



## Knowledge, Attitude and Perception of Oral Diseases Presented by the Patients to General Medicine Practitioners in the Suburban areas of Nagpur City.

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**Abstract:** General Medicine Practitioners (GPs) are often the first point of contact for advice and management in cases of dental related pain. The reasons for presentation to the General Practitioners, rather than the dentist, include non-classic presentation of dento-facial pain, lack of coordinated after hours dental care, poor patient education, patients' prescription of their GP as the primary coordinator of integrated total health care and financial considerations. This study aims to assess the knowledge, attitude and awareness of the common oral diseases and to create awareness of the prevailing dental conditions among general practitioners, techniques for better diagnosis, and appropriate management protocols for different dental conditions. A questionnaire study was carried out among 130 General Practitioners in the suburban areas of Nagpur City using an online survey tool. 21 questions related to dental or denture-related problems and benign and malignant disease were presented in the questionnaire. The doctors have spent an average of 5 minutes to finish the survey. The data was analyzed using descriptive statistics. Out of 130 General Practitioners 71 were well versed about plaque and calculus, whereas 86% felt that referral of the patient to a dentist is the more appropriate way to treat a dental abscess. The results of the study show that general practitioners had good dental knowledge. They were well aware about most of the dental conditions, along with the various oral manifestations of systemic diseases, and life threatening conditions. It is essential that the general practitioners should keep their knowledge updated with time. Oral health education can be included in the medical curriculum to emphasize a positive attitude towards oral health.

**Keywords:** General Practitioners, Knowledge, Attitude, Awareness, Oral Diseases, Survey.

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## I. INTRODUCTION

Oral diseases, conditions, and orofacial trauma, are widely prevalent and costly to treat; yet they are preventable. Most of the oral conditions have an insidious onset, and are chronic and asymptomatic in nature until they have progressed to an advanced stage. Also there are several systemic diseases with oral manifestations, many of which manifest earlier than their systemic counterparts. This makes the routine oral examination an extremely important and a viable area for the early detection and the treatment of the variety of oral and systemic diseases.<sup>1</sup> The first contact for most of the patient is usually with the general medical practitioner. Inspection of the oral cavity by the doctor has been accepted as a part of the physical examination for over a century, and if it is done on a routine basis it can considerably reduce the morbidity and mortality which result from oral diseases.<sup>2</sup> Dentofacial pain is a common presentation in general practice, and more than 50% of cases arise from dental related pathology. Dentists are well equipped and trained to deal with most of the common presentations of dental pain. Furthermore, less common and atypical dento-facial pain presentations are adequately dealt with by dental specialists in the area of Oral Medicine and Oral Maxillofacial Surgery.<sup>3</sup> However, not all people with dental pain report to the dentist or dental specialists. General practitioners (GPs) are often the first point of contact for advice and management in cases of dental related pain. The reasons for presentation to the General Practitioners, rather than the dentist, include non-classic presentation of dento-facial pain, lack of coordinated after hours dental care, poor patient education, patients' prescription of their GP as the primary coordinator of integrated total care and financial considerations<sup>4</sup>. However, for various reasons, GPs may not be well equipped for managing dento-facial pain such as, minimal dental education in medical schools, inconsistent exposure to dental problems, absence of management guidelines, poor localization of dento-facial pain, and poor communication and collaboration between the GPs and dentists.<sup>5</sup> Many patients with oral symptoms present initially to their general practitioner (GP) with a variety of problems, ranging from simple benign disease to premalignant or malignant conditions. Early recognition and diagnosis of this disease spectrum is of paramount importance in the successful treatment, and directly affects prognosis of the disease condition.<sup>6</sup> The primary care clinician who deals with oral diseases must therefore be in a position to identify all suspicious lesions and to seek specialist advice as quickly as possible when unsure, while also referring to the most appropriate discipline.<sup>7</sup> The present study aims to evaluate the knowledge, attitude and perception of the common oral diseases and to create awareness of the existing dental conditions among medical practitioners, techniques for better diagnosis, and appropriate management protocols for different dental conditions.

## 2. METHODOLOGY

The sampling frame for this cross-sectional study included all the medical practitioners practicing in suburban areas of Nagpur City. A Provisional list of all the medical practitioners was obtained from Indian Medical Association (IMA), Nagpur Branch, out of which 130 general Practitioners who were willing to participate in the study were selected. These general practitioners included those with the MBBS degree

and /or with higher degree (PG Diploma /MD/ MS) practicing in the suburban areas of the Nagpur city using a google formonline survey tool. Both the male and female general practitioners were included in the study. The study was carried out in the time period from July to September 2020 after the approval from Institutional Ethics Committee of Swargiya Dadasaheb Kalmegh Smruti Dental College & Hospital, Nagpur. The questionnaire was designed with simplicity in mind so that it covers the questions related to dental knowledge, attitude and awareness.<sup>1</sup> The questionnaire consisted of closed ended questions which enquired about the frequency and type of commonly seen oral conditions including benign and malignant lesions, and if an appropriate second opinion was sought for those conditions. The doctors spent an average of 5 minutes to finish the survey. There were a high number of responses. The response rate may have been influenced by the fact that many general practitioners considered this to be a relevant subject. Response to each question was tabulated and data was statistically analyzed. The study's limitation is that the participants had to rely on his/her memory to recall accurately their recent experience about the subject.

### 2.1 QUESTIONNAIRE<sup>1</sup>

Please mention the validity and the reliability and the pilot study used for this questionnaire, ethical approval for your study and names of the institution where you got your sample.

- 1) What do you think are the factors for Dental Caries?  
A) Smoking B) Brushing once daily or less than once daily C) Using tooth powder D) Frequent snacking and frequent food intake.
- 2) What do you think are the factors for periodontal and gingival diseases?  
A) Plaque and calculus B) Smoking C) Overhanging restorations D) Smoking
- 3) Do you think scaling has adverse effects on the teeth?  
A) Thinning of tooth B) Increase in interdental space C) Increase in tooth mobility D) Causes sensitivity of the teeth.
- 4) How often do you advise your patients to visit the dentist?  
A) Once in 6 months B) Once in a year C) Once in 2-5 years D) Only if pain arises
- 5) How often do you see patients with any oral symptoms and conditions in a week?  
A) Frequently (> 5 in a week) B) Occasionally (2-5 in a week) C) Rarely (less than 2 in a week)
- 6) How often do you manage patients with dental problems or conditions?  
A) Frequently (>5 in a week) B) Occasionally (2-5 in a week) C) Rarely (less than 2 in a week) D) Never
- 7) How do you treat a patient with dental abscess?  
A) Prescribe antibiotics and painkillers B) Refer to the dentist C) Ignore
- 8) Do you think pregnant women need dental check up?  
A) Yes B) No
- 9) Pediatric patients must visit the dentist regularly.

## A) Agree B) Disagree

10) Ludwig's angina is a life threatening condition of  
 A) Cardiovascular system B) Dental space infection C)  
 Respiratory system D) Venous Disease

11) What is another life threatening condition that can occur  
 due to an untreated dental condition?

A) Cavernous thrombosis B) Hodgkin's lymphoma C)  
 Myelofibrosis D) Brain tumors

12) Periodontal Disease is a risk factor and is commonly  
 associated with

A) Diabetes B) Peptic ulcer C) Asthma D) Myocardial  
 infarction

13) Systemic complications arising due to dental disease  
 A) Necrotizing fasciitis B) Diabetes C) Leukoderma D)  
 White patches

14) Certain Anti- hypertensives can cause gingival  
 enlargements

A) Agree B) Disagree

15) According to you, what type of changes in the oral cavity  
 would you associate with progression towards oral cancer or  
 other pre malignant conditions?

A) Non scrapable white patches B) Blanching and stiffness of  
 the oral mucosa C) Non healing ulcers/ erosive lesions D)  
 Exophytic growth

16) There is a connection between General and oral health.

Do you agree?

A) Yes B) No

17) Are you aware of Sjögren's syndrome?

A) Yes B) No

18) If yes, what are the affected regions in Sjögren's  
 syndrome?

A) Salivary and tear glands B) Adrenal gland C) Lymph nodes  
 D) Not Sure

19) Do you think HIV has oral manifestations?

A) Yes B) No

20) If yes, what is the most common type of condition that  
 can be appreciated?

A) Fungal infections (candidiasis) B) Viral infections C)  
 Bacterial infections D) Gingivitis/ periodontitis

21) Systemic conditions with the most oral manifestations

A) Endocrine B) Renal C) Gastrointestinal D) Respiratory

### 3. STATISTICAL ANALYSIS

The data collected was entered into Microsoft excel data sheet. The software used in the analysis was SPSS (V.24). Descriptive statistics was used to find out the frequencies and Percentages of variables considered in the study

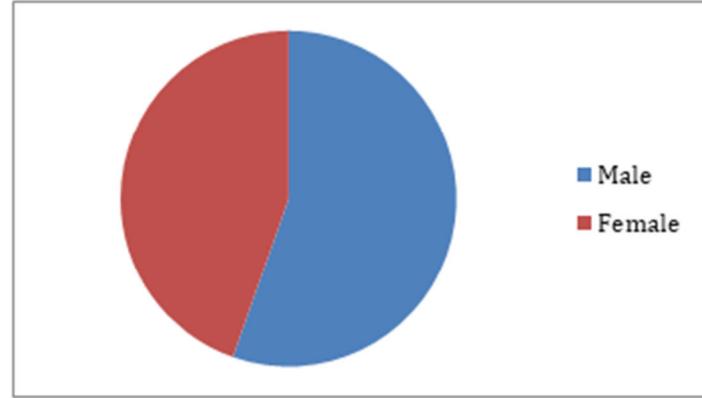
### 4. RESULT AND DISCUSSION

**Table 1: Distribution of the study subjects based on Gender.**

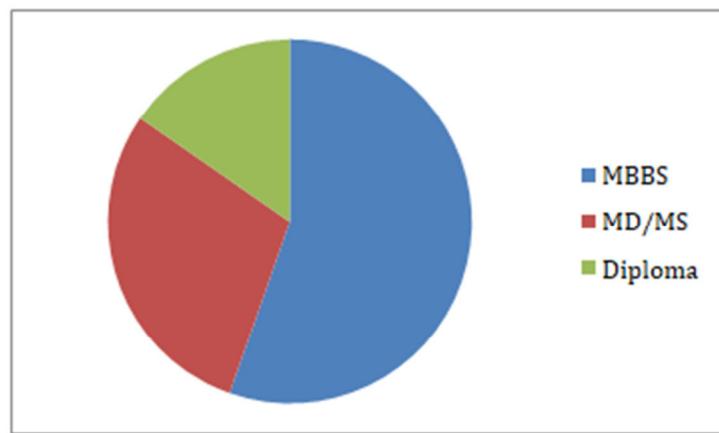
Gender	Number	Male	Female
	130	72 (55%)	58 (45%)

**Table 2: Distribution of Study Subjects based on Qualification.**

Qualification	Number	MBBS	MD/MS	Diploma
	130	72(55%)	38 (30%)	20 (15%)



**Fig 1: Gender wise distribution.**

**Fig 2: Distribution of study subjects based on Qualification.****Table 3: Responses of study subjects based on their knowledge, attitude and awareness**

Sr.No	Question	Response (No.)			
		A	B	C	D
1	What do you think are the factors for Dental Caries?	14 (10%)	31 (23%)	0	85(65%)
2	What do you think are the factors for periodontal and gingival diseases?	80 (61%)	16(12%)	18(13)	16(12%)
3	Do you think scaling has adverse effects on the teeth?	22(16%)	18(13%)	9(6%)	81 (62%)
4	How often do you advise your patients to visit the dentist?	66 (50%)	47(36%)	6(4%)	11(8%)
5	How often do you see patients with any oral symptoms and conditions in a week	36 (27%)	60 (46%)	34(26%)	NA
6	How often do you manage patients with dental problems or conditions?	19(14%)	43(33%)	50(38%)	18(13%)
7	How do you treat a patient with dental abscess?	118(90%)	11 (8%)	1 (0.7%)	NA
8	Do you think pregnant women need dental check- ups?	117 (90%)	13(10%)	NA	NA
9	Paediatric patients must visit the dentist regularly	123 (94%)	7(5%)	NA	NA
10	Ludwig's angina is a life threatening condition	34(26%)	71 (54%)	20(15%)	5(3%)
11	What is another life threatening condition that can occur due to untreated dental condition?	95 (73%)	16(12%)	14(10%)	5(3%)
12	Periodontal Disease is a risk factor and is commonly associated with	102 (78%)	6(4%)	1(0.7%)	21(16%)
13	Systemic complications arising due to dental disease	84 (64%)	19(14%)	16(12%)	11(8%)
14	Certain Anti- hypertensives can cause gingival enlargements	117 (90%)	13(10%)	NA	NA
15	According to you, what type of changes in the oral cavity would you associate with progression towards oral cancer or other pre malignant conditions?	24(18%)	10(7%)	88 (67%)	8(6%)
16	There is a connection between General and oral health. Do you agree?	128 (98%)	2(1.5%)	NA	NA
17	Are you aware of Sjögren's syndrome?	115 (88%)	15(11%)	NA	NA
18	If yes, what are the affected regions in Sjögren's syndrome?	115 (88%)	1(0.7%)	1(0.7%)	13(10%)
19	Do you think HIV has oral manifestations?	125 (96%)	5(3%)	NA	NA
20	If yes, what is the most common type of condition that can be appreciated	98 (75%)	1(0.7%)	1(0.7%)	30(23%)
21	Systemic conditions with the most oral manifestations	85(65%)	10(7%)	25(19%)	10(7%)

The mouth and face are highly accessible parts of the body, sensitive to and able to reflect changes occurring internally. The mouth is the major portal of entry to the body and is equipped with formidable mechanisms for sensing the environment and defending against toxins or invading pathogens. Poor oral conditions may adversely affect general health and certain medical conditions may have a negative impact on oral health.<sup>8</sup> The relationship between oral and general health has been increasingly recognized during the past two decades.<sup>9</sup> This cross sectional study was conducted to assess the dental knowledge, attitude and perception among general practitioners in the suburban areas of Nagpur city towards oral health care. The present study comprised of 72 (55%) males and 58 (45%) were females (Table 1, Fig. 1); out of which 72(55%) were holding MBBS Degree, 38 (30%) were holding MD/MS Degree and 20 (15%) were holding PG diploma (Table 2, Fig. 2). The results of the study showed that general practitioners had good dental knowledge. 85

doctors (65%) agreed that the most common cause of dental caries was frequent food intake and snacking, while other studies done by Vishal Malhotra et al, Mehrotra V et al, MC Bater, Warren jones, S Srinidhi, NavinAnand Ingle et al, Chandra J, Chandu et al, Naidu S et al, Radha et al, Patil et al, showed that 90% of doctors knew that frequent sugar intake and frequent snacking led to dental caries. The present study showed that 80 (61%) of the medical practitioners were aware that plaque and calculus was the causative factor for periodontitis and gingivitis, while Vishal Malhotra et al, Mehrotra V et al, MC Bater, Warren jones, S Srinidhi, NavinAnand Ingle et al, Chandra J, Chandu et al, Naidu S et al, Radha et al, Patil et al, had found that 80% of the doctors were aware that plaque and calculus were the causative factor for periodontal and gingival diseases.<sup>10,11,12</sup> 62% Practitioners felt that scaling causes sensitivity of the teeth. Majority of the Practitioners (90%) considered in the present study agreed that pregnant women need dental checkups,

which was similar to the results obtained by Dr. Rajesh et al. Doctors should be encouraged to refer pregnant patients for oral health examination.<sup>13</sup> 93 % Practitioners agreed that the children must visit a dentist regularly. A multidisciplinary team that includes the Family Physician, Obstetricians and Dental practitioners should assume an active role in providing health education to pregnant women which can significantly decrease the possibility of oral diseases. 64% Practitioners knew that the Systemic complications arising due to dental disease were Necrotizing fasciitis. Oral health education can be included in the medical curriculum to emphasize a positive attitude towards oral health.<sup>14</sup> 90% Practitioners agreed that certain anti-hypertensives cause gingival enlargement. 95 (73%) Practitioners answered correctly that cavernous sinus thrombosis is a life threatening condition arising due to untreated dental condition, which was similar to the study conducted in Kanpur city. 78% Practitioners correctly identified that periodontal disease is commonly associated with diabetes. 60 (46%) Practitioners saw patients presenting with dental conditions frequently (>5 in a week), while about 36 (27%) doctors had patients presenting with oral conditions occasionally(2-5 in a week), while in a study done by MC Bater et al, 46% reported that they saw between two and five patients with oral and dental problems every week, with a further 14% reporting seeing more than five patients on a weekly basis.<sup>15</sup> 102 (78%) Practitioners were confident that diabetes is associated with periodontitis, in a study done by Kumar et al, 100% agreed that there exists some sort of relationship between diabetes and periodontal health, of which only 43.2% were aware of the bidirectional relationship and the remaining 56.4% reported diabetes as a risk factor of periodontitis.<sup>16</sup> Dental students, receive a significant education in general medicine, general pathology and general surgery along with other basic science subjects, while on the other hand, medical students receive only minimal theoretical and practical knowledge about oral conditions. A study by Anderson et al, has demonstrated that general practitioners are more likely to prescribe antibiotics for acute dental abscess than dentists. According to the present study, 90% Practitioners prescribed antibiotics and painkillers and 11 (8%) practitioners felt that referral of the patient to a dentist is the more appropriate way to treat a dental abscess than to prescribe antibiotics and painkillers. Only 0.7% of the participants answered that the abscess can be ignored and that it will subside. According to the study done by Srinidhi et al, 79% of the doctors correctly identified that Ludwig's angina is a dental space

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infection while according to this study; the result obtained was about 54%. According to 67% practitioners the non-healing ulcer/erotic lesions leads to progression towards oral cancer or other pre malignant conditions. 98% Practitioners agreed that there is a connection between general and oral health. 96 % Practitioners agreed that HIV has oral manifestations, whereas 75% practitioners answered that fungal infection i.e. candidiasis is the most common condition associated with HIV. 88% of the doctors correctly answered the affected regions in Sjögren's syndrome as the salivary and tear glands. 65% Practitioners chose that the systemic conditions with the most oral manifestations are the endocrine system.

## 5. CONCLUSION

From this study it can be concluded that the general practitioners were well aware about most of the dental conditions, along with the various oral manifestations of systemic diseases, and life threatening conditions arising due to untreated dental conditions. It is essential that the medical practitioners keep their knowledge updated with time and get actively involved in oral health, as the oral cavity is the mirror of the body. This can be achieved by conducting new seminars for the newly graduated doctors, and by regular examination of the oral cavity by the medical practitioners, during the patients' general examination. A multidisciplinary team that includes the Family Physician, Obstetricians and Dental practitioners should assume an active role in providing health education to pregnant women which can significantly decrease the possibility of oral diseases. Oral health education should be given emphasis in medical curriculum for a positive attitude towards oral health.

## 6. AUTHOR CONTRIBUTION STATEMENT

Dr. Ramhari Sathawane and Dr. Dhiran had designed, carried out the study and compiled the data. Dr. Romita and Dr. Ashish have contributed in compiling the literature associated with the present study. Dr. Rakhi has checked the references. Dr. Sunita Kulkarni has provided an important revision for the article.

## 7. CONFLICT OF INTEREST

Conflict of interest declared none.

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