Opinion

Mental Health Response to Disasters in Healthcare Including the COVID-19 Pandemic

Traci N. Adams 1,*, Haley Belt 1, Roma M. Mehta 1, Hetal J. Patel 1, Rosechelle M. Ruggiero 1 and Carol S. North 2

1 Division of Pulmonary and Critical Care Medicine, University of Texas Southwestern Medical Center, Dallas, TX 75390, USA; roma.mehta@utsouthwestern.edu (R.M.M.)
2 Department of Psychiatry, University of Texas Southwestern Medical Center, Dallas, TX 75390, USA
* Correspondence: traci.adams@utsouthwestern.edu

Abstract: Healthcare workers were substantially impacted by the COVID-19 pandemic. Front-line workers continue to suffer higher rates of distress and burnout than they had before the pandemic. In order to heal the front-line workforce and plan for the next disaster in healthcare, it is necessary to carefully reflect on the COVID-19 pandemic and integrate that experience with the existing literature on disaster mental health. In this narrative review, the disaster MH framework for community disasters is adapted to the healthcare setting. The first principle of disaster mental health is to distinguish between normative distress and psychopathology. The second step in the framework includes stabilization, triage, and referral to psychiatry. The third step in disaster mental health framework is intervention for psychological distress and psychiatric illness. Interventions for emotional distress may include psychological first aid (PFA), psychological debriefing, crisis counseling, and psychoeducation, whereas interventions for psychopathology include pharmacotherapy and/or psychotherapy. Unfortunately, many front-line HCWs were indeed damaged by the pandemic and continue to report high levels of burnout and distress, in part because the MH response to the pandemic was lacking or otherwise inadequate. Screening, triage and referral to MH resources, and interventions are fundamental aspects of an MH response to disaster and may be coordinated with formal operational procedures within incident command structures. Setting up these structures in advance, preferentially, and establishing networks of psychiatrists and crisis MH responders who will implement them are essential. By reflecting on the pandemic and learning from prior disasters, we can care for those who care for our sickest patients.

Keywords: COVID-19; mental health; intensive care

1. Introduction

The emotional, physical, and economic toll of the COVID-19 pandemic were substantial. When reports of a virus refractory to standard treatments began emerging out of Wuhan, China, in December 2019, few people knew that the world was on the brink of transformation. As the virus spread like wildfire, public health authorities rushed to publish models to predict the spread of virus and expected mortality with and without stay-at-home measures, while hospital administrators hurriedly planned for an expected influx of critically ill patients. Yet in the rush to plan for physical health around the globe, mental health (MH) was left behind. As the global burden of anxiety and depression dramatically increased during the pandemic [1], few hospital systems were prepared for the onslaught of emotional distress and psychopathology. Front-line healthcare workers (HCWs) were particularly afflicted and continue to suffer higher rates of distress and burnout than they had before the pandemic [2]; furthermore, the stigmatization of psychiatric illness continues to deter physicians from seeking evaluation and treatment [3].

To heal the healthcare workforce and plan appropriately for an MH response to the next disaster in healthcare, it is necessary to reflect carefully on the COVID-19 pandemic...
and integrate that experience with the existing disaster MH literature. Because insufficient data on the disaster MH framework in a healthcare setting exist, this article provides a narrative review rather than a systematic meta-analysis and proposes a framework for an MH response to disasters in healthcare based on the disaster MH framework proposed in *JAMA* by North et al. in 2013 [4]. This framework is updated in the current manuscript to include more recent data and altered to specifically apply it to the pandemic setting.

2. **Stress in Intensive Care**

Stress is defined as the personal response to a stressor, which broadly encompasses mental or physical sources of threat or danger [4]. Healthcare, particularly in the intensive care unit (ICU), is inherently stressful even under normal circumstances. In an online survey of 253 pediatric critical care physicians in the United States conducted prior to the COVID-19 pandemic, 31% of individuals reported psychological distress and 49% reported burnout, with 21% experiencing severe burnout [5]. Of those with burnout, 90% considered leaving the practice [5]. Burnout was twice as common among women compared to men, and exercise was protective [5].

Baseline stress levels among ICU providers are magnified in times of crisis, as during a critical incident such as a code red or during a disaster such as a pandemic or mass casualty event. The COVID-19 literature notes that work-related stressors among HCWs during the pandemic included inadequate resources, higher work demands, ethical dilemmas, confusion from inconsistent messaging, uncertainty, and stigma [3]. Work-related stressors were complicated by substantial personal stressors challenging general populations during the pandemic, including social isolation, lack of social support, school closures, and economic losses arising from public health measures [3].

The COVID-19 literature has described extensive population-wide psychosocial effects, including fear of exposure or infection, anxiety, distress, noncompliance with public health directives, increased alcohol and drug use, overeating, increased suicide risk, and increased rates of domestic violence [3]. The subpopulations at greatest risk for substantial psychosocial effects of the pandemic included the immunocompromised individuals, mentally ill individuals, working parents with children at home, multi-generational households, essential workers, and front-line HCWs [3]. These subpopulations will require particular attention during planning efforts for the MH response to future pandemics.

3. **Disasters Do Not Uniformly Cause Trauma**

It is important to note, however, that while all disasters are stressors, disasters do not uniformly cause trauma [6]. Trauma is defined as a threat to life or limb, and this is an objective definition aside from a person’s reaction to it [6,7]. According to *the Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) [7], to be considered a trauma, a qualifying exposure must be direct (threatened or actual injury or death to self), eyewitnessed (in-person witness of trauma to others), or via a close associate (learning of trauma exposure of a close associate or loved one, such as a nuclear family member or a best friend) [7]. Naturally occurring medical illness is specifically excluded from the trauma definition in the DSM-5, even if severe or rapidly fatal, with the notable exceptions of catastrophic hemorrhage in one’s child or anaphylactic shock [7]. To qualify for a diagnosis of post-traumatic stress disorder (PTSD), an individual must have exposure to a traumatic stressor and a symptom response that includes intrusive re-experience, avoidance and numbing, and hyperarousal symptoms [7,8]. While ICU clinicians are under significant stress, caring for critically ill patients in times of normal ICU operations or during the COVID-19 pandemic does not meet the definition of trauma exposure [6]. Stress-related states and conditions are an expected accompaniment of ICU work, particularly pandemic front-line work, but ICU clinicians do not qualify for a diagnosis of PTSD solely based on their work with critically ill patients [6]. The significance of this distinction is that screening measures to detect psychopathology among HCWs during a pandemic should be directed toward the detection of depressive and anxiety disorders but not PTSD.
4. Overview of Disaster Psychiatry Literature

To understand the expected stress-related conditions that arise in ICU workers, an exploration of the disaster psychiatry literature is necessary. In a systematic study of disaster conducted by North et al., which included natural disasters, mass shootings, and terrorist incidents, psychiatric illness was found in less than 50% of individuals exposed to disaster [9]. PTSD was the most common diagnosable psychopathology, occurring in 20–35% of survivors, with the prevalence depending on the severity of the exposure and individual pre-disaster characteristics [9]. The most predictive symptoms of PTSD are avoidance and numbing symptoms, as these are relatively uncommon symptoms following disaster and are strongly predictive of PTSD and other psychopathologies commonly occurring after disasters, typically depressive and anxiety disorders [9]. Risk factors for this psychopathology include female gender and pre-existing psychiatric illness [9]. Although the use of alcohol or drugs may transiently increase following a disaster, alcohol and drug use disorders are almost always pre-existing [9]. Nevertheless, the disaster aftermath is a good forum to address the problem of drug or alcohol use as part of medical and psychiatric evaluations.

Studies of the prevalence of psychopathology related to the COVID-19 pandemic are limited by the use of screening questionnaires rather than diagnostic interviews, so the prevalence of psychiatric disease following the pandemic remains unclear [10,11]. Further, studies of COVID-19 report symptoms of PTSD, which is inaccurate, as exposure to severe medical illness is not considered a qualifying trauma for PTSD diagnosis. A PubMed search for the terms “COVID-19” and “PTSD” yielded 25 studies. Results included studies from China (n = 15), Spain (n = 2), Italy (n = 2), US (n = 2), Greece (n = 1), France (n = 1), Korea (n = 1), Ireland (n = 1), Canada (n = 1), and India (n = 1). None used the full diagnostic assessment of PTSD. The prevalence of “PTSD” based on screeners in healthcare workers ranged from 4 to 73% [6].

In contrast to psychopathology, psychological or emotional distress is nearly universal and represents a normative response to disaster [11–13]. Symptoms of this type are nonpathological by themselves, such as hyperarousal and intrusive recollection without prominent avoidance and numbing responses. Differentiating distress from psychopathology is essential. The identification of psychopathology ensures that the most effective treatment is chosen and provided, and normal functioning returns among many individuals with psychiatric illness. The identification of significant distress is important as well, as distress can lead to functional impairment and may benefit from interventions without formal treatment [12,13].

5. Framework for MH Response to Disaster

From these data, a framework has been developed to guide disaster MH preparedness and response. This framework is most effective when it is embedded in the medical and emergency response within an incident command system [4].

*Step 1: Identification of psychiatric disorders*

The first step in disaster MH response is to identify psychiatric disorders and MH needs amidst a sea of psychological distress [4]. This allows appropriate triage and referral to formal psychiatric assessment and treatment for those identified with risk for psychopathology [4].

Tailored approaches can be applied to the identification of psychopathology for different disaster scenarios. When disasters affect small numbers of individuals, all individuals can be formally assessed for psychiatric disorders by a trained MH professional. When the affected population is large, this is unfeasible, and screening with brief self-report symptom scales may be useful [11]. The Generalized Anxiety Disorder-7 and Patient Health Questionnaire-9 [14,15] can detect elevated distress and risk for psychiatric disorders. Individuals screening positive will need full diagnostic assessment by a trained MH professional and linkage to appropriate care [4,11]. Symptom scales by themselves do not
assess the full diagnostic criteria and cannot diagnose psychiatric disorders, determine their population prevalence, or direct treatment decisions [4,7,10,16].

Step 2: Stabilization, triage, and referral

The second step of disaster MH response in the framework includes stabilization, triage, and referral [4]. Individuals with positive symptom screens or who request psychiatric care are referred for formal psychiatric assessment and care [4]. Psychiatric care needs to be timely, sufficient, confidential, and acceptable to affected workers. Individuals with any of the following characteristics following a disaster also have elevated risk for psychopathology and are appropriately referred for formal psychiatric assessment and care: pre-existing psychiatric disorder, psychiatric crisis (suicidal or homicidal ideas, psychosis, or unable to care for self or dependents), inability to function at work or at home, failure to improve with supportive care or reduction in work burden, or prominent avoidance or numbing responses [4]. Distressed individuals who do not meet these criteria can be connected with psychosocial interventions and supportive care. Individuals with subsequent decompensation or psychiatric crisis are re-triaged and psychiatrically evaluated [4]. Screening and triage need to begin quickly after a disaster and remaining ongoing during and after disasters.

Step 3: Intervention for psychological distress and psychiatric illness

The third step in the disaster MH framework is intervention for psychological distress and psychiatric illness [4]. For those without psychopathology, interventions that provide psychosocial support are very helpful, widely appreciated, and usually sufficient. For those with psychiatric disorders, pharmacotherapy and/or psychotherapy are offered.

6. Interventions for Emotional Distress

Interventions for emotional distress may include psychological first aid (PFA) [4]. PFA is a form of MH assistance provided in the immediate aftermath of disaster to address acute distress and re-establish previous levels of coping and functioning. PFA can be provided by MH or other disaster response workers and is flexible for use in various settings, populations, and cultures [17,18]. It was developed through expert consensus and is consistent with available evidence, but research to demonstrate efficacy is needed [4].

Interventions for emotional distress that have been supported by empirical data include psychological debriefing, crisis counseling, and psychoeducation. Psychoeducation provides information to educate affected individuals about stress-related emotional responses and illness and can help to destigmatize psychiatric illness and instill appreciation for the value of treatment and its ability to resolve symptoms and restore functioning [4].

An intervention intended to improve coping among individuals in a disaster that may actually be harmful for some individuals, although widely popular by most of those receiving and providing it, is critical incident stress debriefing (CISD), a group intervention originally designed to process field experiences and emotional responses of military or emergency personnel [19]. This group debriefing approach was first used for operational battlefield information exchange, in which a military unit entering the front lines would receive a debriefing containing important information from individuals coming off the front lines. Eventually this information exchange evolved into a group emotional processing intervention allowing individuals to discuss and share, receive social support and comfort, and reinforce effective coping skills. CISD historically has been performed commonly in hospitals following code blues and among emergency and military personnel. Some individuals find single-session debriefing to be a helpful source of emotional support and may reduce distress and anxiety among participants [20,21]; however, single-session debriefing does not prevent or treat psychopathology and may foster erroneous assumptions that enough has been done to support affected workers [19]. CISD may even promote psychiatric symptoms and worsen psychopathology, particularly in those with prominent avoidance and numbing symptoms [19]. It is generally now agreed that psychological debriefing, if performed, should never be mandatory.
Other helpful workplace interventions for disaster-related distress have been described in prior research. In a volunteer sample of employees from workplaces affected by 9/11, workplace interventions described as helpful included counseling, flexibility in work schedule and expectations, an atmosphere of compassion and understanding, provision of food, company communication, socializing with colleagues and resuming routines, financial compensation, availability of post-disaster work space, safety measures, memorials, and provisions for families of affected workers [22]. Two thirds of workers in the study used MH services, with 30% of workers affirming individual therapy as “very helpful” and 34% noting group support or therapy to be “very helpful” [22].

Finally, system-level interventions that can help to reduce stress among HCWs include monitoring reactions and performance or buddy systems, broadening the pool of front-line HCWs, ensuring the resources needed to care for patients, and creating structures for psychosocial and psychiatric support [4,11].

7. Future Research

The COVID-19 literature is limited but has described the prevalence of MH symptoms during and after the pandemic. Only one study thus far compared pre- and post-COVID-19 levels of distress among HCWs; it found that pre-pandemic, 29% of US intensivists experienced work stress most or all of the time, which increased to 40% during the pandemic [2]. Additional studies conducted post-COVID-19 without a pre-COVID-19 baseline demonstrated an abundance of social isolation (53%), fear of infecting others (67%), occupational distress (76%), burnout (45%), job dissatisfaction (21%, with 41% of those planning to quit), insomnia (60–85%), problem drinking (7%), anxiety and depression (6–60%), passive death wish or suicidal ideation (13%), and self-reported poor or fair MH (28%) [23–28]. These studies also demonstrated remarkable resilience with 49% of individuals in one study self-reporting “good wellbeing” [23–28].

While distress and symptoms during the pandemic are well described, published research evaluating the prevalence of psychiatric illness and assessing full diagnostic criteria is lacking. A particular limitation of the pandemic literature on psychiatric illness is that it fails to appreciate that COVID-19 exposure is not considered a qualifying trauma for the diagnosis of PTSD in the DSM-5 [7]; therefore, the prevalence of pandemic-related PTSD reported by numerous studies is not valid. Importantly, however, the inability to classify the MH consequences of the pandemic as trauma-related does not render them trivial or unimportant. More longitudinal research is thus needed to understand the MH effects of the pandemic. Studies comparing psychiatric syndromes related to COVID-19 exposure and classic trauma are needed to inform definitions of PTSD criteria for psychiatric diagnosis, and empirical data are needed to define the prevalence of COVID-19-related MH conditions conforming to established diagnostic criteria.

8. Conclusions

It has been aptly stated that “People are always changed by disasters and other traumatic life events, but they need not be damaged by them” [29]. Unfortunately, many front-line HCWs were indeed damaged by the pandemic and continue to report high levels of burnout and distress, in part because the MH response to the pandemic was lacking or otherwise inadequate. Screening, triage and referral to MH resources, and interventions are fundamental aspects of an MH response to a disaster and may be coordinated with formal operational procedures within incident command structures. Setting up these structures in advance, preferentially, and establishing networks of psychiatrists and crisis MH responders who will implement them are essential. We suggest a call to action among healthcare administrators and policymakers to prioritize MH preparedness for future disasters in healthcare.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflicts of interest.
References


7. Diagnostic and Statistical Manual of Mental Disorders (DSM-5); Association AP: Washington, DC, USA, 2013.


19. Vignaud, P.; Lavalle, L.; Brunelin, J.; Prieto, N. Are psychological debriefing groups after a potential traumatic event suitable to prevent the symptoms of PTSD? Psychiatry Res. 2022, 311, 114503. [CrossRef] [PubMed]


29. Weaver, J.D. *Mental Health Section Connection*; National Association of Social Workers: Washington, DC, USA, 2007.

**Disclaimer/Publisher’s Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.