

Preventing Dental Fluorosis

Yemane Berhane¹, Banchiamlak Demissie², Legesse Zerihun³, Eyasu Makonnen⁴, Berhanu Eshete¹

Abstract

This study was conducted in an area will recognized to have problems of fluorosis. School children were first asked if they have dental fluorosis and then examined by a dentist (only those reported not to have dental fluorosis). About 84% of the students had severe form of dental fluorosis easily recognizable by themselves. In addition 65% of the students who reported not to have the problem were found to have milder form of dental fluorosis during examination by a dentist. It is concluded that whether they are aware or not children are highly affected by dental fluorosis and any prevention activity should target the general children population. Involvement of schools and teachers in prevention of dental fluorosis is suggested. [*Ethiop.J.Health. Dev.* 2002;16(2):225-226]

Introduction

Dental fluorosis is characterized by lusterless, opaque white, patches in the enamel which may become stained yellow to dark brown and in severe forms cause marked pitting and brittleness of teeth. It is a serious health problem in many Eastern African countries. Dental fluorosis is associated with excessive fluoride exposure at the age of tooth formation (1). The problem of dental fluorosis in Ethiopian Rift Valley areas had also been well recognized (2). Most towns in the rift valley have much higher fluoride level in drinking water (3) than recommended by the WHO (0.8-1.0 PPM). In these towns, dental fluorosis prevalence is very high, reaching mean prevalence of 84% in some places and age groups. Dental fluorosis was reported to be associated with the dose and duration of exposure to high fluoride level in drinking water. At an advanced stage dental fluorosis is easily identifiable by any person. Many local residents, however, may not be aware of their dental condition until it is too late to take any preventive measures. This study reports the

observations made on perception of dental fluorosis in school children living in a very endemic area. The objective was to provide information useful in choosing preventive strategies.

Method

The study was conducted in Wonji town, a highly endemic area for fluorosis in Ethiopia. The actual study population was school children in three elementary schools. The schools were chosen in order to obtain children in the age range of 10-14 years old. The schools had two educational shifts, one in the morning and another in the afternoon. One of the shifts was selected for the survey to avoid contamination of information; this study was part of a larger study that looked into potential risk factors. In each section of the school children, who believed they were not affected by dental fluorosis were asked to report to the research team, no sampling procedure was followed. Dental fluorosis is identifiable by any one living in an endemic area. Children below the age to 10 years and migrants were excluded from the study. Exclusions were made to allow time for biological expression of excess fluoride exposure and to ensure that exposure has occurred at the right time to influence dental growth. Then, a qualified dentist did a thorough examination of the teeth to verify the student's claim of being free of

¹Department of Community Health, Faculty of Medicine, Addis Ababa University, P.O. Box 9086, Addis Ababa, Ethiopia; ²Dental School, Faculty of Medicine; ³Department of Physiology, faculty of Medicine; ⁴Department of Pharmacology, Faculty of Medicine

dental fluorosis. Examination was done privately in an office space offered by the schools.

Result

A total of 1362 students from three schools were involved in the study. Students with obvious signs of dental fluorosis were first asked to excuse themselves from classrooms. Accordingly, 1148 (84.3%) students had a severe form of dental fluorosis that was clearly obvious to the students themselves. The remaining 214 students who believed that they had good teeth were subject to a thorough dental examination. Out of these 214 students only 76 (35.5%) were found to be free of dental fluorosis (Figure 1).

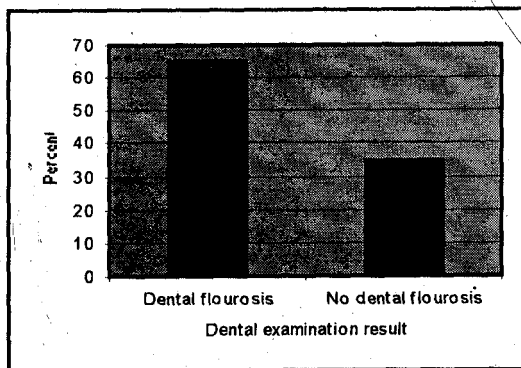


Figure 1: Dental examination result of school children who reported to be free of dental fluorosis. Wonji, 2001 (n=214)

Discussion

This study suggests that although the problem of dental fluorosis is obviously understood by the local community when the process of destruction is completed, many are not aware of the problem at the initial stages while the process of destruction is on going. Since the prevalence of the recognizable disease with high degree of destruction is also very high, it is appropriate that preventive programs target the entire public in an endemic area without any screening. Therefore, continuous mass public sensitization programs with timely and

appropriate interventions need to be conducted in areas where dental fluorosis is endemic.

The school community is especially suited for mass education program for the following reasons. First, it is a very captive audience with clear risk of developing the problem. Second, students will serve as a communication media to convey messages to the community. It can also be done in a sustainable way if school teachers are provided with appropriate and education materials.

Another possibility is to provide students with defluoridated water that is treated using conventional ways or using local technology. This may have dual effects in the prevention of dental fluorosis. First, it provides protection to students by reducing the level of exposure. Second, a spill over effect to the community arising from the demand of students for treated water at home may motivate parents to use local means to reduce fluoride concentration in drinking water (4) and also to put pressure on the local government to provide treated water.

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