

FLUORIDE IN DRINKING WATER: A COMPARISON BETWEEN TWO AREAS IN SELANGOR AND KUALA LUMPUR, MALAYSIA

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ABSTRACT

Background: The fluoridation of drinking water is a systemic approach by health authorities to eradicate dental-related problems among the population at large. However, numerous studies have shown that consumption of high levels of fluoride from unchecked or untested sources may lead to dental fluorosis, which, in severe form, leads to brownish mottling of the teeth. Children aged between 6 months to 2 years who are exposed to high levels of fluoride (more than 1.5 mg/L) may suffer from this abnormality. Fluoride levels in a few Malaysian states were above the recommended levels and this may be a factor contributing to the higher prevalence of dental fluorosis among the population. This study aimed to determine levels of fluoride in drinking water between two areas, one in Selangor (Seri Serdang) and the other in Kuala Lumpur (Kampung Pandan).

Subjects and Method: A cross sectional study was conducted in Seri Serdang, Selangor and Kampung Pandan, Kuala Lumpur involving a total of 111 water samples (71 from Seri Serdang, 40 from Kampung Pandan). Samples were analyzed using a HACH brand direct reading spectrophotometer model DR 1900.

Results: Mean fluoride levels in drinking water for both areas did not exceed the recommended range (0.4 – 0.6 mg/L). Mean fluoride level in Seri Serdang was $0.49 \pm \text{SD } 0.12$ mg/L, while in Kampung Pandan, it was $0.35 \pm \text{SD } 0.01$ mg/L.

Conclusion: Mean level of fluoride was low or within the stipulated range. A more thorough study is needed to determine other intakes of fluoride that may influence the formation of dental fluorosis.

Keywords: fluoride, drinking water, Seri Serdang, Kampung Pandan

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