

Promoting Wellness Among Orthopaedic Surgeons

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Abstract

- Wellness encompasses multiple dimensions of well-being, including physical, mental, emotional, social, and spiritual health. Prioritizing physician wellness is crucial for ensuring high-quality patient care and reducing the risks of burnout, depression, and other mental health issues. Poor wellness among physicians not only affects their personal and professional lives but also has a ripple effect on patient care. It is associated with higher rates of medical errors, lower patient satisfaction, and an increased risk of mental health disorders including anxiety, depression, substance abuse, and suicide.
- Burnout is a significant issue among healthcare professionals, particularly physicians. It can lead to severe consequences like increased medical errors, job dissatisfaction, and a decline in both personal and professional well-being. Addressing burnout through coping mechanisms and better work-life balance is essential. Moral injury occurs when physicians are forced to act against their moral beliefs due to systemic flaws, leading to inner conflict. Unlike burnout, which is often attributed to individual resilience, moral injury points to issues within the medical system itself.
- Anxiety and depressive disorders can alter an individual's ability to participate in work and daily function. Among orthopedic surgeons, burnout has been described as an occupational hazard associated with medical errors, as well as with physical and mental exhaustion. Orthopedic surgeons face a burnout rate ranging between 40% and 60%. Tragically, they also have the highest suicide rate, comprising 28.2% of surgeon suicides from 2007 to 2013.
- More flexible work hours, adequate time off, and efficient workflow are methods that can be used to improve the work environment, as well as providing easy access to mental health counseling and confidential support groups. Research has shown that residents do not utilize employee assistance programs; however, programs with directors that regularly inquire about well-being has led to increased well-being and use of assistance programs and groups.

Introduction

Physician wellness has become a critical topic in recent years given the high level of burnout and depression among health care professionals. Physicians work in demanding environments and bear the responsibility for their patients' health, often at the expense of their own well-being. Physician wellness encompasses both professional and personal domains, and exploring how an imbalance toward work demands may precipitate feelings of hopelessness and dissatisfaction.¹

Burnout refers to the psychological collapse of an individual resulting from prolonged exposure to chronic stressors, and, among physicians, is a rapidly increasing concern that is often overlooked and inadequately reported. The concept of burnout is crucial in medicine due to the increased risk of physical and psychological consequences². Mental health dis-

orders, particularly depression, substance abuse, and suicidal ideation are prevalent psychological adverse effects of burnout. In addition, physical consequences include exhaustion, leading to increased rates of motor vehicle collisions and near-miss events². A 2009 study by the American College of Surgeons (ACS), involving 7,905 respondents, reported that 40% of surgeons experience burnout, 30% exhibited symptoms of depression, and 28% had a quality of life score a half standard deviation below the norm for the general US population. With only 36% of surgeons reporting that their schedules allow enough time for family, the majority of surgeons are dissatisfied with the amount of personal time allotted³. The ACS reported the suicide rate among surgeons is 6.3 per 10,000, considerably higher than the rate of 3.3 per 10,000 in the general population^{2,4}. With the heightened prevalence of suicide among physicians, especially

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surgeons, it is critical to manage and address the effects of burnout while concurrently promoting wellness²⁻⁴.

Orthopaedic surgeons encounter many responsibilities in their daily life, requiring not only technical proficiency but also emotional resilience. This skill is indispensable due to the high-stress situations and intricate decision making inherent in their daily work, which may take a toll on emotional, mental, and physical health, prompting concerns for overall well-being⁵. Orthopaedic surgeons, who are about 7% to 10% of the total surgical workforce according to the American Academy of Orthopaedic Surgeons, face a burnout rate ranging between 40% and 60%⁶. Tragically, they also have the highest suicide rate, comprising 28.2% of surgeon suicides from 2007 to 2013^{1,5}.

The purpose of this review was to provide a narrative exploration of the factors influencing the wellness of orthopaedic surgeons, examining the prevalence of burnout, personal-work life balance, and career satisfaction, while also addressing coping mechanisms and support groups that can be implemented by health care systems. While pharmacological treatments, such as medications for anxiety and depression, are important considerations in addressing mental health among orthopaedic surgeons, the focus of this manuscript is on nonpharmacological interventions and strategies. This review highlights the well-being of orthopaedic surgeons by comparing research across various groups, including orthopaedic surgeons vs. general surgeons, residents, and medical students.

Wellness

Wellness is used to describe the aspects of an individual's overall well-being encompassing physical, mental, and emotional health⁷. Wellness describes the aspects of quality of life with the presence of positive social, physical, and mental connections to well-being, allowing physicians to develop their full potential in their careers and personal lives (Table I). The consequences of poor physician wellness extend to their colleagues, family, friends, and their patients. Physicians facing wellness challenges are at an increased risk of burnout, depression, and suicide, concurrently jeopardizing the quality and safety of patient care. Poor physician wellness is associated with increased medical errors, greater mortality risk, and prolonged postdischarge recovery. Conversely, physicians who

incorporate wellness practices (i.e., exercise, meditation, adequate sleep, leisure activities) to manage the effects of burnout report increased job satisfaction, good health, and positive personal habits, and patients express heightened satisfaction, improved physician-patient communication, and increased adherence to medications and healthy behaviors^{7,8}.

Physical wellness describes elements related to bodily health, including exercise, sleep, and nutritious eating habits⁹. In 2023, Thompson et al. conducted an anonymous self-assessment survey to evaluate personal health habits, wellness, and burnout of 234 practicing orthopaedic surgeons in the United States¹⁰. Overall, only 31% were compliant with the Center for Disease Control aerobic and strength exercise recommendations, while 64% reported exercise as an important wellness strategy.

Mental wellness is another aspect of well-being and includes managing stress, creating a positive outlook, and enhancing cognition^{9,11}. Coping strategies such as meditation, mindfulness, and support groups can have a considerable impact on a physician's emotional stability^{9,11}. According to Thompson et al., 80% of orthopaedic surgeons reported that protecting time for family and friends is the most important wellness strategy¹⁰.

Emotional wellness is a subset of mental wellness that involves controlling and maintaining emotional stability^{9,11}. Emotional wellness empowers physicians to manage and project their emotions in a healthy way, such as open communication, active listening, and self-reflection. Given the emotional turmoil associated with patient illness and death, prioritizing emotional well-being can enable physicians to improve communication skills and enhance their capacity for compassion and empathy^{9,11}.

Social wellness refers to an individual's sense of belonging and is especially important in medicine due to the teams of physicians working together toward a common goal. This dimension of well-being involves an individual's capacity to feel integrated within society, which minimizes feelings of isolation. Enhancing one's social wellness by participating in social activities, embracing diversity, and cultivating compassion and empathy can increase feelings of leadership, support, and effective communication^{9,11}.

Spiritual wellness is an important component of a physician's well-being. Contrary to common misconceptions, spiritual wellness does not always involve religious beliefs^{9,11,12}. Spirituality describes the journey in navigating the meaning and purpose of life, discovering

TABLE I Components of Wellness^{9,11,*}

| Physical Wellness | Mental Wellness | Emotional Wellness | Social Wellness | Spiritual Wellness |
|--|--|--|---|---|
| Elements related to bodily health, including exercise, sleep, and nutritious eating habits | Includes managing stress, creating a positive outlook, and enhancing cognition | Managing and projecting emotions in a healthy way, such as open communication, active listening, and self-reflection | Involves an individual's capacity to feel integrated within society, minimizing feelings of isolation | The journey in navigating the meaning and purpose of life, discovering where their being fits into the life's larger puzzle |

* Reproduced, with modification, from Strout KA, Howard EP. The six dimensions of wellness and cognition in aging adults. *J Holist Nurs.* 2012;30(3):195-204; and Stoewen DL. Dimensions of wellness: change your habits, change your life. *Can Vet J.* 2017;58(8):861-2. Reproduced with permission.

where their purpose fits into life's larger puzzle. The aspect of spiritual well-being may be particularly important for physicians, due to the hardships of facing life and death first-hand^{9,11,12}.

Burnout

Failing to prioritize wellness can lead to burnout among orthopaedic surgeons. Burnout is characterized by a substantial decline in emotional, mental, and physical health due to prolonged stress. The effects of burnout can manifest in different ways, including psychological and physiological changes that culminate in profound exhaustion, medical errors, and career dissatisfaction (Table II)¹³. The 3 primary components of burnout—emotional exhaustion, depersonalization, and low personal accomplishment—may induce hopelessness and negative attitudes¹³.

In 2005, Saleh et al. surveyed 195 US orthopaedic department leaders to determine variables associated with burnout¹⁴. Twenty-two percent reported low emotional exhaustion, 39% moderate, and 38% high, which correlated with poor personal-work life balance¹³. In 2018, Travers et al. evaluated the factors contributing to burnout among orthopaedic surgeons and orthopaedic residents. They noted that 30% to 40% of surgeons and over 50% of residents experience burnout, attributed to work demands, lawsuits, reduced autonomy, and bureaucratic pressures^{4,14}. Interestingly, Dyrbye et al. found burnout decreases later in one's career, possibly due to evolving coping mechanisms or differing definitions of burnout across studies^{4,13,14}.

In 2015, Gosselin et al. used the Mental Health Inventory 5 questionnaire (MHI-5), a valid and reliable 5-question survey that is used to evaluate the mental health status, for 279 orthopaedic surgery residents¹⁵. Women, Post-Graduate Year 2, and PGY3 residents had lower MHI-5 scores. No significant differences in MHI-5 scores were observed when comparing age, race, ethnicity, and subspecialty choice; however, residents working >80 hours per week had significantly lower scores compared with those working <80 hours. Higher rates of burnout and depression were found among junior residents, women, smokers, drinkers of >5 drinks/wk, and unmarried individuals. The prevalence of depressive symptoms ranged from 20.9% to 50%, with 8% of residents experiencing suicidal ideation. Fixed contributors to inferior mental health included educational debt, self-reported quality of life, and residency choice satisfaction. Modifiable variables included work-hour restriction and integrating sufficient support systems to provide mental health aid. While many studies

report differences in findings, the level of training, region, hospital program, and research methods may contribute to the ranges¹⁵.

Moral Injury

A 2019 study conducted by Dean et al. discusses moral injury in comparison with burnout¹⁶. Moral injury refers to the inner conflict that arises when a person is compelled by external forces to act in a way that their belief is wrong or immoral, creating a disconnection between their moral beliefs and their actions. It is essential to distinguish between burnout and moral injury, as burnout suggests that the problem lies with the individual physician, implying a lack of resilience. By contrast, moral injury highlights that the issue stems from a flawed medical system, rather than the individual doctor¹⁶.

Physicians spend about 8 to 10 years in training, but face obstacles that create moral dilemmas when patient care is compromised by nonclinical tasks, leading to a moral vs. immoral dilemma^{16,17}. The concept of burnout has been painted as a reversible phenomenon by practicing wellness and self-care, while moral injury is thought to be more severe because improvements rely on changes within the medical system itself. Moral injury may be at the root of the present-day physician crisis, where physicians are required to focus much of their energy on nonclinical aspects of medicine, including electronic medical documentation and billing priorities. Gebhardt describes physicians as “overpaid data-entry personnel who originally signed up to improve the health of the people in need,” resulting in a failed health care system, with stressed and distracted physicians. Gebhardt further describes that the term “physician” has been replaced with “health care provider,” eroding the self-esteem and devaluing the title of physician, resulting in a loss of trust, purpose, and compassion. Although wellness programs and mindfulness workshops may reduce the feelings of burnout, it is critical to fix the root cause of moral injury. Gebhardt discusses potential solutions to decrease moral injury, including root-cause analysis of moral injury, focusing electronic records on patient care rather than reimbursement, and increase face-to-face time spent with the patients^{16,17}.

Effects of the COVID-19 Pandemic on Orthopaedic Surgeons

The COVID-19 pandemic had a consequential impact on the medical profession, with orthopedic surgeons facing unique challenges, including working outside of their usual expertise and

TABLE II Components of Burnout^{13,*}

| Emotional Exhaustion | Depersonalization | Reduced Personal Accomplishment |
|--|--|--|
| Extended exposure to stress typically serves as the primary catalyst for emotional exhaustion, manifesting as feelings of entrapment, defeat, feeling of helplessness and waning enthusiasm for work | Depersonalization emerges as physicians begin to treat patients with indifference, objectifying them, and cultivating negative attitudes toward both their colleagues and their profession | The absence of a sense of personal achievement is marked by an individual's withdrawal from responsibilities and detachment from their job |
| *Reproduced, with modification, from Romani M, Ashkar K. Burnout among physicians. Libyan JMed. 2014;9(1):23556. Reproduced with permission. | | |

canceled elective surgeries, leading to revenue losses and reduced training opportunities¹⁸. The pandemic created hazards including inadequate protection, personal protective equipment shortages, and unawareness of the increasingly fatal virus. Orthopaedic surgeons experienced high rates of anxiety (23.21%), depression (22.8%), and insomnia (34.32%), with stress driven by fear of contamination; fear of well-being of self, family, and friends; and financial liabilities. It has been shown that orthopaedic surgery residents and trainees were affected the most¹⁸.

Incorporating Wellness Into the Hospital and Work Environment

Improving wellness necessitates a shift in hospital culture and environment (Table III)¹⁹. At the trainee level, this likely involves active leadership participation in monitoring and supporting them¹⁹. In 2017, Kolarik et al. investigated the preferences of residents regarding the role of residency program director (PD) in assessing and promoting their wellness²⁰. One hundred sixty-one residents across various specialties were surveyed using the Patient Health Questionnaire-2 to screen for depression and the Maslach Burnout Inventory to assess the emotional exhaustion and depersonalization. Twenty-eight percent, 44%, and 62% screened positive for depression, emo-

tional exhaustion, and depersonalization, respectively. While 32% would contact the Employee Assistance Program (EAP) on their own, 63% would do so if recommended by their PD, though only 4% have used the EAP within the past year²⁰. One hundred percent of those who contacted the EAP reported that it was helpful. Notably, 82% supported PD involvement in wellness inquiries, highlighting the importance of PDs in promoting mental health interventions, and reducing stigma²⁰.

Prior studies have demonstrated that physician fatigue can compromise patient safety and that resident duty hour restrictions have improved wellness while reducing burnout and fatigue²¹. To address burnout in orthopaedic surgeons, van Niekerk et al. (2023) recommend more flexible work hours, adequate time off, efficient work flow, and providing access to mental health counseling and confidential support groups^{17,21,22}. Promoting routine fitness activity, proper nutrition, and appropriate sleep hygiene can improve both physical and mental wellness²³. Last, fostering a culture of open communication, strong mentorship, teamwork, and ongoing professional development can create a supportive environment^{22,23}.

Depression and Anxiety

Major depressive disorder represents a mood disorder along a spectrum that includes the following criteria; an individual has a persistently low or depressed mood, anhedonia or decreased interest in pleasurable activities, feelings of guilt or worthlessness, lack of energy, poor concentration, appetite changes, psychomotor retardation or agitation, sleep disturbances, or suicidal thoughts^{5,24}. The diagnosis must include 5 of the abovementioned symptoms, 1 being anhedonia, causing social or occupational impairment. Anxiety disorders include many different disorders, ranging from a specific phobia to a generalized anxiety disorder^{25,26}. Anxiety and depressive disorders are recognized by the American Disability Association as disabilities that can alter an individual's ability to participate in work and daily function. Among orthopaedic surgeons, burnout has been described as an occupational hazard associated with medical errors, as well as with physical and mental exhaustion^{5,24}. There is evidence of an association between higher rates of depression and divorced relationship status among orthopaedic surgeons²⁵. Factors that have been found to be protective against depression include marriage or spousal support, career satisfaction, autonomy, and practicing at an academic facility²⁷. Overall, there is a paucity of data related to the prevalence of anxiety and depression among orthopaedic surgeons.

Suicide

Burnout increases the risk of suicide²⁴. In 2022, Jennings et al. conducted a review focused on addressing burnout and depression, while discussing the necessary changes to combat mental illness in orthopaedic surgeons⁵. This study incorporated statistics regarding surgeon suicide from the Center for Disease Control National Violence Death Reporting System, including general surgeons and orthopaedic surgeons. General surgeons with a history of alcohol use, mental health conditions, and legal disputes were more likely to die by suicide. Of the general surgeons who have died by suicide, 95.8% were men. It was also shown that the average ages of death by suicide for men and

TABLE III Strategies for Improving Physician Wellness^{11,*}

| | |
|--------------------|---|
| Physical wellness | <ul style="list-style-type: none"> • Regular exercise • Nutritious eating habits • Adequate sleep • Medical checkups and screening |
| Mental wellness | <ul style="list-style-type: none"> • Meditation • Mindfulness • Support groups • Cognitive restructuring • Stress management |
| Emotional wellness | <ul style="list-style-type: none"> • Identifying root causes of feelings • Practice empathy and compassion • Expressing emotions thoroughly • Managing healthy relationships |
| Social wellness | <ul style="list-style-type: none"> • Participating in social activities • Honest communication • Improve listening skills • Set boundaries |
| Spiritual wellness | <ul style="list-style-type: none"> • Reflection of values • Connecting with the environment • Cultivating gratitude • Practicing forgiveness • Living with purpose and intention |

*Reproduced, with modification, from Stoewen DL. Dimensions of wellness: change your habits, change your life. *Can Vet J.* 2017; 58(8):861-2. Reproduced with permission.

women were 64 and 39 years, respectively. African American surgeons were 56% less likely to die by suicide compared with the total American population, while Asian/pacific islander surgeons are more likely to die by suicide. In addition, 16.6% of interns, 10% of medical students, and 6.25% of practicing physicians live with suicidal ideation⁵.

The increasing prevalence of suicidal ideation and death by suicide has become an ever-growing and deeply concerning issue within the field of orthopaedics, driven by the alarming rates at which these incidents are being reported and recognized. Hogan et al. identified specific causal factors contributing to suicidal behavior in orthopaedic surgeons, highlighting social isolation as a key concern²⁸. Social isolation, referring to the degree of disconnectedness and lack of contact, may become more pronounced during times of heightened stress, thereby increasing the risk of self-harm, as noted in the psychiatric literature. The authors encouraged orthopaedic departments to implement self-audits of their opinions on work conditions. This gives surgeons and trainees a voice, reducing individual isolation and promoting group connectedness²⁸.

Managing Burnout and Promoting Wellness

Wellness can be promoted through various methods such as self-care days and patient-centered therapy^{13,29}. Managing burnout involves stress management, sharing experiences, and controlling work hours and patient load^{4,29}. Cultivating compassion involves developing sustainable coping methods, empathy, and resilience. For physicians, high self-compassion helps managing patient suffering and reframes negative events using positive cognitive restructuring, which views suffering as part of the human experience³⁰. This allows for self-forgiveness and constructive self-talk. Low self-compassion often leads to self-criticism and anger. Negative events such as humiliation, loss or rejection, and failure are not unique experiences and can enhance coping by reducing feelings of isolation by sharing common experiences³¹. Mindfulness of one's emotions is key to self-compassion, which is linked to greater life satisfaction, social connectedness, and lower depression^{30,31}.

Barriers to Seeking Treatment of Mental Health Conditions

Physicians, residents, and medical students are constantly under high stress, increasing their risk of mental health issues, yet barriers to seeking help persist. The 2022 study by Jennings et al. revealed that 61% of orthopaedic residents admit to substance abuse, 13% screen positive for depression, while only 9% have sought treatment due to the stigma surrounding mental health⁵. Many residents and students fear appearing “weak” to their supervisors²⁰. The stigma, rooted in societal misconceptions and pressure to appear resilient, deter many from seeking help, potentially worsening burnout and mental health outcomes. In addition, concerns about medical license repercussions deter many from seeking help³². One-third of the states in America contain mental health disorder-related questions on the medical licensure application. Dyerbye et al. reports that 33% to 50% of physicians do not have a personal general physician and, those who do, visit the doctor less than the average US adult³³. In a 2008 national study among 7,905 surgeons, 6.3% reported suicide ideation within the previous year. Among those, 16% self-prescribed antidepressants and 60% admitted to avoiding treatment due to licensure repercussions³³. ■

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