



# Abstracts for the International Symposium on Dental Hygiene Cape Town, South Africa, August 14–17, 2013

## What is New in Research?

### Oral health education targeting elementary school students

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**Objectives:** Since the average of life expectancy is extended and our society is rapidly becoming an aging society, not only people's health issue is concerning but also oral health and preventing oral disease is raising subject among the people. Dental disease is almost entirely preventable or, when it is detected early, can be cured quickly and cost-effectively. Therefore, community needs produce more oral health professionals and business to support public oral health welfare. The community needs to develop and implement the necessary institutional infrastructures and understand the principles and methods of oral health education targeted to residents. Developing and implementing this program will help to promote oral health for the community.

**Methods:** From October 2012 to November 2012, for a 4 week period, a PHP (Patient Hygiene Performance) index test was conducted three times, the student's oral health knowledge and attitude were surveyed and it was statistically analyzed. The participants were educated by professional dental providers at the same time. In the 1st and the 3rd tests, the research were processed by intraoral Plaque-ch pH test either and compared analyzed the acidities of before and after professional oral health education.

**Results:** PHP index was analyzed for the three tests, the first 733 students participated, the second 754 and the third 759. PHP ability (%) was taken by PHP index. The tests result (PHP abilities (%)) were, the first was ( $M = 42.81$ ), the second was ( $M = 53.98$ ) and the third was ( $M = 70.13$ ). Comparing the first and the third test, there is definite positive effectiveness of professional oral health education. The Patient Hygiene Performance (PHP) ability (%) were, the 1st was 42.68% and the 3rd was 70.12%. The growth rate for oral hygiene performance ability was increased 27.43%. The result shows that this program improved students PHP abilities.

**Conclusions:** After the 3rd professional oral health education, the research shows that the students could improve their oral health performance abilities by proper tooth brushing and dietary control. Therefore, we can conclude that the professional oral health education contributed to improving elementary school student's oral health.

### Effect of gargle and merchantable toothpaste containing low concentration with flouride on enamel remineralization

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**Objectives:** The purpose of this study was to evaluate the efficacy of gargle and toothpaste containing low concentration with sodium fluoride on the remineralization through the surface microhardness and mineral content in enamel.

**Methods:** Ninety-six extracted the intact human teeth were randomly divided into four groups: no treatment (control), 0.02% fluoridated gargle three times a day for 1 minute, 0.23% fluoridated toothpaste three times a day for 3 minutes and 0.02% fluoridated gargle with 0.23% toothpaste three times a day for 4 minutes during 4 weeks which was measured at 1, 2, 3 and 4 weeks. After application, all enamels were washed with distilled water and immersed in artificial saliva. Microhardness of enamel surface was measured using microhardness tester on Vickers Hardness Number (VHN). The calcium (Ca) and phosphorous (P) concentration of mineral content in the all groups by electron probe microanalyzer (EPMA) analysis. The results were analyzed at each treatment period in relation to the control group. Data were evaluated by one-way analysis of variance (ANOVA) and post-hoc Tukey's test using SPSS 18.0 statistical computer program (SPSS Inc., USA).

**Results:** By combining fluoridated gargle with toothpaste, a remineralized enamel resulted in significant differences among the four groups ( $P < 0.05$ ). The Ca change treated with 0.23% fluoridated toothpaste and 0.02% fluoridated gargle with 0.23% toothpaste demonstrated the highest among the other groups, indicating that there may be a remineralization effect in enamel.

**Conclusions:** Based on this experiment, the fluoridated gargle with toothpaste by low concentration showed the greatest synergistic effect on remineralization of the enamel than others groups.

### An association of oral health conditions between preschool children and their mother

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Korea

**Purpose:** The objective of this study was to examine whether there is an association of oral health conditions between preschool children and their mother in Korea.

**Methods:** A sample of 822 preschool children and their mothers were selected for this study from the database of the Fourth Korean National Health and Nutrition examination Survey (KNHANES IV: 2007–2009). Preschool children were defined as children aged 4, 5, and 6 years old. They are usually younger than those attending elementary school. The subjects were clinically examined for the presence of caries lesions (dft index) and their mother was checked for the presence of dental caries (DMFT index), and periodontal disease (CPITN). The socio-demographic characteristics, mother's oral health behaviours, and their children's oral health behaviours were considered covariates in this study, and then surveyed by a self-administrated questionnaire. Multiple regression analysis was adapted to assess an association of oral health condition between preschool children and their mother after adjusting for covariates. All analyses considered a complex sample design using sas 9.2 for Windows, and considered statistically significant as a *P*-value of <0.05.

**Results:** Preschool children's dft index was significantly associated with their age, tooth brushing frequency, periodic dental check-ups, and unmet dental treatment needs. The mother's socio-demographic characteristics and oral health behaviours were not significantly associated with children's oral health status. Of the mother's oral health conditions, DMFT index was significantly associated with their children's oral health condition ( $b = 0.081$ ,  $P = 0.0127$ ), but periodontal disease was not associated with their children's oral health condition ( $b = 0.009$ ,  $P = 0.9806$ ).

**Conclusions:** The preschool children's oral health condition (dft index) was positively associated with their mother's dental caries status (DMFT index) in Korea.

## Comparison between Japanese children and other Asian children about dentistry health action, dietary and living behavior

Miyuki Kibayashi

Japan

**Objectives:** As a basic research to elucidate the Japanese ability of mastication, the survey of dentistry health action, dietary and living behavior of children was carried out in Korea, Taiwan and Mongolia; where living environment, regional background and food culture, dietary behavior are different from those of Japan, and weighed it against those of Japanese children.

**Methods:** Twelve years-old child (199 boys, 221 girls; total of 420 persons), who goes to each school of educational establishment in Japan, South Korea, Taiwan and Mongolia, was the subject of this research. Using a self-administrated questionnaire survey of dietary behavior and life action of the item 40.

**Results:** As to dental health behavior, the habits of oral hygiene were well established in Japan, South Korea and Taiwan. Especially in Japan, many eat watching TV frequently compared to other countries, and there were many fluid intake frequency.

**Conclusions:** Japanese children have the tendency that they eat and drink water watching TV during a meal, and the degree of interest in meal and the chewing consciousness are low. We guess this is a bad influence by not concentrating on a meal. Though there are some differences in each country on living environment, culture and regional background, we think it is important to promote the improvement of dietary environment; where children feel, 'Eating meal is fun', cooperating with school, home and the region.

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