

ORIGINAL RESEARCH

Knowledge, Attitude and Practice on Dental Health among Preclinical Dental Students in Kathmandu Valley

Lipika Shrestha¹, Sandhya Shrestha², Deepika Kapoor³, Deepanshu Garg⁴

ABSTRACT

Introduction: Dental caries is most common infectious disease in the world. Dental students should possess apt knowledge of significance of proper tooth brushing and caries susceptible diet to prevent dental caries. The aim of the study was to determine the extent of knowledge of dental caries among preclinical dental students of different colleges in Kathmandu valley as well as their attitudes and practice towards prevention of dental caries.

Methods: A structured questionnaire was self-administered to 129 second year students of which 23 were male and 106 were female from three different colleges in Kathmandu valley. The data analysis was done using SPSS version 16 and chi-square, student-t test and ANOVA was used to assess the association. $P < 0.05$ was considered statistically significant.

Result: The students had positive attitude towards annual dental checkup and impact of dental caries on the appearance of tooth. Practice of oral hygiene was satisfactory with limited use of dental floss among the students. The study showed acceptable behavior related to consumption of cariogenic foods by students. Significant differences were not observed between the dental colleges in terms of knowledge and attitude.

Conclusion: Knowledge among preclinical dental students from different colleges was very satisfactory and it was seen to influence students' attitude and practice to prevent dental caries. It is important that dental students have positive attitudes towards preventive dentistry. It is recommended to maintain the current approach on dental caries prevention knowledge, attitude and practice to the prospective dental students.

Keywords: Dental caries, oral hygiene, dental floss, preventive dentistry.

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INTRODUCTION

Dental caries is most common infectious disease in the world and its etiology is multifactorial related to plaque, sugar consumption, tooth susceptibility and time.¹ Increasing trend in dental caries in developing countries is due to various factors such as low usage of fluoridated toothpaste, irregular tooth brushing habits and nutritional shift because of easy access to refined carbohydrates.^{2,3}

Dental students should be role models to the society and they should possess apt knowledge of significance of proper tooth brushing and caries susceptible diet. They should also have positive attitude towards preventing dental caries. In other words dental students should be ambassadors of sound oral health.

Knowledge, attitude and practice of sound dental health can prevent dental caries. Most of the studies on dental caries are concentrated on prevalence of disease. Hence the objective of this study is to investigate knowledge, attitude and practice of dental health by students in different colleges of Kathmandu valley in preventing dental caries.

MATERIAL AND METHODS

A cross sectional study was conducted on 129 second year dental students. This sample was selected based

on simple random sampling on all the second year students from all the different dental colleges namely Nepal Medical College (NMC), Kantipur Dental College And Hospital (KDCH) and KIST Medical College (KIST) in Kathmandu valley from January to March 2014.

Ethical approval was taken from the Institutional Review Committee of Kantipur Dental College and Hospital, along with permission from the college principal and Head of Department of Conservative and Endodontic of respective colleges to conduct the survey.

Students were approached in the classrooms and were asked to anonymously fill out structured questionnaire. The questionnaire was pre-tested for reliability. The questionnaire consisted of 16 questions in total with 6 on knowledge, 2 on attitude and 8 on practice.

STATISTICAL ANALYSIS

The data analysis was done using SPSS version 16 and chi-square, student-t test and ANOVA was used to assess the association. P<0.05 was considered statistically significant.

RESULT

A total of 129 students comprising of 17.8% male participants and 82.2% female participants took part in the survey. The demographic background of the participants is presented in Table 1.

Dental health knowledge among the students from different colleges was good, above 90% of students were aware of natural teeth being better than artificial teeth, brushing every morning and night is very important to prevent dental caries, excessive consumption of sweets, chocolate, junk food and soft drinks can cause tooth decay and fluoride is useful in prevention of dental caries. Response to question related to importance of annual dental checkup indicated moderate knowledge, with 69.8% of the students acknowledging the importance

of dental checkup. Only 38.8% of the students showed awareness that dental floss can prevent proximal caries.

	Number	Percentage
Gender		
Male	23	17.8%
Female	106	82.2%
College		
KDCH	56	43.41%
NMC	34	26.35%
KIST	39	30.23%

Table-1: Demographic background

	True	True (%)	False	False (%)
Natural teeth are better than artificial teeth				
	126	97.7	3	2.3
KDCH	54	96.4	2	3.6
NMC	33	97.1	1	2.9
KIST	39	100.0	0	0.0
Brushing twice a day (morning and night) are very important to prevent dental caries				
	123	95.3	6	4.7
KDCH	55	98.2	1	1.8
NMC	32	94.1	2	5.9
KIST	36	92.3	3	7.7
Excessive consumption of sweets, chocolate, junk food, soft drinks can cause tooth decay				
	120	93.0	9	7.0
KDCH	50	89.3	6	10.7
NMC	33	97.1	1	2.9
KIST	37	94.9	2	5.1
Fluoride helps to prevent tooth decay				
	127	98.4	2	1.6
KDCH	56	100.0	0	0.0
NMC	33	97.1	1	2.9
KIST	38	97.4	1	2.6
Dental floss is necessary to prevent proximal caries				
	50	38.8	79	61.2
KDCH	27	48.2	29	51.8
NMC	17	50.0	17	50.0
KIST	6	15.4	33	84.6
Annual dental checkup is necessary				
	90	69.8	39	30.2
KDCH	34	60.7	22	39.3
NMC	21	61.8	13	38.2
KIST	35	89.7	4	10.26

Table-2: Knowledge of students according to colleges

	N	Mean	SD	F	P
KDCH	56	4.93	0.870886	0.073	.930
KIST	39	4.90	0.640513		
NMC	34	4.97	0.904041		
Total	129	4.93	0.811885		

Table-3: Relationship between knowledge score and colleges

	Total	Total %	KDCH	KDCH %	NMC	NMC %	KIST	KIST %	P
Do you think decay makes tooth look bad									
Yes	125	96.90	53	94.64	33	97.06	39	100	0.33
No	4	3.10	3	5.36	1	2.94	0	0	
Dental visit in last 1 year									
Yes	72	55.81	26	46.43	18	52.94	28	71.79	0.046
No	57	44.19	30	53.57	16	47.06	11	28.21	

Table-4: Attitude of students according to colleges

	Total	Total %	KDCH	KDCH %	NMC	NMC %	KIST	KIST %	P
Frequency of tooth brushing									
ONCE	23	17.83	12	21.43	1	2.94	10	25.64	0.31
Twice	101	78.29	43	76.79	29	85.29	29	74.36	
thrice	4	3.10	1	1.79	3	8.82	0	0	
irregular	1	0.78	0	0.00	1	2.94	0	0	
Time of tooth brushing.									
Morning only	22	16.92	12	21.43	3	8.57	7	17.95	0.12
morning and night	103	79.23	42	75	29	82.86	32	82.05	
After every meal.	5	3.85	2	3.57	3	8.57	0	0	
Method of tooth brushing.									
Horizontal strokes	28	20.44	23	35.94	3	8.82	2	5.13	0.03
Up and down strokes	86	62.77	34	53.13	24	70.59	28	71.79	
No systemic method	23	16.79	7	10.94	7	20.59	9	23.08	
Time spent on tooth brushing.									
<3	40	31.01	19	33.93	7	20.59	14	35.90	0.3
>=3	89	68.99	37	66.07	27	79.41	25	64.10	
Frequency of change of tooth brush.									
1-3 months	90	69.77	40	71.43	18	52.94	32	82.05	0.22
4-6 months	33	25.58	14	25	13	38.24	6	15.38	
7-12 months	2	1.55	1	1.79	1	2.94	0	0	
After one year	0	0	0	0	0	0	0	0	
Do not know	4	3.10	1	1.79	2	5.88	1	2.56	
Material used for tooth brushing.									
tooth paste	129	100	56	100	34	100	39	100	NA
tooth powder	0		0		0		0		
Type of tooth paste.									
Fluoridated	126	97.67	56	100	32	94.12	38	97.44	0.19
Non fluoridated.	3	2.33	0	0	2	5.88	1	2.56	
Use of dental floss.									
Yes	36	27.91	21	37.5	11	32.35	4	10.26	0.011
No	93	72.09	35	62.5	23	67.65	35	89.74	

Consumption of sweets									
1-4 times in a day	39	30.23	11	19.64	18	52.94	10	25.64	0.032
2-4 times in a week	61	47.29	28	50	11	32.35	22	56.41	
>4 times in a week	15	11.63	7	12.5	3	8.82	5	12.82	
2-4 times a month	12	9	9	16	1	2.94	2	5.13	
Never	2	1.55	1	1.79	1	2.94	0	0	
Consumption of junk food									
1-4 times in a day	44	34.11	17	30.36	17	50.00	10	25.64	0.24
2-4 times in a week	59	45.74	24	42.86	13	38.24	22	56.41	
>4 times in a week	16	12.40	9	16.07	2	5.88	5	12.82	
2-4 times a month	10	7.75	6	10.71	2	5.88	2	5.13	
Consumption of soft drinks									
1-4 times in a day	20	15.50	6	10.71	11	32.35	3	7.69	0.02
2-4 times in a week	43	33.33	20	35.71	10	29.41	13	33.33	
>4 times in a week	5	3.88	3	5.36	2	5.88	0	0	
2-4 times a month	56	43.41	27	48.21	7	20.59	22	56.41	
Never	5	3.88	0	0.00	4	11.76	1	2.56	
Mouth rinsing habit.									
Rinse after every meal	112	86.82	49	87.5	28	82.35	35	89.74	0.33
Rinse with mouth wash	8	6.20	3	5.36	2	5.88	3	7.69	
Rarely rinse after meal	9	6.98	4	7.14	4	11.76	1	2.56	

Table-5: Practice of students according to colleges

Tables 4 and 5 depict the attitude and practice towards dental health according to colleges. Almost all (96.9%) of the students showed positive attitude towards dental health knowledge related to impact of caries on appearance of teeth with no significant difference between the colleges ($p > 0.05$). 55.8% of the students stated that they visit dentist at least once in a year. There was significant difference in attitude of students from different college related to annual dental visit where less than 50% of students from KDCH made annual dental visit in comparison to other colleges ($p < 0.05$).

The study showed 79.2% of the students brushed their teeth every morning and night. In response to question related to brushing methods 62.7% of the students were found to practice up and down method of brushing. Of the total students 68.9% spent 3 or more minutes on brushing. 69.7% of the students changed their toothbrush every 2 to 3 months. It was noted that all the students used toothbrush and toothpaste to brush their teeth with a high number of the students using fluoridated toothpaste.

Significant differences were not observed in tooth brushing behavior among students of different colleges. However, there were variations in tooth brushing methods and use of dental floss ($p < 0.05$). With re-

gard to tooth brushing methods only 53.1% students of KDCH practiced up and down tooth brushing method in comparison to 71.7% students of KIST Medical College and 70.5% students of NMC. Similarly, 10.2% students of KIST Medical College used dental floss in comparison to 37.5% students of KDCH and 32.3% students of NMC.

When studying the frequency of sweets, chocolate, junk food and soft drinks consumption acceptable behavior was observed.

Nine in ten (86.8%) of students answered that they always rinse mouth after every meal, while 6.2% of students rinse with mouth wash and 6.9% rarely rinse after meal. No significant difference in rinsing habit among colleges was observed ($p > 0.05$).

DISCUSSION

This study conferred a general overview of dental health knowledge, attitude and practice among 2nd year dental students from different colleges of Kathmandu valley. The study cannot be exactly compared with other studies, but meticulous reviews can be obtained from other studies.

Motivation with healthful knowledge influences atti-

tude and practice and thus reduces the occurrence of disease⁴ In our study, students were expected to have sound dental health knowledge. Their knowledge can be helpful in educating their patients and community in their future professional career as a dentist. Fortunately, it was worth noticing that on most of the aspects (questions 1, 2, 3 and 4), knowledge of dental health among students from different colleges was excellent. Satisfactory knowledge was observed for question 6 related to annual dental visit to maintain good dental health. Only one question related to dental floss on prevention of proximal caries was incorrectly answered by most of the students. It is very important for a dental student to know that proximal areas of tooth are difficult to reach by bristles of toothbrush and lack of cleanliness of these areas favors plaque retention that can lead to formation of dental caries.⁵ Therefore proper use of dental floss is recommended to clean the considerable area on proximal surfaces of teeth. Previous study has shown decrease of 52 - 55% of new proximal caries by frequent use of dental floss.⁶ The lack of knowledge on role of dental floss to prevent proximal caries could be attributed to limited teaching hours on dental floss in second year. Significant difference on knowledge was not observed among students of different colleges signifying equally good teaching standard in all colleges. Considering only knowledge is not enough to encourage adoption of healthy behavior,⁷ We further evaluated participants' attitude towards dental health. Concerning the attitude toward dental health, students possessed positive attitude towards negative effect of dental caries on appearance of tooth. Number of students who visited dentist in last one year was above 55%.

In this study, commonly used oral hygiene aids were toothbrush and toothpaste which is similar to other studies.⁸⁻¹² Almost all students were reported to use fluoridated toothpaste signifying possession of sound knowledge of fluoride and its impact on prevention of dental caries. Other than tooth brushing, majority of students were adopting rinsing habit after every meal in order to prevent dental caries and some of students were even using mouth wash to rinse. However, dental floss was used by low percentage of students (27.9%) in this study, which is almost similar to previous study.^{12,13} As the students stated that excessive consumption of sweets, chocolate, junk food and soft drinks causes tooth decay; frequency of consumption of these carcinogenic foods was less among the students. Tooth brushing frequency of twice a day (morning and night) was more common; above 78% of the stu-

dents were brushing as generally recommended. Tooth brushing twice-a-day seems to be an established practice in several industrialized countries such as the United Kingdom,¹⁴ Italy,¹⁵ Sweden,¹⁶ and Norway,¹⁷ while several other countries, including Turkey,¹⁸ Lebanon,¹⁹ Saudi Arabia²⁰ and Kuwait^{21,22} are still far from being realizing this goal.

Almost 70% of students were found to brush their teeth for 3 or more minutes. Reports of previous study have concluded that tooth brushing duration plays important role on plaque removal efficacy.²³ Nevertheless, scientific investigations regarding the ideal brushing time is problematic.²⁴ Meanwhile, it is considered that increased brushing time is more helpful in removal higher amount of plaque which is one the factors for causing dental caries. Former study has recommended 3 minutes as ideal brushing time for manual brushing.²⁴ More than half (55.8%) of the students had visited a dentist during the last 12 months, which is higher than that found in the survey of the total Kuwaiti population (39%).²² The findings of the study shows knowledge about the preventive behaviors was realized into positive preventive practices as opposed to a similar study done in India.²⁵

CONCLUSION

Besides the positive dental health knowledge, attitude and practice observed among the students, preventive behavior could still be improved by providing meaningful learning experience on modern methods like flossing.

As dental students are future dental health providers, it is important to observe and investigate their awareness and practice associated with oral hygiene behavior. It is important that dental students have positive attitudes towards preventive dentistry.

Limitation:

Gender differences in knowledge, attitude and practice related to dental health was not assessed due to lower number of male students in this study.

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