Abstract

Due to the semi-arid nature of Makueni County in South-Eastern Kenya, there is a high dependence on groundwater resources for domestic use. Reliance on this source of potable water may have health implications for the population, given the presence of several naturally occurring and potentially harmful elements reported from aquifer source rocks, soil, and water in the area. A survey involving questionnaires and focus group discussions (FGDs) was conducted with 115 individuals to determine the local population's knowledge, attitude, and perceptions of their drinking water quality and its health impacts. The results show that most respondents (67%) preferred piped water because it was pre-treated and not saline. Only 29% of the respondents were very satisfied with the taste of their drinking water, while the rest complained about varying salinity levels, ranging from slightly salty to very salty. This low satisfaction might have influenced the low daily drinking water consumption (1–2 L) by most respondents. Health issues reported by many (43%) respondents in the area include diarrhoea and gastrointestinal upsets, which may be associated with the saline nature of the drinking water. Elevated fluoride (F^-) in the local groundwater was reported, and the health effects remain a concern. Although 91% knew someone with dental fluorosis, 53% did not know the deleterious effects of high F^- in drinking water. Most respondents (59%) associated the salty nature of the water with dental fluorosis, and as a result, 48% avoided drinking the salty water to prevent the condition. Despite the high prevalence and known psycho-social effects, most people did not perceive dental fluorosis as a severe health threat. The increased health risks associated with high salinity and high F^- in drinking water in Makueni County are poorly understood by most residents, regardless of their education, gender, or age. This warrants an immediate public health education programme and detailed epidemiological studies to determine all the health effects associated with naturally occurring, potentially harmful elements in groundwater in the area.