The coronavirus disease 2019 (COVID-19) global pandemic is affecting 210 countries and territories around the world. By the end of March 2020, the total number of infected cases had exceeded 3,000,000 with more than 200,000 deaths. Vietnam is a low-resource country that has had a good response to the outbreak with only 260 cases and no deaths thanks to the highly restricted infection-prevention and control policy. On 28 March 2020, the government of Hanoi locked down one of largest medical centers in the country, Bach Mai Hospital (BMH), after a large outbreak was detected in staff and linked patients. At the Center for Tropical Diseases where the first two cases were identified, all health-care workers (HCW) were quarantined for more than 3 weeks. The psychological distress of quarantine has been well documented and includes stress, anxiety, confusion, fear, insomnia, and post-quarantine-related stigmatization. This distress might impact HCW more severely than the general population. We aimed to measure the stigma experienced and its association with mental health problems among HCW after 23 days of quarantine at BMH.

We collected data from HCW between 26 and 29 April 2020. We developed a self-reported instrument that measures COVID-19-related stigma among participants. The questionnaires consisted of 12 questions with response options on a 4-point Likert scale. Responses were summed to calculate a total score; higher scores indicated a higher level of stigma (Table 1). We referred to Berger’s HIV Stigma Scale for the wording of terms and phrasing of measurement items. Details of the methods are reported in Appendix S1. The validity assessment followed the COSMIN Risk of Bias Checklist (Appendix S2). The study was approved by the Director Board of BMH and all participants provided informed consent.

A total of 61 participants enrolled in the study; 82.0% were female and the median age was 32 years (interquartile range = 29–36 years).

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Most of the participants were nurses (73.8%; Table S1). The prevalence rates of depression, anxiety, and stress were 13.11%, 14.75%, and 4.92%, respectively (Fig. S1).

The median of Stigma Scale total score was 11 (interquartile range = 6–15; min.–max. = 0–24). Three dimensions were reconstructed from factor analysis: (i) Negative Self-image, (ii) Disclosure Concerns and Personalized Stigma, and (iii) Concerns About Public Attitudes. Each domain score was calculated by dividing the total score by the number of items (possible range of 0–3). Cronbach’s alpha scores were good to great in all domain factors, ranging from 0.75 to 0.86. Stigma Scale domains showed a moderate correlation with the 21-item Depression, Anxiety, and Stress Scale subscale scores.8

The success of outbreak containment in Vietnam has been due to the government’s early and constantly aggressive approach (including zoning, isolating, and quarantining all infected people and their close contacts) as well as its traditional and modern mass media campaign to improve the awareness of all citizens.9 This may have inadvertently increased the likelihood of stigmatization of people after quarantine regardless of their infection status. In frontline HCW, the negative impacts could be more serious as they are receiving greater attention in the press and mass media.

In our results, higher-level stigma was found in the domains of Negative Self-image and Concerns About Public Attitudes, with many participants feeling guilty towards family members and friends, and avoiding contact with neighbors and the community. This finding needs to be further studied as the social-distancing policy is still in effect and the results only show short-term effects. Other limitations include: (i) the small sample size; (ii) using an instrument that has not been extensively validated to measure stigma; and (iii) insufficient baseline data. In addition, the sample from BMH did not represent all HCW in Vietnam and the cross-sectional design might not have been able to establish causal inference.

To our knowledge, this the first study to report COVID-19-related stigma among HCW who have experienced a long duration of quarantine. Vietnam has succeeded in preventing widespread outbreaks during the first two phases of the pandemic, with the epicenters in China and the European Union. The third phase will start soon after the initiation of the government’s plan to receive thousands of citizens returning from abroad.10 As the primary workforce, HCW should receive priority support that minimizes the pressure and burden from non-work sources; formal psychological support should also be provided, if necessary. In addition, further studies investigating the societal impact of COVID-19 and related policies should be conducted soon to prepare for the next stage of the outbreak.

Disclosure statement
The authors declare no conflicts of interest.

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Perioperative mental evaluation and intervention for lung transplantation in elderly patients with COVID-19

As of 31 March 2020, there had only been four cases of double-lung transplantation completed successfully in patients with the novel coronavirus disease 2019 (COVID-19) worldwide. Lung transplantation is considered as the final option for critically irreversibly COVID-19 patients. However, previous studies have demonstrated that SARS-CoV-2 may directly invade the central nervous system. Furthermore, the systemic inflammatory response caused by the virus may also lead to brain damage. Therefore, it is necessary to conduct a perioperative mental evaluation and urge intervention for potential mental symptoms in COVID-19 patients. Given the very little existing experience in this field, we report postoperative mental status outcomes in two elderly COVID-19 patients in China. Neither patient had a history of psychiatric disorder before virus infection.

Patient 1, a 66-year-old woman with a negative history of chronic disease, was diagnosed with COVID-19 on 20 January 2020 and underwent a double-lung transplant on 1 March 2020. She had had no psychiatric symptoms between 20 January and 2 February. Delirium symptoms, characterized by restlessness and confusion, had developed on 3 February and had lasted for 7 days. She was medically sedated and arousable for 7 days before surgery. The total observation time for her was 28 days after surgery. She achieved consciousness on the 8th day after surgery. ('Consciousness' is defined as being able to open one’s eyes autonomously and complete actions as instructed.) Depressed emotion appeared on the 11th day, manifesting as crying and hopelessness. Only psychological supportive treatments were applied to improve her mood, not antidepressants. Sedatives, such as zolpidem (10 mg/day) and olanzapine (5 mg/day), were used to treat insomnia, which started on the 16th day after transplant (Fig. 1a).

Patient 2 was a 70-year-old man with a history of hypertension for 5 years and a 10-year history of diabetes. He was confirmed to have COVID-19 on 2 February and underwent a double-lung transplant on 8 March. He had had no psychiatric symptoms from post-viral infection until February 14, and was medically sedated and arousable thereafter until transplantation. The total observation time for him was 21 days after surgery. The time of recovering consciousness was 6 days after the surgery. He also had insomnia on the 11th day after surgery. Sleep aids zolpidem (10 mg/day) and olanzapine (5 mg/day) were used briefly. By the end of the observation period, there was no sign of insomnia, low mood, delirium, or any other severe mental symptoms (Fig. 1b).

Patient 1 was virus-negative from 23 February until the end of the follow-up period, while Patient 2 was virus-negative from 18 February.

Insomnia occurred in both patients after lung transplantation, and the medium onset time was 13 days after the operation. Both needed small doses of sedatives as treatment. Causes of insomnia may include the use of immunosuppressive agents, surgical stress, and noisy intensive care unit environments. Emotional problems occurred in one of the patients after surgery, and her mood improved only when psychological support was provided. This indicates that the main cause of poor mood might be surgical and medical stress. Given that the incidence of delirium in patients using mechanical ventilation is 50–75%, we closely monitored these two patients for possible postoperative delirium symptoms. Neither patient showed typical symptoms of delirium (such as disorientation, hallucinations, and agitation) or combative behavior after unsedation to consciousness. Both patients started muscle rehabilitation training 10 days after surgery. This suggests that with complete supportive care, patients with COVID-19 may avoid acute brain dysfunction after lung transplantation.

Two elderly COVID-19 patients, with complete supportive care, showed no signs of severe psychiatric symptoms affecting the rehabilitation process after double-lung transplantation. However, psychological evaluation and intervention are still necessary for postoperative care.

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