

INCIDENCE OF ORAL HYGIENE STATUS AND PRACTICES AMONG CHILDREN

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ABSTRACT: This survey aimed to find the oral hygiene status and practices of both government and private school students of Lahore. Sample size was 677 students as a whole. Significant difference between both groups of students with regards to the usage of brushing instruments such as tooth brush, miswak, finger and none ($X^2=20.906$, $P<.001$) was found. Significant difference was present between two groups with regards to the teeth brushing frequency ($X^2=10.925$, $P=.012$). Most of the students of private as well as public sectors schools, brush their teeth once a day, that is, Public sector schools' students (71.8%) and private sector schools' students (59.6%). Majority of students do brushing in the morning, 92.4% public sector students and 93% students of private sector. Overall oral hygiene practices was found higher in private school students as compared to the public school students. But practicing of dental care were found satisfactory among both groups.

Keywords: Oral hygiene, Dental Caries, Gum Bleeding, Plaque.

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INTRODUCTION

The foundation of healthy teeth is laid during the initial years of life. Poor nutrition, habits and inadequate brushing can lead to poor oral health as well as systemic health in children (Drury *et al.*, 1999; Al-Jewair and Leake, 2010).

Dental caries is one of the most common yet absolutely preventable disease in children (Fejerskov, 2004). It is estimated that more than 4 out of 10 children experience tooth decay before they reach kindergarten, while 2 in 10 children suffer from extreme tooth decay also known as rampant caries (Drury *et al.*, 1999). The prevalence of nursing bottle caries is as high as 70% in underdeveloped countries (Al-Jewair and Leake, 2010).

Another common oral disease among children and young adults is inflammation of gums also known as gingivitis mainly caused by lack of brushing and plaque accumulation (Gersh, 2009). Periodontitis, a destructive inflammatory disease of teeth supporting tissues has a high prevalence in Asian countries including Pakistan and is more commonly seen in adults (Corbet and Leung, 2011). In USA, every 5 out of 10 adults have gingival inflammation (Albandar, 2002). There are few studies that provided limited information and showed prevalence of periodontal diseases in Pakistan to be around 98%

(Haseeb, Khawaja, Atallah, Munir, and Fatima, 2012; Ali, 2004; Chaudhry, Babar, and Akhtar, 2003).

Majority of the diseases require behavioral management as they are directly linked with the life style. It is worth mentioning that most of the systemic diseases are also linked with the oral health implicating that prevention of oral diseases can lead to improved general health (Tenenbaum, Matthews, Sandor, and McCulloch, 2007; Noujeim, 2017).

According to various surveys oral health and hygiene has a strong association with socioeconomic status, literacy rate and nutrition (Waseem, Hussain, Maqsood, and Sultan, 2015; Najam-us-saqib and Arif, 2012). Previous studies have shown much less prevalence of common oral diseases in developed countries when compared with developing countries (Kandelman, Arpin, Baez, Baehni and Petersen, 2012). Studies have shown that individuals from lower socioeconomic status have multiple risk factors for poor dental hygiene (Waseem, Hussain, Maqsood and Sultan, 2015).

The health care system in Pakistan primarily focuses on treatment rather than prevention. Health related activities in Pakistan are scattered, limited and only restricted to privileged schools and institutions (Harchandani, 2012). Public schools, due to lack of policies and funds, are therefore unable to conduct such activities (Harchandani, 2012; Waseem, Hussain,

Maqsood, and Sultan, 2015; Noujeim, 2017). Despite limited data, Pakistan has been classified as low caries country, however 97% of the carious lesions remain untreated (Haleem, and Khan, 2006). High cost of treatment, lack of access and knowledge especially in rural areas are major issues that needs to be addressed (Haleem, and Khan, 2006). The aim of this survey was to find the oral hygiene practices of both government and private school students of Lahore.

METHOD

This is a questionnaire based cross sectional study, conducted with approval of Institutional Review Board (IRB) of Akhter Saeed Medical and Dental College and the respective administrations of the participating institutes. The survey was carried out at public as well as private sector schools. Sample size was 677 students.

The questionnaire consisted of 25 questions developed and validated by PDA in collaboration with Colgate, include both open and close ended questions. Open-ended question were excluded. The first 15 questions deal with the demographics, oral hygiene practices and medical profile; the rest of the questionnaire deals with oral hygiene assessment. A pilot study has been performed on 20 students aging from 4 to 18 years of age by convenience sampling. Modifications were made accordingly.

Inclusion criteria were students ranging from 4 to 18 years of age, present at the time of survey. Exclusion criteria were students below the age of 4 and those who were not present at the time of survey.

The questions were verbally asked and responses were noted there and then. The oral examination was done and noted on the response sheet. The original forms were given to the students and carbon copies were immediately collected and arranged.

Chi-square was used to explore the difference of oral hygiene status and practice among public and private sector schools' students using IBM Statistical Package for Social sciences.

RESULTS

The results of chi-square test revealed that there was a significant difference between both groups of students with regards to the usage of brushing instruments such as tooth brush, miswak, finger and none ($X^2=20.906$, $P<.001$). The usage of tooth brush was reported by 91.1% public sector school students whereas among private sector students, 98.2% students reported tooth brush as brushing instrument. This showed that tooth brush usage was higher among private school students as compared to the public sector ones. The usage of miswak was found higher among public sector school students (8.6%) as compared to Private school students (1.6%). Finger was found to be the least used instrument for teeth brushing, reported only by 0.3% students from public schools. Similarly, none of the students reported no usage of instrument for brushing, belonged to public sector schools whereas 0.3% students belonged to private sector schools reported no instruments used for brushing their teeth.

Table 1| Difference of brushing ways among students of public and private sector schools.

	Brushing			
	Tooth Brush	Miswak	Finger	Nil
Public school students	91.1%	8.6%	.3%	0.0%
Private school students	98.2%	1.6%	0.0%	.3%

Chi square= 20.906, $P<.001$, $df=3$,

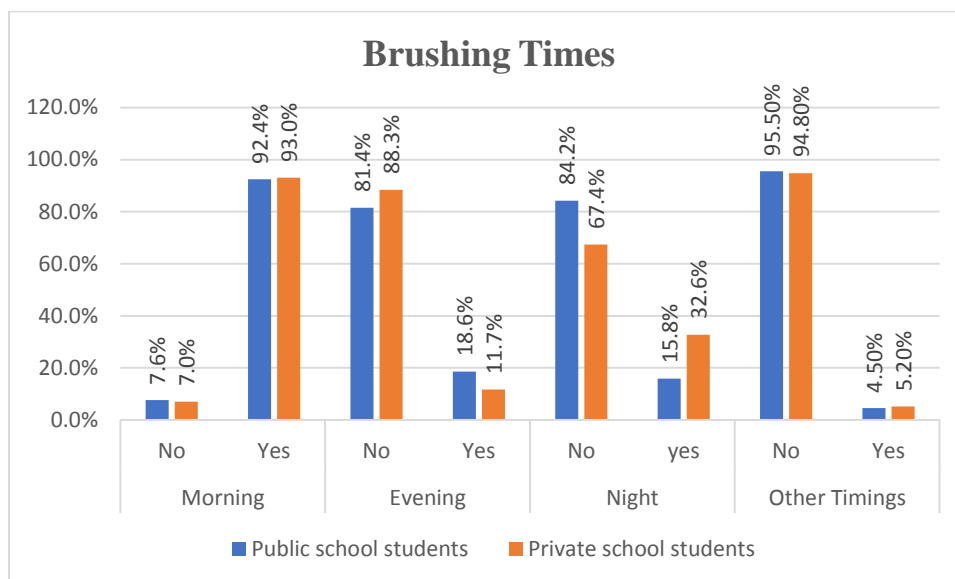
Frequency of brushing teeth among both the groups, i-e., public and private sector school students, was explored using Chi-square test. The results revealed that significant difference was present between two groups with regards to the teeth brushing frequency ($X^2=10.925$, $P=.012$). Most of the students of private as well as public sectors schools, brush their teeth once a day, that is, Public sector schools' students (71.8%) and private sector schools' students (59.6%). 2.1% students belong to public sector schools reported occasional teeth brushing habits as compared to the private sector school

students which was 3.1%. 22.7% students belong to public sector schools reported teeth brushing as twice a day as compared to the private sector school students which was 32.6%. Public sector school students who reported teeth brushing as three times a day were 3.4% whereas Private sector school students who reported teeth brushing as three times a day were 4.7%. Overall, public sector schools' students, daily teeth brushing was found to be significantly higher as compared to the private sector schools' students in Pakistan.

Table 2| Frequency comparison of teeth brushing among students of public and private sector schools.

	Frequency of Teeth Brushing			
	Occasionally	Once	Twice	Thrice
Public school students	2.1%	71.8%	22.7%	3.4%
Private school students	3.1%	59.6%	32.6%	4.7%

Chi square= 10.925, P=.012, df=3,



Graph 1| Difference of Brushing timings among public and private schools' students

Graph 1 showed the difference in brushing timings among public and private schools' students which depicts that majority of students do brushing in the morning. 92.4% public sector students and 93% students of private sector reported morning as brushing time. 18.6% students from public sector schools brush their teeth in the evening, whereas 11.7% students from private sector schools do brushing in evening. The night time brushing was reported by only 15.8% public school students and 32.6% private school students.

Table 3| Comparison of teeth brushing agent among students of public and private sector schools.

	Agent Used For Brushing		
	Toothpaste	Toothpowder	Manjan
Public school students	96.9%	2.1%	1.0%
Private school students	99.7%	.3%	0.0%

Chi square= 9.330, P=.009, df=2

The results of chi-square to compare the use of teeth brushing agent among students of public and private sector schools revealed that there was a significant difference between the students of public and private sector schools with regards to the tooth brushing agent

usage ($X^2 = 9.330, P=.009$). Tooth paste was used by majority of the private school students (99.7%) as compared to the public school students (96.9%). Tooth powder was used more in public school students (2.1%) as compared to private sector schools' students (.3%). Manjan was only reported by public school students at minimal percentage (1%).

DISCUSSION

The current study aimed to explore the oral hygiene status as well as the hygiene maintaining practices among the students of public and private schools. The results of the study showed that there was difference between both groups of students with regards to the usage of brushing instruments such as tooth brush, miswak, and finger. The most frequently used tool for brushing was tooth brush among 91.1% public sector school students and 98.2% private sector school students. This showed that tooth brush usage was higher among private school students as compared to the public sector ones. Frequency of brushing teeth among both the groups, i.e., public and private sector school students, was significantly different. Most of the students of private as well as public sectors schools, brush their teeth once a day, that is, Public sector schools' students (71.8%) and private sector schools' students (59.6%).

Overall, public sector schools' students, daily teeth brushing was found to be significantly higher as compared to the private sector schools' students in Pakistan. The difference in brushing timings among public and private schools' students depicts that majority of students do brushing in the morning. 92.4% public sector students and 93% students of private sector reported morning as brushing time. Tooth paste was used by majority of the private school students as compared to the public school students followed by usage of tooth powder and lastly, Manjan was reported.

According to various surveys oral health and hygiene has a strong association with socioeconomic status, literacy rate and nutrition (Waseem, Hussain, Maqsood, and Sultan, 2015; Najam-us-saqib and Arif, 2012) and the results of current study also are in accordance with the explorations of Waseem, Hussain, Maqsood, and Sultan, (2015) and Najam-us-saqib and Arif, (2012).

Overall oral hygiene practices was found higher in private school students as compared to the public school students. But practicing of dental care were found satisfactory among both groups.

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