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# Oral Health Related Knowledge Attitude and Practices Amongst School Children in Himachal Pradesh, India

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*Conclusion:* Results of this study suggested that the present oral health knowledge attitude & practice of study participants was poor and needed to be improved.

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## I. Introduction

In 1970s dental caries was more severe in developed and industrialized parts of the world due to frequent consumption of refined sugars and cariogenic diets, compared to the developing and underdeveloped countries. In recent years, however, this pattern has been reversed where in the most industrialized countries, prevalence of dental caries and mean dental caries experience in children have declined in spite of high sugar consumption, due to effective use of oral health services, implementation of school based oral health programmes, adaptation of regular health care practices, use of fluoride tooth paste and improved socioeconomic conditions and lifestyles[1-5].

In developing countries like India, against this, increasing levels of dental caries among children are observed due to increasing level of refined sugar available and high sugar and processed food consumption but at the same time insufficient knowledge about brushing and fluoridation due to lack of oral health education and community based preventive oral programmes.[1] During 1940 the prevalence of dental caries in India was 55.5% in 5-14 year age group while during 1960 it was reported to be 62%[6]. National Health Survey conducted in 2004 in India reported the percent prevalence of dental caries as 80.2%.[7] A similar caries prevalence of 77.7% and 80.92% in the age group of 7-12 years has been seen in the studies done by H Grewal, M Verma, A Kumar (2009)[8] and Shingare P (2012)[9].

Numerous studies regarding oral health have been conducted and reported in India, but as far as Himachal Pradesh is concerned no data is available for the knowledge attitude and practices of the school children regarding oral health. The above factors prompted us to conduct the present study with the following objective-

To assess the Knowledge Attitude and Practices in oral health in school children in the age range of 7-14 in Sundernagar city, Himachal Pradesh.

## II. Materials and Methods

According to the Guidelines for Conducting Knowledge, Attitude and Practice (KAP) Study, the sample should be sufficiently large so as to represent the population yet not so large that the data collection and analysis is prohibitively difficult. At 95% confidence interval and 5% confidence level, the sample size calculated was 600. The epidimological study was carried out on 649 children in the age range of 7-14 years randomly selected from schools of Sundernagar city in Himachal Pradesh, India in 2012. Children younger than 7 years required indirect communication through the parents and children older than 14 years are usually not available for the subsequent visits because of their random shifting of institutions and hence they were not included in the study. Baseline data collected will be used for future planning of school oral health programmes.

Ethical approval to conduct the study was obtained from the Institutional Review Board of Himachal Dental College, Sundernagar. Written consent for the participation of the children in the study was obtained from the Principals of the concerned schools.

*a) The inclusion criteria*

- Schoolchildren (male and female) in the age range of 7-14
- Children present on the day of examination

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*b) Number of investigators*

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The children from each class were selected on the basis of systematic random sampling. Data on oral health KAP was collected by means of self administered close-ended questionnaires focusing on brushing frequencies, frequency of sugar intake, sugar and caries, role of fluoride, gum diseases, dental plaque and importance of deciduous teeth etc. The final questionnaire was subsequently discussed among the experts who judged the face and content validity of the questionnaire. Reliability and internal consistency of the questionnaire was assessed using Cronbach's coefficient of alpha test. Only questions scoring > 0.7 were approved for conducting the survey.

A specially prepared computerized proforma in both English and Hindi was used which contained 17 questions,7 on knowledge (K), 5 on attitude (A) and 5 practice (P). The questions were easily understandable by the children and did not contain high flown, technical or scientific words. The questionnaire was pretested by conducting pilot study among 10% of sample size to assess the children's ability to understand the questions and answer them without any help. It took about 15 - 20 min to fill all the questionnaires. Interpersonal communication was not allowed and the children were informed of the importance of answering the questions honestly. Questionnaires were completed under the supervision of investigators.

The data obtained was recorded by using statistical package for social sciences version 11. Associations were assessed using Chi square test and p value of less than 0.05 was considered significant.

## III. Results

*a) Knowledge and attitude of the children regarding oral health (Table1)*

*Table 1:* Knowledge And Attitude Of The Children

| Questions | At baseline evaluation | |
|---|---|---|
| Brushing as best method | 78.7% | |
| Frequency of cleaning teeth in a day | a. Once daily | 18.3% |
| | b. Twice daily | 61% |
| | c. Thrice daily | 13.1% |
| | d. After every meal | 5.7% |
| Role of fluoride on dental diseases | a. Don't know | 71.2% |
| | b. Has got no role | 5.5% |
| | c. Makes teeth stronger & protects from decay | 11.3% |
| Foods which cause tooth decay | a. Don't know | 7.4% |
| | b. Sugars | 84.9% |
| | c. Fruits/vegetables | 0.6% |
| Signs and symptoms of early stage of gum disease | a. Don't know | 56.9% |
| | b. Gums swollen and bleeding | 8% |
| Knowledge about dental plaque | a. Don't know | 87.7% |
| | b. Layer of bacteria, bacterial products and food debris on teeth | 3.7% |
| Knowledge of importance of milk teeth | a. Not important | 37.8% |
| | b. Don't know | 26.2% |
| | c. Important | 36% |

78.7% children considered brush to be the effective method of maintaining the oral hygiene. 61% children had the knowledge that brushing should be done twice per day. Poor knowledge and attitude towards Fluoride was observed. Most of the children were well aware with the fact that sugar is the main food which causes dental caries. 56.9% and 87.7% children in the present study did not know about gum diseases and dental plaque respectively. Most of the children had the knowledge that permanent teeth are important for various functions, but for deciduous teeth 37.8% children stated that they are not important and 26.2% children had no knowledge about the importance of milk teeth.

*b) Oral Health Practices of the children (Table 2)*

*Table 2 :* Oral Health Practices Of The Children

| Questions | At baseline evaluation | |
|---|---|---|
| Children using tooth brush to clean their teeth | 95.8% | |
| Frequency of brushing practiced in a day | a. Once daily | 58.9% |
| | b. Twice daily | 39.1% |
| | c.Thrice daily | 1.7% |

| | | |
|---|---|---|
| Type of paste/solution/powder used for brushing | a. Don't know | 76.9% |
| | b. Fluoridated toothpaste | 9.7% |
| | c. Non Fluoridated paste | 0.6% |
| Frequency of sugar intake by the children per day | a. Thrice | 9.1% |
| | b. Four times | 39% |
| | c. Five times | 25.4% |
| | d. Six times | 14.8% |

95.8% children in the study were already using brushes to clean the teeth. Only 39.1% were brushing twice a day. Of all the children, only 9.7% children were using fluoridated tooth paste to clean the teeth. 9.1% children knew about three sugar exposures and were consuming sugar thrice a day.

## IV. Discussion

The baseline evaluation of oral hygiene practice revealed that 95.8% children were already using brushes to clean their teeth (Table 2). The advertisements and some other educational programs on television have helped children to gain knowledge about the use of toothbrush. Similar results were seen with the study done by Humagain M[10] and Walsh M.M[11] in which 100% and 96% children respectively used tooth brush for cleaning the teeth. In the present study, though 95.8% children were using brushes to clean the teeth but only 78.7% children considered brush to be the effective method of maintaining the oral hygiene (Table 1). The results were comparable with the questionnaire survey of Linn E L[12], where 99% children were using tooth brushes but 93% had the correct knowledge about tooth brush as the best effective tool for cleaning the teeth.

At the start of the study, again 61% children (Table 1) had the knowledge that brushing should be done twice per day but regarding the practice, only 39.1% were brushing twice a day (Table 2). These results were comparable to Petersen PE[13], Harikiran AG[14] and Humagin M[10] in which at baseline 31.3%, 38.5% and 35.1% children were brushing twice. 76.7% children at baseline had poor knowledge and attitude towards Fluoride (Table 1) and only 9.7% children were using fluoridated tooth paste to clean the teeth where as majority (76.9%) of children were not aware whether they were using fluoridated or nonflouridated toothpaste (Table2). These findings were similar to Harikiran AG[14] in which low values of knowledge attitude and practice towards the role of fluoride was noticed at the baseline. In contrast adequate baseline information was observed in the study done by Peterson PE[13] in which 74.9% children were aware of fluoridated tooth paste and were practicing with it. Jensen O[15], Smyth E[16] and Whye C[17] also showed the appreciable knowledge and attitude towards Fluoride tooth paste in the school going children. This lack of information in the present study was due to lack of proper guidance by the teachers or parents and due to lack of dental educational camps..

At the start of the study 84.9% children had the knowledge that sugar is the main food which causes dental caries (Table 1). These findings were in contrast to study done by Shenoy RP[18] and Harikiran AG[14] where only 31% and 48.9% children knew that sugar causes dental caries. Low socioeconomic strata of most of participants in the above mentioned studies could be the reason for these differences. In the present study only 9.1% children had the correct knowledge of three sugar exposures and were consuming sugar thrice a day (Table 2)

It was observed that only 6 to 8% of the children at baseline knew correct answers about the signs and symptoms of gum diseases (Table 1). Casual approach of the children and their parents towards the bleeding gums may be the basic cause for this neglect. Similar findings were observed in a study done in India by Punitha VC[19] and Shenoy RP[18] in which at baseline only 1.23% and 19% children respectively were aware of gum diseases, where as these findings were in contrast to studies done by Whye C[17] and Al-Omiri MK [20] in which 48.3% and 70% children respectively were aware that gingival bleeding reflects gingivitis. This might be explained by the fact that dental schools in the areas of above studies have been consciously promoting the role of prevention and proper management of young patient's oral health.

When the knowledge of the children about dental plaque was analysed at baseline, it was observed that 87.7% children in the present study did not know about dental plaque (Table 1). This lack of knowledge could reflect the dental health education, which was limited to certain levels of understanding and the contact with relevant dental personnel was confined only to the treatment hour. Poor knowledge about dental plaque among children was also noticed by Al Ansari J [21] and Whye C [17] where in both the studies found that 85.6% children were not aware of dental plaque. These findings were in contrast to the study done by Al –Omiri MK[20] and Humagain M [10] in which only 36.3% and 26.2% children respectively lacked knowledge about dental plaque.

Most of the children in the present study had the knowledge that permanent teeth are important for various functions, but for deciduous teeth, 37.8% children stated that they are not important and 26.2% children had no knowledge about the importance of milk teeth (Table11). This lack of knowledge is due to the lack of information of the parents, teachers and caretakers. About 62% of the caretakers in the study done by Mani SA [22] agreed that it was not necessary to do fillings in deciduous teeth, with similar results reported from a study done by Szatko F[23] where two-thirds of the mothers agreed that care of deciduous

dentition was unnecessary. Similar results were seen in the study done by Nagaveni[24] in which majority of parents of were unaware of the importance of the primary teeth.

## V. Conclusion

Results of this study suggested that the present oral health knowledge attitude & practice of study participants was poor and needed to be improved. Systematic community-oriented oral health promotion programs are needed to improve oral health Knowledge attitude & practices of school children. Baseline data collected will be used for future planning of school oral health programmes.

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