

Impact of pre-existing depression on severe COVID-19 outcomes

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The outbreak of the COVID-19 virus in 2019 had rapidly developed into a global pandemic, causing more than 6.8 million deaths and impacting the lives of billions of individuals around the world.¹ Public healthcare around the world have mainly focused on the clinical manifestations and treatment of the deadly respiratory disease. As the pandemic progressed, it became clear that the psychological distress—arising from anxiety, depression and self-isolation; leading even to some suicides—had negatively impacted people's mental health.² However, whether pre-existing mental disorder has an influence on COVID-19 outcomes remains unknown.

There is evidence highlighting how patients with pre-existing depression might be vulnerable in the context of COVID-19 pandemic, not only because of their mental disorders, but also due to long-term effects of medication and comorbid physical health problems.³ The combined factors mean that these patients are vulnerable to the virus as well as the negative effects of public health measures ranging from repeated lockdown, periods of self-isolation and disruption to normal healthcare. Specifically, it is unclear how the prevalence of depression may affect patients who contract COVID-19. This is compounded by the challenge in defining and providing evidence of pre-existing mental disorder in a large-scale cohort.

Against this background, authors Su Kyong Lee et al. in a recent *Annals* article conducted a study in South Korea to investigate the association between patients with pre-existing depressive conditions and severe COVID-19 events.⁴ The population-based cohort covered 97% of all South Korean citizens, where 29,106 eligible patients were screened into the analytic cohort and 6,079 among them showed depressive symptoms. Patients with moderate-to-severe depressive symptoms were shown to be mostly of a younger age, women, of lower income, and who had no COVID-19 vaccination. The findings are consistent with global findings on mental health issues.⁵ Furthermore, a study conducted across 204 countries⁶ revealed a prevalence of 3152.9 cases for depressive symptoms and 4802.4 cases

anxiety disorders per 100,000-population, respectively. The stress was mainly attributed to the worry of increasing infection rates and reductions in human mobility.

Findings by the authors showed that pre-existing depressive status (i.e. diagnosed before the pandemic) was associated with a higher risk of severe clinical COVID-19 events including requirement of various oxygen therapies, admission to ICU, extracorporeal membrane oxygenation (ECMO) and even death. Furthermore, moderate-to-severe depressive symptoms led to a significantly higher risk of severe COVID-19 events when compared to participants without depressive symptoms. These results did not change with vaccination status. The bidirectional association between mental health disorders and severe virus infection has been supported by several studies, where the vulnerability of the immune system and increased level of inflammatory cytokines induced by pre-existing depressive status are suggested as reasons facilitating the occurrence of severe COVID-19 events.⁷ Additionally, mental disorder accompanied by obesity, low systolic pressure and diabetes before the pandemic makes individuals more susceptible to COVID-19 infection.⁸ This analysis based on large population-level data provides the evidence supporting the association between pre-existing depression and increased risk of severe COVID-19.

The implications of severe COVID-19 events for people with pre-existing depression are of great concern. Against this context, mental health support is a priority for both patients and policymakers. Early intervention for patients with mental health disorders can reduce negative mental health problems and improve treatment effectiveness.⁹ This requires timely mental health assessment to identify people with pre-existing depression, and extending to them sustained support and treatment from psychological services. In addition, pandemic-related lockdowns and restrictions in social contact require for new systems of healthcare. A rapid shift from conventional outpatient service to telemedicine or digital medicine has emerged in this global crisis.¹⁰ This change has the potential to provide more

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accessible mental health platforms that enable patients seek psychological treatment via the internet without physical face-to-face consultations with doctors. Telemedicine may also sidestep the issue of stigma when seeking psychological advice and provide greater privacy for patients with mental health disorders to be treated from their homes. According to recent reports in the US, telemedicine has greatly improved the lives of patients suffering from depression and other mental health issues.¹¹ However, it is noted that no telemedicine programme can be created overnight, and clear rules and regulation by governments and health organisations are necessary for strong system integration and data privacy protection. Last but not least, seeing how patients with depression were impacted in the COVID-19 pandemic should remind us to watch out for this vulnerable group in the next crisis. Governments and healthcare workers can be more vigilant regarding the welfare of this group of individuals—with more dedicated care pathways and monitoring and support the patients—and hopefully assisted by greater awareness among the general population for those with multiple medical problems.

The COVID-19 pandemic presents not only a respiratory disease but also a public mental health challenge. As the authors described in the *Annals*, repeated episodes of lockdown, self-isolation and fear of unemployment have put more pressure on patients whose mental health were already affected before pandemic. The pre-existing mental disorders in turn caused higher risks of severe COVID-19 events and outcomes. Thus, it is crucial for countries to increase awareness of vulnerable groups as well as to provide timely public mental health interventions for individuals

with depression. We must focus and integrate our public mental health support targeting groups at high risk of mental disorder in order to be ready for future crises.

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