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REVIEW

Ways of preventing surgeon burnout

A.-F. Naviaux[a,b], L. Barbier[c], S. Chopinet[d], P. Janne[b,e,*], M. Gourdin[b,f]

[a] *College of Psychiatrists of Ireland, Health Service Executive (HSE) Summerhill Community Mental Health Service, W35 KC58 Summer Hill, Wexford, Ireland*
[b] *CHU UCL Namur, Catholic University of Louvain, Yvoir, Belgium*
[c] *Liver Transplant and HPB surgery, Auckland City Hospital, University of Auckland, Auckland, New Zealand*
[d] *Liver and Pancreatic Surgery and Liver Transplantation, La Timone Hospital, Assistance Publique des Hôpitaux de Marseille, Marseille, France*
[e] *Faculty of Psychology, Catholic University of Louvain, place Cardinal Mercier, 10, 1348 Ottignies-Louvain-la-Neuve, Belgium*
[f] *Department of Anesthesiology, CHU UCL Namur, Catholic University of Louvain, B5530 Yvoir, Belgium*

HIGHLIGHTS

- Burnout syndrome is a frequent occurrence among surgeons, with prevalence ranging from 34 to 53%. Most relevant studies appraise prevalence rather than prevention.
- However, numerous means of surgeon burnout prevention exist, and involve not only the surgeons themselves, but also the institutions in which they evolve: from a personal standpoint, maintaining a viable work-life balance, avoiding toxic products; from a professional standpoint, receiving support from colleagues and the overall environment, employing humor and reserving time for rest and relaxation; from an institutional standpoint, earning more income, and benefiting from a sufficient amount of time dedicated to non-clinical activity.
- The prevalence and impact of surgeon burnout syndrome necessitate the elaboration of new institutional strategies and the reinforcement of those already existing.

KEYWORDS
Burnout;
Surgery;
Surgeons;
Prevention;
Operating room

Summary In surgical practice, numerous sources of stress (stressors) are unpredictable, two examples being daily workload and postoperative complications. They may help to explain surgeon burnout, of which the prevalence (34 to 53%) has been the subject of many studies. That said, even though assessments are legion, recommended solutions have been few and far between, especially insofar as by nature and training, surgeons are disinclined to interest themselves in burnout, which they are prone to consider as something experienced by ''others''. The objective of this attempt at clarification is to identify in the literature the strategies put forward in view of avoiding surgeon burnout, and to assess the impact of this phenomenon not only on the surgeon's professional and personal entourage, but also on patient safety. Prevention-based strategies, many of them focused on modifiable stressors, will be detailed.
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* Corresponding author.
E-mail address: pascal.janne@uclouvain.be (P. Janne).

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Introduction

In any type of surgical practice, whether it be ''general'' or specialized, public or private, carried out by confirmed surgeons or young residents, there exist a number of unpredictable stressors, two examples being daily workload and postoperative complications [1]. Surgeon burnout syndrome has been extensively assessed, and estimates of its prevalence range from 34 to 53% [2]. The most frequently cited and widely validated definition in the scientific literature is the one put forward by Maslach and Jackson [3], ''a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment''. However, this concept has yet to be validated, either in the International Classification of Diseases, or in the Diagnostic and Statistical Manuel of Mental Disorders (DSM). That said, the notion of burnout syndrome [4,5] is presently ''one of a kind''.

On the other hand, recommended solutions have been few and far between, especially insofar as by nature and training, surgeons are disinclined to interest themselves in burnout, which they are prone to consider as something experienced by ''others'' [6—12], and they may tend to believe themselves more resilient than their non-surgical colleagues. With these considerations in mind, acknowledgement of the perspective of burnout and development of effective prevention strategies should get underway during the would-be surgeon's years of training, especially insofar as fear of its occurrence may cause medical students to avoid commencing or pursuing a career in surgery, thereby contributing to a shortage of surgeons and increasing the workload of those who continue [8,13].

The objective of the present attempt at clarification was to identify in the relevant literature the strategies put forward in view of avoiding surgeon burnout, and to assess the impact of this phenomenon not only on the patient's professional and personal entourage, but also on patient safety. Prevention-based strategies, many of them focused on modifiable stressors, will be detailed, from a personal as well as an institutional standpoint.

Diagnosis and consequences of burnout

Malash [3] has characterized the three fundamental dimensions of burnout. At the outset, emotional exhaustion signifies a depletion of emotional resources, leaving the surgeon with the impression of no longer having anything to give of himself to his patients. The second aspect, depersonalization, is associated with cynical feelings, detachment from work, and a negative, in some ways dehumanized perception of patients. As for the third dimension, it consists in a tendency to evaluate oneself negatively, a feeling of ineffectiveness and proneness to depreciate one's performances, especially compared to those of others. Burnout symptoms also include physical fatigue, impaired judgment, and guilt feelings [14].

Burnout diagnosis has remained difficult; while numerous scales presently exist, the one reference in the literature is the Maslach Burnout Inventory (MBI) [15], a self-administered 22-item questionnaire covering the three above-mentioned sub-categories. There is no consensus in the literature on thresholds that would facilitate characterization of burnout severity. One of the difficulties consists in the fact that far from being binary, the diagnosis is based mainly on measurement of the intensity of several potentially interlinked phenomena. In a typical case, burnout is a systemic phenomenon marked by the interaction of individual and familial, team-centered and institutional diagnostic parameters. The main etiological and aggravating factors pertaining to burnout are summarized in sidebar Box 1 .

Box 1: The main etiological and aggravating factors in surgeon burnout

Factors contributing to burnout :

- length of training and belated recognition of merit [47,48] ;
- lack of control in delivery of medical/surgical care [14] ;
- lengthy work time, heavy workload [14,49] ;
- difficulties in maintaining work-life balance [50,51] ;
- feeling of isolation, of not having enough time to connect with one's peers [14] ;
- sadness or guilt toward patients following poor outcomes [14,52] ;
- inefficient, if not hostile environment [53] ;
- unrealistic goals [14].

Aggravating factors :

- Area of expertise : trauma, vascular surgery, general surgery, otorhinolaryngology and urology [54] ;
- Experience of a work-life conflict over the last three weeks, resolution of the most recent work-life conflict in favor of work, difficulties in maintaining satisfactory work-life balance [55] ;
- Lack of autonomy, high volume of administrative tasks without assistance, large number of files, legal procedures [54] ;
- Depression, suicidal ideation, substance misuse or abuse [56] ;
- Wish to ''throw in the towel'', poor career satisfaction, few relations with peers [57,58] ;
- Unsatisfying professional career [54,56—58] ;
- Perceived negative judgment by peers [37] ;
- Sex-related discrimination [59] ;
- Low level of career satisfaction [54].

Box 2: The consequences of surgeon burnout

- Early retirement [16].
- Professional, familial and conjugal conflict [16,17].
- Loss of vocational orientation [60].
- Depressive disorders [56].
- Suicides [56].
- Different forms of self-induced intoxication (alcohol, benzodiazepines, and other substances) [61,62].
- Irritability and depersonalization of the physician-patient relationship.

The numerous consequences of burnout are amply detailed in the literature and have different impacts on different persons. Among them, one may note professional crisis, lack of motivation, depersonalization of the physician-patient relationship, premature retirement, suicide, depressive disorder, diverse forms of auto-intoxication (alcohol, benzodiazepines and other substances), irritability, and family, professional and conjugal conflicts [16,17] (see Box 2 . Depressive disorders, suicidal ideation, and intoxication should be considered as major warning signs and lead to search for burnout. Detection can be carried out by the attending physician (if the surgeon has an attending physician, a rare occurrence) or by the occupational doctor, with whom treatment and management are to be coordinated [18]. In France, the care association for health

professionals (SPS) has put into place a nationwide platform of interprofessional communication privileging active listening; at the end of each call, the caller is referred to a psychologist, an attending physician or a psychiatrist. Physical consultations may also be organized in the framework of the nationwide network for psycho-social risk.

Burnout prevention

Prevention of burnout in an exposed or affected surgeon, or in a team, is a challenge of fundamental importance. Solutions can be drawn up from a personal [1] as well as an institutional [2] standpoint.

Personal solutions

From an emotional standpoint

In 2019, Milam et al. observed that self-efficacy, that is to say a person's perceptions of his own skills, is negatively correlated with burnout and positively correlated with the psychological well-being of surgical residents [19]. The authors consequently suggested strategies designed to improve self-perception, thereby reducing surgical burnout [20]. As an example, it would be beneficial to congratulate oneself on achieving personal objectives, on surmounting certain obstacles, on reaching one's goals, on believing in oneself, and on thinking that one performs as well as others.

The cultivation of personal relationships is another key promoter of surgeon well-being [21,22]. Being able: (a) to preserve time outside of work for kith and kin; (b) to apprise friends and relatives of one's feelings; and (c) to participate in recreational activities are protective factors closely associated with improvement of surgeons' quality of life [23].

Several authors have recommended self-control as a way to diminish burnout. For physicians, this implies recognition of stress triggers and symptoms, as well as those of burnout. The professionals are subsequently called upon to react by applying adaptation strategies such as taking time off to spend time with their family, discussing with colleagues, deploying a sense of humor, and preserving moments of calm; taken together, these means of coping can help to reduce emotional exhaustion [22,23].

Surgeons displaying attitudes specific to promotion of well-being are less at risk of burnout. For example, surgeons who lay emphasis on work-life balance and those who take time off for vacations develop less burnout, commit fewer medical errors, and undergo fewer ''work-family'' conflicts than those who do not [23]. Similarly, adoption of optimistic attitudes is correlated with lower rates of burnout, as is the fact of concentrating on what one deems important for one's own sake.

Finding meaning in work is often considered as a factor conducive to enhanced well-being. For example, surgeons can be asked to identify the aspects of their work that are personally meaningful for them, the objective being to help them to focus on these areas [22—24].

Resilience

The noun ''resilience'' is derived from the Latin verb ''*resilire*'', which means ''to rebound'' or ''to retreat'' [25]. For surgeons, it implies the ability to recover, or to draw something positive from a negative experience [26,27].

Some authors [28] maintain that resilience may be one the personality traits most needed by surgeons. Measured by an adapted scale [29,30], resilience has been associated with alleviated symptoms of burnout and depression, lessened stress and distress, and reduced suicidal ideation and anxiety among surgeons [31].

A favorable point consists in the malleability of resilience; it can be increased... and taught. A limited number of university hospitals have successfully added resilience training to their training programs. The factors most contributory to conservation of a positive attitude and a feeling of professional recognition are trust shown by teaching managers, hierarchical recognition of a well-done job, evaluation meetings, positive team feedback following traumatizing events, celebration of small as well as large-scale success, and the realization that resilience is an acquired skill [31]. Resilience must be collectively taken into account, insofar as the pulling together of a surgical team is more preventive of burnout than isolated and solitary approaches, even and especially within a hospital unit.

Among the attitudes likely to enhance resilience, here is a short list: i) limiting the repercussions of professional complications on personal life; ii) maintaining a positive attitude; iii) engaging in a program of physical exercise, if possible in a setting exterior to the work environment; iv) combatting discrimination (sexual harassment, gender differences, racial and socio-economic differences), which can be particularly impactful during a period of professional upheaval [2,32,33]; v) in the event of prolonged fatigue, discouragement or apathy, consulting a psychologist so as to facilitate introspection (keeping a journal may also help); vi) cultivating personal relationships [24,34]. On this last point, while the importance of camaraderie and collegiality should be underlined, relationships outside work are equally vital. Even when a surgeon benefits from (a) the social support essential to emotional resilience, (b) the solidarity provided by family and friends, and (c) a peer-based network ensuring assistance, exchange and apprenticeship, it often behooves him or her to identify a person of experience, a mentor whose expertise and accumulated wisdom could contribute to his or her development as a ''mentee'', that is to say a person who needs to acquire additional knowledge and skills, wishes to achieve professional objectives, and is determined to more effectively collaborate [24,34].

Cognitive flexibility and the realization that errors are part and parcel of human nature can likewise help to enhance resilience. In surgical activity, however, errors are particularly hard to rationalize, and surgeons are inevitably judged according to their results [24,34]. This point is clearly illustrated in the statement made by a surgeon during a qualitative interview: ''You are only as good as your most recent complication'' [35].

To summarize, the factors associated with increased resilience are numerous, and attention should be paid to each and every one: a sense of humor; meaning and objectives in life; time for quality recreation; positive team and favorable team environment; self-awareness and understanding of one's role; self-monitoring; optimism and positivity; cognitive flexibility [34].

Physical factors

Numerous authors have underlined how important it is that surgeons take proper physical care of themselves; after all, illness and injury contribute directly and indirectly to fatigue, long-term absenteeism and early retirement. Rest areas, sports facilities, yoga and meditation training should be offered and organized, as well as decent food and pre-

ventive occupational medicine. Eight hours of nightly sleep should be planned (if possible), and ''catch-up'' sleep be ensured (if necessary); healthy and agreeable food are of vital importance, as is regular exercise [22,23,36].

Institutional factors

Two reasons why the risk of surgeon burnout should not be neglected are that it can reduce safety of care and that it can increase team workload.

Intervention at the institutional level must be multifarious. One example is a program created by the university of Stanford, which targets different aspects of surgical resident well-being [37]. It consists in psychological counseling sessions, a refrigerator containing healthy snacks and meals, a resident mentorship program, sponsored social events, etc. The program was warmly welcomed by residents and considerably improved their well-being. The institution can also help future or confirmed surgeons by facilitating home-based work (writing of medical mail...) or child care, and by actively combatting racial, gender-based and other forms of discrimination [2,32,33].

Remuneration

While the deleterious effects of remuneration perceived as insufficiently calibrated to workload and level of responsibility have rarely been highlighted in studies on surgical burnout, they were nevertheless cited twice [14,38].

Improved physical well-being

On this point, an article published in 2017 [36] suggested that: i) surgeons be offered 7-day-a-week, round-the-clock access to healthy snacks in their working room, as well as an area allowing them to benefit from ''catch-up'' sleep; ii) their work hours be programmed, if possible, in view of facilitating a healthy life style, for example by limiting their work week to 60 hours and at most two nights on call, without programming operations for the day after a night on call; iii) in the operating theater, improving the ergonomics and thereby reducing sanitary risks. On this subject, since poor posture in the operating theater often leads to musculoskeletal disorders and can entail additional surgeon absenteeism, institutional development of strategies aimed at improving ergonomics and ''physical'' quality of life is important [39] and should include free-of-charge assistance pertaining to postural disorders and, more specifically, to prevention, in the event of pregnancy, and to treatment, in cases of physical injury. An on-site ''gymnastics'' room could likewise be propitious to surgeons' well-being.

Emotional

Even though institutions have the power to reduce the impact on surgeons of medical errors, adverse events and eventual lawsuits by providing them with psychological and legal assistance, many of them do not feel sufficiently supported when these situations arise. For example, hospitals could place at practitioners' disposal a psychological counseling (or ''back-up'') service or invite them formal discussions subsequent to significant prejudice or the death of a patient. Hospitals could also systematically provide surgeons with (a) the legal support of a risk management team when court proceedings ensue, and (b) the possibility of staff debriefing, whether by a team or with a psychologist, independently of the management of the institution [36,40].

It has been observed that a feeling of social allegiance or positive association with peers improves surgeon well-being and that, regrettably, this sentiment is all but absent in distressed residents [20]. As a result, the authors have suggested that maximum efforts be made, in view of promoting the feeling of allegiance. The above observation goes hand in hand with conclusions according to which, teamwork and collegiality are of key importance in burnout avoidance [41,42].

Cultural

''Shame and blame'' culture in health professionals is often considered as a factor detrimental to surgeon well-being, especially insofar as it prevents requests for assistance or, when necessary, the reporting of errors. That is why hospitals should clearly come out against ''shame and blame'' culture and encourage honest and forthcoming conversations between the concerned parties [43]. As an additional step, hospitals should offer training aimed at teaching doctors how to support each other more effectively, given that they are often well-intentioned but lacking in the awareness and tools that would enable them to follow through [17,24,39].

Inadequate working conditions, psychological disorders (suicidal ideation, depressive symptoms, burnout...) and emotional distress cannot be remedied by posted calls for optimism [23,44,45]! On the contrary, it is necessary to carry out research aimed at identifying the sources of emotional harm and professional dissatisfaction. Improved surgeon resilience calls for innovative measures paying due respect to the interdependent nature of the existing work communities, laying emphasis on communication and patient experience, and taking into account the economic and political realities of 21st-century workplace environments.

While there are several occasions in which resilience can be of use for a surgeon, one of the most important consists in the death of a patient after an operation, particularly if the surgery had been programmed. In 2020, Boyle et al. interviewed surgeons in Queensland (Australia) so as to identify non-technical factors liable to improve resilience and attenuate feelings of regret following postoperative death [46]; their main suggestions in view of facilitating decision-making and diminishing regrets were to improve communication with patients, families and colleagues, all the while laying emphasis on shared responsibility. They also insisted on the importance for surgeons of training in non-technical skills liable to enhance their resilience and to manage their emotional well-being.

It is for three reasons that these suggestions are highly important. Firstly, they do not represent an attempt to exclude emotions from surgical practice; feelings are not considered as obstacles to technical skills or high-quality surgical care. Secondly, the importance of communication and social support, as opposed to individualized resilience, is underlined. Thirdly and especially, rather than privileging short-term interventions, the suggestions are focused on structural changes and, in the long term, on surgeon training.

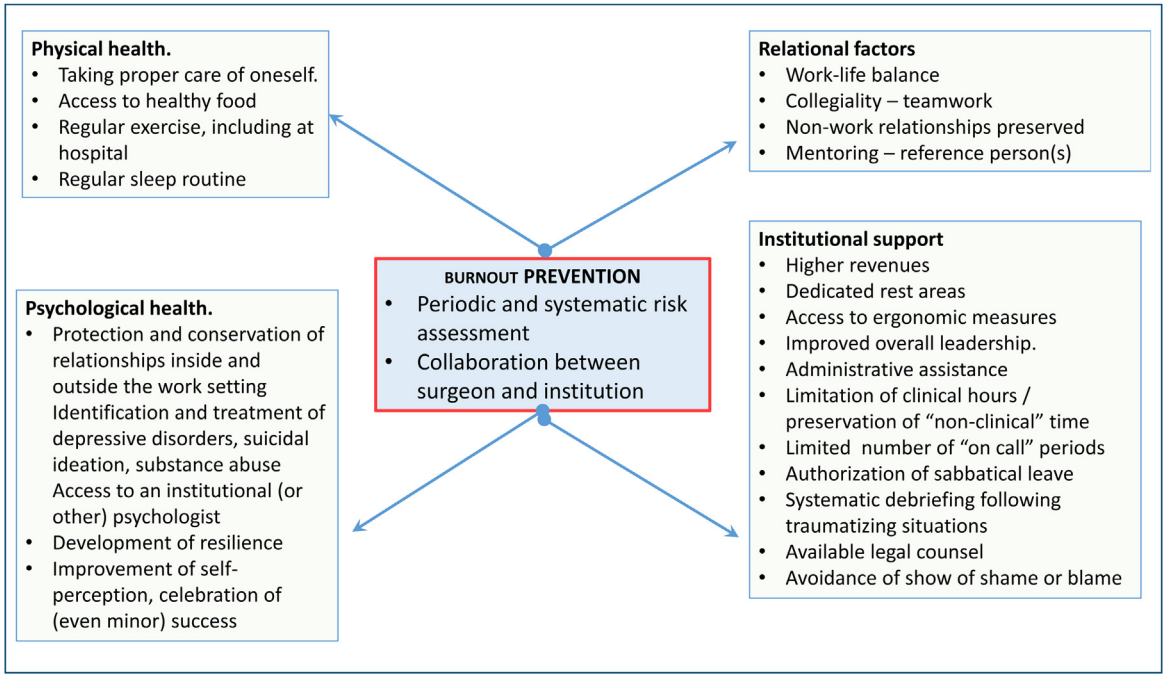


Figure 1. Protective individual and institutional factors with regard to surgeon burnout.

Conclusions

As a major challenge, prevention of surgeon burnout is premised on institutional as well as individual measures (Fig. 1). Implementation of programs specifically aimed at improving surgeons' well-being is generally associated with positive results [12,31]. Some strategies are relatively simple: reduced workload, preservation of work-life balance, development of peer support and an encouraging environment, cultivation of personal relationships, consultation of a psychologist when fatigue and indifference become chronic. Other strategies are more ambitious and difficult to implement: encouragement of careers in surgery, especially among persons with differing sexual orientation or socio-cultural origin, the objective being to fight against discrimination, which can contribute to the occurrence of burnout.

By taking adequate care of their own physical and mental health, surgeons can serve as role models for their peers, their patients and other physicians, not to mention their students and future generations of surgeons. Needless to say, it is essential that the relevant institutions proceed accordingly and take the initiative regarding surgical burnout.

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The authors declare that they have no competing interest.

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