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# Oral Hygiene KAP Assessment and DMFT Scoring Among Children Aged 11-12 Years in an Urban School of Karachi

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## ABSTRACT

**Objective:** To assess the oral hygiene knowledge, attitude and practices among school children and evaluate their DMFT (Decayed/Missing/Filled Teeth) scores.

**Study Design:** Cross-sectional study.

**Place and Duration of Study:** A private school of Karachi from March to April 2008.

**Methodology:** Convenient sample comprising 300 students of grade 6 within the age group of 11-12 years was selected. A knowledge, attitude and practices survey questionnaire based on quantitative indicators was filled by the students. Clinical examination was done for DMFT. Data analysis was done by using SPSS version 11. Associations were assessed using chi-square test and a p-value of < 0.001 was considered significant.

**Results:** There were 160 males and 140 females in the target group. The mean DMFT was found to be 1.27. The children had satisfactory knowledge of oral health's effect on general health and the problems associated with poor dental hygiene. However, 50.3% children did not have positive attitude towards importance of a dentist's role in maintaining their dental health. Only a few students (11.3%) had familiarity with dental floss. A statistically significant association was found between frequency of brushing and children's knowledge of the problems related to irregular tooth brushing ( $p < 0.001$ ).

**Conclusion:** The attitude of school children towards dental health and dental service utilization is determined by certain social and cultural factors. The mean DMFT of 1.27 showed that there must have been some poor oral practices that are contributing towards a higher mean.

**Key words:** School children. Cross-sectional survey. Karachi. Oral hygiene. DMFT score.

## INTRODUCTION

Poor oral health has been proven to have unfavorable effects on general health. Severe dental decay in children can result in pain, sleeping problems, trouble eating and behavior problems.<sup>1</sup> It can also influence the growth and development in children.<sup>2</sup> Therefore, maintaining oral health is essential to improve general health and hence quality of life.

The most common dental problem prevalent in majority of the population is dental caries. It is highly irreversible and the etiology is complex. A recent study showed an estimate of 90% of school children worldwide and most adults have experienced caries, with the disease being most prevalent in Asian and Latin American countries and least prevalent in African countries.<sup>3</sup> It is also the primary pathological cause of tooth loss in children.<sup>4</sup>

In Pakistan, oral health trends have shown considerably dismal results. Dental caries and periodontal disease

have affected majority of the Pakistani children, with an increase in DMFT (Decayed/Missing/Filled Teeth) score of a 12 years old from 0.9 in 1999 to 1.38 in 2003.<sup>5,6</sup>

Studies have shown decline in the disease in some developed countries, and this descent is usually attributed to increasingly better oral hygiene awareness, practices and preventive measures such as fluoride treatment.<sup>7</sup> In order to attain similar results, promotive and preventive measures are required in the developing countries, like Pakistan where dental caries (tooth decay) is the single most common chronic childhood disease 5 times more common than asthma and 7 times more common than hay fever.

The measures for the improvement of oral health requires understanding of an individual's knowledge and perception about oral health and is regarded as an elementary effort in the development of policy strategies towards improvement of oral health.<sup>8</sup>

This study focuses on the analysis of oral hygiene awareness among schoolchildren while evaluating their oral health status through DMFT score. The DMFT Index is a general indicator of dental health status of the population (particularly among children), and is considered reliable.<sup>9</sup> Lower the index, the better the dental health of the population. The DMFT score for any individual can range from 0 to 32, in whole numbers. A mean DMFT score for a population can have fractional values.<sup>10</sup>

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This study will help to assess understanding and perception of school going children towards maintenance of their oral health. The data if significant can be utilized to support any further promotive or preventive activities for improving dental health status of children of the similar age group.

Thus the objective of this study was to assess the oral hygiene knowledge, attitude and practices among school children and evaluate their DMFT scores.

## METHODOLOGY

This cross-sectional study was employed on a convenient sample of 300 students including both males and females studying in a private school of Karachi from March to April 2008. A written application mentioning the purpose of the project with attached questionnaire was submitted to the school's principal and her approval was taken. There were 160 males and 140 females falling in the age group of 11-12 years. This age group was preferred as the baseline data collected could be utilized for future planning of a school oral health programs.<sup>11</sup> The students of the school represent population of children belonging to lower middle class.

A knowledge, attitude and practice survey questionnaire was filled by the students. The questionnaire was adopted from a collaborative project between Government of India and World Health Organization titled "Oral Health Promotion and Intervention Activities" carried out in rural areas of Davangere district of India and consisted questions regarding oral hygiene knowledge, attitude and practice (GOI-WHO collaborative program, 2006-7). The questionnaire was modified to be applicable to the target population. Superficial oral examination of each student in the target group was also carried out by the first author to record the individual's DMFT score. Plastic gloves and facemask were used to ensure proper infection control.

The data was recorded and analyzed by using Statistical Package for Social Sciences (SPSS) version 11. Associations were assessed using chi-square test and p-value of < 0.001 was considered significant.

## RESULTS

The mean DMFT was found to be 1.27 with standard deviation of 1.59, median 1 and mode 0. The data was categorized into good, fair and poor oral health status based on individual DMFT score as less than 1, 2 and more than 2 respectively.

Of the 300 students surveyed, there were 160 males and 140 females. The response rate was 100%. The difference in the knowledge, attitude and practice between the two gender groups was analyzed using chi-square and a p-value greater than 0.001 showed that no

significant difference existed between the two. Only 11% were familiar of dental floss.

Assessment of school children's attitude towards oral hygiene demonstrates that 98% children consider healthy mouth maintenance as an individual responsibility, but 83% felt that it was not in their control; 58% had visited dentist before, out of whom 36% had mentioned the reason for their visit as dental decay. However, 50% children did not have positive attitude towards importance of a dentist's role in maintaining their dental health. A statistically significant association ( $p < 0.001$ ) existed between a positive attitude towards dentist's role and the frequency of dental visits.

Analysis of the frequency of children who visited dentist with dental complain and received treatment, when compared with those who just visited the dentist with complain but never received a treatment, revealed that 61% children went to dentist with dental complain and out of those only 15% received treatment.

The result of the practice questionnaire shows that 93% children use toothpaste and toothbrush to clean their teeth. Though, a small percentage of children did indicate the use of both Toothpaste and Toothpowder. The data for frequency of brushing among school children show that 26% children brush once, 55% twice, 14% more than twice and 5% brush after every meal. The frequency of brushing was associated with children's knowledge of the problems related to irregular tooth brushing. The p-value of < 0.001 shows statistically significant association between the two. Among the target population, 72% school children stated that they change their toothbrush once in 3 months while 22% changed their toothbrush when the bristles fray up.

The results obtained from school children's mouth rinsing practices after meals showed that 66% of them were religiously maintaining, 24% were the frequent followers, and 10% the outliers. Tongue cleaning, which is an important element in maintaining proper oral hygiene, was present in 81% of school children.

## DISCUSSION

The analysis of knowledge, attitude and practice towards oral hygiene of the school children between the age group 11-12 years, have submitted satisfactory results. Though the children have knowledge regarding the effects of oral health on general health and the problems associated with poor dental hygiene; their attitude towards dental service utilization is not very positive. The attitude of school children towards dental health and dental service utilization is determined by certain social and cultural determinants. A number of children perceived that maintaining their oral health is not in their control that could be based on lack of

emphasis given by the parents to their children's dental care routine. Lack of promotion of proper techniques and practices by the dental community and media has also played their roles.

The finding that 50% of children did not have positive attitude towards importance of a dentist's role in maintaining their dental health is quite lower than the results achieved from a similar study in Africa.<sup>13</sup> Poor attitude to dental service utilization can be an influence of poor availability, poor accessibility or prevalence of fear of the dental service, as children of low socio-economic group are more likely to visit dentist for episodic or emergency dental care.<sup>14</sup> It is clearly indicated that children with a positive attitude for the dentist have shown greater utilization of dental services. This positive attitude could have led to greater number of dental visits or could have been created after a dental visit. Despite less positive attitude towards dentist as compared to other studies, the frequency of dental visit is 61% that is higher than 35% reported by a study conducted in Bangalore, India.<sup>11</sup>

The findings from the analysis revealed that only 15% of the children who visited dentist with a dental complain, received treatment. This predicts that there must be about 85% of children with untreated dental problems.

School children's knowledge about dental floss was perceived to be poor. This finding is similar to study conducted in North Jordan by Al-Omiri *et al.*<sup>15</sup> where the use of dental floss (2%) was very less. The reason could be that the target population belonged to lower middle class where the practice of using toothpicks rather than floss is more prevalent due to some factors like poor affordability and less awareness pertaining to little importance given by the marketers to the promotion of oral hygiene aids like dental floss, mouthwash, tongue cleaners etc. The assessment results of the oral health practices does predict a prevalence of healthy practices among school children as greater proportion is using toothbrush and toothpaste as their brushing aid, and brushing twice a day. The results are similar to the study conducted in China;<sup>16</sup> but this survey did not assess the brushing method they are adopting.

The mean DMFT of 1.27 can be compared to countries like Sweden, Denmark and Germany,<sup>17</sup> though it validates the increase in the caries trend in Pakistan as indicated by Khan.<sup>6</sup> As stated by WHO, many developing countries show low DMFT scores but higher incidence of untreated caries pertaining to the lower dietary sugar consumption in these countries.<sup>18</sup>

Since the study was conducted on children of considerably prudent age group who are inclined to make a positive impression about them, hence the results of the oral health practices could be biased especially the response to the frequency of brushing, and mouth rinsing.

Moreover, the study being of cross-sectional design, does not demonstrate the cause-effect relationship between oral hygiene knowledge, attitude and practices among school children and their oral hygiene status.

## CONCLUSION

The results and analysis of the survey have focused upon an effort to conduct a more comprehensive survey to assess deeper understanding of school children's oral health practices like the method of brushing, use of more dental cleaning aids like mouthwash etc. A more widespread promotion of maintenance of proper oral health is also very important.

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