



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Letter to the Editor

Potential threats of COVID-19 on quarantined families



The World Health Organization (WHO) has characterized¹ the new coronavirus disease (coronavirus disease 2019 [COVID-19]) as a global pandemic as it spreads in more than 114 countries, killing thousands of people. Therefore, public health authorities and governments have provided some restrictions, including commuting bans, quarantine, and isolation, as the first risk response strategies to delay the introduction and spread of COVID-19 in their communities.

In terms of public health, 'commuting bans' refers to the implementation of traffic restrictions at specific points in an at-risk area. 'Quarantine' refers to the separation of people who have been exposed to a transferable health risk. Accordingly, 'isolation' applies to the separation of people who are known to be affected.² Two common concepts are extracted from the strategies, staying indoors and decreasing human communication.

Despite these inevitable limitations, it is noteworthy that infectious disease outbreaks are not considered just a medical phenomenon; rather, they show more complex dimensions of human life. It has been proved that staying indoors for a long time and decreasing human communication affect personal and environmental risk factors, such as anxiety-related behaviors, stress disorders, and exposure to smoke from cooking fires.

Globally, the WHO estimated³ that exposure to indoor air pollution was responsible for approximately 3.8 million premature deaths, in 2016 alone, owing to diseases attributed to poor indoor air quality. The most common and serious diseases associated with poor indoor air quality include acute lower respiratory infections, chronic obstructive pulmonary disease, lung cancer, cardiovascular disease, and asthma. In addition, according to the Environmental Protection Agency,⁴ indoor air is around 2–5 times as polluted as the ambient air and occasionally up to 100 times as dirty. Therefore, when people are spending more time indoors than ever before, like in the current scenario of the coronavirus disease outbreak, all risks associated with indoor air must be highly considered.

The mental health of families during quarantine is another major issue that can result in various negative mental health outcomes. Therefore, countries implementing weeklong quarantine measures should consider the mental well-being of quarantined families. It has been observed that the disruption of normal daily activities is potentially stressful and anxiety provoking. Consequently, the feasibility of controlling the COVID-19 pandemic by long quarantines may be significantly affected by the impact on mental health of quarantined families.

Aiming to survey the negative mental health outcomes of quarantines to prevent all COVID-19 transmissions, a most relevant previous study was critically reviewed. Based on the

reported decrease in human communication during Ebola virus isolation,⁵ it is not far from mind that COVID-19 quarantines and isolations potentially will lead to several significant mental and psychosocial effects, including (a) fear associated with the experience of intense distress, (b) anxiety and mood disorders as well as obsessive compulsive disorder, (c) psychosocial problems, and (d) social problems. Especially, recently, a record-high number of divorce requests have been observed after coronavirus quarantines in Chinese cities.

References

1. WHO. WHO director-general [Internet]. WHO 2020 [cited 2020 mar 11]. Available from: <https://www.who.int/dg/speeches/detail/who-director-general-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020>.
2. Parmet WE, Sinha MS. Covid-19 — the law and limits of quarantine. *New Engl J Med* 2020 Mar 18. <https://doi.org/10.1056/NEJMp2004211> [Internet] Available from:.
3. WHO. Household air pollution [Internet]. WHO 2017. Available from: <https://www.who.int/airpollution/guidelines/household-fuel-combustion/en/>.
4. U.S. Environmental Protection Agency. *The total exposure assessment methodology (TEAM) study: summary and analysis*. Washington, DC: U.S. Environmental Protection Agency.; 1987.
5. Emergency IRG on MH and PS in, settings. *Mental health and psychosocial support in Ebola virus disease outbreaks: a guide for public health programme planners*. 2015. Geneva, Switzerland.

M. Ansari

*Environmental Sciences and Technology Research Center,
Department of Environmental Health Engineering,
School of Public Health, Shahid Sadoughi University of Medical
Sciences, Yazd, Iran*

*Student Research Committee,
Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

S. Ahmadi Yousefabad*

*Department of Psychology, Faculty of Education and Psychology,
Islamshahr Branch, Islamic Azad University, Islamshahr, Iran*

*Young Researchers and Elite Club, Islamshahr Branch,
Islamic Azad University, Islamshahr, Iran*

* Corresponding author. Department of Psychology, Faculty of Education and Psychology, Islamshahr Branch, Islamic Azad University, Islamshahr, Iran.
E-mail address: psychologysa7@gmail.com (S. Ahmadi Yousefabad).

27 March 2020

Available online 21 April 2020