Analysis of the Impacts of School Factors on Korean Adolescents' Health Behaviors: Application of Multilevel Analysis with the 15th KYRBWS

Seon-Hui Kwak^{1,2}, Bo-Mi Shin^{1,2}

¹Department of Dental Hygiene, College of Dentistry, Gangneung Wonju National University, Republic of Korea

²Research Institute of Oral Science, Gangneung Wonju National University, Republic of Korea

Objectives: This study conducted a multilevel analysis to identify individual and school-level factors that affect brushing, soda intake, smoking, and high-intensity physical activity in Korean high school students.

Methods: We sampled 27,919 high school students who participated in the 15th Korea Youth Risk Behavior Web-based Survey. The individual-level variables were divided into demographic factors (gender, grade), socioeconomic factors (self-reported economic status, academic performance), health-related factors (self-reported health and oral health status, experience of stress or depression, oral symptoms). The school-level variables included school system (general high school, vocational high schools) and school type (boys' school, girls' school, and co-ed school).

Results: For individual-level factors, socioeconomic factors such as economic level and academic performance had a significant effect when demographic variables were adjusted. In the final model including significant individual-level variables and school-level variables, school-level factors had a significant effect on school system and school type. The OR for brushing less than twice a day in vocational high schools compared to general high schools was 1.63 ($p<0.001$), and the OR for soda intake more than three times a week in vocational high schools was 1.33 ($p<0.001$). In addition, the OR for current smoking in vocational high schools was 2.89 ($p<0.001$), and the OR for high-intensity physical activity in vocational high schools was 0.80 ($p<0.001$).

Conclusions: School factors as well as individual socioeconomic factors have a common influence on Korean adolescents' toothbrushing, soda intake, smoking, and high-intensity physical activity. Schools are best health setting, regardless of socioeconomic level, providing students with supportive environment for controlling risk factors such as toothbrushing, sugar intake and smoking. Therefore, for the adolescents' health promotion, it is necessary to provide a preventive strategy to comprehensively deal with common risk factors based on school.

Keywords: Adolescent, Multilevel analysis, Toothbrushing, Smoking, soda intake, physical activity, risk factors