

Table: 1
Frequency distribution of participants by age and gender

Age in years	Frequency	Percent
11	11	3.8
12	67	23.1
13	48	16.6
14	74	25.5
15	42	14.5
16	32	11.0
17	7	2.4
18	4	1.4
19	1	.3
Male & Female	Frequency	Percent
Male	197	67.9
Female	93	32.1
Total	290	100.0

Table: 2a
Frequency distribution of knowledge among school children

Questions	Yes	No	Idon't Know
Do you have knowledge about oral hygiene?	81.4%	12.8%	5.9%
Do you know brushing is necessary twice daily?	81.7%	13.1%	5.2%
Do you know sweets / candies is bad for your oral health?	73.8%	21.4%	4.8%
Do you know chalia or ghutka is bad for your oral health?	88.6%	8.3%	3.1%
Do you have any knowledge regarding smoking hazards?	76.2%	12.1%	11.7%
Do your gums bleed when you brush your teeth?	61%	34.8%	4.1%
Do you feel bad breath in your mouth?	36.9%	58.3%	4.8%
Do you have any knowledge regarding dental floss?	25.9%	52.8%	21.4%
Do you have knowledge about mouthwash?	30%	53.1%	16.9%

Table: 2b
Frequency distribution of attitude among school children

Frequency	Yes	No	I don't know
I know I have to improve my oral hygiene through proper brushing	85.2%	6.2%	8.6%
I know gum disease is bad for my oral health, that's why I have to plan to increase brushing frequency:	77.6%	10.7%	11.7%
I have a plan to reduce sweets & chocolate intake	78.6%	17.9%	3.4%
I have a plan to reduce gutkha /chalia habit	80.7%	13.4%	5.9%
I have plan to withdraw my smoking habit	72.8%	10%	17.2%

Table: 2c
Frequency distribution of practice among school children

Variables	Once	Twice	No
Do you clean your teeth	46.2%	52.4%	1.4%
Do you get your teeth clean?			
Tooth Paste with finger	4.8%		
Tooth Paste with brush	87.9%		
Miswak	5.5%		
Not clean	1.7%		

Table: 3
Frequency distribution of gingival index among school children

Gingival index	Frequency	Percent
No inflammation	121	41.7
Mild inflammation	126	43.4
Moderate inflammation	39	13.4
Severe inflammation	4	1.4
Total	290	100.0

ORIGINAL ARTICLE

Knowledge, Attitude and Practice Regarding Oral Hygiene among Private School Children

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ABSTRACT:

Objective: To evaluate the knowledge, attitude and behavior of private schools children regarding oral hygiene status of Gadap Town Karachi, Pakistan.

Materials and Methods: This descriptive cross sectional study was carried out in two private schools of Gadap town UC-2, Karachi Pakistan. A self-structured questionnaire related to KAP of oral hygiene was used and data was collected through questionnaire. This research was conducted in 290 school children aged 11-19 years who were examined and fulfilled the inclusion criteria. Questionnaire was designed and three house officers were trained for obtaining the data. The knowledge about oral hygiene and gingival index was determined and recorded from each student. Data was analyzed using SPSS version 20

Results: There were 67.9% male and 32.1% female students. About 81.4% of students had the knowledge regarding oral health, 12.8% individuals had no knowledge and 5.9% students reported I don't know about oral health. Students with knowledge of brushing of teeth twice daily was 81.7%, and without knowledge were 13.1% and 5.2% individuals said I don't know. 73.8% study participants had the knowledge of sweets / candy as harmful for oral health.

Conclusion: Private schools children of Gadap town Karachi Pakistan had knowledge of oral hygiene practices but oral hygiene instructions should be given to further improve the present status.

Keywords: Knowledge, Attitude, Practice, Oral hygiene status, Questionnaire, Gingival index

INTRODUCTION:

Oral diseases qualify as a major community health problem, although these diseases can be prevented by

a positive dental health behavior.¹ Most of the oral diseases in everyday are directly related to lifestyle. They can be considered an important public health issue due to its high prevalence and significant social impact.² Oral health knowledge is considered to be an essential pre requisite for health related behavior.³ Oral health and general health share common risk factors like use of tobacco and the excessive consumption of sweets, chocolates, etc. The solutions to control oral diseases are to be found through shared approaches with integrated chronic disease prevention. Dental caries and periodontal diseases have historically been considered as most important global oral health burdens. At present, the distribution and severity of oral diseases vary in different parts of the world and within the same country.⁴ In developed countries, dental caries and periodontal diseases affects 60-90% of school children and adults.⁵ It is also a most prevalent oral disease in several Asian and American countries, while it appears to be less common and less severe in most African countries. However, it is expected that the incidence of dental caries will increase in the near future in many developing countries of Africa, particularly as a result of growing consumption of sugars and inadequate exposure to fluorides.⁶ While in some industrialized countries there has been a positive reduction in tooth loss among adults in recent years, the proportion of edentulous persons amongst the elderly is still high in some countries. In most developing countries, access to oral health services is limited and teeth are often left untreated or are extracted because of pain and discomfort. Tooth loss and impaired oral function are therefore expected to grow as a public health problem in many developing countries. The tooth loss in adult life may also be due to poor periodontal health. Severe periodontitis which may result in tooth loss is found in 5-15% of most populations. In industrialized countries, studies show that tobacco use is a major risk factor for periodontal disease. With the

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growing consumption of tobacco in many developing countries the risk of periodontal disease and tooth loss, therefore, may increase. Periodontal disease and tooth loss are also related to general chronic diseases.⁷ Dental health educators are frequently invited by different school establishments to deliver lectures on oral health, and to provide preventive services. School teachers traditionally have played a role in educating children about how to prevent oral diseases and promote oral health.⁸ Health education programs in schools may be conducted by groups such as public health professionals, health educators, school nurses and teachers. The advantages of using school personnel are the potential for improved continuity of instruction and lowered cost of the service.

According to previous studies in Pakistan, the government spending on public sector education is only 12% of its federal budget. Overall there are 256,088 educational institutions in our country out of which 71% are in public sector. The total student enrollment is 37,462,884 out of which 25,213,894 students are enrolled in public institutes.^{9,10} The purpose of this study was to evaluate the knowledge, attitude and practice regarding oral hygiene among two private schools children of Gadap town Karachi, Pakistan.

MATERIALS AND METHODS:

This descriptive cross sectional study was conducted for a period of six months from September 2014 to February 2015. A self administered close ended questionnaire to assess the oral hygiene related to knowledge, attitude and practices among students of two private schools in Gadap town UC-2 Karachi. There were 197 males and 93 females with age group of 11-19 years. This age group was chosen as the baseline data collected could be utilized for future planning of a school oral health programs. The students of the school represent population of children belonging to low socioeconomic status.

The questionnaire was filled by the team of dentist and trained house officers. The data for this study were collected by carrying out an interview among participants. The stratified simple random sampling technique was used. The questionnaire was divided into four parts. First part included questions on demographic characteristics of children that is age, gender and educational status. Second part of the questionnaire included questions to test the knowledge of children regarding oral hygiene, brushing frequency, sweets/candies, smoking hazards, dental floss, and mouthwash etc. Third part comprised of questions related to their attitude towards increase brushing frequency, withdraw smoking habits, reduce sweets / candies intake etc. Fourth part consists of cleaning practices of teeth and frequency etc. A written consent was taken from school principals as well as the older children before the collection of data. The data was recorded and analyzed by using Statistical Package for Social Sciences (SPSS) version 20.

RESULTS:

The sample size of this study was 290. The sample comprised of males 67.9% and females 32.1 % (Table 1). The age range among the students was 11-19. The mean age of the study participants was 13.73.

About 81.4% of individuals had the knowledge regarding oral health, 12.8% individuals had no knowledge of oral health and 5.9% individuals don't had the knowledge of oral health. Those participants who had the knowledge of brushing of teeth twice daily were 81.7%, had no knowledge of brushing twice daily was 13.1% and 5.2% individuals don't had the knowledge of brushing teeth twice daily. 73.8% study participants had the knowledge of sweets / candies is harmful for oral health, 21.4% individuals had no knowledge regarding sweets / candies and 4.8% individuals did not know about the harmful effects of sweets / candies of your oral health. 88.6% individuals had the knowledge of chalya or gutka was bad for oral health, 8.3% individuals had no knowledge regarding chalya or gutka was bad for oral health and 3.1% individuals did not know the harmful effects of chalya or gutka of your oral health. 76.2% individuals know about the smoking hazards. The 61.0% individuals had the knowledge of gums bleeding while brushing teeth, while 36.9% individuals had the knowledge of bad breath in mouth (Table 2a).

Regarding the attitude of oral hygiene status in school children 85.2% individuals had to improve oral hygiene through proper brushing. 77.6% know that the gum disease is bad for oral health so they have a plan to increase brushing frequency, 10.7% individuals did not know that gum disease is bad for oral health and 11.7% individuals did not know about the gum disease so they did not increase their brushing frequency. The 78.6% individuals had a plan to reduce sweets and chocolate intake, 17.9% had no plan to reduce sweets and chocolate intake and 3.4% individual didn't had a plan to reduce sweets and chocolate intake. The 80.7% individuals had to reduce gutka and chalya habit, 13.4% individuals had no plan to reduce gutka and chalya habit and 5.9% said that I don't have a plan to reduce gutka and chalya habit that is harmful for oral health. The 72.8% individuals had a plan to withdraw smoking habit (Table 2b)

Frequency of once daily cleaning of teeth was 46.2% and frequency of twice daily cleaning of teeth was 52.4%. Those participants who clean teeth with tooth paste by finger was 4.8%, individuals cleaning teeth with toothpaste by brush was 87.9%, and 5.5% individuals used miswak for cleaning of teeth (Table 2c). 26.6% study participants used dental floss after the meal. The individuals who smoke one cigarette per day were 7.9%, for those who smoke two cigarette per day were 1.7%, who smoke three cigarette per day were 1.7% and the others are included as 88.6%. Frequency distribution of gingival index among school children was also evaluated (Table 3).

DISCUSSION:

In Pakistan being a third world country, has its major bulk of population residing in the rural areas. There is lack of health services and personnel in such areas thus leading to the deficiency of knowledge and awareness of dental hygiene being given by the doctors. This study presented an overview of the oral health behavior in terms of knowledge, attitudes and practice of school children ages eleven to nineteen years¹⁰. Dental plaque initiates reaction in tissues which starts in early ages especially during infancy and results in bacterial challenge in the host. The balance between microbial challenges in the host response is impaired and causes inflammation that results in loss of periodontal attachment. Usually males have a poor oral hygiene. Periodontal disease progression depends on age, sex, socioeconomic status, brushing habits and their frequency.^{11,12} Previous studies on gingivitis had been conducted in many parts of the world in different ethical and cultural background. Majority of the students examined in our study used tooth brush and paste to clean their teeth, some used finger or miswak as a method of cleansing. When age wise prevalence was seen it was found 80% in 5-7 years, 79% in 8-10 years and 78% in 11-13 years.¹³ When gingival index was considered, children examined had gingivitis out of which 13.4% had moderate gingivitis, 43.4% had mild gingivitis and 1.4% had severe gingivitis while 41% were found to be healthy.

Previous studies showed contrast results in comparison to our results, reason behind may be the difference of socio economic and geographical conditions. There was no periodontitis noted, results were concurrent with previous studies. Previous international studies involving Jordanian school children showed that oral hygiene, gingival conditions, have improved since the early 1990s although gingival disease and dental caries among Jordanians were found to be more prevalent than in developed countries.^{10,11} Another previous study conducted among elementary school children 74.9 subjects agreed that fluoride protects the teeth and 84.9 were agreed that clean mouth everyday is the best way to prevent from gum diseases.¹⁴

In our study, 81.4% had knowledge of oral hygiene but 5.9% in a category of I don't know, 12.8% had no knowledge about oral hygiene. Different authors had explained effects of this type in terms of inequality of access to oral healthcare services. This survey found that 81.7% had high percentage of children in this study.¹⁵

A high proportion of the subjects reported that they did not attend dental clinics due to fear from dental treatment; this coincided with previous study on Jordanian private and public school children.¹⁶ This might be attributed to the lack of proper oral health education programs for both children and parents. In addition to the above dental treatment undesired, high costs of dental care, and lack of toothache. Lack of parental encouragement and advice to visit the dentist might also contribute to the irregular dental attendance. Lack of parent's regular dental attendance might be reflected in their children.^{17,18} The participants demonstrated positive attitudes toward

their dentists and high awareness of the link between oral health and systemic well-being. This might be explained by the fact that schools in Gadap town had been consciously promoting the role of prevention.¹⁹ Unfortunately, these efforts are limited and insufficient nationwide; there is a need for comprehensive national educational programs to improve the oral health practice, knowledge, and attitudes of the general population.²⁰ Health education, since they indicate that social factors need to be taken into account in public education programs aimed at improving oral health practices²¹. Observed that daily tooth brushing became more frequent after a community education programs about oral hygiene. In other studies based on the KAP model as applied in health education, the educational intervention significantly improved oral health practices.²² According to WHO periodontal disease is one such chronic diseases for which evidence is available on efficacy of prevention, which has been emphasized by other authors.^{23,24} WHO Global Oral Health Program formulated the policies and the necessary actions for the improvement of oral health. The strategy is that oral disease prevention and the promotion of oral health need to be integrated with chronic disease prevention and general health promotion as the risks to health are linked (like tobacco use and the standard of hygiene).²³ It is imperative that dental hygiene awareness is imparted and measures for improvement in oral hygiene are undertaken in all age groups across rural areas of Pakistan as this constitutes the major portion of the population and community oral hygiene promotion must attempt to maximize opportunities for oral health for all and reduce inequalities by removing financial and other barriers.^{24,25}

CONCLUSION:

Students had knowledge of oral hygiene practices like change of brush, frequency of brushing, time period for brushing and brushing techniques but to improve the oral hygiene status of this population, health schemes like free dental checkups; health education and motivation about oral hygiene and free distribution of samples should be made available for this needy population. The sample size of this study is too small to be conclusive. More researches are required in this field with other parameters related to dental fluorosis, water fluoridation, prevalence and risk factors of oral cancer.

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REFERENCES:

1. Axellson P. Caries and periodontal disease // in: An introduction to risk prediction and preventive dentistry. 2000. p.39-77
2. Sheiham A. In the chemical prevention of gingivitis necessary to prevent severe periodontitis. *Periodontol* 2000. 1997; 15:15-24

3. Al-Ansari J, Honkata E, Honkata S. Oral health knowledge and behavior among male health sciences college students in Kuwait. *BMC Oral Health* 2003;3:2-8
4. Worthington HV, Hill KB, Mooney J, Hamilton FA, Blinkhorn AS. A cluster randomized controlled trial of a dental health education program for 10-year-old children. *J Public Health Dent.* 2001 Winter;61(1):22-7
5. Melnick SL, Nowjack-Raymer R, Kleinman, DV, Swango PA. 1993, Geneva: WHO.
6. *Community Dentistry and Oral Epidemiology* 31 (Suppl. 1), 3–24. Petersen, P.E. (2003b): Tobacco and oral health - the role of the World Health Organization. *Oral Health and Preventive Dentistry*2003;31(1):309-15
7. Arnlaugsson S, Magnusson TE. Prevalence of gingivitis in 6-year-olds in Reykjavik, Iceland. *Acta Odontol Scand* 1996;54:247-50
8. Petersen PE, Kwan S. Evaluation of communitybased oral health promotion and oral disease prevention - WHO recommendations for improved evidence in public health practice. *Community Dental Health* 2004; 21 (Supplement), 319-21
9. Education statistics 2007-2008. Ministry of Education, Pakistan. <http://www.moe.gov.pk/education/alstatistics.htm> Accessed November 2011
10. Taani DQ. Periodontal awareness and knowledge and pattern of dental attendance among adults in Jordan. *Int Dent J* 2002;52:94-8
11. Taani DQ. Trends in oral hygiene, gingival status and dental caries experience in 13-14-year-old Jordanian school children between 1993 and 1999. *Int Dent J* 2001;51: 277-81
12. Harikiran AG, Pallavi SK, Hariprakash S, Ashutosh, Nagesh KS. Oral health-related KAP among 11 – to 12-year-old school children in a Government-aided Missionary School of Bangalore city. *Indian J Dent Res [serial online]* 2008;19(3):236-42
13. Mahesh Kumar P, Joseph T, Varma RB, Jayanth M. Oral health status of 5 years and 12 years school going children in Chennai city. An epidemiological study. *J Indian Soc-PedoPrev Dent* 2005;23:17-22
14. Bjarnason S. High caries levels: problems still to be tackled. *Acta Odontol Scand* 1998;56:176-8
15. Jalevik B, Sjostrom O, Noren JG. Evaluation of three years of dental care of adolescents in the Public Dental Service in west Sweden. *Swed Dent J* 1999;23:141-8
16. Redmond CA, Blinkhorn FA, Kay EJ, Davies RM, Worthington HV, Blinkhorn AS. A cluster randomized controlled trial testing the effectiveness of a school-based dental health education program for adolescents. *J Public Health Dent.* 1999;59(1):12-7
17. Tewari A, Gauba K, Goyal A. Evaluation of KAP of oral hygiene measures following oral health education through existing health and educational infrastructure. *J Indian Soc Pedod Prev Dent.* 1992 Mar;10(1):7-17
18. AlmerichSilla JM, Montiel JM. Oral health survey of the child population in the Valencia Region of Spain (2004). *Med Oral Patol Oral Cir Bucal.* 2006; 11(4):E369 -81
19. Lueveswanij S, Nittayananta W, Robison VA. Changing knowledge, attitudes, and practices of Thai oral health personnel with regard to Aids: an evaluation of an educational intervention. *Community Dent Health.* 2000; 17(3) :165-71
20. Worthington HV, Hill KB, Mooney J, Hamilton FA, Blinkhorn AS. A cluster randomized controlled trial of a dental health education program for 10-year-old children. *J Public Health Dent.* 2001; 61(1):22-7
21. Choo A, Delac, DM, Messer L B. Oral Hygiene Measures and Promotion: Review and Considerations. *Australian Dental Journal.* 2001; 46: 166-73
22. Kunzel W. Trends in coronal caries prevalence in Eastern Europe: Poland, Hungary, Czechoslovakia, Slovak R Romania, Bulgaria and the former States of the USSR. *Int Dent J* 1996; 46(Suppl):204-10
23. Al-Omiri MK, Al-Wahadni AM, Saeed KN. Oral health attitudes, knowledge, and behavior among school children in North Jordan. *J Dent Educ* 2006;70(2):179-87
24. Tubaishat RS, Darby ML, Bauman DB, Box CE. Use of miswak versus toothbrushes: Oral health beliefs and behaviours among a sample of Jordanian adults. *Int J Dent Hyg.* 2005;3:126-36
25. Ahmed S, Solaiman F, Islam MR, Akhter SM, Nizami MZ, Khatun MA. Attitude on Oral Hygiene among the school going children in selected schools at Dhaka city. *City Dent Col J.* 2013;10:41-6

