

Comparative study of attitudes and knowledge about oral health and their association with oral health among dental students in Kurdistan University of Medical Sciences in 2014.

Ensi Kolyaei,¹ Roya Safari Faramani,² Masoud Bashiri ¹

¹ DMD & DDS, General Dental practitioner, Student Research Committee, Kurdistan University of Medical Sciences, Sanandaj, Iran

²MSc, PhD student of Epidemiology, Department of Biostatistics and Epidemiology, School of public health, Kerman University of Medical Science, Kerman, Iran

Corresponding Author: EnsiKolyaei, DMD & DDS, General Dental practitioner, Student Research Committee, Kurdistan University of Medical Sciences, Sanandaj, Iran.

Address: #16, Abidar Boulevard, Sanandaj, Kurdestan, Iran.

Email: nc.kolyaei@gmail.com Tel: 00989128690054

Abstract

Aims: One of the main purposes of dentistry field is to educate students in a way that can make enough motivation to do oral hygiene among patients which can only come in true if they themselves have got necessary interest and motivation. Furthermore dental students should be enabling to apply these gained knowledge and attitude in their daily dental care so due to mentioned importance we decided to assess possible change in dental health condition with increase of dental knowledge among dental students of Kurdistan University, College of Dentistry.

Material and Methods: A total of 308 dental students participated in this survey. Subjects were divided into two groups, i.e., group 1 pre-clinical group (first and second year students) and group 2 clinical groups (third and fourth year students).

Results: Most of the students showed improved oral hygiene following dental health education and the overall DMFT score were reduced.

Conclusion: Dental knowledge and motivation had a positive effect in improving the behavior of oral self-care.

Key Words: Oral Health; Dental Students; Dental Health Education.

Introduction

Since dentists play important role in public oral hygiene, gaining necessary knowledge and attitude related to oral hygiene and disease prevention is very important during their school period. Dental students should be a good example of the one who cares about oral hygiene for the family, patients and their friends.(1)

In another hand learning standard oral hygiene basics by dental students can improve their oral hygiene level, focusing on educational curriculum seems critical because they transfer this gained knowledge to their patients in future.(2,3)

One of the main purposes of dentistry field is to educate students in a way that can make enough motivation to do oral hygiene among patients which can only come in true if they themselves have got necessary interest and motivation.(4) furthermore dental students should be enable to apply these gained knowledge and attitude in their daily dental care while studied shows knowledge and attitude of oral hygiene is different among pre clinic and clinic students.(5) oral hygiene is different among dental students in different countries or cultures.(6,7,8)

Dental care system is developing in Iran but there are very few data in students' knowledge and attitude about oral diseases and their prevention.

Since having detailed and precise data about present preventive aspects of dental educational system on dental students' attitude on their oral hygiene play a key role for future programming and health policy (9), we decided to study the present situation of oral hygiene so we needed to do precise evaluating Gaps and Weaknesses of educational system about teaching oral hygiene.

This study findings can suggest changes for improving dental students' educational curriculum such as holding practical classes to completing preventive dentistry periods and continued strengthening the oral health within the 6 year educational course.

Material and methods

This cross sectional survey was conducted in the month of June 2014, among dental students of Kurdistan College of Dentistry. The study protocol was approved by the Department of Research and Ethics of Kurdistan University of Medical Sciences The sample population includes dental students of undergraduate program. There were no exclusion criteria for this study. The study population was divided into two groups based on the year of study, i.e., Group 1 Preclinical Group (First and second years) and Group 2 Clinical Group (third and fourth year). Before starting the class we attended and

give them necessary explanation about the study and full presenting the research purposes. In this study we used iranized version of **Hiroshima University-Dental Behavior Inventory** questionnaire which was translated by two Linguists and then was evaluated by group of dental specialists, finally initial questionnaire was designed in Persian.

These questionnaire was given to some dental students and asked them inform us if they notice any problem in wording within it. In last step the questionnaire was copied based on the total number of participants and distributed among them. Out of 327 dental students 305 (%^{93/3}) dental students were participated in this study.

We used descriptive statics which include tables and diagram to describe studied population. all data were analyzed by Stata v.10 software.

Results

Descriptive goals:

No 1: determining students' distribution based on demographic characteristics

305 students participated in this study (93.3%). More than half of them were male(%^{54,1}) . Mean age of participants was 22.6 (sd: 1.9). One fourth was below 22 yr old and 33.1% were passing the basic level, also 1/3

were in pre clinic level. Table 1 has the summary of participants' demographic characteristics.

Table 1 : Demographic characteristics of participants

variable	Freq	%
Gender		
Male	165	45.9
Female	140	54.1
Total	305	
Age groups		
19-21	75	24.6
22-23	115	37.7
23+	115	37.7
Total		
Education level		
Basic	101	33.1
Clinical	100	32.9
Pre-Clinical	104	34.1
Total	305	

Categorizing the questions for assessing knowledge, attitude, behavior and health position are found in Table 2.

No2: assessing the knowledge of kurdistan dental school students about oral health

100% of students stated they have never been taught the professional way of tooth brushing.

No3: assessing the attitude of kurdistan dental school students about oral health

As seen clearly only few students were concern about visiting the dentist, although 100% said they were worry about their teeth getting worse and also all participants agreed their teeth cant be cleaned properly without tooth paste nor believed only tooth brushing can prevent gum diseases.

10.82% said their teeth are getting worse despite brushing and 2% were not satisfied about their teeth appearance.

No4: assessing the behavior of kurdistan dental school students about oral health

100% of participants reported they brush each of their teeth precisely. Only 1% reported they don't check their teeth in the mirror after brushing. Most students (%⁹⁴/₄) said they don't visit a dentist unless they have toothache. Around 10.16% said they brush their teeth more than twice along the day and 2.3% reported a long time allocated for tooth brushing. 100% of students use dental floss and none of them apply hard brushes nor forceful brushing.

No5: assessing the oral health of Kurdistan dental school students

14% reported gum bleeding while tooth brushing and also 2.3% complaint of white patches on their teeth. Almost 3% stated that they have abnormal gum color. All participants were concern about their teeth color and also 3.28% suffered form the halitosis.

Table 2: oral health of Kurdistan dental school students

nom	Question	Scope	Yes		No		Total
			Freq	%	Freq	%	Freq
١	I don't worry much about visiting the dentist	Attitude	2	0.66	303	99.34	305
٢	My gums tend to bleed when I brush my teeth	Oral Health	43	14.1	262	85.9	305
٣	I worry about the color of my teeth	Oral Health	305	100	-	-	305
٤	I have noticed some white sticky deposits on my teeth	Oral Health	7	2.3	298	97.7	305
٥	I am bothered by the color of my gums	Oral Health	8	2.6	297	97.4	305
٦	I think my teeth are getting worse despite my daily brushing	Attitude	-	-	305	100	305
٧	I brush each of my teeth carefully	Practice	305	100	-	-	305
٨	I have never been taught professionally how to brush	Knowledge	-	-	305	100	305
٩	I think I can clean my teeth well without using toothpaste	Attitude	-	-	305	100	305
١٠	I often check my teeth in a mirror after brushing	Practice	302	99.02	3	0.98	305
١١	I worry about having bad breath	Oral Health	10	3.28	295	96.72	305

١٢	It is impossible to prevent gum disease with tooth brushing alone	Attitude	305	100	-	-	305
١٣	I put off going to the dentist until I have toothache	Practice	288	94.43	17	5.57	305
١٤	I use a toothbrush with hard bristles	Practice	-	-	305	100	305
١٥	I don't feel I've brushed well unless I brush with strong strokes	Practice	-	-	305	100	305
١٦	I feel I sometimes take too much time to brush my teeth	Practice	7	2.3	298	97.7	305
١٧	I do use tooth floss on regular basis	Practice	305	100	-	-	305
١٨	I brush my teeth twice daily or more	Practice	31	10.16	274	89.84	305
١٩	I am satisfied with the appearance of my teeth	Attitude	299	98.03	6	1.97	305

Analytic goals:

No1: evaluating the knowledge of Kurdistan dental school students about oral health based on the demographic variables (age, sex, semester, marriage statues)

Since all students gave negative answer to professional tooth brushing, we couldn't evaluate the effect of demographic variables effect.

Table 3: knowledge of Kurdistan dental school students about oral health based on the demographic variables

Questions	Respon	Gender			Age Group				Education Level			
		F (%)	M (%)	P-	19-	22-23y	23+ y	p-	Basic	Clinic	Pre-Cli	P-

	se			valv	21y	(%)	(%)	valu	(%)	(%)	(%).	valu
				e	(%)			e				e
I have never been taught professionally how to brush	Yes	0	0	NA		0	0	NA	0	0		NA
	No	140(45.9)	165(54.1)		75(24.6)	115(37.7)	115(37.7)		101(33.1)	100(32.8)	104(34.1)	

No2: evaluating the attitude of Kurdistan dental school students about behavior based on demographic variables (age, sex, semester, marriage status)

As you see in the table below, there was no relation between students' concern with variables as age, sex and educational level.

Since all students answered the question "I think my teeth are getting worse despite my daily brushing" yes, there was no chance to evaluate the relation between it with variables as age, sex and educational level.

The same story happened for question "It is impossible to prevent gum disease with tooth brushing alone"

Although More percent among the girls (21%) compared with boys (14%) were unsatisfied about their teeth appearance but it was not significant statistically (P-value=0.839) but we can say it was increasing by increasing the age in a way that in group age of 19-22 yr old no one was and in higher age groups 2.6% were unsatisfied (p-value: 0.369).

5% of students in clinic level and around 1% in basic level were unsatisfied about their teeth appearance in comparing with pre clinic students who none of them stated un satisfaction. It was meaningful statistically (p<0.05).

Table 4: attitude of Kurdistan dental school students about behavior based on demographic variables

Questions	Response	Gender			Age Group				Education Level			
		F (%)	M (%)	P-value	19-21y (%)	22-23y (%)	23+ y (%)	p-value	Basic (%)	Clinic (%)	Pre-Cli (%)	P-value
I don't worry much about visiting the dentist	Yes	2(1.4)	0	0.12	1(50)	0	1(50)	0.50	0	2(100)	0	0.12
	No	138(98.6)	165(100)	3	74(24.4)	115(37.9)	114(37.9)	4	101(33.3)	98(32.3)	104(34.3)	7
I think my teeth are getting worse	Yes	0	0	NA	0	0	0	NA	0	0	0	NA
	No	140(100)	165(100)		75(100)	115(100)	115(100)		101(100)	100(100)	104(100)	

despite my daily brushing - f												
I think I can clean my teeth well without using toothpaste - i	Yes	0	0	NA	0	0	0	NA	0	0	0	NA
	No	140(100)	165(100)		75(100)	115(100)	115(100)		101(100)	100(100)	104(100)	
I am satisfied with the appearance of my teeth - t	Yes	137(97.9)	162(98.2)	0.839	0	3(2.6)	3(2.6)	0.369	100(99.1)	95(95)	104(100)	0.025
	No	3(2.1)	3(1.8)		75(100)	112(97.4)	112(97.4)		1(0.9)	5(5)	0	
It is impossible to prevent	Yes	140(100)	165(100)	NA	75(100)	115(100)	115(100)	NA	101(100)	100(100)	104(100)	NA
	No	0	0		0	0	0		0	0	0	

gum disease with tooth brushing alone -I												
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Goal 3: evaluating the behavior of Kurdistan dental school students based on demographic variables (age, sex, semester, marriage status)

Since all students gave a same answer to the questions about tooth brushing, using hard brush and dental floss we couldn't evaluate the effect of demographic variables on them. About checking the teeth in the mirror all women and 98.2% of males said yes which was statistically significant (p-value: 0.109).1% of students in age group of 22-23 yr old and 1.7% in age group of >23 yr old didn't do it, this variable has no statistically meaningful relation with age but there was a relation with educational level in a way that 3% of students in clinical level didn't do this which was statistically significant (p<0.05).

6.7% of males and 3.4% of females said they don't go to visit a dentist unless they get toothache which wasn't statistically significant. Also 9% of students in age group 22-23 also said the same which was statistically significant but 12% of students in clinic level compared with 4% who were in pre clinic level and few students in basic level reported toothache as a motivating factor to visit a dentist which was statistically significant.

Around 3% of women compared with 2% of men believed that they allocate so much time for tooth brushing which was not statistically significant. In another hand, 4 % among 19-22 yr old and about 3% in >23 age group did so which was not statistically significant. According to the educational level, 5% of students in clinic level in compared to the students in other levels thought that they spend so much time for tooth brushing that was not statistically significant.

Around 13% among females and 8 % of males brushed their teeth twice or more along the day which was nit statistically significant. Among all groups a decreasing trend is seen by increasing the age meaning by getting older fewer individuals brush their teeth twice or more during a day which was not statistically significant either. According to educational level, pre clinic students more than others and basic students less than all reported brushing teeth twice or more during the day which was significant statistically.

Table 5: behavior of Kurdistan dental school students based on demographic variables

Questions	Response	Gender			Age Group				Education Level			
		F (%)	M (%)	P-value	19-21y (%)	22-23y (%)	23+ y (%)	p-value	Basic (%)	Clinic (%)	Pre-Cli (%)	P-value
I brush each of my teeth carefully	Yes	140(100)	165(100)	NA	75(100)	115(100)	115(100)	NA	101(100)	100(100)	104(100)	NA
	No	0	0		0	0	0		0	0	0	
I often check my teeth	Yes	140(100)	162(98.2)	0.109	75(100)	114(99.1)	113(98.3)	0.488	101(100)	97(97)	104(100)	0.045
	No	0	3(1.8)		0	1(0.9)	2(1.7)		0	3(3)	0	

in a mirror after brushing												
I put off going to the dentist until I have toothache	Yes	134(95.7)	154(93.3)	0.366	72(96)	105(91.3)	111(96.5)	0.179	100(99)	88(88)	100(96.2)	0.002
	No	6(4.3)	11.(6.7)		3(4)	10(8.7)	4(3.5)		1(0.1)	12(12)	4(3.8)	
I use a toothbrush with hard bristles	Yes	0	0	NA	0	0	0	NA	0	0	0	NA
	No	140(100)	165(100)		75(100)	115(100)	115(100)		101(100)	100(100)	104(100)	
I don't feel I've brushed well unless I	Yes	0	0	NA	0	0	0	NA	0	0	0	NA
	No	140(100)	165(100)		75(100)	115(100)	115(100)		101(100)	100(100)	104(100)	

brush with strong strokes												
I feel I sometimes take too much time to brush my teeth	Yes	4(2.8)	3(1.8)	0.54	3(4)	1(0.9)	3(2.6)	0.35	1(0.9)	5(5)	1(0.9)	0.088
	No	136(97.1)	162(98.2)	6	72(96)	114(99.1)	112(97.4)	6	100(99.1)	95(95)	103(99.1)	
I do use tooth floss on regular basis	Yes	140(100)	165(100)	NA	75(100)	115(100)	115(100)	NA	101(100)	100(100)	104(100)	NA
	No	0	0		0	0	0		0	0	0	
I brush my teeth twice daily or more	Yes	18(12.9)	13(7.9)	0.152	8(10.7)	12(10.4)	11(9.6)	0.963	0	11(11)	20(19.2)	<0.0001
	No	122(87.1)	152(92.1)		67(89.3)	103(89.6)	104(90.4)		101(100)	89(89)	84(80.8)	

Goal4: evaluation of oral health among Kurdistan dental school students based on the demographic characteristics (age, gender, semester, marriage status)

Around 14% of males and 14.3% of females who participated in this study complaint of gum bleeding while tooth brushing which was not statistically significant. Our study suggested that possibility of gum bleeding increases by increasing the age in a way that only 5.3% in age group of 19-22 yr old had gum bleeding during brushing meanwhile it was 11.3% and 22.6% in age groups of 22-23 and >23 respectively which was statistically significant.

Also the most prevalence of gum bleeding while tooth brushing was seen among the basic students and clinic ones then after which was statistically significant.

Since all students gave the same answer the question “I worry about the color of my teeth” there was no possibility to evaluate the effect of other variables on it.

2.1% of girls and 2.4% of males reported presence of white patches on their teeth which were not significant statistically. In different age groups 4.4% of the students in 22-23 age group reported this while it was only 2.6% among the students aged 23 or more. None of the students under 22 yr old reported it. It was significant statistically. The most white patch cases were seen among the clinic students which was not significant statistically.

Being worry of gum color among boys and girls reported 2.9% and 2.4% respectively which was not significant statistically. Also 2.6% of students older than 23 yr old and 4.4% of students between 22-23 yr old said are worry of their

gum color which was not significant statistically. The most concern about gum color was stated among clinic students which was significant statistically of course.

Around 6% of females and 1.2% of males reported halitosis which was significant statistically. The most halitosis reported cases was in 22-23 age group which was not significant statistically.

Also the most cases were among the clinic students which were significant statistically.

Table 6: oral health among Kurdistan dental school students based on the demographic characteristics

Questions	Response	Gender			Age Group				Education Level			
		F (%)	M (%)	P-value	19-21y (%)	22-23y (%)	23+ y (%)	p-value	Basic (%)	Clinic (%)	Pre-Cli (%)	P-value
My gums tend to bleed when I brush my teeth	Yes	20(14.3)	23(13.9)	0.931	4(5.3)	13(11.3)	26(22.6)	0.002	24(23.8)	11(11)	8(7.7)	0.002
	No	120(85.7)	142(86.1)		71(94.7)	102(88.7)	89(77.4)		77(76.2)	89(89)	96(92.3)	

I worry about the color of my teeth	Yes	140(100)	165(100)	NA	75(100)	115(100)	115(100)	NA	101(100)	100(100)	104(100)	NA
	No	0	0		0	0	0		0	0	0	
I have noticed some white sticky deposits on my teeth	Yes	3(2.1)	4(2.4)	0.87	0	4(3.5)	3(2.6)	0.28	1(1)	5(5)	1(1)	0.08
	No	137(97.9)	161(97.6)	0	75(100)	111(96.5)	112(97.4)	2	100(99)	95(95)	103(99)	8
I am bothered by the color of my gums	Yes	4(2.9)	4(2.4)	0.81	0	5(4.4)	3(2.6)	0.18	1(0.9)	6(6)	1(0.9)	0.03
	No	136(97.1)	161(97.6)	4	75(100)	110(95.6)	112(97.4)	6	100(99.1)	94(94)	103(99.1)	6
I worry about having bad breath	Yes	8(5.7)	2(1.2)	0.02	1(1.3)	6(5.2)	3(2.6)	0.29	1(0.9)	8(8)	1(0.9)	0.00
	No	132(94.3)	163(98.8)	8	74(98.7)	109(94.8)	112(97.4)	8	100(99.1)	92(92)	103(99.1)	5

8-3-analytic-specific goals

Evaluating the relation of students' knowledge about oral hygiene with oral health

Since all students gave same answer the questions about this part, we couldn't evaluate this correlation.

Table 7: relation of students' knowledge about oral hygiene with oral health

Questions	I have never been taught professionally how to brush			
	Response	No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my teeth	No	262(85.9)	0	NA
	Yes	43(14.1)	0	
I worry about the color of my teeth	No	0	0	NA
	Yes	305(100)	0	
I have noticed some white sticky deposits on my teeth	No	298(97.7)	0	NA
	Yes	7(2.3)	0	
I am bothered by the color of my gums	No	297(97.4)	0	NA

	Yes	8(2.6)	0	
I worry about having bad breath	No	295(96.7)	0	NA
	Yes	10(3.3)	0	

Assessing the relation about oral hygiene with oral health among the students of 20Kurdistan dental school

Around 1% of the ones who reported gum bleeding while tooth brushing were worry about visiting a dentist which was not significant statistically.

There was no possibility to evaluate the effect of being worry about tooth color on being worry for visiting a dentist.

From the ones who reported white patches 0.7% were worry about visiting a dentist which was not significant statistically.

0.7% of participants out of the ones who were worry about their gum color, were worry about visiting a dentist.

From the ones who reported halitosis, 0.7% were worry about visiting a dentist.

Table 8: relation about oral hygiene with oral health among the students

Questions	Response	I don't worry much about visiting the dentist		
		No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my teeth	No	260(99.2)	2(0.8)	0.565
	Yes	43(100)	0	
I worry about the color of my teeth	No	0	0	NA

	Yes	303(99.3)	2(0.7)	
I have noticed some white sticky deposits on my teeth	No	296(99.3)	2(0.7)	0.828
	Yes	7(100)	0	
I am bothered by the color of my gums	No	295(99.3)	2(0.7)	0.816
	Yes	8(100)	0	
I worry about having bad breath	No	293(99.3)	2(0.7)	0.794
	Yes	10(100)	0	

Since all the students gave a same answer to the question “I think my teeth are getting worse despite my daily brushing” we couldn’t evaluate the effect of health variables on this variable

Table 9: teeth condition and daily brushing

Questions	I think my teeth are getting worse despite my daily brushing - f			
	Response	No (%)	Yes (%)	P-valve
My gums tend to bleed when I brush my teeth	No	292(100)	0	NA
	Yes	43(100)	0	
I worry about the color of my teeth	No	0	0	NA
	Yes	305(100)	0	
I have noticed some white sticky deposits on my teeth	No	298(100)	0	NA
	Yes	7(100)	0	
I am bothered by the color of my gums	No	297(100)	0	NA

	Yes	8(100)	0	
I worry about having bad breath	No	295(100)	0	NA
	Yes	10(100)	0	

Since all the students gave a same answer to the question” I think I can clean my teeth well without using toothpaste” we couldn’t evaluate the effect of health variables on this variable

Table 10: teeth and tooth paste

Questions	I think I can clean my teeth well without using toothpaste- i			
	Response	No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my teeth	No	262(100)	0	NA
	Yes	43(100)	0	
I worry about the color of my teeth	No		0	NA
	Yes	305(100)	0	
I have noticed some white sticky deposits on my teeth	No	298(100)	0	NA
	Yes	7(100)	0	
I am bothered by the color of my gums	No	297(100)	0	NA
	Yes	8(100)	0	
I worry about having bad breath	No	295(100)	0	NA
	Yes	10(100)	0	

Among the ones who had gum bleeding while tooth brushing, 14% were worry about their teeth appearance which was significant statistically.

There was no possibility to evaluate the effect of being worry about tooth color on being worry about tooth appearance.

Among the ones who reported white patches on their teeth, 85.7% were unsatisfied about their tooth appearance which was significant statistically.

Among the ones who worry about their gum color, 75% of participants were unsatisfied about their teeth appearance which was significant statistically.

Among the ones who reported halitosis, 40% of participants were worry about their teeth appearance which was significant statistically.

Table 11: teeth and self satisfaction

Questions	I am satisfied with the appearance of my teeth- t			
	Response	No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my teeth	No	0	262(100)	<0.0001
	Yes	6(13.9)	37(86.1)	
I worry about the color of my teeth	No	0	0	NA
	Yes	6(1.9)	299(98.1)	
I have noticed some white sticky deposits on my teeth	No	0	298(100)	<0.0001
	Yes	6(85.7)	1(14.3)	
I am bothered by the color of my gums	No	0	297(100)	<0.0001

	Yes	6(75)	2(25)	
I worry about having bad breath	No	2(0.7)	293(99.3)	<0.0001
	Yes	4(40)	6(60)	

Since all the students gave a same answer to the question “It is impossible to prevent gum disease with tooth brushing alone” we couldn’t evaluate the effect of health variables on this variable

Table 12: tooth brushing as the only way to prevent gum diseases

Questions		It is impossible to prevent gum disease with tooth brushing alone -I		
	Response	No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my teeth	No	0	262(100)	NA
	Yes	0	43(100)	
I worry about the color of my teeth	No	0	0	NA
	Yes	0	305(100)	
I have noticed some white sticky deposits on my teeth	No	0	298(100)	NA
	Yes	0	7(100)	
I am bothered by the color of my gums	No	0	297(100)	NA
	Yes	0	8(100)	
I worry about having bad breath	No	0	295(100)	NA
	Yes	0	10(100)	

Evaluation the relation between oral hygiene with oral health among Kurdistan dental school students

Since all the students gave a same answer to the question"teeth brushing" there was no possibility to evaluate the effect of oral health variables on this variable.

Table 13: relation between oral hygiene with oral health

Questions	Response	I brush each of my teeth carefully		P-value
		No (%)	Yes (%)	
My gums tend to bleed when I brush my teeth	No	0	262(100)	NA
	Yes	0	43(100)	
I worry about the color of my teeth	No	0	0	NA
	Yes	0	305(100)	
I have noticed some white sticky deposits on my teeth	No	0	298(100)	NA
	Yes	0	7(100)	
I am bothered by the color of my gums	No	0	297(100)	NA
	Yes	0	8(100)	
I worry about having bad breath	No	0	295(100)	NA
	Yes	0	10(100)	

Among the ones who reported gum bleeding while tooth brushing; around 7% didn't check their teeth in the mirror after tooth brushing, which was significant statistically.

There was no possibility to evaluate the effect of being worry about tooth color on checking teeth after brushing.

Among the one who reported white patches on the tooth, 28.6% didn't check their teeth in the mirror which was significant statistically.

Among the ones who were worry about their gum color, 35.5% didn't check their teeth in the mirror which was significant statistically.

Among the ones who reported halitosis, 10% didn't check their teeth after brushing which was significant statistically.

Table 14: self checking the teeth condition

Questions	Response	I often check my teeth in a mirror after brushing		
		No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my teeth	No	0	262(100)	<0.0001
	Yes	3(6.9)	40(93.1)	
I worry about the color of my teeth	No	3(0.9)	302(99.1)	NA
	Yes	0	0	
I have noticed some white sticky deposits on my teeth	No	1(0.3)	297(99.7)	<0.0001
	Yes	2(28.6)	5(71.4)	

I am bothered by the color of my gums	No	0	297(100)	<0.0001
	Yes	3(37.5)	5(62.5)	
I worry about having bad breath	No	2(0.7)	293(99.3)	0.003
	Yes	1(10)	9(90)	

Among the ones who reported gum bleeding while tooth brushing; around 5% said they don't go to visit a dentist unless they have toothache which was not significant statistically.

There was not the possibility to evaluate the effect of being worry of tooth color on visiting a dentist.

Among the ones who reported white patches, 14.3% don't visit a dentist unless they suffer from toothache which was not significant statistically.

Among the ones who were worry about their gum color, 14.3% said they don't visit a dentist unless getting toothache which was not significant statistically.

Among the ones who reported halitosis, 20% said they don't visit a dentist unless they get toothache which was significant statistically.

Table 15: dental visit frequency

Questions	I put off going to the dentist until I have toothache			
	Response	No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my	No	15(5.7)	247(94.3)	0.776

teeth	Yes	2(4.6)	41(93.3)	
I worry about the color of my teeth	No	0	0	NA
	Yes	17(5.6)	288(94.43)	
I have noticed some white sticky deposits on my teeth	No	16(5.4)	282(94.63)	0.309
	Yes	1(14.3)	6(85.7)	
I am bothered by the color of my gums	No	16(5.4)	281(94.6)	0.387
	Yes	1(14.29)	7(87.5)	
I worry about having bad breath	No	15(5.1)	280(94.9)	0.043
	Yes	2(20)	8(80)	

There was no possibility to evaluate the relation between health variables on using hard tooth brush due to sameness of students' answers.

Table 16: attitude toward hard bristle tooth brush

Questions	Response	I use a toothbrush with hard bristles		
		No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my teeth	No	262(100)	0	NA
	Yes	43(100)	0	
I worry about the color of my teeth	No	0	0	NA
	Yes	305(100)	0	
I have noticed some white sticky deposits on my teeth	No	298(100)	0	NA
	Yes	7(100)	0	
I am bothered by the color of my gums	No	297(100)	0	NA
	Yes	8(100)	0	
I worry about having bad breath	No	295(100)	0	NA
	Yes	10(100)	0	

There was no possibility to evaluate the effect of health variables due to sameness of students' answers to the question "forceful tooth brushing"

Table 17: satisfaction of self tooth brushing

Questions		I don't feel I've brushed well unless I brush with strong strokes		
	Response	No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my teeth	No	262(100)	0	NA
	Yes	43(100)	0	
I worry about the color of my teeth	No	0	0	NA
	Yes	305(100)	0	
I have noticed some white sticky deposits on my teeth	No	298(100)	0	NA
	Yes	7(100)	0	
I am bothered by the color of my gums	No	297(100)	0	NA
	Yes	8(100)	0	
I worry about having bad breath	No	295(100)	0	NA
	Yes	10(100)	0	

Among the ones who reported gum bleeding while brushing, around 10% reported spending too much time to brush their teeth which was significant statistically.

There was no possibility to evaluate the effect of being worry of tooth color on allocating time for brushing.

Among the ones who reported white patches, 2.3% said they allocate so much time to brush their teeth which was significant statistically.

Among the ones who were worry about their gum color, around 30% stated they allocate so much time to brush their teeth which was significant statistically.

Among the ones who reported halitosis, 3% stated so much time allocating for tooth brushing which was significant statistically.

Table 18: time used for tooth brushing

Questions	I feel I sometimes take too much time to brush my teeth			
	Response	No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my teeth	No	259(98.8)	3(1.2)	<0.001
	Yes	39(90.7)	4(9.3)	
I worry about the color of my teeth	No	0	0	NA
	Yes	298(97.7)	7(2.3)	
I have noticed some white sticky deposits on my teeth	No	293(98.3)	5(1.7)	<0.0001
	Yes	5(71.4)	2(28.6)	
I am bothered by the color of my gums	No	292(98.3)	5(1.7)	<0.0001

	Yes	6(75)	2(25)	
I worry about having bad breath	No	291(98.6)	4(1.4)	<0.0001
	Yes	7(70)	3(30)	

There was no possibility to evaluate the effect of health variables due to sameness of the students' answers to question "using dental floss"

Table 19: using dental floss

Questions	Response	I do use tooth floss on regular basis		
		No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my teeth	No	262(100)	0	NA
	Yes	43(100)	0	
I worry about the color of my teeth	No	0	0	NA
	Yes	305(100)	0	
I have noticed some white sticky deposits on my teeth	No	298(100)	0	NA
	Yes	7(100)	0	
I am bothered by the color of my gums	No	297(100)	0	NA
	Yes	8(100)	0	
I worry about having bad breath	No	295(100)	0	NA
	Yes	10(100)	0	

Among the ones who reported gum bleeding while brushing, around 5% said they brush their teeth twice a day which was significant statistically.

We couldn't evaluate the effect of being worry about tooth color on tooth brushing frequency.

Among the ones who reported white patches, 10.2% stated they brush their teeth at least twice a day which was not significant statistically.

Among the ones who were worry about their gum color, 12.5% reported tooth brushing twice a day which was not significant statistically.

Among the ones who reported halitosis, 20% reported tooth brushing at least twice a day which was not significant statistically.

Table 20: tooth brushing frequency

Questions	I brush my teeth twice daily or more			
	Response	No (%)	Yes (%)	P-value
My gums tend to bleed when I brush my teeth	No	233(88.9)	29(11.1)	0.197
	Yes	41(95.3)	2(4.7)	
I worry about the color of my teeth	No	0	0	NA
	Yes	274(98.8)	31(10.2)	
I have noticed some white sticky deposits on my teeth	No	267(89.6)	31(10.4)	0.368
	Yes	7(100)	0	
I am bothered by the color of my gums	No	267(89.9)	30(10.1)	0.825
	Yes	7(87.5)	1(12.5)	
I worry about having bad breath	No	266(90.2)	29(9.8)	0.295
	Yes	8(80)	2(20)	

Discussion:

To the best of our knowledge, this is the first study examining attitudes and knowledge about oral health and their association with oral health among dental students Kurdistan dental school, Iran. The results of this study confirm previous reports suggesting the enough knowledge and motivation dental students are using more preventive measure in final year as compare to previous years.(2, 5-8) Furthermore, it gives a standard measurement of oral diseases, conditions and treatment need as a base for planning and evaluating oral health. It can be assumed that there is a significant difference in oral health condition of community and dental students, as these are the people who showed enough interest to take it as a profession which deliberately affects a behavioral change in their personality and personally accept themselves as dental personnel who do or will be motivated enough to improve themselves and their corresponding societies.

The impact of knowledge can easily see in the considerable difference in DMFT index, which reflects the professional habits and enough motivation to care for their oral health status and have their own dental problems treated. These results reflects that these students are already such motivated and can lead in making of a society with great improvements if proper revised and continuous education is implicated towards the people of different interests through different resources. Key role in implicating this change will be to form role models to which people of different societies look forward to. Through this study we accept that these students fulfill the criteria of standardizations. A step forward of this study is to educate a respective group of a different interest and evaluate the results to establish the more emphasized association between education of certain criteria and improvement in the respective direction. All the similar researches conducted in different universities of different areas of this world proved the same statement: 'constant exercise in the field of profession reflects in students 'oral hygiene habits'.(1-5, 7-9)

Conclusion

This study concludes that enough dental knowledge and motivation has an association in improving the behavior of oral self-care and thus, if proper information regarding oral health care is implicated in a society we can assure positive results. As far as these students were concerned these results have provided in immersed hope that they will keep improving their own oral hygiene and will certainly play a beneficent key role in educating their societies and will help in improving oral health care as a community.

Acknowledgement:

This research has been done by the financial support of "Vice Chancellor for research and Technology" of Kurdistan University of Medical Sciences.

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