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Burnout syndrome among surgeons in orthopaedics and traumatology

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Abstract

In numerous medical domains and across all stages of medical education and practice, there are instances of burnout, depression, contemplation of self-injury, and dissatisfaction with the equilibrium between work and personal life. Burnout is typified by a gradual deterioration in emotional, attitudinal, and physical wellness. Healthcare professionals grappling with burnout may perceive patients as mere objects and undergo a profound emotional void. This is marked by a diminished enthusiasm for work (emotional exhaustion), a feeling of detachment (depersonalization), and a diminished sense of personal gratification. An extensive investigation into emotional burnout across various medical disciplines highlights orthopaedic surgery as one of the fields with the highest incidence of burnout. Evaluating the workload and work atmosphere presents avenues for mitigating stressors associated with burnout. Deliberating on specific psychological elements like emotional intelligence, resilience, and mindfulness could prove efficacious in mitigating burnout. Addressing both physical and mental well-being is imperative in alleviating burnout. The elevated prevalence of burnout among orthopaedic surgeons may necessitate the enforcement of preemptive measures at different levels, encompassing institutional and governmental realms.

Keywords: Burnout, syndrome, orthopaedics, traumatology, surgery

Introduction

Orthopaedic training is an arduous journey that challenges surgeons emotionally, physically, and intellectually. The significant repercussions of burnout on surgeons, patients, and healthcare systems have garnered considerable attention, underscoring the importance of comprehending burnout among orthopaedic surgeons (Arora *et al.*, 2013) ^[1]. Burnout is commonly described as a state encompassing depersonalization (a decline in empathy), emotional fatigue, and a perception of reduced personal achievement (Maslach *et al.*, 1997) ^[19]. Its effects extend both personally and systemically, with associations to depression, suicidal ideation, and various mental health issues (Lebares *et al.*, 2018; Shanafelt *et al.*, 2011) ^[15, 29]. Concerns also arise regarding its role in elevated turnover and attrition rates (Elmore *et al.*, 2016), alongside its correlation with diminished patient satisfaction and outcomes (Galaiya *et al.*, 2020; Shanafelt *et al.*, 2010) ^[11, 28].

Orthopaedic surgery presents a demanding landscape encompassing diverse anatomy, intricate pathologies, traumatic injuries, and a spectrum of procedures. Surgeons in this field grapple with substantial workloads and often endure prolonged hours (Marsh, 2012; Simons *et al.*, 2016a) ^[18, 31]. The post-specialization orthopaedic training regimen is renowned for its rigors. In the contemporary medical milieu, the shift away from independent surgical practice and exposure has compounded the challenge of honing surgical skills. This trend amplifies the learning curve and magnifies the already lofty expectations in orthopaedics (Hui *et al.*, 2019; Van Vendeloo *et al.*, 2014a) ^[13, 33]. Given the unique hurdles in orthopaedic practice, data extrapolated from other medical specialties regarding burnout may not be directly applicable to orthopaedic surgeons. Consequently, our objective in this discourse is to scrutinize the factors contributing to burnout in orthopaedic surgeons.

Definition and clinical symptoms of burnout syndrome

Occupational burnout emerges as a state of complete exhaustion - physically, emotionally, and mentally - stemming from prolonged exposure to high-demand work environments.

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It is marked by a gradual breakdown in workplace relationships, rendering individuals incapable of coping with persistent stressors (Travers, 2020) ^[32]. The concept of burnout traces back to Greene's 1961 publication "A Case of Burnout" and experienced a resurgence in the 1970s with psychoanalyst Freudenberg's work (Roston, 2006; Freudenberg, 1975) ^[21]. Maslach, Schaufeli, and Leiter (Maslach *et al.*, 2001) ^[20] later formulated a comprehensive definition, describing burnout as a discordance between one's professional identity and duties, resulting in a erosion of personal values, dignity, and motivation. This phenomenon is delineated by three main dimensions: emotional exhaustion, depersonalization (manifesting as dehumanization and apathy towards work), and a decline in personal and professional efficacy. Physicians grappling with burnout often experience an identity crisis as they struggle to reconcile their original professional values with current realities (Cole & Carlin, 2009) ^[4].

Emotional exhaustion manifests as a gradual fatigue and depletion stemming from intense emotional pressure, impacting both physical and mental well-being. Contributing factors include unfavorable working conditions, demanding schedules, and personal responses to emotional demands, particularly challenging for healthcare professionals amidst the pressures of hospital management, clinical practice, and legal concerns (Travers, 2020) ^[32]. Depersonalization ensues as a consequence of emotional exhaustion, leading individuals to detach from their surroundings as a protective mechanism against further deterioration. This detachment impedes decision-making and effective action. The third component involves a loss of personal fulfillment, where individuals perceive themselves as incapable of delivering quality work, fostering a sense of professional inadequacy and heightened emotional distress (Travers, 2020) ^[32].

Burnout consistently presents with clinical symptoms characterized by a gradual onset and deviation from one's previous state. Emotional symptoms include anxiety, sadness, decreased motivation, irritability, heightened sensitivity, and emotional numbness. Cognitive symptoms may manifest as memory problems, attention difficulties, and reduced concentration. Behavioral indicators include withdrawal, isolation, aggression, diminished empathy, resentment, mistrust, and engagement in addictive behaviors. Additionally, motivational aspects exhibit as progressive disengagement, reduced morale, and erosion of work-related values, leading to feelings of devaluation (Khammissa *et al.*, 2022) ^[14]. Physical symptoms such as fatigue, sleep disturbances, musculoskeletal complaints, headaches, dizziness, appetite changes, and gastrointestinal issues often co-occur (Travers, 2020) ^[32].

Prevalence

Numerous successive studies underscore the gravity of the situation within the medical community. A noteworthy survey by the American College of Surgeons, involving over 7,905 participants, revealed a burnout rate of 40 percent among surgeons, with 30 percent exhibiting signs of depression. Moreover, the suicide rate among surgeons stood at 6.3 per 10,000 individuals, compared to 3.3 per 10,000 in the general population (Shanafelt *et al.*, 2009) ^[27]. Interestingly, when both partners were surgeons, the incidence of depression symptoms rose, particularly among female surgeons (Devi, 2011; Dyrbye *et al.*, 2011) ^[6, 7].

The prevalence of burnout varied significantly among orthopaedic surgeons across different centers and among

surgeons of various grades. Despite variations in methodologies, some studies failed to capture all burnout components (Arora *et al.*, 2014; Lesić *et al.*, 2009; Sadat-Ali *et al.*, 2005; Van Vendeloo *et al.*, 2014b) ^[2, 34, 16, 22]. Emotional exhaustion and depersonalization rates ranged from 16.2% to 50.7% and 11.4% to 59.4%, respectively. For instance, Arora *et al.* reported that 53% of Australian orthopaedic surgeons met burnout criteria (Arora *et al.*, 2014) ^[2]. Notably, the lowest rates of emotional exhaustion and depersonalization were observed in the Netherlands, while the highest were found in Saudi Arabia (Van Vendeloo *et al.*, 2014b; Sadat-Ali *et al.*, 2005) ^[34, 22].

Furthermore, research has compared burnout rates among orthopaedic surgeons with those in other medical specialties. Lesic *et al.* compared 30 Serbian orthopaedic surgeons with 38 general practitioners, revealing higher emotional exhaustion (40.0% versus 29.0%), depersonalization (34.5% versus 11.1%), and a lower sense of personal accomplishment (29.6% versus 48.5%) among orthopaedic surgeons compared to general practitioners.

Factors associated with burnout syndrome

In the medical arena, numerous factors negatively impact the perceived quality of life in professional practice. These factors encompass escalating bureaucracy, heightened productivity expectations leading to reduced time for individual patients, prolonged working hours, an exacerbating work-life imbalance, the necessity for continuous education due to rapid advancements in medical knowledge (both scientific and technical), a surge in legal liability cases, shifts in the doctor-patient relationship dynamics, and alterations in the doctor's image in the eyes of patients (Shanafelt *et al.*, 2003, 2009) ^[27, 30].

Individual factors, such as gender or ethnic minority status, have been linked to elevated rates of emotional exhaustion. Instances of harassment and discrimination significantly correlate with exhaustion across both demographic groups. Financial concerns pose a risk factor for emotional exhaustion, while depersonalization is associated with alcohol and drug misuse. Conversely, allocating more time to hobbies is linked with reduced emotional exhaustion. Within orthopaedic department leadership roles, possessing a strong sense of self-efficacy acts as a protective measure against clinically significant burnout (Sargent *et al.*, 2004, 2011) ^[25].

Research by Sargent *et al.* (2004) ^[24] indicates that having a physician father and spending more time with one's spouse are associated with reduced emotional exhaustion rates, while a positive relationship with one's mother lowers the risk of depersonalization. Furthermore, satisfaction derived from interactions with friends and a spouse's prolonged working hours are linked with a heightened sense of personal fulfillment. Family dynamics play a substantial role in burnout, with conflicts between work and family life, inadequate spousal support, and unsatisfactory marital relationships positively correlating with elevated emotional exhaustion. Among orthopaedic surgeons in military hospitals, having a spouse on active military duty is identified as a burnout risk factor (Simons *et al.*, 2016b) ^[31].

The work environment emerges as a critical determinant of burnout. Sleep deprivation is associated with increased emotional exhaustion, depersonalization, and diminished personal accomplishment. Additionally, extended working hours and the frequency of shifts per week significantly impact burnout (Barrack *et al.*, 2006; Saleh *et al.*, 2007; Zheng *et al.*, 2018) ^[3, 23, 36].

A prospective study by Barrack *et al.* assessing burnout rates following the implementation of standard working hours in the USA revealed improved personal accomplishment scores solely among orthopaedic residents, with no substantial change in burnout rates observed among faculty members (Barrack *et al.*, 2006) [3]. Despite the correlation between work hours and burnout rates, orthopaedic surgeons balancing research and clinical duties exhibit a lower burnout risk, possibly due to heightened job satisfaction and a greater sense of achievement (Zheng *et al.*, 2018) [36].

Furthermore, supervised mentoring lowers burnout levels among surgeons. Satisfaction with the training program demonstrates a weaker correlation with burnout. Factors such as professional development, growth opportunities, individualized learning, and increased hands-on training diminish burnout tendencies (Galaiya *et al.*, 2020) [11].

Effects of burnout syndrome in clinical practice

An investigation into the impact of burnout on clinical practice was undertaken, revealing insightful findings. Zheng *et al.* conducted a study involving 202 Chinese arthroplasty surgeons, elucidating that surgeons experiencing high levels of emotional exhaustion were significantly more prone to experiencing outbursts of anger during surgical procedures (Zheng *et al.*, 2018) [36]. However, no substantial correlation was identified between depersonalization and occurrences of intraoperative irritability. Additionally, the study unveiled a correlation between surgeon seniority and the likelihood of exhibiting anger during surgery within the past month. The prevalence of such occurrences was observed to rise with increasing seniority levels: 24% for residents, 58.9% for consultants, 65.0% for senior consultants, and 70.7% for chief residents; a statistically significant trend ($p < 0.001$) (Hui *et al.*, 2019; Zheng *et al.*, 2018) [13, 36].

Remarkably, despite the observed trend, seniority among surgeons displayed an inverse association with burnout prevalence, although this trend did not attain statistical significance (Hui *et al.*, 2019; Zheng *et al.*, 2018) [13, 36].

What can you do to deal with burnout syndrome?

While numerous person-centered strategies exist to mitigate burnout, their implementation by physicians poses significant challenges. In medicine, our primary focus is on enhancing the patient experience, population health, and reducing per capita costs. Given the established connection between stress and healthcare quality, promoting the psychophysical well-being of physicians is imperative. Some argue that physician burnout could potentially undermine successful healthcare reforms. However, despite this recognition, knowledge of effective interventions remains limited, particularly in terms of work-focused recommendations (Saleh *et al.*, 2007) [23].

Interventions centered on mindfulness and resilience, though beneficial for some, may not be directly applicable to orthopaedic surgery. For instance, in a comprehensive study involving physicians ($n = 70$), one group received fortnightly facilitated sessions over 18 months, leading to reduced depersonalization, emotional exhaustion, and burnout after 12 months (West *et al.*, 2014). Conversely, a study focusing on resilience training for residents ($n = 47$) across various postgraduate years in anaesthesia, family medicine, and psychiatry found no significant impact on burnout (Goldhagen *et al.*, 2015) [12].

In the field of orthopaedics, additional measures should include evaluating physician well-being and enhancing factors contributing to physician satisfaction.

Comprehensive insights provided by Daniels *et al.* (Daniels *et al.*, 2016) [5] and practical solutions outlined by Saleh *et al.* underscore the need for structured interventions in residency programs and institutional support to streamline physician workflow and management (Saleh *et al.*, 2007) [23]. Initiatives have been launched at the institutional level to identify at-risk physicians, offering training programs and non-punitive support (Sciolla *et al.*, 2021) [26].

Studies have highlighted the association between a high-stress environment, poor workplace control, and burnout rates. Concerns include disorganized clinical settings, inadequate time for documentation, reliance on electronic medical records from home, brief appointments for complex patients, and institutional instability to support teaching and academic activities (Linzer *et al.*, 2015) [17].

Addressing burnout at a national level necessitates overarching recommendations focusing on understanding the issue, fostering teamwork, fostering a culture of appreciation, and enhancing organizational processes. While diverse practice systems exist, burnout affects all of them, suggesting a need for tailored solutions across orthopaedic practices. Collaboration among orthopaedic communities is essential, led by organizations vested in all levels of the specialty. Acknowledging our high expectations is merely the initial step towards achieving improved patient health and meeting performance standards in the workplace.

Conclusions

Orthopedic surgeons, particularly residents, frequently experience burnout at elevated levels compared to department heads and faculty members. Given residents' central role as primary patient contacts in many public institutions and the adverse repercussions of burnout syndrome, it's vital to assess burnout occurrences among orthopedic surgeons across different nations. Identifying specific factors contributing to burnout within diverse populations is crucial. The notable prevalence of burnout among orthopedic surgeons underscores the need for preventive measures at various tiers, including individual physicians (such as opting for voluntary reductions in work hours), organizational adjustments (like increasing the number of orthopedic surgeons to alleviate workload), and interventions at the level of public policy.

Conflict of Interest

Not available

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