Impact of the COVID-19 pandemic on mental health: potentially vulnerable groups and comorbidities

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ABSTRACT

The coronavirus 2019 (COVID-19) pandemic is an unprecedented emergency situation with significant stressors causing adverse impacts on mental health across the globe. Certain individuals are potentially more vulnerable during the outbreak, in particular those with medical vulnerabilities to COVID-19, eg, elderly, living with chronic illnesses, as well as individuals with pre-existing mental health issues such as anxiety disorders, depression, suicidality, and loss/grief. Additionally, individuals with persistent postacute COVID-19 symptoms, eg, long haulers, are also a vulnerable population. During this international crisis, pandemic-related stressors, such as isolation/quarantine, lockdown, social distancing, homeschooling, loss of income or employment, and/or loss of loved ones could negatively affect these vulnerable subgroups and their overall life functioning. This paper aims to aid in the management of this international emergency by identifying potentially vulnerable subgroups because of the COVID-19 pandemic and by providing recommendations related to appropriate mental health referrals/interventions. This paper also aspires to enhance the knowledge of first responders and lay persons about vulnerability factors to readily help individuals struggling with mental health issues during the pandemic.

Key words: COVID-19, mental health, vulnerable groups

INTRODUCTION

The COVID-19 pandemic has significantly disrupted the daily lives of individuals across the world. The short- and long-term impacts of this international emergency on mental health are unknown, but could be far-reaching for years even after the vaccination process has been implemented. Certain populations are potentially more vulnerable during the pandemic, which includes individuals previously deemed high risk for suicide, individuals with medical vulnerabilities to COVID-19, eg, elderly, living with chronic illnesses, as well as those with pre-existing mental health conditions such as anxiety disorders, depression, and loss/grief. Additionally, individuals with persistent postacute COVID-19 symptoms, eg, long haulers, are also a vulnerable subgroup. During this international crisis, stressors such as isolation/quarantine, lockdown, social distancing, homeschooling, loss of income or employment, and/or loss of loved ones could potentially negatively impact these vulnerable subgroups and their psychosocial functioning.

Although it is impossible to predict how one will respond to this unprecedented situation, research has demonstrated that the pandemic has already had a negative impact on mental health. Thus, it is critical to preemptively identify individuals at risk for adverse outcomes and mitigating strategies to foster resiliency.

This paper aims to assist in the management of this international emergency by elucidating some potentially vulnerable subgroups due to the COVID-19 pandemic and provide targeted recommendations related to appropriate mental health referrals/interventions. Furthermore, this paper aspires to enhance the knowledge of first responders and lay persons about vulnerability factors to readily help individuals struggling with mental health conditions during the pandemic.
VULNERABILITY TO COVID-19
While the COVID-19 pandemic is an unprecedented situation, past disasters can inform effects on mental health. Previous research has shown that major crises and natural disasters can cause people to experience negative emotions like anger in the short term, but can also have long-term effects that include suffering from Post Traumatic Stress Disorder (PTSD), depression, phobias, Obsessive Compulsive Disorder (OCD), and substance abuse.\textsuperscript{8,9} Goldmann and Galea highlighted how disasters tend to have three central elements: threat/death to a large group of individuals, negative impact on social processes, and secondary consequences on medical and psychological health outcomes.\textsuperscript{10} Norris et al. emphasized that people commonly experience distress for a short time after a disaster, but then return to baseline functioning and can develop resiliency.\textsuperscript{11} Unfortunately, some individuals experience persistent psychological sequela that develops into mental health conditions and impairs life functioning.\textsuperscript{10} Unique to this pandemic is the longevity of it, in which the prolonged nature of the associated chronic psychological stress could have devastating effects. The COVID Stress Scale (CSS) was developed to assess COVID-19-related distress to identify people who are in need of mental health services.\textsuperscript{12} It measures five elements of COVID-19 stress syndrome: (1) danger and contamination fears, (2) fears about economic consequences, (3) xenophobia, (4) compulsive checking and reassurance seeking, and (5) traumatic stress symptoms about COVID-19.\textsuperscript{12} A recent study found that pre-existing psychological conditions were significantly related to high scores on CSS, and individuals with high scores generally had “large correlations with premorbid health anxiety ($r = .49$), anxiety sensitivity ($r = .59$), intolerance of uncertainty ($r = .54$), disgust propensity ($r = .44$), disgust sensitivity ($r = .52$), perceived infectability ($r = .35$), germ aversion ($r = .37$) obsessive-compulsive contamination concerns ($r = .53$), and checking rituals ($r = .50$).”\textsuperscript{12} This finding emphasizes that individuals living with mental health conditions prior to the pandemic could experience decompensation due to an exacerbation of psychological symptoms secondary to the stress of the pandemic. Moreover, a recent literature review examined studies from eight countries during the pandemic and found that the rates of psychological distress ranged from 34.4 to 38 percent, anxiety symptoms 6.33 to 50.9 percent, stress 8.1 to 81.9 percent, PTSD 7 to 53.8 percent, and depressive symptoms 14.6 to 48.3 percent.\textsuperscript{1} This points to early evidence that mental health is being significantly impacted across the globe. First responders and lay persons should be cognizant of those vulnerable to mental health issues during the pandemic to understand who might be more at risk and to facilitate treatment engagement.

Anxiety-spectrum disorders
Individuals suffering from anxiety disorders, eg, OCD, generalized anxiety, are a particularly vulnerable population as for many the current pandemic is their “worst nightmare coming true,” meaning that their fears and intrusive thoughts, eg, getting sick and other terrible outcomes, compulsive behaviors and rituals, eg, hand washing, sanitizing, disinfecting etc., and avoidance, eg, of public places, contact with others etc., are reinforced. Increase in intrusive thoughts, eg, related to contamination, and subsequent excessive behaviors, eg, excessive hand cleaning, using strong household chemicals repetitively on the skin, etc., can be extremely harmful to both one’s mental and physical health. Furthermore, OCD is one of the most debilitating mental disorders and is within the top 10 reasons for disability worldwide due to loss of income and decreased quality of life.\textsuperscript{13} Some studies indicate that suicide risk in individuals living with OCD is 10 times higher than in the general population.\textsuperscript{14} Additionally, the stress related to the current pandemic is likely to elevate risk factors, eg, hopelessness, helplessness, depression, increased severity of obsessions, associated with suicide risk for individuals living OCD.\textsuperscript{13} Given the stress inherent from the pandemic and the plethora of associated concerns—when one will receive the vaccine, not safe to be in large group gatherings, isolation, contact tracing efforts, exposure risk—this has fostered fear and uncertainty in many individuals. Although some fear and anxiety could be a normal response to a stressor, it is crucial to seek help if this starts...
to impact one’s social, occupational, and overall life functioning.

The use of telehealth in response to COVID-19 has increased significantly and allows for continuity of care with mental health providers. The opportunity to engage patients in treatment via telepsychotherapy during the pandemic allows for continuous assessment of patients’ potentially excessive and detrimental responses to COVID-19. Primarily, first responders and lay persons who encounter individuals with anxiety disorders should make sure that these individuals are aware that mental health treatment could be done via the computer or telephone to promote treatment engagement. For those living with anxiety disorders, such as OCD, telepsychotherapy approaches allow mental health providers to monitor the following: the use of household chemicals on skin or clothes, cleaning and disinfecting for hours, rumination and intrusive thoughts/fears about contaminating or harming others, taking “perfect” protective measures, and excessive fears of becoming sick. Clinicians’ awareness of the potential impact of the current situation for this population is paramount for early detection, prevention, and utilization of best practice interventions, eg, exposure and response prevention; ERP. Furthermore, telepsychotherapy is largely as effective as face-to-face treatment. Video format telepsychotherapy offers a distinct advantage through exposure to exercises as providers have access to information regarding clinical presentations specific to one’s environment that providers otherwise might not have in office.

**Depressive disorders**

Depressive disorders are considered one of the most prevalent psychological disorders following a disaster. The widespread changes inherent in the pandemic related to daily functioning and psychosocial stressors during these turbulent times could lead to symptoms of depression with prolonged isolation and lack of social connections likely to further exacerbate symptoms. Post severe acute respiratory syndrome outbreak data revealed an increase in depression rates adding to evidence that this could occur during the current pandemic. In fact, a recent study by Ettman and colleagues found that the depression rate in the United States is currently three times higher compared to the pre-COVID-19 pandemic rate and it disproportionally impacts individuals with low income, low savings, ie, 5,000 or less, and more life stressors. Moreover, a recent meta-analysis discovered that depression rates could be currently seven times higher than those of 2017. Furthermore, individuals with severe depression may develop suicidal ideation and/or psychotic symptoms, which could have serious negative effects on their psychosocial functioning.

Cognitive behavioral strategies are effective in treating depressive symptoms. Such strategies include scheduling activities, incorporating pleasant activities, and challenging negative thoughts. Platforms to educate individuals on the symptoms of depression could aid in identification of depressive disorders before the symptoms become severe. Traditionally, there has been a stigma associated with mental health conditions, therefore an increase in education could help thwart that stigma and engage individuals in treatment during the pandemic. First responders and lay persons should screen others for depression and encourage treatment engagement via telepsychotherapy and/or psychiatric management if clinically warranted.

**Suicidality**

During the 1918–1919 influenza pandemic, there was an elevation in suicide rates. Also, during the Great Depression, suicide rates increased in the United States and countries across the world. Recent literature emphasizes that this trend could occur during the current pandemic. Reger et al. highlighted that individuals previously at elevated risk for suicide could be further negatively impacted by factors associated with the current pandemic, such as social isolation, economic stress, and decreased access to community and religious support. Moreover, other established suicide risk factors, eg, alcohol, domestic violence, could be elevated during the outbreak.

To mitigate suicide risk, there needs to be efforts to enhance engagement in mental health care and widespread dissemination of virtual resources during the pandemic.
the pandemic. Those on the frontlines of patient care have the opportunity to promote mental health services and provide referrals. Additionally, mental health providers unfamiliar with virtual care need to rapidly undergo training to enhance their technology competencies. Continuity of care during the pandemic is critical especially for individuals experiencing suicidal ideation. Jobes et al. recommended the implementation of clinical interventions to target suicidality, such as cognitive therapy, dialectical behavior therapy, and the collaborative assessment and management of suicidality (CAMS). Prior to the pandemic, the CAMS has been effectively utilized in a virtual format and is effective at addressing suicidality. Given the scope of the pandemic, Gunnell and colleagues call for universal global interventions to address suicide risk factors, eg, financial instability, intimate partner violence, alcohol use, access to means, misinformation from the media, grief, loneliness, and social isolation. This will require large-scale efforts and mobilization of resources from governing bodies, but is critical during this chaotic time.

Medical vulnerability

The Center for Disease Control and Prevention has identified individuals who are at increased risk for severe illness and should take extra precautions to protect themselves against COVID-19. These include individuals who are age 65 and older and individuals living with underlying medical conditions, eg, immunocompromised due to a condition such as cancer or organ transplantation, severe obesity, diabetes, lung disease, severe asthma, serious heart conditions, liver disease. Patients who fall into these categories might experience increased emotional distress that could exacerbate existing risk factors and mental health symptomatology. In considering subgroups at a higher risk for suicide, both elderly males and individuals living with cancer are at an elevated risk compared to the general population.

Individuals with chronic illness are particularly vulnerable. Desire to hasten death is sometimes present in chronically ill patients, and it might become intensified by concerns associated with suffering from COVID-19 and the wish to die with integrity. There is empirical support that depression and anxiety impact patients’ desire to end their life; thus, thorough assessment and effective management of emotional distress and mental health symptoms is paramount. A recent study from China during the pandemic found that living with chronic illnesses or cancer was a risk factor for anxiety and depression. Additionally, this study also found that having a family member living with cancer was a risk factor for anxiety and depression. Another study found that women with chronic illness and a history of mental health issues were at risk for health anxiety.

Psychotherapists can utilize health psychology principles to help implement cognitive behavioral strategies to manage stress, sleep disturbances, and an exercise regimen as these elements can impact one’s immune system. Focusing on a healthy lifestyle that incorporates these factors has been found to be beneficial to one’s immune defense activity system and is an important clinical intervention. Furthermore, sleep disturbances are a risk factor of suicidal behavior, including attempts and death by suicide. Sher recommended sleep interventions during the stress of the COVID-19 outbreak as a crucial intervention for suicide prevention. First responders and lay persons who encounter individuals living with chronic illness with regard to their medical vulnerability to COVID-19 should emphasize the aforementioned self-care strategies.

Elderly

According to the World Health Organization, suicide rates are high in older males compared to all other demographic groups. Furthermore, older adults have a higher suicide completion rate than other age groups as they typically select highly lethal means, have serious intent, and may evidence fewer warning signs than other age groups. Bennardi et al. found that loneliness is associated with suicidal ideation in individuals 60 and older, which may become intensified with social distancing practices during the pandemic. According to Joiner’s interpersonal theory of suicide, perceived burdensome in conjunction with thwarted belongingness enhances suicide capability. Wand et al. noted that a sense
of burdensome or devalue may arise from less access to healthcare sources because of resource rationing during the pandemic and elderly persons need to rely more heavily on family, which may accentuate prior feelings of being a burden to loved ones. Thus, Wand and colleagues suggest that during this pandemic, older adults might be particularly vulnerable for suicide and these issues warrant consistent assessment in making a determination regarding lethality risk and clinical consideration regarding proactive, effective interventions, eg, family therapy, cognitive behavioral therapy, acceptance and commitment therapy.

Providing support to the elderly is crucial during the pandemic as they may be experiencing concerns related to aging, loneliness, isolation, mortality, and/or concerns of contracting the virus. Ishikawa emphasized the importance of enhancing social connectedness, engaging in mental health care, establishing routines, mindfulness practice, self-care, and physical exercise. These activities can foster resiliency and instill feelings of control during these uncertain times.

Grief and loss

Grief and loss are themes of the COVID-19 pandemic and take shape in multiple forms, eg, anticipatory grief, disenfranchised grief, complicated grief, death of a loved one, loss income, loss jobs, loss of autonomy, loss of social connections. Most notable is the death of loved ones during the pandemic and the inability to be with loved ones who die in hospitals. The inability to directly comfort loved ones has resulted in a disruption of the grief process. Virtual opportunities allow to still maintain closeness, but not at the same level as needed when grieving the loss of a loved one. Furthermore, the ability for funerals and wakes have been limited due to social distancing guidelines and lockdowns. With the mourning process disrupted, need for modifications are warranted. Wallace et al. highlighted concerns for first responders who may experience unresolved grief due to secondary traumatic stress or moral distress as they are tasked with difficult decisions. Thus, it is imperative for first responders to also monitor their own mental health difficulties during this chaotic time, engage in self-care, and engagement in mental health treatment if needed.

Recommendations to mitigate grief reactions include communication by health providers, advance care planning, and establishing self-care routines. Healthcare providers can use communication-based strategies when interacting with patients and their families to facilitate anticipatory grief responses. This includes validating emotional reactions, concerns, and providing resources. The unpredictable course of COVID-19 and sometimes the rapid decline in health status could cause advance care planning discussions to be limited with patients and families. During highly stressful times, it is vital to engage in self-care including hygiene, sleep, nutrition, and stress management strategies. Following the death of a loved one, engagement in bereavement groups and/or individual telepsychotherapy could help facilitate the grieving process.

COVID-19 long haulers

A subset of individuals with post-acute COVID-19, eg, long haulers, have developed persistent symptoms that have significantly impacted their quality of life. These symptoms include fatigue, exhaustion, general malaise, anxiety, delirium, memory loss, hallucinations, “brain fog,” tachycardia, numbness and tingling, and shortness of breath. These pervasive symptoms combined with the stigma associated with COVID-19 can result in hopelessness and frustration. Del Rio et al. proposed that patients recovering from COVID-19 could be at an elevated risk for anxiety, PTSD, substance use, and depression. These lingering symptoms cause significant impairment in individual’s social and occupational functioning leading to further distress. Goldberg reported on some long hauler’s personal experience with mental health issues due to post-acute COVID-19 and noted some contemplated suicide. A recent study on long hauler’s symptoms found anxiety to be the most commonly reported mental health symptom. The timeline of symptoms for COVID-19 long haulers varies and is still in the early stages of research. Regardless,
living with persistent post-acute COVID-19 can have a devastating impact on an individual’s life. First responders and lay persons who encounter long haulers should inquire about both physical health and mental health. Referrals for early psychological interventions for long haulers are critical to help this vulnerable population cope with any associated mental distress.

APPLICATION TO EMERGENCY MANAGEMENT FIELD
Enhancing awareness of vulnerable groups and comorbidities due to COVID-19 allows emergency managers and affiliated professions to be more effective in their job duties. Rapid identification of mental health issues within oneself and/or colleagues can allow for early intervention that will promote a better outcome. Historically, there is stigma associated with mental health symptoms, which is a significant barrier for treatment. To combat stigma, ample opportunities for treatment engagement need to be made available to emergency workers. The National Alliance on Mental Illness (NAMI) highlights best practices when discussing mental health concerns for individuals experiencing mental health difficulties. If emergency workers are experiencing distress and want to disclose to others, they might carefully consider factors such as when to discuss, eg, serves a purpose, when ready, feeling calm, who, eg, personal or work-related relationships, where, eg, confidential/private area, what, eg, specific problem, and how, eg, offer suggestions to support you. NAMI emphasizes the importance of process talk, that is talking about talking, to set the stage that one has something sensitive to discuss with someone. Furthermore, this same framework could be applied if an emergency manager wants to check-in with others that they care about. Consideration of all of these factors, ie, who, what, when, where, how, show a thoughtful approach that offers a warm, genuine environment to discuss mental health concerns. Emergency managers and affiliated professionals are working during an unprecedented, chronically stressful pandemic and the prioritization of self-care, wellness, and mental health is critical to combat chronic stress.

FUTURE DIRECTIONS
From a historical standpoint, understanding mental health outcomes to natural disasters is challenging and has numerous methodological issues. To understand the COVID-19 pandemic mental health outcomes, it would be imperative to find a sample that is generalizable. Given the cultural and individual differences of communities across the globe, this will pose a challenge. Goldmann and Galea highlighted that cross-sectional, post-disaster studies are most commonly implemented, but have limitations establishing cause-and-effect associations between exposure and outcomes. Given the prevalence of mental health issues across the world, it would be challenging to account for individuals living with pre-existing, undiagnosed mental health conditions. Nevertheless, understanding the prevalence of current psychological distress during the pandemic is critically needed. Understanding the scope of individuals suffering could help to mobilize vital resources to promote wellness and mental health.

CONCLUSION
Identification of individuals suffering from mental health issues secondary to COVID-19 is critical for facilitating timely clinical interventions. Unique pandemic-related stressors are impacting citizens across the globe and the authors posit that some subgroups may be particularly vulnerable. Research is needed to ascertain the extent of mental health issues and effective preventative strategies and interventions. Nevertheless, it is clear that individuals are suffering from the pandemic. Mobilization of support and resources to implement widespread mental health interventions are desperately needed during this international emergency.

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