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COVID-19: observed effects on mental health and neurology

Abstract

SARS-CoV-2 has profound effects on the mental health of a society and has implications on neurological brain function. This review explores current research on the SARS-CoV-2 pandemic and the association between different mental health disorders and central nervous system problems. A combination of various factors, such as governmental policies, heightened anxiety surrounding the unknown outcomes, and false narratives spread by mass media outlets, can have significant implications on the cognitive well-being of affected and unaffected individuals, family members, and healthcare providers. Psychological interventions are needed to address the pandemic's short-term and long-term effects, specifically regarding mental health and neurological outcomes of the SARS-CoV-2 infection.

Keywords: SARS-CoV-2, mental health, neurology, pandemic

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Introduction

The SARS-CoV2 pandemic continues to profoundly affect all aspects of society, including mental health.[1] Beyond the psychological impacts of elevated anxiety due to the pandemic's unknown outcomes, the virus may have significant neurological brain function implications. As a result, more significant mental health impacts may result from infection with SARS-CoV2.[2]

A review of current research on SARS-CoV-2 suggested that the zoonotic virus is considered biologically neurotropic and clinically neurotoxic.[2,3] A retrospective study conducted in Wuhan, China, assessed the neurological impacts of SARS-CoV-2. Results showed an increase in central nervous system problems ranging from dizziness, headache, loss of smell, loss of taste, muscle pain and weakness, impaired consciousness, and cerebrovascular complications[2] to encephalopathy[4] and encephalitis.[5] Moreover, the mass hysteria and resulting paranoia associated with an infectious disease outbreak of this magnitude can lead to erratic behaviors, irrespective of gender or socioeconomic status.[6]

The anxiety surrounding the unknown outcomes of the pandemic, the seeming indifference of some politicians to the suffering of the population, has overwhelmed innate coping responses. During such events, especially when there is no clear endpoint, the elevated risk of harmful behaviors may increase, including suicide and self-harm[2]. The SARS-CoV-2 pandemic has directly affected patients' mental health and cognitive well-being, family members, and healthcare workers. Much of this panic has been fueled by mass media.[7]

Mass media, explicitly false narratives, have become commonplace among news outlets and across nearly all social media platforms, further elevating stress, fear, and anxiety among individuals and communities.[8,9] When combined with excessive stress surrounding SARS-CoV-2, the resulting impact on individuals with mental illnesses may intensify psychiatric symptoms.[6]

Key risk factors for specific mental health issues include the effects of quarantine, social distancing, and isolation, which may have adverse effects on alcohol and substance use.[2] Other studies indicate social isolation and loneliness are associated with increased anxiety, depression, self-harm, and increased suicidality.[2] A higher prevalence of psychological distress has been reported among individuals experiencing extended quarantine.[6]

Socioeconomic effects

Governmental policies have been put in place to address and attempt to manage the pandemic; however, these policies' socioeconomic implications can also impose adverse effects on those with mental health issues.[6] Many are experiencing unemployment, financial insecurities, and increased poverty due to the pandemic and the policies implemented to manage viral transmission.[2,6] Many are incurring significant financial losses due to the cessation of community services and the collapse of work industries. Those people who rely on social and psychological benefits are often unable to acquire them, further intensifying anxiety and unease.[2,6]

Individual impacts

It became clear that SARS-CoV-2 would significantly impact mental health early in the pandemic, as panic-buying occurred worldwide of food items and toiletries.[10,11] Such open panic may elicit significant fear of being ill or dying regardless of exposure.[6] Comorbidities ranging from anxiety, depression, panic attacks, somatic symptoms, and post-traumatic stress disorder, along with delirium, psychosis, and suicidality, are all associated with younger age and increased self-blame.[6] Studies show that students are experiencing higher psychological impacts of SARS-CoV-2 due to prolonged school closure, online education requirements, and uncertainty of examinations and matriculation arrangements.[10]

Healthcare workers

Healthcare workers have an increased risk of contracting the virus or infecting family members.[12] The risk of increased exposure heightens stress, anxiety, and depression levels among medical responders; specifically, healthcare workers in emergency departments, intensive care units, and isolation wards.[6,13]

Media impacts

Extensive media coverage of the pandemic may be contributing to the psychological impacts of the outbreak,[14] and the virtually constant

media focus on the case reports, deaths, and financial disruption of the outbreak has primarily ignored the associated mental health issues.[15] Misinformation presented on social media can have detrimental impacts on the well-being of their viewers. As a result, the government and health authorities need to relay timely and accurate, evidence-based information.

Conclusion

Although the long-term neurological side effects of SARS-CoV-2 are currently under investigation, it is essential to be mindful of the psychological impact the pandemic will have on individuals and society. The societal response to previous epidemics and case studies may have provided insight on global reactions to manage SARS-CoV-2; however, in terms of disease spread and containment of the outbreak, community members are distrusting of others and healthcare authorities and services.[10,13,15] It is imperative to implement a nationwide psychological intervention plan to address the short-term and long-term effects of the pandemic and consider how to manage the possible neurological outcomes of SARS-CoV-2 infection.

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Conflicts of interest

The authors declare that there was no conflict of interest.

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