

# **An Evaluation of High School Female Student's Knowledge and Behaviour Regarding Oral Hygiene**

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**(Received 14 Apr 2005; revised 12 Jun 2005; accepted 14 Dec 2005)**

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## **Abstract**

In today's world, due to incensement of communication and different social relationship between people, oral health and aesthetic are considered more important than the past. The aim of this study was to assess the level of knowledge and behaviour of Gonbadkavoos, northern Iran high school female students regarding their oral hygiene and health status. In this descriptive study cluster, sampling technique was used to select 300 samples. The level of knowledge of each individual was assessed according to their information on the causes of caries, the preventive effect of fluoride supplement and so on. In terms of their oral health behaviour, tooth brushing frequency, use of dental floss and regular dentist visit were recorded. Results revealed that 80% of the students were aware of the fluoride preventive action and 18% of them replied, "I don't know", to this question. Parents were identified as their main source of oral health information by 68.3% of them and 12.6% identified the microbial activity as the main cause of dental caries. 44.3% of students expressed lack of time as the main reason for irregular dentist visit and 70% of them stated, only upon dental problems, referred to the dentist. Sixty two percent of the students brushed their teeth regularly. It is recommended to do similar researches on the level of knowledge and behaviour, about dental and oral health in other populations.

**Keywords:** *Knowledge, Behaviour, Oral hygiene, Oral health, Iran*

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## **Introduction**

One of the problems of our society is the lack of enough knowledge regarding dental and oral health that results in inappropriate hygiene behaviour. Dental and oral hygiene training and applying preventive methods, in developed countries, have decreased dental caries and periodontal diseases that play an important role in physical and mental health of society members. Cultural issues are the main problems (1). Briefly, culture consists of arrange of knowledge, beliefs, tendencies and behaviour. The behaviour of the people, in each society, is influenced by their knowledge and tendencies; on the other hand, the beliefs and tendencies of each society are also influenced by people's behaviour. Naturally, social and individual hy-

giene, depend on people's knowledge. In order to promote useful hygienic habits among people and change their behaviour, a comprehensive and accurate programme is necessary. Such an approach leads us to achieve in our cultural goals.

One of the most effective factors, to reach these goals is to invest and pay special attention on oral hygiene training in schools to enhance students' knowledge (2).

In modern dentistry, "prevention" receives special attention and precedes treatment. Prevention is easier and more economical. Nowadays, in advanced societies, through simple prevention techniques such as hygiene training, fluoride therapy, tooth brushing and supplementary instruments, caries prevalence and periodontal

diseases have been reduced significantly. As a result, the needs of treatments, that are mostly expensive and time consuming, have been decreased (3, 4).

DMF (Decay, Missing, and Filling) is one of the best epidemiologic indices, used in dentistry that is an indicative of oral and dental hygiene in each society. Taking preventive steps for oral and dental diseases require a full documentary knowledge of the situation and the existing possibilities (5).

### **Materials and Methods**

This descriptive investigation was performed on 300 samples that were selected by using cluster-sampling technique with 95% confidence level. A group of second grade high school female students in Gonbad Kavoods (a city in the north of Iran) were selected as the study group. They were chosen from five different high schools located in different areas of the city (the north, south, west, east and the centre). According to the number of second grade students in each high school and through referring to the statistical notebooks in each school, the second grade students whose identity card age was (16 years  $\pm$  6 months) were chosen periodically and randomly from each class and questionnaires were distributed among them. Each questionnaire included 16 multiple choice questions about their knowledge and eight questions about their behaviour. Their knowledge was evaluated based on their information about causes of caries, fluoride importance and use of string instead of dental floss. Behaviour was evaluated and recorded, based on the use of toothbrush and dental floss, the frequency of brushing and visiting dentist. Then, questionnaires were collected and evaluated; finally, the level of knowledge and behaviour, among students, was determined. Moreover, DMFT index was estimated to control responses, and the students were compared according to tooth brushing frequency and their father's job.

The statistical analysis was performed using chi-square test.

### **Results**

In this research, 300 high school students, at the age of (16 years  $\pm$  6 months) were investigated, 164 students (54.7%) expressed that visiting dentist was necessary every 6 months, but practically only 20% of them referred to dentist every 6 months and 70%, only upon problems such as toothache, referred to the dentist.

Forty four percent of the students expressed lack of enough time as a reason for their irregular reference to dentist (Table 1). Sixty two percent of the students brushed their teeth regularly and most of them (140 individuals) spent 2 to 5 min for brushing and just for 6.3% of them (19 individuals) tooth brushing took more than 5 min. The distribution of the frequency tooth brushing for students is shown in Table 2.

Eighty percent of the students were completely aware of the caries preventive role of fluoride, while 18% of them replied this question, as "I don't know" (Table 3). Seventy-nine percent had enough information about dental floss and 11% of them did not know anything in this regard. Among the students under study, 37% use dental floss irregularly, 25% use only once a day and just 10.4% of them use it after each meal and 27.6% of them never use it.

Regarding factors involved in caries, as main factors 14.6% expressed microbial activity, 1.4% sugar food and 73% lack of hygiene. Comparing their awareness of fluoride role and using dental floss instead of string, with regard to parents' education ( $\chi^2=4.599$ ) ( $P> 0.05$  N.S). It should be noted that an increase in parents' education enhances the student's knowledge (Table 4, 5).

Table 6 shows the distribution of students according to brushing frequency and DMFT. As it is expected, brushing frequency has a reverse relationship with DMFT, meaning that an increase in oral hygiene causes DMFT reduction.

**Table 1:** The distribution of appropriate intervals to refer to the dentist in student's viewpoint, the student's intervals to refer the dentist

Intervals	No & percent		6 months		1 year		2 years		Urgent times		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Appropriate interval to refer to the dentist	164	54/7	40	13/3	6	2	90	30	300	100		
Intervals to refer to the dentist	60	20	27	9	3	1	210	70	300	100		

**Table 2:** The distribution of the frequency brushing for students understudy

Brushing frequency	No.	%
Regularly	186	62
Every other day	31	10/5
Irregularly	83	27.5
Never	0	0
Total	300	100

**Table 3:** The distribution of student's knowledge about fluoride preventive action and the use of string instead of dental floss

Distributions of answers	No & percent		Positive		Negative		I don't know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Knowledge of fluoride role	240	80	7	2.3	53	18	300	100		
Knowledge about the use of string instead of dental floss	29	9.7	237	79	34	11	300	100		

**Table 4:** The distribution of the number of students according to father education with regard to their knowledge of fluoride role

Father education	Knowledge of fluoride role		Positive		Negative		I don't know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Under diploma	111	73.5	5	3.3	35	23.2	151	100		
Diploma	74	88	0	0	10	12	84	100		
Post diploma	55	84.6	2	3.7	7	1.6	64	100		
Total	240	80	7	2.3	53	18	300	100		

**Table 5:** The distribution of the number of students according to mother education with regard to tooth brushing frequency (*P. value* > 0.05)

Tooth brushing frequency \ Mother education	Regular tooth brushing		Every other day		Irregular brushing		Total	
	No.	%	No.	%	No.	%	No.	%
Under diploma	116	56.3	25	12.1	65	31.6	206	100
Diploma	56	78.8	3	4.2	12	17	71	100
Post diploma	14	61	3	13	6	26	23	100
Total	186	62	31	10.5	83	27.5	300	100

**Table 6:** The distribution of the number of students according tooth brushing frequency by DMFT

Tooth brushing time \ DMF	Regularly		Every other day		Irregularly		Total	
	No.	%	No.	%	No.	%	No.	%
DT	184	27.2	40	32.2	88	27.2	312	27.3
MT	45	6.6	13	10.4	20	6.2	78	6.9
FT	69	10.1	7	5.6	9	28	85	7.5
HT	382	56.1	64	51.8	204	63.6	65	57.9
Total	680	100	124	100	321	100	1125	100

## Discussion

In our study, the results indicate nearly complete awareness and an average level of behaviour for the majority of students. Their awareness and behaviour are influenced by economic situation, social and cultural status. As it was proved in this study, students with educated parents show higher level of awareness and behaviour (1-3). This result is in agreement with what a cross sectional study found in Uganda, they using DMFT Index. In the results sixty six percent caries (decay) and DMFT was 0.7 that was approximately near to our study (4, 5). Preventive Programmes Targeting in periodontal Disease in Cambodia focus on oral health education and simple oral hygiene instructions (5). Frequency of tooth brushing has a positive correlation with parents' education, level that is a

reasonable relationship. Education is an undeniable factor in oral hygiene.

In a research, was done in Belfast (6), the role of economical and social studies was proved. In Hong Kong (7), females were more aware and showed a better hygienic behaviour than males. In a wide range investigation in Ukraine (8), it was concluded that brushing frequency was influenced by sex and social status and females brushed more than males. For this reason, we investigate on female student. Moreover, it was reported that from 2209 adolescents under investigation, 37% expressed having a beautiful appearance was a motivation for oral hygiene. In a research on 12- year old adolescents in Caribbean Islands(9), 44% did not have any kind of information about fluoride action, but in

another study, only 20% of the respondents were not aware of such role.

In another investigation on 110 high school students in Shiba, Japan, the results were as follows: 48% of the students introduced their school hygiene instructor as their most important source of oral hygiene information, approximately 50% of them expressed dental plaque as the main cause of dental caries and 11% were familiar with the preventive action of fluoride (10), however, in comparison with the present research, only 2% of the students considered their hygiene instructor as the most effective factor for tooth brushing, 14% were aware of caries causes and 80% knew fluoride preventive role. It is obvious that an emphasis on oral hygiene training at school age promotes student's awareness and their hygiene behaviour and knowledge (11, 12).

Taking efforts to decrease dental plaque, to train correct nutrition habits among families and to prevent sugar and sweet food consumption, increase the awareness of the society members (12, 13). On the other hand, mass media such as newspapers and television can familiarize youngsters and their families with dental diseases and as a result increase their awareness (14, 15).

As this study was performed in Gonbadkavoos, the expansion of hygiene units in schools, both in cities and villages, and the enhancement of oral and dental hygiene network in the country, are effective suggestions that promote people's awareness and hygiene behaviour.

With regard to the mentioned points, the following programs are suggested:

The establishment of comprehensive dentistry units all around the country, with the help of young dentist and dental hygienist in governmental sections to take necessary steps for oral and dental (14) disease prevention;

The arrangement of periodical and systematic up-to-date training courses regarding dental and oral disease prevention (15);

Giving lectures in schools by dentists, to increase the students' knowledge;

Increasing students' knowledge about oral hygiene with the aid of advertising posters by hygiene instructors in the school.

Preventive programmes targeting oral health, in our country should focus on oral health education and simple oral hygiene for students.

### Acknowledgements

The authors thank Dr Lina Melkomian for statistical analysis and her supports.

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