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ORIGINAL RESEARCH ARTICLE

ORAL HEALTH RELATED KNOWLEDGE, ATTITUDE, AND PRACTICE AMONG SCHOOL CHILDREN OF JYAMRUNG, NEPAL.

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ABSTRACT

Oral diseases are common in school children of underprivileged region of developing countries. The community-based oral health promotion approach, using schools as a platform, is a way to tackle the oral health problems of community with limited human and financial resources. A base-line study was conducted in a school of Jyamrung so as to evaluate oral health related knowledge, attitude and practices among schoolchildren, based on which an oral health promotion program will be developed for the school. A descriptive study was conducted among all the students of the school. Oral heath related information of the students was collected using DMFT (Decayed Missing Filled Teeth) index and a questionnaire. A total of 88 children with age ranging from 6 to 16 years took part in the study. A total of 61% of the children had dental caries. Mean DMFT of the schoolchildren was 1.78 (SD 2.04). The Filled component score was 0. Children with the experience of tooth pain the previous year was 36.5% for 6-11 yrs of age, and 58.3% for 12-16 yrs of age. None of them had received any form of treatment following the pain. Only 4 children have dental consultation. Almost 92% of them have never received oral health education in their school. A comprehensive oral health care program is required to address the present oral health needs of the schoolchildren.

Key words: *Dental caries, Oral health, School children.*

INTRODUCTION

There have been significant improvements in the global oral health, but still problems continue to affect many communities around the world, especially among underprivileged in both developed and developing countries. [1] Oral diseases increase the risks of general health. [2] A report by World Health Organization suggest 60-90% of schoolchildren worldwide have experienced caries, with higher prevalence in Asian and Latin American countries. [3] The 2004 National Pathfinder Survey of Nepal shows 58% of 5–6 year- old schoolchildren experienced dental caries. Approximately 31% of age 35-44 years had deep periodontal pockets, putting Nepal into the top 15% of the countries in the world where this age group suffers from deep periodontal pocketing. [4] Oral cancer, in Nepal, is the second most common form of cancer in men; and the third most common form of cancer in female. [5]

In Low-Income countries, health related behaviors among children are low. [6] Poverty, lack of awareness and inaccessibility to health care services constrain them to live with the disease.[7] Childhood oral diseases, if untreated, can lead to irreversible damage, pain, disfigurement, more serious general health problems, lost school time, low self-esteem, poor quality of life and, in the case of noma, death. The delay in treatment not only results in aggravation of disease, but also costs of care are substantially escalated as a consequence. [8] Tooth decay is one of the most common chronic childhood diseases. [9] Health behavior such as the use of fluoridated tooth paste and regular tooth brushing is rare among children in low-income countries. [6, 10, 11] In addition, national public health programmes often do not consider oral health. [12]

The community-based oral health promotion approach is a way to address poor oral health where human and financial resources are limited. [13] Schools offer the ideal setting to reach millions of children and ensure strong foundations for a healthy life at an early stage. [14] Focusing efforts in practical school based health activities have reduced inequalities in health. [15] In 2003, the World Health Organization stated that “oral health promotion is an essential element of a health-promoting school”.[16, 17] Oral health and other chronic diseases share diet, hygiene, smoking, alcohol use, stress and trauma as risk factors. Thus, adopting a common risk factor approach, during oral health promotion will help to bring down the chronic diseases as well, and contribute to the overall health of the population. [2]

Above discussion holds very true in the scenario of Jyamrung,

where the only medical facility nearby is a health post built, and maintained by Tuki Nepal, a local non-profit organization, supported by philanthropic Swedish nationals. The author was contacted by the organization to develop an oral health package for a school, supported by Tuki Nepal and establish a dental health facility. A baseline data to assess and evaluate the oral health status, needs, knowledge of the school children was necessary to devise an oral health package. Hence, a base-line study was conducted among school children so as to evaluate oral health related knowledge, attitude and practices among them.

MATERIALS AND METHOD

A descriptive study was designed to include all the students of the school. The study had two components: clinical examinations based on WHO methodology and a set of structured questionnaire. The status of dental caries was recorded using the guideline of WHO Oral Health Survey Basic Methods 1997. All examinations were carried out in well-lit classrooms. The questionnaire consisted of topics that concern not only personal life habits like oral hygiene habits, smoking habits, alcohol consumption, but they are aimed at revealing the level of knowledge about some different topics like prevention, treatment history, and aesthetic factors. Responses to questionnaire for 6-11 years old, were recorded by the interviewer himself (chief author) and were self-administered by 12-16 year-old schoolchildren. The study took place in a school in Jyamrung Village Development Committee of Dhading District in central Nepal in 2013. The numbers of participants were 88 children, aged 6-16 years (39 males and 49 females) studying in grades 1- 8. Consent to undertake the study was sought from the parents of the school children, and the headmaster. Almost everyone complied for that. SPSS 20 software was used for data analysis.

RESULTS

The study population comprised of 88 children with age ranging from 6 to 16 years. Among them 39 were male and 49 were female. A total of 61% of the children had dental caries in one or more teeth (maximum 8). The mean DMFT of children with dental caries was 2.91 (SD 1.87), whereas the mean DMFT of the entire school was 1.78 (SD 2.04). Among 6-11 yrs age group, 51.9% (27 out of 52) were affected by dental caries and mean DMFT was 1.65 (SD 2.17). At age 12-16 yrs, 75% (27 out of 36) were affected by dental caries and mean DMFT was 1.97 (SD 1.84). The distribution of dental caries in two age groups was found to be statistically significant ($p < 0.05$). Decayed and Missing components comprised the entire DMFT score. The Filled component score was 0.

The proportion of schoolchildren who felt tooth pain the previous year was 36.5% for 6-11 yrs of age, and 58.3% for 12-16 yrs of age. The difference was found to be statistically significant ($p<0.05$). When enquired about seeking dental consultation following pain, ironically none of them had received any form of treatment/advice by a dentist and/or health personnel.

In 6-11 years age group, 17.3% never brushes their teeth, 67.3% brushes once a day, and 15.4% brushes twice a day. In 12-16 years age group, almost 100% brushes their teeth at least once a day, among which 86.1% brushes once daily and 13.9% brushes twice daily. The brushing habits in two age groups was found to be statistically significant ($p<0.05$). When children were enquired about the brand of toothpaste they use at home, a total of 75% of children brush with fluoridated toothpaste. It shows good availability of toothpaste in the village. Only 2 children in 12-16 years age group correctly knew about fluoride and its benefits.

Only 4 children in 12-16 years age group have visited a dentist. It was for removal of painful tooth. It shows that more than 95.5% of all children had never visited a dentist. The percentage of children who had missed schools because of tooth pain was 61.5% and 77.8% for age groups 6-11, and 12-16 yrs age. A question on the perception about appearance of the front teeth was limited to 12-16 years age group. More than 75% of 12-16 years children were uncomfortable with the appearance of their teeth. The most prevalent sugar intake behavior was taking tea with sugar; the proportion of children drinking it at least once a day was approximately 87% in both age groups. The percentage of children eating biscuits daily was around 46% for the 6-11 yrs, and 74% for the 12-16 yrs age groups. The fraction of children eating ready- to-eat noodles was 29% and 68% in 6-11 yrs and 12-16 yrs age groups respectively. The difference was statistically significant ($p<0.05$). The proportion of children consuming sweets daily ranged from 48.5% to 21.4% in 6-11 yrs and 12-16 yrs age group respectively. The differences was found to be statistically significant ($p<0.05$). None of the students have ever smoked or consumed tobacco products, whereas, parents of 67% of children smoke. However it was sad to find 92% of them have never received oral health education in their school.

DISCUSSION

In the past, diseases of the oral cavity have been viewed separately from those of the rest of the body. However, in recent years, efforts have been made to recognize oral health as an integral part of overall health. [14] Poor oral health can have detrimental effect on children's performance in school and their success in later life. [18] Global goals for oral heath 2020 states to minimize the impact of diseases of oral and craniofacial origin on health and psychosocial development, giving emphasis to promoting oral health and reducing oral disease amongst populations with the greatest burden of such conditions and diseases.[19] The school provides an ideal setting for promoting oral health offering an efficient and effective way to reach over 1 billion children worldwide and, through them, families and community members. [18]

The present study provides information on prevalence of dental caries, dental attendance and oral health knowledge and behaviors in 6 – 16 years old school children of a rural population in central part of Nepal. The survey was confined to the school under oral health education program and therefore the data are not representative in pure statistical terms.

The prevalence of dental caries (51.9%) in 6-11 yrs age group

was found to be in accordance with earlier studies of Nepal [20, 21], whereas the prevalence of dental caries (75%) in 12-16 years age group was found to be higher than other Nepalese studies. [20, 21, 22] DMFT was 1.65 (SD 2.17). At age 12-16 yrs, 75% (27 out of 36) were affected by dental caries and mean DMFT was 1.97 (SD 1.84).

The present study showed that over 89% of children claimed to brush their teeth once daily and 14.8% brush twice daily with a tooth brush. Findings from a similar study [22] among ethnic Chepang children reported 56% brushing daily and only 24% brushing teeth twice daily. Another study in Central Nepal reported once a day brushing among 77.5% and twice a day among 16.9% of children. A study in Jordan [23] reported 69% of school children brushing twice daily and 17% reported brushing once a day. These data show that twice a day brushing is not a norm commonly practiced in Nepal. The poor oral hygiene condition of most of the schoolchildren reflected irregular tooth brushing habits, which was evident from the fact that a large number of students (61%) require immediate treatments in the form of restorations and extractions. This could be due to once a day brushing, inadequate brushing time, ineffective brushing technique or all. It was also possible that some of the children did not brush as they claim. There is a need to motivate children about the importance of brushing two times a day, and effective brushing to prevent against dental caries.

Information on majority of children (75%) brushing with fluoridated toothpaste reflects good availability of fluoridated toothpaste in the remote village, unlike a city in China (17%).[24] But the fact that they have been using it without knowing the potential benefit of fluoride requires an in-depth oral health education about the benefits of fluoride in oral health care.

A number of students (36.5% for 6-11 yrs of age, and 58.3% for 12-16 yrs of age) in both the age groups suffered from dental pain the previous year. Ironically, none of them had sought dental consultation following painful episodes. Almost 95% of the children have never visited/seen dentist compared with 35.9% in India [25] and 20% in Jordan. [23] Of only 4 schoolchildren who had ever visited a dentist, was for extraction of the offending teeth. It was not surprising to find mean FT for both the age groups 0. The reasons for these could be the facts like unavailability of dental services in the village and nearby places; dental services were not free, even in government hospitals; lack of dental awareness and low priority placed on oral health care compared with other needs; lack of time for the parents to take their children for the dental treatment, which might take a minimum of 5 hours bus ride to the nearest city. A child's economic background has also been shown to influence the probability of seeking dental care. [12] When asked about the pain management, it was appalling to know the self admitted habit of tolerating the pain, and living with it. This confession reveals the suffering of the people living in the least developed part of the developing countries.

Usually regular school attendance in village is very poor. Students miss schools as they have to indulge in different household choirs. It's very sad to find out dental pain as one of the reasons for poor school attendance (32% had missed school because of dental pain). It was in concomitant with a high decay component in both primary and permanent dentition. So if proper oral health education can be administered, then we could improve the school attendance rate and performance of the students. [26, 27]

None of the students reported to consume tobacco in any forms, whereas the fact that parents of 67% of the children consume tobacco requires an oral health education about oral cancer targeted not just towards students, but to their parents as well. A primordial prevention against oral cancer can be executed. Students should be discouraged and warned not to take up the bad habits in future.

A large majority (92%) of them has never received oral health education in their school, which is higher than a study in China (47.5%).[24] An oral health program that gives effort in educating them in preventing dental diseases and maintaining good oral health is of utmost essential to raise the oral health related quality of lives of the students and the community itself.

The enthusiasm of almost 90% of children who felt teeth are important to maintain good health and living, can be of great advantage to create a positive learning environment during oral health education program in future. The value they placed on the importance of teeth in appearance can be used as a motivating factor to help them maintain good oral health care. It was in agreement with the similar studies conducted in different parts of the world.

CONCLUSION

Dental caries is the most prevalent of oral diseases in developing countries like Nepal. A very low priority is placed upon its prevention and treatment due to relatively low mortality and morbidity compared to other childhood diseases, and other factors like knowledge; cost; availability and accessibility of services. Although the level of dental caries is low in school children of Jyamrung (mean DMFT=1.78), almost 100 per cent of the caries remains untreated in both the primary and permanent dentition, which needs immediate attention. This data justifies the need of regular dental camps to be conducted in Jyamrung for better oral health promotion. A comprehensive oral health care design is required to address the present oral health needs, followed by periodic maintenance of the service. Systematic health education improves the oral health of Nepali children, and primary schools provide the effective setting for such oral health programs. Children should be educated about ill effects of smoking, and should persuade their parents in quitting the habit. Education to the parents is also needed.

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REFERENCES

1. Petersen PE, Hoerup N., Poomviset N., Prommajan J, Watanapa A. : Oral health status and oral health behaviour of urban and rural schoolchildren in Southern Thailand. International Dental Journal 2001; 51; 95-102.
2. Do LG, Scott JA, Thomson WM, Stamm JW, Rugg-Gunn AJ, Levy SM, Wong C, Devenish G, Ha DH, Spencer AJ. Common risk factor approach to address socioeconomic inequality in the oral health of preschool children – a prospective cohort study. BMC Public Health 2014 14:429
3. Petersen PE, Bourgeois D, Ogawa H, Estupinan-Day S, Ndiaye C: The global burden of oral diseases and risks to oral health. Bull World Health Organ 2005, 83:661-69
4. Yee R, Mishra P: Nepal oral National Pathfinder Survey 2004. Int Dent J 2006, 56:196-02.
5. Oral Cancer: Rationale for inclusion in SEA Regional NCD Strategy. Expert Consultation, Bangkok, World Health Organization, 2013.
6. Jiang H, Petersen PE, Peng B, Tai B, Bian Z: Self-assessed dental health, oral health practices, and general health behaviors in Chinese urban adolescents. Acta Odontol Scand 2005, 63:343-352
7. Sheiham A, Alexander D, Cohen L, Marinho V, Moysés S, Petersen PE, Spencer J, Watt RG, Weyant R. Global oral health inequalities: task group--implementation and delivery of oral health strategies. Adv Dent Res. 2011 May; 23(2):259-67
8. Retna Kumari N. Assessment of dental treatment required and analysis of cost in the management of dental caries among semiurban primary school children of Kerala. J Indian Soc Pedod Prev Dent 2000; 18(1): 28-37
9. U.S. Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institute of Health, 2000.
10. Petersen PE. In: InternationalEncyclopedia of Public Health. 1. Heggenhougen K, Quah S, editor. Vol. 4. Oxford Elsevier Publications; 2008. Global Oral Health; pp. 677–685
11. Varenne B, Petersen PE, Ouattara S. Oral health behaviour of children and adults in urban and rural areas of Burkina Faso, Africa. Int Dent J. 2006; 56:61–70.
12. Jürgensen N, Petersen PE. Oral health and the impact of socio-behavioural factors in a cross sectional survey of 12-year old school children in Laos. BMC Oral Health. 2009 Nov 16;9:29
13. Petersen PE, Kwan S. Evaluation of community based oral health promotion and oral disease prevention – WHO recommendations for improved evidence in public health practice. Community Dental Health 2004; 21 Suppl 1:319-29.
14. Jürgensen N, Petersen PE. Promoting oral health of children through schools--results from a WHO global survey 2012. Community Dent Health. 2013 Dec;30(4):204-18.
15. WHO's Global School Health Initiative. Health-promoting Schools. A healthy setting for living, learning and working. Geneva: World Health Organization; 1998
16. Oral health promotion: an essential element of a health-promoting school. Geneva: World Health Organization; 2003. WHO Information Series on School Health. Document 11.
17. Kwan SY, Petersen PE, Pine CM, Borutta A. Health-promoting schools: an opportunity for oral health promotion. Bull World Health Organ. 2005 Sep;83(9):677-85. Epub 2005 Sep 30.
18. WHO Information series on School Health, Document Eleven. Oral Health Promotion: An essential element of a Health-Promoting School. World Health Organization, 2003.
19. Hobdell M, Petersen PE, Clarkson J, Johnson N. Global goals for oral health 2020. Int Dent J. 2000 Oct;50(5):245-9.
20. Limbu S, Dikshit P, Mehata S, Thapa P. Dental Caries prevalence and treatment needs in children aged upto16 years attending at Kantipur Dental College and Hospital. Journal of Nepal Dental Association Vol . 13 . No. 2 . July-Dec . 2013
21. Adhikari RB, Malla N, Bhandari PS. Prevalence and treatment needs of dental caries in school-going children attending dental outpatient department of a tertiary care centre in western region of Nepal. Nepal Journal of Medical sciences 2012;1(2):115-8.
22. Prasai Dixit L, Shakya A, Shrestha M, Shrestha A. Dental caries prevalence, oral health knowledge and practice among indigenous Chepang school children of Nepal. BMC Oral Health. 2013 May 14;13:20.
23. Al-Omiri MK, Al-Wahadni AM, Saeed KN. Oral health attitudes, knowledge, and behavior among school children in North Jordan. J Dent Educ. 2006 Feb;70(2):179-87
24. Zhu L, Petersen PE, Wang HY, Bian JY, Zhang BX. Oral health knowledge, attitudes and behaviour of children and adolescents in China. Int Dent J. 2003 Oct;53(5):289-98
25. Mehta A, Kaur G. Oral health-related knowledge, attitude, and practices among 12-year-old schoolchildren studying in rural areas of Panchkula, India. Indian J Dent Res. 2012 Mar-Apr;23(2):293
26. Stephanie L. Jackson, William F. Vann, Jr, Jonathan B. Kotch, Bhavna T. Pahel, Jessica Y. Lee. Impact of Poor Oral Health on Children's School Attendance and Performance. Am J Public Health. 2011 October; 101(10): 1900–1906
27. Peker I, Alkurt MT. Oral impacts on daily performance in Turkish adults attending a dental school. J Contemp Dent Pract. 2014 Jan 1;15(1):92-8.