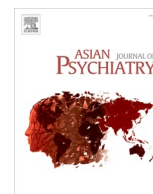




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Addressing psychosomatic issues after lifting the COVID-19 policy in China: A wake-up call

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ABSTRACT

The Coronavirus has infected up to 900 million people as of 11 Jan 2023 in China Mainland, which is more than 60% of the population. The sudden and unprecedented nature of pandemic has resulted in a range of psychosomatic issues among the population. These issues can manifest in a variety of ways and it is important to address these issues as they can have serious consequences for individuals' mental and physical health. The lifting of lockdown measures in China presents an opportunity to address these issues and provide support to those who have been affected.

1. Introduction

As China emerges from the COVID-19 pandemic, it is important to consider the psychological and physical health effects of the measures that were implemented to curb the spread of the virus (The State Council of the People's Republic of China, 2022a). Since government restrictions on Coronavirus have been eased, infections have spread rapidly. The Coronavirus has infected up to 900 million people as of 11 Jan 2023 in China Mainland, which is more than 60% of the population, according to researchers at Peking University (Covid Cases in China Touch 900 Million – Study, 2023). The sudden and unprecedented nature of the pandemic has resulted in a range of psychosomatic issues among the population.

Psychosomatic issues refer to physical symptoms that are caused or exacerbated by psychological factors such as stress, anxiety, and depression (Gong et al., 2022; Huang et al., 2023). Up to 84% of COVID-19 hospitalized patients have neurological symptoms, according

to a series of studies from China and France (Helms et al., 2020). Researchers have discovered that SARS-CoV-2 is capable of infecting tissues via the angiotensin-converting enzyme 2 (ACE2) receptor on the host cells (Bahari et al., 2021; Meftahi et al., 2020). A weakened immune system and a greater vulnerability to contracting life-threatening and lethal viral infections are more likely to plague patients with chronic stress, particularly those at risk such as the elderly, pregnant women, and those with chronic diseases (Dehghani et al., 2022). Similarly, excessive psychological difficulties weaken the immune system as a result of Covid-19 pandemic, thereby increasing the body's vulnerability to infection. These issues can manifest in a variety of ways, including headaches, stomach problems, and sleep disturbances (Yong, 2021).

Symptoms of acute COVID-19, also known as long COVID, include a number of neurological and neuropsychiatric conditions and long COVID-19 syndrome (Chou et al., 2021; Helms et al., 2020; Mao et al., 2020; Nasserie et al., 2021; Varatharaj et al., 2020). A variety of neurological and neuropsychiatric symptoms are associated with these

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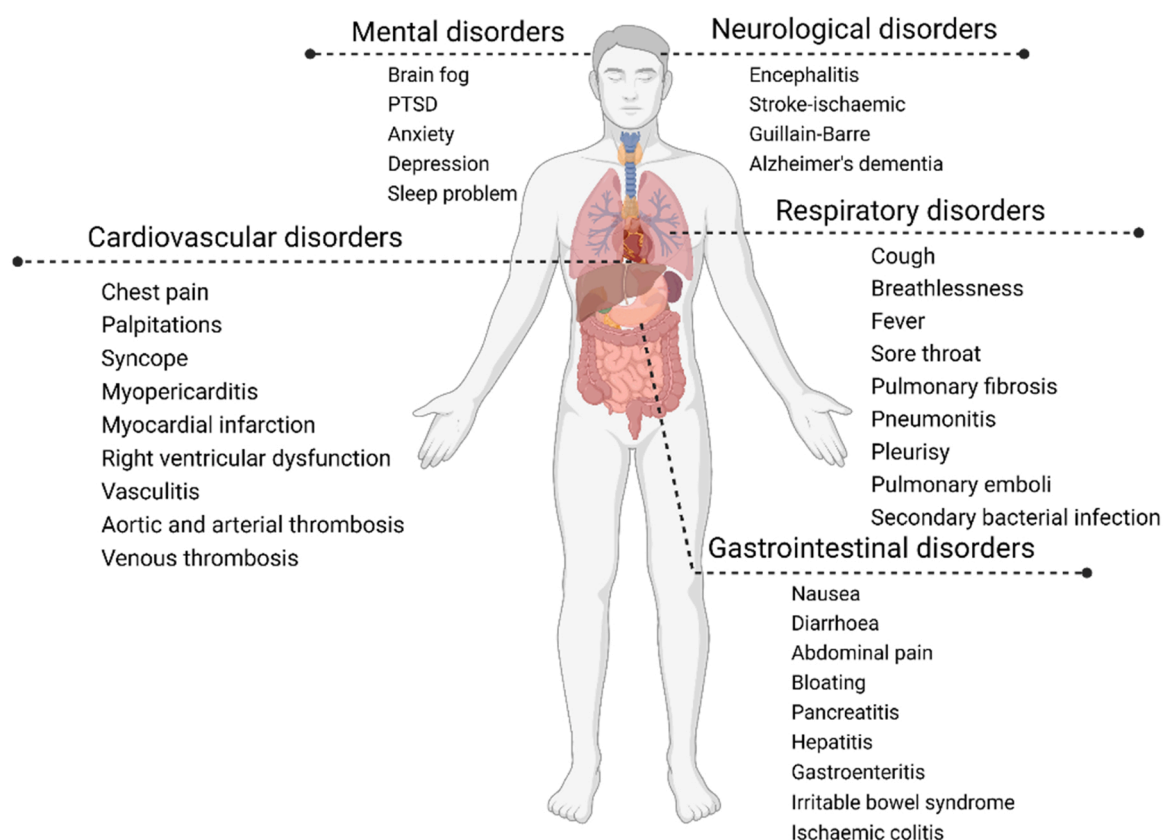


Fig. 1. Psychosomatic diseases triggered by COVID-19 including the neurological disorders, respiratory disorders, cardiovascular disorders, gastrointestinal disorders.

conditions, including cognitive and mental impairments, depression, anxiety, agnosia, ageusia, brain fog, PTSD, sleep problem (Nasserie et al., 2021). Rossi et al. reported 37% PTSD, 22% high perceived stress, 21% anxiety, and 17% depression in the Italian population. According to the survey conducted by Liu et al., a delay in medical treatment only negatively affected post-traumatic stress symptoms development in males, whose levels rose sharply when delay exceeded one week (Liu et al., 2022).

In previous neurological studies, ventilated patients have been observed to deteriorate neurologically, including memory impairment, attention difficulties, and verbal influence (Vannorsdall and Oh, 2021). The persistent form of cognitive impairment was known as brain fog, which interferes with attention, concentration, memory, information processing speed, and executive function (Monje and Iwasaki, 2022). In addition, It has been shown that sleep disorders are bidirectionally related to psychiatric comorbidities such as anxiety, depression, and stress-related disorders, implying that sleep therapists should address psychiatric comorbidities when treating sleep disorders, and vice versa (Jahrami et al., 2021). Getting generalizations of these symptoms to the general population confirmed the link between cognitive changes, dementia, and infection (Ritchie et al., 2020).

After acute COVID-19, fatigue and dyspnea are the most commonly reported symptoms (Cares-Marambio et al., 2021; Shah et al., 2021). Other persistent symptoms may include Neurological disorders (encephalitis, stroke-ischaemic, guillain-Barre, alzheimer's dementia), Cardiovascular disorders (chest pain, palpitations, syncope, myopericarditis, myocardial infarction, right ventricular dysfunction, vasculitis, aortic and arterial thrombosis, venous thrombosis), Respiratory disorders (cough, breathlessness, fever, sore throat, pulmonary fibrosis, pneumonitis, pleurisy, pulmonary emboli, secondary bacterial infection), Gastrointestinal disorders (Nausea, Diarrhea, Abdominal pain, Bloating, Pancreatitis, Hepatitis, Gastroenteritis, Irritable bowel syndrome, Ischemic colitis, Fig. 1) (Alkodaymi et al., 2022; Global

Burden of Disease Long COVID Collaborators et al., 2022; Raman et al., 2022; Zeng et al., 2023; Zhao et al., 2020a). Multiple organ systems are involved in long COVID, illustrating its multifaceted nature (Table 1) (McMahon et al., 2021; Stavem et al., 2021; Xiong et al., 2021). COVID-19 recovery patients may experience these symptoms for up to six months following hospital discharge or the onset of symptoms (Arnold et al., 2021; Bellan et al., 2021; Carfi et al., 2020; Dennis et al., 2021; Garrigues et al., 2020; Huang et al., 2021; Liang et al., 2020a; Lu et al., 2020; Miyazato et al., 2020; Petersen et al., 2021; Simani et al., 2021; Sonnweber et al., 2021; Sudre et al., 2021; Taboada et al., 2021; Townsend et al., 2020; van den Borst et al., 2021; Wong et al., 2020; Woo et al., 2020; Xiong et al., 2021; Yong, 2021; Zhao et al., 2020a). One fifth (22.3%) of respondents in the Japan survey of 4.4 million people reported that COVID-19 worsened their mental health in the past year (Japan Ministry of Health, Labour, and Welfare, 2021).

2. Discussion

In the case of the COVID-19 pandemic, the fear of contracting the virus, the loss of loved ones, and the social isolation imposed by lockdown measures have all contributed to an increase in psychosomatic issues among the population (Yuan et al., 2022). Kawakami reported that a significant percentage of people worried about their own and their children's mental health in the future as a result of difficulties and life changes in Japan (Kawakami et al., 2022). It is important to address these issues as they can have serious consequences for individuals' mental and physical health, as well as their overall well-being. The lifting of lockdown measures in China presents an opportunity to address these issues and provide support to those who have been affected (The State Council of the People's Republic of China, 2023a).

One way to address psychosomatic issues is through the use of mental health services. The Chinese government has recognized the need for mental health support during the pandemic and has

Table 1

Demographics and psychosomatic symptom of COVID-19 survivors.

Authors	Region/Country	Period	Age (years)	Sample size	Females (%)	Symptom
Arnold et al. (2021)	Bristol, England	Between 30 March and 3 June 2020	median age = 60	N = 110	44%	74% Persistent symptoms 39% Fatigue; 24% Insomnia; 22% Myalgia
Bellan et al. (2021)	Novara, Italy.	Between March 1 and June 29, 2020	Median age = 61	N = 238	40.3%	17% PTSD 5.9% Myalgia
Carfi et al. (2020)	Rome, Italy.	From April 21 to May 29, 2020	56.5 ± 14.6	N = 143	37.1%	87.4% Persistent symptom 53.1% Fatigue
Dennis et al. (2021)	London, U.K.	Between 1 April 2020 and 14 September 2020; Baseline assessment by 14 September 2020	44 ± 11	N = 201	71%	98% Fatigue 86.7% Myalgia 82.6% Headache
Garrigues et al. (2020)	Clichy, France.	Between March 15th and April 14th, 2020	63.2 ± 15.7	N = 120	37.5%	Fatigue (55%) Impaired concentration (28%) Memory loss (34%), Sleep disorders (30.8%)
Huang et al. (2021)	Hubei, China.	Between Jan 7, 2020, and May 29, 2020.	Median age = 57	N = 1733	48%	Persistent symptom (76%) Fatigue(63%) Muscle weakness (63%) Pain (27%) Sleep difficulties (26%) Anxiety/depression (23%) Dizziness (6%)
Liang et al. (2020a)	Wuhan, China.	-	41.3 ± 13.8	N = 76	72.4%	Chest tightness and palpitations (62%) Fatigue (59%)
Lu et al. (2020)	Anhui Province, China.	-	44.10 ± 16	N = 60	43.3%	Persistent symptom (55%) Memory loss (28.3%) Fatigue (6.7%) Mood changes (16.7%) Myalgia (25%)
Miyazato et al. (2020)	Tokyo, Japan.	July 30, 2020 to August 13, 2020	48.1 ± 18.5	N = 63	33.3%	Fatigue (9.5%) Dyssomnia (9.7%)
Petersen et al. (2021)	Faroe Islands, Denmark.		39.9 ± 19.4	N = 180	54%	Persistent symptom (55%) Fatigue (28.9%) Headache (7.2%) Myalgia (7.2%) Chest tightness (6.1%) Nausea (6.1%)
Simani et al. (2021)	Tehran, Iran.	Between 20 February 2020 and 20 April 2020	54.6 ± 16.9	N = 120	33.3%	Fatigue (17.5%) PTSD (5.8%)
Sonnweber et al. (2021)	Innsbruck, Austria.	Began on April 29, 2020,	57 ± 14	N = 145	43%	Persistent symptom (41%) Pain (24%) Night sweat (24%) Sleep disorders (22%)
Stavem et al. (2021)	Lørenskog, Norway.	In the end of June 2020	49.8 ± 15.2	N = 434	56%	Persistent symptom (38.7%) Myalgia (8.5%) Headache (6%)
Sudre et al. (2021)	Sweden, U.K, and U.S.	Between 24 March 2020 and 2 September 2020	median age = 42	N = 4182	71.5%	Fatigue Headache
Taboada et al. (2021)	Santiago, Spain.	Between March 1 to April 30, 2020	65.9 ± 14.1	N = 242	40.5%	Persistent symptom (31.1%) Fatigue Memory loss Anxiety Depression Pain Muscle weakness
Townsend et al. (2020)	Dublin, Ireland.	-	49.5 ± 15	N = 128	54%	Fatigue (52.3%)
van den Borst et al. (2021)	Nijmegen, Netherlands.	Between 23 April and 15 July 2020	59 ± 14	N = 124	40%	Fatigue (69%) Functional impairment (64%) Cognitive or mental impairments (36%) Decreased quality of life (72%)
Wong et al. (2020)	Vancouver, Canada.	-	62 ± 16	N = 78	36%	Persistent symptom (76%) Worsened quality of life (51%)
Woo et al. (2020)	Hamburg, Germany.	Until 14 July 2020	42.2 ± 14.3	N = 18	57.9%	Attention deficits (50%) Concentration deficits (44.4%) Memory deficits (44.4%) Trouble finding words (27.8%) Fatigue (16.7%) Mood swings (11.1%)
Xiong et al. (2021)	Wuhan, China.	Before 1 March 2020	Median age = 52	N = 538	54.5%	Persistent symptom (49.6%) Fatigue (28.3%) Sweating (23.6%) Sleep disorders (17.7%)

(continued on next page)

Table 1 (continued)

Authors	Region/Country	Period	Age (years)	Sample size	Females (%)	Symptom
Zhao et al. (2020b)	Henan Province, China.	Jan 20, 2020 to Feb 24, 2020	47.5 ± 15.5	N = 55	41.8%	Chest pain (12.3%) Anxiety (6.5%) Gastrointestinal symptoms (30.91%) Fatigue (16.36%) Headache (18.18%)

implemented measures such as the establishment of hotlines for emotional support and the provision of online counseling services (The State Council of the People's Republic of China, 2023b). These services have been successful in providing support to those in need, but it will be important to continue to provide these services as the lockdown measures are lifted and people adjust to a new normal.

In addition to traditional mental health services, there is also a need to consider alternative approaches to addressing psychosomatic issues (Yue et al., 2020). For example, mindfulness-based interventions such as meditation and yoga have been shown to be effective in reducing stress and anxiety and could be an effective way to support those who are struggling with psychosomatic issues.

Another way to address psychosomatic issues is through the promotion of healthy lifestyle habits. Stress and anxiety can often lead to unhealthy behaviors such as overeating, smoking, and substance abuse. Encouraging people to adopt healthy habits such as regular exercise, a healthy diet, and stress-reducing activities can help to alleviate psychosomatic issues. Stress-related disorders can be reduced by implementing emergency interventions among people and chronic stress can be alleviated, preventing immunosuppression (Liang et al., 2020b; Lotzin et al., 2020; Song et al., 2018). The Chinese government has already taken steps in this direction by promoting the importance of exercise and healthy eating during the pandemic (The State Council of the People's Republic of China, 2022b).

In addition to individual-level interventions, there is also a need for a more comprehensive approach to addressing psychosomatic issues in China. This could include measures such as workplace interventions to reduce stress and promote mental health, as well as community-level initiatives to support those who have been affected by the pandemic.

One key aspect of this more comprehensive approach should be the recognition of the role that social support plays in mental and physical health (Banerjee and Rai, 2020). The social isolation imposed by lockdown measures has had a significant impact on people's mental health and well-being, and it will be important to encourage and facilitate social connections as lockdown measures are lifted (Morrisette, 2021). This could involve initiatives such as community-based support groups, as well as efforts to promote social cohesion and a sense of community.

In addition to promoting social support, it will also be important to address the economic impacts of the pandemic (Tandon, 2022). The lockdown measures have resulted in widespread job losses and economic disruption, and addressing these issues will be crucial in supporting the mental and physical health of the population. This could include measures such as employment programs, financial assistance, and economic stimulus initiatives. Overall, addressing psychosomatic issues after lifting the COVID-19 policy in China is a complex and multifaceted challenge. It will require a range of interventions at the individual, workplace, and community level to support those who have been affected by the pandemic.

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CRediT authorship contribution statement

Yi Zhong: Conceptualization, Writing – original draft. Jichao

Huang: Conceptualization. Wen Zhang: Writing – review & editing. Shuiqing Li: Supervision, Writing – review & editing. Yujun Gao: Supervision, Writing – review & editing.

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Conflict of interest

The authors declared that they have no conflicts of interest to this work.

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