted 26 November 2022

Available online 5 December 2022

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that required additional time on the part of the residents in addition to their clinical demands. In addition, the authors noticed the lack of interest in participating in mindfulness-based stress reduction sessions and cognitive behavioral therapy, thus making these interventions unfeasible to implement.

The issues of non-feasibility and lack of effectiveness with individual-based interventions have prompted the shift to alternative strategies identifying burnout risk factors and tailoring interventions to address burnout based on data derived from survey results. As a result, organization-based interventions have been proposed that would focus on eliminating the 24-h call, creating long shifts followed by a day free of duties, and expanding evening shifts for certified registered nurse anesthetists and/or certified anesthesiology assistants. However, despite the need for organization-based interventions, many programs face barriers to implementing these changes due to production pressure and increased surgical volume at different institutions. Therefore, advocating for additional staffing, including expanding the residency program, may be of value to many anesthesiology residencies.

In addition to the prevalence of burnout, Bui et al. reported the relationship between residents' burnout and the poor quality of patient care [5]. In a meta-analysis reviewing 82 studies, provider burnout was negatively associated with quality of care, including medical errors, patient satisfaction, quality indicators, and perceptions of safety [9]. These findings emphasize the importance of prioritized well-being interventions at the institutional level for all healthcare providers, including physician trainees, as many healthcare institutions aim for improved quality and safety of patient care. As institutions create strategies to improve patient care, stakeholders should focus on clinician well-being incorporated into the overall mission of enhanced quality and safety. These strategies may allow program directors and executive leaders to invest in organization-based interventions that will address the economic costs of physician burnout for their healthcare organizations [10].

Reevaluation of the prevalence of burnout and depression among anesthesiology trainees during the COVID-19 pandemic reflected lower rates compared to the 2013 survey as well as the current burnout burden after two years of the pandemic. However, highlighting this issue to address residents' well-being may serve as a starting point for many more anesthesiology residency programs to formally address their trainees' burnout levels and use the survey results as a guide to reevaluate the levels of burnout longitudinally after implementing interventions. Individual-based interventions in anesthesiology may not be feasible given the additional barriers of time constraints and perioperative scheduling. Focusing efforts on organization-based interventions that reduce long work hours and optimize staffing patterns with regards to well-being may be more impactful on anesthesiology trainees' burnout as well as on practicing anesthesiologists' quality of patient care. However, individual-based interventions that improve physicians' resilience while not requiring additional time in residency might be the focus of future studies. Some potential avenues for these individual-based interventions could focus on mitigating anesthesiology trainees' fatigue and chronic sleep deprivation, training to improve

work efficiency, and developing clinical learning environments that minimize the time needed to study.

#### CRediT authorship contribution statement

**Basma Mohamed:** Conceptualization, Writing – original draft, Writing – review & editing. **Brenda G. Fahy:** Conceptualization, Data curation, Methodology, Writing – original draft, Writing – review & editing.

#### Declaration of Competing Interest

The authors declare no conflicts of interest.

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