

# NATIONAL AND SUB-NATIONAL FLUORIDE CONCENTRATION OF DRINKING WATER, PREVALENCE OF FLUOROSIS, AND DMFT IN IRAN FROM 1990–2014: A SYSTEMATIC REVIEW

Mohammad Mosaferi,<sup>a</sup> Nader Taghipour,<sup>b,\*</sup> Mojtaba Pourakbar<sup>c</sup>  
Tabriz, Iran

**SUMMARY:** Dental caries and fluorosis are health problems which affect people's lives in many areas of the world. Drinking water is considered to be the main source for exposure to fluoride (F). The aim of this study was to systematically review and assess the F concentration in drinking water of the 31 provinces of Iran along with fluorosis prevalence and the DMFT index. Electronic databases were searched for articles which were published from 1990 to the spring of 2014. A total of 861 records were found. After applying the study criteria, 98 reports were selected for the study. The average, minimum, and maximum concentrations of F throughout the country were estimated to be 0.53, 0, and 4.9 ppm, respectively. In 16 of the 31 provinces, the F concentration was lower than 0.5 ppm. The results showed that the level of F in drinking water in the southern regions of Iran was higher in comparison with the northern and central regions. No dental fluorosis was found in 28% and severe dental fluorosis in 5%. According to the epidemiological studies, the highest prevalence of dental fluorosis was observed among the students of Qazvin province (Mahmoud Abad city), Hormozgan province (Bandarabbas city) and Khuzestan province. In these areas, the F concentration in drinking water was higher than 1mg/L. For 25 cities, the total DMFT was 0.19–6.6 and the average F concentration in drinking water was 0.16–2.43ppm.

Key words: DMFT; Fluoride; Fluorosis; Iran; Systematic review.

<sup>a</sup>Tabriz Health Services Management Research Center, Tabriz University of Medical Sciences, Tabriz, Iran, E-mail: (mmosaferi@yahoo.com); <sup>b</sup>School of Health, Student research committee, Tabriz University of Medical Sciences, Tabriz, Iran, E-mail: (n.taghipoor5@gmail.com); <sup>c</sup>School of Health, Student Research Committee, Tabriz University of Medical Sciences, Tabriz, Iran, E-mail: (ppourakbar@yahoo.com); For correspondence: Nader Taghipour, School of Health, Student research committee, Tabriz University of Medical Sciences, Tabriz, Iran, Cell phone: +989366050828; Fax: +98 411 334 0634, E-mail: n.taghipoor5@gmail.com