

COVID-19 Pandemic: What are the Risks and Challenges for Schizophrenia?

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The World Health Organization declared COVID-19 as a pandemic in March 2020 following the SARS-CoV-2 outbreak (a new coronavirus subtype) in China in late 2019. Hence, an emergency state was announced, as well as issuing a rigid lockdown order for decreasing the virus spread rate [1]. Recent research has found the COVID-19 crisis to adversely affect the general population and schizophrenic patients [2]. Schizophrenia is approximately 1% prevalent worldwide [3]; however, it accounts for a heavy burden on society and families [4]. Also, the mortality rate for these patients is high, and they suffer from comorbid medical conditions. If they get SARS-CoV2 infection, the system will experience an extra difficulty [4,5], whereas such patients have been disregarded [5]. Above all and for helping families and policymakers function better and adopting preventive measures, this paper aims to answer the question below:

What are the likely challenges and risks for schizophrenic patients during the COVID-19 crisis?

Schizophrenic patients may have vulnerabilities to adverse direct and indirect impacts by the COVID-19 [6]. Also, stressful situations, routine shifts and interpersonal anxiety owing to extended COVID-19 quarantine or the fear of catching the disease are likely to change the schizophrenia course [7]. Moreover, COVID-19 symptoms and their treatments might have been associated with distress related to symptoms severity and isolation, as well as psychosis secondary to steroids and other interventions [8]. In this respect, the neural diathesis-stress model can elaborate on how environmental factors can worsen or provoke psychosis symptoms [9]. Stress-associated escalations of cortisol levels (i.e., increasing dopamine release) can mediate the former stress sensitivity [10]. Further, noticeable distress can be generated (both for caregivers and patients) by social isolation as a major collective sanitary strategy to avoid contamination [4]. Therefore, limited access to regular psychosocial medication or interventions could trigger psychotic symptoms [4] and suicide [11]. These cases feature the necessity of health services to psychosocially support schizophrenic patients during the COVID-19 pandemic. Antipsychotic medication alone may not be sufficient to avoid a relapse of psychosis associated with COVID-19-related anxiety. The COVID-19-related psychosocial measures, including diminishing social isolation and restricting pandemic news exposure, should be addressed [4].

Moreover, schizophrenic patients could get respiratory infections more probably [12]. Since schizophrenia involves impairments in decision-making capacity and insight [13], schizophrenic people may find it more difficult to adhere and adopt to the protective measures for inhibiting infection (e.g., social distancing or isolation, hand washing, and confinement) [14]. Schizophrenia is also a risk factor for homelessness or institutionalization, which may increase the risk of COVID-19 infection [15]. Besides, disorders

induced by comorbid substance use, prevailing among schizophrenic patients, may complicate impairments in decision-making and judgment [16]. Also, smoking (prevalent among 50%-90% of schizophrenic people [4]) may heighten the disease progression risk and form severe COVID-19 complications, e.g., death, by affecting immune responsiveness and lung health [17]. In other words, the activity and/or expression of angiotensin-converting enzyme ACE in the lung is elevated by nicotine [18]. ACE-2 may act as a physiologically relevant cellular entry receptor for SARS-CoV-2 [18].

Reliable data has shown that COVID-19 mortality increases among schizophrenic patients under comorbid conditions [12]. Beyond 70% of schizophrenic patients have also experienced at least one clinical condition, namely chronic pulmonary disease, diabetes type II, and hypertension/coronary heart disease [4]. The spirometric evaluation illustrates impaired lung function among schizophrenic patients, and they are frequently diagnosed with obstructive and restrictive pulmonary diseases [19]. Also, schizophrenic patients hospitalized for pulmonary conditions have higher levels of acute respiratory failure, intensive care unit admissions, mechanical ventilation, and in-hospital death [20]. Irrespective of the cause, they are also more likely to have acute organ dysfunction (compared to the general population) if admitted to the intensive care unit [20]. Generally, most schizophrenic patients would be included in one or more known COVID-19 risk groups. Also, when admitted to a hospital, they would be at higher risks of worse clinical outcomes [4]. Moreover, restricted access to required medical care (as one feasible cause of increased mortality among schizophrenic patients) could exacerbate this scenario [21]. Patients and their families might need medical assistance; however, they may not receive appropriate evaluation or treatment attributable to the stigma surrounding schizophrenia [22].

The COVID-19 pandemic has brought about difficulties providing services to schizophrenic patients. Consistent care is vital for these patients to avoid decompensation and its consequences, namely emergency hospital admissions and department visits yielding mental and physical deterioration, further strain on the health care system, and even deaths [23]. The early effect of COVID-19 could be even more significant in an outpatient setting, wherein most mental health care is delivered [12]. Evidence-based care models of schizophrenia, such as assertive community treatment and intensive case management, underline in-person contacts in patients' homes and the community [24]. However, outreach visits escalate the rate of transmission to both providers and patients. Also, abrupt variations in mental health services delivery could lead to increased service disengagement, medication non-adherence, and distress, leading to decompensation and relapse [12].

Moreover, the treatment of patients with refractory schizophrenia is another challenge. Although clozapine is the best treatment for refractory schizophrenia, it has remained almost underutilized [25]. Clozapine has

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highly better clinical superiorities over other antipsychotic medications, such as enhanced community and social integration and fewer hospitalizations [26], though it needs regular bloodwork [27]. On the other hand, clozapine might lead to low-prevalent potentially-fatal agranulocytosis as a probable risk factor in COVID-19 [28]. Additionally, clozapine appears to account for death from pneumonia relevant to impaired swallowing, hypersalivation, and sedation, which is aggravated during the immune response because of a feedback loop that raises clozapine concentrations [29].

Nevertheless, the U.S. Food and Drug Administration (FDA) has altered some of its laboratory monitoring requirements regarding the COVID-19 on an emergency basis [30]. Therefore, within the pandemic, blood monitoring needed for clozapine maintenance could be less frequent. However, the advantages and drawbacks of such a shift need to be further assessed [12].

All in all, it is essential to consider the needs of schizophrenic patients during this pandemic since they are highly vulnerable. It may decrease the pandemic burden not only on schizophrenic people but also on the whole population.

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