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How to prevent burnout in cardiologists? A review of the current evidence, gaps and future directions

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How to prevent burnout in cardiologists? A review of the current evidence, gaps and future directions.

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Abstract

Burnout is rising in all physicians and cardiologists are not an exemption. Cardiology is a very popular specialty among medical students as it is associated with outstanding training standards and high prestige and income. In this review, we critically summarize the evidence on consequences, causes, and evidence-based interventions for burnout with a view towards recommending the best strategies for promoting wellness in cardiologists. Only a handful of studies have examined burnout specifically in cardiologists. Evidence therefore was mainly extrapolated by larger studies in all physicians and other physician specialties. Burnout in cardiologists has serious negative personal and professional consequences and is associated with suboptimal healthcare outcomes for patients. Burnout in cardiologists is primarily driven by professional and healthcare system demands and inefficiencies such as excessive workload and role complexity, training and certification demands, inefficient compensation models and lack of resources, computerization and loss of autonomy. Moreover, loss of connectedness with patients, difficulties in balancing work and personal life and overvaluing compulsiveness and perfectionism in medical practice further increase the risk for burnout. Burnout among cardiologists may be best mitigated by organizational strategies complemented by individual stress reduction and reflection techniques under the resilience-based approach. Large-scale strategies are needed to mitigate burnout and promote physician wellness as a shared responsibility of healthcare systems and individuals and be committed in creating a new culture in medicine.

Keywords: burnout; cardiologists; wellness; resilience; prevention; mitigation strategies.

Introduction

Cardiology is a leading area of medicine for technological advancement and research. It is estimated that there are over 25,901 active cardiologists working in the US, 64% being general cardiologists [1]. The appeal of cardiology to new entrants is linked to the high income and prestige derived by the advanced specialty training with strong research and clinical focus [2]. Although cardiology can be an extremely rewarding specialty, it can also be very strenuous and demanding, leading to burnout [2,3].

Burnout is a syndrome resulting from prolonged exposure to occupational stress with three main components: i. emotional exhaustion resulting from excessive workload, ii. Depersonalization, which refers to a sense of cynicism and a lack of compassion for patients and peers, and iii. a diminished sense of personal accomplishment that captures a sense of competence and professional efficiency [4]. The most common measure of burnout is the Maslach Burnout Inventory [4]. However, there are different versions of this measure and also measures of other relevant concepts (professional fulfillment, engagement, fatigue, stress) which are used interchangeably in the literature of physician burnout, making the direct comparison across studies difficult at times [5].

Burnout is common in physicians across all healthcare sectors and specialties. In the first large study of physician burnout in 2012, 45.8% of 7,288 physicians reported at least one symptom [6]. However, the rise in the rates of burnout in physicians in the past four years is alarming. Burnout is reported by 50% of cardiologists in the 2017 Medscape Physician Lifestyle Report (which is a rise of 4% within a year) suggesting that they are a high risk group to experience burnout [7].

Consequences of burnout

Burnout adversely affects the physicians, the patients as recipients of the healthcare services and has important repercussions for the whole healthcare organization. This widespread impact justifies why wellness of physicians is increasingly proposed as a quality indicator in the health care delivery [8].

Strong associations have been found between burnout and mental illness, substance abuse, and suicide in physicians. According to the American Foundation of Suicide Prevention, the suicide rate among male physicians is 1.41 times higher than the general male population and among female physicians 2.27 times greater than the general female population and is associated with burnout [9]. Moreover, alcohol and substance abuse problems are more frequent (10-15%) in physicians than the adult general US population (8%) and they strongly correlate with burnout [10]. Specific data on substance abuse and suicide rates and its association with burnout in cardiologists specifically would be an important addition to the current evidence base.

Physician burnout negatively impacts patient care. Two recent systematic reviews show strong links between physician burnout and suboptimal quality of care, patient safety and patient satisfaction [11,12]. As in all specialties in the front line of care, burnout in cardiologists affects patient care. In the 2017 Medscape survey, 22% of cardiologists admitted that they had some degree of bias toward specific types or groups of patients and those reporting burnout were more likely to report such biases. Over a quarter (28%) of cardiologists who expressed burnout reported biases, whereas just 16% of non-burned out cardiologists reported biases [7]. The relationship between burnout and bias is not surprising as depersonalization (which might link to bias and less empathy to patients) is a core component of burnout. Although more research is needed to examine the relationship

between burnout in cardiologists and specific patient outcomes, such as patient safety, satisfaction and trust, the current evidence base shows that burnout can have an adverse impact on critical aspects of patient care.

Physician burnout has serious negative consequences to the healthcare system as a whole. It is linked with lower career satisfaction, reduced productivity and absenteeism [13]. Career dissatisfaction in physicians is linked with turnover or leave medicine, thus increasing costs and contributing to workforce shortages [14]. The loss of cardiologists through career drop out, reduced working, or early retirement places additional burden on the healthcare systems. Taken together, burnout is detrimental to the smooth running of healthcare organizations as it raises costs, disrupts workflows and reduces efficiencies – thus efforts to retain cardiologists and prevent burnout are critical to improving patient care and subverting negative organizational consequences.

Contributory factors to burnout

A multitude of factors contribute to physician burnout including excessive workload, imbalance between work demands and skills, and a lack of control [15]. The five most frequently reported causes for burnout by cardiologists in the Medscape Cardiologist Lifestyle Report 2017 were the large amount of bureaucratic tasks, amount of time spent at work, increased computerization of practices, lack of autonomy and meeting certification demands. Introducing strategies to eliminate or mitigate these factors has the potential to reduce burnout in cardiologists [7].

Workload and role complexity

Cardiology is a high demand specialty responding to growing demand from patients for cardiology services; in addition there is a restricted supply of new entrants to the field [1,3].

A limited supply that falls short of demand for cardiologists means there is pressure for cardiologists to see more patients in shorter visits, to work long hours, and accept on-call duties [2,12]. The specialist cardiologist role also involves a range of duties in addition to clinical practice, such as leading and managing clinical teams (consisting of nurses, radiographers, physiotherapists, and administration staff), hospital administration and clinical audits [16]. In addition to seeing and managing patients, cardiologists have to take on multiple complex and demanding roles and responsibilities, including oversight and training of junior staff, leadership and team management, administrative and research activities. These tasks place a considerable load burden on cardiology specialists in terms of energy demands, time-management, and multi-tasking [3].

Job stress and loss of connectedness

Cardiology may be a particularly emotionally-involved and stress-provoking specialty. Research has shown that physicians managing acutely ill patients and those dealing with the issues surrounding death and dying, are more likely to feel burnout [17]. Cardiologists have to face life and death situations, often in emergency or critical care scenarios, with time being a major factor in patient outcomes for patients suffering cardiac failure. A loss of a patient or the inability to be able to positively intervene may take an emotional toll on cardiologists. Moreover, poor training in communicating outcomes to patients is likely to affect the levels of burnout in cardiologists and the quality of their relationships with patients [18]. Research from other specialties such as oncologists, where communication of bad news is common, suggests that poor training in communication skills is associated with higher rates of depersonalization, and lower personal accomplishment, whereas appropriate training in communication skills is associated with less burnout [19]. These experiences undoubtedly play some part in burnout risk, particularly if a trainee or specialist feels their level of resilience is diminishing as a result of high workload demands.

Ineffective support and compensation models

While the demand for cardiologists is rising, there is often a gap between supply and demand [1]. Cardiology is impacted by resource allocation constraints from Governments which contribute to cardiology staffing shortages, support staff availability, workloads, and resources availability [2]. These are factors cardiologists and cardiology professional bodies have little control over which can lead to feelings of uncertainty and lack of control in cardiologists. Moreover, the current compensation model is primarily based on productivity despite multiple studies showing that compensation exclusively based on clinical productivity increases risk for physician burnout. Linking of pay to the volume of work done, rather than to the quality or outcomes of that work, can leave some physicians feeling coerced and punished for doing what they consider the best patient care [16].

Computerization and loss of autonomy

Computerization and electronic records challenge the work-life balance of physicians by enabling them to have twenty-four-hour work access at the expense of rest and relaxation [20]. It is no surprise that physicians who check email regularly, update electronic health records, and respond to text results when they are not at work experience higher burnout [21]. Another negative consequence of increased requirements for documentation and electronic medical records is that physicians feel burdened with administrative duties that often appear valueless. This can lead to a diminished sense of autonomy, inability to affect patient care and reduced feelings of accomplishment, resulting in burnout. A Kaiser study found that a loss of sense of control over the practice environment is one of the most important predictors of physician burnout [22]. Although not yet tested empirically, older physicians might be less able to efficiently cope with the increased modernization and computerization of healthcare and as a result they might experience feelings of burnout and reduce their working hours. The

inter-relationships between physician age, healthcare modernization and burnout should be examined by future studies.

Training and certification demands

It can take up to 10 years of training to reach the level of a specialist cardiologist. Training encompasses a wide array of clinical skills and competencies, intensive clinical exposure (mainly in hospital rotations) and a focus on research, whilst also undertaking professional examinations. Cardiology also has multiple subspecialties each with its own credentialing, training and testing [2,3]. Cardiologists are required to continually update their skills and to keep abreast of new developments within the field. Many cardiologists struggle to maintain competency in the face of fast technological advancements in treatments and procedures. A survey of cardiology trainees revealed that between 2004-2012, trainees' subspecialty preferences have changed, reflecting an increasing preference for non-invasive imaging and device therapy, while conversely, a reduced preference for coronary intervention [23]. This shift in career preferences parallels changes in technological advancements within the field of cardiology, but also, a possible aversion to on-call primary percutaneous coronary intervention rotations [23].

Culture and values

There is a culture in medical training towards continuous achievement and placing work duties above self and family. This pattern of behavior becomes hard to break once in practice, leading to difficulties in balancing career with personal life. Prioritizing work over personal time is associated with burnout in physicians, particularly in women [24]. As a result, compulsiveness, perfectionism, and an exaggerated sense of responsibility/guilt are common traits of many physicians, including cardiologists, which can cause difficulties in setting boundaries, maintaining personal relationships and enjoying healthy self-interest [25]. To

alleviate burnout, clinicians must function with greater self-awareness by controlling work-hours, minimizing stress interactions and optimizing personal accomplishment. Physicians also have a personal responsibility to improve their self-awareness by controlling work-hours, reducing stress and maintaining a fulfilling personal life. Revising current medical education practices to reduce the emphasis on competitiveness and continuous strenuous achievements and also adding modules on healthy lifestyle and coping with clinical uncertainty can help towards this direction.

Work-life balance

Difficulties in balancing work and personal life is another important factor contributing to burnout in physicians [26]. The expectation that physicians will perform at an outstanding level in their job while enjoying a very fulfilling personal life without support is unrealistic and even dangerous. The effects of work-life integration difficulties on burnout are more pronounced in women. In a large study based on over 7000 US physicians assessing work-home conflict in dual career relationships, women were 60% more likely than men to report signs or symptoms of burnout [26]. In this year's Medscape Lifestyle Report, a higher percentage of female cardiologists (55%) reported burnout than their male peers (51%). Although the underlying reasons for these gender differences can be broad, difficulties in maintaining work-life balance plays a crucial role for making female physicians more vulnerable to burnout. Female physicians have to devote considerable additional time to family commitments and are more likely to experience breaks and disruptions in their clinical training in comparison to their male counterparts [27].

Interventions for mitigating burnout

Interventions for preventing and reducing burnout in physicians are increasingly developed and tested but there is a paucity of studies in cardiologists. However, studies conducted in a

range of physician groups with similar positive results, suggesting that existing burnout interventions could be expected to transfer to cardiologist groups. For example, the results of a recent meta-analysis suggests that there are no significant differences in burnout reduction scores when interventions are delivered to physicians in secondary care as opposed to primary care, or when the physicians have more experience (e.g., qualified specialists) or less experience (e.g., resident doctors) [28]. Existing interventions can be broadly classified into those that are physician-directed and those that are focused at the level of the organization [28].

Physician-directed interventions are common for mitigating burnout in the literature [28]. There is a wide range of approaches with the majority focusing on improving the emotional health of physicians by enhancing their self-care and self-awareness capacity. Examples of emotional health interventions are mindfulness and mind-body training programs, and stress management approaches. Facilitated group interventions such as small group curricula and communication skills training (e.g. reflection time and balint groups - physicians who meet to discuss clinical cases) are other examples of physician-directed interventions. In a randomized controlled trial, West and colleagues have recently tested the effectiveness of an intervention that included facilitated physician discussion groups incorporating mindfulness, reflection, shared experience, and small group learning. This intervention led to significant improvements in burnout (particularly depersonalization) but the impact on symptoms of depression, and overall quality of life or job satisfaction were mixed [29]. Moreover, interventions addressing physical health and lifestyle factors including exercise, nutrition, sunlight, and sleep are also increasingly proposed as promising approaches for mitigating burnout in physicians. However, robust tests of such interventions are scarce. One randomized controlled trial that examined the effects of a physical exercise program in physician trainees showed improvements on burnout scores in the intervention group

compared to the control group [30]. In the larger pool of studies using pre-post designs, more encouraging findings are reported for physician-directed approaches [31]. However the reported improvements and consequently the prospects of these approaches as stand-alone interventions might be overestimated due to the methodological flaws (no control groups and small sample sizes).

Organization-directed interventions are less common and are underpinned by the theory that responsibility for physician wellness does not lie solely with the physician, but is a shared responsibility within the medical community. To date, research studies have focused on interventions involving simple changes in schedule and workload reductions, such as shortened resident shifts and duty hour restrictions, protected rest periods on night shifts, and other modifications to clinical work processes. Few studies have tested more extensive healthcare system strategies, such as promotion of teamwork, changes in work evaluation, supervision to reduce job demand and enhanced job control, yet such interventions show considerable promise for mitigating burnout [28]. An example is the strategies evaluated by Linzer et al. using a cluster RCT design, aimed at improving communication, workflow and the undertaking of quality improvement projects addressing clinicians' concerns. Such intervention strategies were associated with significant improvements in burnout and satisfaction compared to control groups [32]. Recently, Shanafelt and colleagues have recommended nine organizational strategies to promote engagement and reduce burnout [33]. These strategies have several strengths, making them a valuable basis for future larger-scale evaluations. They directly aim to ameliorate the most critical workplace causal factors for burnout such as the quality of leadership, the teamwork and work community, the efficiency of the rewards and incentive models and the need to cultivate a culture where flexibility, work-life balance and help-seeking are accepted and promoted. The majority of the proposed strategies are relatively straightforward and their evaluation and implementation should be

less costly than anticipated. Moreover, as these strategies aim to build resilient healthcare organizations, they are applicable across different specialties of physicians (with some reasonable adaptations) and most likely are useful for mitigating burnout in all healthcare professionals working together with physicians in the same healthcare organizations.

Overall, physician-level interventions have been more frequently evaluated compared to organization-directed interventions. The most likely reason is that burnout was primarily viewed as a personal problem of physicians; only recently a shift is endeavored in viewing burnout as a problem of the health care organization driven by workplace factors. Two recent meta-analyses have suggested that both physician-directed and organization directed interventions are effective for reducing burnout in physicians but organization-level interventions are associated with greater improvements [28,31]. Research into novel organizational interventions, combined approaches, local mitigating factors is warranted.

The importance of fostering resilience

Assessing and introducing strategies to reduce burnout is a very logical target for maintaining physician wellness. However, positive psychology offers a new perspective that has the potential to complement current approaches for improving physician wellness. It suggests that sustaining and improving physician wellness requires not only the elimination of personal and organizational risk factors for burnout, it also requires the assessment and promotion of positive aspects of individuals and healthcare organizations in order to counter the adverse effects of risk factors on well-being. The concept of resilience has been developed to capture this need [34,35]. However, this has sometimes been misused to lay blame for burnout on clinicians for not being strong enough to cope with pressure. In contrast, resilience is only a truly positive concept when it is not used as an excuse for failing

to address organizational problems, but is instead used as an opportunity to embrace and promote individual wellness strategies in the context of organizational improvement.

Recognizing that cardiology has a long and demanding training pathway, and that prevention is more efficient than cure, interventions for cardiologists could be enhanced by taking a resilience-based approach [36]. This pre-emptive approach could prepare cardiologists for the certain challenges of the profession, capitalize on existing coping strategies and avoid burnout and the negative outcomes associated with this. In a recent systematic review, we found that i) high self-esteem, ii) a more positive way of explaining events and iii) low perfectionism protected individuals from experiencing depression and distress after failure events [37]. This review has particular relevance for physicians for whom patient safety failures are known to be a significant cause of distress. Furthermore, whilst these factors are psychological in nature, there are clear organizational implications. For example, evidence suggests that level of self-esteem is associated with the work environment, and that higher levels of mentorship support, greater autonomy and higher job satisfaction, are all linked with greater self-esteem [38]. Similarly, a positive explanatory style requires recognition of all the contributory factors that are involved in negative events, including those at the level of the organization. As such, this review suggests that organizations looking to implement a resilience-based intervention for burnout should consider job-design, leadership or management training, and review processes for understanding negative events or patient safety failures, in addition to the implementation of individual-level interventions.

Recommendations and conclusions

Cardiologists, like many other physician groups, are at high risk for burnout. Cardiology is one of the most popular and competitive specialties and involves direct access to patients which has critical links to quality of care, patient safety, and patient satisfaction [12]. It is

time to address the serious problem of burnout and view physician wellness as a fundamental target in medical education and practice. Undoubtedly, cultivating physician wellness is challenging as it requires considerable combined effort, time and resources, from individual physicians and the healthcare systems. It is encouraging that organization directed interventions, as well as individual strategies, lead to reductions in burnout in physicians, with the former being more effective [28,31]. However, most of this evidence has been generated by trials focused on mixed groups of physicians but there is very little evidence specifically for cardiologists. Future evaluations and adaptations of these strategies in cardiologists could result in greater benefits because they will be personalized to this specialty.

Evidence-based frameworks and exact strategies have been put forward on how to mitigate burnout and promote wellness at the organizational level [33,39]. Although some adaptation of these strategies to the cardiology specialty is needed, the knowledge base from all physicians is sufficient (especially since findings in cardiologists are fully consistent with the findings in all other physicians) to allow actions and improvements now. Scalable evaluations and implementation of these strategies (e.g. national level) are necessary to enable the transition from the present burnt out physician to the future resilient healthcare organization. Their success and long-term sustainability will depend on how extensively and systematically they integrate the following principles:

- Physician wellness as a shared responsibility of healthcare systems and individuals. The system contribution should involve brave reforms, such as reduction of administrative tasks for physicians, increases in non-physician support staff, selection of compensation models, new practice models to boost leadership, teamwork and productivity; financial support and protected time for physicians to attend wellness programs. Individual cardiologists are expected to self-care (e.g. exercise, sleep, rest),

meaningfully reflect and create a work community of mutual support and engagement [15,28].

- Creating a new culture. Medical schools and professional associations need to teach new values to cardiologists, such as the importance of self-awareness, life-work balance, acceptance of clinical uncertainty and help-seeking for mental health problems (e.g. modules on work-life balance, mindfulness, management of clinical uncertainty, mentorship for young physicians) [40].
- Valuing and fostering individual and organizational resilience. Strategies to mitigate burnout should not fail to recognize, build on and enhance existing positive features of healthcare systems and physicians [34,37]. A balanced focus on eliminating the risks for burnout and enhancing existing resilience factors of systems and individuals will potentially be more acceptable and can lead to higher overall benefits.
- Engaging organizations and physicians. The long-term sustainability of improvements from organizational and individual strategies will largely depend on the commitment and joint-effort of cardiology leaders, healthcare teams and individual physicians. There is some evidence that the most burnt out physicians and healthcare practices are the hardest to engage in such strategies [41]. Research on optimizing the adaptation of generic strategies to the needs of specific specialties (and potentially different age groups) and improving their acceptability and engagement is needed.
- Developing new tools to capture the multidimensional nature of physician wellness. There is a need for new improved tools that will be validated and widely used as gold standard measures of physician wellness [5]. The view of physician wellness as a prisma with four complementary dimensions could be a valuable guide. There is an individual and organizational dimension of physician wellness and therefore equal resources should be placed in measuring both of these dimensions. Similarly, the

assessment of the motivating dimension of physician wellness (resilience and engagement) is as important as measuring its symptomatic dimension (symptoms of burnout and stress). This holistic measurement will help to locate impairments and target interventions at all four dimensions (individual/organizational; motivating/symptomatic) of physician wellness.

Accepted manuscript

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