COVID-19 and burnout in healthcare personnel: A review of the literature

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ABSTRACT

Healthcare personnel have been providing care to individuals affected by coronavirus disease 2019 (COVID-19) for well over a year. They have been faced with numerous challenges during this time. Burnout was a problem for healthcare providers even prior to the pandemic, but the increased challenges of the pandemic are likely to raise the burnout rates in this population. This study provides information on burnout and the effects of previous epidemics and the current pandemic on burnout and mental health of healthcare providers. Lastly, information on interventions is presented, including organizational and individual interventions.

Key words: COVID-19, burnout, mental health

INTRODUCTION

On January 9, 2020, the World Health Organization (WHO) announced a mysterious coronavirus-related pneumonia in Wuhan, China. On January 21, the Centers for Disease Control and Prevention (CDC) confirmed the first case of the coronavirus disease 2019 (COVID-19) in the United States. The WHO issued a global health emergency on January 31, and a few days later, on February 3, the United States declared a public health emergency. The WHO officially declared COVID-19 as a pandemic on March 11, 2021.1

It has been well over a year since healthcare personnel started providing care to individuals affected by COVID-19. The job stress for these professionals has been immense. Due to the increased need for services, healthcare professionals had to put in long hours at work. They suffered from dehydration, poor nutrition, fatigue, lack of sleep, and exposure to suffering and death. They were exposed to individuals with COVID-19, thus running the risk to become infected themselves. Besides worrying about getting sick themselves, they were worried about getting their family sick. Making the situation worse, there was a shortage of disinfectants and personal protective equipment (PPE). When PPE was available, they had to wear it for prolonged periods of time, causing excessive heat. There were worries about the effectiveness of PPE due to the use of dirty and worn PPE and the inability to regularly replace PPE. Due to lack of resources, healthcare personnel were not able to follow proper infection control measures. Overall, healthcare personnel have been faced with lack of supplies and a hospital infrastructure that was not prepared for the increased needs caused by the pandemic.2-5

Research has shown increased rates of mental health problems and burnout in healthcare personnel during previous epidemics. Recent research has started to report similar findings regarding the COVID-19 pandemic. Burnout significantly impacts the individual and their professional functioning. This study reviews the relevant research on this topic and discusses burnout prevention strategies.

BURNOUT

Burnout is defined by the WHO in the International Classification of Diseases – 11th Revision (ICD-11) as a “syndrome conceptualized as resulting from chronic
workplace stress that has not been successfully managed. It is characterized by three dimensions: 1) feelings of energy depletion or exhaustion; 2) increased mental distance from one’s job, or feelings of negativity or cynicism related to one’s job; and 3) reduced professional efficacy.”

Burnout is a phenomenon of the modern age, and the term began appearing regularly in the 1970s, although mentions of similar experiences exist from earlier. Initially, the concept was not particularly well defined, but by the 1980s it started to form into a unified concept, driven by the research on this topic during this period. For many people, the concept of burnout is synonymous with exhaustion. In fact, exhaustion is the most widely reported and thoroughly analyzed part of burnout. Cynicism causes people to withdraw from their work in an attempt to get distance between themselves and their work. In interpersonal professions, this involves perceiving service recipients as impersonal objects of one’s job, by ignoring qualities that make them unique individuals. Reduced professional efficacy likely arises as a function of either one or both of the previously mentioned dimensions of burnout. It is exemplified by an employee’s sense of ineffectiveness and tendency to evaluate themselves negatively.

Maslach and colleagues describe burnout as a mismatch between a person and their work setting in terms of all or some of the following six areas: workload, control, reward, community, fairness, and values. They stated that it is this mismatch that leads to burnout, which subsequently leads to other negative outcomes. A workload mismatch is a reference to both quantity of work and type of work. This category is most associated with the exhaustion aspect of burnout. Lack of control can mean insufficient control over the type of work the individual believes will be most effective or lack of resources to do their work. Mismatch in this aspect is most associated with the reduced personal accomplishment aspect of burnout. A mismatch in reward can include social reward (praise), monetary reward, or even intrinsic reward (taking pride in doing something of importance). A mismatch in community is exemplified by a sense of a lack of positive connection with others in the workplace. Isolation in the workplace and workplace conflict tend to result in this lack of sense of community. A mismatch in fairness is a result of a lack of perceived fairness in the workplace, which may stem from inequity of pay, other rewards, or workload. Lastly, a mismatch in values occurs when personal values and the values of the organization do not match, when the values of the organization are in conflict with each other, or when there is a discrepancy between stated values and actual practice.

Research has pointed out specific factors that may lead to burnout, many of which fall under the abovementioned six areas of person–work mismatch. Job characteristics, such as quantitative job demands (workload exceeding human limits), role conflict (conflicting job demands), role ambiguity (lack of adequate information to do the job well), lack of feedback, lack of decision-making control, violation of personal values, perceived unfairness, lack of reward (monetary, institutional, or social), and lack of social support (especially by a supervisor) are associated with burnout. Certain types of jobs, especially those that are people oriented (healthcare, human services, education), have higher rates of burnout. Individual factors are also associated with burnout, but the relationship between these factors and burnout is not as strong as that between burnout and the previously mentioned factors, and sometimes there are conflicting findings on these factors. Some individual factors associated with burnout include younger age, being single (especially for men), higher education levels, having low levels of hardiness (openness to change, a sense of control), passive coping styles, external locus of control (belief that events are outside their control and caused by external factors), and Type-A behavior (competitive, self-critical, and excessive need for control).

Burnout affects both the organization and the employees themselves. From an organizational standpoint, there is a decrease in job performance, reduced patient care level, an increase in medical errors, lower patient safety, an increase in absenteeism, job dissatisfaction, low organizational commitment, intention to leave the job, and job turnover. The individual suffering from burnout may disrupt the workflow and cause strife, leading to burnout in others. Thus,
burnout may be contagious. From an employee standpoint, burnout impacts both physical health and mental health. Physical health outcomes associated with burnout include headaches, exhaustion, cardiovascular problems, type 2 diabetes, gastrointestinal issues, respiratory problems, musculoskeletal pain, severe injuries, and mortality below the age of 45 years. Mental health outcomes associated with burnout include insomnia, depression, anxiety, substance abuse, use of psychotropic medications, and psychiatric hospitalizations.

The effects of pandemics and epidemics on burnout

A recent paper by Busch and colleagues provides a thorough overview on the relationship between COVID-19 and previous epidemics, on the one hand, and burnout and mental health problems, on the other. This systematic review and meta-analysis included a total of 86 studies, reporting data from a total of 75,991 healthcare staff. The majority of these studies (61) were on the COVID-19 pandemic, followed by 17 studies on the 2003 severe acute respiratory syndrome (SARS), four on the 2015–2016 Middle East respiratory syndrome (MERS), two on the 2014–2016 West African Ebola epidemic, and two on the 2009 H1N1 pandemic. Across these studies, the burnout rate for frontline healthcare staff was 31.81 percent. A number of other symptoms and concerns were present in much of the participants, including concerns about transmitting the virus to their families (60.39 percent), stress (56.77 percent), concerns about their own health (45.97 percent), sleeping difficulties (39.88 percent), symptoms of depression (27.72 percent), symptoms of anxiety (25.36 percent), symptoms of post-traumatic stress disorder (PTSD; 24.51 percent), general mental health issues (23.11 percent), and symptoms of somatization (14.68 percent). Other symptoms and concerns were investigated in only a few of the studies included in the meta-analysis. Only two studies examined the following symptoms and concerns: fatigue (70.3 percent and 71.0 percent), worry regarding the future course of the outbreak (45.0 percent and 92.3 percent), fear of social contact (41.7 percent and 46.0 percent), and suicidal ideation (12.0 percent and 13.0 percent). Only one study investigated the following symptoms and concerns: poor subjective well-being (71.42 percent), sadness (49.6 percent), low quality of life (44.44 percent), allostatic load (15.8 percent), obsessive-compulsive symptoms (7.3 percent), and feeling of isolation (4.3 percent).

When comparing frontline healthcare workers to nonfrontline healthcare workers, Busch and colleagues reported that in the studies on SARS, H1N1, Ebola, and MERS, the frontline healthcare workers had significantly greater mental health problems and lower psychological well-being. However, there was less consistency in the COVID-19 studies. Three of these studies found greater levels of burnout, anxiety, levels of traumatization, and symptoms of PTSD among the nonfrontline group than the frontline group, and other studies found no significant difference between the two groups. The authors note that in one of three studies, the nonfrontline group was poorly defined and included the general population as well. This introduced a number of potential confounds, such as differences in education, socioeconomic background, and employment. The authors suggested other factors that may explain the outcome of the other two studies and the studies that found no differences between the groups, such as potential greater availability for psychological support of frontline staff, more up-to-date information on the outbreak being provided to frontline staff, and better policies and infection control measures being implemented for this staff.

Seven of the studies included in this systematic review and meta-analysis conducted follow-ups. The results of these follow-ups were mixed, with five studies showing improvement over time in frontline healthcare workers’ emotional well-being, while two studies reported the worsening of symptoms. Only one of the five studies that reported an improvement explicitly mentioned that psychological support was provided to the staff, while the other studies did not mention if support was provided. Therefore, it is difficult to draw conclusions about the long-term effect of pandemics and epidemics on healthcare providers’ well-being and burnout if no action is taken to improve mental health.
prevent the negative effects. More research is needed in this area.

Studies that have taken a closer look at the factors for burnout and outcome of burnout show results that are consistent with burnout theory. In addition to the abovementioned symptoms and concerns, these studies note that burnout was significantly positively correlated to compassion fatigue, secondary traumatic stress, staff and resource inadequacy, uncertainty of the clinical situation, conflict between work and family, and poor interprofessional relationships. Burnout was negatively correlated to self-efficacy, resilience, family support, compassion satisfaction, finding meaning in one’s work, quality of life, life satisfaction, and psychological well-being as defined by PERMA (Positive emotion, Engagement, Relationship, Meaning, and Achievement). A study of 1,153 Italian healthcare workers showed that burnout is significantly associated with at least one somatic symptom, eg, difficulty sleeping, irritability, muscle tensions, change in eating habits. Higher levels of emotional fatigue and depersonalization aspects of burnout were associated with greater frequency of somatic symptoms.

Although not directly assessing burnout, one study reported on what is causing stress and what is alleviating stress in healthcare workers involved in the COVID-19 response. Given that burnout is caused by chronic workplace stress, the findings of this study are important to note and are indeed similar to the findings on burnout. This study reported the following factors to be causing stress: social and professional obligations to work long hours, concerns of personal and family safety, concerns for the safety of their colleagues, and concerns for patient mortality. Protective factors were found to be the availability of strict infection control guidelines, recognition by hospital management and the government, specialized equipment, decrease in reported COVID-19 cases, and seeking social support. Another study reported that stress and anxiety in frontline healthcare workers were alleviated by having a strong social support system. Furthermore, social support was also related to an increase in self-efficacy and better sleep quality.

Another potential concern is moral injury in healthcare workers. There is some preliminary evidence of this during the COVID-19 pandemic; however, this topic has not been particularly well investigated. Moral injury occurs when an individual perpetrates, witnesses, or fails to prevent acts that go against their moral beliefs and value system. During the pandemic, healthcare providers had to make a number of difficult choices that could lead to such more injury. Examples of this include triaging patients in a way that is inconsistent with personal values due to lack of supplies and being conflicted about wanting to help but not wanting to expose oneself or ones family to the virus. Moral injury has been found to be related to burnout symptoms in healthcare providers.

Encouragingly, healthcare providers working with COVID-19 patients may be open to psychological help. A study of both frontline and nonfrontline healthcare workers reported that although most of the overall sample (56 percent) were not interested in psychological help, those working with COVID-19 patients were significantly more open to consider psychological help. Another study, conducted in the early stages of the pandemic and using a large sample of healthcare providers in Wuhan, reported that 50.4 percent of staff had accessed psychological resources through media, eg, TV, online; 36.3 percent through psychological materials, eg, books, brochures; and 17.5 percent participated in psychotherapy or counseling. These results were similar to those found in a study of healthcare providers in New York. This study reported that 49 percent of participants were not interested in wellness resources, but 33 percent stated interest in self-guided counseling with access to a therapist, 28 percent in individual counseling/therapy, 24 percent in online clinician support group, 15 percent in mental wellness video, and 14 percent in online general wellness group. Furthermore, a significant portion of this sample (86 percent) was already engaged in at least one type of healthy coping behavior, including exercise (59 percent), talk therapy (26 percent), yoga (25 percent), meditation (23 percent), religious/spirituality practices (23 percent), virtual provider
support groups (16 percent), and other coping skills (14 percent).26

INTERVENTIONS

Interventions can be centered either on the organization or on the individual. The individual-centered interventions aim to strengthen the individual’s ability to cope with stressors in the workplace, eg, psychotherapy, meditation, coping skills. These approaches generally alleviate exhaustion, but do not address the other two components of burnout: cynicism and professional efficacy. Research has shown that organizational factors tend to play a larger role in burnout than individual ones.7 Organization-centered interventions focus on reducing or overcoming organizational mismatch and stressors, eg, team-building, change in work schedules. Per Maslach and colleagues, in order for interventions to be effective, they need to combine individual skills and attitudes with any of the six areas of work–life mismatch: overload, control, reward, community, fairness, and values.7 Research has supported this assertion. A meta-analysis of 25 studies published between 1995 and 2007 on burnout intervention reported that a combination of both person-directed and organization-directed interventions had longer-lasting positive effects than person-directed interventions only.27 There is some indication that even the combined approach is not a cure-all. A recent meta-analysis of 10 studies examining nine different combined individual- and organization-directed burnout interventions reported that in both the short term (4 months) and the long term (12 years), the combined interventions led to greater improvement in exhaustion and cynicism than in professional efficacy.28 However, both meta-analyses reported that the majority of the interventions led to an overall reduction in burnout, with the first meta-analysis reporting 80 percent of the covered studies indicating an improvement and the second meta-analysis reporting a 100 percent of the included studies indicating an improvement.27,28 The authors of the first meta-analysis reported that the effects of the interventions diminished over time and recommended that refresher courses be provided.27 The authors of the second meta-analysis examined the factors that led to a decrease in burnout scores. Of the 10 studies included, three studies looked at these factors and reported the following factors being associated with a positive change: enhancing employees’ sense of job control, social support, participation in decision-making, and reducing workload.28

Organizational interventions

Despite research showing that the most effective interventions are combined approaches, most of the research on burnout interventions has been centered on individual interventions. A great deal of the recommendations on organizational interventions are based on the theory of burnout and not on research, and many of the recommendations fall in the six areas of work–life mismatch that are central to burnout. Work overload can be addressed by decreasing clinical demands (increasing staff, including support staff) and changing work patterns (mandated time away from work, implementing scheduling changes and flexible work schedules, increasing frequency of breaks, and avoiding overtime). Creation of a “buddy system,” where one staff member can cover the duties of another while that staff member rests or is quarantined or where professionals can provide peer support to one another may also be beneficial.3,10,29-35

To increase a sense of control, healthcare workers should be included in the decision-making process and autonomy should be promoted. Healthcare systems should plan ahead regarding future infectious disease outbreaks by optimizing supply chains for essential resources and creating infection control teams. Management may implement supportive measures regarding family-related issues, eg, assistance with childcare, transportation, and temporary housing. Other ways to accomplish increasing a sense of control is to have clear communication with staff, including provision of clear and available guidelines, avoiding excessive and unnecessary preventative measures, implementing training sessions on the use of PPE, and implementing telehealth so as to prevent unnecessary exposure to an individual with COVID-19. Ensuring participation of a mental health professional on COVID-19 teams and setting up psychosocial resources, such
as psychosocial committees and call lines, may also be beneficial.\textsuperscript{2,10,29,31,33-37}

Rewards can include recognition from colleagues and management.\textsuperscript{30,33} Time-off awards and monetary awards, such as bonuses, may also be considered. A sense of community among healthcare staff has been decreased because of increased demands and decreased physical meetings due to infection prevention measures. Establishing regular virtual meetings to replace the physical meetings may re-establish the sense of community. Minimizing changes in team membership, development of peer support networks, and creation of supportive spaces where staff can rest, socialize, and engage in recreational activities may also be beneficial.\textsuperscript{2,30,32,33} An intervention that targeted workplace civility has been shown to decrease cynicism and improve job satisfaction, and the effects may be long lasting.\textsuperscript{38,39} A sense of fairness may be increased by ensuring just distribution of scarce needed equipment, such as PPE.\textsuperscript{35} Fair distribution of duties and desirable work schedules may also increase a sense of fairness. To improve a match in values, healthcare professionals should be provided an opportunity for professional development.\textsuperscript{35} Diversifying job activities, eg, clinical, teaching, research, may also help provide a better match between work and employee values.

Although research is generally lacking on the organizational interventions, there is research to support the recommendations based on burnout theory. For example, a study that observed the outcomes of burnout in primary care providers before and after an intervention that was designed to reduce the workload demands on each team member reported a decrease in the exhaustion dimension of burnout.\textsuperscript{40} Another study used interventions to increase a sense of control, order, and work purpose for physicians and reported a decrease in exhaustion and depersonalization.\textsuperscript{41} Reorganization of work in another primary care setting, including changes to roles and accountabilities, also found a reduction in burnout, as well as an improvement in patient experience and cost of care.\textsuperscript{42} The establishment of a team-based support group during which medical providers had the opportunity to discuss work-related feelings and work-related problems and potential solutions showed a decrease in exhaustion and depersonalization.\textsuperscript{43}

An area of potential future research is the utilization of Psychological First Aid (PFA) in the context of burnout of healthcare workers during a pandemic. PFA is an evidence-informed approach to support individuals affected by disaster and other traumatic events. Previous studies have called for training in PFA to provide mental health assistance to people affected by disasters.\textsuperscript{44} PFA has been implemented as part of a support structure to healthcare staff working in the West African Ebola epidemic. This has been accompanied by the creation of individualized resilience plans, monitoring of a stress response, and utilization of the predeveloped resilience plans.\textsuperscript{45} A PFA approach has also been utilized to provide peer support to healthcare staff following patient adverse events.\textsuperscript{46} However, there is still no research evidence to support the effectiveness of this approach in regard to burnout, and more studies are needed on this approach.

\textbf{Individual interventions}

Individual interventions have focused on education to enhance the capacity to cope with workplace stressors in individuals. Basic self-care strategies, such as physical activity, good sleep hygiene, social support, and mindfulness, and stress management practices have been found to reduce burnout and promote resilience in healthcare providers.\textsuperscript{35,47} Physical activity has been reported to improve the exhaustion component of burnout.\textsuperscript{48} Finding meaning in one's work also protects from burnout and can be accomplished by reflective practices or group discussion, such as Schwartz rounds. Group discussions also serve to increase positive social relationships.\textsuperscript{35,47} Mindfulness is the practice of non-judgmentally focusing one's attention on the present moment. Mindfulness can be used to deal with stress and has been shown to improve exhaustion, depersonalization, and personal accomplishment.\textsuperscript{47,49} Other coping strategies, such as reducing avoidance behaviors, increasing interpersonal skills, seeking support, thought catching, and problem-solving, can also help with the stress that leads to burnout.\textsuperscript{35,50}

Trainings and resources that cover one or more of the above strategies are available and can assist
healthcare staff to deal with stress that leads to burnout. In-person approaches are effective and often recommended for use. However, digital approaches are also effective and will reach a larger audience. For example, a study that provided computer-based training to hospital staff reported significant improvements in several areas, including confidence in support and training, influenza pandemic self-efficacy, and interpersonal problems.51 Another study showed that a digital learning package designed for promoting and protecting the psychological well-being of healthcare workers was perceived to be usable, practical, low burden, and of low cost.52 There are a number of mobile apps that are designed to help deal with stress due to COVID-19, which may be useful for healthcare providers. One such example is COVID Coach, published by the US Department of Veteran Affairs, which includes stress management techniques, psychoeducation, mood tracking, and a list of resources. Another app published by the US Department of Veteran Affairs is Mindfulness Coach, which provides mindfulness training. There are a number of Apps published by the National Center for Telehealth & Technology (T2), which is part of the US Department of Defense, including Virtual Hope Box, Provider Resilience, and Tactical Breather. These apps provide coping skills for stress, such as breathing exercises, meditations, muscle relaxation techniques, distractors, coping cards, and measures for burnout.

CONCLUSION

For over a year, healthcare personnel have been dealing with increased workload, increased worries about their health risks and the health of their families, equipment shortages, and lack of adequate self-care due to increased demands. This has taken a toll on these professionals. Changes are needed to ensure that healthcare professionals not only stay in the work force but also continue to provide quality care and maintain their own well-being. Healthcare organizations need to ensure that they are applying appropriate organizational interventions to prevent burnout. Healthcare organizations should also encourage their employees to utilize individual interventions to prevent burnout. It is the combination of the organizational and individual interventions that will produce the best results for the healthcare providers, the organization, and the patients.

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