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Posttraumatic stress symptoms and attitude toward crisis mental health services among clinically stable patients with COVID-19 in China

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The novel coronavirus disease (COVID-19) has been rapidly transmitted globally. With the increasing number of infected cases and deaths, many patients experienced both physical suffering and great psychological distress. In China, a range of guidelines and expert consensus have been developed by health authorities and academic associations. Crisis mental health interventions, such as online education and counseling services, have been widely adopted nationwide (Liu et al., 2020).

According to the treatment guidelines in China, COVID-19 patients need to be treated in isolated hospitals. Due to social isolation, perceived danger, uncertainty, physical discomfort, medication side effects, fear of virus transmission to others, and negative news on social media, patients with COVID-19 may experience loneliness, anger, anxiety, depression, insomnia, and posttraumatic stress symptoms (Wu, Chan, & Ma, 2005; Xiang et al., 2020), which could negatively affect individuals' social and occupational functioning, and quality of life (Monson, Caron, McCloskey, & Brunet, 2017; North et al., 2002). To date, no studies on the pattern of posttraumatic stress symptoms among COVID-19 patients have been reported. Therefore, we examined the pattern of posttraumatic stress symptoms in clinically stable COVID-19 patients. We also explored patients' attitude toward crisis mental health services during the COVID-19 outbreak.

Online assessment was incorporated as part of the crisis psychological interventions. Patients were invited to participate in this online assessment prior to their discharge from five quarantine facilities ('Fang Cang' hospitals) in Wuhan, Hubei province in March 2020. '*Fang Cang*' hospitals refer to temporary quarantine hospital facilities converted from gymnasiums, exhibition centers and sports centers for clinically stable patients with COVID-19 in Wuhan, China. To be eligible, participants should be adult patients diagnosed with COVID-19 verified by patients' medical records, and clinically stable, as screened by patients' case medical officers. Participants were asked about their attitudes toward COVID-19-related online crisis mental health services, such as psycho-educational resources, and mental health counseling, using a standardized question: '*Do you think online psycho-educational resources and mental health counseling provision during the COVID-19 outbreak are helpful?*' (yes/no). The amended self-reported Posttraumatic Stress Disorder (PTSD) Checklist– Civilian Version (PCL-C) (Weathers, Litz, Herman, Huska, & Keane, 1993) was used to assess the severity of the posttraumatic stress symptoms associated with the COVID-19. A total PCL-C score of $\geqslant$50 was considered 'having significant posttraumatic stress symptoms' (Yang, Yang, Liu, & Yang, 2007).

A total of 730 COVID-19 patients were recruited in this study, of whom, 714 met the inclusion criteria. The mean age of the participants was 50.2 ± 12.9 years, men accounted for 49.1% of the sample, and 25.8% lived alone prior to admission. The prevalence of significant posttraumatic stress symptoms associated with the COVID-19 was 96.2% (95% CI 94.8–97.6%). Half of the participants (49.8%) considered psycho-educational services helpful.

To the best of our knowledge, this was the first study examining the prevalence of posttraumatic stress symptoms in COVID-19 patients. It is noteworthy that most COVID-19 patients suffered from significant posttraumatic stress symptoms associated with the disease prior to discharge, and these symptoms may lead to negative outcomes, such as lower quality of life and impaired working performance. Following the outbreak of severe acute respiratory syndrome (SARS) in 2003, the prevalence of PTSD in SARS survivors was 9.79% in their early recovery phase (Fang, Zhe, & Shuran, 2004) and 25.6% at 30-month post-SARS assessment (Mak, Chu, Pan, Yiu, & Chan, 2009). Our findings were significantly higher than that of

Fang's and Mak's. The remarkable differences between these studies could be attributed to different clinical diagnosis and illness phrases (e.g., clinically stable COVID-19 inpatients vs. SARS survivors) and different measurements (e.g., self-reported instrument on posttraumatic stress symptoms associated with the COVID-19 vs. clinical diagnosis of PTSD established by professionals). The rapid transmission of COVID-19 alongside with demeaning news coverage in widely used communication programs (e.g. WeChat and Weibo), and social discrimination toward COVID-19 patients may result in higher prevalence of self-perceived posttraumatic stress symptoms associated with the COVID-19 in this study.

Of particular note was that only half of the patients hold positive attitudes toward online crisis mental health services. During the COVID-19 outbreak, most crisis mental health services for infected patients are delivered online. Many COVID-19 patients were older adults with limited time, and restricted access to internet and smartphones due to poor health status during hospitalization (Yang et al., 2020). Compared with on-site psychological interventions, online self-guided psycho-educational resources could be less effective, especially for those with reading difficulties and physical discomfort brought by COVID-19 and treatment side effects.

In conclusion, this study found that most clinically stable COVID-19 patients suffered from significant posttraumatic stress symptoms associated with the COVID-19 prior to discharge. Considering the negative detrimental impact of significant posttraumatic stress symptoms, appropriate crisis psychological interventions and long-term follow-up assessments should be urgently initiated for COVID-19 survivors.

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Conflicts of interest. None.

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