Brief Communication

Stress and burnout among health-care workers in the coronavirus disease 2019 intensive care unit

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ABSTRACT

Since late December 2019, the city of Wuhan in China has reported a novel pneumonia caused by coronavirus disease 2019 (COVID-19), which has now spread domestically and internationally. The COVID-19 pandemic has caused unthinkable consequences and has challenged and, in numerous cases, beaten the capacity of hospitals and intensive care units (ICUs) worldwide to handle it. Apart from the obvious burden of patient care, extended work timings, and fear of personal safety, health-care workers (HCWs) also suffer from occupational stress as a result of lack of skills, organizational factors, and low social support at work leading to distress, burnout, and psychosomatic problems. This leads to stress, direct deterioration in quality of life as well as the quality of service provided. In this article, the authors navigate on the root cause of stress that is peculiar to the HCWs deployed in the ICU and suggest recommendations to alleviate it. To aid in the research, we searched the Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, PsycINFO, CINAHL, NIOSHTIC-2, and Web of Science up to May 2021.

Key Words: COVID-19, critical care, intensive care unit, psychological burnout, psychological stress

INTRODUCTION

Stress is an integral part of our life and a stress response is triggered when one’s perceived demands exceed the available resources to manage the same. The stressors which can elicit a stress response can be broadly categorized into six broad domains: (i) intrinsic job characteristics; (ii) work relationships; (iii) organizational roles; (iv) career growth issues; (v) organizational factors including climate, structure, and culture; and (vi) the home–work interface. Intensive care unit (ICU) is a highly stressful environment for health-care workers (HCWs) due to the amalgamation of almost all the above types of stressors.¹ The ever-increasing number of confirmed and suspected cases, overwhelming workload, depletion of personal protection equipment, widespread media coverage, lack of specific drugs, and feelings of being inadequately supported may all contribute to the mental burden of these HCWs.

Contrary to the popular belief, stress is not always harmful. To perform in any pressure situation, we need to experience the “eustress” or positive stress which enables concentration, increases performance, and energizes us to accomplish our objectives. The eustress is, however, time limited; and frequent, excessive, or chronic exposure can turn into “distress.” The prolonged maladaptive stress response leading to negative emotional states is known as distress. Burnout syndrome (BOS) results due to an imbalance between personal stress handling resources and personal stressors.
and work/organizational-related issues leading to physical and emotional exhaustion. BOS has three classic symptoms: exhaustion, depersonalization, and reduced personal accomplishment.\[2\] It may also present with high absenteeism and sickness rates, drug and alcohol dependence, or chronic physical complaints (headache, muscle tension, insomnia, and gastrointestinal problems). Hence, there exists a spectrum of stress starting from eustress to distress which, if left unchecked, leads to BOS and finally culminating in a psychiatric disorder.

The incidence of stress was found to be 71% in a large ($n = 21,767$ participants) multicentric study (180 educational and private hospitals), Iranian study with male gender, poor collaboration among HCWs, and low doctor-patient ratios associated positively with higher stress. The protective factors were increasing age, being married, and years of clinical ICU experience.\[1\] Based on multiple studies, 33% of nurses and up to 45% of critical care physicians reported typical symptoms of BOS.\[2\] Burnout has been associated with medical errors and inadequate patient safety.\[3\] During the initial phase of the coronavirus disease 2019 (COVID-19) outbreak, a Chinese study reported significantly high rates of distress (72%), insomnia (34%), anxiety (45%), and depression (50%) among HCWs treating patients with COVID-19.\[4\] Beyond burnout, 39% of physicians report depression and about 400 physicians die by suicide each year, which is twice the rate of the general population. The suicide rate among female doctors is about 130% higher than the general population, while male doctors experience a 40% higher rate. ICU nurses also report high rates of burnout and depression, as well as high rates of posttraumatic stress disorder symptoms.\[5\] In addition to psychological symptoms, stress is implicated in various physical conditions such as higher risk of high blood pressure and heart problems, asthma, obesity, diabetes, headaches, gastrointestinal problems, and Alzheimer’s disease.\[6\]

The impact of stress on an individual depends not only on the nature and severity of the stress but also on the psychological makeup of the individual (coping style, personality type, and social support). Coping has been defined as a cognitive and perpetually changing behavior-cognitive effort toward a perceived problem aiming at minimizing psychological distress. These coping strategies can be either problem-focused rational coping (solution oriented, positive reevaluation, and seeking support) or emotional coping (negative auto-focalization, denial, avoidance, acting out behavior, and distancing).\[7\] In a study on the effects of demographics on coping strategies, it was found that coping strategies varied as per age and cultural background. The nurses of younger age groups (<30 years) and from Asian origin were found to be utilizing more emotion-focused coping, while those from the United States used more problem-focused coping strategies.\[8\] The personality traits of high extraversion, openness, conscientiousness, and agreeableness were found to be associated with positive coping strategies and less perceived stress. While individuals with high neuroticism utilized emotion-focused coping and reported poor stress management and reduced professional efficacy.\[9\] There are other personality traits such as resilience and hardiness which also determine response to stressful situations. Hardiness encompasses a dynamic union of variables (viz., commitment, control, and challenge) which ensures positive adaptation to perceived stressors. Hardy individuals tend to utilize positive/rational coping strategies which are negatively associated with perceived stress. Resilience is a trait that allows an individual to succeed while enduring hardship which can be learned. High resilience is associated with a reduction in symptoms of stress, BOS, anxiety, PTSD, and depression.\[10\]

**Unique challenges faced by health-care personnel**

So what makes HCWs in the ICU more prone to stress and burnout? Many factors have contributed to the present state of stress among HCWs. There has been a significant increase in the number of patients in care, most of them being severely or critically ill, posing an increased demand on a health-care system with limited workforce resources. This often poses increased work demands with longer shifts or no breaks. Increased hours of clinical responsibility are related to greater fatigue, which in turn aggravates the effects of other stressors more severely. Equipment-related challenges such as deficiency of essential life-saving equipment (ventilators, oxygen supply, etc.) can stall optimal patient care, despite their own professional expertise. The protective equipment

**Table 1: Signs of stress/burnout among junior staff**

| Sign                  | Symptoms                                                                 |
|-----------------------|--------------------------------------------------------------------------|
| The disappearing act  | Disappearing between clinic and ward; lateness; frequent sick leave, not answering bleeps; poor time management, backlog of work, persistently late |
| Low work rate         | Slowness in doing procedures, over/underinvestigating, clerking patients, dictating letters, poor decision-making, poor record-keeping, leaving late, and unable to finish all the tasks |
| Ward rage             | Irritability, unpredictability, temper, outburst, impulsivity, shouting matches with other members of the team (nurses, midwives, secretaries, etc.) |
| Rigidity              | Poor tolerance to healthy criticism, inability to compromise, difficulty prioritizing, inappropriate whistleblowing |
| Bypass syndrome       | Junior colleagues and nurses find ways to avoid seeking the doctor’s opinion or help |
| Career problems       | Difficulty with examinations, uncertainty about career choice, disillusionment with medicine |
| Insight failure       | Rejection of constructive criticism, defensiveness, counter challenge |
| Cognitive             | Forgetfulness, impaired concentration, poor problem-solving, learning problems |
| Social                | Isolation, withdrawal, poor interpersonal relations with peers |

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can be uncomfortable to wear over extended hours, with limited mobility and scope for communication. Occasionally, shortages may occur for one or other protective equipment leading to anxiety related to exposure. There can arise emotionally challenging experiences such that infection can lead to mortality in spite of the best efforts put in by health-care personnel. Such experiences may be emotionally draining for the HCW.

The erratic work schedule in ICUs disrupts the biorhythms and leads to various mental and physical illnesses including an increased risk of hypertension, diabetes, obesity, heart attack, stroke, and depression. Health-care professionals had to isolate themselves from their family members due to fear of transmitting COVID-19, thus causing fragmentation of available social support. Furthermore, HCWs have been subjected to denigration from various sources during the pandemic, including domestic help and community support. Working remotely and being shunned by help providers only added to the agony. COVID-19 has had a disproportionate effect on female HCWs. Women comprise 70% of the global health and social care workforce, putting them at risk of infection and the range of physical and mental health problems associated with their role as health professionals and carers in the context of a pandemic. The pandemic exacerbated gender inequities in formal and informal work, and in the distribution of home responsibilities, and increased the risk of unemployment and domestic violence. While trying to fulfill their professional responsibilities, women had to meet their families’ needs, including childcare, homeschooling, care for older people, and home care.\[11\] After controlling for confounders, being a woman and having an intermediate professional title were associated with severe symptoms of depression, anxiety, and distress.\[4\]

At the organizational level, while the educational framework emphasizes only on the management of the illness, there is a lack of training to tackle stress in medical students, residents, and ICU staff. Additionally, there is a lack of integrated mental health resources for HCWs. The internet is replete with information and more misinformation, however, evidence-based evaluations and mental health interventions targeting frontline HCWs are relatively scarce.\[6,12\] There has been an increase in non-COVID-related health problems and deaths (e.g., those caused due to disruptions of routine outpatient services and screening programs for other infectious diseases. This further increased workload in the ICUs), since the world focused all its attention and resources to the research and treatment of the pandemic.\[13\]

**What are the red flag signs of stress among health-care workers?**

There are some signs that may raise concerns that a doctor is getting into difficulties and warrants attention. The signs would suggest the need for an approach by a skilled senior doctor or their training supervisor, to identify any underlying factors and to set clear goals for improvement [Table 1].\[23\]

**Recommendations**

Working in the front line was an independent risk factor for poor mental health outcomes in all dimensions of interest. It is important that we devise strategies for ensuring self-care and well-being of frontline HCWs involved in the pandemic. Even as we navigate through the dark times of the pandemic, there have also been glimmers of hope and solace. We were buoyed by support in whatever minimal form from institutional and government leadership, the spirit of teamwork, the celebration of lives saved, and the acknowledgment of our values by the public. Social media, to some extent, became a venue for HCWs to share their anxiety, insomnia, and fatigue, which reduced the sense of isolation and normalized conversations about mental health. However, those short-lived measures were not good enough to tackle the elephant in the room. Any solution to the problem has to have three main goals: better understanding the challenges to clinician well-being, raising the visibility of clinician stress and burnout, and elevating evidence-based solutions.

A few tips to ensure that mental health is nurtured are enumerated below:

i. Meet your basic needs on a regular basis. Maintain a regular eating, drinking, and sleep schedule, adjusted to your duty shifts. Neglecting the basic needs puts you at higher risk and may affect your ability to care for patients.\[14\] Make sure that your nutrition is not compromised and that you are resting well.

ii. Take designated breaks. Give yourself a rest from patient care. If possible, do something unrelated to medical care such as listening to a song or talking to a friend or simply doing deep breathing exercises. Music, for instance, a known tool for relaxation of different styles, may help you to relax at different times and in different ways. A warm, candlelit bath while listening to soft classical music may work sometimes, whereas loud rock music may help you to release pent-up tension through dancing and/or singing along. Remember that appropriate rest or relaxation leads to proper care of patients after your break is over.

iii. “Problem-focused” coping style. Problem-focused coping is made up of two strands: “problem-solving” and “stress-reducing appraisal.” The former uses deliberate policies of simplification (start with the most obvious steps when faced with a problem), prioritization (deal with the most important things first), and delegation (delegate when possible) to reduce the number of stressful events the individual
is exposed to. The latter aims to reduce the emotional load of the stresses that remain – in this case by: (i) accepting that difficulties are an inherent part of the working environment, (ii) accepting that there are physiological and psychological limits to what can be done – and that these limits do not necessarily imply failure, (iii) accepting that periods of high demand are an inevitable component of our career and finally, (iv) retaining the right to say “no.” These simple steps help the stressed individual to accept the stress they are exposed to, divorce them from a sense of failure, and encourage a more constructive coping response[15].

iv. Remain connected with family and friends. Studies have shown that ICU staff who were not spending time with family and our friends were more likely to be in stress than ICU staff who were spending more time to the family and friends.[16] Keep in touch with your family and close friends who form your support network outside the health-care system. Sharing your feelings and staying connected with them may help in de-stressing you.

v. Communication with your colleagues. Talk to your colleagues and extend as well as receive support from each other. Identify the problems or challenges being faced in the delivery of health care, work on effective solutions to ease the burden of care, and exchange constructive ideas.

vi. Stay updated with the latest scientific information. Gather information from credible sources of information and keep yourself updated on a daily basis. Participate in workplace discussions to stay informed of the latest status and guidelines. Use teleconferencing to connect, communicate, and learn.

vii. Limit media exposure. A continuous stream of news and updates on social media platforms and a variety of news outlets can eat into your time, increase your stress, and may reduce your effectiveness. Try to monitor the unnecessary exposure to media, setting a strict time limit.[17]

viii. Appreciate the honorable status of your profession. There may be times when it seems challenging to provide constant care for those in need. However, it may help to remember the noble calling of the medical profession – taking care of those most in need, which might be reassuring and fulfilling. Give due honor to yourself and your colleagues’ services toward those in need. It is an opportunity to service only a privileged few get to deliver.

ix. Train health-care professionals to combat stress. Stress management lessons should be part of the curriculum of HCWs, especially for those who are trained to work in the ER or ICUs.

x. Organizational interventions. As a general rule, organizational actions to reduce job stress should be given top priority to improve working conditions. Organizational intervention consists of changes in working conditions, organizing support, changing care, increasing communication skills, and changing work schedules. Changing work schedules (from continuous to having weekend breaks and from a 4-week to a 2-week schedule) reduced stress.[17] In addition, it is imperative for an employer to identify his employees who are utilizing stopgap coping because these are individuals who somehow cope with the stressful situation but refuse to seek help until it becomes too late. This can be achieved by providing integrated mental health support resources with obligatory mental health checkups. While it is important to educate doctors and nurses regarding stress management, it is just as important to have a tangible change within the hospital environment too to address the same.

xi. Gauge your mental or emotional health. Monitor yourself over time for any symptoms of excessive anxiety or depression or prolonged stress such as changes in mood, insomnia, intrusive memories, hopelessness, etc. Once burnout has set in, and the red flag signs as mentioned above are visible, there is limited evidence to support the usefulness of modalities such as cognitive behavioral therapy, relaxation, music, or creating a positive work environment. Treatment then involves medical intervention. Prevention appears to be, once again, far more beneficial than treatment when it comes to burnout. However, if faced with stress or burnout, do not hesitate to seek professional help.

CONCLUSION

HCWs have continued to provide care for patients despite exhaustion, personal risk of infection, fear of transmission to family members, illness or death of friends and colleagues, and the loss of many patients. Sadly, HCWs have also faced many additional – often avoidable – sources of stress and anxiety, like: long shifts combined with unprecedented restrictions, and personal isolation, have affected individuals’ ability to cope. To effectively support HCWs, we must recognize their unique challenges and requirements. Multiple stakeholders should thus join hands to help mitigate the development of stress and burnout in critical care health-care professionals and diminish the harmful consequences of stress, both for critical care health-care professionals and for patients. By acknowledging the commonality of psychological distress related to caring for patients with COVID-19, we can destigmatize work-related mental health issues and appropriately attend to the mental health needs of all HCWs affected by the pandemic. Finally, we can only hope that the COVID-19 pandemic will prompt a redefinition of essential support workers, with recognition of the contribution of all HCWs and appropriate education, protection, and compensation.
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There are no conflicts of interest.

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