

# Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: Mental health consequences and target populations

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In December 2019, cases of life-threatening pneumonia were reported in Wuhan, China. A novel coronavirus (2019-nCoV) was identified as the source of infection. The number of reported cases has rapidly increased in Wuhan as well as other Chinese cities. The virus has also been identified in other parts of the world. On 30 January 2020, the World Health Organization (WHO) declared this disease a 'public health emergency of international concern.' As of 3 February 2020, the Chinese government had reported 17 205 confirmed cases in Mainland China, and the WHO had reported 146 confirmed cases in 23 countries outside China.<sup>1</sup> The virus has not been contained within Wuhan, and other major cities in China are likely to experience localized outbreaks. Foreign cities with close transport links to China could also become outbreak epicenters without careful public health interventions.<sup>2</sup>

In Japan, economic impacts and social disruptions have been reported. Several Japanese individuals who were on Japanese-government-chartered airplanes from Wuhan to Japan were reported as coronavirus-positive. Also, human-to-human transmission was confirmed in Nara Prefecture on 28 January 2020. Since then, the public has shown anxiety-related behaviors and there has been a significant shortage of masks and antiseptics in drug stores.<sup>3</sup> The economic impact has been substantial. Stock prices have dropped in China and Japan, and other parts of the world are also showing some synchronous decline. As of 3 February 2020, no one had died directly from coronavirus infection in Japan. Tragically, however, a 37-year-old government worker who had been in charge of isolated returnees died from apparent suicide.<sup>4</sup>

This is not the first time that the Japanese people have experienced imperceptible-agent emergencies – often dubbed as 'CBRNE' (i.e., chemical, biological, radiological, nuclear, and high-yield explosives). Japan has endured two atomic bombings in 1945, the sarin gas attacks in 1995, the H1N1 influenza pandemic in 2009, and the Fukushima nuclear accident in 2011: all of which carried fear and risk associated with unseen agents. All of these events provoked social disruption.<sup>5,6</sup> Overwhelming and sensational news headlines and images added anxiety and fear to these situations and fostered rumors and hyped information as individuals filled in the absence of information with rumors. The affected people were subject to societal rejection, discrimination, and stigmatization. Fukushima survivors tend to attribute physical changes to the event (regardless of actual exposure) and have decreased perceived health, which is associated with decreased life expectancy.<sup>7,8</sup>

Fear of the unknown raises anxiety levels in healthy individuals as well as those with preexisting mental health conditions. For example, studies of the 2001 anthrax letter attacks in the USA showed long-term mental health adversities as well as lowered health perception of the infected employees and responders.<sup>9</sup> Public fear manifests as discrimination, stigmatization, and scapegoating of specific populations, authorities, and scientists.<sup>10</sup>

As we write this letter, the coronavirus emergency is rapidly evolving. Nonetheless, we can more or less predict expected mental/physical health consequences and the most vulnerable populations. First, peoples' emotional responses will likely include extreme fear and uncertainty. Moreover, negative societal behaviors will be often driven by fear and distorted perceptions of risk. These experiences might evolve to include a broad range of public mental health concerns, including distress reactions (insomnia, anger, extreme fear of illness even in those not exposed), health risk behaviors (increased use of alcohol and tobacco, social isolation), mental health disorders (post-traumatic stress disorder, anxiety disorders, depression, somatization), and lowered perceived health. It is essential for mental health professionals to provide necessary support to those exposed and to those who deliver care. Second, particular effort must be directed to vulnerable populations, which include: (i) the infected and ill patients, their families, and colleagues; (ii) Chinese individuals and communities; (iii) individuals with pre-existing mental/physical conditions; and, last but not least, (iv) health-care and aid workers, especially nurses and physicians working directly with ill or quarantined persons. If nothing else, the death of the government quarantine worker must remind us to recognize the extent of psychological stress associated with imperceptible agent emergencies and to give paramount weight to the integrity and rights of vulnerable populations.

## Disclosure statement

The authors declare no conflicts of interest.


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**Supporting information**

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

**File S1** Online health information sources for the novel coronavirus (2019-nCoV).

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