Original Research Article

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Assessment of knowledge and practice of oral health among nursing and pharmacy students

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ABSTRACT

Background: Oral health is an integral part of general health and wellbeing of an individual at every stage of life. Good oral health knowledge is a requisite criterion for good oral health related behavior. So, this study was done to assess knowledge and practice about oral health and whether there is any difference of knowledge and practice about it among nursing and pharmacy students.

Methods: A cross sectional study was done among 110 nursing and 90 pharmacy students in June 2019 by stratified random sampling method using a self-administered predesigned structured questionnaire. Descriptive statistics and chi-square test were applied using SPSS software.

Results: Knowledge and practice of pharmacy students was found to be better than nursing students. **Conclusions:** Knowledge and practice of the students should be improved through health education.

Keywords: Oral health, Oral cancer, Dental decay

INTRODUCTION

WHO defines oral health as "a state of being free from chronic mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial well-being." A beautiful smile, fresh breath, white teeth and the ability to chew are some of indicators of good oral health. Oral health-related disorders comprise a global challenge and are caused by variety of factors ranging from individual factors to oral health-related literacy and behaviour, social and familial factors, economic and environmental factors. So, this study was conducted to study socio demographic profile of the students, to assess knowledge

and practices of pharmacy and nursing students about oral health

and to assess whether there is any difference of knowledge and practices among nursing and pharmacy students in relation to oral health

METHODS

Study area

Institute of Pharmacy and BSc. College of Nursing, Assam Medical College & Hospital, Dibrugarh

Type of study

Cross sectional study.

Study population

1st & 2nd year students of Institute of Pharmacy and 1st, 2nd, 3rd & 4th year students of BSc. College of Nursing, Assam Medical College & Hospital.

Study period

June 2019

Sample size calculation

Assuming that 50 percent of students had adequate knowledge about oral health, with an allowable error of 15% and 95% confidence interval, using formula N=4pq/12 minimum sample size of 178 was calculated. Further, considering a 10 % non-response rate, required sample size came out to be 196, which was rounded off to 200.

Inclusion criteria

Students present on the day of study and willing to participate in the study.

Exclusion criteria

Students absent on the day of study.

Sampling technique

Stratified random sampling method with proportion allocation was used to select the students. There were 180 pharmacy students (90 students each in 1st & 2nd year) and 218 BSc nursing students (56 students each in 1st & 3nd year, 53 students each in 2nd & 4th year) enrolled in the college which constituted the sampling frame. So, a total of 90 students (45 students each from 1st & 2nd year) from Institute of Pharmacy and 110 students (28 students each from 1st & 3rd year, 27 students each from 2nd & 4th year) from BSc. College of Nursing were selected randomly from the list of attendance register of the students.

Data collection tools

A pre designed structured questionnaire in English containing close ended questions about oral health knowledge and practices and socio-demographic profile of the students. Knowledge was assessed using 16 questions which included "yes" or "no" responses and Practice using 14 questions which included multiple choice and "yes" or "no" responses.

Data collection method

Before the start of the study, permission was taken from the Vice Principal, Institute of Pharmacy and Principal, BSc. College of Nursing, AMCH. The institutes were visited according to a prefixed day wise schedule and

students were approached in their classrooms without disturbing their academic classes. Purpose of the study was explained to the students and after obtaining informed verbal consent from the students, they were given the questionnaire which was self-administered by each student. Knowledge and practice were assessed using a scoring system. For knowledge section, each correct answer/yes was given a score of 1 and every wrong answer /no/don't know was given a score of 0 with maximum score of 16 and minimum score of 0. Total knowledge score was calculated for each student. Out of total questions regarding knowledge, score more than 75% (12-16 points) was considered as good, more than 50% (8-11 points) average and below 50% (0-7 points) poor. For practice section score of 1 was given for good practice and 0 for bad practice on selected questions with maximum score of 10 and minimum score of 0. Total practice score was calculated for each student with score between 6-10 points considered as following good practice and score between 0-5 points considered as bad practice.

Data analysis

Data was analyzed using SPSS version 20.0 software. Statistical analysis was done by percentage and chi square test. A p value <0.05 was taken to be statistically significant.

Operational definition good practice

Frequency of brushing teeth twice or more per day, mode of brushing teeth with toothbrush and toothpaste, brushing time both in the morning and at the bedtime, brushing duration two or more than two minutes, using soft toothbrush and fluoridated toothpaste, brushing looking at mirror, rinsing mouth with water after meal, changing toothbrush in 3 to 6 months and visit to dentist once or more in a year.

RESULTS

The mean age of the students was 20.8 ± 1.4 years which ranged from 18 to 26 years (nursing students 21 ± 1.4 years and pharmacy students 20.7 ± 1.4 years.) Majority (80.9%) of nursing students belonged to Hindu religion and most of the (46.7%) pharmacy students belonged to Muslim religion.

Almost all (99.1% and 96.7%) nursing and pharmacy students were aware that oral health is as important as general health. (p>0.05) All (100.0%) pharmacy and majority (90.9%) of nursing students were aware about dental caries. (p<0.05) Majority (84.5% & 82.2%) of nursing and pharmacy students were aware that consuming sugary food causes dental caries. (p>0.05) Most (61.8% & 60 %) of nursing and pharmacy students knew that consuming soft drinks causes dental caries. (p>0.05) Majority (93.6% & 91.1%) of nursing and pharmacy students were aware that daily brushing can

prevent dental caries. (p>0.05) Majority (85.6%) of pharmacy and (62.7%) of nursing students knew that brushing with fluoridated toothpaste can prevent dental caries. (p<0.05) (Table 1).

Table 1: Distribution of students according to their knowledge about oral health.

	Nursing students (n=110)	Pharmacy students (n=90)	Total (n=200)	P value	
	No (%)	No (%)	No (%)	value	
Oral hea	alth is import	ant as genera	al health		
Yes	109 (99.1)	87(96.7)	196 (98.0)		
No	1(0.9)	1(1.1)	2(1.0)	0.297	
Don't know	0(0.0)	2(2.2)	2(1.0)	0.287	
Know al	out dental c	aries			
Yes	100 (90.9)	90(100.0)	190 (95.0)	0.003	
No	10(9.1)	0(0.0)	10(5.0)	0.003	
Consum	ing sugary fo	ood causes de	ntal caries		
Yes	93(84.5)	74(82.2)	167 (83.5)		
No	14(12.7)	11(12.2)	25(12.5)	0.596	
Don't know	3(2.7)	5(5.6)	8(4.0)		
Consum	ing soft drin	ks causes den	tal caries		
Yes	68(61.8)	54(60.0)	122 (61.0)		
No	36(32.7)	31(34.4)	67(38.5)	0.965	
Don't know	6(5.5)	5(5.6)	11(6.5)		
Daily brushing prevents dental caries					
Yes	103 (93.6)	82 (91.1)	185 (92.5)	_	
No	6(5.4)	7(7.8)	13(6.5)		
Don't know	1(0.9)	1(1.1)	2(1.0)	0.792	
Brushing with fluoridated toothpaste prevent dental caries					
Yes	69(62.7)	77(85.6)	146 (73.0)	_	
No	28(25.5)	9(10.0)	37(18.5)	0.001	
Don't know	13(11.8)	4(4.4)	17(8.5)	_	

Almost all nursing students (98.2%) knew that Smoking/chewing tobacco is harmful for oral health compared to pharmacy students (93.3%). Majority (80.0% & 86.7%) of nursing & pharmacy students were aware about the causes of gum bleeding. Again majority (71.1%) of pharmacy students were aware that daily brushing can prevent gum bleeding whereas only (58.2%) of nursing students were aware about the fact. Majority (78.2% & 78.9%) of nursing and pharmacy students were

aware about the causes of oral cancer but more than half (53.6% & 57.8%) of nursing and pharmacy students were not aware about the treatment of oral cancer. Majority (86.4% & 92.2%) of nursing and pharmacy students knew that decayed teeth can affect teeth appearance. Majority (90% & 84.8%) of nursing and pharmacy students knew that regular visit to dentist keeps the teeth in a healthy state. Only knowledge of the students about harmful effect of tobacco on oral health was found to be statistically significant (Table 2).

Table 2: Distribution of students according to their knowledge about oral health.

	Nursing students (n=110) No (%)	Pharmac y students (n=90) No (%)	Total No (%)	P value		
Smokir	ng/chewing to	bacco is har	mful for oral l	nealth		
Yes	108 (98.2)	82(91.1)	190 (95.0)			
No	1(0.9)	08(8.9)	9(4.5)	0.0176		
Don't know	1(0.9)	0(0.0)	1(0.5)	0.0176		
Causes	of gum bleed	ding				
Yes	88(80.0)	78(86.7)	166 (83.0)	0.2110		
No	22(20.0)	12(13.3)	34(17.0)	0.2118		
Daily b	-	prevent gum				
Yes	64(58.2)	64(71.1)	128 (64.0)			
No	42(38.2)	24(26.7)	66(33.0)	0.1642		
Don't know	4(3.6)	2(2.2)	6(3.0)	0.1643		
Causes	of oral cance	er				
Yes	86(78.2)	71(78.9)	157 (78.5)	0.5577		
No	24(21.8)	19(21.1)	43(21.5)	0.5577		
Treatm	ent of oralca	ncer				
Yes	51(46.4)	38(42.2)	89(44.5)	0.5577		
No	59(53.6)	52(57.8)	111 (55.5)	0.55//		
Decayed teeth can affect teeth appeareance						
Yes	95(86.4)	83(92.2)	178(89.0)			
No	6(5.4)	2(2.2)	8(4.0)	0.3731		
Don't know	9(8.2)	5(5.5)	14(7.0)			
	Regular dental visit keeps teeth in a healthy state					
Yes	99(90.0)	76(84.4)	175 (87.5)	0.3491		
No	9(8.1)	13(14.4)	22(11.0)			
Don't know	2(1.8)	1(1.2)	3(1.5)			

All (100%) nursing students and almost all (96.7%) pharmacy students use toothpaste & toothbrush for brushing their teeth. Majority (85.6%) of pharmacy students had a habit of brushing teeth twice daily

compared to (64.6%) of nursing students. (p<0.05) Majority (91.1%) of pharmacy students brush their teeth both in the morning and before going to bed whereas only (66.4%) of nursing students do so. (p<0.05) Only (32.7% & 38.9%) of nursing and pharmacy students had an habit of brushing teeth for two minutes. Only half (50.9% & 60%) of nursing and pharmacy students brush their teeth with soft toothbrush. More than half (58.9%) of pharmacy students uses fluoridated toothpaste whereas only (29.1%) of nursing students do so for brushing. (p<0.05) (Table 3).

Most (62.7% & 71.1%) of nursing and pharmacy students have the habit of brushing their teeth in front of mirror.

Majority (86.3% & 87.7%) of nursing and pharmacy students rinse their mouth after eating. Majority (94.5% & 94.4%) of nursing and pharmacy students changes their toothbrush and among them most (53.8%) of nursing and majority (73%) of pharmacy students do so in less than 3 months. (p<0.05) Most (68.2% & 66.7%) of nursing and pharmacy students visit dentist only when necessary and among them (70.0% & 73.8%) of nursing and pharmacy students do so only when there is dental pain. Only (18.2% & 11.1%) of nursing and pharmacy students had never visited a dentist due to lack of awareness (45% & 80%). (Table 4).

Table 3: Distribution of students according to their practices in relation to oral health.

No (%) No (%) No (%) No (%) No (%)		Nursing students	Pharmacy students	Total	P value
Coothpaste & tooth-brush 110 (100.0) 87 (96.7) 197 (98.5) Cooth-powder & toothbrush 0 (0.0) 2 (2.2) 2 (1.0) 0.155 Coothpaste & finger 0 (0.0) 1 (1.1) 1 (0.5) 0.155 Crequency of brushing teeth 37 (33.6) 8 (8.9) 45 (22.5) 0.000 Chrice 71 (64.6) 77 (85.6) 148 (74.0) 0.000 Chrice 2 (1.8) 5 (4.5) 7 (3.5) Chrice 2 (1.8) 5 (4.5) 7 (3.5) Chrice 37 (33.6) 8 (8.9) 45 (22.5) Chrice 2 (1.8) 5 (4.5) 7 (3.5) Chrice 2 (1.8) 5 (4.5) 7 (3.5) Chrice 37 (33.6) 8 (8.9) 45 (22.5) Chrice 73 (66.4) 82 (91.1) 155 (77.5) Chrice 73 (66.4) 82 (91.1) 155 (77.5) Chrice 74 (4.5) 11 (12.2) 38 (19.0) Chrice 36 (32.7) 35 (38.9) 71 (35.5) 0.1160 Chrice		No (%)	No (%)	No (%)	
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Con't remember 19 (17.3) 13 (14.4) 32 (16.0) Sype of toothbrush used 56 (50.9) 54 (60.0) 110 (55.0) Hard 1 (1) 2 (2.3) 3 (1.5) Medium 46 (41.8) 28 (31.1) 74 (37.0) 0.414 Hever noticed 7 (6.3) 6 (6.6) 13 (6.5) 0.414 Sype of toothpaste used Huoridated 32(29.1) 53(58.9) 85 (42.5) Hon fluoridated 16(14.6) 7(7.8) 23 (11.5) 0.000	Two minute	36 (32.7)	35 (38.9)	71 (35.5)	0.1160
Type of toothbrush used oft 56 (50.9) 54 (60.0) 110 (55.0) Hard 1 (1) 2 (2.3) 3 (1.5) Medium 46 (41.8) 28 (31.1) 74 (37.0) 0.414 Rever noticed 7 (6.3) 6 (6.6) 13 (6.5) 0.414 Sype of toothpaste used Fluoridated 32(29.1) 53(58.9) 85 (42.5) Hon fluoridated 16(14.6) 7(7.8) 23 (11.5) 0.000	More than two minute	25 (22.7)	30 (33.3)	55 (27.5)	
oft 56 (50.9) 54 (60.0) 110 (55.0) Hard 1 (1) 2 (2.3) 3 (1.5) Medium 46 (41.8) 28 (31.1) 74 (37.0) 0.414 Rever noticed 7 (6.3) 6 (6.6) 13 (6.5) 0.414 Sype of toothpaste used Fluoridated 32(29.1) 53(58.9) 85 (42.5) Hon fluoridated 16(14.6) 7(7.8) 23 (11.5) 0.000	Don't remember	19 (17.3)	13 (14.4)	32 (16.0)	
Hard 1 (1) 2 (2.3) 3 (1.5) Medium 46 (41.8) 28 (31.1) 74 (37.0) Never noticed 7 (6.3) 6 (6.6) 13 (6.5) Sype of toothpaste used Fluoridated 32(29.1) 53(58.9) 85 (42.5) Non fluoridated 16(14.6) 7(7.8) 23 (11.5) 0.000	Type of toothbrush used				
Medium 46 (41.8) 28 (31.1) 74 (37.0) 0.414 Never noticed 7 (6.3) 6 (6.6) 13 (6.5) Type of toothpaste used Supering the state of the	Soft	56 (50.9)	54 (60.0)	110 (55.0)	
Very noticed 7 (6.3) 6 (6.6) 13 (6.5) 13 (6.5) 13 (6.5) 13 (6.5) 13 (6.5) 14 (14.6) 13 (6.5) 15 (14.6) 13 (6.5) 15 (14.6) 13 (6.5) 15 (14.6) 13 (6.5) 15 (14.6) 13 (6.5) 15 (14.6) 13 (6.5) 15 (14.6) 13 (6.5) 15 (14.6) 13 (6.5) 15 (14.6) 13 (6.5) 16 (14.6) 13 (6.5) 17 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.5) 18 (14.6) 13 (6.6) 18 (14.6) 13 (6.6) 18 (14.6) 13 (6.6) 18 (14.6) 13 (6.6) 18 (14	Hard	1(1)	2 (2.3)	3 (1.5)	
Never noticed 7 (6.3) 6 (6.6) 13 (6.5) Type of toothpaste used Fluoridated 32(29.1) 53(58.9) 85 (42.5) Fluoridated 16(14.6) 7(7.8) 23 (11.5) 0.000	Medium	46 (41.8)	28 (31.1)	74 (37.0)	0.414
Solution of the distribution	Never noticed	7 (6.3)	6 (6.6)	13 (6.5)	0.414
Von fluoridated 16(14.6) 7(7.8) 23 (11.5) 0.000	Type of toothpaste used	·			
	Fluoridated	32(29.1)	53(58.9)	85 (42.5)	
200n't know 62(56.3) 30(33.3) 92 (46.0)	Non fluoridated	16(14.6)	7(7.8)	23 (11.5)	0.000
52(50.6)	Don't know	62(56.3)	30(33.3)	92 (46.0)	

Table 4: Distribution of students according to their practices in relation to oral health.

	Nursing students (n=110) No (%)	Pharmacy students (n=90) No (%)	Total (n=200) No (%)	P value			
Brushing in front of mirror	Brushing in front of mirror						
Yes	69 (62.7)	64 (71.1)	133 (66.5)	0.211			
No	41 (37.3)	26 (28.9)	67 (33.5)	0.211			
Rinsing of mouth after eating							
Yes	95 (86.3)	79 (87.7)	174 (87.0)	0.767			
No	15 (13.7)	11 (12.3)	26 (13.0)				

Continued.

	Nursing students (n=110)	Pharmacy students (n=90)	Total (n=200)	P value	
	No (%)	No (%)	No (%)		
Changes toothbrush				_	
Yes	104 (94.5)	85 (94.4)	189 (94.5)	0.975	
No	6 (5.5)	5 (5.6)	11 (5.5)	0.973	
Time interval of changing to	othbrush	•			
<3 months	56 (53.8)	62 (73.0)	118 (62.4)		
3-6 months	34 (32.7)	21 (24.7)	55 (29.1)	0.005	
>6 months	14 (13.5)	2 (2.3)	16 (8.5)		
Frequency of visiting dentist		•			
Once in a year	12 (10.9)	11 (12.2)	23 (11.5)		
Two times a year	3 (2.7)	9 (10.0)	12 (6.0)	0.106	
Only when necessary	75 (68.2)	60 (66.7)	135 (67.5)	0.100	
Not at all	20 (18.2)	10 (11.1)	30 (15.0)		
Reasons for visiting dentist					
Dental pain	63 (70.0)	59 (73.8)	122 (71.8)		
General/routine checkup	18 (20.0)	19 (23.8)	37 (21.8)	0.132	
Gum bleeding	9 (10.0)	2 (2.5)	11 (6.5)		
Reasons for not visiting dentist					
Fear	1 (5.0)	0 (0.0)	1 (3.3)		
Expensive	3 (15.0)	0 (0.0)	3 (10.0)	0.267	
Lack of awareness	9 (45.0)	8 (80.0)	17 (56.7)	0.207	
Lack of time	7 (35.0)	2 (20.0)	9 (30.0)		

Table 5: Table showing distribution of students according to their knowledge and practice score.

Variables	Nursing student (n=110) N (%)	Pharmacy student (n=90) N (%)	Total (n=200) N (%)			
Knowledge score						
Poor	3 (2.7)	0 (0.0)	3 (1.5)			
Average	32 (29.1)	18 (20.0)	50 (25.0)			
Good	75 (68.2)	72 (80.0)	147 (73.5)			
Practice score						
Poor	55 (50.0)	14 (15.5)	69 (34.5)			
Good	55 (50.0)	76 (84.5)	131 (65.5)			

Majority (80%) of pharmacy students have good knowledge about oral health than nursing students (68.2%). Majority (84.5%) of the pharmacy students were found to be following good oral health related practices than nursing students (50%) (Table 5).

DISCUSSION

In our study, 96.7 % of pharmacy students knew oral health is as important as general health which was better than study by AL-Jawfi et al (79%).⁴ In our study, majority (80%) of pharmacy students were aware that consuming sugary food causes dental caries which was better than study by AL-Jawfi et al (65%).⁴ In our study, more than half (60%) pharmacy students knew that consuming soft drinks causes dental caries which is almost similar to study by AL-Jawfi et al (55%).⁴

In our study, (85.6%) of pharmacy students knew that brushing with fluoridated toothpaste can prevent dental caries which was better than study by AL-Jawfi et al (78%).⁴

In our study, (85.6%) of pharmacy students had an habit of brushing teeth twice daily which was better than study by AL-Jawfi et al (78%).⁴

In our study, (84.8%) of pharmacy students knew that regular visit to dentist keeps the teeth in a healthy state which was better than study by Preethi et al (47.8%).⁵ In our study, (58.9%) of the pharmacy students uses fluoridated toothpaste for brushing which was better than study by Preethi et al (21.5%).⁵ In our study, (87.7%) of pharmacy students rinse their mouth after eating which is better than study by Preethi et al (44.8%).⁵

In our study, 66.7% of pharmacy students visit dentist only when necessary which is contrast to study by Preethi et al (78.9%).⁵ Again, (11.1%) of pharmacy students had never visited a dentist which is better than study by Preethi et al (58.9%).⁵

In our study, (96.7%) pharmacy students use toothpaste & toothbrush for brushing their teeth which is almost similar to study by Bashiru et al.⁶

In our study, (64.6%) of nursing students brush twice daily which is contrary to study by Bhattarai R et al (78.9%).⁷

In our study, all nursing students use toothpaste and toothbrush for brushing which is similar to study by Bhattarai et al (98 %).⁷

In our study, (70%) of nursing students visit dentist on dental pain which is better than study by Bhattarai et al (58.6 %).

CONCLUSION

The current study observed that pharmacy students are having better oral health related knowledge and following good oral health related practices than nursing students. So, Oral health awareness among nursing students should be increased through oral health education and awareness programs.

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