

ABSTRACT

Endemic fluorosis caused by the consumption of high-fluoride groundwater is a public health problem in Nakuru, in the Kenyan Rift Valley. The present study was carried out during the period January–February 2017 to determine the prevalence and severity of dental fluorosis among patients of two Nakuru healthcare facilities, namely St. Mary’s Hospital-Gilgil and Egerton University-Njoro Dental Clinic. The patients consisted of both young and old members of the Nakuru population served with groundwater containing high levels of fluoride ranging from 0.1 to 72 mg/l. The Thylstrup–Fejerskov (TF) index was used to estimate the severity of dental fluorosis. Among the patients of St. Mary’s Hospital-Gilgil, the prevalence of dental fluorosis was 86% (n = 100), whereby 54% of the patients were found to have mild to moderate dental fluorosis and 32% had severe dental fluorosis. Whereas the prevalence of dental fluorosis in patients below the age of 14 years was higher (92%) than in older patients (85.56%), severity was reversed (average TF = 3.77 for older patients; average TF = 2.18 for younger patients). No significant variation in severity and prevalence of dental fluorosis was recorded with respect to both genders of the patients. The dental fluorosis prevalence rate amongst the patients of the Egerton University-Njoro Dental Clinic was found to be 79.49% (n = 73). However, a comparative analysis of the two age groups revealed a much higher prevalence rate of 100% for patients below the age of 14 relative to the older patients (79.49%). While a high number of cases of dental fluorosis from both healthcare facilities were reported in patients residing in Njoro, Nakuru town, Gilgil and Bahati, the fewer cases were from Solai and Rongai. The results seem to suggest a much higher occurrence of dental fluorosis within the younger population group. This implies that rapid population growth and urbanization puts more pressure on public water resources which leads to a strong reliance on fluoride contaminated groundwater and the concomitant increased cases of dental fluorosis. Therefore, there is a need for a change of local government policy to enhance access to safe water and public education on fluorosis in the areas that were under investigation.