

Knowledge and awareness about dentistry among medical students, residents, and medical practitioners in Bhairahawa city, Nepal

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ABSTRACT

Introduction: Oral health is considered to be a mirror of systemic health and vice-versa. Medical professionals are considered to be the primary caregivers in a given population and as such a vast majority of the population visits them for health-related problems. Therefore, this study aimed to evaluate the level of knowledge and awareness of dentistry among first-year medical students, residents, and medical practitioners. **Methods:** A cross-sectional questionnaire survey was carried out to assess the knowledge and awareness of dentistry among MBBS first-year students, medical residents, and medical practitioners of Bhairahawa city, Nepal. Data analysis was done with SPSS version 11. **Results:** As per the demographic characteristics out of 147 subjects 82 (55.8%) were male and 65 (44.2%) were female. Most of the participants were from the age group of 21-30 years, 66 (44.9%) and 115 (78.2%) of them were married. Among 147 subjects every respondent (100%) knew about the profession of dentistry giving statistically significant results. **Conclusion:** The present study shows that medical professionals had better knowledge of dentistry as compared to medical students and residents. This unnecessary gap between dental and medical professionals can only be fulfilled by including dental education in both undergraduate and postgraduate medical curriculum.

Keywords: Dentistry, knowledge, medical professionals

Introduction

Oral health is considered to be a mirror of systemic health and vice-versa. Medical professionals are considered to be the primary caregivers in a given population and as such a vast majority of the population visits them for health-related problems.^[1] Primary care providers, especially medical practitioners, have a profound impact on the oral health of their patients by integrating oral health in their practices which can effectively address their

oral health needs.^[2] Many studies have shown that medical professionals play an important role in oral disease screening, emergency treatment, pain management, and management of trauma cases. However, at the same time, many studies have found out that the knowledge regarding dentistry is suboptimal among medical practitioners as well as medical students. In developing countries, there is a vast difference in oral health status between urban and rural populations, with enormous and widening disparities in access to quality care, predominantly in rural areas. The physician's office is considered an opportune site to reach a large population who visit for their non-dental problems.^[3]

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For all these reasons it becomes necessary to lay more emphasis on dentistry-related topics to be taught during their medical courses and training period. According to Mehrotra *et al.*^[4] it was found that the medical practitioners had good knowledge about dentistry while a study by Sujatha *et al.*^[5] found that among 1092 students only 25% of undergraduates medical students had awareness about good oral health. Moreover, the lack of distinction between the scope of dental specialists and other closely-related dental disciplines among referring clinicians is likely to result in significant delays in the referral to dental clinics and thus could worsen the prognosis for many conditions or at least affect the oral health-related quality of life.^[6]

Therefore, this study aimed to evaluate the level of knowledge and awareness of dentistry among first-year medical students, residents, and medical practitioners.

Methods

A cross-sectional questionnaire survey was carried out to assess the knowledge and awareness about dentistry among MBBS first-year students, medical residents, and medical practitioners of Bhairahawa city, Nepal.

Inclusion criteria

The MBBS first-year students, medical residents, and medical practitioners present on the day of the survey were included in this study. Those who were willing to give consent. The study protocol was reviewed by the institutional review board and it was granted ethical clearance 24th march 2019.

Based on the sample size calculation anticipating non-eligibility and unwillingness to participate in the study a sample of 147 individuals was chosen for this study out of 157.

A questionnaire containing 25 questions was distributed among 147 subjects. Subjects were divided into three groups, group A (50 MBBS first-year students), group B (50 medical residents), group C (47 medical practitioners) in the medical institution.

The questionnaire was designed to have four sections: section A consist of three questions describing the sociodemographic characteristics of the respondents, section B contained information on dental awareness about dentistry comprising of 13 questions, section C evaluated respondents knowledge about dental specialties and insight into dentistry comprising of five questions, and section D evaluated the referral practices of the respondents. They were asked when to refer patients with a toothache and dental abscess to the dentist comprising of four questions.

Data was collected and the statistical analysis was done applying the Chi-square test. For the test, the confidence interval and the *P* value were set at 95% and ≤ 0.05 , respectively.

Results

The information was collected and analyzed using Statistical Package for the Social Sciences (SPSS) version 11. For descriptive variables that are categorical, simple frequency, and percentages were determined. A Chi-square test was used for statistical analysis.

As per the demographic characteristics out of 147 subjects, 82 (55.8%) were male and 65 (44.2%) were female. Most of the participants were from the age group of 21–30 years; 66 (44.9%) and 115 (78.2%) of them were married [Table 1].

Respondents knowledge and awareness about dentistry [Table 2]^[1]

Among 147 subjects, every respondent (100%) knew about the profession of dentistry giving statistically significant results. As they were aware of the profession of dentistry 122 (83.0%) have been to a dentist for treatment or checkup and only 25 (17.0%) never been to the dentist. The reason for not visiting the dentist by group A 37 (74.0%) and group C 24 (51.1%) was that there was no dental complaint, whereas the reason given by group B was fear of needle 18 (36.0%).

More than half of subjects 86 (58.5%) brush their teeth twice daily using fluoridated toothpaste 144 (98.0%), and using a toothbrush (100%) following circular method of brushing by group A 44 (88.0%). Group B 25 (50.0%) and group C 22 (46.8%) following the horizontal method giving highly statistically significant results.

Nearly 61 (41.5%) subjects were unaware of the appropriate time for routine dental consultations. Among them, only group B 29 (58.0%) correctly answered and believed that the appropriate time to visit a dentist is every 6 months whereas, group A 28 (56.0%) and group C 21 (44.7%) only visited a dentist when there was pain or any other complaint.

Respondents knowledge and awareness about dental specialties [Table 3]^[1]

Although the maximum respondents 99 (67.3%) knew dental specialties as an individual, group A had a negative response 40 (80.0%) which gradually improved in group B 48 (96.0%), and group C 41 (87.2%).

When asked about various dental specialists and their respective treatment only group C knew about it, unlike the other two groups (group B, group C) except for the specialty that deals with infants through adolescents (pedodontics and preventive dentistry) of which each group was aware.

Regarding knowledge about the causative agent of dental caries, maximum believed it as complex sugar 87 (59.2%), followed by bacteria 35 (23.8%) by each group which was highly statistically significant.

Table 1: The sociodemographic characteristics of the respondents

	Medical first-year students	Residents	Medical practitioners	Total
Sex				
Male	28 (56.0%)	23 (46%)	31 (66%)	82 (55.8%)
Female	22 (44%)	27 (54%)	16 (34%)	65 (44.2%)
Age				
<20	48 (96.0%)	4 (8.0%)	0 (0.0%)	52 (35.4%)
21-30	2 (4.0%)	42 (84.0%)	22 (46.8%)	66 (44.9%)
31-40	0 (0.0%)	4 (8.0%)	22 (46.8%)	26 (17.7%)
41-50	0 (0.0%)	0 (0.0%)	3 (6.4%)	3 (2.0%)
>50	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Marital status				
Single	47 (94.0%)	45 (90.0%)	23 (48.9%)	115 (78.2%)
Married	3 (6.0%)	5 (10.0%)	24 (51.1%)	32 (56.0%)

Table 2: Dental awareness and knowledge of respondents about dentistry

	Medical 1 st year students	Residents	Medical practitioners	Total
Are you aware of a profession called Dentistry?				
Yes	50 (100.0%)	50 (100.0%)	47 (100.0%)	147 (100.0%)
No	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Have you ever been to a dentist for treatment or checkup?				
Yes	35 (70.0%)	44 (88.0%)	43 (91.5%)	122 (83.0%)
No	15 (30.0%)	6 (12.0%)	4 (8.5%)	25 (17.0%)
Why would you not want to visit a dentist?				
Fear of pain	2 (4.0%)	6 (12.0%)	1 (2.1%)	9 (4.0%)
Fear of needle	2 (4.0%)	18 (36.0%)	0 (0.0%)	20 (4.0%)
High cost	4 (8.0%)	7 (14.0%)	5 (10.6%)	16 (4.0%)
Lack of time	5 (10.0%)	7 (14.0%)	17 (36.2%)	29 (19.7%)
No dental complaints	37 (74.0%)	12 (24.0%)	24 (51.1%)	73 (49.7%)
How often do you brush your teeth?				
Once Daily	24 (48.0%)	19 (38.0%)	18 (38.3%)	61 (41.5%)
Twice Daily	26 (52.0%)	31 (62.0%)	29 (61.7%)	86 (58.5%)
≥Thrice	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
How u brush your teeth?				
Use of tooth brush	50 (100.0%)	50 (100.0%)	47 (100.0%)	147 (100.0%)
Chewstick/meswak	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Charcoal	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Thread/wooden sticks	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Use of toothpaste				
Fluoridated	50 (100.0%)	50 (100.0%)	44 (93.6%)	144 (98.0%)
Non-fluoridated	0 (0.0%)	0 (0.0%)	3 (6.4%)	3 (2.0%)
Method of brushing				
Horizontal	0 (0.0%)	25 (50.0%)	22 (46.8%)	47 (32.0%)
Vertical	6 (12.0%)	5 (10.0%)	12 (25.5%)	23 (15.6%)
Circular	44 (88.0%)	20 (40.0%)	13 (27.7%)	77 (52.4%)
Appropriate time for routine dental consultations				
Once every 6 months	7 (14.0%)	29 (58.0%)	13 (27.7%)	49 (33.3%)
Once every year	10 (20.0%)	9 (18.0%)	12 (25.5%)	31 (21.1%)
When there is dental pain/other dental problem	28 (56.0%)	12 (24.0%)	21 (44.7%)	61 (41.5%)
There is no need	5 (10.0%)	0 (0.0%)	1 (2.1%)	6 (4.1%)
Last visit to the dentist				
0-12 months	10 (20.0%)	15 (30.0%)	28 (59.6%)	53 (36.1%)
>1 year	12 (24.0%)	18 (36.0%)	14 (29.8%)	44 (29.9%)
>2 year	0 (0.0%)	10 (20.0%)	0 (0.0%)	10 (6.8%)
>5 year	13 (26.0%)	2 (4.0%)	2 (4.3%)	17 (11.6%)

Contd...

Table 2: Contd...

	Medical 1 st year students	Residents	Medical practitioners	Total
Never	15 (30.0%)	5 (10.0%)	3 (6.4%)	23 (15.6%)
Reason for visit				
Consultation	8 (16.0%)	16 (32.0%)	9 (19.1%)	33 (22.4%)
Pain	8 (16.0%)	11 (22.0%)	19 (40.4%)	38 (25.9%)
Routine checkup	8 (16.0%)	13 (26.0%)	7 (14.9%)	28 (19.0%)
Treatment	8 (16.0%)	7 (14.0%)	10 (21.3%)	25 (17.0%)
Do not know	18 (36.0%)	3 (6.0%)	2 (4.3%)	23 (15.6%)
Pain/discomfort in the last 12 months				
Yes	13 (26.0%)	14 (28.0%)	13 (27.7%)	40 (27.2%)
No	25 (50.0%)	21 (42.0%)	33 (70.2%)	79 (53.7%)
Do not know/remember	12 (24.0%)	15 (30.0%)	1 (2.1%)	28 (19.0%)
Problems in teeth in the last 12 months				
Yes	5 (10.0%)	28 (56.0%)	15 (31.9%)	40 (27.2%)
No	28 (56.0%)	18 (36.0%)	30 (63.8%)	76 (51.7%)
Do not know/remember	17 (34.0%)	12 (24.0%)	2 (4.3%)	31 (21.1%)

Table 3: Respondents knowledge about dental specialties and insight into dentistry

	Medical 1 st year students	Residents	Medical practitioners	Total
Do you know about the Specialization in dentistry				
Yes	10 (20.0%)	48 (96.0%)	41 (87.2%)	99 (67.3%)
No	40 (80.0%)	2 (4.0%)	6 (12.8%)	48 (32.7%)
Specialties of dentistry that treat facial fractures				
Orthodontics	5 (10.0%)	0 (0.0%)	0 (0.0%)	5 (3.4%)
Prosthodontics	0 (0.0%)	1 (2.0%)	0 (0.0%)	1 (0.7%)
Oral and Maxillofacial Surgery	15 (30.0%)	14 (28.0%)	43 (91.5%)	72 (49.0%)
Periodontology	0 (0.0%)	0 (0.0%)	(0.0%)	(0.0%)
Oral Medicine	0 (0.0%)	0 (0.0%)	(0.0%)	(0.0%)
Oral pathology	0 (0.0%)	0 (0.0%)	(0.0%)	(0.0%)
Pedodontics	0 (0.0%)	0 (0.0%)	(0.0%)	(0.0%)
Conservative and endodontics	0 (0.0%)	35 (70.0%)	(0.0%)	35 (23.8%)
Public health dentistry	0 (0.0%)	0 (0.0%)	(0.0%)	(0.0%)
Do not know	30 (60.0%)	0 (0.0%)	4 (8.5%)	34 (23.1%)
Specialties of dentistry that treat abnormally arranged teeth				
Orthodontics	0 (0.0%)	8 (0.0%)	41 (87.2%)	49 (33.3%)
Prosthodontics	0 (0.0%)	27 (54.0%)	4 (8.5%)	31 (21.1%)
Oral and Maxillofacial Surgery	0 (0.0%)	15 (30.0%)	0 (0.0%)	15 (10.2%)
Periodontology	0 (0.0%)	0 (0.0%)	0 (0.0%)	(0.0%)
Oral Medicine	0 (0.0%)	0 (0.0%)	0 (0.0%)	(0.0%)
Oral pathology	0 (0.0%)	0 (0.0%)	0 (0.0%)	(0.0%)
Pedodontics	0 (0.0%)	0 (0.0%)	0 (0.0%)	(0.0%)
Conservative and endodontics	0 (0.0%)	0 (0.0%)	1 (2.1%)	1 (0.7%)
Public health dentistry	0 (0.0%)	0 (0.0%)	0 (0.0%)	(0.0%)
Do not know	50 (100.0%)	0 (0.0%)	1 (2.1%)	51 (34.7%)
Specialties of dentistry that treat unusual facial pain				
Orthodontics	0 (0.0%)	18 (36.0%)	0 (0.0%)	18 (12.2%)
Prosthodontics	0 (0.0%)	16 (32.0%)	0 (0.0%)	16 (10.9%)
Oral and Maxillofacial Surgery	0 (0.0%)	0 (0.0%)	23 (48.9%)	23 (15.6%)
Periodontology	0 (0.0%)	4 (8.0%)	2 (4.3%)	6 (4.1%)
Oral Medicine	0 (0.0%)	12 (24.0%)	16 (34.0%)	28 (19.0%)
Oral pathology	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Pedodontics	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Conservative and endodontics	0 (0.0%)	0 (0.0%)	3 (6.4%)	3 (2.0%)

Contd...

Table 3: Contd...

	Medical 1 st year students	Residents	Medical practitioners	Total
Public health dentistry	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Do not know	50 (100.0%)	0 (0.0%)	3 (6.4%)	53 (36.1%)
Specialties of dentistry that treat infants through adolescents				
Orthodontics	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Prosthodontics	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Oral and Maxillofacial Surgery	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Periodontology	0 (0.0%)	0 (0.0%)	1 (2.1%)	1 (0.7%)
Oral Medicine	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Oral pathology	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Pedodontics	0 (0.0%)	50 (100.0%)	44 (93.6%)	0 (0.0%)
Conservative and endodontics	0 (0.0%)	0 (0.0%)	0 (0.0%)	94 (63.9%)
Public health dentistry	0 (0.0%)	0 (0.0%)	0 (0.0%)	(0.0%)
Do not know	50 (100.0%)	0 (0.0%)	2 (4.3%)	52 (35.4%)
Causes Dental caries				
Smoking	0 (0.0%)	0 (0.0%)	2 (1.4%)	2 (1.4%)
Complex Sugars	30 (60.0%)	34 (68.0%)	23 (48.9%)	87 (59.2%)
Bacteria	0 (0.0%)	16 (32.0%)	19 (40.4%)	35 (23.8%)
Tooth picking	0 (0.0%)	0 (0.0%)	1 (0.7%)	1 (0.7%)
Do not know	20 (40.0%)	0 (0.0%)	2 (4.3%)	22 (15.0%)

Table 4: Referral practices among respondents

	Medical 1 st year students	Residents	Medical practitioners	Total
Delayed referral of dental treatments can result in life-threatening condition				
Strongly agree	3 (6.0%)	23 (46.0%)	17 (36.2%)	43 (29.3%)
Agree	34 (68.0%)	24 (48.0%)	29 (61.7%)	87 (59.2%)
Strongly Disagree	3 (6.0%)	3 (6.0%)	1 (2.1%)	7 (4.8%)
Disagree	10 (20.0%)	0 (0.0%)	0 (0.0%)	10 (6.8%)
Have you ever referred any patient to the dentist before				
Yes	18 (36.0%)	31 (62.0%)	39 (83.0%)	88 (59.9%)
No	32 (64.0%)	19 (38.0%)	8 (17.0%)	59 (40.1%)
Patient with toothache				
Refer the patient to dental clinic	35 (70.0%)	28 (56.0%)	45 (95.7%)	108 (73.5%)
Give antibiotics and analgesics	11 (22.0%)	18 (36.0%)	2 (4.3%)	31 (21.1%)
Ignore/Leave alone	4 (8.0%)	4 (8.0%)	0 (0.0%)	8 (5.4%)
Patient with a dental abscess				
Refer the patient to dental clinic	36 (72.0%)	19 (38.0%)	40 (85.1%)	95 (64.6%)
Give antibiotics and analgesics	9 (18.0%)	25 (50.0%)	7 (14.9%)	41 (27.9%)
Ignore/Leave alone	5 (10.0%)	6 (12.0%)	0 (0.0%)	11 (7.5%)

Referral practices among respondents [Table 4]^[1]

More than half of the respondents (59.2%) agreed that delayed referral of dental treatments can result in life-threatening conditions. Most of the respondents 88 (59.9%) have referred the patient for a dental consultation. Out of all three groups, group C strongly believed that patients with toothache (95.7%), and dental abscess (85.1%) should be referred to dentists for treatment.

Discussion

Importance of oral health and the high prevalence of oral

diseases in the whole body, the joint effort of dentists and clinicians is necessary for people's health, and it should be integrated as a part of the comprehensive health promotion.^[7]

Thus for efficient healthcare delivery, smooth interaction is needed between medical and dental professionals as medical doctors are also expected to play an important role in oral health promotion. The present study thus was designed to compare dental awareness, knowledge, and attitude among medical students, residents, and medical practitioners that somehow will improve oral health awareness.

Among 147 participants 100% were aware of the dental profession, similar to the findings reported by Chandra *et al.*^[8] where 100% of participants of the high socioeconomic status group claimed that they are aware of dental diseases and as reported by Elijah *et al.*^[1] About 95.5% were aware of dentistry as a profession. However, results differed in studies done among medical students by Sujatha *et al.*^[5] showed only 25% of the medical students have good oral health awareness.

In the present study, 83.0% of all respondents visited the dentist for dental check-up and treatment similar to the study reported by Doshi *et al.*^[9] 79.4% and by Chandra *et al.*^[7] 100% had visited a dentist for a checkup at one point or the other in their life. Despite other studies by Bashiru *et al.*^[10] who noted that 71.6% of the 360 studied undergraduate students never visited a dentist before. Elijah *et al.*^[1] only 78 (38%) participants had ever visited the dentist. As the fear of pain is one of the reasons not to visit dentists,^[8,11,12] but in this study, only 4% showed fear of pain the same as Elijah *et al.*^[1] However, in the present study, 36% showed fear of needle by residents rest among all 49.7% gave reason showing no dental complains, lack of time was also one of the reasons which showed a gradual increase from medical students (10%), residents (14%), and medical professionals (36.2%).

Oral hygiene practices were satisfactory showing 58.5% was brushing their teeth twice daily, this may be as the study was conducted in educated professionals whereas other studies^[13-15] show brushing once daily. Despite that only 33.3% were aware of appropriate time for routine dental consultation thus showing a lack of knowledge. Although 100% knew about profession dentistry, only 67.3% of respondents knew about specialization in dentistry giving maximum response to pedodontics (100.0%) by residents similar to the study by Gambhir *et al.*^[2] where 75% of participants were aware regarding different specialties in dentistry.

In the present study, the causative factors of dental caries were 59.2% complex sugar and bacteria 23.8% whereas Elijah *et al.* reported bacteria (61.1%).

Based on referral practices only 59.9% referred their patients for dental consultation still some of the professionals do not refer the patient to a dentist with toothache (5.4%) and with dental abscess (7.5%).

However, the knowledge was satisfactory but still needs more dental awareness among medical students and professionals. This may be due to little or no exposure to dental education in their curriculum. As suggested by many studies^[13,14,16] to improve dental awareness, dental education should be a part of medical education.

Conclusion

This study shows that knowledge and oral health awareness among the respondents was satisfactory. Oral hygiene practices

were good and respondents visited the dentist for their checkup but only a few referred their patients for dental consultation/treatment. Thus suggestive of more understanding between medical and dental professionals. The present study shows that medical professionals had better knowledge of dentistry as compared to medical students and residents. This unnecessary gap between dental and medical professionals can only be fulfilled by including dental education in both undergraduate and postgraduate medical curriculum.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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