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# Staying (Mentally) Healthy: The Impact of COVID-19 on Personal and Professional Lives

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## ABSTRACT

COVID-19 pandemic has played havoc at various levels throughout the world but has especially impacted the Health care professionals and put them at risk of mental ill health. The morbidity, mortality, and financial impact of COVID-19 have been huge and can easily dwarf the issues about mental wellbeing of individuals during these tough times. This can potentially have a long-lasting impact resulting in delayed recovery from this pandemic on all fronts of life. In our review, we aim to explore the issue of mental health with particular emphasis on health care workers and try and understand the size of problems, the symptoms and specific causes pertaining to COVID-19 related mental ill health. Finally, we have summarized some of the measures that can be taken by institutions and individuals to minimize the impact of COVID-19 pandemic on our mental wellbeing.

*Keywords:* Mental health; Health care workers; COVID-19, Wellbeing, Burnout, Anxiety.

## Introduction

In late December 2019, reports of a pneumonia caused by a novel coronavirus (COVID-19) began to emerge from the Chinese city of Wuhan. On January 30, 2020, the World Health Organization (WHO) held an emergency meeting and declared the outbreak as a global public health emergency of international concern. By this time, a total of 7818 cases were confirmed worldwide with the majority in China and 82 cases from 18 countries outside of China. On March 11, 2020, with alarming levels of spread and severity worldwide, the WHO characterized COVID-19 as a pandemic; there were 118,000 reported cases in 114 countries with over 4000 deaths at this time.<sup>1</sup>

Previous outbreaks including the 2002 severe acute respiratory syndrome coronavirus (SARS-CoV), 2012 Middle East respiratory syndrome coronavirus (MERS-CoV), and 2014 Ebola had resulted in adverse psychological distress and other mental health symptoms among health care workers (HCWs) during and after resolution of the outbreak<sup>2-4</sup> stems from increased workload created by a medical emergency but also fears of contagion to themselves and family along with frequently and rapidly changing protocols with little consistency from local, national, and international leadership.

In many countries, the COVID-19 pandemic broke out in a health care system already experiencing significant levels of burnout and baseline psychological distress. There have been reports of up to 60% of primary care providers and a third of gastroenterologists experiencing symptoms of burnout even before the COVID-19 pandemic.<sup>5</sup> In addition to the stressors experienced by health care providers, trainees are particularly vulnerable, requiring special attention during this current pandemic crisis. De Cross et al laid out some factors responsible for burnout in trainees,<sup>6</sup> but now the situation is worse especially for trainees in procedural specialties (gastroenterology), who are at risk of interruption in training and deployment to cover medical floors with COVID positive patients. The aim of this paper is to address some of the factors related to COVID 19 pandemic that could contribute to psychological ill health of health care workers, recognize symptoms of the mental ill health and identify resources to address some of these issues.

## Size of the problem

A PubMed literature search was conducted using the keywords “COVID” + “mental health” + “health care

workers” on June 22, 2020. In this first PubMed search, a total of 75 articles were retrieved and screened. All but one article was available free online; all articles were from academic centers. Fifteen (22.1%) articles originated in the United States; 14 (20.6%) in China; 9 (13.2%) in the UK and 6 (8.8%) were a multinational effort.

Mental ill health related to COVID-19 pandemic is not uncommon. The size of the problem seems to vary between studies depending on the population under study and the country of the origin of the study. Stress, fear, anxiety, and depression were commonly reported symptoms in most studies. A Chinese study looked at the magnitude of mental ill health in HCWs treating patients with COVID-19. They surveyed 1257 HCWs in 34 hospitals in China. The prevalence and symptoms of mental ill health in HCWs was depression in 50.4%; anxiety in 44.6%; insomnia in 34% and distress in 71.5%. The rate of mental ill health related symptoms was higher among nurses, women, frontline HCWs, and those working in Wuhan <sup>7</sup>. Similar findings were reported in another Chinese study which surveyed 5062 HCWs. <sup>8,9</sup>

Lu et al compared the prevalence of mental ill health between patient facing HCWs (2042) and administrative staff in the hospital (257) and found that frontline HCWs had a higher prevalence (1.4-fold) as compared to administrative staff. <sup>10</sup>

Pappa et al conducted a systemic review of 13 studies and included a total of 33,062 participants in the analysis. They reported prevalence rates of anxiety, depression, and insomnia at 23•2%, 22•8%, and 38.9, respectively. <sup>11</sup>

In the western studies, Garcia-Fernandez et al suggested that COVID-19 had greater impact on the mental health of HCW as compared to non-HCW. Nurses and physician trainees were identified as the most vulnerable groups. <sup>12</sup>

A recent meta-analysis reviewed 62 studies from 17 countries related to mental ill health and COVID-19 and has reported an overall prevalence of anxiety at 33% (28%-38%). They reported a variable level of anxiety amongst patients (56%), HCWs (26%) and the general public (32%). Prevalence among HCW also varied between countries ranging from 7% (5%-9%) in Singapore to 57% (52%-63%) in Italy. The prevalence of anxiety in general public also varied by the country of origin between 8% (7%-10%) and 55% (45%-64%). The overall prevalence of depression was 28% (23%-32%). The prevalence of depression was higher among patients (55%) compared to HCWs (25%) and the general public (27%). Similar to anxiety, the prevalence of depression also depended on the country of origin of the study. Among the HCW, the prevalence of depression ranged between 9% in Singapore to 51% in China. Other psychological disturbances have also been reported at variable levels of prevalence; distress (35%), stress (40%), and insomnia (32%). Post-traumatic stress disorders were reported to be very high in patients (93%) as compared to HCW (3%) and general public (16%). <sup>13</sup>

It seems that the COVID-19 pandemic has had a huge impact on the mental health of the population. The incidence of ill health varies from study to study and country to country. This variation could be related to specific country and health care system related issues but could also be related to selection bias as most studies are based on voluntary surveys. Despite all these variations, it is clear that the incidence of mental ill health remains high and is highest in COVID-19 patients followed by HCWs and then the general population at large.

## Reasons for psychological distress secondary to COVID-19 crisis

The etiology behind the mental ill health related to COVID-19 pandemic in HCWs is multifactorial. Some of the commonly reported causes include fear of catching infection, or transmitting infection to the loved ones, shortage of resources including personal protective equipment (PPE), responsibility of taking difficult medical decision like allocation of ventilators, physical exhaustion and overwork. The other compounding factors include social isolation and loss of social support (Table 1).

The uncertainty about the safety at workplace and lack of effective treatment for COVID-19 are considered as the greatest challenges contributing to the significant amount of fear and anxiety in the minds of HCWs. <sup>14-16</sup>

History of organic disease, living in rural areas, being at risk of exposure to COVID-19 patients in the hospital

**Table 1.** Risk factors for mental ill health.

HCWS	Trainees
Frontline HCWs (Contact with COVID-19 patients)	Uncertainty of their job
Nurses	Uncertainty about education/training
Women	Redeployment
Pregnancy	Lack of experience
Social isolation	Long working hours
Loneliness	Shortage of the staff
Financial insecurity	Lack of social collaboration
Co-morbid conditions and older age)	Worry about their wellbeing
Lack of Knowledge or experience	Worry about their families
Lack of resources	
Lack of preventive measures (PPE)	
Uncertainty of the situation	
Long working hours	
Fear of acquiring infection	
Fear of transmitting infection to beloved ones	
Lack of sleep	
COVID-19 misinformation	
Working in hardest hit area	
Single	

and being a female have been identified as independent risk factors for developing Mental ill health related to COVID-19.<sup>16,17</sup> Liu et al reported that living alone, being a nurse, being a frontline HCW as well as being middle-aged are significant risk factors for developing anxiety and distress related to COVID-19 in Chinese settings.<sup>18</sup> Another study identified pregnant women as one of the most vulnerable groups with general health related concerns cumulating to 94.6%.<sup>19</sup>

Interestingly, it was reported that nurses who received COVID-19 epidemic training were able to cope much better with the situation than those who did not. This emphasizes the need for such training of HCWs.<sup>20</sup>

Access to resources and PPE remained the most important concerns among HCWs.<sup>21</sup> Zhang et al found that access to PPE improved the anxiety, distress, and job satisfaction among HCWs way beyond physical protection.<sup>22</sup>

Mohindra et al conducted a study in India and reported that fear of being a potential source of infection, being isolated or quarantined, worry about transmitting the infection to families and colleagues, fear of lack of resources and improper use of PPE, and issues related to medical insurances were some of the factors that contributed to the mental ill health.<sup>23</sup>

Sociodemographic variables like gender, profession, age, place of work, department of work, and psychological variables like poor social support and lack of self-sufficiency have also been identified as significant causes for mental ill-health in HCWs.<sup>24,25</sup>

The nature of HCWs jobs gets them into closer contact with the patients of COVID-19 and exposes them to the risk of infection. This risk is substantially increased to HCWs working in Respiratory and Gastroenterology departments as HCWs in these departments also perform Aerosol generating procedures like Bronchoscopy, Gastroscopy, and Colonoscopy. The risks related to each procedure depends on the screening strategy in place (no screening vs clinical screening vs PCR testing) and this strategy changes from unit to unit and from 1 week to the next making it very confusing and stressful for everyone concerned. The other uncertainties surround the need for downtime between procedures, need, and space for social distancing between patients and staff in the units, impact of different types of masks on effective communications, the differences between the infective potential of different procedures (Gastroscopy vs Colonoscopy) etc. There are a lot of issues relevant to gastroenterology departments where the lack of literature and conflicting local and national guidance have caused confusion and uncertainties leading to adverse impact on Mental health of HCWs in gastroenterology departments.

This risk and fear can be made worse by the lack of PPE, inadequate training in the use of PPE, and lack of effective treatment or vaccine. The outcome of patients hospitalized with COVID-19 was very poor in the early part of the pandemic and although it is improving now with some better treatments (corticosteroids) and

understanding of the disease and appropriate timings of various interventions but still remains poor. Given the scale and the speed of spread of the pandemic, the exposure of HCWs to COVID-19 related morbidity, mortality, and ethical and moral dilemmas has been at an epic scale over a very short span of time. We believe that HCWs around the world were not mentally prepared to cope with this scale of misery and that has been one of the main reasons for higher incidence of mental ill health in HCWs as compared to the general public.

## Trainees

The reasons for mental ill-health in trainees include all the factors mentioned above but the trainees face some special issues which are worth mentioning. These include suspension of clinical rotations, cancellation of study/annual leaves, cancellation of teaching/training programs, and relocation of trainees to acute and long medical duties rather than the planned specialist training posts. Furthermore, long working hours, shortage of the staff, loss of social collaboration between colleagues and families, and fear of their health and well-being are also the issues that have hit trainees harder than the others.<sup>26</sup>

Keswani et al has described the burnout among gastroenterology trainees as a combination of multiple factors like emotional exhaustion, depersonalization, and low sense of personal achievement.<sup>27</sup> Ong et al listed a range of issues that could contribute to mental ill health in trainees. These included concerns about their learning curves due to reduced number of specialist procedures and job uncertainty.<sup>28</sup>

A survey-based study from UK looked at the impact of COVID-19 on specialist training as well as availability of all types of training opportunities. One hundred thirty-two trainees were surveyed and 50% of them reported having performed unsupervised procedures (which are not permitted for trainees in UK) and 75.8% reported being excluded from specialist procedures. These unsupervised activities, lack of access to specialist procedures like endoscopy, anticipated heavy workload, loss of leadership, staff absences due to illness, moral and clinical challenges beyond their skills and abilities were identified by the trainees as significant contributors to the dissatisfaction, distress, and concerns about their mental health.<sup>29</sup>

Another, international survey conducted in 63 countries included 770 trainees describing similar outcomes to the previous study. Additionally, they found that anxiety was independently associated with female gender (odds ratio [OR], 2.15;  $P < 0.001$ ), availability of PPE (OR, 1.75;  $P = 0.005$ ), lack of institutional support for emotional health (OR, 1.67;  $P = 0.008$ ), and concerns regarding prolongation of training (OR, 1.60;  $P = 0.013$ ).<sup>30</sup>

Surgical and urology residents share the same concerns as the GI trainees regarding their training and anxiety level.<sup>31,32</sup> Additionally, ophthalmologists and ophthalmology trainees in India completed an online

survey and the results were almost similar to the previous studies apart from the multivariate analysis showing that depression among ophthalmologist was significantly higher at younger age.<sup>33</sup>

We believe that similar issues like any other HCWs affect trainees but their problem is compounded by the fact that almost all training activities were stopped during this pandemic and the trainees were roistered to provide acute medical duties on frontline. They are therefore frustrated by the fact that their training and learning curve has been delayed and they have been forced to work in areas of not their choice. This is compounded by the situations when our trainees find themselves ill-prepared in terms of knowledge and skills and have to make difficult medical and ethical decisions beyond their abilities and experience due to lack of senior staff, support, or leadership.

### Recognizing the symptoms of psychological stress/mental ill health

The commonly reported symptoms among HCWs (927) as compared to non-HCWs (1255) included insomnia (38.4% vs 30.5%), anxiety (13 %vs 8.5%), depression (12.2%vs9.5%), obsessive-compulsive symptoms (5.3% vs 2.2%) and somatization (1.6% vs 0.4%).<sup>17</sup>

Commonly reported symptoms have been listed in [Table 2](#).

Other commonly reported symptoms included headache, dizziness, difficulty in falling asleep, restless sleep, early morning awakening, lack of energy, generalized anxiety, irritability, sadness, demoralization, and impairment of social and occupational functioning.<sup>17,34</sup>

Higher rates of post-traumatic stress disorders have been reported during the COVID-19 pandemic. A recent European meta-analysis reported post-traumatic stress disorders at 20.7%<sup>35</sup> as compared to 9.6% in resuscitation providers at baseline before and after the onset of pandemic, respectively.<sup>36</sup>

Sadly, there have been reports of suicides in HCWs due to increasing psychological pressure and mental ill health.<sup>37</sup> Engaging in bad behaviors like self-harm, drug abuse, domestic, and child abuse are also increasing. These are a result of social disconnection, feeling of worthlessness, entrapment due to isolation, bereavement, relationship breakdowns, financial problems, unemployment, and homelessness.<sup>38,39</sup>

**Table 2.** Symptoms of mental ill health.

Commonest	Anxiety, depression, fear, burnout
Less common	Distress, stress, post-traumatic stress disorder, insomnia, somatization (headache dizziness, sadness, difficulty in falling asleep, early morning awakening, lack of energy, generalized anxiety, irritability, overwhelming, demoralization), and obsessive compulsive symptoms
Rare	Suicide, bad behaviors (gambling, addiction self-harm, domestic and child abuse) Social isolation and loneliness.

Exhaustion, cynicism, and feeling of inadequacy are contributing to Burnout seen in HCWs.<sup>40</sup> The burnout is associated with a loss of emotional, cognitive, and physical energy. It also leads to reduction in the ability to use effective coping strategies, negative attitudes, and disengagement from work. The consequences of burnout are substantial with long-ranging implications for workplace morale, patient safety, quality of care, and health care costs.<sup>41</sup>

The symptoms of mental ill health related to COVID-19 pandemic are no different from the well-recognized markers on mental ill health. The range of signs and symptoms can vary from simple sadness to suicide and will require expert help and awareness to recognize these signs and symptoms at an early stage before the overall mental health of an individual begins to deteriorate.

### Measures that can be taken by institutions to prevent/treat mental ill health of employees and staff

A whole range of measures can be implemented to support and treat people affected by COVID-19 related mental ill health but at the same time we should think of measures to be taken to prevent mental ill health. These measures will depend on the type of people/population under question. Here we will focus mainly on HCWs. The measures are listed in [Table 3](#).

Xiang et al has suggested commissioning multidisciplinary mental health teams, improving communication, timely updates about the COVID-19 outbreaks and provision of psychological counseling as significant measures that can help improve/support mental wellbeing of staff.<sup>42</sup> These measures would be easy to implement for most health care institutions. Chen et al extended this approach by applying a direct interaction with the workers as well as redesigning the rest areas, provision of food, special educational sessions, and updated information on protective measures.<sup>43</sup>

**Table 3.** Measures that can be taken by employers.

Measures that can be taken by employers
Creating multidisciplinary mental health teams
Regular assessment by mental health teams of the HCWs working in ICUs and respiratory units
Easy access to mental health teams
Training in relaxation techniques
Special educational sessions and updated information on protective measures
Regular screening for stress, depression, and anxiety
Provision of some relaxation place and availability of psychological counseling
Increasing the staffing level during the crisis
Providing more senior support
Finding new ways of supporting medical training
Complementary food and beverages when on duty

Regular screening for stress, depression, and anxiety among HCWs by a multidisciplinary team can be a very important preventive measure.<sup>24</sup> Liu et al highlighted the importance of regular assessment by mental health teams of the HCWs working in ICUs and respiratory units.<sup>44</sup>

Other important preventive measures include monitoring of psychological status, training in relaxation techniques, training in dealing with difficult patients and difficult scenarios, and provision of some relaxation place and availability of psychological counseling.<sup>45</sup> Provision of free/subsidized food and daily supplies by institutions can help boost the morale of a work force during these difficult times.<sup>46</sup> Increasing the staffing level during the crisis can allow for extra off days for HCWs and this can help them relax and recharge and should be considered by large health care institutions along with psychological skills training for HCWs to be able to deal with high pressure situations<sup>43</sup> as well as running educational training session on resilience.<sup>47</sup>

We believe that it is a moral responsibility of employers and institutions to look after the mental wellbeing of their employees. Mental ill health in the workforce of an institution can have a devastating impact on the performance of an institution. It is therefore in the interest of an employer/institution to implement measures to improve the mental well-being of staff. Some of the measures like regular appreciation of workforce would not cost the institutions but other measures like employing extra staff, providing free food and psychological counseling would introduce financial burden on the institutions but that can be partially compensated by reduction in staff sickness and staff errors related costs and improved productivity.

### Trainees issues

As the pandemic has stretched for a long time and is unlikely to get over in the foreseeable future so the issues related to trainees require a serious consideration. We need to think creatively and provide teaching and training opportunities during this period.

A recent study looked at special measures that can be taken to support the trainees. These included changes in assessment criteria (competency based), additional teaching sessions to make up for the lost training opportunities, weekly sessions to discuss issues and concern as well as availability of 24 hours psychological support. Other measures include the use of social media to improve communication and introduction of flexibility/cancellation of formal presentations to allow the trainees to spend time with their families. Furthermore, seniors stepping in to help with the clinical workload could help improve the mental wellbeing of trainees.<sup>28</sup> Good leadership, remote learning, and a clear management pathway for COVID-19 patients can positively impact the mental wellbeing of trainees.<sup>48</sup>

We believe that national Societies should take a lead and initiate creative programs and measures to support trainees. These could include webinars and simulation

models to improve the cognitive skills. Changes in training evaluation process from a numbers-based certification to a competency-based certification so as to minimize the COVID-19-related delays in training and accreditation process. Societies should also start thinking of post-training mentorship programs to support the current generation of trainees.<sup>49,50</sup>

Providing some creative solutions for training and teaching during these difficult times will not only help in training and learning curves of trainees but will also have a positive impact well beyond that and potentially keep them engaged in the acute medical duties and extra burden of care being imposed on trainees. Above all, this will be a constructive way to appreciate them for all the hard work that they have put in and will certainly have a positive impact on their mental wellbeing.

### Measures that can be taken by individuals to prevent or cure mental ill health

A lot of mental distress and anguish is related to the lack of knowledge about SARS-coV-2 virus and the best means of protecting oneself from catching the contagion. The measures are summarized in Table 4. It therefore makes sense for individuals to adhere to strict protective measures, follow isolation guidelines, and exhibiting a positive mindset to minimize the risk of mental ill health during this period.<sup>16</sup> Furthermore, all HCWs should stay updated about SARS-CoV2 virus prevention and treatment strategies. This can reduce the COVID-19 related mental health illness among HCWs.<sup>20</sup> We also believe that HCWs performing aerosol generating procedures like gastroscopy should not only have access to proper PPE but should also receive proper training in the technique of putting on (donning) and taking off (doffing) PPE. This will certainly protect them but will also make them feel good and protected and that can significantly improve the mental health of an individual.

Self-care in the form of good hygiene and adequate sleep is very important for mental wellbeing. Sleep deprivation is associated with errors, conflicts, and reduction in performance. It is therefore essential that HCWs get enough sleep. Physical activity and exercise have also been shown to improve the quality of life and reduce the risk of burnout.<sup>51</sup>

Improved social and professional support as well as

**Table 4.** Measures that can be taken by individuals.

Measures that can be taken by individuals
Strictly follow National/Local Guidelines & Protocols
Stay updated about SARS-CoV2 virus prevention and treatment strategies
Receive proper training in the technique of putting on (donning) and taking off (doffing) PPE
Self-care in the form of good hygiene and adequate sleep
Awareness of symptoms of mental ill health
Seek early help from colleagues, seniors and managers

appreciation of an individual's work helps improve mental wellbeing and should be encouraged amongst colleagues. Having timely breaks, investing in relaxation techniques and regular physical exercises, mindfulness, and stress management are a few interventions that individuals should be encouraged to consider.

We believe that lack of knowledge, skills and awareness can result in individuals finding themselves in difficult situations making decisions outside their comfort zone resulting in mental anguish and ill-health. This can be avoided if individuals invest in improving their knowledge base, accessing and following appropriate guidelines, and investing in general measures of mental wellbeing.

## Discussion/Conclusion

Population in general but specifically, HCWs have experienced significant psychological distress during the COVID-19 pandemic. During the Pandemic, work in most spheres of life came to standstill but the burden of work in health care industry went up at an overwhelming pace and volume. This combined with the lack of knowledge and understanding related to the SARS-COV-2 virus, it is infective potential and lack of availability and effectiveness of PPE has significantly contributed to the mental anguish and distress in HCWs. We believe that there are lots of measures that organizations, individuals, and national societies can take to minimize the impact of COVID-19 on the mental health of HCWs. Most of these measures are simple and easily implementable but requires acceptance of the problem first and then a planned approach to it. Most countries have poured in huge amount of resources to find an effective treatment and vaccine against the SARS-cOV-2 virus. This will help us win the battle against COVID-19 but if we do not look after the mental well-being of the population and in particular of the HCWs then the aftermath of the war against COVID-19 will continue for years to come. Let us act now to improve and preserve the mental well-being so that we can win the battle and war against COVID-19.

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**Conflicts of interest**

The authors disclose no conflicts.