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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1 Goldman E. How the unvaccinated threaten the vaccinated for COVID-19: a Darwinian perspective. *Proc Natl Acad Sci USA* 2021; **118:** e2114279118.

2 Brown CM, Vostok J, Johnson H, et al. Outbreak of SARS-CoV-2 infections, including COVID-19 vaccine breakthrough infections, associated with large public gatherings—Barnstable County, Massachusetts, July 2021. *MMWR Morb Mortal Wkly Rep* 2021; **70:** 1059–62.

3 US Centers for Disease Control and Prevention COVID-19 Vaccine Breakthrough Case Investigations Team. COVID-19 vaccine breakthrough infections reported to CDC—United States, January 1–April 30, 2021. *MMWR Morb Mortal Wkly Rep* 2021; **70:** 792–93.

4 Robert Koch Institut. Wöchentlicher Lagebericht des RKI zur Coronavirus-Krankheit-2019 (COVID-19)—14·10·2021—aktualisierter Stand für Deutschland. Oct 14, 2021. https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Situationsberichte/Wochenbericht/Wochenbericht_2021-10-14.pdf?__blob=publicationFile (accessed Oct 18, 2021).

5 Von Dolle F. Münster: Inzwischen 85 Infizierte nach 2G-Party im Club. Sept 20, 2021. https://www1.wdr.de/nachrichten/westfalen-lippe/corona-infektionen-clubbesuch-muenster-100.html (accessed Sept 23, 2021).

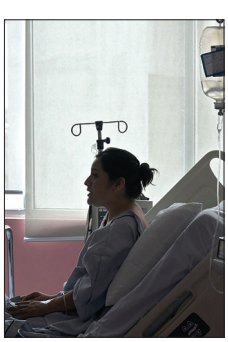
Long-term effects on survivors with COVID-19

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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