



Comparison of Oral Health Status, Dental Treatment Items, Periodontal Disease between Use of Dental Floss and Interdental Toothbrush using the 6th Korea National Health and Nutrition Examination Survey

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Dear Editor-in-Chief

To prevent periodontal disease is prevent biofilm accumulation. The most widely used self-oral care method is brushing (1). As the main onset site of periodontal disease is interdental spaces, depending on the periodontal condition, oral care supplements that are effective for interdental care should be used (2). According to the American Dental Association, 80% of the biofilms in interdental areas can be removed by dental floss but, the utilization rate of dental floss is very low because the use of dental floss is uncomfortable and unfamiliar (3). The effectiveness and necessity of interdental toothbrushes is already known, but only about 11% of 12-year-olds use interdental toothbrushes, and only about 17% of all South Koreans (4).

Therefore, this study aimed to compare the subjects' oral health statuses, and dental treatment items within the last year, and confirm the effect of oral care products on periodontal disease using the Korea National Health and Nutrition Examination Survey (KNHANES) data, by distinguishing among those who don't use oral care products, those who use only dental floss, and those who use only an interdental toothbrush, to utilize such data as fundamental data for establishing the importance of using oral care products.

The data of 2013-2015 KNHANES of 11,619 people were selected to comprise the dental-floss and interdental-toothbrush groups. The Community Periodontal Index (CPI) was checked to evaluate the periodontal state. As the number of CPIs increases, periodontal disease becomes more serious.

The data were analyzed using IBM SPSS ver. 21.0 (IBM Co., Armonk, NY, USA) and Logistic and linear regression analyses were performed on the periodontal state.

Table 1 shows oral conditions according to dental floss and interdental toothbrush. The prevalence of periodontal disease was 0.837 times lower in the group using dental floss than in the group not using oral care products. In addition, compared to the group not using oral care products, the group using dental floss was 0.130 lower in the maxillary right posterior, and the group using an interdental toothbrush was 0.130 lower. Compared to the group not using oral care products, the group using dental floss was 0.019 lower in the maxillary anterior, and the group using an interdental toothbrush was 0.055 lower. Compared to the group not using oral care products, the group using dental floss was 0.090 lower in the maxillary left posterior, and the group using an interdental toothbrush was 0.082 lower. Com-



pared to the group not using oral care products, the mandibular right posterior was 0.141 lower in the group using dental floss, and 0.120 lower in the group using an interdental toothbrush. Compared to the group without oral care products, the group using dental floss was 0.106 lower in

the mandibular anterior, and the group using the interdental toothbrush was 0.107 lower. The mandibular left posterior was 0.091 lower in the group using dental floss than in the group not using oral care products, and 0.077 lower in the group using an interdental toothbrush ($P<0.05$).

Table 1: Periodontal state according to the use of dental floss and interdental toothbrush

Variable	Dental floss		Interdental toothbrush	
	OR (95% CI)	P-value	OR (95% CI)	P-value
Periodontal disease ^a	0.837 (0.707~0.991)	0.040	0.838 (0.699~1.004)	0.055
‡Maxillary right posterior ^b	-0.130 (-0.228~-0.032)	0.019*	-0.130 (-0.228~-0.032)	0.010**
‡Maxillary anterior ^c	-0.019 (-0.091~0.053)	0.609	-0.055 (-0.125~0.014)	0.118
‡Maxillary left posterior ^d	-0.091 (-0.190~0.008)	0.071*	-0.082 (-0.178~0.013)	0.090
‡Mandibular right posterior ^e	-0.141 (-0.229~-0.052)	0.002**	-0.120 (-0.211~-0.028)	0.010**
‡Mandibular anterior ^f	-0.106 (-0.188~-0.025)	0.011**	-0.107 (-0.191~-0.022)	0.013*
‡Mandibular left posterior ^g	-0.091 (-0.171~-0.011)	0.026**	-0.077 (-0.164~0.011)	0.085

* $P<0.05$, ** $P<0.01$, *** $P<0.001$, *by complex-sample logistic regression analysis. ‡by complex-sample linear regression analysis. Nothing=1, $R^2(P)$; a=0.001 (0.038), b=0.002 (0.007), c=0.000 (0.288), d=0.001 (0.083), e=0.003 (0.001), f=0.002 (0.005), g=0.001 (0.036)

This study is very meaningful in that it confirmed that the use of dental floss and interdental toothbrushes actually lowers the incidence of periodontal disease by using data from KNHANES, which has a representative nature. Therefore, the dental hygienist's awareness of the importance of oral health education should be extended to ensure that education on oral care products is well conducted.

Conflict of interest

The authors declare no conflicts of interest.

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