



Fluoride contamination in groundwater resources in the southern Iran and its related human health risks

Mohammad Hadi Dehghani^{a,b,*}, Ahmad Zarei^{c,d}, Mahmood Yousefi^a,
Farzaneh Baghal Asghari^a, Gholam Ali Haghghat^{e,f}

^aDepartment of Environmental Health Engineering, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran, Tel. +982142933227, Fax +982166419984, email: hdehghani@tums.ac.ir (M.H. Dehghani)

^bInstitute for Environmental Research, Center for Solid Waste Research, Tehran University of Medical Sciences, Tehran, Iran

^cDepartment of Environmental Health Engineering, School of Health, Gonabad University of Medical Sciences, Gonabad, Iran, Tel. +98 5157223514, Fax +98 57223814, email: a.zarei.tums@gmail.com (A. Zarei)

^dStudent Research Committee, Gonabad University of Medical Sciences, Gonabad, Iran

^eDepartment of Environmental Health Engineering, School of Health, Jiroft University of Medical Sciences, Jiroft, Iran, Tel. +983443318084, email: gholamali.haghghat@yahoo.com (G.A. Haghghat)

^fDepartment of Environmental Engineering, civil, water and environment faculty, Shahid Beheshti University, Tehran, Iran

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ABSTRACT

The occurrence of excessive fluoride levels in groundwater has to be recognized as a threat to human health. Based on fluoride concentrations in groundwater samples in the Larestan County, Iran, the health-risk assessment such as chronic daily intakes (CDI) and hazard quotient (HQ) were computed to assess the suitability of groundwater for human consumption in 2018. In 48.27% of the water samples, the level of fluoride exceeds the desirable limits of 1.5 set by WHO. The results also showed that approximately 70.6, 48.2 and 34.4% of HQ values for children, teenagers and infants in these areas were above the safety level of 1, indicating that these age groups are facing to risk of fluoride through drinking water consumption. The health risk was in the order of: children > women > men. The study provides information to the government authorities, water and sewage organizations and health professionals concerned with water supply to provide water with optimum fluoride level.

Keywords: Groundwater; Fluoride contamination; Risk assessment; Larestan, Iran

*Corresponding author.