

Oral health related knowledge, attitude and practice among nursing students of Kathmandu – a pilot study

Rosina Bhattarai, Sunita Khanal, G. Nagaraja Rao, Sujita Shrestha

Department of Community Dentistry, Kantipur Dental College, Dhapasi, Kathmandu, Nepal

Correspondence

Dr. Rosina Bhattarai
Kantipur Dental College,
Dhapasi, Kathmandu, Nepal
Email:
rosinabhattarai@gmail.com

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ABSTRACT

Background & Objectives: The objective of the study was to assess the oral health related knowledge, attitude and practices of bachelors level nursing college students in Kathmandu district. **Materials & Methods:** Data was collected using pre-designed questionnaire among 251 nursing students of three colleges comprising of 43 closed ended questions adopted from various studies. Twenty five questions related to knowledge, 8 questions of attitude and 10 of practice were asked. Prior to conducting the study permission was obtained from institutional review board of Kantipur Dental College and from the Campus Chief of the nursing colleges. **Results:** Majority of respondents had good oral health knowledge including functions of teeth (94.0%), mineral important for tooth formation (98.4%), vitamin necessary for growth and development of teeth (91.2%), dental caries (90.4%), gingival diseases (96.4%) and treatment for malocclusion (90.8%). Almost half of the participants did not know about treatment options for gum disease, consequences of irregular teeth and causes of oral cancer. Majority of the participants showed good attitudes towards oral health with 99.2% giving equal importance to their teeth like their general health. 78.9% of the participants brush twice daily with 98% using toothbrush and toothpaste among whom 65.7% uses soft bristle toothbrushes. **Conclusion:** It was seen that oral health related knowledge, attitude and practice of nursing students was adequate but further improvements can be encouraged and facilitated.

Key words: Attitude, knowledge, nursing students, practice

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INTRODUCTION

Health is the state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.¹ Health is a common theme in most cultures with remarkable emphasis on the fact that health is a fundamental human right and a worldwide social goal necessary for an improved quality of life. Oral health is the standard of health of the oral and related tissues which enables individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general well-being.² There have been rapid changes in the pattern of oral diseases during the past decade.^{3,4}

One of the primary concerns of dental health care professionals is to impart positive oral health knowledge and behavior in the society and creating

an environment conducive to shift the responsibility of public health from the shoulders of health professionals to the people's own hands. Students related to health franchise play an important role in oral health care and promotion. Nursing personnel also play a vital role in health promotion, preventive information dissemination and therefore it is important that their oral health knowledge be good so that the community can also get benefited eventually. Therefore, the aim of this study was to assess the oral health knowledge, attitude and practice (KAP) of nursing students of Kathmandu.

MATERIALS AND METHODS

Study design: A cross-sectional study was carried out using questionnaire adopted from studies by Senthil et al⁵ and Amith HV et al⁶.

Ethical consideration and consent: Ethical consent was obtained from Institutional Review Board of Kantipur Dental College, Teaching Hospital and Research Centre. Prior permissions were taken from the Campus Chief of respective colleges. The participation in the study was voluntary, informed consent was obtained and all participants remained anonymous.

Collection of data: Data was collected from three different nursing colleges from Kathmandu having Bachelor's level nursing program in their curriculum. The students of Certificate level and Masters level nursing program were excluded. Colleges from where data was collected were Nobel College, School of Nursing, Sinamangal, Kathmandu Model Hospital School of Nursing, Swyambhu and Yeti Health Sciences Academy, Maharajgunj which were randomly selected from available list of colleges.

STATISTICAL ANALYSIS

The results were analyzed using Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics was obtained and frequency distribution, mean, range and standard deviation was calculated.

RESULTS

A total of 251 respondents, all females, participated in the study with age range of 17 to 31 years and mean age of 20.96. Out of total respondents, 74.5% i.e. 187 were B.Sc Nursing students while 25.5% i.e. 64 were BN students.

Table 1 show that out of 251 participants 94% had knowledge on functions of teeth, 98.4% on mineral important for tooth formation, 91.2% on vitamin important for growth and development of bones and teeth. Regarding chronology of tooth development 80.1% had knowledge on time of first tooth eruption, 54.6% on age of first permanent tooth eruption and 63.7% on number of deciduous teeth.

Table 2 shows knowledge about the most prevalent oral disease i.e. dental caries 70.1% knew what dental caries is with 90.4% having knowledge on how to notice it, 82.5% about the causes and 84.9% about their treatment. Knowledge on gingival diseases was found to be fairly adequate. 96.4% had knowledge on bleeding from gums, 98% on cause of bad breath whereas only 56.2% had knowledge on treatment of gingival diseases.

Table 3 shows 90.8% had knowledge on treatment of irregularly positioned teeth, while 44.2% had knowledge on consequences of irregularly positioned teeth. With regards to oral cancer, 73.3%

had knowledge on oral cancer, 73.3% on signs of oral cancer, 51% on causes and 78.5% on treatment of oral cancer. Only 40.2% had knowledge on role of fluoride in dentistry. A total of 81.3% had knowledge regarding presence of fluoride in their toothpaste. About 62.9% know about sequelae of missing teeth while 41% know about various options to replace lost teeth.

Table 4 shows the attitudes of nursing students towards oral health. 16.7% keep their oral cavity clean by regular brushing while 83.3% both brush their teeth and rinse regularly. 99.2% believe brushing with brush and paste is a good habit. 98.8% think visiting dentists regularly is a good practice while 94.8% believe that a dentist can improve her appearance. However, only 86.5% want their irregularly positioned teeth to be treated by their dentist. A total of 98.8% agreed that tobacco chewing is a bad habit. With regards to acceptance of artificial denture, 86.1% believe it is well accepted by the society.

Table 5 shows that out of 251 students, 198 of them i.e. 78.9% brush their teeth twice daily. Table 6 shows that 98% use toothbrush and paste to brush their teeth. Table 7 shows 49% use mouth rinse, 34.7% use tongue cleaner, 16% use dental floss and 2.4% use interdental brush to clean their oral cavity. Table 8 shows 82.9% brush their teeth with a combination of horizontal, vertical and circular technique. Table 9 shows that 75.7% use plain water to rinse their mouth. Table 10 shows how frequently the nursing students visit their dentists. 58.6% visit dentist in case of any problem, 24.7% visit once a year, 11.6% visit twice a year and 4.4% visit once in two years.

Figure 1 shows that 65.7% use soft bristle brush while 25.1% use medium bristle and 7.6% use ultra-soft toothbrush to clean their teeth. Figure 2 shows that 64.5% change their toothbrush every one to three months. Figure 3 shows that 37.5% brush their teeth for two to three minutes, 20.7% for one to two minutes, 35.1% for three to four minutes and 6.4% for more than four minutes. Figure 4 shows that 49.8% use toothbrush while 42.6% use tongue scraper to clean their tongue.

DISCUSSION

Oral diseases are one of the major public health problems and since the nursing staffs and students reach out to the many underserved areas of the country, they are expected to have positive behavior towards oral health and its diseases. Our study

Table 1: Knowledge on eruption and functions of teeth

Questions	Frequency	Percentage	
Function of teeth	Good appearance	1	0.0%
	Efficient chewing	10	0.03%
	Pronounce properly	1	0.0%
	All of above	236	94%
	Not answered	3	0.01%
Mineral important for tooth formation	Calcium	247	98.4%
	Zinc	1	0.4%
	Copper	1	0.4%
	Selenium	2	0.8%
Vitamin for growth and development of bones	Vitamin A	5	2.0%
	Vitamin B	5	2.0%
	Vitamin D	229	91.2%
	Don't know	5	2.0%
	Not answered	7	2.8%
First tooth erupts at	6 months	201	80.1%
	1 year	37	14.7%
	4 months	10	4.0%
	Don't know	1	0.4%
	Not answered	2	0.8%
Age of first permanent tooth eruption	4-5 years	20	8.0%
	6-7 years	137	54.6%
	12 years	85	33.9%
	Don't know	6	2.4%
	Not answered	3	1.2%
Number of deciduous teeth	15	21	8.4%
	22	41	16.3%
	20	160	63.7%
	Don't know	19	7.6%
	Not answered	10	4.0%

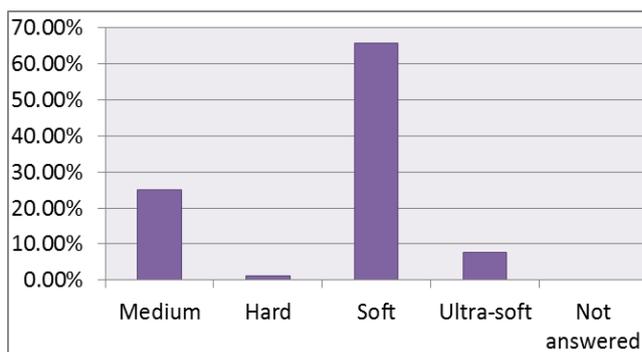


Figure 1: Type of toothbrush used

showed that the oral health related knowledge among nursing students of Kathmandu district was fairly adequate with some lack of knowledge in the field of oral cancer, fluorides and prosthetic rehabilitation.

It was seen that 96.4% had knowledge on unhealthy gums leading to their bleeding. However, in study

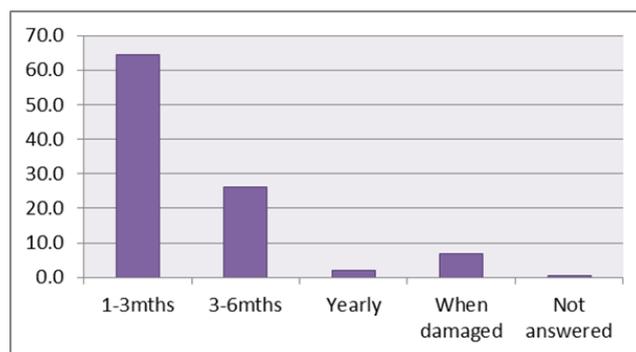


Figure 2: Frequency of change of toothbrush

conducted by Kaira LS et al³ among nursing students of Rohilkhand Medical College and Hospital, a good percentage i.e. 86.4% were aware regarding gingival and periodontal health. Only 40.2% of the students had knowledge regarding role of fluorides in dentistry in our study. Similarly, study by Usman et al⁷, conducted among clinical,

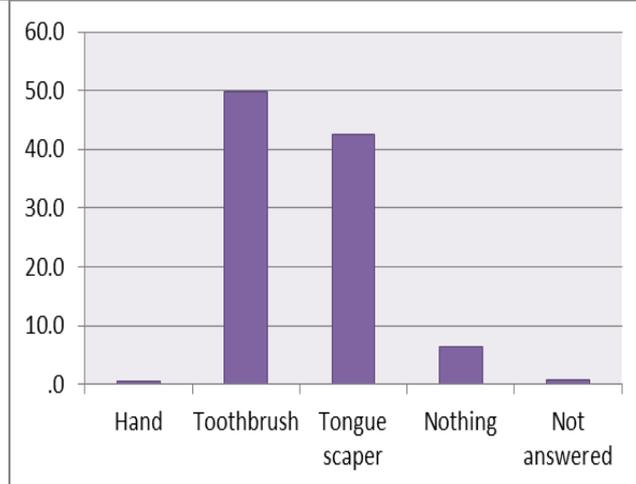
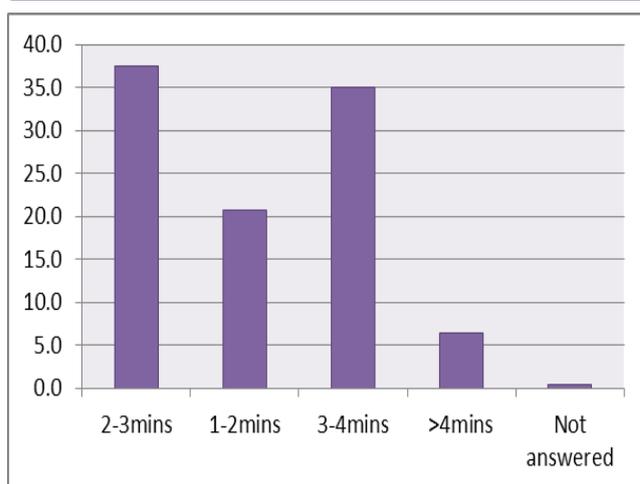


Figure 3: Duration of tooth brushing

Figure 4: Methods used for cleaning tongue

Table 2: Knowledge on dental caries and gum diseases

Questions	Frequency	Percentage	
Tooth decay	Fractured tooth	227	90.4%
	Discolored tooth	18	7.2%
	Destroyed tooth	5	2.0%
	Don't know	1	0.4%
Notice tooth decay	Black color with hole	227	90.4%
	Swollen gums	18	7.2%
	Fractured	5	2.0%
	Don't know	1	0.4%
Causes of tooth decay	Injury to tooth	34	13.5%
	Intake of more sweets	207	82.5%
	Over rinsing of mouth	8	3.2%
	Don't know	2	0.8%
Treatment of tooth decay	Scaling	19	7.6%
	Clove oil dressing	9	3.6%
	Filling	204	81.3%
	Don't know	18	7.2%
Prevention of tooth decay	Not answered	1	0.4%
	Regular tooth brushing	31	12.4%
	Visiting dentist	2	0.8%
	Rinsing mouth after meal	5	2%
Bleeding from gums	All of the above	213	84.9%
	Tooth decay	8	3.2%
	Unhealthy gums	242	96.4%
	Healthy gums	1	0.4%
Causes of bad breath	Don't know	0	0.0%
	Infected gums	246	98.0%
	Missing teeth	2	0.8%
	Don't know	2	0.8%
Treatment for gum disease	Not answered	1	0.4%
	Scaling	16	6.4%
	Surgical treatment	18	7.2%
	Mouthwashes	67	26.7%
	All of the above	141	56.2%
Not answered	9	3.2%	

Table 3: Knowledge on other oral conditions

Questions		Frequency	Percentage
Type of treatment for irregular teeth	Extraction	5	2.0%
	Treatment with wire	228	90.8%
	Grinding of teeth	3	1.2%
	Don't know	12	4.8%
	Not answered	3	1.2%
Irregularly positioned teeth leads to	Dental decay	24	9.6%
	Gum disease	30	12.0%
	Trauma	84	33.5%
	All of the above	111	44.2%
	Not answered	2	0.8%
Oral cancer	Small ulcer	31	12.4%
	Malignant lesion	184	73.3%
	Decay tooth	11	4.4%
	Don't know	20	8.0%
	Not applicable	5	2.0%
Suspect oral cancer	Bleeding gums	32	12.7%
	Dental decay	7	2.8%
	Non-healing wound	184	73.3%
	Don't know	23	9.2%
	Not answered	5	2.0%
Cause of oral cancer	Sharp edged teeth	1	0.4%
	Excess tobacco consumption	120	47.8%
	Chronic alcoholism	1	0.4%
	All of the above	128	51.0%
	Not answered	1	0.4%
Treatment of oral cancer	Stopping tobacco usages	35	13.9%
	Chemotherapy	17	6.8%
	Radiotherapy	2	0.8%
	All of the above	197	78.5%
Fluorides are useful	Periodontal diseases	12	4.8%
	Oral cancer	15	6.0%
	Dental caries	101	40.2%
	All of the above	113	45.0%
	Not answered	10	4.0%
Use of toothpaste with fluoride	Yes	204	81.3%
	No	5	2.0%
	Don't know	41	16.3%
If few teeth are missing	Not answered	1	0.4%
	Reduces masticatory efficiency	158	62.9%
	Causes gingival diseases	20	8.0%
	Leads to dental decay	27	10.8%
	Don't know	38	15.1%
Options to replace lost tooth	Not applicable	8	3.2%
	Removable appliance	10	4.0%
	Fixed appliance	99	39.4%
	Both	103	41.0%
	Don't know	33	13.1%
Visiting dentist is necessary	Not answered	6	2.4%
	Painful	25	10%
	For regular checkup	215	85.7%
	When injured	7	2.8%
	Don't know	2	0.8%
Not answered	2	0.8%	

Table 4: Oral health related attitudes

Questions		Frequency	Percentage
How do you keep your oral cavity clean	Regular brushing	42	16.7%
	Regular rinsing	0	0.0%
	Both	209	83.3%
Cleaning with brush and paste	Good habit	249	99.2%
	Not a good habit	1	0.4%
	Don't know	1	0.4%
Good oral health helps in maintenance of general health	Yes	249	99.2%
	No	1	0.4%
	Don't know	1	0.4%
Visiting dentist is a good habit	Yes	248	98.8%
	No	2	0.8%
	Don't know	1	0.4%
Does dentist improve your appearance	Yes	238	94.8%
	No	3	1.2%
	Don't know	9	3.6%
Do you want irregularly positioned teeth to be	Yes	217	86.5%
	No	26	10.4%
	Don't know	6	2.4%
	Not answered	2	0.8%
Tobacco chewing	Good habit	1	0.4%
	Bad habit	248	98.8%
	Don't know	2	0.8%
Wearing artificial denture	Accepted	216	86.1%
	Not accepted	17	6.8%
	Don't know	16	6.4%
	Not answered	2	0.8%

medical, dental and paramedical students of Mangalore, also showed that a greater portion of medical and paramedical students showed poor knowledge on the role of fluorides in dentifrices.

In our study, it was seen that 78.9% of the participants brush twice daily with 98% using toothbrush and toothpaste while in the study by Kaira LS et al³, only 48.7% brush twice daily with 70.2% using toothpaste. According to study by Udoye et al² on nursing students of Nigerian tertiary hospital, however, only 43.4% brush more than once and 53.7% brush once daily. Study by Darout IA et al⁴ conducted among Jimma

University Health Sciences students of Ethiopia, only 23.3% of males and 34.4% of females brush at least twice or more. In a study by Alsrour et al⁸ in Jordan, it was seen that 61% of students brush at least twice a day where 92.2% use fluoridated toothpaste with 49.3% replacing their toothbrush every one to three months.

Only 10% of the participants in our study used dental floss, similar to 13.5% in a study by Kaira LS et al³, 30% in study by Kakkad et al⁹ conducted among engineering students it was less than 35% according to Baseer et al.¹⁰ Thus, it seems that with regards to regular flossing attitudes of the students

Table 5: Showing frequency of tooth brushing

Question	Frequency	Percentage	
How many times do you brush your teeth?	Once	27	10.8%
	Twice	198	78.9%
	Thrice	21	8.4%
	After every meal	4	1.6%
	Not answered	1	0.4%

Table 6: Agent for tooth brushing

Question	Frequency	Percentage	
What do you use to brush your teeth?	Toothpaste	246	98%
	Neemstick	1	0.4%
	Salt	3	1.2%
	Not answered	1	0.4%

Table 7: Other aids used to clean oral cavity

Question	Frequency	Percentage	
Other aids used to clean oral cavity	Dental floss	25	10%
	Tongue cleaner	87	34.7%
	Mouth rinse	205	81.6%
	Interdental brush	6	2.4%
	Not answered	9	3.6%

Table 8: Brushing technique

Question	Frequency	Percentage	
How do you brush your teeth?	Horizontally	10	4.0%
	Vertically	8	3.2%
	Circularly	23	9.2%
	Combination of these	208	82.9%
	Not answered	2	0.8%

Table 9: Table showing what is used by the students to rinse the mouth

Question	Frequency	Percentage	
What do you use to rinse your mouth?	Plain water	190	75.7%
	Mouthwash only	5	2.0%
	Water and mouth wash	55	21.9%
	Not answered	1	0.4%

Table 10: Frequency of visiting the dentist

Question	Frequency	Percentage	
How often do you visit your dentist?	Once a year	62	24.7%
	Twice a year	29	11.6%
	Once in two years	11	4.4%
	When there is problem	147	58.6%
	Not answered	2	0.8%

have to be improved. 58.6% of participants in our study visit dentists only in case of any problem similar to Kaira LS et al³ where 49.5% visit dentist only in case of pain.

Health promotion in developing country like Nepal is limited due to geographic, social, economic and political factors leading to inadequate health care resources.¹¹ According to study by Harikiran et al¹² conducted on 11-12 year old school children in a government aided missionary school in Bangalore, 36.3% had knowledge on fluoride preventing tooth decay similar to our study where the percentage was 40.2%. Study by Sharda et al¹³ comparing oral health knowledge between BDS first and final year students suggested 51.6% of first year students while 98.7% of final year students had knowledge on effect of sweet retention on teeth. It was seen that in study by Harikiran et al¹² 75.1% thought brushing prevents tooth decay similar to our study where it was 84.9%. However, only 48.9% had knowledge that sweets cause dental decay in contrast to our study where it was 82.5%. Only 38.5% brush twice daily while only 4.6% use dental floss. The children who were aware of the importance of regular dental visits were 67.8% while only 35.1% have reported that they have visited a dentist recently.

The scientific literature provides us an overview regarding impact of oral health knowledge, attitude and oral health behavior on oral diseases. Collection of such data is helpful in carrying out various programs to train this important group of manpower to utilize their services in the field of oral health. When interpreting the results of the present study, several limitations have to be considered. Over-reporting of proper hygiene practices is a likely limitation since the students' report of their behavior by themselves.

CONCLUSION

This study presented an overview on oral health related knowledge, attitude and practice of nursing students of Kathmandu district which was satisfactory with deficiency in knowledge about oral cancer, fluorides, dental flossing and prosthetic rehabilitation. Therefore, to fill this void and bridge this gap, further improvements can be encouraged and facilitated through integration of oral health in their curriculum or through orientation and training programs. These auxiliaries can therefore be of use in dissemination of dental health related knowledge

to the public.

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