ORIGINAL ARTICLE

ORAL HYGIENE PRACTICES IN PRIMARY SCHOOL CHILDREN AND THEIR TEACHERS IN A PERI-URBAN LOCALITY OF ISLAMABAD

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ABSTRACT

The objective of this descriptive, cross-sectional study was to assess the oral hygiene practices of primary school children in Bara Kahu, a peri-urban locality in the outskirts of Islamabad Capital Territory. From a list of 17 primary schools in the area, five schools were randomly selected using the dice roll method. With consent from school authorities and parents, a convenience sample of 384 children aged 4-10 years were selected from the five schools and, in the presence of a class teacher, oral hygiene practices were assessed via a questionnaire filled out by the investigator team members. Teachers were also included in the assessment. With analysis by SPSS version 20, the results showed that the oral hygiene practices of the children was below standard where one-third of the children did not brush their teeth at all, 66.1% brushed their teeth at least once daily and only 2.86% followed the recommended twice a day. Only 6.1% children had been to a dentist. Teachers also exhibited deficient oral hygiene practices with only 33.33% following the twice a day protocol. Use of miswak was popular. It is recommended that oral health education and awareness program, modified to include miswak as an additional oral hygiene tool, are essential for improve the standard of oral health practices by children from rural and peri-urban settings.

Key Words: *Oral hygiene practice, Primary school children, oral health education.*

INTRODUCTION

Health is the fundamental right of all human beings. The most effective approach to a healthy nation is investment in preventive and health promotion strategies at a grass root levels. Under the premise of oral health, dental caries and periodontal diseases are not only the most prevalent but are also the most easily preventable diseases.[1] Oral hygiene practices adopted properly in childhood continue into adulthood and go a long way in prevention of both these diseases. Studies have shown that high socioeconomic status with educated parents are factors that instil better oral hygiene practices in their children.[2] Other than the home, schools are a viable alternative for creating good oral hygiene habits of the children. Teachers are role models for students; research has shown that a positive involvement of teachers during oral health education promotes higher levels of oral hygiene practices among students.[3] Delivering health awareness is a teamwork; hence, health promoting schools initiatives that include teachers as team members have yielded better results when teachers educate their students regarding knowledge, practices to maintain, protect and promote dental health.[4]

Pakistan faces tremendous oral health inequalities in access to healthcare and essential facilities between urban and rural populations.[5] Low levels of education result in a lack of awareness of importance of oral health among the general population. Pakistan has a population of over 200 million and the total gross domestic product (GDP) spent on health sector is only 0.7%.[6] This inadequate budget allocation has resulted in a non-uniform distribution of resources to the health infrastructure where the rural, underprivileged have little or no access to healthcare, especially oral health. This has resulted in proliferation of un-qualified street based quacks who malpractice rudimentary, low cost, unsterile dental procedures inflicting more harm than good to unsuspecting poor and vulnerable people.[7]

The aim of this study was to assess the oral hygiene practices of primary school children and their teachers in the low socio-economic area of Bhara Kahu, a peri-urban locality of Islamabad. The rationale for this study is findings that can develop recommendations

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for a school oral hygiene program tailored to a rural/ peri-urban low socioeconomic population with the focus on teachers' training.

METHODOLOGY

A descriptive, cross sectional study was carried out by the department of community dentistry IM&DC. Second year undergraduate BDS students annually, as part of their practical curriculum, conduct an outreach School Dental Program in primary and secondary schools. This outreach program is composed of health education demonstrative sessions followed by screening of all children with referral to the IM&DC dental hospital for free dental care if a problem is identified.

Dice of roll method randomly selected five schools from a list consisting of 17 primary schools located in the Bhara Kahu. These schools were approached before the intervention of the outreach school dental program; after data collection, they were enrolled into the routine program activities as per ethical considerations. The technique of sampling of children within each school was convenience; students included in the study were aged 4 to 10 years; those who were absent or uncooperative were excluded from the study. After consent was taken from school authorities, who were responsible for obtaining consent from parents, a sample size of 384 children aged 4-11 years, calculated with 80% power of study and 0.05 error, were selected. A questionnaire composed of three demographic and 15 oral hygiene practice assessment questions was used. Trained dental students filled questionnaires in the presence of class teachers. Oral hygiene habits of all accompanying teachers (36) were also assessed in the study using the same questionnaire. The variables recorded were under four categories of tooth brushing, use of floss and/or toothpick, past dental experience and intake of sugary diet/sweets. Within each category were sub-questions focusing on source of sugary diet/sweets, use of miswak by subject and/or his/her family members, use dentifrice materials other than toothpaste, and how often does a parent help brush the child's teeth. Screening of subjects was then carried out by using a disposable wooden tongue depressor, disposable gloves and good illumination to identify past dental experience. The data was analysed using SPSS 20 version.

RESULTS

The response rate was 100% as all 384 children participated in the study. Demographics of the study population was that with a mean age of students at 7.5 years, 322 (83.8%) were girls and 62 (16.10%) were boys. The distribution according to class/grade was 20 (5.22%) were in nursery, 85 (22.14%) in grade 1, 88 (22.92%) in grade II, 61 (15.88%) in grade III, 69 (17.96%) in grade IV and 61 (15.88%) were in grade V.

Oral hygiene practices showed that nearly one-third students (119; 30.98%) students did not brush their teeth, the majority 255 (66.4%) brushed at least once a day and only 10 (2.86%) students observed the recommended twice a day. All of the 265 children who brushed their teeth, used toothbrush and toothpaste as their routine oral hygiene tools. However, 31 children

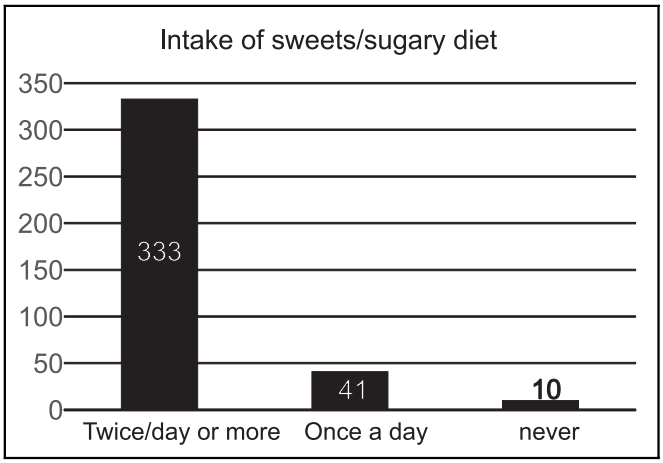

Fig 1: Frequency of intake of sweets/sugary diet

TABLE 1: FREQUENCY OF PRIMARY SCHOOL CHILDREN SHOWING HYGIENE PRACTICES

Frequency (n)		Percent (%)	Valid Percent	Cumulative Percent
Tooth brushing				
At least once a day	255	66.41	66.41	66.41
Twice a day	10	2.60	2.60	69.01
No, I don't brush	119	30.98	30.99	100.0
Flossing				
Yes	7	1.9	1.9	1.9
No	375	98.05	98.05	100.0
Use of toothpick				
Yes	109	28.38	28.38	23.38
No	275	71.62	71.62	100.0

occasionally use 'miswak' to clean their teeth. When asked if 'miswak' is used by family members, more than half the children (201; 52.3%) replied in affirmative. Interestingly four children mentioned that they have occasionally used 'ash' from burnt coal on their tooth-brushes instead of toothpaste. When asked if someone helped them brush their teeth, 24 (6.25%) children from nursery grade (9) and grade 1(15) were in affirmative and all identified 'mother' as the key person. Children of higher grades (grade II-V) all denied any assistance for their tooth brushing.

Floss was used by seven (1.9%) children while 375 (98.17%) had no idea what a 'floss' was and recorded a 'no'. However when asked about using toothpick, 109 (28.38%) admitted to using it while the remaining 275 (71.62%) recorded a 'no'. On physical demonstration of a floss or toothpick and asked which of the two is the recommended way of removing food stuck in the teeth, all 384 (100%) children pointed at the toothpick.

Past dental experience was very low where only 26 (6.57%) children had visited a dentist while the majority, 358 (93.43%) children had never gone for any dental check-up or visit. Intake of sugary diet/sweets was high with 333 (86.7%) children admitting to eating sweets twice a day or more and 41 (10.67%) indulging once a day. Only 10 (2.6%) children claimed to never eating a sugar rich/sweet diet. (Fig 1) The most common source of sweets/sugary diet was the local shop in the neighbourhood/school canteen (243; 63.28%), followed by grandparents/parents (84; 21.88%) and friends/ others (47; 12.22%).

Oral hygiene habits of teachers: Class teachers (36) from the five schools agreed to participate in the study. All the teachers brushed their teeth; however, the recommended tooth brushing frequency of twice a day was practised by only 12 (33.33%) teachers while the remaining 24 (66.66%) admitted to once a day. Use of toothbrush and toothpaste was the norm by all the teachers; however nearly half of them (17; 47.22%) also use Miswak regularly as an additional oral hygiene tool. Use of floss was admitted by only six (19.44%) teachers although all of them had knowledge of what a floss is used for. On the other hand, 22 (61.11%) teachers use toothpicks to clean food lodged in their teeth and none of them knew that the recommended tool is a floss instead of a toothpick. A majority of the teachers (26; 72.22%) claimed past dental experience; this was confirmed during the screening exercise. Admitting to a sweet tooth, 11 (30.5%) teachers indulged in a sweet intake twice a day or more, while 22 (61.11%) had it at least once a day and only three (8.33%) teachers did not like sweet food. None of the teachers had ever discussed oral hygiene in any class discussion or subject except for grade V where a science subject included a chapter on teeth.

DISCUSSION

The results of this study showed that there is dire lack of awareness about oral health and healthy diet among the schoolchildren. The teachers also exhibited deficient oral hygiene practices that indicated a low level of awareness. This trend is a valid finding given that knowledge about oral health varies in different socioeconomic areas; a fact that was evidenced in a WHO based research that reported that developed countries exhibited a higher level of oral awareness as compared to their developing counterparts.[8] The teachers in our study are from the same neighbourhood and hence belong to similar SES class as the children, so naturally they would exhibit similar behaviours and practices. The poor results of 'past dental experience' and 'frequency of tooth brushing' are comparable with a study conducted in Karachi in which 31% children had visited dentist and 69% children brush their teeth once daily.[9] In our study, nearly 1/3 of the student do not brush their teeth; this statistic becomes less shocking when one looks into the national statistic of the country where 8% of the adult population, who are role models for children, never clean their teeth.[10] Naturally, the oral hygiene practices exhibited by the schoolteachers followed similar trend albeit with a slight improvement due to their higher education levels.

None of the teachers had any form of interactive sessions on oral hygiene practice with their students because the primary school curriculum introduces teeth as a chapter in science subject in grade 5; this finding is similar to a study conducted in rural Mangalore.[11]

Miswak is a traditional oral hygiene tool in Pakistan that is popular especially in rural areas.[12] This has come across in the study where even children as young as 7-10 years have started adopting its use; teachers also admit to its common use. Miswak, research as shown has many qualities that make is an effective oral hygiene tool.[13] It is recommended that Miswak, as an additional hygiene tool, should be a culturally specific modification that should be tailored into oral health education sessions for oral health promotion amongst the lower socioeconomic classes of society in Pakistan.

Children are the future; health education will not only keep them healthy but it will subsequently increase productivity of the country. The most economical approach for improvement of oral health of residents of low socio-economic areas is the oral health education. Research has shown that a combination of efforts by dental professionals and schoolteachers yields excellent improvements in oral hygiene practices of schoolchildren.[14,15] Teachers' participation is a cornerstone for on-going health promotion long after the dental team has left the classroom. Studies have shown that success and sustainability of any school health programmes lies on contribution by the teachers. It is also recommend-

ed that education departments introduce a chapter regarding oral health in the curriculum starting as early as grade I. For sustainability and prevention of dental caries, coordination between schools, dental professionals and parents is necessary.

CONCLUSION

It was concluded that periodic oral education sessions to the students and teachers can make a difference in improving their oral hygiene practices. Awareness about oral health can be increased by combined effort of dental professionals and school teachers.

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1 Sadia Sajjad: Conception, data collection and analysis; write up of results.

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3 Rubina Mumtaz: Drafting of the manuscript/ Proof reading.