DENTAL FLUOROSIS AND THE PATTERN OF WATER CONSUMPTION IN THE POPULATION AGED 6–18 YEARS INTHEDENTAL FLUOROSIS RISK AREAS OF THAILAND

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SUMMARY: A well-intentioned policy of water provision for the rural population in Thailand has resulted in bringing a developmental disturbance of dental enamel, dental fluorosis, to over 8,500 communities all over the country. This has involved approximately 14% of the total deep-wells dug to serve as new water sources during 1981–1990, a period known as the International Drinking Water Supply and Sanitation Decade. The objective of the present study was to study dental fluorosis and the pattern of water consumption in the population aged 6–18 years in some of the 8,500 communities mentioned above, in five provinces in the northern part of Thailand. The subjects, n=1,715, were all the school children in grades 1–12 in those areas. Samples of drinking and cooking water were collected and their fluoride (F) concentration determined using the standard method. The presence of dental fluorosis was determined by trained Village Health Volunteers. The data were analyzed statistically. The results showed that bottled water was drunk by 56.1% of the subjects and piped water, the main source of unsafe water, was used for cooking by 48.7. Unsafe water was drunk by 5% of the subjects and used for cooking by 22.3%. The prevalence of dental fluorosis was 50.6% and increased significantly with the higher F concentrations in the drinking and cooking water (OR=1.95, 95% CI=1.23–3.09 and OR=1.41, 95% CI=1.12–1.77, respectively). When piped water was provided by the state, people always considered it to be safe. Piped water is convenient to use, clean, clear, and never causes diarrhea. However, in addition, it must be safe and not contain excessive levels of F. Thailand needs a law to ensure that only safe water can enter the piped water system. In addition, the routine surveillance of water quality is also crucial.

Key words: Cooking water; Dental fluorosis; Drinking water; Fluoride; Water consumption.

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