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RESEARCH ARTICLE

APPROACH OF A PRIVATE DENTAL PRACTITIONER TOWARDS THE DIAGNOSIS & TREATMENT OF PERIODONTAL DISEASE: A SURVEY

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ABSTRACT

Introduction: unlike the last decade the field of periodontics has evolved in the recent years and has gained utmost importance in the field of dentistry. There has been a tremendous about of advancement in diagnostic aids and methods in relation to periodontics.

Materials and methods: The present study was carried in the form of a survey among 100 dental practitioners in rural areas in Navi Mumbai (Uran, Turbhe, Kalamboli, Panvel) with a minimum of one year of active clinical practice. Interns, dental students, and especially periodontists were excluded from the survey. The questionnaire consisted of 11 questions. The questions ranged from chief periodontal complain of the patient to the level of satisfaction of private dentists after periodontal therapy.

Results: the observations were that majority if the private practitioners used basic diagnostic aids, which were not sufficient to determine periodontal disease. Also majority of the practitioners do not refer the patient to a periodontist in the first visit or follow up with the patient after phase 1 therapy

Conclusion: The lack of awareness and applications about periodontal healthcare in urban areas of Navi Mumbai practitioners in terms of diagnostic techniques, systemic disease relationships and reasons for referrals to periodontists. There is a need for patient motivation for disease prevention and guidance to general dentists for patient referrals to periodontists for enhancement to better treatment outcomes.

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INTRODUCTION

Unlike the last decade, the field of periodontics have evolved in the recent years and has gained utmost importance in the field of dentistry as the periodontal health of a patient has become an integral part of the treatment plan. Periodontal disease is often ignored or neglected; this might be due to the lack of adequate knowledge of the dentist or inability to go about the treatment. Often patients with periodontal disease only go through scaling and polishing and no further treatment or follow up is done. Periodontal health of a patient is utmost important to a dentist as it defines the probable treatment for the patient. Poor periodontal health may lead a dentist to provide a much compromised treatment keeping in mind the periodontal health of a patient. Periodontal health is a key factor in determining the prognosis of a patients treatment outcome , for example providing a fixed prosthesis to a patient with poor periodontal health has a very poor prognosis as the supporting structures are not ideal .Various authors have conducted a similar study which demonstrated "Demographic variables affecting patient referrals from general practice dentists to periodontists" (Zemanovich, 2006). They concluded that various factors such as gender of the dentist and the proximity to a periodontist affected the number of referrals by a general dentist. A comprehensive demographic study in the United States was authorized by the American Academy of Periodontology (AAP) in 1981. The study concluded that clinicians are the best source of referrals to a periodontist (Brown *et al*., 1981). This survey intends to recognize the basic knowledge and skills implemented by the general dental practitioners towards the patients visiting them with periodontal diseases as diagnosis and treatment of periodontal disease is utmost important in order to provide an overall treatment to the patient.

Aim

The aim of this survey is to know about the approach, knowledge and clinical skills implemented by a dental practitioner towards periodontal disease. This survey is first of a kind conducted in rural areas in and around NAVI MUMBAI which includes only private dental practitioners.

MATERIALS AND METHODS

The study was carried in the form of a survey among 100 dental practitioners in rural areas in Navi Mumbai (Uran,

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Turbhe, Kalamboli, Panvel) with a minimum of one year of active clinical practice. Interns, dental students, and especially periodontists were excluded from the survey. Out of the 100 dental practitioners 74 were males and 26 were female. To assess the goal a questionnaire was formulated. The questionnaire consisted of 11 questions. The questions ranged from chief periodontal complain of the patient to the level of satisfaction of private dentists after periodontal therapy.

Questionnaire

1. Name:
2. No. of years of practice:
3. How do you go about a diagnosis(diagnostic aid) of periodontitis in a patient?

- o Visualexamination
- o Probing (mention probe/explorer used)
- o PSR method
- o Radiograph

  - Intra oral periapical radiograph
  - Bite wing
  - Orthopantogram
  - Cone beam visual imaging

- o Microbiological examination

4.Are you aware of a inter-relation between certain systemic diseases and periodontitis? Justify.

5. Are you aware of the effect of certain drugs on the gingiva/ periodontium ? Justify.

6. Do you carry out phase–I* periodontal therapy in your private clinic?

**(phase 1 therapy includes scaling, root planning, patient education and motivation, splinting of tetth, orthodontic treatment)*

7. How long do you follow up after phase-1 therpy?

8. Do you carry out any periodontal surgeries on your own? If YES, which?

- Depigmentation
- Frenectomy
- Crown lengthening
- Flap surgeries
- Recession coverage procedures (Free Gingival Graft/Connective Tissue Graft)
- Bone defects
- Other –please mention

9. For which signs and symptoms do you refer the patient to the periodontist?

- Attachment loss
- Bleeding on probing
- inflammation/enlargement
- Gingival /periodontal abscess
- Mobile teeth

10. How often do you refer your patients to a periodontist?

- Once a week
- Twice a week
- Once a month
- Other

11. What is your opinion on the cost effectiveness of the treatment?

- Inexpensive
- Reasonable
- Expensive

RESULTS

A multivariate regression analysis were obtained by a qualified statistician. Following were the observations of analysis to the justifications for the questions.

-Observations for diagnostic aid used for diagnosis of periodontal disease. Results showed that 56% (n=100) considered probing alone as a diagnostic aid, where as 58% considered both probing and radiograph as a diagnostic aid. 42% considered both visual examination and probing as a diagnostic aid. 26% considered radiograph alone as a diagnostic aid. 18% considered visual examination alone as a diagnostic aid. (Table 1A)

Observations for Probing method used for diagnosis (%, n=56) (72% (n=56) reportedly use a diagnostic dental probe for examination of periodontal pockets, where as 28% use explorers to check for periodontal pockets (Figure 1): Radiography used for diagnosis (%, n=26): - 81% (n=26) prefer OPG for diagnostic aid, 19% prefer Intra Oral Periapical radiograph (IOPA) for diagnostic aid (Figure 2)

Observations on knowledge of systemic diseases and drugs that cause gingival enlargement

57% (n=100) could name more than 2 systemic diseases that have an influence on periodontal health where as the remaining 43% could name 1 -2. (Table 1B)

Knowledge of drugs that cause gingival enlargement:

78% (n=100) could name majority of the drugs (7-8) that cause gingival enlargement. Whereas 22% could only name around 2-3 drugs that have an effect on the gingiva. (Table 1C)

Phase-1 treatment of periodontal therapy

87% conducted phase 1 therapy on their own.
13% referred the patient to a periodontist for the same. (Table 2)

Obsrvations for recall after phase-1 therapy

71% followed up the patient for upto 6 months
29% followed up the patient for 1-2 months (Table 3)

Results for surgical techniques performed by dentists by themselves

59% conduct crown lengthening procedures on their own. 24% conduct gingivectomy on their own, 13% conduct fenectomy,

4% conduct Depigmentation, none conduct flap surgeries or any bone defect procedures by themselves. (Table 4)

Table 1A:	% (n=100)
Diagnosis method	
— Visual examination	18%
— Probing	56%
— Radiograph	26%
— Visual examination & probing	42%
— Probing and radiograph	58%
Table 1B	
Knowledge of systemic diseases	
— Could name >2 systemic diseases that influence periodontal health	57%
— could name only 1-2 systemic diseases that influence periodontal health	43%
Table 1C	
Knowledge of drugsthat cause gingival enlargement.	(n=100)
- Could name majority of the drugs that cause gingival enlargement.	78%
- Could name less than 3Drugs .	22%

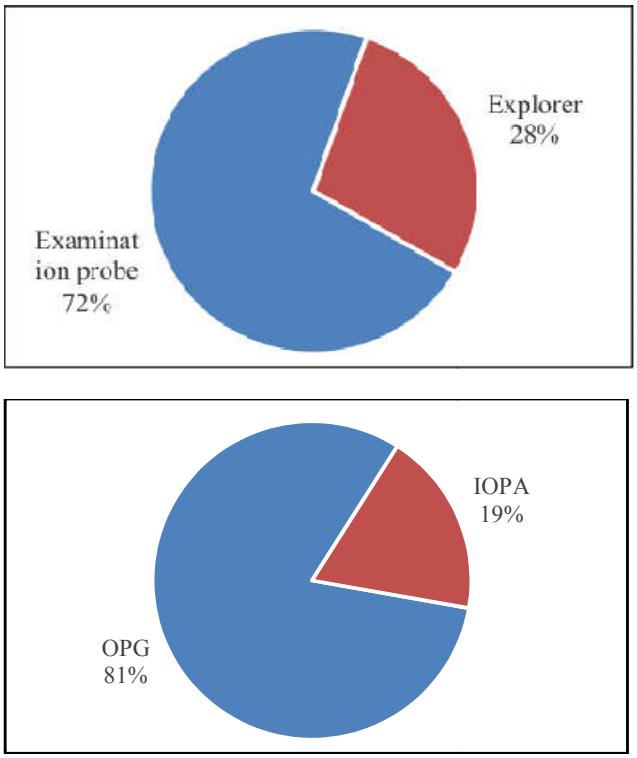

Table 2. Observations for treatment trends for periodontal disease

	% (n=100)
Phase-1 treatment for periodontal disease	
— Self-treatment	87%
— Consult periodontist	13%
Table 3- Patient recall after periodontal therapy	
Recall after phase-1 therapy	
— Recall for upto 6 months.	71%
— Recall for a month or two	29%
Table -4	
Conduct periodontal surgery	
— Crown lengthening	59%
— Gingivectomy	24%
— Frenectomy	13%
— Depigmentation	04%
— Flaps	00%
— Bone defects	00%

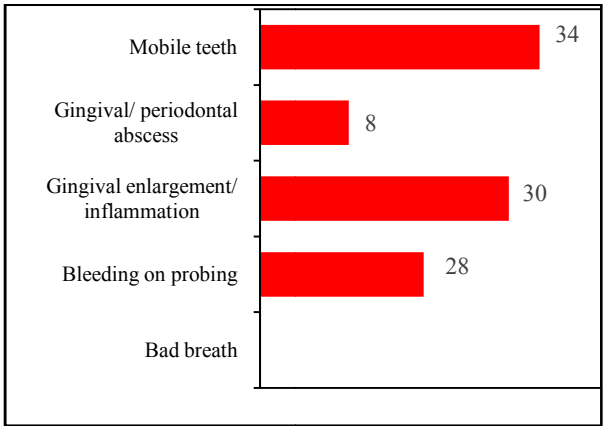

Figure 3. Reason for referral to periodontist (%, n=100)

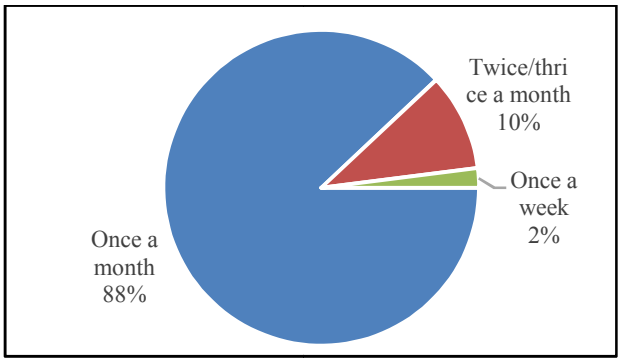

Figure 4. Frequency of referral to periodontist (%, n=100)

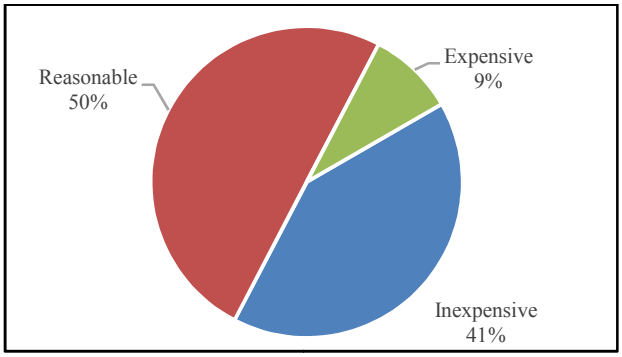

Figure 5. (%, n=100)

Reasons for referral to a periodontist

Reason for referral to a periodontist (Fig 3)
34% referred when the patient had mobile teeth
30% referred when there was gingival inflammation /enlargement
28% when there is bleeding on probing
8%when there was gingival/periodontal abscess
0% attachment loss.

Frequency of referral to a periodontist: (Fig 4)

88% refer to a periodontist once a month
10% twice/thrice a month
2% once a week. (Figure 4)

Opinion on cost-effectiveness of treatment

Opinion on cost effectiveness of treatment: (Fig 5)

50% find the cost reasonable, 41% find it inexpensive, 9% find it expensive

DISCUSSION

Diagnosis of periodontal disease is of utmost importance as it helps the clinician in appropriate treatment plan. In this survey the observation was that most of the clinicians used probing and radiographs for diagnosis of periodontal disease findings. This is the appropriate way as it correlates between the clinical & radiographic findings to arrive at a definitive diagnosis. Probing depth is not the main criteria to assess the severity as the gingival margin is never fixed but fluctuates its position as per the condition, however, it is a important clinical sign in detecting deep periodontal pockets which are the main areas of occupants of subginigval bacteria which is a direct cause of periodontal disease (Loe and Brown, 1991).Very few used visual examination as it's a subjective analysis which can mislead in diagnosis. Out of the clinicians who used probes only a few used graduated probes for periodontal measurements while remaining used non graduated probes. To check for periodontal pockets is to basically check the extent of the disease, there a certain probes like the William's Probe and University Of North Carolina 15 probe (UNC15) probes that are used to check the depth of the periodontal pocket. (Savage Amir *et al*., 2009) Radiographs alone might be misleading as they are a 2 dimensional image and sometimes what a clinician finds on a radiograph do not co-relate to what is seen clinically. (Corbet *et al*., 2009) As mentioned earlier radiographs are used as a secondary diagnostic aid after clinical examination .Therefore, clinical examination alone also is not an ideal way to go about the diagnosis. The type of radiograph is also important for diagnosing periodontitis especially in cases where there is a certain bone defect. In this survey 81% preferred OPG where as only 19% preferred intra oral radiographs. Although OPG's provide sufficient information as localized bone defect at times may not be clearly depicted. These errors are quite minimal in intra oral radiographs. AAP in its 2001 position paper on "guidelines for periodontal therapy" holds that intra-oral radiographs, such as periapical films and vertical or horizontal bitewings, provide a considerable amount of information about the periodontium that cannot be obtained by any other non-invasive means. (Corbet *et al*., 2009)

To conclude, most of the practitioners use panoramic radiographs (orthopantomogram) as a radiographic diagnostic aid. However, to obtain a good survey view of the dental arch and the surrounding structures and minimum of 14 intraoral periapical radiographs are required and also 4 posterior bitewing radiographs in order to check the extent of any interdental wall defects. (Armitage, 1996) Systemic diseases have a great impact on periodontitis (Abiodun *et al*., 2012). In this survey more than half of the dentist had a knowledge about the impact of systemic disease and periodontal problem. Diabetes as it is clear from various epidemiologic studies that it increases the risk and severity of periodontal disease. The elevated level of periodontal inflammatory factors may increase inflammatory activity in atherosclerotic lesions, potentially increasing the risk for cardiac or cerebrovascular events (Haraszthy *et al*., 2000). Other than these periodontal disease also have an indirect effect on respiratory disease, rheumatoid arthritis, preterm low weight birth babies (Abiodun *et al*., 2012). However, it is important for clinicians to have a thorough knowledge of the systemic diseases and it is important for the practitioner to expand their horizons of knowledge and recognize oral cavity as one of the many interrelated organ systems. It is also important to know the history of patients systemic disease as the drugs (question 5) used for the treatment of these diseases can aggravate cause gingival enlargement or inflammation. More than three-fourths of the dentists could elaborate on the influence of certain drugs like phenytoin-Anticonvulsants, Immunosuppresants and various calcium channel blockers-amlodipine having an effect on the gingival (VipinBharti and ChhayaBansal, 2013). Hence it always important to know the patients history of the drugs used the patients before predicting a certain final diagnosis. Majority of clinicians conducted Phase 1 therapy on their own before consulting a periodontist and the remaining consulted a periodontist for the same. This effectively explains that most of the dentists had a basic understanding about importance of etiotropic phase and referral to a periodontist is minimum.

The non-surgical periodontal treatment remains the gold standard for managing the periodontal patients (Anastosios Pleassas, 2014). Scaling and root planing is important especially in cases where there is > 6 mm periodontal pockets. A thorough scaling and root planing in these cases might reduce the pocket depth to a level where it can be maintained by the patient and further periodontal procedures can be avoided. Therefore, a role of a high quality scaling and root debridement along with implementation of risk factor modification approach (oral hygiene habits, smoking cessation, diabetescontrol, lifestyle) in the management of periodontitis is paramount. (Anastosios Pleassas, 2014) In this survey most of the clinicians conducted phase 1 therapy on their own. However, it is important for them to understand all the aspects (patient motivation, splinting of mobile teeth, orthodontic therapy if required) are included in the phase 1 therapy other than scaling and root planing and should be applied for better prognosis. After phase 1 therapy a good number of clincians followed up the patients for about 6 months and a minority of them followed up for about 2 months. Follow up of the patient is important especially if the patient is suspected to be having any sort of periodontal disease. Most of the time scaling and root planing alone is not sufficient and hence there should be a follow up for atleast 6 months in order to check for disease progression. (Annie kitty George *et al*., 2015)

Large number of clincians carried out various periodontal surgeries on their own. The most common surgery performed were gingivectomy and crown lengthening procedures. However none of the dentists conducted any sort of Mucogingivalsurgeries, grafting procedures or even flap surgeries on their own. This shows that the clinicians have a basic knowledge on periodontal surgeries yet a skilled specialist (periodontist) is required to conduct procedures such as flaps and mucogingival surgeries as per the required indications. The most common clinical feature for referral to Periodontist was mobile teeth. Mobile teeth is one of the last signs of periodontal disease when there is insufficient bone support (Savage Amir *et al*., 2009). Second major reason for referral was when there is gingival inflammation or enlargement. Quarters of clinicians refer when there is bleeding on probing which is the sign of inflammation or disease activity in the gingiva .Few of the clinicans refer when there are any gingival or periodontal abscess. None referred for attachment loss which is one of the most important signs of periodontal disease as it is associated with disruption of connective tissue and alveolar bone resorption (Abiodun *et al*.,

2012). In this survey although the clincians refer the patient to a periodontist for basic signs and symptoms it is important to refer the patient to a periodontist as early as possible by thorough investigation as it is beneficial for the patient more than the clinician.

(question 10) Referral to a periodontist: Majority of the dentists refer to a periodontist once a month. Few refer twice a month. Minority of the clinciansreferonce a week. During the referral consultation, it is the dentist's duty to educate the patient the benefits of the management to be done by a consultant. It is also important to consult the same periodontist for every periodontal related treatment as this builds confidence in the patient and also makes it easier for the specialist and this is difficult to obtain if three or four specialists are consulted for the same patient. Also the timing of the referral is an important aspect, delaying referring the patient to a specialist is a loss to the patient especially if the patient has had 4-5mm periodontal pockets 6 months back but the dentist consulted the periodontist when the pocket depth increased to 9-10mm. Timely inclusion of a specialist in the treatment not only preserves patients confidence but also patients dentition. (Ashish Kumar, 2007)

(question 11) Majority of the practitioners consider the cost effectiveness to be reasonable to the periodontist, patient and the practitioner themselves. Few find it inexpensive and a handful consider it expensive given the fact that the survey was conducted in rural areas in navimumbai.

Conclusion

This survey provides a complete insight on how general dental practitioners approach a case of periodontal disease and diagnose and treat these patients. However, changes are required to change with respect to pathogensis of periodontal disease and referral to a periodontist.

Role of a general dentist: The main purpose of this study was to know about the approach of private practitioners towards periodontal disease diagnosis and treatment. General practitioners play a very vital role as they create a bridge in between the patient and the periodontist. Therefore, it is important for the dentist to know when to approach a periodontist. Ideally any patient with a suspected periodontal disease should be referred to a periodontist whether there is necessary treatment or not for an opinion, especially before the dentist conducts phase-1 therapy by himself. Some patients might find temporary relief from phase-1 therapy which might provoke them against visiting the dentist for a follow up. Hence, it is the job of the dentist to motivate the patient and consult a periodontist to motivate the patient and talk thru the severity of the disease. In this study majority of the dentists have a decent knowledge on the diagnosis of periodontitis. However, there are certain drawbacks as mentioned earlier that can be improved. This knowledge needs to be imparted at graduation level in their curriculum and continuously updated during practisingyears.

Role of a Periodontist: As a periodontist it is not only important to treat the patient referred but also important to educate the dentist about certain diagnostic and treatment modalities if required. It is important for the periodontist to educate the dentist about the importance of periodontal treatment especially in cases where for example a full mouth rehabilitation or orthodontic treatment is required or even implant prosthesis. None of these can be done if the patient has poor periodontal health. So it is important for the dentist to know how and when to consult a periodontist and also why is it important to make sure the patient has a good periodontal health before going about any major treatment.

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