Mental health burden of frontline health professionals treating imported patients with COVID-19 in China during the pandemic

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The 2019 novel coronavirus disease (COVID-19) outbreak emerged in Wuhan in December 2019 before spreading to all provinces of China. Although the outbreak has been well controlled in China since March 2020, the pandemic has now affected more than 200 countries (WHO, 2020). When many Chinese residents who were either studying or working aboard begun to return to China since February 2020, some of them were infected with COVID-19. As a new wave of infection cases was imported from abroad, several temporary isolation hospitals were urgently established in major cities to provide early identification and management. The Beijing Xiaotangshan Hospital, which was initially set up in April 2003 during the outbreak of severe acute respiratory syndrome (SARS) as a temporary designated infectious hospital, was reopened on 16 March 2020. The primary goal of this new service was to provide screening tests and medical treatments for the imported COVID-19 cases of mild-to-moderate severity.

A recent study found that mental health problems were common among frontline healthcare staff in the early stage of the COVID-19 outbreak in China (Lai et al., 2020). With the rapid provision of personal protective equipment (PPE) and effective measures to address mental health issues, the prevalence of mental health problems among frontline health professionals had been substantially reduced by the later stage of the COVID-19 outbreak (Zhou et al., 2020). To date, the mental health impact on the frontline health professionals involved in caring for the imported cases has not yet been studied. Hence, in this study we examined the prevalence of stress, depression, anxiety, and insomnia symptoms among these health professionals.

This study was conducted from 6 April to 10 April 2020 using the QuestionnaireStar program. The Perceived Stress Scale (PSS-10), Patient Health Questionnaire (PHQ-9), Generalized Anxiety Disorder (GAD-7) scale, and Insomnia Severity Index (ISI-7) were used to assess the perceived stress levels and the symptoms of depression, anxiety and insomnia, respectively. The total PSS-10 score of ≥15 was considered as having a moderate to severe level of stress. A PHQ-9 total score of ≥5, GAD-7 total score of ≥5, and ISI-7 total score of ≥8 were considered as having depression, anxiety, and insomnia symptoms, respectively.

All of the 1057 frontline health professionals in Beijing Xiaotangshan Hospital were invited, of whom, 845 participated in this survey. The mean age of the participants was 35.5 ± 6.7 years, and 76.8% were nursing staff, who were predominantly female (84.5%). The prevalence of moderate to severe stress level was 60.8% [95% confidence interval (CI) 57.8–63.9]; whereas the prevalence of depression, anxiety, and insomnia symptoms were 45.6% (95% CI 42.4–49.3), 20.7% (95% CI 18.0–23.7), and 27.0% (95% CI 23.9–30.0), respectively.

It is noteworthy that around two-thirds of the frontline health professionals in this study reported moderate to high level of stress. This could be attributed to several reasons. First, as many Chinese residents who returned from overseas had already been infected with COVID-19 prior to their return (Chinadaily, 2020), they needed urgent containment to prevent community transmission. Although many health professionals from 22 major hospitals in Beijing promptly volunteered to work at the Beijing Xiaotangshan Hospital, only 44 had clinical experience in respiratory diseases or infectious units in their hospitals of origin. The lack of expertise in treating COVID-19 patients can increase the psychological stress and effects on health professionals. Second, many people from abroad often make unreasonable requests (e.g. airport transfers, frequent contacts with their family members, and supply of food and daily consumables) on the frontline health professionals during their hospital stay. Such demands may increase the responsibilities and clinical workload of the frontline health professionals.

Compared to the recent survey (Lai et al., 2020) in the early stage of the COVID-19 outbreak in China using the same measures, the prevalence of depression (45.6% *v.* 50.4%),

anxiety (20.7% *v.* 44.6%), and insomnia symptoms (27.0% *v.* 34.0%) in our study were however lower. Apart from sufficient supply of PPE, timely access to a range of effective mental health measures may mitigate some of the adverse impact on health professionals.

In conclusion, high levels of stress and mental health problems are common among frontline health professionals during the course of the COVID-19 pandemic, even in a well-contained disease transmission setting. Timely development and implementation of effective mental health and psychosocial support are key to address the mental health challenges in this population.

References

Chinadaily (2020). Chinese citizens return from abroad. https://www.chinadaily.com.cn/a/202003/05/WS5e60366fa31012821727c621.html.

Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., … Hu, S. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open*, 3, e203976.

WHO (2020). Coronavirus disease (COVID-2019) situation reports. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports.

Zhou, Y., Zhou, Y., Song, Y., Ren, L., Ng, C. H., Xiang, Y. T., & Tang, Y. (2020). Tackling the mental health burden of frontline healthcare staff in the COVID-19 pandemic: China's experiences. *Psychological Medicine*. doi: 10.1017/S0033291720001622.