

Health Measures in the Event of an Earthquake during the COVID-19 Pandemic

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Authors

Seyedin H.¹ PhD,
Nasiri A.² PhD,
Ahmadi Marzaleh M.³ PhD,
Marzban A.¹ PhD,
Dowlati M.*¹ PhD

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¹Department of Health in Disasters and Emergencies, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran

²Department of Health in Emergencies, Disasters and Passive Defense, School of Health, Baqiyatallah University of Medical sciences, Tehran, Iran

³Department of Health in Disasters and Emergencies, School of Health Management and Medical Information Sciences, Shiraz University of Medical Sciences, Shiraz, Iran

*Correspondence

Address: School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran. Postal Code: 1449614535
Phone: +98 (912) 4840377
Fax: +98 (21) 86701
mohsendowlati.69@gmail.com

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Dear Editor

Earthquake is considered as one of the most destructive disasters and has endangered human life and property throughout history. Earthquakes are sudden events associated with increase in morbidity and mortality and large social and economic losses, including costly property damage [1]. Due to its location, Iran is one of the most earthquake-prone countries on earth; i.e., over the active Alps-Himalaya earthquake belt. The Tehran earthquake occurred 6 km away from Damavand in Tehran province, capital of Iran on May 7, 2020 at 00:48:21 AM local time and 20:18:21 UTC (Coordinated Universal Time). This incident occurred with a magnitude of 5.1 on the Richter scale at a longitude and latitude of 35.78N and 52.05E at a depth of seven km from the earth's surface. This earthquake was also felt throughout the neighboring provinces such as Zanzan, Qazvin, Mazandaran and Qom [2]. According to the announcement of the Emergency Medical Services organization, 22 people were injured and two people died due to the earthquake and the rapid evacuation of houses with fear and panic [3]. This earthquake was accompanied with the epidemic of COVID-19. As of May 7, more than 102,000 confirmed cases have been reported with 6,418 deaths [4].

In Tehran, as the most populous city in Iran and one of the most polluted parts of the country with 5098 confirmed cases, many people are at risk of contracting the disease of COVID-19 [5].

Due to the prevalence of the disease, the main focus of the country, especially the health system and hospitals, is on the management of COVID-19 patients. A large number of hospital beds have been occupied by COVID-19 patients and other hospital services have been temporarily suspended.

During the COVID-19 epidemic, many public places, including schools, universities, mosques, and shopping malls, were closed to enforce social distancing policies. Additionally, strict restrictions were placed on other essential service centers. According to the repeated recommendations of the officials of the World Health Organization and Iran's Ministry of Health, people should refrain from leaving their houses unnecessarily. In case of leaving their houses, while observing the health issues and wearing masks and gloves, people should avoid gatherings and strictly observe social distancing [3]. On the other hand, due to the COVID-19 epidemic conditions and the possibility of disease transmission in gatherings, it is not possible for people to be present in shelters and public places such as stadiums and hangars that have already been considered for emergencies. As a result, some people spend hours in cars, parks and alleys outside their houses without observing social distance and health issues such as using masks and gloves [2].

Based on the abovementioned points, the following measures are recommended to manage the reduction of the consequences of the earthquake and COVID-19:

Government measures

- The country's official media should avoid multiple interviews with officials of various organizations to reassure the public about the safety and health points by a limited number of experts and officials of the main organizations in charge.
- Officials should avoid making unprofessional comments and creating extra fear or false confidence among people.
- Public service organizations, such as the municipality, the Crisis Management Organization, and the Red Crescent Society, must be prepared to distribute health equipment such as masks, gloves, and hand sanitizers along with other essential items.
- Service providers and neighboring provinces must be on standby to return to normal conditions.

Public measures

- People should follow the news from official sources and avoid paying attention to and spreading rumors in cyberspace and social media.
- In the event of an earthquake, people should be in a safe place at home, away from falling objects and glasses, and protect their heads and necks. Then carefully leave the house without using the elevator and stay in a safe place away from buildings, cables and electric wires and trees and away from other people to prevent the transmission of the COVID-19 disease.
- People should strictly avoid gathering and close contact in the hallways and lobbies of buildings as well as outside the buildings.
- When leaving the house with an emergency bag that contains first aid, essential medicines, water and food, money, and important documents, people should make sure to have masks, gloves, and hand sanitizers.
- Before consuming food, people must disinfect their hands with soap and water or 70% alcohol solutions.
- Food and drinking water should be distributed only in packaged form.
- When people are outside the buildings, avoid contact with other objects such as mobile phones, door handles and the environment inside the car as much as possible.
- At least 72 hours after the earthquake, all health and safety precautions must be observed by the people.

Hospital measures

- Hospitals and other healthcare facilities must be prepared in terms of equipment and staff to admit potential earthquake victims and care for the injured people in a separate department away from COVID-19 patients.
- Hospital staff assigned to provide services to earthquake victims should be screened for COVID-19. It is preferable not to use the personnel present in the COVID-19 ward.
- Physicians and other healthcare providers should use appropriate personal protective equipment and follow health issues and infection control standards.
- For admitted earthquake casualties, Real-Time Polymerase Chain Reaction (RT-PCR) testing for COVID-19 should be performed alongside other essential services, and victims should be isolated in a separate ward until test results are determined.
- Medical staff should be examined as soon as possible using serological tests (IgM, IgG) to ensure that they are not carriers.
- For admission and treatment of the earthquake trauma victims, the authorities should use separate treatment areas or mobile structures as much as possible to reduce the risk of virus transmission.
- The presence and gathering of patients' companions around and inside the hospital should be prevented.

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