

# Awareness of Medical Doctors on Oral Health: A Cross Sectional Study

Harini Chitta<sup>1</sup>, Nallan CSK Chaitanya<sup>2</sup>, Reddy Lavanya<sup>3</sup>, M.Padma Reddy<sup>4</sup>, Imran<sup>5</sup>, Subramanyam<sup>6</sup>

<sup>1</sup>Dental surgeon, Hyderabad. <sup>2</sup>Department of Oral medicine and radiology, Panineeya dental college, Hyderabad. <sup>3</sup>Department of Oral medicine and radiology, Panineeya dental college, Hyderabad. <sup>4</sup>Department of Public health dentistry, Panineeya dental college, Hyderabad. <sup>5</sup>Department of neurosurgery, Gandhi medical college, Hyderabad. <sup>6</sup>Department of Gastroenterology, GEM College, Coimbatore

## Abstract

**Background:** Oral health is an integral component of general health and profoundly influences the general health and the quality of life. The objective of our survey was to investigate the attitude, knowledge and awareness among medical doctors regarding the specializations in the field of dentistry and also their knowledge on common management of oral health related conditions.

**Materials and Methods:** The study group included 502 medical practitioners from 4 major cities of Andhra Pradesh. After informed consent, a questionnaire was distributed to the subjects enquiring the knowledge of common oral lesions and different specialization in dentistry dealing with the same. The data, thus collected was statistically analysed.

**Results:** The results showed that, only 47% of the study group were aware that there could be intense inflammation of gums in pregnant women, 58% of them knew that stress is a major risk factor for Periodontitis, and almost half of the practitioners do not know that dentists play an important role in the treatment of cleft lip and palate. Only 28% knew about TMJ disorders and the dentist connection. 65% call a maxillofacial surgeon for facial injuries management. Almost 79% knew that there was a relation between diabetes and periodontal diseases. Oral and Maxillofacial surgery and Orthodontics were well known branches to most of the practitioners.

**Conclusion:** It was concluded that only few medical doctors were aware about oral health and related problems and were referring the patients to concerned specialist. Similarly there was deficiency in their perception regarding various specializations in the field of dentistry. This assumes important in treating many diseases requiring interdisciplinary coordination for benefit of the patient.

*Key Words: Oral health, Medical doctors, Attitude, Knowledge, Awareness*

## Introduction

The importance of maintaining good oral health is seen under a new prism. The oral cavity is described as the mirror of the body. In fact, many diseases appear first in the mouth before they manifest systemically and they frequently requires supervision from both medical and dental practitioners as a multidisciplinary approach.

Mouradian defines oral health as “encompassing all the immunologic, sensory, neuromuscular and structural functions of the mouth and craniofacial complex. Oral health influences nutrition and growth, pulmonary health, cardiac health and various societal functioning.” [1].

Thus oral health is an essential component of general health. Poor oral health and untreated oral diseases and conditions can have a significant impact on quality of life [2-4]. It implies being free of chronic oro-facial pain, oral and pharyngeal carcinomas, birth defects such as cleft lip and palate, and other diseases and disorders that affect the oral, dental and craniofacial tissues, collectively known as the craniofacial complex [4,5].

The patients attending the medical doctors with simultaneous oral and systemic complaints and primary oral complaints are ever increasing and the awareness combined with knowledge of the management of both these aspects of disease assumes paramount importance for effective treatment outcome.

Many medical doctors are less familiar with the oral cavity and oral diseases bearing systemic origin. They may not be able to effectively recognize that many of the unknown aetiologies of the systemic diseases may be found in the oral

cavity such as pemphigus, a common mucocutaneous lesion [5]. Therefore it is required to create awareness amongst the medical doctors to understand the importance of the inter-relationship between systemic and oral diseases is the need of the hour [6]. The objective of our survey was to investigate the dental knowledge of medical doctors and their attitude towards oral health, as well as their awareness of different specialities in dentistry dealing with dental disorders for timely referral.

## Materials and Methods

An anonymous closed end questionnaire survey was conducted in medical colleges of Andhra Pradesh, India to assess the awareness of medical doctors (Post graduates, Assistant Professors and Professors) from different specialities of medicine on oral health care. A total of 502 participants had responded to a self-administered questionnaire which comprised of 10 close ended questions. Respondents of either gender with age between 25-60 years of various medical departments in different colleges in the state of Andhra Pradesh, India were included. Prior consent was obtained from the participants and their confidentiality was maintained.

After obtaining ethical clearance from the concerned authorities, this anonymous survey was conducted among medical doctors selected randomly among four major Medical colleges from the State of Andhra Pradesh, India. The subjects were asked to mark their responses as either positive or negative. The completed questionnaires were then collected and statistically analyzed with SPSS 16 software, Pearson

Corresponding author: Reddy Lavanya, Senior lecture, Department of Oral Medicine and Radiology, Panineeya Dental College, Hyderabad, Telangana, India, Tel: +91-9866612910; e-mail: padmalavanya1117@gmail.com

Chi-Square was used to identify differences in response for different variables with the level of significance set at  $p < 0.05$ .

### Results

The data thus collected were compiled, analyzed, and interpreted. Results were expressed in terms of percentage and proportion by using Pearson Chi-Square with  $p$  value  $< 0.05$ .

88.4% of the doctors replied that they do come across oral health related problems in their patients and would refer them to a dentist for treatment ( $P=0.001$ ) (Table 1).

**Table 1.** Pearson Chi-Square = 14.16;  $p = 0.001$  (S) (HS=House Surgeon/intern, PG=Post Graduate, MP= Medical professor/staff).

			1q		Total
			Yes	No	
Designation	HS	Count	132	31	163
		% within Designation	81.0%	19.0%	100.0%
	PG	Count	208	21	229
		% within Designation	90.8%	9.2%	100.0%
	MP	Count	104	6	110
		% within Designation	94.5%	5.5%	100.0%
Total		Count	444	58	502
		% within Designation	88.4%	11.6%	100.0%

When questioned about their course of action when they would come across a patient with facial injuries, 64.7% replied that they would seek dentist's referral ( $P=0.001$ ) (Table 2).

**Table 2.** Pearson Chi-Square = 13.75  $p = 0.001$  (S) (HS=House Surgeon/intern, PG=Post Graduate, MP= Medical professor/staff).

			7q		Total
			Yes	No	
Designation	HS	Count	88	75	163
		% within Designation	54.0%	46.0%	100.0%
	PG	Count	155	74	229
		% within Designation	67.7%	32.3%	100.0%
	MP	Count	82	28	110
		% within Designation	74.5%	25.5%	100.0%
Total		Count	325	177	502
		% within Designation	64.7%	35.3%	100.0%

Regarding the questions about the knowledge of oral health related conditions, 79.5% of the doctors know that a diabetic patient may have multiple abscesses in the mouth ( $P=0.19$ ); 81.1% of the doctors would examine the oral cavity when they come across patients with Sexually transmitted disease ( $P=0.23$ ); 58.2% knew that stress is a major risk factor for

periodontal diseases ( $P=0.41$ ); and only 47.4% are aware that there can be intense inflammation of the gums in a pregnant woman ( $P=0.002$ ) (Table 3).

**Table 3.** Pearson Chi-Square=12.22;  $p=0.002$  (S) (HS=House Surgeon/intern, PG=Post Graduate, MP= Medical professor/staff).

			3q		Total
			Yes	No	
Designation	HS	Count	59	104	163
		% within Designation	36.2%	63.8%	100.0%
	PG	Count	120	109	229
		% within Designation	52.4%	47.6%	100.0%
	MP	Count	59	51	110
		% within Designation	53.6%	46.4%	100.0%
Total		Count	238	264	502
		% within Designation	47.4%	52.6%	100.0%

In reply to the questions testing the attitudes of the doctors in taking the opinion of dentists, 76.5% of the doctors reported that they would consult a dentist if they personally had an inflammation of gums, ulcers or pus discharge in their mouth ( $P=0.26$ ). 71.9% agreed that they would call for a dentist's opinion when they come across a patient with TMJ (Temporomandibular Joint) problem and only 58% are aware that dentists play an important role in the treatment of cleft lip and palate ( $P=0.04$ ) (Table 4).

**Table 4.** Pearson Chi-Square = 6.43;  $p = 0.04$  (S) (HS=House Surgeon/intern, PG=Post Graduate, MP= Medical professor/staff).

			6q		Total
			Yes	No	
Designation	HS	Count	117	46	163
		% within Designation	71.8%	28.2%	100.0%
	PG	Count	155	74	229
		% within Designation	67.7%	32.3%	100.0%
	MP	Count	89	21	110
		% within Designation	80.9%	19.1%	100.0%
Total		Count	361	141	502
		% within Designation	71.9%	28.1%	100.0%

### Awareness of Specializations in the Field of Dentistry

On the whole Oral and Maxillofacial surgery ( $p=0.001$ ) and oral medicine and radiology ( $p=0.02$ ) are well known to most of the doctors when compared to other branches while forensic odontology ( $p=0.5$ ) and periodontics ( $p=0.41$ ) are the branches least known (Table 5).

**Table 5.** Depicts P value and percentages of questioner survey on awareness of medical doctors on oral health. (s=significant, ns=not significant).

No.	Question	Yes	No	P value
1	Do you come across oral health related problems in your patients?	88.4%	11.6%	0.001(s)
2	Do you consult a dentist if you personally have inflammation of the gums, ulcers or pus discharge in your mouth?	76.5%	23.5%	0.26(ns)
3	Are you aware that there can be intense inflammation of the gums in a pregnant female?	47.4%	52.6%	0.002(s)
4	Are you aware that a diabetic patient may have multiple abscesses in their mouth?	79.5%	20.5%	0.19(ns)
5	Are you aware that stress is a major risk factor for periodontal (gum) diseases?	58.2%	41.8%	0.41(ns)
6	Do you call for a dentist's opinion if a patient comes to you with TMJ problems?	71.9%	28.1%	0.04(s)
7	Do you call for a dentist's opinion when you encounter a patient with facial injuries?	64.7%	35.3%	0.001(s)
8	Are you aware that a dentist plays an important role in treatment of Cleft lip and palate?	58%	42%	0.88(ns)
9	When you encounter a patient with STD's, do you look for any symptoms in patient's oral cavity?	81.1%	18.9%	0.23(ns)
10	Are you aware of the following specialties in the field of dentistry?			
	Oral Medicine and Radiology	69.3%	30.7%	0.02
	Oral and Maxillofacial Surgery	85.5%	14.5%	0.001
	Conservative Dentistry and Endodontics	63.1%	36.9%	0.19
	Orthodontics	85.9%	14.1%	0.40
	Periodontics	81.9%	18.1%	0.41
	Prosthodontics	78.9%	21.1%	0.01
	Pedodontics	57.4%	42.6%	0.001
	Community and Preventive Dentistry	57.8%	42.2%	0.02
	Implantology	54%	46%	0.01
	Oral Pathology	71.3%	28.7%	0.12
	Forensic Odontology	55.6%	44.4%	0.5

## Discussion

The compartmentalization involved in viewing the mouth separately from the rest of the body must cease. Oral health affects general health by causing considerable pain and suffering and by changing what people eat, their speech and their quality of life and well being [7]. Results from the study reflect that the importance of oral health in relation to general health has been overlooked. There are many studies which have determined a connection between untreated dental infections and death. There are reports of deaths occurring from a minor dental infection [8].

systematic review of 25 studies (13 case-control, 9 cohort and 3 controlled trials) by X Xiong et al (2006) has demonstrated that periodontal disease may be associated with adverse pregnancy in women [9,10]. It has been shown that pregnancy increases the tendency to have gingival inflammation [7]. On the other hand, pregnant women with periodontitis have an increased risk for pre-term and low birth weight delivery [1,11]. Rekha P Shenoy [12] conducted a study among gynaecologists and of them 77% of the respondents stated that bleeding or enlargement of gingiva was a sign of periodontal infection. Hence it has to be emphasized that the Medical Professionals are expected to have a good knowledge about the association between Oral health and Pregnancy, whereas in our study as low as 47% of the Professionals were evident of the fact. This is similar to

the observation made by Al-Habashneh R. et al [13] in their study on the knowledge of healthcare providers in general medicine and other specialties. Only 54% of the Physicians thought that tooth and gums problem can affect the outcomes of pregnancy.

Individuals with diabetes are more likely than non-diabetics to develop gingivitis and periodontal disease [14]. Periodontitis has been called the "sixth complication of diabetes [1]. In a study, Rola Al-Habashneh et al. [15] stated that of the 164 doctors included in their study, 70% had heard of the link between diabetes and oral health. The majority agreed that diabetes increased the tendency to have periodontitis, but only half of them advised their diabetic patients to consult a dentist concerning their oral health. A relatively similar results have been observed in our study that 79% of them knew that there is a relation between oral health and diabetes. Contrast to this observation, a study conducted by A.Gur et al. [6] showed that only 6% of the doctors were aware that Diabetes is a risk factor for Periodontitis.

### Periodontal Disease [16]

Temporomandibular Disorder (TMD) is a collective term that includes a number of clinical complaints involving the muscles of mastication, Temporomandibular joint and associated Orofacial structures [17]. More than 20% of adults experience chronic facial pain, the effects of which can

profoundly affect quality of life [1]. Approximately 50% of patients suffering from TM disorders do not first consult with a dentist, but seek advice for the problem from a physician [17]. According to the study conducted by Krishnaraj et al. [18] only 42% of the practitioners would seek the opinion of the dentists when they come across patients with Temporomandibular disorders to dentists. As per the results of our survey, 72% doctors seek the opinion of the dentists. Jeffrey P. Okeson et al. [17] stated that in many instances the physician can provide valuable information and simple therapies that will reduce the patient's TMD symptoms. In other instances, it is appropriate to refer the patient to a dentist for additional evaluation and treatment.

The congenital malformation of cleft lip or palate or both causes more than physical and cosmetic problems. In many cases the condition impairs speech, causes malocclusion and irregularity of the teeth, and results in an above-average frequency of dental caries. As well, it can cause psychological and emotional problems. The complete care of a child with a cleft lip or palate or both requires multidisciplinary approach [21]. A craniofacial team is routinely used to treat this condition. The members of the craniofacial team at a minimum include a plastic surgeon, an Oral and maxillofacial surgeon, otolaryngologist, geneticist, orthodontist, and social worker [22]. Krishnaraj et al. [18] conducted a survey for medical practitioners regarding management of a child with cleft lip and palate. Of them 89% replied that they would refer to a Plastic surgeon and only 9% would refer to an Oral and Maxillofacial Surgeon. In our study 58% knew that Dentists play an important role in the treatment of Cleft lip and Palate. However a significant percentage that is 42% were unaware.

A number of studies have demonstrated a negative impact on oral health of HIV infection. Approximately 40-50% of people who are HIV-positive have oral disease caused by fungal, bacterial or viral infections that often occur early in the course of the disease [23]. Medical clinicians should be able to recognize HIV-associated oral disease and to provide appropriate care and referral [24]. According to our study 81% of the Doctors look for oral cavity when they encounter a patient with sexually transmitted diseases.

A large number of Doctors don't know the difference between the branches in Dentistry and live under the false belief that all of their dental issues can be solved by a general dentist. A general dentist could diagnose and treats common dental problems in people of different age groups but cannot deal with conditions which require procedures which could be dealt only by dental specialities.

According to Morgan et al. [25], failure to carry out oral examination is probably multifactorial and includes insufficient time, insufficient training, and lack of confidence. Wanda C. Gonsalves et al. [26] has conducted a study for Family medicine residency directors and reported that approximately 95% agreed that oral health knowledge should be a component of residency training.

The speciality of the doctor did not have much influence on the results of the present survey.

## Limitations

The study was administered over academic hospitals hence the results of the study cannot be attributed to the whole medical population. There is no appropriate validity evaluation of the sum of the questions. Hence it is recommended evaluate any question if any further study is intended on medical doctors including a option of no idea should be incorporated. The experience of academic faculty could not be obtained due to technical difficulties such as migration of various staff from various medical colleges in India during the course of the study (in a period of a year).

## Conclusion

Despite the tremendous advancements in the field of Dentistry most of the medical practitioners had a relatively low level of knowledge about the oral health related conditions and also about the related specializations in the field of dentistry. Most of them could not recognize the common diseases in dentistry and advise their patients to consult a dentist which may be attributed to the insufficient time and insufficient training. The results of this survey suggest that doctors are not as knowledgeable as they should be about oral health conditions their detection and prevention. By integrating oral health into strategies for promoting general health and by assessing oral needs in sociodental ways health planners can greatly enhance both general and oral health.

## Recommendations to Bring About Awareness on Oral Health

- Doctors should be advised to examine the oral cavity of the patients as oral cavity is the mirror of general health.
- Steps should be taken to increase educational collaboration between dentistry and the other health professions, featuring more curricular emphasis on the interaction of dental and medical problems.
- Medical and Dental communities should take necessary steps towards accurately documenting the connection between medical conditions, diseases and oral health.
- Setting up of associate clinics which includes Dental and medical practitioners should be encouraged so that the patients are at benefit.
- Expanding public health and prevention training for Medical and Dental school graduates.

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