Quantitative Assessment of Oral Hygiene Habits of 12-15 years old school children of Hayatabad Peshawar: Pilot study

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Abstract

Aim: The purpose of this study was to assess the oral hygiene habits of school children aged 12 to 15 years.

Materials and methods: A pilot study with a cross sectional study design was conducted to assess the oral hygiene habits. A total of 125 school children aged 12-15 years participated in the study. A written informed consent was obtained from the school and participants before participation in the study. An interviewer-administered calibrated questionnaire was used for data collection. The data was statistically analyzed with SPSS version 25 and descriptive statistics were used to present data.

Results: Out of the total, majority of participants were of aged 12 years (45%) followed by 13(33%), 14(17%) and 15(6%), respectively with equal gender distribution. Nearly half of school children brushed their teeth frequently twice a day (46%), almost 37.6% brushed once a day and one-tenth of children did not brush their teeth at all. Almost three-quarter of children brushed before (38%) and after (35%) breakfast. Forty-nine percent of children preferred soft bristled toothbrush, while 28% used medium type and 23% used hard bristled toothbrush for cleaning teeth, respectively. Majority of school children used toothpaste as cleaning agent (87%). All the children changed their toothbrushes with highest percentage changing after one month (84%). Majority children (84%) never flossed their teeth. More children had never visited dentist than those who visited.

Conclusion: Children had limited oral health knowledge which was considered to be the reason for their unsatisfactory oral hygiene habits

Key words: Oral hygiene, Quantitative assessment, Flouride school children

Introduction:

Oral hygiene maintenance is an essential component of oral health behaviour.[1] It should be incorporated into our daily routine for the maintenance of good oral health.[2] Tooth brushing not only disturbs the dental plaque (biofilm) responsible for oral diseases, but also toothbrush acts as a tool for fluoride application on tooth surfaces.[3,4] Children of 12 to 15-years belong to an important age group because; they are easy to access at schools, their permanent teeth eruption is almost completed (excluding third molars) and they are now capable of self-made decisions about diet and hygiene.[5] At this time, it is eminent to evaluate their oral hygiene habits and provide necessary guidance regarding oral hygiene maintenance (at schools and home) to prevent oral diseases and improve their oral health. Therefore, present study aims to assess the oral hygiene habits of 12-15 years old children. It will provide baseline for the assessment of oral hygiene habits of school children.

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Methods

A cross-sectional pilot study was conducted on 125 school children of Hayatabad, Peshawar to evaluate the oral hygiene habits of children of age group 12-15 years. The ethical approval for this study was obtained by the Ethical Committee of Rehman College of Dentistry. Data was collected from April-June 2019.

The study participants were selected using convenience sampling technique until the target was achieved. Five Schools participated in this study (4 private and 1 government). All students who were healthy (without any oral or systemic illness), aged 12-15 years, student of school located in Hayatabad, Peshawar were included in the study. Students of

schools who did not permitted for the study or were located outside the premises of Hayatabad were excluded from the study.

A written informed consent was taken from the schools and the participants before the study. The study was conducted in the school premises. The participants were individually interviewed in a classroom. A validated questionnaire comprising of seven questions about oral hygiene habits was used to collect data from children. The data was analysed using SPSS software (version 25.0) and presented in the form of descriptive statistics.[18]

Results

A total of 125 students from five different schools of Hayatabad Peshawar participated in the study. An interviewer administered questionnaire was used for data collection and presented in form of pie charts. The characteristics of study participants are tabulated in Table 1.

Table 1: Characteristic of Participants

	Characteristic	Frequency (N)	Percentage (%)
Age	12	56	44.8
	13	41	32.8
	14	21	16.8
	15	7	5.6
Gender	Male	63	50.4
	Female	62	49.6
Class	2	1	0.8
	3	8	6.4
	4	17	13.4
	5	23	18.4
	6	29	23.2
	7	21	16.8
	8	26	20.8
	Total	**125**	**100**

Nearly half of school children brushed their teeth frequently twice a day (46%) and once a day (37.6%) respectively. Although, one-tenth of children did not brush their teeth at all (Figure 1). There was slight difference in children brushing before and after breakfast, More children brushed after dinner (38%)than before dinner(17.6%) (Figure 2). Slightly less than half (49%) of children brushed with soft bristle toothbrush followed by medium (28%) and hard type (23%) of bristles respectively (Figure 3).

The toothpaste was choice of cleaning agent preferred by majority of school children (87%). However, a small percentage also opted for dental powder (4%) and miswak (8.8%) for cleaning their teeth (Figure 4). Nearly, half of the children changed their toothbrush after one month, whereas one-fifth of children changed after two months and only 17% changed after every three months. Nevertheless, small percentage (16%) changed toothbrush only on visible deformation (Figure 5). The majority (85%) of children did not preferred to floss their teeth (Figure 6). Moreover, more than 50% of children never visited dentist (58%) (Figure 7).

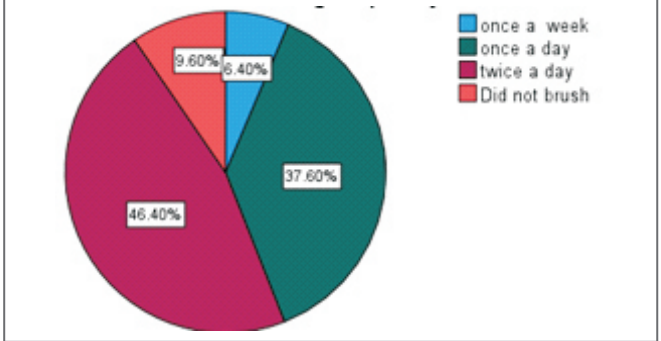

Figure 1 Tooth brushing frequency

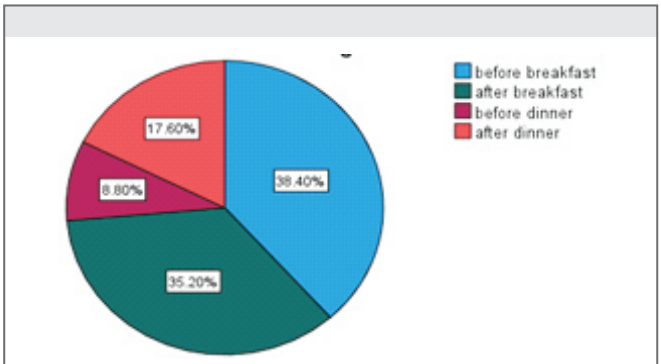

Figure 2 Toothbrushing time

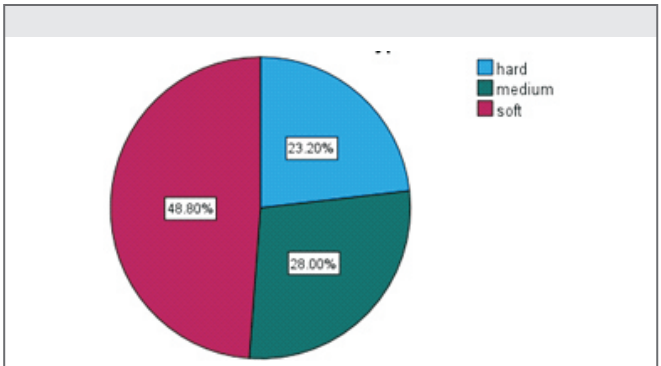

Figure 3 Toothbrush type

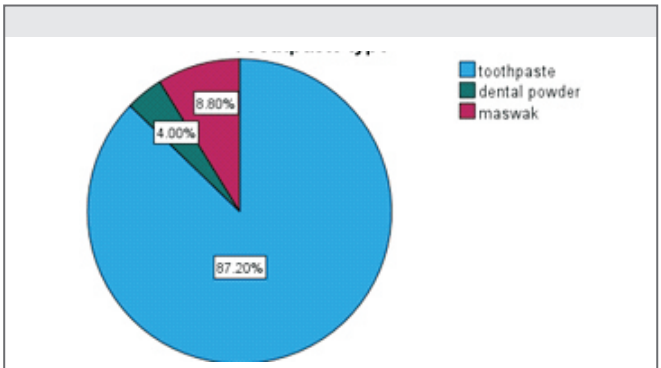

Figure 4 Toothpaste type

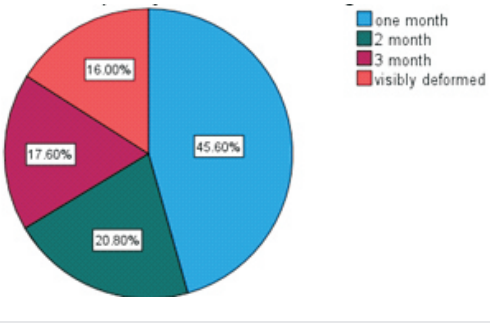

Figure 5 Frequency of toothbrush change

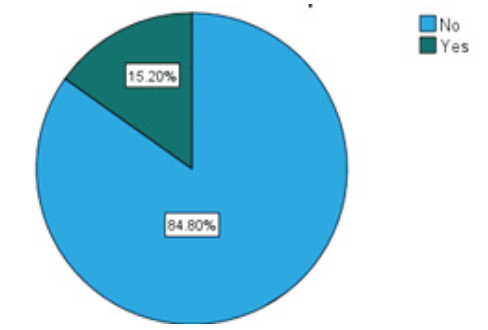

Figure 6 Frequency of flossing

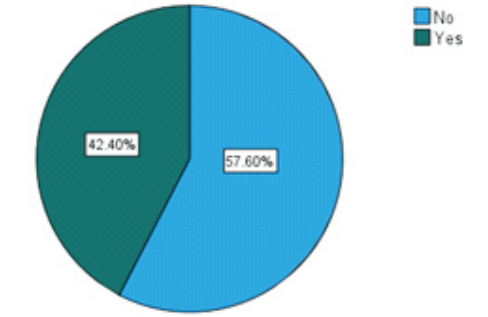

Figure 7 Dental visit

Discussion

Childhood is the age where individual develops reflexes to maintain oral hygiene practices and attitude towards oral health.[6] It is the duty of parents, teachers as well as children themselves to know the importance of oral hygiene. Children of 12-15 years age group is an ideal age to be targeted. Firstly for the assessment of their oral hygiene because at this age the trends of oral diseases is prominent, secondly, it is the recommended age by WHO for oral health education and motivation.[7] Therefore, the present study focuses on the tooth brushing habits of 12-15 years old school children.

The recommendation of brushing twice a day removes adequate dental plaque from the tooth surfaces and promotes oral health.[8] In present study, nearly half (46%) of the school children reportedly brushed twice a day, which is indicative of their awareness regarding it. On comparison with other studies, percentage of children brushing twice a day. In our study (46%) was lower than another investigation on children of Karachi, Pakistan (62%) but higher than the children of Saudi Arabia (41%).[9,10] In terms of brushing once a day the percentage of children brushing once a day was also lower (31%) among children of Saudi Arabia than ours.[10] Moreover, in present study a small percentage never brushed their teeth which was higher than another study performed by Ambrina et al., 2014 on Pakistani population.[9]

This is probably because the school children had knowledge but may not be aware about its importance and hence did not practiced. The suggested time for brushing twice daily were in morning after the breakfast and before going to bed at night. Although, in our study many children preferred to brush their teeth before breakfast and after dinner at night. This may be because the children dress up for school before breakfast and to get rid of smelly breath in the morning.

A toothbrush is an oral hygiene instrument used to clean the teeth, gums, and tongue. A toothbrush with a head size of 22 to 25 mm is suitable for children aged 12 to 15 years.[11] The toothbrush should have soft bristles to prevent gingival trauma and damage.[12] In present study the use of soft bristled toothbrush by nearly half of children is admirable yet, a considerable percentage in our study was using hard bristled toothbrush which may damage their teeth and gums making them more prone to oral diseases. However, on comparison this percentage was lower than Indian study (53%).[13] The possible reason behind this could be the feeling of cleaning better with hard bristles.

Moreover, in present study the children changed their brushes regularly, which is also recommended,[12] because a toothbrush with frayed bristles will not remove plaque effectively. However, these percentages were lower when compared to a previous study on Karachi children.[14] The anticariogenic and antiplaque properties of toothpaste can be beneficial in the reduction of plaque deposition and development of dental caries.[15] In this study, the percentage of children using toothpaste was lower than the study conducted on school children of Karachi.[14] Although, miswak is better at plaque and caries control, yet only small number of children in our study used miswak stick compared to an investigation on Indian population.[16]

Besides tooth brushing, dental floss is also important. It not only helps to remove inter-dental debris from the oral cavity, but also reduce gum diseases and bad breath by removing plaque that forms along the gum line. In comparison to the study conducted on children of Saudi Arabia, majority of children in our study did not floss possibly because lack of knowledge about its proper technique and use.[17]

However, the small percentage in our study which showed familiarity to dental flossing was higher than that recorded in children of Karachi (11%).[14] In this study, percentage of children visiting dentist was low because it is common practice to visit dentist only for pain or when treatment is needed rather than for check-up for preventive purpose.

Nevertheless, the percentage of not visiting dentist was much lower (39%) in Pakistan until the data from the recent year revealed a drastic increase (83%).[9,14] A drop of 26% was observed in children not visiting dentists in present study.

The strength of our study was that the level of oral hygiene knowledge and practice of school children of Hayatabad was assessed that was needed to provide guidance regarding oral health. The study had some limitations, no data was recorded in terms of tooth brushing duration, type of toothbrush (electric and manual toothbrush) used and grip, fluoride content in toothpaste and amount used by children, rinsing of mouth after tooth brushing. Further studies are brushing recommended with large sample size and missing variables that will provide better and in-depth understanding about the tooth brushing habits of children of 12 to 15-year age group.

Conclusion

Hence, within the limitations of the study it can be concluded that overall tooth brushing habits of children of Hayatabad were unsatisfactory. Their oral health knowledge was limited that was responsible for their poor practice. Therefore, there is an urgent need for oral health awareness campaign to educate them about proper oral health maintenance needed to improve their oral health.

CONFLICT OF INTEREST: None
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Author Contributions

1. Sami Salleh Khan- Data collection and analysis
2. Kanwal Nazir Arbab- Data collection, critical analysis, paper writing
3. Iqra Muhammad Khan- Construct, data analysis, paper writing