

Perception of Dentists towards Periodontal Diagnosis, Treatment and Referral in Belagavi District, Karnataka, India: A Cross-sectional Study

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ABSTRACT

Introduction: Periodontitis poses a major burden to the society because of lack of awareness about periodontal health among the population. Patients diagnosed with periodontitis require special attention which usually goes unnoticed due to lack of comprehensive periodontal examination. The standard of periodontal care varies among the dentists.

Aim: To assess the perception of the dentists towards periodontal diagnosis, treatment and referral.

Materials and Methods: A cross-sectional web-based questionnaire survey was conducted in the Department of Periodontics, KLE Academy of Higher Education and Research (KAHER), VK Institute of Dental Sciences, Belgaum, Karnataka, India, between October 2020 to January 2021 among the dentists in Belagavi district of Karnataka. A total of 19 custom designed multiple choice, open ended and checklist questions were formulated and an online link to the questions was circulated via email and WhatsApp among professional colleagues. The questions were designed to embark on periodontal diagnosis, treatment provided by the dental practitioners and their routine referral to a periodontist. The data acquired was statistically evaluated using descriptive analysis with the IBM Statistical Package for the Social Sciences (SPSS)

software (Version 20.0 Chicago IL, USA) and Chi-square test with a significance level of $p < 0.05$.

Results: Of the total responses obtained ($n=150$), 98.6% of the dentists carried out full mouth examination. Dentists surveyed were aware of the parameters for periodontal diagnosis, 73.3% used periodontal probe and 92.7% were aware of the critical probing depth. A total of 68.6% of the dentists provided scaling followed by referral to a periodontist. Statistical significance was observed between the years of experience of a dental practitioner towards the awareness of interrelationship between periodontitis and systemic health ($p=0.009$). Female practitioners contributed more to education and motivation regarding periodontal health ($p=0.048$). Treatment outcomes and longer periodontal recall were the factors considered by 66% of the dentists that influenced a periodontal referral.

Conclusion: Within the limitations of the study, it was found that the dentists were able to diagnose periodontitis, majority of them provided scaling followed by periodontal consultation. Mucogingival deformity was most often planned for a periodontal referral. Contribution towards patient education, motivation and reinforcement to have a regular periodontal maintenance therapy was positively implemented in their practice.

Keywords: Consultation, Dental practitioner, Periodontal therapy, Periodontist

INTRODUCTION

Periodontal disease is one of the major health care problems seen among patients [1]. The multifactorial aetiology of periodontal disease is an interplay of micro-organisms and host response [2]. About 10-15% of the patients with gingivitis are susceptible to advanced periodontal disease and this affects about 85% of adults over 65 years [3]. Undiagnosed and untreated periodontal disease is one of the fastest growing healthcare burden faced by the society [1,3]. The usual scenario with the general dental practitioners is to address the patient's chief complaint symptoms only [4]. Most periodontal diseases do not show symptoms and patients are not aware or concerned until the disease reaches the advanced stage and the symptoms become obvious like tooth mobility, bleeding gums or recession [5,6].

Lack of variability with respect to the periodontal care provided by the dentist may result in different outcomes [7]. In addition, delayed referral of periodontitis cases may be partially responsible for the deterioration in periodontal status [7]. Majority of the referred patients to a periodontist are when teeth showed signs of mobility or when the chief complaint of patient is mobile teeth, where even a periodontal intervention would result in unpredictable outcomes [5,8]. Mild to moderate chronic periodontitis can be (is) treated by a general dentist with Scaling and Root Planning (SRP) [9]. SRP

can reduce probing depths, inhibit disease progression, and reduce the level of clinical inflammation. However, the average number of cleanings received in the general dental office was considered less than the standard of care according to the severity of the disease [9,10]. In a study by McFall WT et al., it was determined that, in most private practice, patient records were deficient of diagnostic information on periodontal status. It is self-evident that treatment requires a definitive diagnosis, i.e., a disease cannot be adequately treated unless first diagnosed [11]. The general dentist, is the professional who knows the patient best and must take the lead in developing a periodontal diagnosis, treatment, referral to a specialist, maintenance and monitoring of periodontal disease. The treating dentist should involve the patient through education and motivation regarding the inter-relationship between periodontal/oral health and systemic conditions [12].

Wide variation in diagnosis and treatment has been cited as a problem in dentistry and attributed to a lack of an accepted standard of care [13]. Among various factors, treatment variability and delayed referral may be partially responsible for the deterioration in periodontal status [14]. This established a need to evaluate the views and practice of dentists to correctly identify periodontal disease. Studies conducted in this area have attempted to analyse the attitude and perception of dental practitioner towards periodontal diagnosis,

treatment strategies and referral [8,12,15]. Similar survey has not been conducted regarding the dentists' attitude towards periodontal diagnosis, treatment and their referral pattern in Belagavi district of Karnataka. Therefore, this questionnaire survey was conducted with the aim to understand the knowledge, attitude and perception of the dentists towards periodontal diagnosis, treatment and referral in Belagavi district of Karnataka.

MATERIALS AND METHODS

A cross-sectional, questionnaire survey was conducted between October 2020 to January 2021 at KLE Academy of Higher Education and Research (KAHER), VK Institute of Dental Sciences, Belgaum, Karnataka, India. All responses from dentists with qualification of either Bachelors of Dental Sciences (BDS) or Masters of Dental Sciences (MDS) owning a dental clinic in Belagavi district of Karnataka were selected. Ethical approval was obtained from Institutional Ethical Review Board of KAHER KLE VK Institute of Dental Sciences, Belagavi (IEC NO. 1371).

Inclusion criteria: All responses from dentists with qualification of either Bachelors of Dental Sciences (BDS) or Masters of Dental Sciences (MDS) owning a dental clinic in Belagavi district of Karnataka were included in the study.

Exclusion criteria: Responses from the periodontists were excluded.

Sample size calculation: The data obtained from the pilot study was used to determine the sample size, using the formula $N=4PQ/D^2$ (where, N stands for sample size, P stands for highest prevalence which was 90 for pilot study, Q=100-P and D stands for acceptable error or lowest prevalence-5%). Thus, sample size obtained was 144. It was rounded off to a minimum of 150 dentists to ascertain the results.

Questionnaire

A total of 19 custom designed multiple choice, open ended and checklist questions were formulated in English language. The questions with regards to treatment and referral was based on existing questionnaire studies [5,8,12,15]. The questionnaire was shared with the members of Indian Dental Association, Belagavi branch through WhatsApp group and they were requested to forward it to their colleagues with the aim to obtain maximum responses from the private practitioners practising in Belagavi district of Karnataka. The responses obtained from October 2020 to January 2021 were selected for further analysis.

The questionnaire was validated for relevance of questions particular to the topic of the survey (face validity) and for the reliability of the options provided (content validity) with a Content Validity Index score (CVIs) of 0.60 by the professors from the Department of Periodontics, KLE VKIDS Belagavi, Karnataka, India, along with a subject expert.

A pilot survey was conducted on 15 dentists to assess the reliability and internal consistency of the questionnaire which revealed that the survey was reliable with the Cronbach's alpha internal consistency score of 0.8.

STATISTICAL ANALYSIS

The individual responses from each participant were recorded and tabulated on an MS Excel sheet (Microsoft Corporation) Descriptive analysis was done using IBM SPSS software (Version 20.0 Chicago IL, USA). For each question, independent percentage was calculated to determine the frequency of the responses. Chi-square test was applied to know the statistical significance in the responder's knowledge about periodontal diagnosis, treatment, maintenance and referral pattern with a significance level of $p<0.05$.

RESULTS

Demographic data: Of 150 dentists, 66 (44%) were males and 84 (56%) females and the mean age of the participants was

32.84±6.2 years [Table/Fig-1]. A 78 (52%) of the responders had an average practice experience of 0 to 5 years. Among them 66 (44%) had BDS and 84 (56%) had MDS as their highest qualification. A 73 (48.6%) of the dentists practiced both general dentistry and speciality related treatment and 52 (34.7%) of the dentists practised only general dentistry [Table/Fig-2].

Questions	Options	N (%)
Gender	Male	66 (44%)
	Female	84 (56%)
Age	<25 years	4 (2.7%)
	26 to 35 years	100 (66.7%)
	36 to 45 years	40 (26.7%)
	46 to 55 years	4 (2.7%)
	>55 years	2 (1.3%)
	Mean age	32.84±6.2 years

[Table/Fig-1]: Questions regarding demographic details of the participants.

Questions	Options	N (%)
1. What is your highest level of education?	Bachelor of Dental Sciences (B.D.S)	66 (44%)
	Master of Dental Sciences (M.D.S)	84 (56%)
2. What kind of practice do you follow?	General dentistry	52 (34.7%)
	Only specialty related treatments	25 (16.7%)
	Both of the above	73 (48.6%)
3. Since how many years have you been into dental practice?	0 to 5 years	78 (52%)
	6 to 10 years	41 (27.3%)
	>10 years	31 (20.7%)
4. Do you own a private dental practice?	Yes	86 (57.3%)
	No	64 (42.7%)

[Table/Fig-2]: Questions regarding qualification and practice details.

The data from the responses received were categorised into perception of dentists towards periodontal diagnosis, treatment and referral [Table/Fig-3].

Questions	Responses	N (%)
5.* What according to you are the common dental problems for which patients visit a dentist?	Caries	146 (97.3%)
	Periodontal disease	63 (42%)
	Missing tooth	53 (35.3%)
	Pain	9 (6%)
6. Do you carry out comprehensive full mouth examination for your patients?	Yes	148 (98.6%)
	No	2 (1.3%)
7. Do you use a periodontal probe for examination of periodontitis cases?	Yes	110 (73.3%)
	No	40 (26.7%)
8. Are you aware of the critical probing depth for diagnosis of periodontal diseases?	Yes	139 (92.7%)
	No	11 (7.3%)
8A*. If yes, at what probing depth you would call a periodontist?	2.5 to 3 mm	8 (5.3%)
	3 to 4 mm	34 (22.6%)
	5 mm or more	113 (75.3%)
	None of the above	5 (3.3%)
9.* What clinical parameters do you record when considering a periodontal diagnosis?	Bleeding on probing	126 (84%)
	Periodontal pockets	139 (92.6%)
	Mobility	134 (89.3%)
	Furcation	122 (81.3%)
	Gingival recession	123 (82%)
	Pathologic migration	102 (68%)

10. Do you treat patients who complain of periodontal problems?	Yes	134 (89.3%)
	No	16 (10.7%)
11.* What treatment do you provide for patients diagnosed with periodontal disease?	Scaling and root planing	56 (37.3%)
	Scaling followed by periodontal consultation	103 (68.6%)
	Referral to a periodontist	41 (27.3%)
12.* For which cases do you plan a periodontal consultation?	Persistent periodontal inflammation	109 (72.6%)
	Recurrent periodontal abscess	93 (62%)
	Mobile teeth	67 (44.6%)
	Gingival enlargement	94 (62.6%)
	Mucogingival deformities	110 (73.3%)
13.* Do you practice any of the following procedures?	None of the above	4 (2.6%)
	Gingivectomy	78 (52%)
	Flap surgery	56 (37.3%)
	Crown lengthening	94 (62.6%)
	Frenectomy/ vestibuloplasty	63 (42%)
	Ridge augmentation	33 (22%)
	Free gingival graft	35 (23.3%)
14.* What according to you is the most common periodontal treatment done by a periodontist?	Implants	68 (45.3%)
	None of the above	39 (26%)
	Flap surgery	127 (84.6%)
	Crown lengthening	77 (51.3%)
	Excision of gingival enlargement	53 (35.3%)
15.* What factors according to you could influence a referral to a periodontist in private practice?	Root coverage procedure (treatment for gingival recession)	60 (40%)
	None of the above	2 (1.3%)
	Patient compliance	68 (45.3%)
	Lack of awareness about periodontal health	91 (60.6%)
	Cost of the treatment	49 (32.6%)
	Treatment outcome and periodontal recall	99 (66%)
16. Do you reinforce the patients with periodontitis to have a regular maintenance therapy?	None of the above	1 (0.6%)
	Yes	148 (98.7%)
16A.* If yes, for how long do you follow the maintenance therapy for patients after periodontal treatment?	No	2 (1.3%)
	Minimum 0 to 1 month	12 (8%)
	Minimum 3 to 6 months	71 (47.3%)
	Minimum 6 months to 1 year	73 (48.7%)
None of the above	1 (0.6%)	

17. Do you contribute towards patient education, motivation and awareness about importance of periodontal health?	Yes	147 (98%)
	No	3 (2%)
18. Are you aware of the interrelationship between periodontitis and systemic conditions and their management?	Yes	142 (94.7%)
	No	8 (5.3%)
19. Do you attend any CDE programmes conducted by regulatory bodies regarding periodontal diagnosis and treatment?	Yes	93 (62%)
	No	57 (38%)

[Table/Fig-3]: Questions regarding the perception of general dentistry practitioners towards periodontal diagnosis, treatment and referral. CDE: Continuing Dental Education.

*Multiple responses could be selected: Questions 5, 8A, 9, 11, 12,13,14,15, 16A

Periodontal diagnosis: Out of 150, 148 (98.7%) of the dentists carried out full mouth examination of their patients and 73.3% (110) of them used a periodontal probe for examination of the periodontium. A 139 (92.7%) of the dentists said they were aware of the critical probing depth [Table/Fig-3].

A total of 113 (75.3%) of the dentists considered the critical probing depth of more than 5 mm as the major criteria for a periodontal referral [Table/Fig-3]. According to the practitioners who participated in this survey, 91 (60.6%) considered lack of awareness of periodontal health and 99 (66%) noted unpredictable treatment outcome with frequent recall appointments as major factors which influenced their referral to a periodontist [Table/Fig-3]. A total of 148 (98.7%) of the practicing dentists reinforced their patients to have a maintenance therapy [Table/Fig-3].

A total of 147 (98%) of the dentists contributed towards patient education, motivation and importance of periodontal health towards overall systemic health. Of all the dentists surveyed, 93 (62%) showed interest in attending Continuing Dental Education (CDE) programmes conducted by regulatory bodies regarding periodontal diagnosis and treatment [Table/Fig-3]. Periodontal pockets 139 (92.6%) and mobility 134 (89.3%) were most frequently selected by the dentists in addition to the other parameters for periodontal diagnosis [Table/Fig-3].

The dentists with less than five years of experience contributed significantly towards diagnosing a periodontitis case and majority of the dentists were aware of the inter-relationship between periodontitis and systemic conditions which was statistically significant with p-value of 0.009 [Table/Fig-4].

Years of experience	Number of practioners N (%)	Awareness of interrelationship between periodontitis and systemic conditions		Chi-square value, p-value
		Yes	No	
5	78 (52%)	74	4	9.501, 0.009*
6 to 10	41 (27.3%)	37	4	
>10	31 (20.7%)	31	0	
Total	150	142	8	

[Table/Fig-4]: Chi-square test for the association between years of experience and awareness of inter-relationship between periodontitis and systemic conditions. *p<0.05 was considered statistically significant

Periodontal treatment: A total of 134 (89.3%) of the dentists provided treatment to the patients diagnosed with periodontitis [Table/Fig-3], out of which 103 (68.6%) provided scaling to the patients followed by periodontal consultation [Table/Fig-3].

Other periodontal procedures commonly carried out by the dentists in the present study were crown lengthening 94 (62.6%) followed by gingivectomy 78 (52%). In response to question regarding the treatment procedures done by a periodontist, the most common were flap surgeries 127 (84.6%), crown lengthening 77 (51.3%) and mucogingival surgeries 60 (40%).

Maintenance therapy and referral to a periodontist: Persistent periodontal inflammation 109 (72.7%) and mucogingival deformities 110 (73.3%) were the common conditions for which a periodontal consultation was planned by the practitioners [Table/Fig-3]. A 73 (48.7%)

of the dentists planned maintenance therapy at an interval period of minimum six months to one year [Table/Fig-3]. A significant association was found towards patient education and motivation for periodontal health by female dentists which was statistically significant with p-value of 0.048 [Table/Fig-5].

Gender	Yes	No	Total	Chi-square value	p-value
Male	63 (42%)	3 (2%)	66	3.896	0.048*
Female	84 (56%)	0 (0%)	84		
Total	147	3	150		

[Table/Fig-5]: Chi-square test for the correlation between gender and patient education, motivation and awareness about periodontal health. Correlation data: *p<0.05 was considered statistically significant

DISCUSSION

The present survey documents the general trends in the belief and activity of dentists in regards to periodontal diagnosis, treatment, maintenance and referral. Chestnutt IG and Kinane DF in their study stated or warned that the clinical features of periodontal disease requires an increased level of vigilance by the clinician, which cannot be gained by visual inspection alone [16]. Therefore, a thorough screening and recording of pocket depths which are critical indicators of periodontal disease becomes a prerequisite for the dental clinician to optimally treat their patients [17].

Periodontal diseases do not show symptoms unless reached at advanced stages of destruction [18] therefore the basic full mouth periodontal examination of the teeth is mandatory [19]. The survey focused on understanding the perceptions of dentists to diagnose, treat and understand the referral patterns of a dentist towards periodontal disease. The responses obtained showed that the dentists were confident to screen and diagnose a periodontal disease. A comprehensive full mouth examination was practiced by most of the participants 148 (98.6%) of the study. 110 (73.3%) of the dentists used periodontal probe and 139 (92.6%) were aware about the critical probing depth. Similar results were obtained by Darby IB et al., and Kraatz J et al., where 79.7% and 84% of the dentists screened the patients for periodontal disease respectively, however, only 40% of them carried out full mouth probing [18,20]. In contrary, a study by Ghiabi E and Weerasinghe S stated that only 37.8% carried out full mouth probing and 43.3% considered critical probing depth measurements for periodontal diagnosis [21].

A study by Chestnutt IG and Kinane DF conducted among Scottish dental practitioners stated that, the dentists were confident to diagnose a periodontitis case but only 40% provided basic treatment for the patients [16]. However, 103 (68.6%) of the dentists from the present survey provided the basic treatment protocol i.e., scaling and then referred the patients to a periodontist. Similar findings were reported by Jones JH and Manjunath SH and, Mali A et al., where, 86% and 98% of the dentists provided phase I therapy respectively before planning a periodontal referral [5,12].

The most common cases which were planned for periodontal referral by the dentist were mucogingival deformities 110 (73.3%) and persistent periodontal inflammation 109 (72.6%). Similarly, Sum J and O'Rourke VJ reported that unresolved periodontal inflammation (89.8%), chronic (85.7%) and aggressive (87.8%) form of periodontitis were more often planned for a referral to a periodontist [22].

With respect to the questions related to type of treatment performed by the periodontists, flap surgery accounted for about 127 (84.6%) followed by crown lengthening 77 (51.3%) and root coverage procedure 60 (40%). Similar result was reported by Jadhav SS et al., where periodontists performed flap surgery (37%) followed by bone grafting (27%) and crown lengthening (35%) [8].

With regard to disease management and the referral pattern the major concern was related to patient factors. The present survey

identified a lack of awareness about periodontal health among the patients 91 (60.6%), treatment outcome and longer periodontal recall visits 99 (66%) to be the chief factors that would influence a referral to a periodontist. Similar findings were stated in the studies by Jadhav SS et al., and Mali A et al., where, lack of patient maintenance and awareness among the patients posed a major reason for not calling in a periodontal referral. A 73 (48.6%) dentists in this study planned their recall visit after six months to one year. A major variation was noticed with respect to planning of the recall visit as reported by Jadhav SS et al., and Mali A et al., to be one month and three months, respectively [8,12].

Many systemic diseases have influence on the gingival and periodontal tissues which can impact the progression of gingivitis and periodontitis, as well as the response to periodontal therapy. In addition, research has shown that infection of the periodontium can enhance the risk for the systemic diseases or can significantly alter the natural course of the systemic diseases [5,19]. The results of the survey indicated that majority of the dentists 142 (94.6%) were aware of the interrelationship between periodontitis and systemic conditions which is important in both diagnosis and management of periodontal diseases. A significant association (p=0.009) was observed between the younger dentists with an experience of less than five years 78 (52%) showed to be more aware of the effects of systemic condition on periodontal health.

About 93 (62%) of the dentists surveyed in the study attended CDE programmes related to periodontal diagnosis and treatment. Similar result was reported in a study by Ismail MB et al., wherein the dentists in Bellary city attended less than five dental education programmes in a year [23].

Limitation(s)

With specific regard to the results of the present study, the limited sample size and the bias of self reporting by the participating dentists must be considered. The response rate from the dentists who were motivated to return was relatively lower than expected.

CONCLUSION(S)

The dentists were confident to diagnose periodontitis and provided basic treatment followed by a periodontal referral. The results of the survey showed that the perception of the dentists surveyed in Belagavi district of Karnataka were pragmatic towards patient motivation regarding importance of periodontal health and regular maintenance therapy.

REFERENCES

- [1] Bhati AK. Referral to a periodontist by a general dentist: An understanding of the referral process. *Journal of Dental Research and Review*. 2016;3(1):42.
- [2] Bader JD, Rozier RG, McFall Jr WT, Sams DH, Graves RC, Slome BA, et al. Evaluating and influencing periodontal diagnostic and treatment behaviors in general practice. *J Am Dent Assoc*. 1990;121(6):720-24.
- [3] Allen G. Producing guidance for the management of patients with chronic periodontal disease in general dental practice. *Br Dent J*. 2015;218(8):461-66.
- [4] Cherian DA, Dayakar MM, Thermadam TP. Rationale of referral of patients to a periodontist by general practitioners: Review with a cross-sectional survey. *J Interdiscip Dentistry*. 2015;5(1):7.
- [5] Jones AH, Manjunath SH. Attitude and awareness about the periodontal treatment referral among the general dentists of the Nasik City. *Sch J Dent Sci*. 2017;4(2):48-51.
- [6] Sweeting LA, Davis K, Cobb CM. Periodontal Treatment Protocol (PTP) for the general dental practice. *J Dent Hyg*. 2008;82(suppl 2):16-26.
- [7] Dockter KM, Williams KB, Bray KS, Cobb CM. Relationship between prereferral periodontal care and periodontal status at time of referral. *J Periodontol*. 2006;77(10):1708-16.
- [8] Jadhav SS, Rajhans NS, Mhaske NH, Moolya NN, Salunkhe N, Nagappa R. Awareness and attitude among general dentists regarding periodontal treatments and referrals in Ahmednagar City. *J Int Oral Health*. 2015;7(12):90-96.
- [9] Greenstein G. Nonsurgical periodontal therapy in 2000: A literature review. *J Am Dent Assoc*. 2000;131:1580-92.
- [10] Cobb CM. Clinical significance of non-surgical periodontal therapy: An evidence-based perspective of scaling and root planing. *J Clin Periodontol*. 2002;29 (suppl 2):06-16.
- [11] McFall Jr WT, Bader JD, Rozier RG, Ramsey D. Presence of periodontal data in patient records of general practitioners. *Journal of Periodontology*. 1988;59(7):445-49.

- [12] Mali A, Mali R, Mehta H. Perception of general dental practitioners toward periodontal treatment: A survey. *J Indian Soc Periodontol.* 2008;12(1):04-07.
- [13] Friedman JW, Atchison KA. The standard of care: An ethical responsibility of public health dentistry. *Public Health Dent.* 1993;53(3):165-69.
- [14] Cobb CM, Carrara A, El-Annan E, Youngblood LA, Becker BE, Becker W, et al. Periodontal referral patterns, 1980 versus 2000: A preliminary study. *J Periodontol.* 2003;74(10):1470-74.
- [15] Sathyamurthy P, Padhye A, Gupta HS. Knowledge of diagnosis, treatment strategies, and opinions on periodontal treatment procedures among general dentists in an Indian urban population: A questionnaire survey. *J Public Health Dent.* 2018;16(1):62-72.
- [16] Chestnutt IG, Kinane DF. Factors influencing the diagnosis and management of periodontal disease by general dental practitioners. *Br Dent J.* 1997;183(9):319-24.
- [17] Beltrán-Aguilar ED, Eke PI, Thornton-Evans G, Petersen PE. Recording and surveillance systems for periodontal diseases. *Periodontol* 2000. 2012;60(1):40-53.
- [18] Darby IB, Angkasa F, Duong C, Ho D, Legudi S, Pham K, et al. Factors influencing the diagnosis and treatment of periodontal disease by dental practitioners in Victoria. *Aust Dent J.* 2005;50(1):37-41.
- [19] Gift HC. Awareness and assessment of periodontal problems among dentists and the public. *Int Dent J.* 1988;38(3):147-53.
- [20] Kraatz J, Hoang H, Ivanovski S, Ware RS, Crocombe LA. Periodontal diagnosis, treatment, and referral patterns of general dental practitioners. *J Investig Clin Dent* 2019;10(3):e12411.
- [21] Ghiabi E, Weerasinghe S. The periodontal examination profile of general dentists in Nova Scotia, Canada. *J Periodontol.* 2011;82(1):33-40.
- [22] Sum J, O'Rourke VJ. Factors affecting periodontal disease referral and the adherence to guidelines among general dentists. *Aust Dent J.* 2018;63(4):394-401.
- [23] Ismail MB, Dhamali D, Nambidiveetil R, Koser R, Sargaiyan V, Sunitha M. Referral practice of periodontics among general dentists. *Int J Prev Clin Dent Res.* 2019;5(1):112-13.

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