Review Article

Resilience training for healthcare providers: an Asian perspective

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Abstract: The level of burnout has been found to be high in medical students, alongside maladaptive coping behaviours such as heightened alcohol and drug intake and mental health issues in the US, Europe and other developed countries. While burnout and resilience in healthcare have been researched in the West, there is a paucity of data in Asia pertaining to these factors. In this article, we review stressors in medicine, specifically during medical school training, the consequences of burnout on physicians' health and patient care, and the interventions that might expound resilience among students. Finally, we present potential solutions within an Asian context.

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Introduction

The level of burnout has been found to be high in medical students, alongside maladaptive coping behaviours such as heightened alcohol and drug intake and mental health issues (1-3). Most recently, a systematic review showed that at least half of all medical students in the US are affected by burnout during their medical education, and that burnout may persist beyond medical school, potentially causing psychiatric disorders (3). Dyrbye and Shanafelt (4) also stated that: "*We must help students to recognize that caring for oneself is an essential part of being a doctor*" (p. 344). Interventions have been designed to help medical students acquire resilience (5-7). Howe *et al.* (8) called for an understanding of resilience and its relevance to medical training. While burnout and resilience in medicine have been extensively researched in western culture, there is a paucity of data in Asia pertaining to these factors. In this article, we review stressors in medicine, specifically during medical school training, the consequences of burnout on physicians' health and patient care, and the interventions that might expound resilience among students. Finally, we review potential solutions within an Asian context.

Stressors

Work-related stressors abound within the medical profession, such as excessive workload, fatigue, difficult relationships with peers and supervisors, and organisational issues within increasingly complex healthcare systems (1,2,7,9). In a medical school setting, sleep loss and physical exhaustion have implications on the cognitive abilities, empathy, and physical and mental health of students (6,7). Studies have shown that personality traits, coping skills, gender and culture contribute to stress perception and responses (2,10). Furthermore, specific personality traits have been shown to be related to stress vulnerability in medical students (11).

Students' stress can be compounded by latent values disseminated during training and by the stigma associated with revealing coping problems (5,7,12). Paradoxically, specific aspects of the medical profession induce maladaptive outcomes such as ignoring one's emotions, concealing a lack of understanding, and denying the need for help (13).

This is particularly salient within certain specialties, such as surgery. Surgical students are greatly influenced by the way in which senior members respond to errors (13), and adopt the values openly endorsed by senior doctors (14).

The inculcation of socialisation and values occurring within medical school is a powerful force that shapes the attitudes and beliefs of future physicians regarding professional behaviours (15). Professionalism is developed through observations of senior doctors and role modelling. Students are conflicted between patient-centred empathetic care and tacit expectations of self-denial. Banja (16) observed that "*the contribution of these kinds of events to a nascent narcissism consists in how they present a schizoid message to physicians who are told to be empathetic, caring, and available, and yet are made to work incredibly gruelling hours and tolerate emotional anguish that exists in no other profession*" (p. 65).

Currently, the acquisition of resilience is left to physicians themselves, with no systematic training in coping strategies offered at institutional levels. Students should be taught ways of acquiring and maintaining resilience via evidenced-based training. Information about the potential physiological and psychological manifestations of stress, maladaptive coping and burnout on health should be integrated within curricula.

Consequences of burnout on physicians' health and patient care

Considerable research exists on the health consequences of chronic stress. Stress responses are influenced by a variety of genetic and epigenetic factors in a complex chain of reactance (17). The cumulative effects of chronic activation of stress responses have been researched within the field of neural science. The hippocampus is particularly exposed to the dysregulation of glucocorticoid production (excess and hypo-production), potentially contributing to hippocampal atrophy and long-term deficits in memory and cognition (18). These physiological changes have been associated with a deterioration in immune function, obesity, metabolic syndrome, hypertension, cardiovascular disease and chronic inflammation (17,19-21).

Sleep regulation is another system that is highly susceptible to chronic stress exposure. Research has shown a relationship between sleep reduction, obesity and increased body mass index (19,22). Chronic sleep disruption and circadian dysregulation—both common in the practice of medicine—have been shown to be related to oxidative stress and cancers, heart disease, diabetes, ageing and neurodegenerative diseases (23). Several studies have reported sleep disturbances, insomnia and poor sleep quality in their burnout medical professionals (23,24).

The relationship between physicians' stress and performance is important because of its association with quality of care, safety and work satisfaction. Physicians' burnout has been found to correlate with increased incidences of medical errors (2,25), medical malpractice suits (26), diminished levels of patient compliance (16) and reduced patient satisfaction (27). Chronic stress and burnout also affect the level of empathy expressed by physicians. Compassion fatigue and chronic stress can contribute to suboptimal patient care (28).

The cultivation of resilience in Asia

Examining coping skills and resiliency through cultural specificities is significant because the appraisal of stressors and engagement in coping strategies is influenced by cultural factors (7,29). Chun *et al.* (29) remarked that "*physician stress research needs to increase its attention to the influence of culture on stress and coping experiences*" (p. 589). Slavin *et al.* (30) noted that "*some behaviors that are normative within one cultural group may be perceived as pathological in another*" (p. 160). Studies relating to the cultivation of resilience have been culturally circumscribed, predominantly, to western countries. Recently, studies have investigated physicians' stress in Asian countries (31-33). A review of these studies showed the importance of internal factors such as personality traits (34,35), appraisal and coping strategies or coping styles, gender and culture in the cultivation of resilience (36-39).

Kirkbride *et al.* (40) observed that: "*The traditional Chinese respect for age and status also has a bearing upon conflict situations (…) that awareness will affect the manner in which the situation will be handled. Relationships with older people and those of higher status will be more highly valued and there will be greater attempts to maintain guanxi and to protect face in such circumstance*" (p. 370). According to Chun *et al.* (29), in Asia, the group forms the central unit of society, binding individuals to its needs, goals and fate. Yeh *et al.* (41) noted that: "*Collectivist coping may include (…) family support, respect for authority figures, intracultural coping, relational universality, forbearance, social activity, and fatalism*" (p. 59).

The support of medical schools in the promotion of health maintenance is central to the cultivation of coping strategies in students. Coherence between curriculum content and systematic support for the health of medical students is necessary for the future wellbeing of healthcare

professionals (42). Robiner, Lazear and Duffy (43) noted that: "*Medical students and health professionals should be encouraged, or even obliged, where medically, psychologically and socially appropriate, to develop and practice effective dietary and exercise regimens for a sufficient duration to attain basic competence*" (p. 162). The authors concluded that: "*Addressing health-related behaviors that are critical to health outcomes requires doctors and other professionals to help patients realize how to act in healthy ways more consistently. Preparing health professionals to do this would arguably be improved by encouraging them to engage in the healthy behaviors themselves, and to commit to sustained efforts (…) what better time and place is there to acquire sound health habits and demonstrate effective self-care than during the education and training of doctors and health professionals?*" (p. 163). However, to promote healthy behaviours, medical schools should provide exercise facilities and healthy food options, which have been found lacking in some Asian countries (44).

Interventions

Improve job satisfaction

Job stress and job satisfaction are inversely related, with greater professional satisfaction representing a significant protective factor against the effects of job stress and emotional exhaustion (45). Organisational support reduces physical, psychological and behavioural reactions to stressors (46). Physicians' satisfaction is associated not only with their health, but also with prescribing behaviour, patient adherence to medication, patient satisfaction, physician turnover, staff morale and overall quality of care (47,48). It is essential to consider the implications of job dissatisfaction on patient care (49). Job satisfaction is affected by poor health and lower standards of professionalism (50). Feelings of competency, skill use, levels of demands, control, work clarity, relations with colleagues and spill-over effects of work in one's personal life all influence physicians' satisfaction (10).

Physician dissatisfaction has raised healthcare expenditures worldwide (51). Relying exclusively on "*the intrinsic motivation of physicians may be an obsolete and detrimental training and management strategy*" (p. 364) (52), as a result, organisations should take action to maintain satisfaction in the providers. The global dearth of physicians coupled with significant levels of attrition and burnout represent considerable challenges for healthcare organisations and physicians.

Monitoring and maintaining physicians' health is in the best interest of healthcare organisations in terms of litigation, quality of care, reduction of errors, and cost control (10). Shanafelt, Sloan and Habermann (25) stated that distress has been identified in the literature in almost "*every group of physicians that has been studied from interns in training to department chairs*" (p. 516). The literature has underscored the economic and ethical rationale for keeping doctors healthy (53,54). Spickard *et al*. (55) noted that healthcare organisations have an economic stake in the wellbeing of physicians. Workers who are satisfied tend to be more productive. Moreover, evidence exists that the wellbeing of physicians is related to patient satisfaction—a key outcome variable tracked by most healthcare organisations.

As stated by Shanafelt *et al*. (25), the responsibility to defend and actively promote the health of physicians and healthcare professionals also extends to medical schools: "*Academic medical centers have an additional obligation to promote the wellbeing of physicians in training, and unique interventions may be needed. Medical educators underestimate distress in residents and curricula are needed that promote self-awareness and healthy approaches to balancing personal and professional life*" (p. 517). Organisations can assist in the development of intervention programmes, policies and educational courses to improve work-related stress (22,56).

Support healthy behaviours

Exercise and physical fitness have been shown to be effective in maintaining and improving physiological and psychological health (26,57,58). Other researchers have underscored the cumulative benefits accrued by physical exercise through affect regulation (57,59). Physical fitness and regular exercise have been proven to increase resilience in extreme environments, promoting improved performance and inducing lasting neuro-protective effects (60). Physical fitness has also been shown to act to "*blunt stress reactivity in response to both physical and psychological stressors*" through the mediation of the hypothalamic-pituitary-adrenal (HPA) axis and the fight or flight response (60) (p. 25). Comprehensive Soldier Fitness (CSF), intended to improve the resilience of US Army service personnel, uses physical fitness as a regulator of cognitive and behavioural health (61). Other studies have also shown the physiological effects of physical fitness in reducing oxidative stress (62), cognitive decline and the ageing process (63). Huang *et al*. (57) noted consistent findings for associations between acute aerobic

exercise and peripheral brain-derived neurotrophic factors (BDNF); BDNF concentrations are a crucial mediator of brain health (p. 2).

Integrate health issues into the Asian medical education curriculum

The support of medical schools in the promotion of health behaviour is central to cultivating coping strategies in students. Integrating health behaviour promotion into medical curriculum is necessary for students' future wellbeing as healthcare professionals (42). Robiner, Lazear and Duffy (43) noted that: "*Medical students and health professionals should be encouraged, or even obliged, where medically, psychologically and socially appropriate, to develop and practice effective dietary and exercise regimens for a sufficient duration to attain basic competence*" (p. 162). Dyrbye *et al.* (4) noted that: "*promoting and nurturing well-being during medical school and equipping graduates with the skills necessary to recognize personal distress, to determine when they need to seek assistance, and to develop strategies to promote their own well-being is essential to promoting professionalism and laying the foundation for resilience through the course of a career*" (p. 1617). Research from Japan (64) and the West (65) highlighted the importance of curriculum-based health programmes.

Integrate digital micro-health management systems to enhance resilience

In the digital era, which defines our daily lives, medicine has, so far, only integrated technology at the levels of patients' care, diagnostics and research. The significant potential represented by wearable devices and their numerous data aggregations and analytics have yet to be applied for the benefits of medical staff and students' wellbeing. Topol, Steinhubl and Torkamani (66) noted: "*sensors have already been used for activity tracking by more than 1 in 4 individuals*" (p. 353). Simple digital platforms could help healthcare professionals and medical students manage their health and stress more actively, and with the right support contribute actively and simply to their enhanced resilience.

Conclusions

The health of medical students and physicians remains an afterthought, unless sub-optimal performance becomes salient. Physical and mental resilience must be fully integrated into curricula, otherwise medical education will contribute to, or augment, the attrition of the physicians it trains.

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Footnote

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