symptomatology in 60 fully or partially remitted OCD patients (mean age = 41.5 years [SD = 7.9 years]; sex ratio (M/F), 25/35) consecutively treated for more than 3 years in our OCD clinic. All participants: met the DSM-5 criteria for OCD; had directly visited our clinic from 7 April to 2 May 2020 in the state of emergency in Japan; and provided us with informed consent to participate in this study. Of the subjects, 24 (40%) had fully remitted (FR) OCD (total score on Yale–Brown Obsessive–Compulsive Scale [Y-BOCS] < 8) and 36 subjects (60%) were assessed as partially remitted (PR; 9 < Y-BOCS < 15),[5] and their principle OCD symptoms were categorized according to the symptom dimension typology,[6] such as contamination/washing ($n = 29$), aggressive/checking ($n = 20$), and symmetry/repeating and ordering ($n = 11$), at the latest assessment before the spread of COVID-19 (before December 2019). Their OCD symptoms were reassessed at the time when they came to our clinic in the state of emergency as described above.

The mean (SD) Y-BOCS total scores before and after the spread of COVID-19 were, respectively, 5.5 (1.4) and 5.7 (1.5) in the FR group and 12.2 (2.2) and 13.0 (2.3) in the PR group. Only four participants (one in the FR group and three in the PR group; 6.7%) exhibited additional or renewed OCD symptoms associated with COVID-19, such as contamination obsessions or washing compulsions, and no subjects exhibited the symptom transition of their principle symptoms. In addition, six of the participants (10%) experienced the deterioration of the symptom severity of OCD as assessed by increase of Y-BOCS total score > 3, especially the 'time spent performing compulsions' score rather than the 'time occupied by obsessive thoughts' score on the Y-BOCS without any significant differences in the prevalence between the FR (8.3%) and PR (11.1%) groups. All six subjects with deteriorated OCD, except for one assessed as predominantly having symmetry/repeating and ordering symptoms, had principle OCD symptoms associated with contamination/washing. Finally, those subjects with OCD symptoms badly affected by COVID-19 were significantly more likely to have higher trait anxiety, depressive status, higher prevalence of generalized anxiety disorder, and contamination/washing symptoms specifically associated with virus respiratory infection, such as influenza infections, at the assessment before the spread of COVID-19.

In this preliminary study, there were some crucial limitations, such as sample bias (only including subjects who had visited our clinic in the state of emergency), cross-sectional assessment, and low number of subjects. Moreover, determining the diagnostic threshold for OCD along with severity of OCD symptoms especially associated with contamination/washing symptoms should be substantially affected by the attention in the media, because excessive washing behaviors for more than 30 s has been recommended and endorsed by Japanese health agencies.

Nevertheless, at least in the acute phase along with fully or partially remitted samples, there may be some acute impact on the phenomenological features and severity of OCD. These findings seem consistent with the long-term stability of OCD symptom dimensions[7] and also seem to support the possible inflexibility of symptoms, specifically biological bases of the long-term enduring symptom structure.[8] Further studies are needed to prospectively clarify the longer-term effect of fear or anxiety regarding COVID-19 on the onset or deterioration of OCD symptoms in a larger number of subjects, including the general population.

Disclosure statement

The authors have no conflicts of interest to declare.

References

1. Taylor S, Landry C, Paluszek M et al. Development and initial validation of the COVID Stress Scales. J. Anxiety Disord. 2020; 72: 102232.
2. Hamada K, Fan X. The impact of COVID-19 on individuals living with serious mental illness. Schizophr. Res. 2020. https://doi.org/10.1016/j.schres.2020.05.054
3. Cisler JM, Brady RE, Olatunji BO, Lohr JM. Disgust and obsessive beliefs in contamination-related OCD. Cognit. Ther. Res. 2010; 34: 439–448.
4. Fontenelle LF, Miguel EC. The impact of COVID-19 in the diagnosis and treatment of obsessive-compulsive disorder. Depress. Anxiety 2020; 37: 510–511.
5. Nakajima A, Matsuura N, Mukai K et al. A ten-year follow-up study of Japanese patients with obsessive–compulsive disorder. Psychiatr. Clin. Neurosci. 2018; 72: 502–512.
6. Matsunaga H, Maebayashi K, Hayashida K et al. Symptom structure in Japanese patients with obsessive-compulsive disorder. Am. J. Psychiatry 2008; 165: 251–253.
7. Mataix-Cols D, Rauch SL, Baer L et al. Symptom stability in adult obsessive-compulsive disorder: Data from a naturalistic two-year follow-up study. Am. J. Psychiatry 2002; 159: 263–268.
8. Pauls DL, Abramovitch A, Rauch SL et al. Obsessive–compulsive disorder: An integrative genetic and neurobiological perspective. Nat. Rev. Neurosci. 2014; 15: 410–424.

Hisato Matsunaga, MD, PhD [ORCID] Keiichiro Mukai, MD, PhD [ORCID] and
Kyosuke Yamanishi, MD, PhD
Department of Neuropsychiatry, Hyogo College of Medicine,
Nishinomiya, Japan
Email: hisa1311@hyo-med.ac.jp

COVID-19-related stigma and its association with mental health of health-care workers after quarantine in Vietnam

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.[1] 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.[2] 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.[3] 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.[4] 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.[5] 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.[6] Details of the methods are reported in Appendix S1. The validity assessment followed the COSMIN Risk of Bias Checklist (Appendix S2).[7] 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).

Table 1 Factor analysis results of Stigma Scale and the correlation with DAS-21 Scale scores

Items	Agreed responses (%)†	Domain factors‡		
		Negative Self-image	Disclosure Concerns and Personalized Stigma	Concerns About Public Attitudes
1. Feel unsafe to be a health worker	18.03	0.86	—	—
2. Feel guilty because of being isolated	34.43	0.80	—	—
3. Feel blamed by relatives or friends	9.84	—	0.67	—
4. Feel ashamed of being isolated	3.28	—	0.81	—
5. Try to hide being quarantined	6.56	—	0.68	—
6. Try to avoid going out	65.57	—	—	0.64
7. Not disclosing to anyone about the feeling	14.75	—	0.76	—
8. Try to avoid work related to COVID-19	1.64	—	0.85	—
9. People talk behind back	39.34	—	—	0.77
10. People avoid touching and direct contact	34.43	—	—	0.88
11. People feel uncomfortable when around	31.15	—	—	0.84
12. Experienced discrimination actions	6.56	—	—	0.62
Domain scores, median (interquartile range)	—	1 (0.5 to 1.5)	0.6 (0 to 1)	1.2 (0.6 to 1.6)
Floor/ceiling effect (%)	—	1.64/13.11	1.64/19.67	1.64/37.7
Cronbach's alpha score	—	0.75	0.86	0.86
Correlation with DAS-21 Scale score§				
DAS-21 Scale Depression subscale	—	0.35 (0.10 to 0.55)	0.32 (0.08 to 0.53)	0.33 (0.09 to 0.54)
DAS-21 Scale Anxiety subscale	—	0.45 (0.23 to 0.63)	0.36 (0.12 to 0.56)	0.39 (0.15 to 0.58)
DAS-21 Scale Stress subscale	—	0.32 (0.07 to 9.53)	0.16 (−0.1 to 0.40)	0.24 (−0.01 to 0.46)

†Percent of participants agreeing or strongly agreeing.
‡Factor loadings > 0.6.
§Spearman's correlation, *r*-value (95% confidence interval).
DAS-21 Scale, 21-item Depression, Anxiety, and Stress Scale.

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[2]) 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.

References

1. World Health Organization. Coronavirus disease 2019 (COVID-19): Situation Report 100 29 April 2020. [Cited 1 May 2020.] Available from URL: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200429-sitrep-100-covid-19.pdf?sfvrsn=bbfbf3d1_6
2. Thanh HN, Van TN, Thu HNT *et al*. Outbreak investigation for COVID-19 in northern Vietnam. *Lancet Infect. Dis.* 2020; **20**: 535–536.
3. Boudreau J, Nguyen XQ. Hanoi's largest hospital locked down on virus outbreak fears. *BNN Bloomberg*. 28 March 2020. [Cited 1 May 2020.] Available from URL: https://www.bnnbloomberg.ca/hanoi-s-largest-hospital-locked-down-on-virus-outbreak-fears-1.1413751
4. Nga L, Chi L. Two Hanoi nurses become Covid-19 patients. *VN Express International*. 20 March 2020. [Cited 1 May 2020.] Available from URL: https://e.vnexpress.net/news/news/two-hanoi-nurses-become-covid-19-patients-4071673.html

5. Brooks SK, Webster RK, Smith LE *et al.* The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *Lancet* 2020; **395**: 912–920.

6. Berger BE, Ferrans CE, Lashley FR. Measuring stigma in people with HIV: Psychometric assessment of the HIV Stigma Scale. *Res. Nurs. Health* 2001; **24**: 518–529.

7. Mokkink LB, de Vet HCW, Prinsen CAC *et al.* COSMIN Risk of Bias Checklist for systematic reviews of patient-reported outcome measures. *Qual. Life Res.* 2018; **27**: 1171–1179.

8. Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behav. Res. Ther.* 1995; **33**: 335–343.

9. La V-P, Pham T-H, Ho M-T *et al.* Policy response, social media and science journalism for the sustainability of the public health system amid the COVID-19 outbreak: The Vietnam lessons. *Sustainability* 2020; **12**: 2931.

10. HCM City projects to receive 17,000 from high-risk areas. *DTiNews.* 20 March 2020. [Cited 1 May 2020.] Available from URL: http://dtinews.vn/en/news/017004/67016/hcm-city-projects-to-receive-17-000-from-high-risk-areas.html

Supporting information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Appendix S1. Details of Methods.

Appendix S2. COSMIN Risk of Bias checklist.

Figure S1. Classification of 21-item Depression, Anxiety, and Stress Scale subscales.

Table S1. Demographic characteristics of participants.

Cuong Do Duy, MD, PhD (iD),[1][†] Vuong Minh Nong, MSc,[1][†] An Ngo Van, MD,[1] Tra Doan Thu, MD, PhD,[1] Nga Do Thu, MSc[1] and Tuan Nguyen Quang, MD, PhD[2]

[1]*Center for Tropical Diseases, and* [2]*Bach Mai Hospital, Hanoi, Vietnam*
Email: doduy.cuong@bachmai.edu.vn
[†]*Both authors contributed equally to this manuscript.*

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 irreversible COVID-19 patients.[1] However, previous studies have demonstrated that SARS-CoV-2 may directly invade the central nervous system.[2] 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,[3] 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%,[4] 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.

Disclosure statement

The authors declare no conflicts of interest.