Investigation of fluoride in potable water resources in Torbat Heydariyeh City in 2016-17

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Abstract

Background & Aim: Fluoride concentration in drinking water within the optimal range reduces dental caries and prevents dental fluorosis. This study was conducted to determine the level of fluoride in drinking water resources in Torbat Heydariyeh City in 2016-17.

Methods: This descriptive cross-sectional study was conducted on 22 wells used to supply drinking water of Torbat Heydariyeh City. A seasonal sample of one litre was withdrawn from each well and the fluoride concentration was measured using the SPADNS standard method with a DR 5000 spectrophotometer. Data were analyzed by SPSS version 11 software.

Results: The concentration of fluoride in the study area was measured in the range of 0 to 0.35 mg/L with an average of 0.23 mg/L. No significant seasonal changes were observed in the fluoride concentration. In addition, there was no significant relationship between fluoride concentration and well depth.

Conclusion: Considering the fact that observed fluoride concentrations were below the standard level, it is recommended to take measures to prevent dental caries due to fluoride deficiency such as distribution of mouthwash containing fluoride in schools and fluorination of drinking water.

Keywords: Fluoride, Drinking Water, Dental Caries, Torbat Heydariyeh