

# UPSTREAM APPROACH AN ORAL HEALTH NEED IN NEPAL

\*Dixit PL, BDS, MDPH \*\*Wagle S, BDS \*\*\*Dali A, BDS

## ABSTRACT

**Background:** To report the dental caries experience of children studying in public school in Kathmandu valley and tooth brushing frequency.

**Methods:** Two government schools were randomly chosen in the valley. Information on tooth brushing frequency and use of fluoridated toothpaste was obtained through self structured questionnaires and 5-6 year old (n=61) and 12-13 year old children (n=134) were examined in classroom setting using the DMFT index. Consent from the school was taken prior to the start of the study.

**Results:** 25% of 5-6 year old and 36% of 12-13 year old brushed their teeth twice daily and 62% of 5-6 year and 36% of 12 year old had untreated dental caries.

**Conclusion:** Systematic oral health promotion programs and improved oral health services planning and resource allocation are needed to target the oral health needs of these children.

## INTRODUCTION

Nepal belongs to the world's fourth poorest country with an annual per capita income of US\$240 in 2005.<sup>1</sup> Nepal has a population of 24 million and 42% of the population is living below the poverty line. 50% of the total population is under the age of 18 years and 15% under the age of five years (UNICEF, 2000).

Health is a basic right of our people and oral health is a significant component of general health. Oral diseases are an important public health problem due to high prevalence, public demand and impact on individuals and society. A decrease in the prevalence of dental caries has been experienced among children and adolescents in developed countries within the last two decades.<sup>2-3</sup> This is due to fluoridation schemes, improved oral hygiene practice, use of fluoridated toothpaste, school oral health services, accessibility to oral health care services and affordability. But an increase in the prevalence of dental caries is seen in the developing countries. This may hold true for countries where preventive programs have not

been implemented.

Untreated dental caries is one of the most prevalent childhood diseases in Nepal. The incidence of untreated dental caries in Nepal is increasing. The WHO Pathfinder survey conducted in 1994 showed that 36% of the 12 year old children in Nepal were affected by dental caries and a mean 12 year old DMFT is 0.9.<sup>1</sup> Cross sectional surveys done over last twenty years shows that 12 year old DMFT in Nepal is doubling almost every ten years since 1997.<sup>4-6</sup>

Untreated dental caries is one of the most prevalent childhood disease in Nepal. More prevalent than malnutrition and Vitamin A deficiency which is reported to affect 53-58% of the child population in Nepal (Ministry of Health, 2000) A study done by the UMN Oral Health Program shows that dental caries affects approximately 65% of 6 year old children in Nepal.<sup>7</sup>

Education is one of the determinants of health and an important aspect of health promotion.

\*Dr. Lonim Prasai Dixit, BDS, MDPH, Asst. Professor & Head, \*\*Dr. Sarita Wagle, BDS, Dental Surgeon, \*\*\*Dr. Anu Dali, BDS, Dental Surgeon, Dept. of Community Dentistry, People's Dental College & Hospital, Naya Bazar, Kathmandu, Nepal.

Education is one of the key tools to empower people to take control of their own health. In studies of social class and health behaviour it was found that high scores of dental knowledge and attitudes to teeth and oral health care is more frequent in people with high education attainment<sup>8</sup>. Education has not been looked at even today with great importance in the rural areas. Only A huge gap lies between the importance of general and oral health among the Nepalese population. Only 26 % of Nepal's women are literate compared to 62% % of men.

A study showed that improved self performed oral hygiene, daily use of fluoridated dentifrices and regularly repeated professionally teeth cleaning effectively prevented the recurrence of dental disease<sup>8</sup>. In 1995 UMN OHP postulated increasing the consumption of fluoridated toothpaste as an appropriate oral health promotion strategy and as a result there was an increased availability and consumption of fluoridated toothpaste<sup>9</sup>.

Prevention is always better than cure. It is less expensive, requires fewer resources and if integrated with general health it becomes a perfect upstream approach towards oral health care. Imbalances in the health workforce due to shortage of personnel and geographical maldistribution is seen in Nepal. Poverty also acts as a barrier for most people to accessing health care services Public health strategies should tackle the underlying social determinants of oral health through the adoption of Common Risk Factor approach. According to Ottawa Charter, a range of complimentary strategies can be implemented in partnership with relevant local, national and international agencies.

According to Alma- Ata health conference in the then USSR in 1978, World Health Organisation (WHO) has adopted a goal of "Health for all by year 2000 A.D "One of the measures of success for achieving PHC is the provision of health care to all people. Being signatory to Alma Ata Health Conference although Nepal has pledged to meet the PHC to the people, it still remains only a dream for most Nepalese people. The strengths and

weaknesses of the Nepali Dental Health care system are directly related to the strengths and weaknesses of Primary Health Care in Nepal. Many disadvantaged communities in Nepal are left without any basic oral health care services. Government and policy makers have an enormous responsibility for the health of their people.

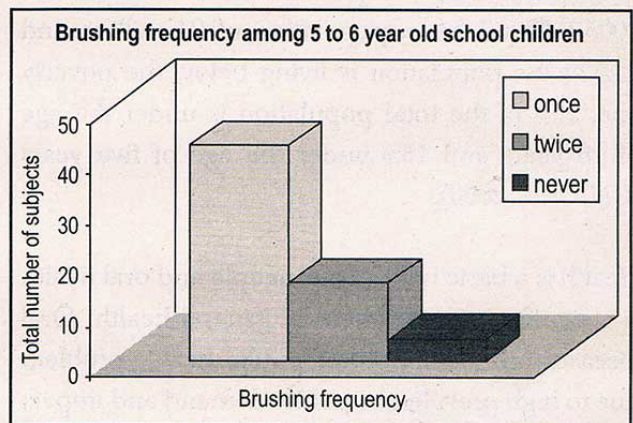
## AIMS AND OBJECTIVES

- To improve the oral health of school children
- To provide health education and awareness programs
- To provide oral health services in school settings
- To improve children's oral health self care and help them follow the golden rule of Brushing twice daily with fluoridated toothpaste
- To train teachers in delivering health education

## RESULTS

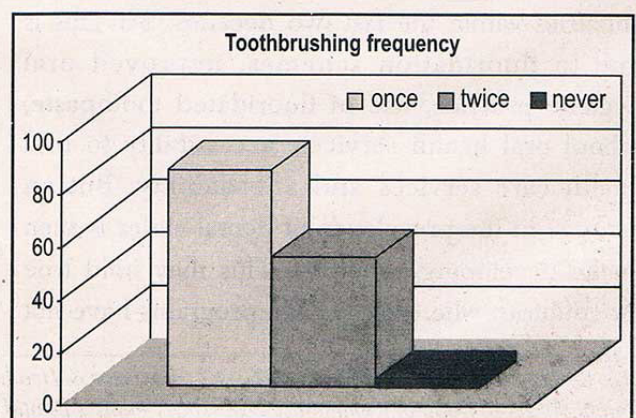
**Figure 1**

*Tooth brushing frequency in 5-6 years old school children.*

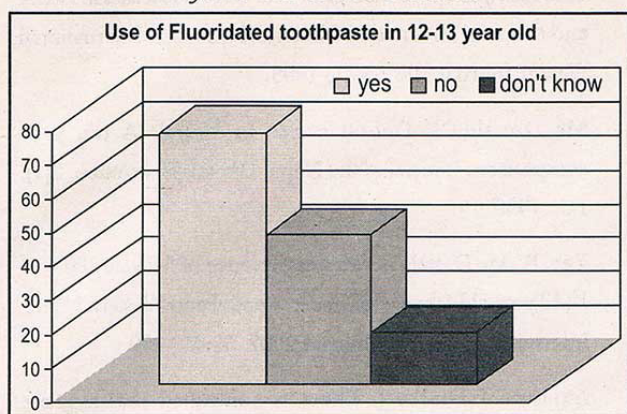


**Figure 2**

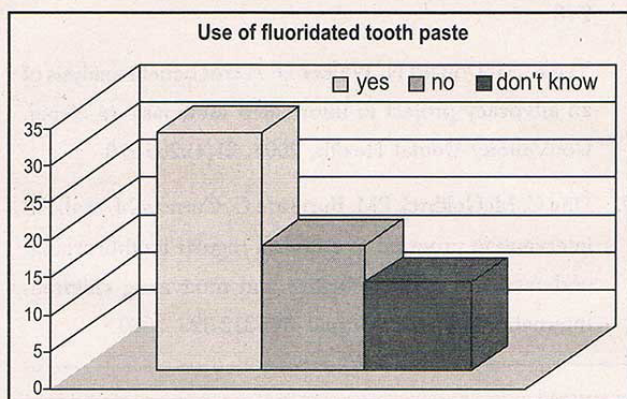
*Tooth brushing frequency in 12-13 year old school children*



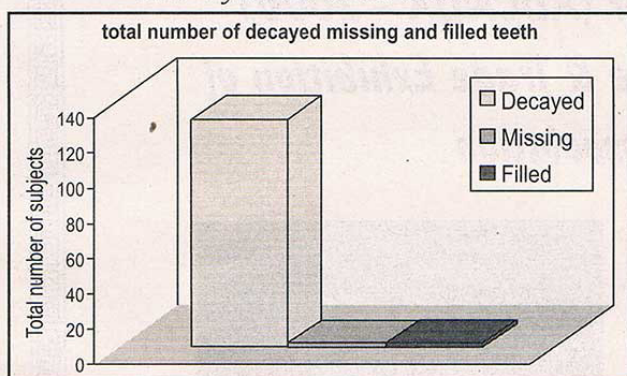
**Figure 3:** *The use of fluoridated toothpastes in 12-13 years old school children*



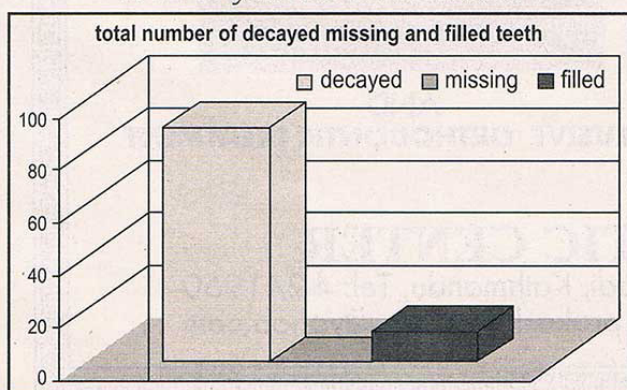
**Figure 4:** *Use of fluoridated toothpaste in 5-6 year old school children*



**Figure 5:** *Total number of untreated decayed teeth in 5-6 year old school children*



**Figure 6:** *Total number of untreated decayed teeth in 12-13 years old school children*



## DISCUSSION AND CONCLUSION

Dental caries experience in school children remains high in Nepal. Although there has been a decline in dental caries in school children in developed countries, it still remains a major public health problem in the developing countries. 25% of 5-6 year old and 36% of 12-13 year old brushed their teeth twice daily and 62% of 5-6 year and 36% of 12 year old had untreated dental caries. Almost % of 5-6 year old and % of 12-13 year old brushed their teeth using a toothbrush.

It has been seen that there has been an increase in the use of fluoridated toothpaste as a result of its increased availability in the Nepalese market. Although this study has its limitations it still cements onto lack of education and awareness and the prevalence of untreated dental caries among young age groups and provides an insight into the oral health care system of Nepal. The experience of dental caries in school children is such that current public oral health resources are unable to meet the need for immediate dental care.

If oral health care is an essential health care and not an elective luxury it should be provided to those who cannot access and afford it. Dental caries is preventable in both children and adults. But a more medical model has been seen addressing the disease process rather than modifying diet, increasing the resistance of tooth decay and using an oral health approach. It has been observed that brushing of children's teeth with fluoridated toothpaste twice daily from early stage is effective in preventing and reducing dental caries in children<sup>10</sup>. The increased number of untreated dental caries could be due to lack of knowledge of simple preventive measure like toothbrushing with fluoridated toothpaste twice daily. The authors also assume the low attendance pattern could be as a result of lack of affordability to oral healthcare services and also knowledge regarding oral health. The golden rule of tooth brushing twice daily with fluoridated toothpaste could be very effective in preventing dental caries in these young age groups in Nepal.

Dental health education program should be implemented in schools and more information should be provided on oral health. Increase in accessibility to preventive approaches may increase the use of preventive services and as a result the decline in dental caries.

The need of Nepal is clearly an upstream approach.

## REFERENCES

1. World Bank Group.  
[www.worldbank.org/data/countrydata.html](http://www.worldbank.org/data/countrydata.html) 2002
2. Burt BA. Trends in caries prevalence in North American children. *International Dental Journal* 1994. 44: 403-413
3. Beltran -Aguilar ED, Estupinan- Day S, Baez R. Analysis of prevalence and trends of dental caries in the Americans between 1970s and 1990s. *International Dental Journal* 1999. 49:322-329.
4. Milsom KM, Rijal K and Lenon MA. Oral health status of 12year old children in Nepal in 1994. *International dental journal* 47:88-93,1997
5. Van Palenstein Helderma WH, Groenveld A, Truni G-J, et al. Analysis epidemiological data on oral diseases in Nepal and the need for a national oral health survey. *International Dental Journal*. 48: 65-71, 1998
6. Mc Donald N. Dental caries in Nepal: A ten year comparison. *Journal of the Nepal Dental Association*. 2(1): 1-5, 1999.
7. Yee R, Mc Donald: Caries experience of 5-6 year old and 12-13 year old school children in Central and Western Nepal. *International Dental Journal* 2002. 52:453-460
8. Axelsson P, Lindhe J. Effect of controlled oral hygiene procedures on caries and periodontal disease in adults. Results after 6 years. *Journal of Clinical Periodontol* 1981. 8:239-248
9. Yee R, McDonald N, Walker D. A cost benefit analysis of an advocacy project to fluoridated toothpaste in Nepal. *Community Dental Health*, 2004. 21(4):265-270
10. Pine C, McGoldrick PM, Burnside G, Curnow M, et al. An intervention program to establish regular toothbrushing: understanding parents beliefs and motivating children. *International Dental Journal*. 50: 312-323. 2000.