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**Association of dental caries with socioeconomic status in relation to different water fluoridation levels.**

Cho HJ<sup>1</sup>, Lee HS, Paik DI, Bae KH.

Author information: <sup>1</sup>Department of Preventive and Public Health Dentistry, School of Dentistry, Seoul National University, Seoul, Korea; Dental Research Institute, School of Dentistry, Seoul National University, Seoul, Korea; Bucheon Apple Tree Dental Clinic, Bucheon, Korea.

**Abstract**

**OBJECTIVES:**

The aim of this study was to assess the prevalence of dental caries in 11-year-old children, related to water fluoridation and family affluence scale (FAS), as an indicator of socioeconomic status (SES) in Korea.

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**OBJECTIVES:**

The aim of this study was to assess the prevalence of dental caries in 11-year-old children, related to water fluoridation and family affluence scale (FAS), as an indicator of socioeconomic status (SES) in Korea.

**METHODS:**

A total of eight areas were selected for study: four areas with fluoridated piped water (WF areas) and four areas with nonfluoridated piped water (non-WF areas). Non-WF areas had a similar economic level and population size compared with the WF areas. A total of 1446 elementary school students, 11 years of age, were included.

They were examined, and questionnaires completed by their parents were analyzed. In the questionnaire, information about gender, FAS as an indicator of SES, occasions of daily cariogenic snack intake, occasions of daily cariogenic beverage intake,

drinking of piped water, cooking with piped water, and usage of oral hygiene supplemental measures were surveyed. The bivariate association between the characteristics of the subjects and the number of decayed, filled, and missing permanent teeth (DMFT score) was analyzed through an independent samples t-test.

The difference in the mean DMFT score between different FAS groups was analyzed by DMFT ratio, after adjusting for gender, oral health behaviors, and usage of piped water variables. The DMFT ratio was calculated from a Poisson regression model, because the DMFT score was not normally distributed.

### **RESULTS:**

There was no significant association between FAS and the mean DMFT score in both areas, by bivariate analysis.

After adjusting for each group of confounders, a significant association (95% CI: 1.032-1.513) was found between the FAS and mean DMFT scores in non-WF areas; however, no significant difference was observed in the WF areas (95% CI: 0.766-1.382).

### **CONCLUSIONS:**

This study supported that water fluoridation could not only lead to a lower prevalence of dental caries, but also help to reduce the effect of SES inequalities on oral health.

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