

Fluoride concentration in Qom drinking water supplies and DMFT index of 12 years old students

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Abstract

Fluoride concentration in various drinking water resources of Qom province and its relationship with DMFT dental index of 12 years old students was investigated. 270 samples were collected from different drinking water resources which consist of drinking water systems relied on private, public and household desalination units. 480 students randomly selected from 24 primary schools which 20 students belonged to each school. Entering criterion for participant (student) selection was at least 3 years continuous consumption of each water resource. Average fluoride concentrations of public salty distribution system (PSDS), public desalinated distribution system (PDDS), private desalinated water suppliers (PDWS) and household desalinated water units (HDWU) were 0.45 mg/L, 0.16 mg/L, 0.1 and 0.18 mg/L respectively. DMFT index of populations consumed PSDS, PDDS, PDWS and HDWU were 3.1, 2.44, 2.8 and 1.99 respectively. Results reveal a direct relationship with fluoride concentrations of some resources (PSDS and HDWU) and DMFT index. It seems that other factors such as mouthrins use, parents educational level and brushing have more important effects on DMFT index. There are no obvious difference between DMFT among populations satisfied with PDDS and PDWS. Considerations should be taken for water desalination systems during installation, operation and maintenance regarding to provision by-pass line for compensate fluoride deficiencies. Because of more important effect of other factors, it is recommended to emphasis on parent's educational program regarding to dental hygienic aspects.

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