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Smoking Cessation and the Dental Team

Abstract: Dental teams are in an ideal position to help smokers stop smoking. In spite of this, smoking cessation interventions are not often incorporated as a routine part of dental care. Surveys have shown that most dentists believe that helping patients stop smoking is important, but they are reluctant to provide smoking cessation services for their patients. However, comparatively little research has been carried out to examine the views and activities of other members of the dental team, with respect to the provision of smoking cessation support as part of dental care. This paper describes a self-administered, questionnaire-based study to investigate attitudes and practices amongst staff in the Birmingham Personal Dental Service, with respect to helping patients to stop smoking.

Clinical Relevance: Dentists and their team members have an important role to play in smoking cessation.

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Tobacco smoking is a major public health problem worldwide and is the single greatest cause of premature death and preventable illness in the United Kingdom.[1] The harmful effects of tobacco use have been very well documented and endless facts and figures could be used to illustrate the impact of smoking. For example, each year in the UK, smoking kills over 120 000 people and is estimated to cost the NHS up to £1.7 billion.[1] There are also significant links between smoking and oral health[2] and some of these are listed in Table 1. In recognition of the impact of smoking, the UK Government published a White Paper in December 1998, which outlined a range of measures to tackle smoking including, most notably, an increased investment in NHS Smoking Cessation Services.[1]

The role of the dental team in smoking cessation

Opportunities have been identified for dentists and their teams to become involved in smoking cessation activities.[3] Members of the dental team are in an ideal position to help people stop smoking, in part because they are among the few healthcare professionals who routinely see 'healthy individuals'. Clinicians involved in oral healthcare have a natural entry to discussion of tobacco-related diseases with their patients because of the impact of smoking on oral health. The early effects of tobacco use on the mouth, such as stained teeth and halitosis, are visible and reversible and may be a useful motivator for smokers to quit. Furthermore, most people are aware of the effects of smoking on general health, but relatively few know about the links between smoking and oral diseases, including oral cancer. Therefore,

Discoloration of teeth and dental restorations
Halitosis
Taste and olfactory senses dulled
Acute necrotizing ulcerative gingivitis
Increased prevalence and severity of periodontal disease
Oral cancer and precancer
Leukoplakia
Smoker's palate, smoker's melanosis and oral candidosis
Delayed wound healing
Increased frequency of dry sockets
Higher dental implant failure rates

Table 1. Oral health risks of smoking.

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raising awareness about the potential oral health effects of smoking, along with providing reassurance that cessation significantly reduces the increased risk, could be helpful in motivating patients to quit.[3]

Scientific reviews based upon the findings of randomized, controlled clinical trials clearly demonstrate the value of smoking cessation delivered in primary care and form the evidence base for guidelines introduced to encourage health professionals, including dentists, to become more actively involved in smoking prevention.[4] Relatively few studies have been undertaken to assess the effectiveness of dental professionals in smoking cessation. However, reviews examining the outcome from smoking cessation trials conducted in dental settings are generally favourable and report cessation rates comparable to those achieved in other primary care settings.[5]

Helping Smokers Stop: A Guide for the Dental Team was first published in the UK in 1999 and has recently been updated.[6] This guidance is designed to encourage the dental profession to become more involved in smoking cessation, by outlining practical ways in which dental practitioners and other members of the dental team can effectively support smokers to quit.

The earlier guidelines were based on the 'four-As model', which was originally devised in the United States and consists of:

- Asking patients about smoking and their desire to quit;
- Advising smokers about the benefits of quitting;
- Assisting patients in stopping either through personal support or by referral to a specialist smoking cessation programme; and
- Arranging follow up visits to monitor progress.

The updated guide is organized around a 'modified four-As approach', which places greater emphasis on the 'Arrange' component.[6] This highlights the importance of arranging referral to specialist Smoking Cessation Services, which have now been established across the country to provide help to smokers who are willing to quit.

Most smoking cessation programmes conducted in dental practice stress the pivotal role of the 'team approach' if success is to be achieved. Each member of the team can make a relevant and important contribution. Although dentists may take the lead in assessing smoking status, they can then delegate responsibility to other members of the dental team (including therapists, hygienists and nurses) to provide more detailed assistance. Furthermore, receptionists can play a useful role by ensuring that relevant health education material and information on local Smoking Cessation Services is readily available.[3,6]

Smoking cessation interventions: dental staff attitudes and practices

In spite of the apparent appropriateness of the dental practice as a setting for the delivery of smoking cessation advice and assistance, smoking cessation interventions are not often incorporated as a routine part of dental care. Research has shown that most oral healthcare professionals believe that helping patients stop smoking is important, but they are reluctant to provide smoking cessation services for their patients.[7] Studies have identified a number of barriers to providing support, including time and cost pressures, inadequate training and patient resistance.[3,6,7]

Whilst several surveys have attempted to investigate the views and activities of dentists with respect to helping patients stop smoking, comparatively little research has also involved other members of the dental team, in particular dental nurses or receptionists. Using searches of the 1950 to 2004 MEDLINE database, only one peer-reviewed study was found to include dental nurses and receptionists.[8] Even this study failed to investigate attitudes amongst this group of staff and was simply used to determine what smoking cessation services dental team members were providing. This is surprising, given the widespread recognition of the importance of a 'team approach' in order to achieve the greatest success in helping smokers to quit.[3,6] Furthermore, in the UK, most formal research on the effectiveness of dental professionals in smoking cessation has been based in hospital or general dental practice settings,[5] rather than the salaried primary dental care services (ie Community Dental Service, CDS, and salaried Personal Dental Service, PDS, pilots). Yet dental teams working in the CDS and some PDS pilot schemes could be expected to be in a better position to help patients stop smoking compared to their colleagues in general dental practice. In part, this is because all members of the dental team, including dentists, are salaried and therefore 'lack of financial reimbursement' should theoretically not be a barrier. Furthermore, salaried primary dental care services are often part of NHS Primary Care Trusts (PCTs), which normally also host specialized Smoking Cessation Services.

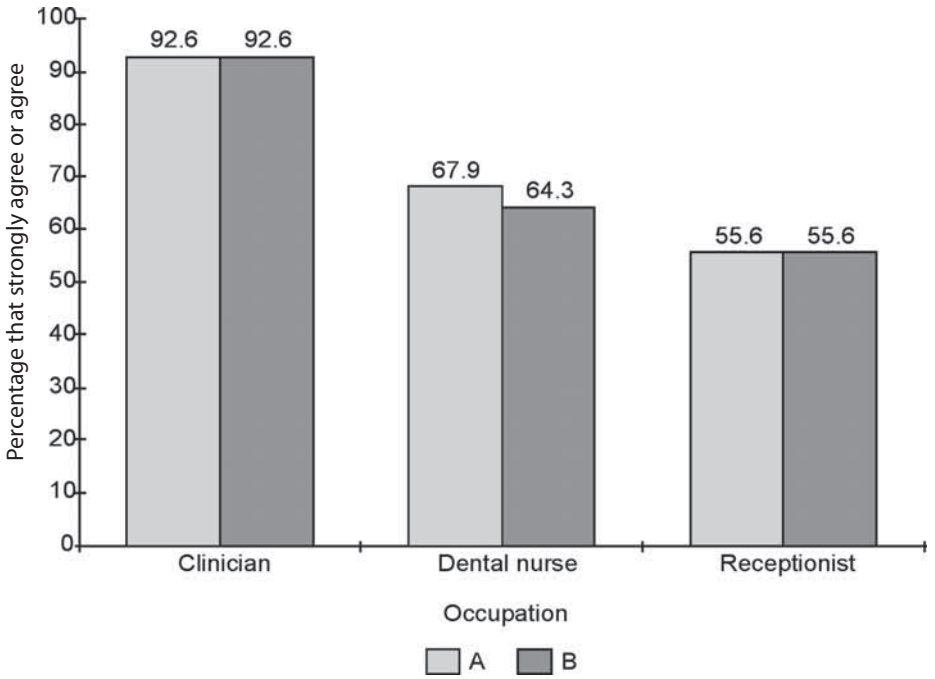
Establishing closer links between the dental team and smoking cessation teams operating within the same PCT could be of potential benefit to reduce smoking and methods that could be used to achieve closer working should be explored. This is particularly relevant in view of proposed changes to the provision of primary care dentistry in England, which will enable PCTs to commission and develop NHS dental services locally. The lack of existing research suggests that, as a baseline, there is a need to determine the nature and extent of smoking cessation intervention currently being provided within salaried primary dental care services. It would also be useful to examine the views and activities of all potentially relevant members of the dental team, in relation to helping patients to stop smoking.

Helping patients stop smoking: attitudes and practices of staff in the Birmingham Personal Dental Service

The aim of this study was to investigate attitudes and practices amongst Birmingham Personal Dental Service (PDS) staff, with respect to helping patients stop smoking.

Method

A self-administered questionnaire was used to collect data from dental staff in the Birmingham PDS (26 dentists, 2 dental therapists, 31 dental nurses and 10 receptionists). Birmingham PDS clinics are computerized and all staff are accessible by e-mail. The questionnaire was sent to subjects by e-mail in July 2004 and was accompanied by a participant information sheet. E-mail and telephone



A: Members of the dental team (other than dentists) should play a role in smoking cessation. Differences significant ($P < 0.05$) as determined by chi-squared analysis.
B: Dental teams could be effective in helping patients stop smoking. Differences significant ($P < 0.05$) as determined by chi-squared analysis.

Figure 1. The relationship between respondent's occupation and views on the role of dental teams in smoking cessation.

	Number (No)	Percentage (%)
Total respondents	64	
Occupation:		
Clinician	27	42.2
Dental nurse	28	43.8
Receptionist	9	14.1
Smoking status:		
Current smoker	8	12.7
Ex-smoker	7	11.1
Never smoked	48	76.2

Table 2. Profile of respondents.

reminders were used to follow up non-respondents and data collection was concluded at the end of August 2004.

The structured questionnaire had 28 items and included sections on:

- Demographic characteristics of the dental staff surveyed including occupation and smoking status;
- General opinions with respect to smoking cessation intervention as part of dental care;
- Reported activity in this area; and
- Perceived barriers to helping patients stop smoking.

A subset of questions were also used to assess the extent to which Birmingham PDS staff were willing to be involved in helping patients stop smoking, along with their views on what Service-based measures could be most effective.

The majority of questions were closed and coded but, where appropriate, an open option was also included. A four-point Likert -type scale (*strongly agree/agree/disagree/strongly disagree*) was used to assess attitudinal variables and a three-point Likert-type scale (*always/nearly always/sometimes/rarely/never*) was used to measure levels of reported activity.

Completed questionnaires were coded and data tabulated prior to analysis by SPSS (Statistical Package for the Social Sciences). Frequencies and percentages were used to examine the distribution of responses for each variable. Respondents' views and activities concerning smoking cessation were cross-tabulated against their occupation and associations were analysed using the chi-squared test.

Results

Response rate and profile of respondents

Of the 69 questionnaires e-mailed, 64 (92.8%, 64/69) were completed and returned. The level of response from different occupation groups was fairly similar. However, the responses obtained from dentists and therapists are reported together (ie 'clinicians') because of the low number of dental therapists available to survey.

Information relating to the profile of respondents is outlined in Table 2. The majority of staff (76.2%, 48/63) participating in the survey stated that they had never smoked. Clinicians were more likely to report that they had never smoked (92.3%, 24/26: $P < 0.05$) when compared with other members of the dental team (dental nurses 67.9%, 19/28: receptionists 55.6%, 5/9).

General views about smoking cessation as part of dental care

The vast majority of respondents (92.2%, 59/64) believed that dentists should encourage patients to stop smoking. Just over three-quarters (76.6%, 49/64)

	Frequency of Activity	Number (No)	Percentage (%)
Total respondents		27	
Ask adult dental patients if they smoke:	- Always/nearly always	11	40.7
	- Sometimes	14	51.9
	- Rarely/never	2	7.4
Discuss general health risks of smoking with patients who smoke:	- Always/nearly always	0	0
	- Sometimes	14	51.9
	- Rarely/never	13	48.1
Discuss oral health risks of smoking with patients who smoke:	- Always/nearly always	13	48.1
	- Sometimes	12	44.4
	- Rarely/never	2	7.4
Advise patients who smoke to quit:	- Always/nearly always	12	44.4
	- Sometimes	10	37.0
	- Rarely/never	5	18.5
Advise patients who have never smoked to avoid starting:	- Always/nearly always	1	3.7
	- Sometimes	3	11.1
	- Rarely/never	23	85.2
Assist patients who want to stop smoking to quit:	- Always/nearly always	0	0
	- Sometimes	6	22.2
	- Rarely/never	21	77.8

Table 3. Clinicians' self-reported smoking cessation activities.

agreed that other members of the dental team should also play a role. Of these, everyone (100%, 49/49) believed that dental therapists and hygienists should be involved. A substantial proportion (83.7%, 41/49) also thought that dental nurses could play a part, but only about a quarter (26.5%, 13/49) felt that receptionists should be involved. Most respondents (81.3%, 52/64) thought the oral health problems linked to smoking were an important motivator for smokers to quit and three-quarters (75%, 48/64) believed that dental teams could be effective in helping patients stop smoking.

As can be observed from Figure 1, when compared with dental nurses and receptionists, clinicians were more likely to believe that members of the dental team (other than dentists) should play a role in helping patients stop smoking and that they could be effective in this area ($P < 0.05$).

Activity related to smoking cessation

Only dentists and therapists were required to answer the bulk of questions on activity with respect to smoking cessation intervention. Clinicians' self-reported activities are shown in Table 3.

Amongst the clinicians that did enquire about smoking status, the vast majority (92%, 23/25) reported that they were less likely to ask older children (ie 11–12 year-olds) if they smoke. A substantial proportion (60%, 15/25) were less inclined to raise the subject with adults who had learning disabilities or mental health problems, and some also reported that they would be less likely to ask teenagers (40%, 10/25) or female patients from Asian ethnic minorities (32%, 8/25). Almost half of respondents (48%, 12/25) said they were less inclined to enquire about smoking status for patients who had no oral signs or symptoms to suggest that they smoked.

Most (81.3%, 52/64) Birmingham PDS staff claimed to know about NHS Smoking Cessation Services. Of these, only two members of staff (3.8%, 2/52) had recommended this Service to patients within the last year, and no clinicians had formally referred any patients (by letter or phone call) within the same time period.

Views on proposed barriers to providing smoking cessation intervention

Participants were asked which (if any) of a range of factors they perceived to be a barrier to helping patients stop smoking. Respondents' views on proposed barriers are shown in Table 4.

Clinicians (11.1%, 3/27) were less likely to perceive that smoking cessation intervention was not part of their job, when compared to dental nurses (35.7%, 10/28) and receptionists (66.7%, 6/9): $P < 0.01$.

Views on the role of the Birmingham PDS in smoking cessation

Most staff (82.8%, 53/64) participating in the survey believed that the '*Birmingham PDS could do more to help patients stop smoking*'. When asked about the potential effectiveness of approaches that could be used, the majority believed that raising awareness about NHS Stop Smoking Services (SSS) would be the most effective (56.6%, 30/53), and that training PDS staff to give advice would be the least effective (69.8%, 37/53). The effectiveness of formally referring patients to NHS SSS was viewed somewhat equivocally: 28.3% (15/53) considered this approach to be the most effective, whilst a similar proportion (26.4%, 14/53) thought this would be the least effective. In reply to

	Number (No)	Percentage (%)
Total respondents	64	
Proposed barriers to providing smoking cessation intervention:		
Do not see this as part of my job	19	29.7
Lack of time	38	59.4
Lack of knowlege on the subject	28	43.8
Lack of educational resources to give to patients	42	65.6
Inadequate training	37	57.8
Don't know enough about where or how to refer patients that need specialist help	35	54.7
Don't think patients would listen or adhere to advice offered	24	37.5
Other	2	3.1

Table 4. Respondents' views on proposed barriers to providing smoking cessation intervention.

the question '*Given the opportunity, as part of your job, would you like to develop your role in helping patients stop smoking*', almost half (49.1%, 26/53) of respondents said 'Yes', 30.2% (16/53) were 'Not sure' and the remainder (20.8%, 11/53) answered 'No'.

Discussion

The population for this survey, ie 69 Birmingham PDS staff, was relatively small. In view of this and the self-reported method of data collection, the results should be interpreted with a degree of caution and it would be inappropriate to generalize the findings to other populations.

It was encouraging to find that the majority of staff in the Birmingham PDS (87.3%) are non-smokers as this should help make them good role models for patients in terms of smoking behaviour. Consistent with the findings of a recent Canadian study[8], clinicians were more likely to report that they had never smoked when compared with other members of the dental team.

This survey indicates that Birmingham PDS staff have generally positive attitudes towards helping patients stop smoking. It was difficult to find any published research with which to compare the views reported by dental nurses and receptionists, but this study found that the views of support staff were, on the whole, comparable to those held by dentists and therapists.

However, the apparent reluctance of some clinicians to ask older children and teenagers about their smoking status is of some concern, given the relatively high prevalence of smoking among young people in the UK.[1] The socially important oral health effects of smoking, such as halitosis and stained teeth, can be a useful motivator for smokers to quit, especially young people. Furthermore, children and teenagers use dental services on a regular basis and dental teams would therefore appear to be in an ideal position to help them quit.[3] PDS clinicians also reported that they would be less likely to ask adults with learning disabilities or mental health problems whether they smoked. A recent report from the Health Development Agency[9] highlights that smoking rates are much higher among people with mental health problems than the general population, and that many smokers with mental health problems want to quit but do not receive the advice and support they need to do so. Therefore, an opportunity exists for dental teams to support younger smokers and those with mental health problems, but this could be difficult to achieve if staff remain reluctant to approach the subject with vulnerable groups. It was interesting to discover that almost one-third were less willing to raise the subject with female patients from Asian ethnic minorities. Although this could be owing to language barriers, it might also be related to a general perception that Asian women don't smoke. Smoking rates amongst minority ethnic women in Britain are generally low, but recent trends indicate an increased prevalence of smoking among women from South Asian countries.[10]

The majority of clinicians surveyed said that they did advise patients who smoked to stop smoking, but it was disappointing to discover that very few were actively involved in assisting smokers to quit. Studies across Europe and the UK[5,7] have generally reported low levels of activity in both these areas so, compared to some surveys, it was encouraging to find that a greater proportion of PDS clinicians did at least advise smokers to stop.

Birmingham has a well-established NHS Smoking Cessation Service and nearly two-thirds of PDS staff had heard about it. In spite of this, only two respondents had recommended the Service to patients within the last 12 months, and none of the clinicians had made a formal referral. This calls for Birmingham PDS staff to be better informed about the actual work

of the Service, to help encourage staff to direct or refer more smokers with a desire to quit, and a presentation by members of the Stop Smoking team has since been arranged.

Participants reported a range of factors to explain their low level of routine involvement in smoking cessation. These were consistent with the findings of several other surveys, although these did not include dental nurses or receptionists in the study sample.[3,6,7] Studies involving dentists in general dental practice have found 'inadequate reimbursement' to be a frequently cited barrier. For the purpose of this survey, financial concerns were not included as an option, since Birmingham PDS practitioners are salaried. Respondents had an opportunity to suggest 'other' barriers, but none mentioned concerns about reimbursement. Although financial concerns were not perceived as a barrier by this group of salaried primary dental care staff, compared to clinicians, dental nurses and receptionists were less likely to regard smoking cessation as part of their job.

Over half of respondents believed that raising public awareness about local SSS would be the most effective PDS intervention, and more than two-thirds thought that training PDS staff to give advice would be the least effective. These views lend support to the recommendation that the most appropriate role for dental teams in smoking cessation is to direct smokers towards an appropriate source of specialist help.[6]

Although it is possible to train members of the dental team to provide smoking cessation advice, the value of doing so ought to be questioned, when trained counsellors may already be available to deliver effective smoking cessation services.

There is little doubt that the establishment of clear and simple referral pathways, possibly involving the use of a standardized referral form, should serve to facilitate formal referral to Smoking Cessation Clinics.

Conclusion

The dental team has a major role to play in smoking cessation. Dental staff responding to this survey held generally positive attitudes about helping their patients stop smoking, and the views expressed by nurses and receptionists were, on the whole, comparable to those of dentists. Opportunities have been identified for members of the dental team to play a more active role in smoking cessation intervention, in particular by supporting younger smokers and those with learning disabilities or mental health problems. Reported views lend support to the recommendation that the most appropriate role for dental teams in smoking cessation is to direct smokers towards an appropriate source of specialist help.

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References

1. Department of Health. *Smoking Kills: A White Paper on Tobacco*. London: The Stationery Office, 1998.
2. EU Working Group on Tobacco and Oral Health. Meeting Report. *Oral Dis* 1998; **4**: 48–67.
3. Watt RG, Johnson NW, Warnakulasuriya KAAS. Action on smoking-opportunities for the dental team. *Br Dent J* 2000; **189**: 357–360.
4. West R, McNeill A, Raw M. Smoking cessation guidelines for health professionals: an update. *Thorax* 2000; **55**: 987–999.
5. Johnson NW. The role of the dental team in tobacco cessation. *Eur J Dent Educ* 2004; **8** (Suppl 4): 18–24.
6. Beaglehole RH, Watt RG. *Helping Smokers Stop: A Guide for the Dental Team*. London: Health Development Agency, 2004.
7. Newton JT, Palmer RM. The role of the dental team in the promotion of smoking cessation. *Br Dent J* 1997; **182**: 353–355.
8. Brothwell DJ, Armstrong KA. Smoking cessation services provided by dental professionals in a rural Ontario health unit. *J Can Dent Assoc* 2004; **70** (2): 94–98.
9. McNeill A. *Smoking and Patients with Mental Health Problems.* London: Health Development Agency, 2004.
10. Brown C. *Tobacco and Ethnicity: A Literature Review*. ASH, Scotland, 2004. **http://www.ashscotland.org.uk**

Abstracts

NEW MATERIALS FOR DECIDUOUS TEETH ENDODONTICS

Comparison of zinc oxide and eugenol, and Vitapex for root canal treatment of necrotic primary teeth. M Mortazavi and M Mesbah. *International Journal of Paediatric Dentistry* 2004; **14**: 417–424.

Although many medicaments have been advocated for root canal therapy in primary teeth, considerable success with zinc oxide and eugenol (ZOE) paste was first reported by Sweet in 1930, and has been consistently successful since then. This paper considers the use of ZOE, its advantages and disadvantages, in comparison to an 'ideal' material. It may be slow in resorption, deflect the erupting permanent successor, and may only have limited antibacterial activity. In the light of this, a clinical trial compared ZOE to a new material, Vitapex, which is a pre-mixed paste of calcium hydroxide and iodoform.

Fifty-two teeth were treated in two groups of children with a mean age of just under six years. They were followed for up to 16 months postoperatively.

The success rates in lack of symptoms and retention of the teeth were 100% in the case of Vitapex, and 78.5% when ZOE was used.

The difference is statistically significant, and the authors conclude that Vitapex would be an appropriate treatment modality, in particular whenever there is doubt about a patient's return for follow-up.

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