Letter Title
Public responses to the novel 2019 coronavirus (2019-nCoV) in Japan: mental health consequences and target populations

Running title
Novel coronavirus and mental health

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Supplementary file: 1 (File 1. Online health information sources for the novel coronavirus (2019-nCoV))

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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 January 30, 2020, the World Health Organization (WHO) declared this disease a “Public Health Emergency of International Concern.” As of February 3, 2020, the Chinese government reported 17,205 confirmed cases in mainland China, and the WHO reported 146 confirmed cases in 23 countries outside China. The virus was not contained within Wuhan, and other major cities in China are likely to be experience localized outbreaks. Foreign cities with close transport links to China could also become outbreak epicenters without careful public health interventions.

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

This is not the first time for the Japanese people to experience imperceptible agent emergencies—often dubbed as CBRNE (chemical, biological, radiological, nuclear, and high-yield explosives). In 1945, two atomic bombings took place; the sarin gas attacks in 1995, H1N1 influenza pandemic in 2009, and the Fukushima nuclear accident in 2011 all carried fear and risk associated with unseen agents. These events provoked social disruptions. Overwhelming and sensational news headlines and images added anxiety and fear to these situations as well as 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. The 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.\textsuperscript{7,8}

Fear of the unknown raises anxiety level in healthy individuals as well as those with preexisting mental health. For example, studies of the 2001 anthrax letter attacks in the United States showed long-term mental health adversities as well as lowered health perception of the infected employees and responders.\textsuperscript{9} Public fear manifests as discrimination, stigmatization and scapegoating of specific populations, authorities and scientists.\textsuperscript{10}

As we write this letter, the Coronavirus emergency is rapidly evolving. Nonetheless, we can more or less predict expected mental/physical health consequences and most vulnerable populations. First, the 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 (posttraumatic 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 direct to vulnerable populations which include 1) the infected and ill patients, their families, and colleagues, 2) Chinese individuals and communities, 3) individuals with preexisting mental/physical conditions, and last but not least, 4) healthcare 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.

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None

Disclosure Statement

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The authors declare no conflict of interest.

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