

KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING ORAL HYGIENE IN SCHOOL GOING CHILDREN OF BOTH GENDERS, AGED 10–15 YEARS

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ABSTRACT

Objective: *The objective of the study is to assess Knowledge, Attitude and Practices (KAP) regarding oral hygiene in 10–15 year old school going children and its gender wise analysis.*

Methodology: *It was a cross sectional study conducted on 400 school going children of 10 to 15 years age of both genders. Systematic random sampling technique was used. Custom made Questionnaire was used as tool to assess the knowledge, attitude and practices of children regarding oral hygiene. Pilot study was conducted on 10% of the sample size. The data collected was analyzed on SPSS version 16.*

Results: *No significant difference was observed with regard to knowledge between male and female students. Majority of the students, more significantly girls, were aware of the benefits of tooth brush ($p=0.01$), and dental flossing ($p=0.006$). 69.2% of the respondents in this study, significantly more girls ($p=0.02$), brushed their teeth at least twice a day. Majority (66.8%) students preferred brushing their teeth after meals and 41.4%, mainly girls ($p=0.01$), used circular motion of the brush for cleaning their teeth.*

Conclusions: *The underlying knowledge of oral hygiene in our respondents was lacking in both genders. Girls were found to have a more positive attitude towards tooth brushing and dental flossing, though the actual practice of dental flossing was low in both genders. Girls were also keener on brushing their teeth at least twice a day and preferred using circular motions of the brush.*

Key words: *Oral hygiene. Gender, KAP*

INTRODUCTION

Oral hygiene is the practice of keeping the mouth and teeth clean to prevent dental problems, especially dental caries, gingivitis and bad breath¹. The purpose of maintaining oral hygiene is to prevent the build-up of plaque, the sticky film of bacteria and food that forms on the teeth.

There is some evidence to suggest that better knowledge of oral hygiene translates into better practice² and a more positive attitude toward oral health. Similarly studies have shown that oral health education can help cultivate better oral health prac-

tices³. Western countries have always been in the fore front when it comes to understanding the perils of oral health^{2,4,5,6}. As a result the level of awareness in these countries regards importance of oral hygiene maintenance is appreciable^{7,8}. and they have a very healthy oral health practice in relation to essential activities such as brushing^{9,10,11} and flossing¹². in other respects developing countries like Pakistan lack a systematic approach towards the issue of oral hygiene.

Oral hygiene measures have been practiced since pre historic times, as evidenced by various excavations around the world whereby chew sticks, tree twigs, bird feathers, animal bones and porcupine quill were recovered¹³. The Babylonians and Egyptian are believed to be the first to have introduced tooth brushing tools almost 3500 yrs BC. The Chinese developed chewing sticks around 1600 BC¹⁴. In Arabic culture oral cleanliness has a religious significance. The use of Siwak

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(Miswak) Maintaining oral hygiene with Miswak is part of the Sunnah of the Holy prophet Muhammad PBUH "Were it not that I might over-burden the Believers I would have ordered them to use Siwak (Miswak) at the time of every Prayer¹⁵."

The concept of oral hygiene in one form or the other has been recognised for ages¹⁶. Oral health is now widely recognized as an essential entity of the general body health and it determines the overall well being of an individual. Poor oral health can be the result of as well as predispose to serious underlying systemic illnesses. The oral cavity contains several hundred bacteria and the number multiplies in unclean conditions. These bacteria use saliva and gingival fluid as their main nutrients, and live on the tooth surfaces, gingival crevices, saliva, the tongue, and the oral mucosa¹⁷.

Periodontitis has been shown to predispose people to diabetes, respiratory diseases¹⁸, rheumatoid arthritis¹⁹, obesity²⁰, osteoporosis²¹, complications of pregnancy^{22,23}, and cardiovascular diseases such as atherosclerosis, heart attack, congestive heart failure, and coronary artery disease^{17,24}. There is a growing realization in developed countries that oral hygiene is an integral part of an individual's overall health status²⁵⁻²⁷.

Studies around the world have demonstrated a sufficient degree of knowledge amongst schoolgoing children regarding importance of Oral health, which has been shown to improve with age^{28,29}. Knowledge of oral hygiene does not necessarily correlate with practice. This is specially a problem in third world countries like Pakistan where only 16% of patients with dental carries seek dental care³⁰. Public and professional awareness about oral hygiene needs to be created to ensure a healthy society free of oral and systemic illnesses³¹. Schools are the key to educating children and making them accept responsibility for their health including oral health^{32,33}. Children's attitude to oral health care is built on experience and information imbibed from different sources including parents, teachers, electronic and print media³⁴.

One of the burning issues regarding practice of oral hygiene is the seriousness of regular visits to the dentist, not only when there is some dental problem but also for routine check-ups as a preventive measure against disease such as caries. The WHO reported in 2008 that majority of the young population visited

the dentist only when they had dental pain³⁵.

Given the dearth of national studies on oral hygiene this study was designed to test the knowledge, attitude and practice of oral hygiene in school going children aged 10 - 15years.

METHODS AND MATERIALS

It was a cross sectional study conducted on 400 school going children age 10 to 15 years of both genders in schools of University Town area of Peshawar, Pakistan. Though these schools have children belonging to families of rather affluent socioeconomic status, they were selected as they have uniform distribution of both genders and are expected to have some baseline understanding of oral hygiene. These schools include, Bloomfield Hall School, Daffodils school, Qadeems laminar school, Peshawar Grammar school and City school. Systematic random sampling technique was used. Students with any congenital defects like cleft lip and palate, any major systemic disease and history of allergy were excluded from the study. A well designed questionnaire was used as tool to assess the knowledge, attitude and practices of children regarding oral hygiene. Prior consent was taken from each student after explaining purpose of the study. Pilot study was conducted on 10% of the sample size. The data collected was analyzed on SPSS package version 16. The results are presented in form of Tables.

RESULTS

The knowledge level of respondent's regards different aspects of oral health is shown in Table-1. The mean score across both genders was recorded at 7.2 out of a total of 12, with a minimum score of 4 and maximum of 12. Gender wise cross tabulation did not show any significant difference ($p = 0.47$), amongst boys and girls regards their knowledge of oral hygiene.

When asked about the effects of tooth brushing majority (55.8%) significantly females ($p = 0.01$) attributed multiple benefits to its regular use, including making teeth attractive and preventing dental caries as well as gum bleeding and swelling. The details are given in Table-2. Table-3 shows that 77.9% of the children of age 10-15 years, were of the opinion that dental floss helps in removing food debris with a significantly higher proportion of girls ($p = 0.006$) showing awareness in this respect.

Table-4 shows that there is a clear tilt ($p=.002$) towards use of tooth paste (90.5%) as compared to muswak. The use of toothbrush twice a day by 69.2% of the respondents with a significant difference ($p =$

0.02) amongst genders – girls more keen on the said practice than boys as shown in Table- 5. As for the timing of tooth brushing 66.8% preferred it after

Table 4: teeth cleaning materials used

Table-1: Gender wise cross tabulation of Knowledge score

Gender	Knowledge score				Total		p-value
	< 7.2		> 7.2				
	n	%	n	%	n	%	
Male	73	18.25	110	27.50	183	45.75	0.47
Female	79	19.75	138	34.50	217	54.25	
Total	152	38	248	62	400	100	

Gender	What do you use for cleaning your teeth?						P-value
	Tooth paste		Muskwak		Total		
	n	%	n	%	n	%	
Male	167	41.75	16	4	183	45.75	.002
Female	213	53.25	4	1	217	54.25	
Total	380	95	20	5	400	100	

Table 2; Effect of tooth brushing

Gender	What is the effect of tooth brushing										Total		P-value
	Make teeth attractive		Prevents gum bleeding		Prevent swollen gums		Prevent cavities in teeth		All the above				
	n	%	n	%	n	%	n	%	n	%	n	%	
Male	47	11.75	9	2.25	10	2.5	22	5.5	95	23.75	183	45.75	0.01
Female	37	9.25	10	2.5	5	1.25	37	9.25	128	32	217	54.25	
Total	84	21	19	4.8	15	3.8	59	14.8	223	55.8	400	100	

Table-3: Effect of dental floss on dental care

Gender	How does dental floss affect dental care?						Total		P-value
	Polishes teeth		Strengthen the gums		Remove food debris				
	n	%	n	%	n	%	n	%	
Male	22	7.58	17	5.86	90	31.03	129	44.48	0.006
Female	15	5.17	9	3.10	137	47.24	161	55.32	
Total	37	12.75	26	8.97	227	78.28	290	100	

Table 5: Frequency of tooth brushing

Gender	How often do you brush your teeth in a day?						Total		P-value
	Once a day		Twice a day		Thrice a day				
	n	%	n	%	n	%	n	%	
Male	40	10	119	29.75	24	6	183	45.75	0.02
Female	25	6.25	158	39.5	34	8.5	217	54.25	
Total	65	16.25	277	69.25	58	14.5	400	100	

Table 6: Brushing techniques

Gender	Techniques of brushing the teeth?								Total		P-value
	Vertical		Horizontal		Circular		Combination				
	n	%	n	%	n	%	n	%	n	%	
Male	29	7.26	23	5.76	65	16.29	65	16.29	182	45.62	0.01
Female	18	4.51	39	9.77	100	25.06	60	15.03	217	54.38	
Total	47	11.77	62	15.3	165	41.35	125	31.32	399	100	

meals while 17 % had no preference when the practice is considered in relation to meal timing. 41.4% of the 10 -15 year olds in this study practiced circular movements of the tooth brush for cleaning teeth – a technique more commonly used by the female gender ($p = 0.01$) as shown in Table-6. Only 8.8% of our study sample admitted regular use of flossing.

DISCUSSION

This cross sectional study was aimed at testing the knowledge, attitude and practice of Oral Hygiene in children both boys and girls, aged 10-15 studying in private sector schools of the university town area of Peshawar. While the said age group has been the focus of comprehensive reviews regards their oral health behavior in studies across the globe, there certainly is a dearth of substantial research in this respect in Pakistan. Moreover the subject has largely been neglected in Khyber Pukhtunkhwa (KPK) this is the first study of its kind on this very important health issue.

The schools selected for this study, had a good mix of boys and girls enabling adequate comparison of the two genders. Furthermore as a result of exposure to mass media they were expected to have a reasonable understanding of the basic concepts of oral hygiene.

Knowledge or awareness about oral health was tested in our study by way of a questionnaire concentrating on four different aspects, namely an understanding of the basic concepts of oral hygiene, familiarity with oral hygiene measures, ill effects of poor oral hygiene and factors affecting oral health in general. The students tested achieved a mean score of 7.2 out of 12. This reflects the fact that children belonging to the tested age group have only a limited understanding of oral health, with their knowledge level lacking in different respects. A similar general pattern was observed in 12 year old students in a study in India³⁶. Further analysis of our results suggested that while the general concepts about good oral hygiene and the effect of healthy diet and fluoride based toothpastes was relatively better understood, the students were found lacking in their understanding of oral diseases such as caries, plaques and gingivitis. These findings are in keeping with a Malayasian study among secondary school students from Kuching, Sarawak³⁷. Certain European studies have shown

a comparatively better understanding of oral health and diseases such as caries in children^{2,4,5,6}. Similarly a study carried out in Tanzania has shown a reasonably good level of awareness when it comes to importance of oral hygiene measures³³. A recent national analysis has shown a direct relationship between the socioeconomic status and the level of knowledge about oral health in Pakistan³⁸.

Gender wise assessment, no significant difference was observed in the knowledge level ($p = 0.47$). This shows that the knowledge imbibed from various sources including schools, parents, teachers and media is more or less the same for both boys and girls, in urban settings. Other studies from developing and developed countries show a similar pattern³⁷. However a study in rural India by Joshi et al³⁹ has shown that boys of a similar age group are more knowledgeable than girls. This reflects the fact that in the rural population especially in developing countries the boys are more exposed to extraneous sources of information including schools and mass media and are the focus of attention at home when it comes to hygiene and other health related measures.

It was interesting to note that majority of the students acknowledged the healthy effects of a balanced, nutritious diet and avoidance of sweet and sticky food. Unfortunately this did not translate into practice for one reason or the other. They were also well aware of the importance of daily brushing and flossing, with a majority (55.8%) acknowledging the benefits of brushing regularly resulting in healthy teeth and gums. Interestingly the girls showed a significantly better understanding in both these respects as compared to their compatriots.

The practice of observing oral hygiene measures certainly lags far behind the actual knowledge and attitude of the sample population in the present study. No significant gender difference was noted in this respect, though certain international studies have reported a higher consumption of sweets amongst the female gender³⁷. As expected tooth paste forms an overwhelming proportion of the product used for teeth cleaning (90.5%). This finding correlate with the practice noticed elsewhere in developing and developed countries like Malaysia³⁷, Saudi Arabia⁴⁰ and Kuwait⁴¹. The use of mouth wash is limited up to twice daily in 70% of our study population.

Soft bristle tooth brushes are favored by majority of the children (51%) and the frequency of brushing is mostly twice a day (69.2%) – before breakfast and after dinner, a practice more prevalent in the female gender. Similar findings were reported by other international studies^{8,40,41}. While twice-a-day tooth brushing is an established practice in industrialized countries^{9,10,11}. The WHO report of 2008³⁵ showed only 44% of students brushing their teeth more than once a day.

CONCLUSIONS

From this study it is concluded that:

- 1- The knowledge, attitude and practice of 10 – 15 year olds regards oral hygiene is still far from satisfactory in certain respects in our population.
- 2- Boys and girls had no significant difference in their knowledge of oral hygiene.
- 3- Girls had a more positive attitude towards regular use of tooth brush and dental flossing. Most of the students especially girls were found to practice twice a day brushing of teeth with a majority opting for circular motions of the brush.
- 4- Visits to the dentists were reserved mainly for pain.
- 5- Tooth paste and tooth brushes with soft bristles were the favorite oral hygiene tools in majority of the youngsters under study while use of dental floss was disappointingly low in both sexes.

RECOMMENDATIONS

Knowledge and awareness regards oral hygiene especially in relation to a general understanding of oral problems such as plaques, caries and gum diseases needs to be propagated. Emphasis needs to be laid on the areas of oral health commonly neglected by the concerned age group (10-15 years) as highlighted by this study e.g. regular use of tooth brush by all the students, proper brushing and flossing techniques, importance of regular visits to the dentist.

More Pedodontists should be recruited in oral health care with proper motivation and arrangements for easy access of the younger population to these professionals. School visits by the Pedodontists should be arranged on a regular basis.

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