Turkish Archives of Pediatrics

SCIENTIFIC LETTER
DOI: 10.5152/TurkArchPediatr.2023.23061

Public Health Emergencies and Disaster Risk Management: A Rural Experience Following the Earthquake

Hüseyin Anıl Korkmaz

Department of Pediatrics, Dr. Behçet Uz Pediatric Diseases and Surgery Training and Research Hospital, İzmir, Turkey

Islahiye in Gaziantep province was one of the affected centers in the recent very severe earthquake that occurred on February 6, 2023, centered in Kahramanmaraş province in southeastern Turkey. In this report, we evaluate the first 15 days of the earthquake in a rural-based area.

An earthquake is an event that causes sudden destruction in the human ecological system.[1,2] Therefore, it requires urgent help and support from outside. Three periods are seen after the earthquake: earthquake impact period (0-4 days), post-impact period (4 days-4 weeks), and recovery period (4 weeks later).[1-5] This disaster causes serious mortality and morbidity loss with a direct effect because of sudden earthquake occurrence. These losses in the first (impact) period are due to injuries such as blunt trauma, crush, and burn. Most earthquake deaths are directly attributable to trauma, and nearly 95% of deaths occur at a very early stage. Air, food, water-borne, vector-borne, and wound infectious diseases may develop in the second period after the disaster. There is an increased risk of respiratory, diarrheal, soft tissue, and vector-borne infectious diseases in this period. The third period is characterized by a long incubation period and/or latent (until now) infections and vector-borne infections (such as Malaria).[1-5]

Contrary to popular belief, epidemic vector-borne infections are rare in the earthquake zone within the earthquake impact period. There is no scientific evidence that the corpses of dead people lead to epidemic diseases.[1-5] Although 1368 people were dead in Islahiye, there was no increase in the incidence of contagious diseases associated with decomposing corpses (putrefaction).

Following the earthquake in Islahiye, diseases associated with poor health outcomes started to occur within the post-impact period (4-14 days), because of haphazard and overcrowded shelters and camps, difficulties in nutrition and fresh water supply, lack of substructures, damage in sanitation systems, conditions of poor personal hygiene, and protein-energy malnutrition. These diseases were respiratory, diarrheal, soft tissue, and vector-borne infections. Especially, the incidence of norovirus and rotavirus infections has started to increase because of demolished canalization system in Islahiye. In addition, Cryptosporidium, Giardia, and many enteric diarrheal infections have started to increase as a result of difficulties in fresh water supply because of damage to sanitation systems. We also have seen fecal-oral transmitted hepatitis A and giardia infections. After the Kocaeli earthquake in our country, emotional stress, nutrition, and sudden changes in living space were responsible for short-term and large-scale epidemic infections without endemic pathogens in this region. Lice and scabies epidemic infections were frequently seen in this area because of crowded and poor hygiene conditions. Tetanus disease and its complications are inevitable because of lack or insufficient vaccination.[1-6] There are some examples in the past (106 tetanus cases, 20 deaths after the 2004 Aceh earthquake and tsunami, and tetanus cases after the 2005 Pakistan earthquake).

An "earthquake readiness plan" should be done for effective prevention and control of epidemic diseases. Coordination is necessary for the earthquake because international and

Corresponding author:
Hüseyin Anıl Korkmaz
✉ hanilkorkmaz@gmail.com
Received: March 31, 2023
Accepted: April 6, 2023
Publication Date: May 2, 2023

Content of this journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

Cite this article as: Korkmaz HA. Public health emergencies and disaster risk management: A rural experience following the earthquake. *Turk Arch Pediatr.* 2023;58(3):353-354.

national teams generally provide emergency health services.[7-9] Lack of basal surveillance data before the earthquake (data about the frequency of local diseases) lead to difficulties in early epidemic infection detection. "Risk Evaluation" should be carried out to define the course of endemic and epidemic diseases. Safe water and appropriate sanitation conditions should be provided. Fast initiating public health services (e.g., immunization, sanitation, waste management, freshwater, and food safety) and surveillance use are critical. Surveillance systems should be designed for detecting epidemic infectious diseases.[1-9]

Peer-review: Externally peer-reviewed.

Declaration of Interests: The author declares there is no conflict of interest in this paper.

REFERENCES

1. Kouadio IK, Aljunid S, Kamigaki T, Hammad K, Oshitani H. Infectious diseases following natural disasters: prevention and control measures. *Expert Rev Anti Infect Ther*. 2012;10(1):95-104. [CrossRef]
2. Murthy S, Christian MD. Infectious diseases following disasters. *Disaster Med Public Health Prep*. 2010;4(3):232-238. [CrossRef]
3. Makwana N. Public health care system's preparedness to combat epidemics after natural disasters. *J Fam Med Prim Care*. 2020;9(10):5107-5112. [CrossRef]
4. Chan EYY, Man AYT, Lam HCY. Scientific evidence on natural disasters and health emergency and disaster risk management in Asian rural-based area. *Br Med Bull*. 2019;129(1):91-105. [CrossRef]
5. Guha-Sapir D, van Panhuis WG. Health impact of the 2004 Andaman Nicobar earthquake and tsunami in Indonesia. *Prehosp Disaster Med*. 2009;24(6):493-499. [CrossRef]
6. Ligon BL. Infectious diseases that pose specific challenges after natural disasters: a review. *Semin Pediatr Infect Dis*. 2006;17(1):36-45. [CrossRef]
7. Matsuzawa G, Sano H, Ohnuma H, et al. Patient trends in orthopedic traumas and related disorders after tsunami caused by the Great East Japan Earthquake: an experience in the primary referral medical center. *J Orthop Sci*. 2016;21(4):507-511. [CrossRef]
8. Canpolat N, Saygılı S, Sever L. Earthquake in Turkey: disasters and children. *Turk Arch Pediatr*. 2023;58(2):119-121. [CrossRef]
9. Viswanathan R, Chakrabarty A, Basu S. Active support after natural disasters: a review of a microbiologist's role. *Trans R Soc Trop Med Hyg*. 2021;115(1):110-116. [CrossRef]