IN BRIEF

- Greater attention could be given to participation in informal (general) CPD.
- Large numbers of GDPs may need to do more CPD to meet the requirements of the GDC's *Lifelong Learning Scheme.*
- Targeted support for specific groups of GDPs may be needed.
- The GDC's *Lifelong Learning Scheme* and the requirement to undertake clinical audit or peer review will put pressure on providers of CPD.

Participation of UK dentists in continuing professional development

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Introduction This paper reports participation of dentists in continuing professional development (CPD) and factors affecting participation.

Method All general dental practitioners (GDPs) in three deaneries in England were surveyed. The overall response rate was 54% ($n = 2082$); by deanery it was 68% West Midlands, 45% South West and 44% Anglia. Findings across deaneries were remarkably similar. Comparisons with national data show no notable bias in the sample for gender, owners/partners and age/experience.

Results Most frequent forms of CPD were journal reading and courses in which almost all engaged. A score based on individual participation in CPD over the 12-month period was calculated. The mean score (hours) for participation in verifiable CPD was 31 (median 25) and for general, 29 (median 29). In terms of the GDC's *Lifelong Learning Scheme*, 57% were already undertaking 50 hours. Net of other effects, those less likely to be doing 50 hours are those with more years in practice and single-handed practitioners. Greater access to courses and media-based CPD is desired.

Conclusion Certain groups of dentists will need support to meet the requirements of the GDC's *Lifelong Learning Scheme*. Statutory peer review or clinical audit will significantly alter the CPD profile of most dentists. This has implications for facilitators.

It is widely accepted as good practice for health professionals regularly to up-date their clinical skills and knowledge to ensure research developments are integrated into patient care. The pursuit of ongoing professional education or updating is referred to as continuing professional development (CPD). CPD is defined as a process of 'lifelong learning for all individuals and teams which meets the needs of patients and delivers the health outcomes and healthcare priorities of the NHS and which enables professionals to expand and fulfil their potential'.[1] The Government has stressed the key role CPD plays in assuring quality[1,2] and has strongly encouraged the professional bodies to strengthen systems for self-regulation, and promote lifelong learning.

This paper reports participation in CPD and factors affecting participation. Recent survey-based research has found that dentists' involvement in postgraduate dental education is substantial. For example, Mouatt *et al.*[3] reported that 79% had attended some type of postgraduate education. Mercer *et al.*[4] also established high participation figures for Section 63 course attendance (82%) in a survey of GDPs in Yorkshire. Other participation rates reported in that study[4] included: clinical audit (6%), self assessment approaches (37%), peer review (15%), objective self criticism (14%) and private course attendance (50%). Sixty-seven per cent were members of a national or local professional association, and 20% were actively involved in study groups.

The phased introduction of the General Dental Council's (GDC) *Lifelong Learning Scheme*[5] commenced in January 2002 and is designed to ensure that all dentists participate in CPD. It links participation in CPD with recertification to practice dentistry. The scheme requires

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all dentists to complete 250 hours of CPD over a 5-year period. At least 75 hours must be spent undertaking verifiable CPD (with educational aims and outcomes), the remainder can be so-called general CPD (for example, journal reading). The GDC advises that the CPD is best managed on a yearly basis. Dentists should aim to complete 50 hours per year, of which 15 hours should be verifiable. The GDC's survey[6] of those on the voluntary scheme showed that the great majority – 89 per cent – thought that '...the GDC has communicated its requirement at least fairly well'.

As part of the commitment to clinical governance across the NHS, since 1st April 2001 all dentists who provide general dental services are required to complete at least 15 hours of clinical audit (or peer review) in each successive period of three years.[7] The GDC will accept demonstration of participation in clinical audit (or peer review) as verifiable CPD. Therefore, at least 15 hours of the minimum of 75 hours verifiable CPD over five years will account for time spent undertaking clinical audit or peer review.

This paper reports on the participation of general dental practitioners in continuing professional development prior to the introduction of mandatory CPD. Factors affecting participation are explored. Funding from the Department of Health (England) supported this cross-deanery study.

METHODS

The overall purpose of the study was to explore and evaluate whether education affects change in professional practice resulting in improved patient care. The research had two distinct phases. In the first the type, nature and volume of training was investigated by surveying all GDPs in three deaneries – West Midlands, Anglia (formally East Anglia) and the South West. These deaneries were chosen because of their different geographical features, characteristics of the urban/rural divide, and location of a dental school. In phase two, 30 case studies of GDPs were developed. In addition, small-scale surveys of 60 patients in each of the 30 practices were undertaken. The focus of this paper is the data from phase one.

The questionnaire was drafted with advice from three general dental practitioners and a postgraduate dental dean and, informed by the literature (specifically Mercer *et al.*[4]). It was mailed out in June 2000 to 3,876 GDPs. Vocational dental practitioners were excluded because of the unique nature of their educational programme. Two re-mailings to non-respondents took place at four-week intervals.

The questionnaire was divided into four sections. In section one, questions were presented on training and updating. A range of CPD activities was listed (as in Table 1) and respondents were asked to indicate the extent of their participation in the 12-month period to 31 March 2000. Section 2 contained questions on motivations to undertake CPD; Section 3, changing practice (including questions on impact on practice, constraints to participation, barriers to change, views on the GDC's *Lifelong Learning Scheme*); and Section 4, questions 'about you'. This paper reports data from Sections 1 and 4 only.

Data were entered using an optical mark reader. Open questions were coded by hand and manually entered. Data were analysed using SPSS and STATA.

RESULTS

Response rate

The response rate was 54%. A higher proportion of the West Midlands dentists responded (68%) compared with the South West (45%) and Anglia, (44%). The higher response rate to the survey in the West Midlands might be explained by the affinity some GDPs might feel for the principal provider of short courses in the region.

Comparisons with national data were sought to determine whether our sample required statistical weighting. Survey results, by deanery, were compared with the national data especially calculated from the Dental Rate Study Group (DRSG) population by the Statistics Division 1B of the Department of Health (England). The comparisons show no notable bias in the sample for gender, owners/partners, and age/experience. For single-/multi-handed practices, the comparison suggests an under-representation of single-handed practitioners. Rather than weight the data, the advice from our statistician was to analyse separately for multi-handed and single-handed practices. The logit model that was developed explores net effects and so holds all other variables constant.

Key characteristics

A majority (72%) of this sample was male; 68% were the practice owner or partner; 79% work full time for the GDS; and the majority (56%) had been in dental practice for more than 15 years. Sixteen per cent of this sample worked in a single-handed practice; 24% with one other; 24% with two others; and 37% with three or more.

Types of CPD undertaken and participation rates

Dentists were asked to indicate if they had taken part in a range of CPD activities in the year to 31 March 2000. Table 1 summarises participation rates.

The most frequently undertaken forms of CPD in this sample are journal reading and attendance courses. Almost all of those who replied engaged in at least one of these activities in the time period. In terms of professional/ academic journal reading, most (66%) regularly read (ie consult most issues) between one and three different journals; 29% read between four and six; and 3% read seven or more. The figures for course attendance show 24% attending one to three (where one equals a 2½ hour session); 29% four to six; 16% seven to nine; and 27% ten or more.

Table 1 Rates of participation in CPD activity (April 1999 – March 2000)

CPD Activity	%	Notes
Journal reading	98	Read at least one regularly (ie most issues)
Course attendance	97	Attended at least one 2½ hour session
Professional associations and societies	83	Local and/or national
Discussion with colleagues	80	(Other) formal discussion of professional matters
Book purchase	62	Purchased at least one
Professional videos	60	Watched at least one
Internet	50	At least a few times, for professional purposes
Conferences	46	Attended at least one 2½ hour session
Self-assessment	32	Except as part of clinical audit or peer review
Journal clubs and/or study groups	31	
CAL packages	28	Used at least one
Peer review	18	
Clinical audit	11	Formal, collaborative or individual
Distance learning	9	

Note: percentages have been rounded to the nearest whole per cent.

High proportions of the sample were members of professional associations or societies: 30% were members of both a national and a local association/society; 53% were a member of either a local or national one with the much greater proportion being members of a national association/society. Similarly high proportions engaged in formal discussions of professional matters with their colleagues. For 38% these happened on a monthly basis; for 27% a weekly basis; and for 15%, a daily basis.

Books and videos were used in similar proportions. Forty nine per cent purchased one to three books and 52% used one to three videos; 10% purchased four to six books and 7% used four to six videos; 3% purchased seven or more books and 1% used seven or more videos. In the 12-month period, the internet was used for professional development purposes by 37% of this sample a few times; by 7% on a monthly basis; by 5% on a weekly basis; and by 1% on a daily basis. About a third (32%) attended between one and three conference sessions in the period; 9% attended between four and six; and 7% seven or more. About a third (32%) had used self-assessment materials (for example, the *BDJ / Primary Dental Care* self-assessments). Overall, similar proportions (31%) were members of a journal club or study group. Twenty per cent were members of a study group; 9% were members of a journal club; and 2% were members of both. CAL packages were used by a little over a quarter (28%) of these respondents. Most (25%) of these had used between one and three; 3% used between four and six; and 1% seven or more. Only a minority had participated in peer review or clinical audit. Eighteen per cent had undertaken peer review in the 12-month period. Fewer had done clinical audit: 5% on an individual basis and 6% collaborative. Finally, 9% had used distance learning materials (not covered in the other activities listed) in the period.

When the results are looked at by deanery the figures are similar for the top five items, and peer review, differing by not more than 2%. Anglia, selected for its rural, dispersed geography had notably greater proportions of dentists doing general (informal) CPD – professional videos, the internet and CAL packages. Despite this though, proportionally no fewer dentists in Anglia attended courses. The participation rate for distance learning is higher in the South West (16%). This may be influenced by the local promotion of the Bristol University Open Learning for Dentists (BUOLD) distance learning course.

Table 2 Scores for participation in CPD activity

CPD Activity	Response-options	Participation scores (notional hours)
Course attendance (in 2½ hour sessions)	0 1-3 4-6 7-9 more	0 5 12.5 20 25
Conferences (in 2½ hour sessions)	0 1-3 4-6 7-9 more	0 5 12.5 20 25
Clinical audit	Yes, individual	15
	Yes, collaborative	20
	No	0
Peer review	Yes No	20 0
Self-assessment	Yes No	5 0
Professional associations and societies	Yes, local	2.5
	Yes, national	2.5
	Both	5
	No	0
Journal clubs and/or study groups	Yes, journal club	7.5
	Yes, study group	17.5
	Both	25
	No	0
Journal reading (number of different journals which most issues are consulted)	0 1-3 4-6 7-9 more	0 5 12.5 20 25
Book purchase	0 1-3 4-6 7-9 more	0 2 5 8 10
Professional Videos	0 1-3 4-6 7-9 more	0 2 5 8 10
CAL packages	0 1-3 4-6 7-9 more	0 2 5 8 10
Internet (for professional development)	Never	0
	A few times	1
	Monthly	5
	Weekly	20
	Daily	25
Distance learning	No Yes	0 25
Discussion with colleagues (Excluding discussion with colleagues arising from the above, how frequently do you formally discuss professional matters (eg clinical, managerial) with colleagues (eg at practice meetings))	Never or rarely	0
	Monthly	5
	Weekly	20
	Daily	25

A participation score

A participation in CPD score was calculated for each dentist in the sample based on the reported amounts of CPD in the 12-month period. For each of the CPD activities on the questionnaire, the response-options are listed in Table 2 together with the CPD score for each. Those that were not in hours were assigned notional amounts of time.

In assigning amounts of time to the frequency of participation in CPD activities we recognise that subjective judgements of value are involved. However, we have been rational in our approach and have been concerned to avoid the over-dominance of one particular activity. To illustrate, there is the argument that it takes 2 hours to 'read' a journal. If this amount of time were employed in our calculations then reading 1–3 journals per month would amount to 40 hours (assuming a 10-month year and 2 journals) which is in excess of all the other activities. Clearly some of the respondents might have put in that amount of time; for others, 'reading' might have amounted to a quick flick through and a look at the job advertisements. Our scoring puts a limit on the number of points any one activity might score; that maximum is 25.

Our scoring system has been reviewed by the GDC's recertification section. Whilst they state that it is very difficult to make any hard and fast assumptions about the number of hours involved in any CPD activity, they found our assumptions on the likely hours for each activity to be reasonable.

Attention was given to Mercer *et al.*'s index of CPD.[4] It is difficult to compare our scoring system with theirs as we asked respondents to report on activity in the past year; Mercer *et al.* asked for activity in the past 3 years. However, we make two critical observations of their scoring system. Firstly, key activities – audit, peer review, practice meetings – are scored by whether or not the respondent indicated participation. We score by frequency of activity. For example, in Mercer *et al.*'s work[4] a score of 1 is given for participation in peer review and the same score is given for attendance at 1–2 Section 63 courses. We score peer review

in relation to the number of 2½ hour sessions and would argue that this approach has greater validity. Secondly, our list is more comprehensive than Mercer *et al.*'s. Additional items include videos, CAL, internet, distance learning, journal clubs/study groups and conferences.

A score for each individual reply to the survey was calculated by summing their score across CPD activities. The mean for the sample was 60 (median 55) which represents a notional 60 hours of CPD undertaken in the year to 31 March 2000. The interquartile ranges were: 2.5 to 36.5; 36.5 to 55; 55 to 79.5; and 79.5 to 227. The mean scores for each deanery were very similar.

These scores can be related to the GDC's *Lifelong Learning Scheme*. Fifty-seven per cent of our sample is already undertaking 50 hours or more. Formal CPD which is likely to be verifiable includes courses, conferences, clinical audit, peer review, journal clubs and study groups and distance learning. It could, arguably, include other items such as CAL, self-assessment and some more formal discussion with colleagues. This is open to debate. For this paper we identify just the seven listed. The mean score (hours) for participation in formal ('verifiable') CPD is 31 (median 25) and, for informal ('general'), 29 (median 29).

Although the response rate was 54%, no differences, in terms of mean number of hours of CPD per annum, were found between those who returned the questionnaire on the first mail-out compared with those who returned later. Those doing little CPD were evenly distributed across the returns which suggests that it was not just those who were more actively engaged in CPD who returned the survey.

Characteristics of dentists affecting participation

Whether characteristics of dentists affect participation in CPD was explored using a logit model. The logit model has the property of proportional odds. The exponentials of the coefficient estimates for dummy variables representing categories of a variable relative to a base, give odds ratios, ie odds of a positive response (at least 50 hours of CPD per year) relative to that base category. In modelling, these effects are net of other effect variables in the model. By examining effects relative to this we can get a picture of the kind of GDP who is more or less likely to have completed at least 50 hours (≥ 50 hours) of CPD in the year.

The odds ratios for all the experience (years in general dental practice) dummies have a statistical significance well below zero (negative) so the least experienced GDP is likely to have the highest participation. The odds ratios, and hence likely participation, decrease uniformly with number of years in dental practice.

GDPs with a postgraduate qualification and those who undertake part-time related work (eg course tutors) are 2.44 and 2.24 respectively more likely, in terms of odds, to be in the ≥50 hours CPD group compared with those without a postgraduate qualification and those who do not do additional related educational work.

The odds of a positive response for owner/partner is 2.31 times that for those who are not owners/partners. The number of partners in the practice also affects the odds of being in the ≥50 hours CPD group. Here the odds of a positive response for GDPs working in a practice with four or more others are nearly twice (1.97) that of those working in single-handed practices.

Thus, characteristics of dentists affect the likelihood of their meeting the GDC's *Lifelong Learning* requirements. A number of factors seem to be important. In this sample, those less likely to be doing 50 hours per year are those who have been in dental practice longer and single-handed practitioners. Other factors which appear to have a notable (positive) effect include whether the dentist is an owner/partner, has a postgraduate qualification or does additional related educational work.

Enhanced access needed to some types of CPD

Included in the questionnaire was an open question which asked: *Are there any forms of continuing education to which you would like greater access?* Nine hundred and fifty-five respondents identified 1,298 items. Courses featured strongly. Some form of course was mentioned 392 times (30% of items; hands on, high quality, relevant courses, update courses, longer term, and practice management). Greater access to media based CPD (CAL, internet, IT, CD roms, videos) was also desired (263 mentions; 20% of total).

DISCUSSION

Course attendance and discussion with colleagues are amongst the most frequently undertaken CPD activities. That only a minority had participated in peer review or clinical audit is worthy of comment given recent changes which require all dentists to complete 15 hours of clinical audit (or peer review) during a three year cycle.[7] Considerable input from audit facilitators and others will be needed to support what may be a new undertaking for some and to ensure maximum benefit from this activity.

Table 1 showed that overall comparatively few use CAL packages (28%) and half use the internet. The results to the open question suggest that greater availability or awareness of CAL packages and the internet might result in higher rates of participation.

What is also clear from Table 1 is that, for this sample, there is more participation in verifiable CPD activity. This is interesting given that the *Lifelong Learning Scheme* demands much less participation in verifiable activity.

Although almost all GDPs in the sample do some CPD, rates of participation are affected by characteristics of the GDP and the practice. The statistical modeling showed that likely participation decreases with years in dental practice. This finding complements the phased introduction of the GDC's *Lifelong Learning Scheme* in that those more recently registered need to comply with the requirements first. Also, single-handed practitioners tend to do less than those working in group practices. Possible reasons for this might include limited flexibility making it more difficult to get time off practice.

Forty-three per cent of the sample does not, on our calculations, undertake the recommended 50 hours of CPD per year. What is perhaps needed is the targeting of certain groups of GDPs to provide support with CPD, for example, single-handed practitioners and those qualified for many years. On the other hand, dentists actively participating in CPD are likely to be owner/partners, have a postgraduate qualification or do additional related educational work.

CONCLUSION

In the light of the findings, we suggest the following:

- Increased provision of CPD is required, particularly more courses (including hands-on) and media-based CPD (including internet, CD roms, videos). The GDC's *Lifelong Learning Scheme* is likely to lead to greater uptake of CPD and deaneries and other educational providers need to be prepared for such an increase. However, it is notable that the respondents were doing as much verifiable CPD as general, informal CPD. In terms of an individual's profile of CPD, greater recognition could be given to informal CPD.
- Certain groups of GDPs might be targeted and supported in their CPD. These are groups of dentists less likely

to be engaging in sufficient CPD, notably those with more than 15 years in general dental practice and those working in single-handed practices.

- The statutory requirement of GDPs in the General Dental Service to undertake clinical audit or peer review will result in a significant change for most in their profile of CPD. Considerable support from audit facilitators will be needed to ensure that dentists and their patients obtain maximum benefit from this activity. The outputs and benefits of this statutory scheme need to be audited, and a cost-effectiveness analysis undertaken.

The underlying rationale of the GDC's *Lifelong Learning Scheme* is about ensuring that dentists participate in CPD. This aim is admirable. However, there is little regard as to whether the activity will match the needs of dentists and impact on their practice. The scheme permits dentists to choose CPD activity that is within their 'comfort zone'. Although this may serve to reassure and perhaps motivate them to pursue further CPD, it would be more desirable to have a situation where much CPD is chosen in a way which enhances the likelihood of impact on practice. Other findings from this study have demonstrated that impact on practice is improved when CPD is selected in relation to learning needs. The personal development plan is a good means for encouraging reflection on learning needs and we suggest this is one way to enhance the impact of CPD on practice.

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