Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

COVID-19: stigmatising the unvaccinated is not justified

In the USA and Germany, high-level officials have used the term pandemic of the unvaccinated, suggesting that people who have been vaccinated are not relevant in the epidemiology of COVID-19. Officials' use of this phrase might have encouraged one scientist to claim that "the unvaccinated threaten the vaccinated for COVID-19".[1] But this view is far too simple.

There is increasing evidence that vaccinated individuals continue to have a relevant role in transmission. In Massachusetts, USA, a total of 469 new COVID-19 cases were detected during various events in July, 2021, and 346 (74%) of these cases were in people who were fully or partly vaccinated, 274 (79%) of whom were symptomatic. Cycle threshold values were similarly low between people who were fully vaccinated (median 22·8) and people who were unvaccinated, not fully vaccinated, or whose vaccination status was unknown (median 21·5), indicating a high viral load even among people who were fully vaccinated.[2] In the USA, a total of 10 262 COVID-19 cases were reported in vaccinated people by April 30, 2021, of whom 2725 (26·6%) were asymptomatic, 995 (9·7%) were hospitalised, and 160 (1·6%) died.[3] In Germany, 55·4% of symptomatic COVID-19 cases in patients aged 60 years or older were in fully vaccinated individuals,[4] and this proportion is increasing each week. In Münster, Germany, new cases of COVID-19 occurred in at least 85 (22%) of 380 people who were fully vaccinated or who had recovered from COVID-19 and who attended a nightclub.[5] People who are vaccinated have a lower risk of severe disease but are still a relevant part of the pandemic. It is therefore wrong and dangerous to speak of a pandemic of the unvaccinated. Historically, both the USA and Germany have engendered negative experiences by stigmatising parts of the population for their skin colour or religion. I call on high-level officials and scientists to stop the inappropriate stigmatisation of unvaccinated people, who include our patients, colleagues, and other fellow citizens, and to put extra effort into bringing society together.

I declare no competing interests.

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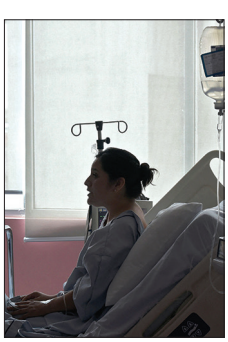
Long-term effects on survivors with COVID-19

Lixue Huang and colleagues[1] reported that patients discharged from hospital with COVID-19 showed good physical and functional recovery 1 year after symptom onset. Because of several concerns with the methods, we contend that the findings should be interpreted cautiously.

Quality of life (QOL) was measured using the EuroQol five-dimension five-level (EQ-5D-5L) questionnaire. However, the authors did not seem to use the validated Chinese version of the EQ-5D-5L, nor did they cite relevant studies.[2] Additionally, the EQ-5D-5L item on anxiety or depression was used on its own as a major health outcome, which is not appropriate since the EQ-5D-5L item on anxiety or depression has not been validated in Chinese populations. Furthermore, depression and anxiety each consist of a cluster of different symptoms that cannot simply be assessed using one EQ-5D-5L item. The study findings on the anxiety or depression risk factors are therefore tentative.

Clinically, depression refers to major depressive disorder, and anxiety refers to anxiety disorder. The investigators did not clarify that the EQ-5D-5L item on anxiety or depression only reflects their symptoms, which is misleading. Strictly speaking, specific methods of measuring anxiety and depression symptoms such as the Generalized Anxiety Disorder 7-item scale and Patient Health Questionnaire-9 should be used. Further, for anxiety disorder and major depressive disorder, structured diagnostic instruments such as the Mini-International Neuropsychiatric Interview or the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders are routinely used.

Moreover, most somatic symptoms reported in the Article[1] could be attributed to, or at least be partly explained by, depression or anxiety, or both, since it is widely documented that Chinese populations tend to somatise their mental health problems.[3,4] Most of the somatic symptoms were therefore probably incorrectly assumed to be sequelae symptoms caused by COVID-19. Furthermore, the risk factors of fatigue or muscle weakness were examined using multiple logistic regression analysis; anxiety and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depression should have been handled as either major contributing factors or covariates with confounding effects.

Finally, aside from the depression and anxiety symptoms, other notable and common mental health problems in COVID-19 survivors such as post-traumatic stress disorder symptoms and stigma[5,6] were not examined. Such problems could lead to a host of negative health outcomes, including depression and anxiety in the survivors of serious infectious diseases.[7,8]

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The conditions that linger after recovery from COVID-19 are commonly referred to as the long-term effects of COVID-19 (long COVID). The risk for sequelae varies according to the severity of the initial acute SARS-CoV-2 infection.[1]

We note that the proportion of patients admitted to intensive care units included in Lixue Huang and colleagues' analysis of 1-year outcomes in hospital survivors with COVID-19 was small (4%) and might not realistically capture the repercussions of long COVID. Furthermore, patients with comorbid activity-limiting health conditions or disabilities, a patient demographic previously shown to have an increased prevalence of long COVID by the UK Office for National Statistics, were excluded.[3]

Anxiety or depression were observed infrequently in patients at both 6 months (23%) and 12 months (26%). Self-reported symptoms of depression might be misleading and overestimate the actual prevalence. This over-estimation might explain why only one patient with COVID-19 reported participation in a psychological intervention programme.[2] In the future, the investigators might consider using questionnaires specific to depression and anxiety to avoid this issue.

Cytokines are closely associated with the progression and severity of chronic fatigue syndrome.[4] Given the high rate of fatigue and weakness and the availability of data on cytokines, are the investigators able to compare the difference in the number of survivors between patients with fatigue or muscle weakness and those without fatigue or muscle weakness?

Lastly, reinfection with SARS-CoV-2 variants have been confirmed with genetic evidence.[5] It is unclear whether patients with long COVID also have an increased susceptibility to reinfection because of the poor durability of their antibody response. Despite the success of COVID-19 vaccines, their effectiveness in preventing long COVID has yet to be elucidated.

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Authors' reply

Yan-Jie Zhao and colleagues and Chengliang Yang and colleagues all recommend specific questionnaires to evaluate depression and anxiety symptoms in hospital survivors with COVID-19 1 year after onset.[1] We agree that the professional questionnaires could provide the actual prevalence of psychiatric symptoms. However, these questionnaires are somewhat complex and time-consuming. It is challenging to integrate all these assessments into our follow-up study.[1] The EuroQol five-dimension five-level (EQ-5D-5L) questionnaire is commonly used to assess the quality of life from five domains in clinical studies. The EQ-5D-5L questionnaire used in our research is from the Chinese version of the EQ-5D user guide.[2] Zhao and colleagues point out that the EQ-5D-5L