

Editorial

Beyond the Breaking Point: Solutions for Burnout in Orthopaedic Surgery

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Burnout, characterized by emotional exhaustion, depersonalization, and reduced professional fulfillment, has emerged as a critical issue in orthopaedic surgery. Affecting an estimated 30–40% of surgeons, burnout has been associated to increased medical errors, malpractice risk, decreased patient satisfaction, and alarming mental health

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consequences, including elevated suicide rates. While traditionally viewed as an individual failing, contemporary evidence highlights its systemic roots, driven by structural inefficiencies, cultural dynamics, and personal vulnerabilities. Key contributors include escalating administrative burden, loss of autonomy, high-stakes clinical demands, and discriminatory workplace cultures, particularly affecting women and underrepresented groups. The consequences extend beyond surgeon well-being to institutional performance and patient safety. Current wellness initiatives are often poorly aligned with the realities of surgical practice, underscoring the need for systemic reform. This review synthesizes the current literature on burnout and provides evidence-based systemic solutions to address it. Evidence-based strategies emphasize leadership and mentorship, peer support, workload optimization, cognitive efficiency, diversity initiatives, and integration of digital innovations to reduce documentation burden. Additionally, programs promoting mindfulness, protected time for meaningful work, and inclusive professional cultures show promise in enhancing resilience and career sustainability. Addressing burnout in orthopaedic surgery requires a paradigm shift away from reactive, individual-focused solutions toward structural interventions that restore professional autonomy, support surgeon well-being, and safeguard patient care.

INTRODUCTION: DEFINING BURNOUT IN ORTHOPAEDIC SURGERY

Burnout, which is marked by emotional, physical, and mental exhaustion, has become a critical concern in orthopaedic surgery (Travers 2020). Recent studies estimate that 30-40% of orthopaedic surgeons experience burnout, contributing to increased medical errors, malpractice risk, and patient dissatisfaction (Travers 2020). Factors such as long work hours, high-stakes clinical demands, and excessive administrative burden play a central role in the development of burnout (Pearl et al. 2023). Alarmingly, burnout can have a significant impact on mental health with orthopaedic surgeons accounting for 28.2% of physician suicides between 2003 and 2017 (Jennings et al. 2022). These sobering statistics highlight the urgency of systemic reform.

Burnout has traditionally been viewed as a personal failing, but emerging literature reframes it as a systemic issue (Travers 2020). The mismatch between professional values and systemic expectations, such as productivity demands, documentation burden, and excessive administrative oversight, can contribute to loss of professional meaning and increased depersonalization (Pladdys, n.d.; Ross et al. 2025). This disconnect contributes to emotional fatigue and moral injury, in which physicians feel unable to provide care that aligns with their values. While individual traits contribute, the persistence of burnout reflects systemic structural shortcomings in surgeon wellness, patient safety, and health system sustainability. This review focuses on current evidence on burnout in orthopaedic surgery and various solutions that promote autonomy, engagement, and long-term career sustainability.

PART II: CAUSES OF BURNOUT (STRUCTURAL, CULTURAL, AND PERSONAL)

STRUCTURAL DRIVERS

Administrative burden is one of the most consistent drivers of burnout across the literature. Although the operating room remains a source of professional fulfillment for many orthopaedic surgeons, administrative burdens have become increasingly difficult to manage, often resulting in more time spent behind a screen than at the bedside (Jennings et al. 2022; Dibbs et al. 2022). In academic orthopaedic practice, Electronic Health Record (EHR) usage has been shown to consume up to 58% of the clinical day, surpassing face-to-face patient care time (Kesler et al. 2022). In a large scale retrospective analysis across surgical specialties, orthopaedic surgeons spent the most time compared to any other surgical subspecialty navigating electronic medical records and charting, approximately 2.33 hours per day (Dibbs et al. 2022). Even as patient volume increases, the process of securing reimbursement becomes more complex, requiring detailed documentation to justify care already delivered. Simultaneously, autonomy has eroded in both subtle and overt ways. From prior authorizations that delay treatment to lack of scheduling control, many surgeons feel sidelined by uncontrollable processes that affect their patients (American Medical Association (AMA), n.d.). The cumulative effect is longer hours, greater fatigue, and a widening disconnect between effort and reward.

CULTURAL CONTRIBUTORS

Beyond structural inefficiencies, relational dynamics in the workplace also shape the experience of burnout. In high-stakes environments like the operating room, emotional exhaustion can impair communication and escalate conflict, degrading the collaborative dynamic that is essential to patient care (Chahal and Matwala 2025). Additionally, there is gender disparity in the rate of burnout among orthopaedic surgeons remains a controversial point, with up to 50.5% of female orthopaedic surgeons experiencing

burnout (Hiemstra et al. 2023). A 2020 AAOS Work Environment and Culture Survey found that 81% of female orthopaedic surgeons reported experiencing discrimination, bullying, sexual harassment, or harassment in the workplace, compared to only 35% of men (Balch Samora et al. 2020). These behaviors were not isolated as 70% of those affected experienced the behavior more than three times, and attending orthopaedic surgeons were the most frequent perpetrators (Balch Samora et al. 2020). Deutsch et al. reinforced the persistent challenges female trainees continue to face, noting that 22% of female orthopaedic trainees experiencing sexual harassment and 27% reported gender discrimination, both significantly associated with increased burnout (Deutsch et al. 2024). These findings reinforce the need to address cultural factors, not just workload, in tackling burnout.

PERSONAL AND PSYCHOLOGICAL FACTORS

In orthopaedic surgery, high-performance expectations, perfectionism, and a culture that prizes stoicism and delayed gratification often discourage expressions of vulnerability. These traits often lead to emotional exhaustion, depersonalization, and a progressive loss of meaning in clinical work (Pladdys, n.d.). This erosion of purpose has increasingly been reframed as moral injury, a condition where one's personal ethics are in conflict with systemic demands (Ross et al. 2025). In orthopaedic surgery, this may arise when physicians feel pressured to prioritize volume, documentation, or compliance over meaningful patient care.

CONSEQUENCES OF BURNOUT

The downstream consequences of burnout are profound leading to significant job dissatisfaction. Among surgeons, burnout is associated with increased rates of depression, substance use, and suicide (Jennings et al. 2022). Burnout not only impacts physician health, but also endangers patient care (Ross et al. 2025). Physicians experiencing emotional exhaustion or depersonalization are more likely to report medical errors with a 5% to 11% increased likelihood (Daniels et al. 2016). Institutions with high burnout rates face increased staff turnover, reduced morale, and lower quality of care (Chahal and Matwala 2025). Patients treated by burned-out physicians report worse experiences and perceive lower levels of compassion (Daniels et al. 2016).

SEEKING OUT THE ROOT CAUSE AND PROTECTIVE FACTORS

Beyond universal wellness programs, several studies have highlighted the importance of identifying individual risk and protective factors to more effectively prevent burnout. For example, Saleh et al. surveyed 195 orthopaedic department chairs and identified common stressors such as excessive workload, budget deficits, and leadership disputes (Saleh et al. 2009). Similarly, Sargent et al. found that orthopaedic residents and faculty attributed burnout to anxiety in clinical decision making financial pressures, and poor work-life balance (Sargent et al. 2004). In addition, pro-

TECTIVE factors such as supportive personal relationships, healthy coping strategies, and hobbies were associated with greater resilience (Sargent et al. 2004). These studies demonstrate the importance of identifying risk and protective factors associated with burnout so that institutional strategies can be developed to help prevent burnout among orthopaedic surgeons. There may be value in developing targeted screening programs that proactively detect burnout risk and suggest customized mitigation strategies (Pearl et al. 2023).

PART III: CURRENT STRATEGIES TO ADDRESS BURNOUT

Despite widespread recognition of physician burnout, many institutional strategies remain reactive, generic, and poorly tailored to the realities of surgical practice. For orthopaedic surgeons already burdened out by clinical, operative, and academic demands, well-meaning interventions often fall short or worsen the issue.

MANDATED WELLNESS MODULES AND “WELLNESS DAYS”

In response to widespread burnout, institutions have introduced wellness initiatives to support physicians, but efforts like mandatory modules often add screen time and paperwork, worsening fatigue among attendings and residents (American Association for Physician Leadership - Inspiring Change. Together, n.d.-a). In orthopaedic surgery specifically, Acuña et al. surveyed residents and program directors and found that only 43% of residents perceived their institution's wellness initiatives as helpful (Acuña et al. 2025). Moreover, both groups agreed that web-based platforms were among the least helpful resources available. “Wellness days,” while designed to offer protected time off, are frequently underutilized especially by interns due to feelings of guilt, scheduling pressure, or a lack of perceived benefit (Acuña et al. 2025). In high-volume settings, taking a day off can feel more stressful than restorative. Orthopaedic surgery residents have also cited lack of time and negative program attitudes toward mental health as major barriers to effective wellness programming, highlighting a disconnect between institutional initiatives and the root causes of burnout (Acuña et al. 2025; Orman et al. 2021).

SCHEDULE AUTONOMY AND UNIONIZATION

Loss of autonomy, particularly around scheduling and workload, has become a central driver of burnout and frustration for surgeons with rigid schedules, unbalanced call burdens, and escalating administrative demands that interfere with patient care, research, and teaching (Travers 2020). In this context, unionization is emerging as a tool not only for residents, but for practicing surgeons as well. While early efforts have largely been led by trainees through organizations like the Committee of Interns and Residents (CIR), interest among practicing surgeons is rising (Tyagi et al. 2024). Legislative changes, including the

Quality Health-Care Coalition Act of 2000 and provisions under the National Labor Relations Act, have enabled both employed and independent physicians to collectively negotiate contract terms (“Rep. Campbell T [R C 15. All Info - H.R.1304 - 106th Congress (1999-2000): Quality Health-Care Coalition Act of 1999” 2000). However, the efficacy of unionization in addressing burnout is still unclear.

PART IV: WHAT CAN WORK – EVIDENCE-BASED SYSTEM-LEVEL STRATEGIES

Tackling burnout in orthopaedics requires shifting the focus from individual resilience to systemic solutions. Evidence supports actionable interventions across five key areas including cultivating a positive work environment through leadership and mentorship, workload management, teamwork, personal health, and professional identity. Together, these domains offer a path forward that is both practical and sustainable.

LEADERSHIP AND MENTORSHIP

Effective mentorship has been thoroughly explored as a protective factor against surgeon burnout (Gaeta et al. 2024). More than just a passive relationship, successful mentorship requires active engagement, mutual trust, and institutional commitment (Bhadani and Mukhopadhyaya 2025). In orthopaedic surgery, where the rigors of training and clinical practice are particularly intense, mentorship has been associated with improved job satisfaction, reduced emotional exhaustion, and even long-term career advancement (Bhadani and Mukhopadhyaya 2025). Several structured mentorship models have emerged in surgical training, ranging from peer mentorship to multi-mentor frameworks with varying structure but all are aimed at consistent goal oriented guidance (Gaeta et al. 2024). The most successful programs are those that set clear expectations, provide regular feedback, and promote open communication (Bhadani and Mukhopadhyaya 2025; Levine et al. 2013). Ross et al. emphasized the importance of longitudinal, bidirectional mentor relationships that are integrated into residency training early in the process (Ross et al. 2025). Levine et al further described how these relationships can evolve into professional collegiality and eventually friendship (Levine et al. 2013). To foster lasting mentorship, residents should be encouraged to select a dedicated professional mentor distinct from rotation-specific supervisors during their PGY-1 year (Ross et al. 2025).

Structured mentorship programs that begin early, but allow for flexibility over time, can provide both foundational support and the autonomy to seek out mentors aligned with a resident's developing interests. A national survey of orthopaedic residents found that although 96% of trainees recognize mentorship as important, only about two-thirds of residency programs offer a structured or informal mentorship program (Oladeji et al. 2018). In this study, minorities were more likely to have a mentor that was obtained while they were in medical school, less likely to have multiple mentors, and more likely to be dissatisfied with

the quality of mentorship in residency. Females were more likely to pursue a mentor on their own. Critically, nearly one-third of residents reported experiencing burnout, and those with burnout were significantly more likely to be dissatisfied with the quality of mentorship they received (Oladeji et al. 2018). The evidence suggests that the presence of a mentor alone is not enough and what matters is the quality, consistency, and alignment of the mentorship relationship (Levine et al. 2013). Institutions that invest in mentorship programs and prioritize relational leadership create an environment where individuals feel seen, supported, and empowered.

PEER SUPPORT AND PSYCHOLOGICAL SAFETY

One of the most overlooked contributors to surgeon burnout is the emotional toll of adverse clinical outcomes and litigation. This is understandable when considering the fact that orthopaedic surgery is the fourth most litigated field amongst all medical specialties (Jena et al. 2011). Even when not at fault, surgeons involved in adverse events often experience guilt, shame, and moral distress (Richard et al. 2024). In a national survey of Dutch orthopaedic surgeons, nearly 20% described experiencing a traumatic adverse event and 80.7% reported that support from colleagues was their most common coping strategy, highlighting the essential role of peer support in emotional recovery (Sligter et al. 2020). To address these risks, institutions may want to prioritize initiatives that normalize emotional recovery, promote psychological safety, and have been linked to improved morale, retention, and institutional trust. Ultimately, fostering a culture that acknowledges emotional fallout, rather than penalizing it, is essential for sustaining surgeon well-being and high-quality care.

WORKLOAD OPTIMIZATION AND COGNITIVE EFFICIENCY

Burnout is not solely the result of long hours but often stems from disorganized workflows, inefficient task structures, and administrative burdens that lead to decreased time for meaningful patient care. Physicians frequently face fragmented electronic health record systems, redundant documentation requirements, and poorly designed processes that undermine their ability to focus (Chahal and Matwala 2025). Addressing burnout requires a redesign of clinical work with cognitive efficiency at its core. Excessive multitasking increases error rates and mental fatigue, while focused, sequential attention has been shown to improve both performance and satisfaction (American Association for Physician Leadership - Inspiring Change. Together, n.d.-b). Practical strategies such as prioritizing tasks, creating manageable to-do lists, delegating responsibilities, starting the day on time, and setting daily goals aligned with clinical priorities can help reduce the cognitive load of a typical workday. Institutional cultures must also support physicians in setting boundaries and delegating non-essential responsibilities. Allocating at least 20% of a physician's time to work that is personally and professionally meaningful has been associated with lower rates of burnout and

greater job fulfillment (Grimes 2019). This can include allowing time for teaching, innovation, community, mentorship, or leadership roles that align with individual strengths.

STREAMLINING DOCUMENTATION

In an effort to mitigate documentation burden, institutions are piloting web-based programs in the form of digital scribes. Wang et al. reported an increased documentation efficiency by 2.7-fold while simultaneously facilitating patient-centered communication (Wang et al. 2021). Preliminary studies have not shown reductions in burnout with digital scribes; however, users report a perceived decrease in documentation burden, which may allow for more time on fulfilling tasks such as direct patient care and operating (Nguyen et al. 2023).

While some institutions are considering digital scribes, others are looking towards artificial intelligence (AI) based documentation programs. The use of AI has been shown to decrease weekly time spent on documentation, including hours spent working at home, and to reduce frustration with EHR (Liu et al. 2024). Furthermore, the use of AI has been shown to decrease documentation errors and facilitate communication between health systems, thereby reducing additional burden on physicians (Bongurala et al. 2024). These pilot programs show promising results and may be implemented on a larger scale in order to reduce documentation burden, and ultimately alleviate burnout in some physicians.

INCREASING DIVERSITY, EQUITY, AND INCLUSION

Orthopaedic surgery has one of the lowest percentages of women and minorities among all medical specialties (Peterman et al. 2022). Furthermore, women and people of color experience burnout at higher rates compared to their male and white colleagues, respectively (Hiemstra et al. 2023). Women physicians report lack of role models, wage gaps, lack of promotion to leadership roles, microaggressions, and sexual harassment as drivers of burnout (Hiemstra et al. 2023; Carnes et al. 2008). Moreover, when surveyed on career satisfaction, women physicians are more likely to report decreased satisfaction and regret over career choice (Robinson 2003). In order to address gender-based burnout disparities, institutions can establish “top-down” approaches to increase diversity. Others have suggested that increasing women faculty members and expanding “pipeline” programs may improve diversity, thereby reducing burnout among women in orthopaedics (Peterman et al. 2022).

MINDFULNESS AND PRIORITIZING YOUR HEALTH AND WELLBEING

Despite understanding the importance of physical health, a survey of practicing orthopaedic surgeons found that only 31% met national exercise guidelines, with even lower rates among those in academic practice (Thompson et al. 2023). In contrast, adherence to preventive health screenings was high, suggesting a disconnect between professional diligence and personal wellness (Thompson et al. 2023). To bridge this gap, institutions must promote environments that support self-care through flexible scheduling, protected time off, efficient workflow design, and access to confidential mental health resources (Ross et al. 2025). Encouraging surgeons to prioritize their own well-being not only improves quality of life but can directly enhance professional longevity and patient care.

The growing emphasis on physician health also includes the promotion of mindfulness as a stress management tool. Promising data support the use of low-burden interventions like mindfulness-based apps. A randomized control trial by Boden et al. investigated the effectiveness of a mindfulness-based smartphone application in 24 orthopaedic surgery residents, which demonstrated that residents who used the mindfulness app had significant reductions in stress, anxiety, and burnout scores (Boden et al. 2023). Another study demonstrated that a 10-minute meditation session using a mobile app enhanced arthroscopy performance and reduced short-term skills deterioration in orthopaedic surgery residents (Li et al. 2023). These findings suggest that incorporating mindfulness techniques, particularly through easily accessible mobile applications, can be beneficial for both orthopaedic surgeons and their patients in managing stress and improving performance.

CONCLUSION

Burnout in orthopaedic surgery is the result of a complex response to systemic challenges within the healthcare environment. For many orthopaedic surgeons, the core drivers of burnout are reduced autonomy, persistent inefficiencies, and insufficient time devoted to operating, teaching, innovating, and patient care. If institutions are committed to addressing burnout, they must shift the focus from individual resilience to systemic reform. This includes protecting time for meaningful work, reducing administrative burden, and investing in mentorship and leadership structures that align with the demands of surgical practice. Sustaining the well-being of orthopaedic surgeons is not just an institutional responsibility but rather fundamental to the delivery of safe, effective, and quality patient care.

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