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COVID-19: A new challenge for mental health and policymaking recommendations

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ABSTRACT

The coronavirus disease 2019 (COVID-19) infection has emerged lately, leading to a serious public health threat. The clinical features associated with COVID-19 are yet to be conclusively documented. Caution is needed when interpreting the severity of the symptoms as most of the diagnosed patients are those attending clinical assessments. Features of COVID-19 are far from understood. There is a suggested increased risk of COVID-19 infection among people with mental health disorders, which is primarily attributable to the challenges associated with limited resources. There are a variety of reasons why individuals with mental health disorders are more susceptible to infectious diseases. There is currently no specific recommended antiviral treatment. The interventions now used are supportive treatments to alleviate the symptoms and invasive mechanical ventilation. In this review, we discuss the adverse events associated with COVID-19 vaccinations. We further highlight the need to develop guidelines and recommendations for managing patients with mental health. It is evident from this review, there is a need to provide training programs with interprofessional, multidisciplinary communication channels.

Contents

Introduction

In 2003, an increased human–animal interface facilitated greater distribution of the Severe acute respiratory syndrome-related coronavirus (SARS-CoV) in Guangdong Province, China [1]. In 2012 this facilitated the spread of the Middle East respiratory syndrome-related coronavirus (MERS-CoV) in Saudi Arabia and the Middle East. Both SARS-CoV and MERS-CoV can cause severe respiratory diseases [2–4]. In late December 2019, the Chinese Center for Disease Control and Prevention (China CDC) identified a novel coronavirus (19-nCoV) in the specimens of inpatients with pneumonia [5]. The virus is very similar to SARS-CoVs and was named SARS-CoV-2 [6]. Studies have shown that SARS-CoV-2 is a betacoronavirus that shares 79% of its sequence homology with SARS-CoV [3,7].

The challenge in reducing this new infection is that knowledge of how SARS-CoV-2 is spread, and its virulence is limited [8]. The virus

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is believed to be transmitted primarily through droplets and contacts [9]. Transmission can also occur through aerosols, especially in places where people are in close proximity [9]. The identification of SARS-CoV-2 in stool samples also suggests that SARS-CoV-2 can spread through the gastrointestinal route [4,9]. There are cases where the virus cannot be identified in respiratory tract samples but is present in the stool specimen of carriers [9]. No evidence of transmission in newborns has been reported [9–11]. Furthermore, evidence regarding mother-to-child transmission suggests that the child cannot be infected through breast milk [4,9,12]. Another challenge with respect to containing the spread of the virus is that there is limited knowledge on how to effectively identify infected but asymptomatic persons. It is difficult to detect and isolate asymptomatic cases, especially those who exhibit fecal-oral transmission [4]. Undocumented infectious cases of COVID-19 pose the greatest danger in terms of disease transmission [8]. This danger has led to nations adopting travel restrictions and, in some areas, total lockdown and mandatory screening to identify and break the chain of SARS-CoV2 transmission [8]. Transmission of the virus can also occur from discharged patients to a healthy population, as indicated by real-time reverse transcriptase-polymerase chain reaction outcomes [9].

The clinical features associated with COVID-19 are yet to be conclusively documented. Caution is needed when interpreting the severity of the symptoms as most of the diagnosed patients are those attending for clinical assessments. These patients are normally sicker, which increases the risk of detection bias and leads to over-representation of the severity of the illness [3]. There exist various undocumented infectious diseases whose epidemiological characteristics are unknown [8]. These undocumented cases include individuals who are infected but experience only mild or no symptoms; hence they are not identified and not hospitalized [4,8]. Although asymptomatic patients may not exhibit obvious signs of COVID-19, abnormal chest imaging may be observed, especially if a high-resolution chest computed tomography is used [4].

There is currently no specific recommended antiviral treatment [9]. The interventions currently used are supportive treatments to alleviate the symptoms and invasive mechanical ventilation, which is used in the management of respiratory distress [9]. In vitro studies have shown that Remdesivir and chloroquine are effective in controlling SARS-CoV-2, with chloroquine recommended as an effective antiviral therapy for COVID-19 patients. Moreover, because the disease is associated with bacterial comorbidities, antibiotics are also administered [9]. Systematic corticosteroids can also be used to address the rapid aggregation of the chest and acute respiratory distress syndrome. Additional interventions can also be adopted in accordance with the patient's condition [9].

Overall mental health status and COVID-19

Mental health challenges elevate the likelihood of COVID-19 infection as they present unique challenges in terms of adherence to disease prevention guidelines [13]. Individuals who have mental health challenges, such as cognitive impairments, have unique needs that sometimes make social isolation a challenge [13]. There are a variety of reasons why individuals with mental health disorders are more susceptible to infectious diseases. For instance, lifestyle factors and engagement in health risk activities are responsible for the elevated likelihood of pneumonia [14]. A key reason for the elevated vulnerability to infection among people with mental health issues is that they are likely to exhibit cognitive impairment, which means their comprehension of the risk of COVID-19 infection is reduced, and they are less likely to immediately engage in actions to avoid contracting the illness [14–17]. People with mental health disorders may also fail to observe hygiene and social distancing measures [18]. The risk of COVID-19 pneumonia is high among patients who frequently take food or liquids into their lungs [19]. Individuals with mental health disorders may also lack the ability to recognize health problems and seek help from or communicate with healthcare providers regarding these problems [14]. Isolated persons with mental illness, especially those in psychiatric hospitals, might disinterested or insensitive to the news concerning COVID-19, which limits their understanding of the steps that need to be taken to prevent the spread of the infection [16]. For those psychiatric patients who are undergoing care, their confinement in psychiatric wards might increase the likelihood of infection due to close human contact [16]. Psychiatric hospitals are not designed to meet the necessary standards of isolation in the event of infectious disease outbreaks [16]. Furthermore, the novelty of the COVID-19 infection means that the steps that need to be taken to manage infection among psychiatric patients are currently not fully understood [16]. The limited availability of beds in the psychiatric system also presents challenges in terms of implementing the recommended preventive and management measures [18]. For instance, 101 psychiatric patients in South Korea contracted COVID-19 as a result of being confined to a single health facility. This highlights the increased risk of COVID-19 infection among people with mental health disorders, which is primarily attributable to the challenges associated with limited resources [18,20]. The atypical presentation of COVID-19 related symptoms among people with mental illness also increases their risk of infection [14].

Comorbidities associated with mental health disorders also make the treatment of COVID-19 infection potentially less effective. Infections such as human immunodeficiency virus and tuberculosis, which are more prevalent among persons with mental health disorders, increase the likelihood of severe outcomes [21]. Those with mental health disorders who need to visit healthcare facilities for regular outpatient care may also be impacted negatively as a result of nationwide regulations on travel and quarantine [15].

Patients with mental illnesses are also likely to suffer stress. The negative emotional effects of COVID-19, which can include fear and depression, can lead to relapse or the severe outcomes associated with an existing mental illness [15,18,21,22]. For example, persons with epilepsy may also experience an increase in seizures as the COVID-19 infection places physical and emotional stress on the body [19]. Recently, massive national and international COVID-vaccination programs have been launched [23].

COVID-19 vaccinations and mental health adverse events

Following covid-19 massive vaccination programs, some neurological complications have been reported [24]. Among side effects associated with the COVID-19 vaccine, anxiety was reported more frequently in recipients. The majority of these recipients were females [23]. Gender-bias is well acknowledged in psychiatric diseases, especially mood disorders such as depression and anxiety [25]. Also, some anxiety-related signs and symptoms were reported immediately after the administration of the vaccine. These signs and symptoms include syncope, dizziness, j-like events [23]. Other mental-related events were reported. For instance, one case has reported Guillain-Barre syndrome. An adult male expressed neurological symptoms, including an acute and progressive back pain and muscle weakness, along with clinical features of magnetic resonance imaging and cerebrospinal fluid examinations, supporting Guillain-Barre syndrome's autoimmune neurological characteristics [26]. In another clinical report, a female patient with a history of Bell's Palsy reported the onset of Bell's Palsy [27]. Previous studies linked facial palsy and influenza vaccination [28,29]. During clinical trials, a vaccine recipient demonstrated transverse myelitis [30]. In a multiple sclerosis female patient treated with

Table 1
Main neurological complications reported following the COVID-19 vaccination. Ad26.COV2.S: adenovirus serotype 26 (Ad26) vector-based vaccine: ChAdOx1: Chimpanzee adenovirus-vectored COVID-19 vaccine; MRI: magnetic resonance imaging.

Adverse-event	Characteristics	Type of vaccine	Reference
Anxiety	Anxiety-related signs and symptoms:syncope, dizziness, chest pain, nausea, vomiting, and seizure-like events.	Ad26.COV2.S	[23]
Guillain-Barre syndrome	Acute and progressive back pain and muscle weakness, along with clinical features of MRI and cerebrospinal fluid examinations, supporting Guillain-Barre syndrome's autoimmune neurological characteristics.	ChAdOx1	[26]
Bell's Palsy	Onset of Bell's Palsy.	mRNA-based vaccine	[27]
Transverse Myelitis	Impaired sense of vibration and ovoid T2-hyperintense lesion.	ChAdOx1	[30]
Multiple sclerosis	Female patient treated with rituximab, acute relapse has been reported.	Not indicated	[31]
Cerebral venous sinus thrombosis	Two male recipients were reported to exhibit clinical features.	ChAdOx1	[33]
Myelitis	Ovoid T2-hyperintense spinal cord lesion.	ChAdOx1	[34]

rituximab, acute relapse has been reported. Multiple sclerosis is an autoimmune neurological disorder [31]. On the other hand, an observational study examined 500 multiple sclerosis patients following vaccination, and it was reported that about 2% of the recipients showed relapse, indicating the lack of significant association between COVID-19 vaccination and multiple sclerosis relapse [32]. Also, cases of cerebral venous sinus thrombosis have been reported. Two male recipients were reported to exhibit clinical features following the chimpanzee adenovirus-vectored COVID-19 vaccine [33]. In another report, a patient was admitted with myelitis. At the same time, his magnetic resonance imaging indicated an ovoid T2-hyperintense spinal cord lesion in the ChAdOx1 COVID-19 vaccine recipient [34]. Table 1 describes the main neurological complications reported following the COVID-19 vaccination.

Policymaking and recommendations

Various steps can be taken to protect people with mental illness from infectious diseases such as COVID-19. These include putting in place measures that promote safe social behaviors, adopting preventive and management steps by caregivers and health care providers, and taking important considerations into account when using antipsychotics. For instance, rigid monitoring procedures are needed when prescribing medication for individuals with mental illness, mainly if they are elderly [35]. The potential side effects of atypical antipsychotics that are known to reduce immunity [36], should be carefully considered by health care practitioners. They must also assess the extent to which patients can tolerate the side effects of specific antipsychotic drugs. In cases where patients are also prescribed other drugs, the potential interaction between these drugs and the subsequent side effects needs to be determined [35]. Rigid adherence to the recommended dosage is, therefore, essential [37]. The severity of the side effects associated with antipsychotics means they should be prescribed only when needed [37]. Nursing homes administering inappropriately high levels of antipsychotics also registered a high incidence of pneumonia [38].

It is thus essential to educate health care practitioners who care for people with mental illnesses in nursing homes of the need to adhere to the recommended dose of antipsychotics [35]. Ongoing education should highlight the severe side effects patients are exposed to following high doses of antipsychotics [37]. It is also essential to educate health care personnel on the increased risk of infectious diseases among persons with mental illness as a result of the excessive prescription of antipsychotics. Besides, COVID-19 has been reported to be associated with multiple neurological symptoms, such as altered olfaction, delirium, and encephalitis [39]. The limited available resources highlighted the need to prioritize studies involving mental health, expand our research, and training programs to overcome these challenges.

In mental illness, both pharmacological and non-pharmacological interventions are implemented. With the pandemic wave and social distancing, most of the non-pharmacological interventions were reduced, leading to increased disease-related symptoms. With the massive national and international COVID-vaccination programs, these gaps in mental health services are highlighted. Also, the strategies followed in fighting the COVID-19 pandemic can provide an infrastructure to improve the mental health system globally [40,41].

The most learned lesson from this pandemic is acknowledging an urgent need to build an evidence-based guideline for managing mental health during pandemic attacks. An outstanding example of such an experience is the Oxford Health Biomedical Research Centre initiative, called the Oxford Precision Psychiatry Lab (OxPPL) [42]. This project's principal assets are multidisciplinary team experts, including scientists and clinicians. Scientists' expertise included psychology, basic neuroscience, bioinformatics, and biostatistics. At the same time, clinicians were psychologists, psychiatrists, and pharmacists [43]. The OxPPL platform is based on a rigorous strategical method to reach, collect, and summarize information for these questions. In a specific and rapid period of time, responses from different practitioners such as physicians, pharmacists, and nursing staff were collected [44]. The responders were able to modify and correct if needed. The results were summarized and made available online (https://oxfordhealthbrc.nihr.ac.uk/our-work/oxppl/covid-19-and-mental-health-guidance/). Additionally, the information is being updated frequently. In that experience, some difficulties stemmed, such as the abundant source of data and frequently changing input. Thus, they generated a user-friendly clinician platform to collect information and summarize results quickly and accurately [44].

Conclusion

This epidemic experience has highlighted multiple needs. Firstly, the need to fill treatment gaps and establish a treatment delivery system that ensures continuous care rather than episodic. Secondly, the need to establish a service-led health care module rather than a needs-led module. Third, the need to provide the provision of appropriate mental health care in the short timescale [45].

As is evident from this review, particular emphasis is needed on training, continuing education, and interprofessional communication. Providing these training opportunities extends knowledge to reach and communicate existing ones to new practitioners and heading toward new strategies, approaches, and development in the field. Such training programs require interprofessional, multidisciplinary communication channels.

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MAA and TKA Contributed equally to this work.

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