

Review Article

Resilience strategies to manage psychological distress among healthcare workers during the COVID-19 pandemic: a narrative review

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Summary

The COVID-19 pandemic marks an extraordinary global public health crisis unseen in the last century, with its rapid spread worldwide and associated mortality burden. The longevity of the crisis and disruption to normality is unknown. With COVID-19 set to be a chronic health crisis, clinicians will be required to maintain a state of high alert for an extended period. The support received before and during an incident is likely to influence whether clinicians experience psychological growth or injury. An abundance of information is emerging on disease epidemiology, pathogenesis and infection control prevention. However, literature on interventions for supporting the psychological well-being of healthcare workers during disease outbreaks is limited. This article summarises the available management strategies to increase resilience in healthcare workers during the COVID-19 pandemic and beyond. It focuses on self-care and organisational justice. It highlights various individual as well as organisational strategies. With the success of slowing disease spread in many countries to date, and reduced work-load due to limitations on elective surgery in many institutions, there is more time and opportunity to be pro-active in implementing measures to mitigate or minimise potential adverse psychological effects and improve, restore and preserve the well-being of the workforce now and for years to come. The purpose of this review is to review available literature on strategies for minimising the psychological impact of the COVID-19 pandemic on clinicians and to identify pro-active holistic approaches which may be beneficial for healthcare workers both for the current crisis and into the future.

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Introduction

The COVID-19 pandemic marks an unprecedented global public health crisis unseen in the last century with its rapid spread worldwide and associated mortality burden. Many countries have experienced an overwhelming public health emergency, others including Australia, New Zealand and South Korea have been able to slow the

spread of disease early, pre-emptively implementing successful management strategies after bearing witness to the devastation that some healthcare systems and communities have faced [1].

Issues faced by clinicians around the globe have included high mortality of patients in their care, high healthcare demands, rationing of healthcare supplies and

extraordinary physical and emotional stress [2]. Furthermore, the longevity of the crisis, the uncertainty and the disruption to normality is unknown, with health statisticians predicting that COVID-19 may continue as a public health crisis for some time [3]. Beyond these immediate issues created by the health crisis, the flow on effect of cancelled health clinics, surgeries and research will perpetuate the stress for healthcare workers and strain the health system into the future.

An abundance of information is increasingly available around topics such as disease epidemiology, pathogenesis and infection control and prevention. There is nevertheless a paucity of literature on interventions for supporting healthcare workers during disease outbreaks [4]. The purpose of this narrative review is to evaluate available literature on strategies for minimising the psychological impact of the COVID-19 pandemic on clinicians and to identify approaches which may be beneficial for healthcare workers both for the current crisis and into the future. We draw on literature examining general approaches to promoting well-being in healthcare workers and rely on lessons learned from prior health crises including SARS-CoV-1 and Ebola.

Psychological consequences for clinicians

The psychological impact on clinicians working during the pandemic is an important consideration [5, 6]. Acute stress involves adaptive physiological responses to meet anticipated increase in demand [7]. If recovery does not involve termination of the acute adaptive response, deleterious effects on psychological and physiological function can occur [7, 8]. Literature examining adverse psychological outcomes following the 2003 SARS-CoV-1 epidemic found significant emotional distress was present in 18–57% [4, 9–14] of healthcare workers, with one quarter of doctors found to have psychiatric symptoms. For example, ~20% had Impact of Events Scale scores of ≥ 30 , which is an indication of post-traumatic stress disorder [4]. Healthcare workers were psychologically affected regardless of specific exposure to infected patients or high-risk work areas [4, 9]. Examples of factors identified as causal in emotional distress included: concern for family; fear of contagion; job stress; interpersonal isolation; stigmatisation; and conscription to areas of work outside normal duties [9, 10]. Informal interviews also identified that the wearing of personal protection equipment and stringent infection control procedures exacerbated work stress [4, 10]. Two years after the SARS-CoV-1 epidemic, healthcare workers reported significantly higher levels of burnout,

psychological distress and post-traumatic stress compared with workers not dealing with potential or case definition SARS-CoV-1 patients [9]. Notably, the duration of perceived risk correlated with the severity of these outcomes, and affected healthcare workers were also more likely to display functional indicators of distress [9]. These included reduced patient contact, reduced work hours and increased substance use [9].

Another consequence of chronic exposure to stressors is burnout [15], a state of depleted psychological resources [8]. Burnout is commonly described as multidimensional, consisting of emotional exhaustion, depersonalisation and diminished sense of personal accomplishment [16]. Risk factors for clinician burnout have been identified as: stressful professional experience; increased work-load; reduced quality of work; social isolation; and younger age and career stage [17]. The consequences of burnout in clinicians are important both in terms of personal well-being and patient care. Burnout has been associated with predisposition to depression and anxiety, substance abuse, increased risk of medical errors and poor clinical decision-making [8, 15, 18, 19]. Furthermore, 'second victims' are those affected negatively by the impact of critical events [20]. In the context of the COVID-19 pandemic, healthcare workers will deal with traumatic patient experiences and the unexpected loss of family, friends and colleagues. These critical events contribute to the psychological distress clinicians will face in the COVID-19 health crisis.

Preventative strategies

Historically, a 'one size fits all' approach has been the mainstay of psychological support for healthcare workers exposed to disasters [21, 22]. The concept of the need to build resilience has gained momentum in recent times [23]. Resilience can be defined as the ability to resist disruption of normal functioning in the face of a distressing event, by anticipation and preparation [10, 23]. Furthermore, it is suggested that resilience may be an important factor in the difference between clinicians who suffer burnout compared with those that do not [18].

Resilience is an innate trait, considered to be the physical and psychological characteristics possessed by individuals [18, 24]. Consistent patterns of psychological qualities associated with successful adaptation include emotional intelligence, altruism and an active coping style in confronting a stressor [24, 25]. Whereas some factors identified as individual vulnerabilities for risk of burnout, such as genetic predisposition, young age, female sex and

marital status are relatively fixed [15], other attributes can be developed, and the concept of learned resilience has emerged. Individually, emphasis is on pre-empting likely stressors, possible reactions and symptoms, and developing behavioural and cognitive coping strategies [21]. Protective factors, such as enhanced self-care and strengthening traits, can be learned through building a meaningful purpose in life and a belief that it is possible to learn and grow from both positive and negative life experiences [10].

The concept of organisational resilience recognises the role that our working lives, patterns of communication and cultural norms play in worker stress [4]. It refers to building reserves before a crisis and establishing workplace cultures and systems, such as effective leadership and a culture of organisational justice, that buffer work stressors and improve individual resilience [9, 10]. Whereas structural interventions aimed at organisational change are both longer lasting and more effective, it is imperative that strategies targeting the individual are concurrent [8, 16, 26]. Interventions to reduce burnout before it results in impairment are sparse, as are data on the efficacy of interventions designed to reduce burnout and promote resilience [18, 22].

Self-care

Although robust tests of efficacy are scarce, physical activity has shown promising effects on decreasing rates of burnout in clinicians [16, 27–30]. A clinical trial examining the effects of a 12-week incentivised physical exercise program in physician trainees has shown improvement in burnout scores as compared with controls. In addition, the study showed significant improvement in quality of life as measured by a validated single-item linear self-assessment scale [28].

Good sleep hygiene is an important measure in burnout prevention and promoting personal resilience [8, 31]. Disruption to the circadian rhythm causes short and long-term consequences including sleep disturbance and daytime somnolence [32, 33]. Impairment of logical reasoning and reduced vigilance secondary to sleep restriction is significant for healthcare workers given technical expertise and rapid decision-making are necessary for patient safety [34]. Notably, sleep deprivation is implicated in increased medical error rate, interpersonal conflicts and reduced peak performance [8, 32, 35, 36].

Regarding social support, evidence suggests that clinicians who have strong meaningful relationships, both personally and professionally, are happier and at lower risk of burnout; whereas those with greater work-home

interference are more likely to suffer burnout [16, 37]. At the individual level, cultivating meaningful relationships and a solid social network is important; however, this is interdependent on organisational factors that facilitate a work-life balance and professional connectedness [16].

Altruism is discussed in resilience literature as a protective psychological quality [24]. Similarly, finding meaning and value in one's work is shown to be associated with less burnout in clinicians [16, 29, 38]. Developing self-awareness is a way in which clinicians can find meaning in work through reflective practice and small group discussions [15, 16, 24, 39]. A Norwegian cohort study of 227 doctors looking at burnout dimensions pre- and postpreventative counselling showed a significant reduction in emotional exhaustion at 1 and 3 years following the intervention [40–42]. Emotional exhaustion is one of three dimensions in the Maslach burnout inventory, a 22-item measure of three dimensions of burnout which also includes depersonalisation and personal accomplishment [16]. The intervention was reflective counselling undertaken either individually as one session or in small group sessions over 1 week [40]. A randomised clinical trial conducted by West et al. looked at the effect of facilitated physician discussion groups on well-being [41]. The 1-hour weekly sessions were held over 9 months and incorporated mindfulness, reflection, shared experience and small group learning intended to promote collegiality and improve meaning in work. The trial showed significant burnout reduction, predominantly in the domain of depersonalisation [27, 41]. Schwartz rounds are another intervention which may help with finding meaning in one's work [16]. They are an evidence-based forum for healthcare staff to speak about the emotional and social challenges they face. The purpose is to share emotional professional experiences, focus on positive aspects and reinforce a sense of purpose [16]. Sharing stories of success can help clinicians find joy amidst chaos [4, 6]. Group-based activity participation has the added benefit of increasing professional connectedness [16].

Mindfulness practice and stress management approaches are two emotional health interventions with evidence of efficacy and measurable outcomes for reducing burnout and promoting resilience in clinicians [26, 27, 43]. Mindfulness is the awareness that arises from purposeful, non-judgmental attention to the present moment [44]. Standardised mindfulness-based stress reduction interventions that have efficacy in physicians consist of intensive group programs over eight weeks combining meditation, yoga, and group discussion [17, 22, 43, 45]. Utility of such programs may be unfeasible for logistic reasons, including competing clinical needs, and lack of

time and money [44]. However, benefit has been shown through other forms of mindfulness interventions, including a mindful communication program [16, 46] and online mindfulness modules [16, 47].

Organisational justice

Organisational justice refers to workplace cultures that ensure fairness, respect and social justice in the workplace [10, 26]. Aspects include ensuring manageable work-loads [15, 16, 43]; opportunities for staff professional development [15]; flexibility to facilitate family-work balance [26]; ensuring physicians feel valued and heard [16, 27]; and providing autonomy and control, where appropriate [15, 16, 27, 48]. These system aspects are components of a positive work environment, which is protective against physician burnout and builds resilience at the organisation level [10, 15, 16, 26, 27, 43, 48].

Aspects of leadership and positive work culture that are protective against the risk of burnout include good communication and supportive professional relationships [48]. Direct management support contributes to staff feeling positive about work and the capacity to cope with work stress and is, therefore, protective against burnout [15, 16]. Other leadership qualities identified as preventative against burnout include provision of resources to promote resilience, self-care [26] and staff engagement [15, 16].

Leaders must manage expectations clearly and compassionately, clarify work hours and provide sufficient resources including the just distribution of effective personal protective equipment. Leaders should aim for work schedules that promote physical resilience by enabling adequate sleep and providing access to rest areas for hospital-based clinicians working long or multiple shifts [6].

Individual strategies

Evidence from the SARS-CoV-1 outbreak suggests that a pro-active, multifaceted approach should: instil confidence in workers that they will be supported by their organisation; provide appropriate preparation and training for the pandemic [5, 9, 11, 49]; and improve adaptive coping strategies such as problem solving, seeking support and reducing avoidance behaviours [9, 10, 25, 50]. Furthermore, interventions should target evidence based mediators of psychological distress, identified as job stress, interpersonal isolation, perceived mistrust or fear by others, social support barriers, fear of contagion, concern for family health and treating ill colleagues [50].

Conscription to areas of work outside normal duties is a source of stress to healthcare workers during a disease outbreak [6, 7]. Appropriate training in use of PPE and up-

skilling in work duties is therefore essential to provide competent safe patient care and build personal resilience through empowering workers with appropriate preparation and training.

Following the SARS-CoV-1 outbreak, a computer-based resilience training module was developed in Toronto, Canada [25]. Participants were stratified to 1.75-, 3- or 4.5-h courses, which were provided freely and completed independently. The course consisted of knowledge-based modules with content such as: what to expect in a pandemic; what is resilience; normal stress response; working outside your comfort zone; moral dilemmas; work life balance; and getting help. Other modules promoted cognitive interactivity and included relaxation skills and interactive reflective exercises. Additional components of the training included self-assessment to characterise facets such as coping, quizzes and individualised feedback.

The researchers identified four variables deemed likely to mediate stress responses in a pandemic. These were: confidence in support and training; pandemic self-efficacy (ability to respond adaptively); coping style; and interpersonal problems. The variables were measured pre- and post-training. Investigators found significant improvements for confidence in support and training, and pandemic self-efficacy in all groups. For the medium and long course groups, significant improvement was also found for interpersonal problems. Overall, no change was found for the domain of coping using problem-solving, seeking support and escape-avoidance. However, on subgroup analysis looking at participants who had previously underutilised these coping skills, the training was associated with an improvement. Investigators identified that study findings were limited by proximal measurement of resilience predictors compared with participants' actual responses to a pandemic. Overall, the findings show that computer based learning is feasible and as stated by the investigators "*may facilitate improvement in psychological variables that predict resilience to the stress of an outbreak of an emerging infectious disease*" [25]. The advantages of standardisation and flexibility are relevant to potential barriers of training in a health crisis including timing and cost.

An alternate strategy of didactic education sessions for healthcare workers was implemented over the course of five months in Mount Sinai Hospital in Toronto, as part of pandemic planning following the SARS-CoV-1 epidemic [50]. The training sessions focused on provision of information about normal stress response, and introduced and reinforced principles of effective coping, principles of organisational resilience and resources for further support.

The institution described derivation of principles from the Folkman and Greer model of coping, although content was not specified [50]. This model of coping originally formed in the context of serious illness is aimed at effective adaptation through use of appraisal and coping processes [10, 51]. Fundamentals include problem solving, emotion-based coping and meaning-based coping, as well as recognition that distress and coping are individualised, influenced by personal values and experience [10]. The institution found that participants reported feeling better prepared to confidently cope with a pandemic after the session. These findings are limited by retrospective measurement of confidence before training and no data are available during and after the next pandemic (H1N1) to inform the impact of the resilience training [50].

In the US, healthcare workers aiding with the Ebola outbreak utilised the Anticipate, Plan and Deter Responder Risk and Resilience model [21]. The model was developed in recognition of the importance in monitoring psychological risk and utility of a pro-active approach to enact timely support interventions [21]. It requires healthcare workers to create individualised resilience plans in the pre-incident phase training (anticipate and plan phases). This focuses on the psychosocial impact of mass casualty events, including expected stress reactions. As stated by the author, the individuals are encouraged to identify and document: anticipated challenges; coping resources including social support systems; concrete strategies for positive coping they already use; and 'resiliency' factors such as a life mission or sense of purpose in their work [21]. Healthcare workers must then monitor exposure to risk factors during the incident, ideally using the PsySTART-R self-triage system. This is a web-based app available on smart phones that facilitates identification of exposure to evidence-based traumatic stress risk factors over a 24-h period. These risk factors are objective features of the experience such as standards of care and impact on providers. Healthcare workers are trained to recognise when cumulative risk warrants invoking implementation of their resilience plan (deter phase) [21]. Additionally, a Behavioural Health Incident Co-ordination Team would receive a de-identified summary of the risk events in the previous 24 h and cumulative risk in the workforce population. The team would then help in the form of psychological first aid to those who expressed need, and encourage workers to invoke their personal resilience plans developed during pre-incident training. The investigators concluded that this approach is feasible, with the benefit of real-time capacity to initiate early prevention measures, however, compared with 'as usual' strategies, there is not yet evidence to evaluate effectiveness [21].

The American Psychological Association defines psychological first aid as "*an initial disaster response intervention with the goal to promote safety, stabilise survivors of disasters and connect individuals to help and resources*" [52]. Johns Hopkins Hospital in Baltimore (US) has a confidential peer support program called RISE (Resilience in Stressful Events) [53]. Established in 2012, this program provides in-person psychological first aid and emotional support to healthcare workers who experience stressful clinical events with a 24/7 response. The Johns Hopkins Center for Public Health Preparedness subsequently developed a model of psychological first aid for non-mental health trained public health personnel called RAPID-PFA [54]. A 1-day RAPID-PFA training course was delivered to more than 1500 participants. The authors reported statistically significant pre- and post-intervention improvement in: knowledge items supportive of psychological first aid delivery; perceived self-efficacy to apply psychological first aid interventions; and confidence about being a resilient psychological first aid provider.

Organisational strategies

Staff feedback sessions facilitate the opportunity for healthcare workers to contribute to decision-making in the workplace [9, 50]. Sessions have the dual purpose of aiding personal resilience through increased sense of control over one's environment while building systemic resilience through a culture of organisational justice showing commitment to engage and support staff directly [10, 50]. Protective factors for reduced adverse psychological outcomes in healthcare workers during the SARS-CoV-1 experience included feeling supported and listened to by their organisation [4, 9, 11, 49]. Themes raised by staff in response to the SARS-CoV-1 experience have important implications for pandemic planning [50] (see Box 1).

As part of the pandemic planning, a strategy adopted by Mount Sinai Hospital in Toronto was to establish the Psychosocial Pandemic Committee (PPC). The committee was responsible for running education training sessions and enabled open lines of communication between psychosocial providers and frontline healthcare workers. The committee had representatives at senior administrative meetings which enabled information dissemination regarding the principles of psychosocial resilience, and facilitated communication of staff concerns and suggestions gathered during feedback sessions. The PPC contributed to the hospital communications strategy, ensuring reliable, consistent and timely information to staff and through these multifaceted roles, enhanced the visibility of support providers to frontline workers.

Box 1 Hospital healthcare worker concerns for pandemic planning based on SARS-CoV-1 experience [50].

- 1 Work-life balance
- 2 Medication prophylaxis
- 3 Need for reliable, consistent and timely information
- 4 Education and preparation of employees' families and the community
- 5 Ethical concerns and fairness (such as fair distribution of resources and exposure to risk)
- 6 Visibility and presence of leadership
- 7 Valuing the contribution of frontline staff
- 8 Addressing mistrust or fear of healthcare workers
- 9 Information about staff redeployment to unusual duties or work areas
- 10 The need for ongoing resilience training

The conditions faced by healthcare workers during the current COVID-19 pandemic can be likened to battlefield conditions faced by military personnel [55]. The authors describe a rapidly deployable psychological resilience intervention based on the Battle Buddy system of the US army combined with elements of the anticipate-plan-deter model. The intervention had three levels of support: a Battle Buddy system to provide peer support; unit level support through appointing a mental health consultant; and individual support for at-risk individuals. Whereas the latter two elements are more resource-intensive, the Battle Buddy concept is easily implemented and requires few resource commitments.

Conclusion

The psychological distress faced by clinicians during this pandemic will also occur during future healthcare crises. It is essential that strategies to promote resilience in clinicians are developed and implemented to counter this psychological distress (Table 1). Some of the strategies

Table 1 Summary of interventions and strategies for mitigating risk of psychological distress, reducing burnout and building resilience amongst healthcare workers.

Intervention and strategies	Accessibility		
	Self	Self (with organisation infrastructure)	Organisation or group
Self-care			
Exercise	✓		
Sleep hygiene	✓	✓	
Social support	✓		✓
Meaningful work			
Small group discussions			✓
Reflective counselling	✓		✓
Emotional health			
Mindfulness practice	✓	✓	✓
Stress management program			✓
Organisational justice			✓
Effective leadership			✓
Competency Training			✓
Computer based resilience training		✓	
Education sessions (resilience focused)			✓
Anticipate, plan and deter responder risk and resilience model		✓	
Psychological first aid			✓
Staff feedback sessions			✓
Psychosocial pandemic committee			✓
Battle buddies		✓	

outlined above require substantial lead time and potentially challenging negotiations with organisational stakeholders. This might require, for example, an increase in the number of or reallocation of support staff; reallocating how revenue is distributed throughout the organisation; ensuring physicians feel valued and heard; and negotiations with internal and external stakeholders to change reimbursement and compensation models [27]. However, in the current crisis, other strategies can be implemented quickly and easily such as: mindfulness interventions; Battle Buddies; and staff feedback sessions. These can be implemented now to help reduce the psychological impact of the COVID-19 crisis on all healthcare workers.

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