

# Factors influencing the diagnosis and treatment of periodontal disease by dental practitioners in Victoria

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## Abstract

**Background:** Healthy periodontal tissues are essential to overall dental health. Therefore, the detection and management of periodontal disease is an integral part of general dental practice. The aim of this study was to investigate confidence in diagnosis and management of periodontal disease by general dental practitioners (GDPs), assess if the Dental Practice Board guidelines on periodontal record keeping are being addressed, and, if necessary, try to find ways of improving the periodontal knowledge of GDPs.

**Methods:** A survey assessing practitioner confidence in diagnosing and treating periodontal disease was sent to a random selection of 550 dental care providers registered with the Dental Practice Board of Victoria.

**Results:** Two hundred and eighty five (51.8 per cent) of questionnaires were returned completed. It was found that 79.7 per cent of the sampled population screened all new patients for periodontal disease. The majority of respondents felt confident to diagnose and treat gingivitis and initial periodontitis. However, only 61.9 per cent felt confident to diagnose aggressive/early onset periodontitis, and many were not confident in treating advanced periodontitis (36.3 per cent) or aggressive periodontitis (51.6 per cent). The majority of dentists reported that they provided most of the non surgical periodontal therapy to their patients, while most surgical treatments were referred to specialist periodontists. Factors deemed to be important in influencing the decision to provide periodontal treatment included level of training and ability to motivate patients to improve oral hygiene. Many respondents requested periodontic continuing education (CE) courses be run.

**Conclusions:** Most of the dentists surveyed were confident to diagnose periodontal disease and to treat the more common presentations of periodontal disease. There is some evidence to suggest that some practitioners are not following the minimum requirements set by the Dental Practice Board of

Victoria in relation to periodontal record keeping. The results also indicate a need for more periodontic CE courses in Victoria.

**Key words:** Periodontal disease, diagnosis, treatment, general dental practitioners.

**Abbreviations and acronyms:** BPE = basic periodontal examination; CE = continuing education; CPITN = community periodontal index of treatment needs; DPBV = Dental Practice Board of Victoria.

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## INTRODUCTION

The diagnosis and management of periodontal disease is essential in the success of the overall management of dental patients. A foundation of periodontal health is important to enable success of subsequent restorative treatment and ensure overall patient health. While this is appreciated by most general dental practitioners (GDPs) in theory, the emphasis placed on periodontal health in general practice is largely unknown. Chestnutt and Kinane<sup>1</sup> suggest in their survey of Scottish GDPs that "the management of periodontal disease has been overshadowed by more dramatic forms of dental activity . . . the provision of a restoration or denture appears to the uninformed patient as being of greater significance than the often intangible benefits of periodontal care". However, they do report that the Scottish dentists in their survey were confident in diagnosing and treating gingivitis and initial periodontitis. Sadly, it has been suggested that dentists know much more about caries than they do periodontal disease.<sup>2</sup> As periodontal therapy is such a vital component of oral health, it is concerning to find reports in the literature which suggest that GDPs do not place enough emphasis on periodontal health when treating their patients. Schaub,<sup>3</sup> reporting his findings in a survey of Dutch dentists, found that "few general dentists are performing complete periodontal examination with a periodontal probe" and that "practitioners do not feel that they have adequate skills in or knowledge of periodontal therapy". Reviewing

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the published evidence, Gift<sup>2</sup> has concluded that many general dentists have a low interest in the aetiology, prevention or treatment of periodontal disease and that only a small proportion of the general dentist's time is spent on periodontal care. Linden<sup>4</sup> in his study of GDPs in Northern Ireland reports that the management of periodontal diseases varies considerably amongst GDPs. Spencer and Lewis<sup>5</sup> suggest that variability may be due to the differing knowledge and skill level of dentists, as assessed by their survey of dentists in Australia. Thus, there are some differences regarding the provision of periodontal services by general dentists in different countries. However, we are not aware of any studies that have investigated the ability of general dentists to diagnose and treat periodontal diseases in Australia. Chestnutt and Kinane<sup>1</sup> report that there has been a steady increase in the number of complaints and claims relating to the diagnosis and treatment of periodontal disease in the UK, which seems to be a worldwide trend. The Dental Practice Board of Victoria (DPBV) has issued guidelines for recording periodontal status, which if followed properly would prevent complaints and claims relating to the diagnosis and management of periodontal diseases. Therefore, this study also aimed to assess whether or not the DPBV guidelines for periodontal record keeping were being followed in a sample population of Victorian dentists. In addition, Chestnutt and Kinane<sup>1</sup> also state a need to improve both the patients and dentists' ability to manage periodontal disease. So this study also aimed to assess what need there is for periodontal continuing education (CE).

## MATERIALS AND METHODS

The study was conducted by questionnaire, which comprised of 22 questions, with a combination of open and closed questions. The study sample consisted of 550 dental practitioners selected at random from the DPBV register (on 13 March 2003). Questionnaires were sent to participants by post. A follow up letter was sent to non-respondents to maximize the number of questionnaires returned. The results were coded and analyzed using Excel (Microsoft). At no point following the collection of the data were the details of individual practitioners known.

## RESULTS

Three hundred and one questionnaires were returned, of which 285 (51.8 per cent) were complete. Of the 285 questionnaires, 281 were from dentists and four from periodontists, which were not included in the analysis. The returns of the 281 general dentists formed the basis for the analysis of this study. Of these, 195 (69.4 per cent) were male, 79 (28.1 per cent) were female and seven (2.7 per cent) failed to disclose their gender.

The majority of respondents (79.7 per cent) reported that they screen all new patients for periodontal disease, while 13.5 per cent claimed they did not screen

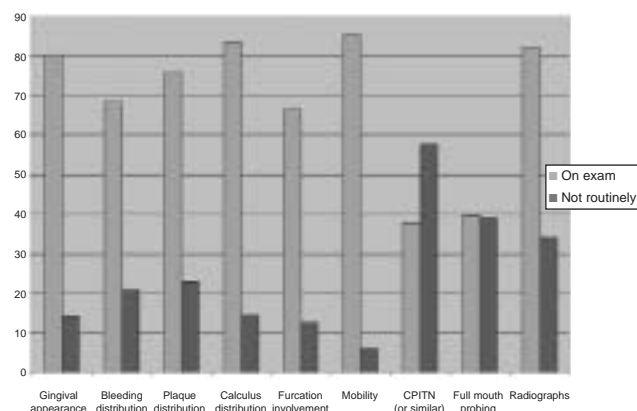


Fig 1. Recording of information relevant to periodontal disease.

all patients, and 6.8 per cent did not respond to this question (Fig 1). Most respondents indicated that they record information relevant to periodontal disease, such as gingival appearance, plaque, calculus and bleeding distribution, tooth mobility, furcation involvement and radiographs upon examination of the patient. However, a high proportion of respondents do not routinely record community periodontal index of treatment needs (CPITN) or full mouth probing.

The majority of respondents reported greater confidence in diagnosing periodontal disease, as opposed to treating it. The vast majority of respondents reported they were confident in both diagnosing and treating gingivitis and initial periodontitis. With regards to gingivitis, 95.4 per cent reported confidence to diagnose, while 96.4 per cent were confident to treat. Confidence to diagnose and treat initial periodontitis was also high, with 88.3 per cent of respondents reporting confidence in diagnosing and 87.9 per cent reporting confidence to treat initial periodontitis.

The disparity between confidence to diagnose and confidence to treat was most pronounced for the less common, more destructive forms of periodontitis (Fig 2). Most respondents reported confidence to diagnose advanced (i.e. severe) forms of periodontitis (91.5 per cent) and 61.9 per cent reported confidence to diagnose aggressive (i.e. early onset) forms. This was opposed to 31.7 per cent who reported they were confident to treat advanced periodontitis and 19.5 per cent who reported they were confident to treat aggressive periodontitis.

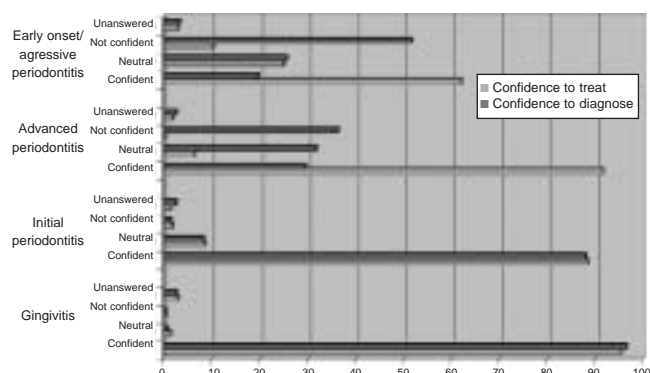


Fig 2. Confidence to diagnose and to treat periodontal disease.

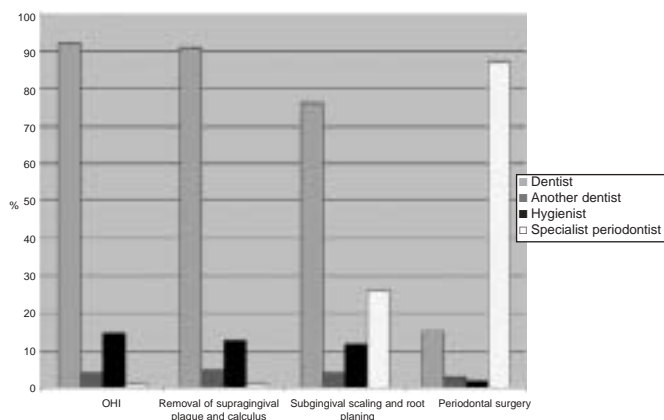


Fig 3. Provision of periodontal services.

### Services provided

As part of the study, participants were asked to disclose who routinely provided oral hygiene instruction, removal of supragingival and subgingival plaque and calculus and periodontal surgery to their patients (Fig 3). The results show that 16 per cent of respondents had a hygienist available to provide treatment at their practice. The vast majority of respondents indicated that they routinely provided oral hygiene instruction (92.3 per cent) and supragingival plaque and calculus removal (91.3 per cent) as part of the management of their patients' periodontal health. Only a small proportion of those surveyed indicated that these two services were provided by hygienists (14.6 and 12.7 per cent respectively), and even a smaller proportion reported that these services were provided by a periodontist (0.7 per cent). Of the dentists surveyed 76.4 per cent reported that they routinely provide subgingival scaling and root planing for their patients, while only 11.6 per cent indicated that this service was provided by a hygienist. A higher proportion (26.2 per cent) reported that subgingival scaling and root planing for their patients was routinely performed by a periodontist. A much smaller proportion of respondents (15 per cent) indicated that they routinely provided periodontal surgery for their patients, with the majority of those surveyed (87.2 per cent) indicating that a specialist routinely provides this service. When asked whether they undertook complex periodontal treatments, most GDPs surveyed never provided gingivectomies (70.5 per cent), flap surgery (82.2 per cent), fraenectomies (77.2 per cent) and other complex treatment (84.3 per cent). Of the respondents 49.8 per cent provided scaling and root planing as the patient's needs dictated and 29.9 per cent provided it in selected cases only. Of those surveyed 18.1 per cent indicated that they never personally provided deep scaling and root planing for their patients. Forms of oral hygiene instruction most commonly provided included general oral hygiene advice, brushing advice and advice regarding interdental cleaning. Of the dentists surveyed 96.7 per cent commonly provided general advice to patients concerning oral hygiene, 98.5

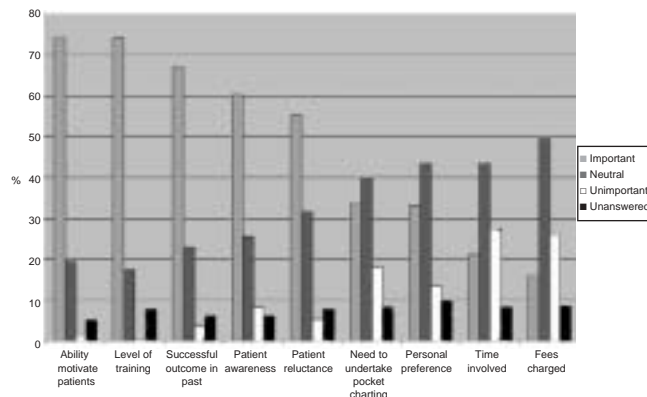


Fig 4. Factors influencing decision to provide periodontal treatment.

per cent commonly provided instruction on brushing and 96.7 per cent of clinician's commonly provided instruction on interdental plaque removal. Forty six per cent commonly provided instruction to their patients on the use of chlorhexidine. Of dentists surveyed 24.8 per cent used plaque disclosing agents as a form of oral hygiene instruction.

### Criteria for referral

Referral to a periodontist was considered by the majority of respondents in cases in which periodontal disease did not respond to therapy (86.2 per cent). Of the GDPs 54.1 per cent surveyed considered referral for all patients with moderate periodontitis or worse (e.g., for pockets greater than 5mm) and for patients with complex medical histories (48.1 per cent).

### Factors important in the decision to provide periodontal treatment

Factors considered important in the decision to provide periodontal treatment included the ability to motivate patients to improve their level of oral hygiene (74.4 per cent of respondents), the level of training of the clinician (74 per cent), whether a successful outcome was obtained in past experience (67.3 per cent), patient awareness of periodontal disease (60.1 per cent) and patient reluctance to undergo periodontal treatment (55.2 per cent) (Fig 4). Only 16 per cent of respondents indicated that the fees charged were important, and only 21 per cent indicated that the time involved in undertaking periodontal treatment was important in the decision to provide such treatment.

### Interest in periodontics

About one third of the general dentists surveyed reported that their level of interest in periodontics has increased since their graduation. Just over 50 per cent indicated that their level of interest had remained unchanged, and only 9.6 per cent of the respondents reported that their level of interest in periodontics had decreased since completing dental school.

Of the total number of GDPs surveyed, 79 per cent have attended a periodontics continuing education course or seminar, while 17.4 per cent have not. Thirty

nine per cent of the respondents have attended a CE course in the last three years, while 69 per cent indicated that they would be interested in attending a CE course related to periodontics in the near future.

## DISCUSSION

A Victorian group of general dentists was chosen because a list of registered dentists is easily obtainable from the DPBV website, the DPBV guidelines for recording periodontal indices only apply to Victorian dentists and the senior author on this paper has input into the running of periodontic CE courses and was wanting to initiate CE courses based on the information obtained in the survey. A postal questionnaire relies on those surveyed to return the completed form in an intelligible manner that can be used by the researchers. The response to this survey was disappointingly low at 51.8 per cent, in spite of a follow up reminder to those that did not return the questionnaire. Recently, previous surveys of GDPs in Australia have returned response rates of between 61 to 75 per cent.<sup>8-11</sup> Other international studies have had similar low responses of between 53 and 65 per cent when surveying GDPs in the UK, Sweden and New Zealand.<sup>12-17</sup> However, the question remains whether or not those that responded are representative of all GDPs? Direct comparison of the results with other reports is difficult due to the lack of studies in this particular area. In the current study our results are very similar to those found among Scottish GDPs, and this may provide some validity. Given the relatively low response rate, we have been careful in our comments of the data and have acknowledged the low return.

At the time of this study there were 2267 dentists registered with the DPBV, of which 301 were specialists. So the sample of 281 represents 14.3 per cent of all GDPs. Epidemiological studies have used a much lower percentage of the population as representative and have drawn conclusions about the population as a whole from their data.<sup>18-22</sup>

While this survey may prove useful in demonstrating general trends in the beliefs and activity of GDPs in regards to periodontal disease, there are some limitations in the interpretation of data from this type of study. While subjects were randomly selected in an attempt to gain a representative sample of GDPs, bias may have been introduced with a return rate of 51.8 per cent. It is possible that only the more motivated GDPs returned their questionnaires, who are more likely to respond more positively to some of the questions, overestimating the results. It would be interesting to see how those that didn't return the questionnaire practise in regards to periodontal diagnosis and therapy.

A study of Scottish GDPs<sup>1</sup> found that 71.4 per cent of dentists screened all new patients for periodontal disease. The current study compares favourably, with 79.7 per cent of Victorian dentists reporting the same either recording pockets depth or scoring by CPITN.

However, it should be noted that the minimum acceptable requirements published by the DPBV in their Standards for Dental Records<sup>6</sup> are that periodontal status should be recorded for each patient, including the presence of gingivitis, periodontal probing depths, supra- and sub-gingival calculus and oral hygiene status. Therefore, it would be expected that nearly all practitioners examine patients for periodontal disease, taking into consideration that patients who present for emergency care may not have this charted on the first visit. Thus, approximately 20 per cent of the respondents are not fulfilling DPBV guidelines, which could have serious legal implications. Chestnutt and Kinane<sup>1</sup> warn that while "the clinical features of periodontal disease are obvious in the majority of patients, more subtle forms of the disease require an increased level of vigilance by the clinician", which cannot be gained a visual inspection alone. CPITN can be used to quickly screen patients to determine if any further periodontal care is required<sup>7</sup> and fulfils many of the requirements of the DPBV for periodontal recording. The recording of periodontal pocket depths is a critical indicator of periodontal disease and it is of some concern that some dentists may overlook this in their examination.

The present study confirms that most GDPs are confident to diagnose and treat gingivitis and initial periodontal disease. The results are very similar results to those found by Chestnutt and Kinane<sup>1</sup> in their study of Scottish GDPs.

With regard to factors affecting a dentists ability to diagnose and treat periodontal diseases, this current study had similar findings to the study of Scottish GDPs,<sup>1</sup> with both finding that "patient related factors were seen as the major hindrance to disease management". In particular, both studies found that the ability to motivate patients to improve their oral hygiene was the most important factor influencing the ability to treat periodontal disease (85.8 per cent Scotland, 74.4 per cent Victoria respectively). It appears from the results of this study that greater efforts are required to motivate and inform patients of the necessity for and benefits of periodontal therapy if we are to remove some of the barriers perceived by the general dentists responding to this survey. Successful outcome in the past and level of training were important factors influencing the decision by a GDP to provide periodontal treatment. This may be an important point to consider in the planning of undergraduate periodontal curriculae and continuing education courses. Gift<sup>2</sup> suggested that the lack of adequate knowledge or confidence to treat periodontal disease was due to lack of experience. However, with ready access of periodontal specialist for patients, there may be little opportunity for general dentists to gain sufficient experience in treating periodontal disease, especially complex cases. She suggested that it may be sufficient to build upon pre-existing training or to re-educate dentists due to outdated knowledge and

practices. Interestingly, a study investigating the use of the basic periodontal examination (BPE) in a general dental practice in the UK found that of the seven dentists assessed, BPE was used from 96 to 0 per cent when examining patients.<sup>23</sup> Not only does this indicate that patients are not being cared for properly, but that there is little interest in or motivation to record periodontal disease shown by the GDPs. However, training in the use of the BPE system and subsequent follow up showed a 100 per cent usage by all GDPs.

The low rate of attendance in CE courses in the past three years is also of concern. Obviously, the attendance may reflect the provision of continuing education courses and steps are being taken in Victoria to increase the number of periodontics CE courses with the introduction of a surgical hands-on course in 2004 and a proposed distance learning periodontics course for 2005. This course would cover many of the aspects raised by the GDPs in this study including diagnosis, treatment planning, scaling and root planing and surgery.

## CONCLUSION

In conclusion, most of the dentists surveyed were confident to diagnose periodontal disease and to treat the more common presentations of disease. There is evidence to suggest that some GDPs are not following the minimum requirements set by the DPBV in relation to periodontal record keeping. The results indicate a need for more periodontic CE courses in Victoria.

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