The search for an effective fluoride toothpaste utilisation formula

An interview with Dr Michael Antonio F. Mendoza, the Philippines

The effective use of fluoride for the prevention of dental caries is advocated by organisations like the WHO and the FDI. In most Asian countries, fluoride toothpaste is often the only affordable source of fluoride for the general population. In early 2008, a cross-sectional study was conducted in the Philippines to evaluate the utilisation of fluoride toothpaste in the country.

Daniel Zimmermann spoke with Dr Michael Antonio F. Mendoza, Assistant Professor at the College of Dentistry of the University of the Philippines in Manila, about the study and the challenges of making the use of fluoride toothpaste more effective.

Daniel Zimmermann: Dr Mendoza, is tooth brushing with fluoride toothpaste common routine in the Philippines?

Dr Michael Antonio F. Mendoza: Toothpastes available in the Philippines are generally fluoridated and most people use such toothpaste when they brush their teeth. However, it is not uncommon in certain parts of the population to clean teeth without toothpaste. A toothbrush, washcloth or even a twig is used with or without alternatives to dentifrice, such as salt, sand, ash or just water.

A study was conducted on the use of fluoride toothpaste in two Filipino barangays (villages). What were the objectives of the study and what were its findings?

With an initial objective to present oral-health policy opinions to the local government, baseline data on fluoride utilisation patterns was first required. Toothpaste is the primary fluoride source for most barangays. Therefore, we selected a peripheral barangay and a central barangay in the city of Malolos, which is located 45 km north of Manila.

Household health managers were interviewed on their knowledge, attitudes and practices regarding oral health, particularly fluoride use. We also questioned them on the amount of toothpaste dispensed, the frequency of use and whether rinsing was done after brushing.

All interviewed health managers who are dentate brush with fluoride toothpaste. A hot dog-sized amount was used twice to three times a day, followed by rinsing with water. We also found that the use of kiddie toothpaste was not an established practice.

What effect does the rinsing habit have on the benefits of fluoride toothpaste?

Almost all respondents and their family members rinsed with water after brushing with toothpaste. Therefore, the effects of fluoride were not optimised, as was evident from an observed trend of increasing DMFT score with increasing age.

Were there any differences with regard to age and gender?

Three out of four respondents were female, as mothers are usually considered to be the household health managers. All claimed to use fluoride toothpaste regardless of gender. DMFT scores were higher in the peripheral barangay. However, there was only a significant difference in the age group 55 to 44, for which the peripheral barangay had a high caries level compared to the moderate level of the central barangay.

The study was conducted in early 2008. What has been done in the last 12 to 16 months to address the problem?

Workshops were held in collaboration with the Youth Council and the mother leaders to increase their knowledge of oral health and, hopefully, their capacity to communicate the knowledge gained to other members of the community. The results of the study were discussed with the communities who participated in the study and members of the City Council involved in the planning and implementation of the research. However, no specific oral-health programmes have been established.

In your opinion, what are the main challenges of increasing the effectiveness of brushing with fluoride toothpaste in countries like the Philippines?

As I mentioned before, Filipinos generally use fluoridated toothpastes but improper brushing techniques and poor awareness of its benefits negate the preventive potential of fluoride. Re-education of patients and re-orientation of dental professionals on the optimal use of fluoride, particularly fluoride toothpastes, is required.

Only seven per cent of the population in the Philippines receives fluoridated drinking water. Could increased levels of fluoride in water be of any help to the problem?

The National Oral Health Survey of 2006 found a very low, naturally occurring fluoride content in drinking water, which was also evident in tests of water samples from Malolos.

Although literature indicates that it would be the most cost-effective in terms of prevention, infrastructure costs and water-system modification for water fluoridation would be too prohibitive.

Most countries in the Asia Pacific region have conditions similar to those in the Philippines. What are your recommendations in this regard?

We need to investigate more practical and cost-effective preventive measures. The proper use of fluoride toothpastes needs to be practised and steps to make fluoride toothpastes more affordable, as the WHO advocates, should be taken.

Thank you very much for the interview.

Oral examination in Malolos. (DTI/Photo Dr Michael Antonio F. Mendoza)