Abstract

The purpose of this study was to determine the fluoride concentration of drinking water and any correlations between the severity, and discoloration level of dental fluorosis and decayed/missing/filled permanent teeth (DMFT) values in the rural fluorotic village of Deregumu, Isparta, Turkey. Intraoral examination of 293 individuals (150 women, 143 men) aged between 12 and 80 years was performed. Female and male individuals were divided into four age groups. DMFT and Thylstrup-Fejerskov Index (TFI) scores and discoloration levels were recorded for each tooth. Water samples were taken from the drinking water tank of the village and from the groundwater source. Statistical analysis was performed using the Kruskal-Wallis, Mann-Whitney, Bonferroni-Dunn, and Spearman rank correlation tests. The prevalence of dental fluorosis in this population was 94.1%, with TFI scores between 1 and 8. The level of fluoride in the drinking water was 1.83 mg/L. The mean TFI score was 3.58 and the overall mean DMFT value was 6.45. Men had significantly higher DMFT values (8.13) than women (4.75) (p<0.05). Discoloration was severe (score of 3) in 25.08% of the individuals, moderate (score of 2) in 20.14%, and mild (score of 1) in 20.5%, whereas 34.28% had no discoloration (score of 0). DMFT, TFI and discoloration scores were positively correlated with age in both genders and were positively correlated with gender in some age groups (p<0.05). A very high prevalence and relatively severe dental fluorosis exists in the population of Deregumu, Isparta, Turkey, which continues to be a high-fluoride area.