

## Review Article

# Occupational stress and burnout among young surgeons: a review

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## ABSTRACT

A surgeon's lifestyle is a multifaceted commitment that revolves around their workplace, physical, personal, emotional, and communal domains. Surgical training programs are competitive and challenging to match and provide a sense of gratification among medical school trainees. But they also report a much higher level of burnout when compared to their peers from other specialities. Workplace burnout has been a scorching issue since the COVID pandemic broke out in 2019. We did this review to understand the factors leading to workplace burnout, identify any East-West differences, and find possible solutions. We also tried to find the role of COVID-19 in worsening occupational stress among surgeons. We searched the PubMed and SCOPUS databases for studies between January 2000 to January 2022 on burnout, well-being, wellness, and practice improvement among surgeons. The search included studies on COVID-19 that were available either as full-text papers or abstracts. Burnout has affected younger surgeons owing to loss of professional control, inefficient work-life balance, administrative burdens, medico-legal problems, and the competitive nature of the job and tiresome training programs. Burnout is more common in South-Asian countries. Workplace stressors, including long hours and difficult interactions with co-workers, are linked to greater levels of burnout. The COVID-19 pandemic has only made matters worse.

**Keywords:** COVID-19, Burnout, Surgical residency, Pandemic, Surgeon

## INTRODUCTION

Burnout is a syndrome comprising of emotional depletion, depersonalization, and loss of a sense of personal accomplishment at work and in life. The close connection between a surgeon's personal and professional identities can result in fatigue, depression, decreased patient safety and care quality, loss of job and drug abuse, strained personal relationships, and even suicidal thoughts. It is a phenomenon marked by depersonalization of self, a diminished feeling of self-worth, and emotional depletion due to stress at work.<sup>1,2</sup> Long working hours, delayed and denied rewards, difficulties balancing work and family, and difficulties delivering adequate patient care put doctors, especially

surgeons, at higher risk for burnout, especially in the constantly developing healthcare environment.<sup>1,3-5</sup>

In surgical specialities, burnout is particularly common. Substance misuse, disruptive behaviour, absenteeism, divorce, depression, and suicidal ideation are just a few of the serious adverse effects of burnout.<sup>6</sup> The capacity to effectively diagnose and identify surgeons who are burnt out has increased over the past ten years as awareness of the issue has improved.

Medical errors, suicide, depression, and absenteeism are just a few of the potentially harmful outcomes of burnout.<sup>7</sup> Shanafelt et al in their study, examined the relationship between self-reported medical errors and burnout among American surgeons.<sup>8</sup> Of the 7,905

surgeons who participated in that study, 700 (8.9%) reported making an error three months before the start of the study. Compared to surgeons who did not disclose medical errors, nine surgeons who did, had considerably higher mean ratings for emotional tiredness and depersonalization and significantly lower scores for personal success. However, the number of working hours, more time spent in the operating room, and frequent nights on call per week were not associated with a higher frequency of medical errors (surgeons who reported a medical error worked an average of 4.6 more hours per week). A recent meta-analysis showed that post-graduate trainees, especially surgical registrars, are more prone to burnout than other post-graduate trainees. It also emphasized that burnout is unique for different subspecialties, and finding the pattern would help remove them early during training.<sup>9</sup> Burnout is more common among Asians, but studies supporting the same are scarce. Gandhi et al., in their study, compared a group of anaesthesiologists and young trainee surgeons about burnout in a tertiary care hospital in India and concluded that surgical residents face marginally high burnout compared to their co-workers in the same setting.<sup>10</sup>

## LITERATURE RESEARCH

We searched the PubMed and Scopus databases for studies published between January 2000 to January 2022 for our review. The following terms and/or their equivalents were combined to accomplish the search: burnout, well-being, wellness, practice improvement, and surgeon. The search included studies on COVID-19 that were published in English and available either as full-text papers or abstracts.

## DISCUSSION

### *Over-working does not lead to glory*

One of the least talked about issues is how overworking and overdosing have been long attributed to a sense of pride in surgical training. Even though developed countries have strong disbelief in this concept, Asian and African training institutes still consider them valid. Surgical training is slow process and never-ending. Trainees who tend to overdose on it at an early tend to be victims of burnout in the long term. Long duration of work overall and working more towards weekends in a month have been accounted for high burnout triggers.<sup>11,12</sup> A national survey conducted on surgical trainees in the United States (US) states that 69% of surgical trainees had high burnout scores, high depersonalization, emotional exhaustion, and decreased personal achievement. Such a scenario is quite common to young surgeons who enter the field with a different fantasy but end up doing medical records and clerical jobs. Many young surgeons consider alterations in their job just after starting the initial steps in their careers. Longer working hours of more than 80 hours per week have been the best indicator for the same. It is noteworthy that unmarried

female surgeons are at a significant burnout than male peer surgeons due to low personal achievement scales and high emotional exhaustion due to time constraints in social and mental well-being. Hence a structured training program can avoid such miserable outcomes.<sup>13</sup> Surprisingly, surgeons who aspire to have a private practice are at high risk of burnout compared to surgeons in an academic setting.<sup>14</sup>

Poor work-life balance, more extended working periods, and multiple weekend duties have been linked circle as causes of higher burnout among surgical trainees.<sup>15</sup> In a survey done in the United States, there is significant burnout and regret of career choice among general surgical trainees compared to residents from other surgical specialties, mainly because general surgical residency is lengthy and tiresome and rewards are delayed.<sup>16</sup>

Hence proper mentoring in a surgical training program and adequate opportunity to achieve work-life balance can help residents achieve self-efficacy, a feeling of belief in their capabilities. This would cater as a solution to crunch burnout even in a busy and tiresome training schedule and improve a positive working environment.<sup>17</sup>

When surgical trainees report higher work support considerations, burnout is less common. For instance, frequent meetings with higher-grade surgeons and weekly ward rounds by senior surgeons were linked to decreased burnout in French plastic surgery residents.<sup>18</sup> On the other hand, things that might make a person feel unsupported have been linked to a higher risk of burnout. In a study of French trainees in digestive surgery, it was discovered that feeling unappreciated by senior staff, receiving insufficient practical training, and having too much responsibility were all linked to a higher likelihood of experiencing burnout.<sup>19</sup>

### *Burnout in Western versus Asian countries*

In the United States, burnout was initially described in the middle of the 1970s. Additionally, burnout among healthcare personnel other than physicians may result from a demanding work environment in some hospital units. According to recent studies, this also holds for basic healthcare settings in non-Western nations.<sup>20</sup>

At least 54% of respondents in a recent poll of US doctors reported having experienced at least one burnout symptom in 2014.<sup>21</sup> Of the 80% of doctors in rural British Columbia reporting moderate to severe emotional tiredness, 61% reported experiencing moderate to severe depersonalization, and another 44% reported medium to a low sense of personal accomplishment.<sup>22</sup> The responding cohort of UK otolaryngologists showed a burnout prevalence rate of 28.9%. Among French general practitioners in training, a cross-sectional study on burnout found that 16.0% had high levels of emotional tiredness, 33.8% had high scores for depersonalization,

and 38.9% had high scores for low personal accomplishment.<sup>23</sup>

Comparatively, few studies on doctor burnout have been conducted in Asian regions. The reported burnout rate for medical professionals in Malaysia was 36.6%. The 31.4% of respondents in a cross-sectional poll on burnout among public doctors in Hong Kong met the standards for high burnout. According to reports, the burnout rate for doctors in China ranges from 66.5% to 76.9%, with significant burnout rates between 12.1% and 25.4%.<sup>24</sup> A simple direct comparison of the burnout condition is challenging due to the small number of studies and the fact that most were cross-sectional studies carried out in Asia.

According to several studies, burnout among doctors is already considered a worldwide epidemic. Estimates of doctor burnout frequently provide high numbers and vary by country, by time, by speciality, or by industry, such as public versus private or rural versus urban.<sup>25</sup> Because of this, a thorough investigation and debate on burnout treatment should focus on a particular group of doctors who work in a similar setting and location, taking into account their unique beliefs and cultures.

#### ***Better health is better performance at work***

A surgeon's precision and accuracy of skills may be related directly to the surgeon's health. As surgeons, we often try to overrun our boundaries and forget about our health, in turn reducing the level of care we provide to the patient.<sup>26</sup> Buysse suggested that good sleep is characterized by subjective satisfaction, adequate duration, high efficiency, appropriate timing, and sustained alertness during waking hours.<sup>27</sup> A serious problem in the workplace is burning out due to demanding conditions and associated emotional stress, which is detrimental to surgeons' health.<sup>28</sup> Doctors deprived of adequate sleep chronically might have increased wakening during the night, insomnia, and increased daytime sleepiness which culminate in an irritable doctor and prone to committing mistakes.<sup>29,30</sup> St-Onge et al found that people who slept for a short duration consumed more calories, and the source was frequent snacks and fatty food.<sup>31</sup> Chronically sleep deprivation is a prime risk factor for landing up with cardiovascular diseases, hypertension, and diabetes mellitus.

Stress and burnout associated with young surgeons may be a reason for addiction.<sup>32,33</sup> A major problem in a surgeon with addiction is more difficult to recognize as they are less likely to address it and seek help than the general population. All these cumulatively impair and spoil a bright surgeon's future.<sup>34</sup> Even if they recognize the addiction problem, they often believe they can treat it by themselves or may become defensive about it as it might threaten their licensure.<sup>35</sup> Colleagues and families also get trapped in the conspiracy of silence, not wanting

to cause problems for them, and surgeons ought to be able to heal themselves. More effort is required to coerce a surgeon to enter rehab, although they do better than the general population.<sup>36</sup>

A surgeon's career is demanding in every dimension, including mental, physical, and emotional. A surgeon's training includes unprecedented scrutiny of the results, very little autonomy, and strict regulations, making it harder to maintain a work-life balance.<sup>37</sup> Dr Daniel Tawfik, in his study, depicted that physicians who are burned out have 2.2 times more chances of committing a mistake in delivering care to the patient.<sup>38</sup> In a US-based study prevalence of burnout among physicians was found to have 50%, and fatigue is reported in 45% of physicians.<sup>21,39</sup> The suicide rate among doctors is much higher than the general population.<sup>7,40</sup>

Although most authorities are aware of burnout syndrome, less attention is paid to it. Ironically, surgeons, being healers, are very reluctant to notice this matter. Trying to make efforts to improve healthcare delivery and reduce medical errors is of no use until the cause of it is not addressed. Hence this is high time we, as the society's elite, focus on this problem on paper and in corporeal reforms.

#### ***Burnout and its implications for healthcare delivery***

Globally, work-related stress is a known risk factor for employee performance, health, and safety. More specifically, the atmosphere in the healthcare industry is continually evolving, with an even more demanding and stressful life.

Maslach and Jackson first introduced Maslach burnout inventory (MBI) in 1981.<sup>41</sup> Three factors-emotional weariness, depersonalization, and a lack of personal fulfilment-are used by the MBI to define burnout. Healthcare professionals, and perioperative clinicians, appear to be particularly vulnerable to burnout. A more than 40% burnout rate was revealed in the Medscape national physician burnout and suicide report, 2020, which is similar to that in 2013 and 2015.<sup>42</sup>

Many studies have examined the effect of subspecialty choice on the risk of burnout. Some of them show that those in front-line surgical specialities, such as trauma and general surgery, are at higher risk. A landmark study of American college of surgeons members found that 40% of surgeons screened positively for burnout.<sup>14,43</sup> Alarmingly, a recent study discovered that burnout increased across all medical specialities from 2011 to 2014, rising from 42%-52% among surgical specialities.<sup>21</sup> Another large-scale Medscape survey revealed unusually high rates of burnout across all disciplines (more than 40%), including surgery (51%).<sup>43</sup>

This might also suggest that burnout is more closely linked to productivity than the other way around. They

discovered a strong connection between burnout and sick time. This may be the case because the kind of productivity decline that burnt-out doctors opt for may depend on their work setting.

### *Is the COVID-19 pandemic a reason for burnout?*

A questionnaire-based study was conducted in India to analyze burnout during a pandemic and found that 52% of the respondents had pandemic-related burnout. This was mainly due to the fear of treating infected patients, getting a cross infection, being in quarantine away from family, social stigmata about health care workers (HCWs) in India, being forced to do COVID duties and depression per se during the pandemic.<sup>44</sup> A meta-analysis on anxiety and depression among HCWs during the COVID-19 pandemic showed a higher prevalence among female HCW.<sup>45</sup> Women's dual roles might explain this in managing the home and maintaining their careers during COVID-19. Fear of becoming sick and infecting family members seems to be the most prevalent worry.

A qualitative investigation done on surgeons of NHS during the pandemic mentioned that surgeons suffered from low mood, depression, fear, and challenges due to a change of role in the pandemic setting. They said that switching to telephonic consultations and working in COVID wards with reduced surgical exposure and hands-on training affected their training in the long run.<sup>46</sup> Further non-availability of PPE and the hazardous nature of surgeries on patients with COVID-19 contributed to the negative impact on mental health.<sup>47</sup> Coleman et al in their study on COVID-19 and how it affected surgeons in an early career in the American College of Surgeons (ACS), mentioned that a significant number of residents (84%) were unhappy with surgical training during the pandemic due to a lack of adequate surgical exposure or training. It resulted in a negative impact early in their career and burnout.<sup>48</sup> Another interesting survey found that surgical trainees were exposed to inadequate surgical training because of the potential threat of contracting the virus and the possibility of reduced human resources. Even though the day off per month was more compared to the pre-COVID era, many residents reported burnout and not getting to do what they desired. COVID-19 shifted the learning platforms from bedside to online Zoom and Google Meet with overall virtual learning. But worldwide, it was accepted as a better way of propagating knowledge.<sup>49</sup>

### **CONCLUSION**

Burnout among surgical trainees and residents is expected due to demanding work schedules and a lack of proper communication among co-workers. The burden of COVID-19 has only added to the occupational stress.

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