

Awareness of Specialties of Dentistry among Medical Trainees and Teaching Faculty of Medical College in the Central West India

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ABSTRACT

Objective: The purpose of this study was, to assess and create awareness of specialties of dentistry among medical trainees and teaching faculty.

Materials and Methods: Printed and validated questionnaires were given personally to a total sample of 180 patients, including 60 interns, 40 postgraduate (PG) trainees and 80 teaching staff of Government Medical College. Their responses were collected and the results were tabulated using Micro-Soft Excel 2010. Data obtained was analyzed using the GraphPad Prism 7 statistical software. To compare the responses between the study groups a Pearson's Chi-square test was used.

Results: About 96.11% of the sample replied that they are not aware of the different specialties of dentistry and 89.44% of the sample refers their patients to the general dentist without knowing the specialty. About 70% of the interns marked orthodontics as a specialty dealing with fractures of the jaw, whereas 82.5% of the PGs and 95% of the faculty advised referral of the fracture mandible case to the Oral and Maxillofacial Surgeon. Percentage of correct response for interns, PGS and staff, was 53.33%, 78.75%, and 92.34%, respectively ($P \leq 0.05$).

Conclusion: A large number of interns are not aware of the differences among the branches in Dentistry, specifically between orthodontics, oral-maxillofacial surgery, community dentistry, and Pedodontics. Many medical doctors have misbelief that all of their dental-related issues can be solved by the general dental practitioner. It is the present need to spread the awareness among the medical trainees and doctors about different subspecialties of dentistry to ensure proper referral practices of the dental patients they come across.

KEYWORDS: Medical trainees, oral and general health, specialties of dentistry

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INTRODUCTION

William Osler has rightly said, "Mouth is the mirror of general health."^[1] Poor dental and oral health may adversely affect overall general health. Furthermore, certain illnesses and disease conditions may have a negative impact on oral health.^[2] Dental and medical practitioners both form integral parts of a comprehensive healthcare team. However, the existence of such teamwork in India is actually questionable. Some of the earlier studies have shown that a lack of general medical practitioners' knowledge of oral diseases contributes to delays in referral and treatment.^[3-5]

FDI has announced "Say ah" as a theme for 3 years campaign launched in 2018. It encourages people to make the connection between their oral health and general health and well-being. To make this campaign successful, it is important that medical doctors also need to be aware of the different dental pathologies/conditions and their concerned specialties.

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This is because, in India as like other developing countries, medical doctors working at the rural areas are the primary caregivers to the regional population for most of their health-related complaints.

Many rural patients report to the medical professionals for their dental and oral problems due to the lack of awareness or unavailability of the dental services in the near vicinity. Thus, they serve as a center for initial oral examination and referring patients with dental problems to the concerned dental specialist. Hence, medical doctors should also be updated with basic knowledge of dentistry so that they can look for etiology and findings of the dental diseases and provide primary care and advice to these patients. Dentistry is an integral part of the syllabus of the medical training. There has been an explosion of knowledge all around us which has led to many specializations and super specializations in all branches of study, and dentistry is no exemption to this. However, awareness of the specializations in dentistry among the public and medical fraternity in India is questionable. Different studies have shown that medical doctors have inadequate awareness of dental subspecialties.^[6-9] Medical practitioners fail to conduct oral examination probably because of either insufficient time and training or lack of confidence.^[10]

Considering the above evidence, we sought a need to assess the awareness of dental problems/conditions and its related dental specialty that treat them, among the Medical trainees and teaching faculty of a Medical College. It is important to increase their interest in screening and appropriately guiding patients with dental pathologies.

MATERIALS AND METHODS

A cross-sectional questionnaire study was conducted to assess the awareness of dental specialties among Medical trainees and teaching faculty of a Medical College at Nanded city, Maharashtra, India. The study was approved from the college ethical committee (reference No 270/17 Date 12/10/2017). Consent was given by all the participants after explaining the study and its purpose. Identity was not disclosed, and confidentiality of the participants was maintained. The sample is described in Table 1.

Table 1: Distribution of the study participants according to the gender and qualification (percentages in parenthesis)

Qualification	Gender		Total
	Males	Females	
UG	37 (61.66)	23 (38.33)	60 (33.33)
PG	22 (55)	18 (45)	40 (22.22)
Teaching staff	58 (72.5)	22 (27.5)	80 (44.44)
Total	117 (65)	63 (35)	180

The questionnaire involved a set of self-administered fixed, closed ended questions, adapted from pretested questionnaires that have been used in similar study by Azodo *et al.*,^[6] with some modifications. Before distributing the questionnaire, a pilot study was performed on a random mixed sample of the respondents ($n = 20$), and the questionnaire was modified according to the feedback obtained to improve the clarity of understanding by the survey population. Experienced subject experts were involved to validate the questionnaire for content. As the responses are not in the form of Likert scale, so Cronbach's Alpha Test could not be applied for validity of questionnaire. Content evaluation panel consisted of 15 postgraduate senior dental faculties. Content validity ratio was calculated for each item of the questionnaire. It ranged from 0.6 to 1.0 which is within acceptable range.

Ten special questionnaires with options were framed by the investigators. They were divided into two sections; Section 1 was on demographic variable and family history. Section 2 elicited knowledge of the doctors on different areas of dentistry, where certain oral and dental conditions should be referred to using ten questions. Printed and validated ten questionnaires consisting of match the pair of dental condition and the concerned specialty, were given personally to a total of 180 medical students and staff of different specialties of the Medical College. Those medical practitioners who had any of their close family members in the dental fraternity were excluded to remove any sort of bias. Participants were approached personally in their respective departments and the responses were collected. This resulted in the return of all 180 questionnaire forms representing 100% response rate. The time duration of this study was from January to March 2018. The results were tabulated using Microsoft Excel 2010. Frequency distribution and percentages of the responses were calculated. Data obtained was analyzed using the GraphPad Prism 7 statistical software (GraphPad Software Inc, San Diego, California). The Pearson's Chi-square test was utilized to compare the study groups for their responses based on awareness of specialties of dentistry. Level of significance was set at $P < 0.05$.

RESULTS

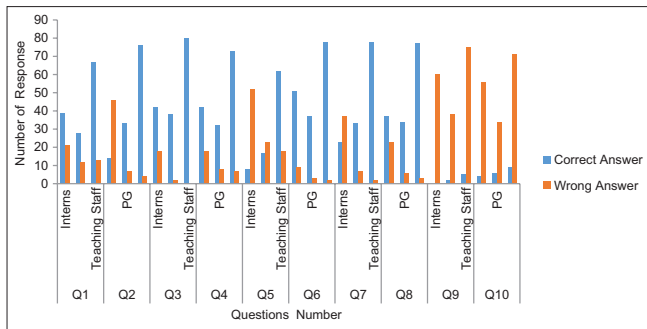
Distribution of the study participants according to the gender and qualification is as presented in Table 1. Of the total sample 33.33% were interns, 22.22% were postgraduates (PGs) and 44.44% were teaching faculty. When asked about awareness of different specialties of the dentistry 96.11% of the sample replied that they are not aware of the different specialties of dentistry and 89.44% of the sample refers their patients to the general dentist without knowing the specialty. Percentage of correct

Table 2: Comparison of the responses of the respondent groups. Percentages of the responses in parenthesis

Disorder	Respondent group	Specialties										P (Chi-square test)
		Ortho ^o	Laso ^o	Prosth ^o	Perio ^o	Odo ^o	ODMR	OMFS	CD	Endo ^o	Pedo ^o	
Cariious painful tooth	Interns	0	0	0	0	7 (11.67)	3 (5)	11 (18.33)	0	39 (65)	0	0.032*
	PGS	0	0	0	0	7 (17.5)	0	5 (12.5)	0	28 (70)	0	
	Staff	0	0	0	0	0	2 (2.5)	11 (13.75)	0	67 (83.75)	0	
Fracture of jaw	Interns	42 (70)	0	0	0	0	4 (6.66)	14 (23.33)	0	0	0	<0.0001**
	PGS	7 (17.5)	0	0	0	0	0	33 (82.5)	0	0	0	
	Staff	4 (5)	0	0	0	0	0	76 (95)	0	0	0	
Cariious teeth in a child	Interns	0	8 (13.33)	0	0	0	3 (5)	2 (3.33)	0	5 (8.33)	42 (70)	<0.0001**
	PGS	0	0	0	0	0	2 (5)	0	0	0	38 (95)	
	Staff	0	0	0	0	0	0	0	0	0	80 (100)	
Bleeding gums	Interns	0	0	0	42 (70)	0	12 (20)	3 (5)	0	3 (5)	0	0.0054*
	PGS	0	0	0	32 (80)	0	8 (20)	0	0	0	0	
	Staff	0	0	0	73 (91.25)	0	7 (8.75)	0	0	0	0	
School dental health	Interns	0	0	0	0	0	0	0	8 (13.33)	0	52 (86.66)	<0.0001**
	PGS	0	0	0	0	0	0	0	17 (42.5)	0	23 (57.5)	
	Staff	0	0	0	0	0	0	0	62 (77.5)	0	18 (22.5)	
Multiple missing teeth	Interns	0	0	51 (85)	0	6 (10)	0	0	0	3 (5)	0	0.0238*
	PGS	0	0	37 (92.5)	0	0	0	0	0	3 (7.5)	0	
	Staff	0	0	78 (97.5)	0	0	0	0	0	2 (2.5)	0	
Irregular and crooked teeth	Interns	23 (38.33)	0	12 (20)	0	0	0	17 (28.33)	0	0	8 (13.33)	<0.0001**
	PGS	33 (82.5)	0	5 (12.5)	0	0	0	2 (5)	0	0	0	
	Staff	78 (97.5)	0	0	0	0	0	1 (1.25)	0	0	1 (1.25)	
Diagnosis of oral cancer	Interns	0	0	0	0	0	37 (61.66)	23 (38.33)	0	0	0	<0.0001**
	PGS	0	0	0	0	0	34 (85)	6 (15)	0	0	0	
	Staff	0	0	0	0	0	77 (96.25)	3 (3.75)	0	0	0	

Response	Interns			PGS			Staff			Total	P (Chi-square test)
	Yes	No	Total	Yes	No	Total	Yes	No	Total		
Are you aware about the different specialties of the dentistry?	0 (0)	60 (100)	60 (100)	2 (5)	38 (95)	40 (100)	5 (6.25)	75 (93.75)	80 (100)	7 (3.89)	0.1531#
Where do you refer your dental patients	56 (93.33)	General dentist	56 (93.33)	34 (85)	General dentist	34 (85)	71 (88.75)	General dentist	161 (89.44)	19 (10.56)	0.3988#
	0 (0)	Concerned specialist	0 (0)	0 (0)	Concerned specialist	0 (0)	0 (0)	Concerned specialist	0 (0)	0 (0)	

^oDontics, CD=Community dentistry, OMFS=Oral and maxillofacial surgery, ODMR=Oral diagnosis medicine and radiology, *Significant (P<0.05), **Highly significant (P<0.001), #Nonsignificant (P>0.05)



Graph 1: Graphical representation of the number of responses of the subjects

response for interns, PGS and staff was 53.33%, 78.75%, and 92.34%, respectively. Great confusion was noted among the interns and PGs about the procedures performed under Orthodontics and Maxillofacial surgery and under Pedodontics and Community Dentistry [Table 2].

About 70% of the interns marked orthodontics as a specialty dealing with fractures of the jaw, whereas 82.5% of the PGs and 95% of the faculty advised referral of the fracture mandible to Oral and maxillofacial surgeon. Nearly 38.33% of the interns replied that orthodontics is the specialty concerned with irregular and crooked teeth whereas 82.5% PGS and 97.5% of the staff replied for same. Numbers of responses are represented graphically in Graph 1.

DISCUSSION

Dental problems usually in most situations do not lead to significant risk or threat to life. Because of which they are overlooked and considered as less important by many of the medical doctors.

By virtue of their professional role, medical personal play a vital role in health promotion and preventive information dissemination in community level. It is, therefore, important that their own oral knowledge is good and their oral health behavior conforms to the expectation of the population. Even though the medical curriculum includes the subject of dentistry under general surgery, very few interns could correctly answer about the specialties of the dentistry, especially orthodontics, oral and maxillofacial surgery and community dental health.

It has been pointed out by their failure to correctly match the procedures done under the different specialties of dentistry. Many erroneously selected Lasodontics and Odontodontics as the specialties dealing with caries teeth. This might be because of the limited exposure of the respondents to the dentistry, hence could not fully understand the variable role of the different subspecialties in this field. A similar study conducted by Azodo *et al.* also found a lack of

awareness of various specialties of dentistry among the medical doctors.^[6]

Prevalence of malocclusion in India has been reported to range from 20% to 92% including different malocclusions in different age groups.^[11-13] Many of the interns of the present study might be having friends or family member with orthodontic treatment need or their known person might be undergoing orthodontic treatment. Despite this their perception about orthodontics subject was wrong to a larger extent.

In the study of Adegbite *et al.*^[14] involving medical trainees of the year second to sixth, only 45.9% of the trainees had heard about orthodontics. When they were asked to identify the appliances used in orthodontic treatment only 57.7% selected the braces. About 81.2% of the trainees responded that they would refer patients with malocclusion for orthodontic treatment. About the treatment procedures done at orthodontic centers, 54.1% selected rearrangement of teeth compared to 38.33% of the interns in the present study.

A study was undertaken by Mehrotra *et al.*^[15] involving, graduate, PG (MD/MS/MCH) and diploma holder doctors. About 93.6% of respondents answered correctly that orthodontics is a specialty in dentistry. 94.6% of UGS, 95.3% of PGS, and 80% of PG diploma holders were aware of orthodontics as a specialty. In contrast in the present study, 96.11% of the sample showed unawareness of different specialties of dentistry.

Studies have shown that esthetically poor dentition has a major impact on the confidence level and psychological health of the concerned person.^[16] Hence, it is important to give more attention toward early screening and prompt referral of such persons for appropriate treatment of their irregular crooked teeth.

Ali *et al.*^[17] conducted a study to assess the knowledge and awareness of general medical practitioners toward oral and maxillofacial surgery as a specialty. Of the 125 participants, 84% were aware of the oral and maxillofacial surgery as a specialty in dentistry. Only 41.6% of the participants were aware of the various treatment procedures falling under the scope of this specialty. Furthermore about the referral of the concerned cases, 40% of the respondents usually refer their oral and maxillofacial cases to the oral surgeons. Tooth removal was the only procedure where most of the medical practitioners knew it is a specialty work of the oral and maxillofacial surgeon. Similarly, for facial fractures and facial abscesses, many medical practitioners believe that they come under the scope of the orthopedic and general surgery, respectively.

In the present study, 61.66% of the interns marked oral and maxillofacial surgery as specialty of diagnosis of oral cancer. About 85% of the PGS and 96.25% of the faculty marked it as a work of oral medicine diagnosis and radiology. These findings suggest that awareness about specialties of dentistry is poor among undergraduate trainees and it varies between 80% and 97% among the faculty and PG doctors. Great confusion was noted about the referral of the dental patient to the proper dental specialty, especially for the Orthodontics and Oral and Maxillofacial Surgery.

A study was conducted by Shah *et al.*^[18] to assess the knowledge, attitude, and awareness of the oral and maxillofacial surgery specialty among the consultants and practitioners of medicine. They reported that surgical removal of the third molar, oral submucous fibrosis, and implants were the problems where oral surgeons are preferred. For traumatic injuries to maxillofacial region plastic surgeons and orthopedic surgeons were preferred than oral surgeons. Similarly for the maxillofacial pathology, ENT surgeons were preferred.

A survey was done by Sharma *et al.*^[7] involving a total of 462 medical practitioners, comprising general practitioners, specialists, and super specialists to check the awareness regarding the field of oral and maxillofacial surgery and its scope in the medical field. About 4.98% of the medical practitioners had never heard about oral and maxillofacial surgery as a specialty. Only 20.78% of the medical practitioners had ever visited, consulted or referred a patient to an oral and maxillofacial surgeon. About 21.21% of medical practitioners did not know even a single oral and maxillofacial surgeon in their vicinity. The study showed that although a majority of medical practitioners had heard of OMFS, most of them were not aware of the wide surgical scope of this specialty.

From the above studies, it is clear that great overlapping of the treatment of oro-facial region pathologies between oral surgeons, plastic surgeons, and ENT surgeons and general surgeons is noted. The conditions asked to medical practitioners could be treated by different specialties. Although there are overlapping responsibilities over some specialties, there are never absolute right or wrong on who should do what. It all depends on the training they have received and the culture in different places. The results indicate only on how the medical practitioners thought when they came across these diseases. In real life, it depends a lot on who was referring to the cases. A dental surgeon would mostly refer these cases to an oral and maxillofacial surgeon, while a medical practitioner would tend to do it differently.

In the present study, more than 85% of the respondents replied that they would refer a case of missing teeth to the prosthodontist. Similarly in a study conducted by Srinidhi *et al.*^[19] based on their qualification 95.7% of UG and 93.8% PG and 80.6% PG diploma holders, had marked the right option of prosthodontics as a specialty of dentistry.

In a study conducted by Oyetola *et al.*^[20] involving medical doctors, medical students, and nurses, the majority (71.4%) of the respondents agreed that oral and maxillofacial surgery is a specialty of dentistry that deals with facial fractures. Less than half of the participants (48.5%) were aware that Orthodontists treat malaligned teeth. About one-third of the respondents did not know the specialty of dentistry that treats a hole on the tooth. Only 11% of the participants linked the management of unusual facial pain to the oral medicine.

In our study, 61%, 85%, and 96% of the interns, PGs, and faculty respectively, were aware that diagnosis of the oral carcinoma could be better done by oral medicine specialty. In a survey conducted by Bokkasam *et al.*^[9] involving medical practitioners, among 100 study participants, only 39% were aware of the oral medicine specialty in dentistry. Furthermore for the referral of a case with TMJ and facial pain 25% replied to a dental surgeon, and 8%, 10%, 40%, 12%, 2% and 3% to the general surgeon, neurology specialist, ENT specialist, orthopedician, and general physician, plastic surgeon, respectively.

In a survey involving medical doctors, Chitta *et al.*^[8] observed that oral and maxillofacial surgery, orthodontics and periodontics are the dental specialties well known to >80% of the doctors compared to the other branches, whereas forensic odontology (55.6%), pedodontics (57.4%), and community and preventive dentistry (57.8%) are the branches least known.

Limitation of the present study is that the sample size was small. Hence, the result thus obtained cannot be generalized to the all medical students and faculty. Furthermore, because of the limited literature available on this topic very few comparisons had been made.

CONCLUSION

Despite the tremendous advancements in the field of dentistry, many interns had a relatively low level of awareness about oral health-related different specializations of dentistry. They live under the misbelief that all their oral health-related issues can be solved by a general dentist. This may be attributed to the lack of

sufficient time and training. This justifies the need for creation of proper awareness of specialties of dentistry among the medical trainees to promote proper referral practice in their future career as a healthcare worker. Activities should be increased to promote educational collaboration and interactions between dentistry and other health professionals, with more emphasis on the scope of dentistry and its specialty branches. Equally the public would be benefited, if they come to know that which specialist do what, as they can request for an appropriate referral.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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