IN BRIEF

- Advent of Continuing Professional Development well-received although significant funding issues exist.
- Additional module in dental therapy required for qualified dental hygienists.
- Employment issues in terms of lack of nursing assistance and poor remuneration highlighted.
- E-learning should be instigated particularly in remote and rural areas.
- Dentists do not use dental hygienists to their full potential.

Educational needs and employment status of Scottish dental hygienists

M. K. Ross,[1] R. J. Ibbetson,[2] J. S. Rennie[3]

Aims and objectives: To investigate the educational needs and employment status of registered dental hygienists in Scotland

Subjects: Three hundred and eighty one registered dental hygienists with postal addresses in Scotland.

Design: Structured questionnaire.

Results: A 76% response rate was achieved following two mailings. Of the respondents, 43% were in full-time employment albeit in more than one setting, mostly in the 'central belt' of Scotland. It was reported that 41% were employed in general dental practice with both NHS and private lists and 39% worked in a purely private setting. The introduction of extended clinical duties had been well received and 59% of subjects were interested in additional training in dental therapy, should this become available. Absence of funding for CPD was raised repeatedly, with only 41% reporting a degree of financial assistance. Greater accessibility to continuing education via distance learning, particularly in remote and rural settings, was requested by 73% of hygienists.

Conclusions: This study identifies a number of issues in relation to this increasingly important group of healthcare professionals, which will inform the providers of oral healthcare. Although hygienists' involvement in CPD was commendable, results indicated that despite commitment to their profession, respondents did not always feel respected in terms of their employment status or support for continuing professional development.

INTRODUCTION

Dental hygienist education in Scotland commenced in 1962 at Edinburgh Dental Hospital, where a total of eight hygienists were expected to qualify each year. This course was followed by an initiative at Dundee Dental Hospital in 1976 where four hygienist places were made available per year, and then in 1989 by Glasgow Dental Hospital, which trained 20 students annually. However, in 1996 because of the introduction of a mandatory two-year training programme and financial restrictions, Edinburgh and Dundee reduced their output by admitting students on alternate years. Glasgow maintained an annual cycle, but reduced its intake to 10 students. This situation continued until 2001 when new funding, from the Scottish Executive, allowed Edinburgh and Dundee to revert to a yearly intake and both now produce 10 hygienists per year. Currently, there is thus a potential output of 30 trained hygienists each year in Scotland.

Changes in regulations over the last 15 years have permitted expansion of the clinical remit of dental hygienists. The following additional procedures can now be undertaken and the year of implementation appears in parenthesis: infiltration analgesia (1991); dental radiography (1995); placement of temporary dressings (2000); replacement of crowns with a temporary cement in an emergency (2002); removal of excess cement using instruments which may include rotary instruments (2002); taking impressions (2002); administration of inferior dental block analgesia under the direct personal supervision of a registered dentist (2002) and, treatment of patients who are under conscious sedation, provided that a registered dentist remains in the room throughout treatment (2002).

Although a limited number of publications have attempted to discuss career patterns and job satisfaction of hygienists,[1-4] there is a paucity of recent information relating to the educational needs, or employment patterns of practising hygienists.

The purpose of this investigation was to determine workforce numbers, sources of employment, and educational and professional needs of this group of oral healthcare workers in Scotland.

[1]*Senior Lecturer, Edinburgh Postgraduate Dental Institute, The University of Edinburgh, 4th Floor, Lauriston Building, Lauriston Place, Edinburgh EH3 9HA; [2]Professor of Primary Dental Care and Director, Edinburgh Postgraduate Dental Institute, The University of Edinburgh, 4th Floor, Lauriston Building, Lauriston Place, Edinburgh EH3 9HA; [3]Postgraduate Dental Dean, NHS Education for Scotland, 2nd Floor, Hanover Buildings, 66 Rose Street, Edinburgh EH2 2NN

Correspondence to: M.K. Ross, Edinburgh Postgraduate Dental Institute, The University of Edinburgh, 4th Floor, Lauriston Building, Lauriston Place, Edinburgh EH3 9HA. Email: margaret.k.ross@ed.ac.uk

Refereed Paper
Received 8.4.03; Accepted 15.1.04
doi: 10.1038/sj.bdj.4811981
British Dental Journal 2004; 198: 105–109

Table 1 Time since qualification

Within last 5 years	6-9 years ago	10-19 years ago	20-30 years ago	More than 30 years ago
35 (12%)	52 (18%)	126 (44%)	61 (21%)	11 (4%)

MATERIALS AND METHODS

A postal questionnaire was distributed to 381 dental hygienists who were registered with the GDC as having an address in Scotland, in January 2002. A total of 290 (76%) were returned following two mailings and were subsequently analysed. Quantitative and qualitative data were collected about personal details, training establishment, qualifications held, employment patterns, professional development and perceived educational needs. As not all respondents answered every question, the number of replies to each question (*n*=28) is shown in each case.

RESULTS

Sex

The majority of respondents (*n*=285) were female (280; 98%), with only 5 (2%) being male.

Time since qualification

The breakdown is demonstrated in Table 1. Figures reveal that approximately 70% of hygienists qualified more than 10 years ago which reflects the reduction in intake which occurred in 1996.

Training establishment

The information which shows the dental hospital of qualification is demonstrated in Figure 1. A total of 87% of hygienists registered in Scotland qualified from a Scottish school of dental hygiene. There appears to be some movement of qualified hygienists into Scotland who trained in locations in England and Wales, largely within the Armed Forces.

Duration of training

The responses to a question relating to the duration of training, (*n*=276), recorded that 144 (52%) subjects had undergone a training period of between 12-17 months while 78 (28%) trained for 6-11 months. Those in training for only six months were undoubtedly dental therapists undertaking training in dental hygiene. For 53 (19%) the tuition time was 18-24 months and only one individual (0.5%) reported being in hygienist education for a period in excess of two years.

Additional qualifications

Of the 271 respondents who answered this question, additional qualifications were held by 136 (50%). The details of the qualifications are shown in Table 2. A number of hygienists held qualifications in more than one additional subject.

Table 2 Additional qualifications

ADDITIONAL QUALIFICATION	NUMBER OF RESPONDENTS
Dental nurse	82
Diploma in Dental Health Education	32
Further and Adult Education Teaching Certificate	15
Dental Therapist	5
Certificate in Radiography	5
Master of Public Health	3
Certificate in Oral Health Education	3
D32/33 Units (Education)	2
PG Dip Adult Education	1
Diploma in Humanities	1
BSc	1
BA	1
Institutional Management	1
Certificate in Oral Health Promotion	1
Aromatherapy	1
HNC in Complementary Therapy	1
HNC	1
General Nursing	1
Reflexology	1
Chiropody	1
MA	1
HNC in Management	1
Open University Degree	1

Extended duties

Subjects were asked to reveal if they had undertaken training in extended duties for hygienists and a total of 244 (86%) stated they had received formal training in the administration of local analgesia, mostly in Glasgow (112; 46%). The remainder had had training either in Dundee (53; 22%), Edinburgh (43; 18%), Inverness (10; 4%) or in 'other' centres, presumably outside Scotland. The latter category applied to 23 (10%) individuals.

Training in the placement of temporary restorations was completed by 150 (56%; *n*=270). Of those who responded (*n*=144), 82 (57%) completed this activity in Glasgow; 27 (19%) in Edinburgh, and 16 (11%) in Dundee, with the remaining 19 (13%) stating they had undertaken such tuition in 'other' centres.

About your employment

On being questioned whether they were currently employed as dental hygienists, 270 respondents (94%) stated they were in employment. Of the 18 (6%) who were not employed as hygienists, 17 subjects offered a variety of reasons for giving up their careers. These responses are detailed in Table 3.

In total, 10 (56%) of those hygienists not in employment (*n*=18), stated they would be interested in returning to work, and 11 (61%) indicated they would like to access a refresher course prior to recommencing employment.

Employment patterns were investigated and it was revealed that 116 (43%) were in full-time employment and 157 (57%) worked on a part-time basis (*n*=272). Those who worked part-time were asked to indicate how many sessions they were employed each week, and in how many locations. The responses are illustrated in Figures 2 and 3.

Subjects were asked to record the branch of dentistry in which they were employed. The majority of respondents stated this was in general dental practice, with both NHS and private lists (117; 41%), albeit many worked in more than one setting. Detailed results are provided in Figure 4.

Geographical location of employment

Geographical locations of employment were identified, results of which are exhibited in Figure 5.

The majority of respondents were situated in the central belt with only a comparatively small number in the Highlands and Islands.

Professional memberships

Membership of professional bodies was investigated to provide some measure of

Table 3 Reasons for leaving hygienist employment

REASON	NUMBER
To have children	9
Health reasons	2
Retirement	1
Change of career	1
Promotion	1
Relocation	1
Poor working conditions	1
Discharge from armed forces	1

the degree of commitment to an affiliated organisation. A total of 176 (64%) responses were positive and, of those, 165 (94%) were members of the British Dental Hygienists' Association.

Attendance at scientific meetings/courses

Of the respondents to this question (*n*=281; 97%), 165 (59%) stated they attended courses on a regular basis with 224 (86%) reporting they had attended between one and four such events in the previous 12 months. A total of 55 (19%) of subjects had not attended any educational event in the previous calendar year.

Funding issues

Of the 276 (95%) of those who answered the question on CPD funding, a total of 114 (41%) stated they had received funding to enable them to attend a professional/educational meeting. The majority (162; 59%) revealed that they had received no financial assistance. Furthermore, of the 114 (41%) who did obtain financial assistance, 99 (87%) received full funding, with 15 (13%) securing partial funding.

Access to continuing education

A total of 182 (65%) subjects reported that it was difficult to access continuing education and only 96 (35%) maintained that access was not a problem. A number of reasons were offered as to why access proved difficult, but 'funding issues' (*n*=113; 41%) and 'family commitments' (*n*=89; 32%) were most commonly cited. Geographical location was reported to be a barrier to education by 79 (28%), and 57 (21%) individuals highlighted 'travel' and 'lack of opportunity' as reasons for non-attendance.

The demand for distance learning was investigated and, of those who replied (*n*=270; 93%), the majority (198; 73%) reported that this would be a desirable alternative mode of educational delivery.

Educational satisfaction

Of the 271 (93%) respondents, only 176 (65%) stated they were satisfied that their education was up to date. A number of comments were made in relation to this aspect, the more frequently cited of which are summarised below:

- Lack of funding for CPD
- Loss of income while undertaking CPD
- Problems of access to CPD because of geographical location
- Need for a therapy training module in Scotland
- Course numbers limited
- Need for more education on a regular basis
- Desire for evening/weekend courses
- Need for refresher courses
- Access to CPD dependent on views of employer.

Educational needs

Hygienists were asked to state which CPD subjects would be of most benefit to them in their current role, and the results obtained are summarised in Table 4.

As expected, periodontology was most popular amongst hygienists, but considerable interest was reported in oral medicine and caries prevention.

General comments about personal professional development

In an open-ended section, respondents were given an opportunity to make comments about their own personal development, the more significant of which are detailed below:

Practice-related comments:

- Patient appointment times too short
- No job satisfaction
- No nursing assistance

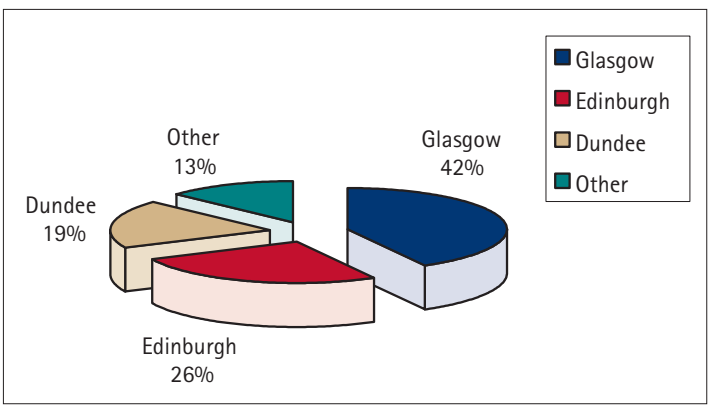


Fig. 1 Training school

Table 4 Educational subjects

SUBJECTS	RESPONSES
Periodontology	243
Oral medicine	182
Medical histories	155
Caries prevention	132
Oral health promotion	131
Pharmacology	127
Behavioural science	116
Radiography	111
Special needs patients	110
Infection control	100

- Poor remuneration, therefore considering career change
- Lack of knowledge of some dental practitioners regarding the legal clinical remit of the hygienist.

Education/CPD-related comments:

- No funding
- Notification of meetings often too late
- Courses in Aberdeen or Inverness desirable
- Development of career pathways
- Need for specialist qualifications e.g. special needs
- Desire for orthodontic therapy course
- Dental therapy 'top-up' training
- Video-conferencing facilities for rural and remote areas
- Need for evening courses
- Need for update in practical skills.

Domestic issues:

- Requirement for creche facilities.

Desire for dental therapy training

Finally, of the 275 (95%) responses to a question enquiring about the additional training required for hygienists to be permitted to undertake therapy work, the majority (*n*=161; 59%) reported they would be interested in pursuing such tuition.

DISCUSSION

This national dental hygienist needs assessment exercise, which commanded a 76% response rate, revealed a number of findings on which the future of continuing education for Scottish dental hygienists should be based. Although our data were obtained from hygienists in Scotland, we believe that our findings are likely to be indicative of the remainder of the UK, as respondents were employed in different branches of dentistry and came from wide geographical areas, including industrialised and more remote and rural areas.

Analysis revealed that the majority of respondents had qualified between 10-19 years previously, with only 11 having qualified in excess of 30 years ago. The cohort

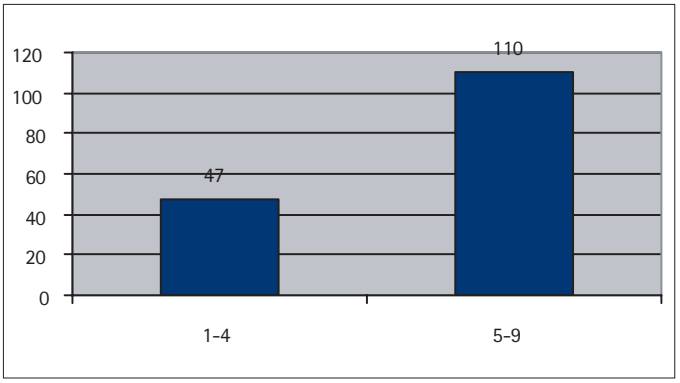


Fig. 1 Sessions of employment

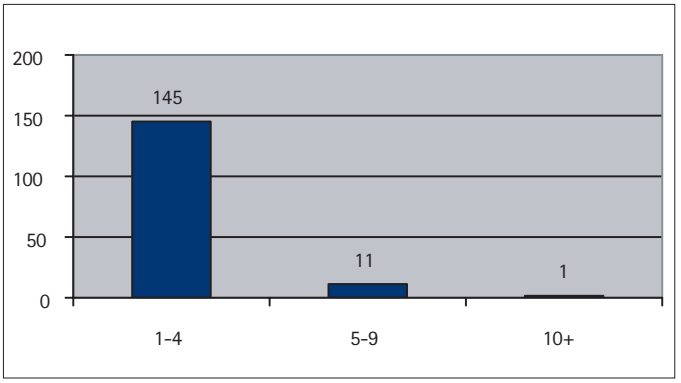


Fig. 1 Locations of employment

who trained outside Scotland means that a small proportion of the workforce is moving into, or returning to Scotland from other locations. However, it may suggest that insufficient training places in Scotland have been available in the past, or it may simply be that relocation has occurred as a result of domestic or personal reasons.

It is clear that a number of issues, such as funding and access to education, are problematic and require to be addressed. It is anomalous that dental hygienists who are employed in general practice have to fund their CPD and, in addition, bear the costs of loss of remuneration and for travelling to courses. This investigation revealed that only 41% obtained some degree of financial assistance, which is hardly an incentive to encourage the pursuit of continuing education. This situation contrasts with that for NHS dentists, where awards are made both for loss of earnings, and travel and subsistence allowances. With the forthcoming GDC directive regarding mandatory CPD for this PCD group, this is surely unacceptable and should be rectified. In partial recognition of these difficulties, NHS Education for Scotland has, in the past year, established CPD courses for this professional group, and although participants are not able to claim financial support for their attendance, courses are free at the point of delivery. This is in direct contrast to much of the remainder of the UK, where courses are often costly to the individual, and often have long waiting lists due to lack of availability.

Significant costs will be associated with providing each PCD with CPD, and it is intimated that central funding is unlikely to be available for this purpose. Primary care trusts, by-and-large, provide funding for staff to attend educational courses. However, within the general practice setting, it has been suggested that the employing practitioner should be responsible for this. Although this approach is perhaps understandable, it is difficult to see how it could work. It would be likely that general practitioners would seek reimbursement for staff CPD, and in light of this, it would perhaps be more appropriate that a separate budget, similar to that for Section 63 education, should be made available for PCD groups. This would surely reduce further unnecessary administrative costs from the already stretched financial status of the NHS.

Clinically-related observations confirmed the much-reported circumstances whereby the length of appointments is often inadequate in the primary care setting. Employing practitioners should consider whether treatment provision is compromised by inappropriate time-constraints on hygienists, who often undertake advanced periodontal therapy for patients.

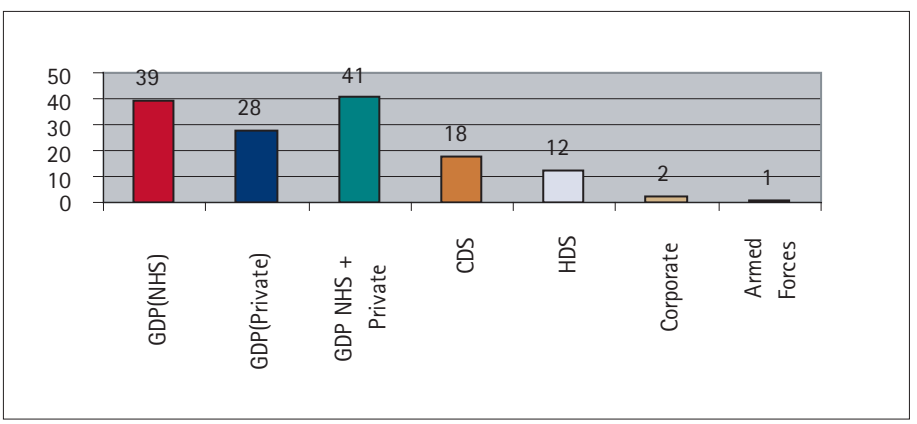


Fig. 4 Branch of dentistry

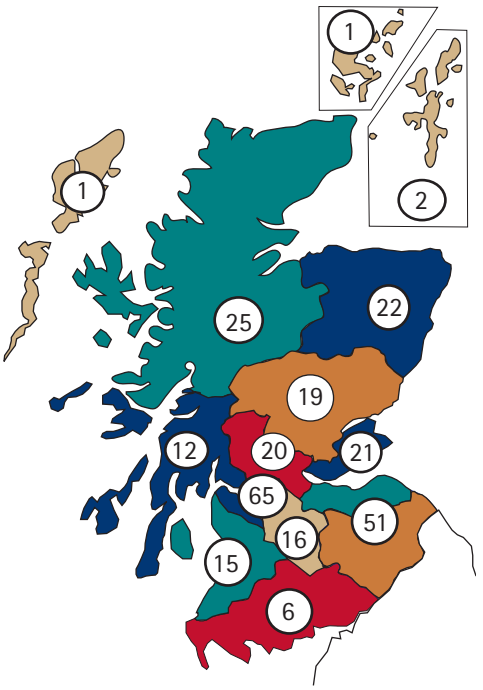
In addition, nursing assistance is reportedly often not available and some doubt must be raised about the efficacy of certain treatments, in particular those which require a four-handed approach, such as fissure sealing and ultra-sonic scaling.

A further concern raised was that hygienists were not infrequently asked to undertake duties outside their clinical remit. Clearly, dentists should be aware of the legally permitted duties but conversely, should allow their staff to undertake all clinical work in which they have received appropriate training.

Access to continuing education was reported as being 'difficult' by 65% of the target group, which is perhaps not surprising given the geography of Scotland and its number of remote and rural areas. The distribution of hygienists illustrated in Figure 5 exemplifies this point. The option of distance learning was welcomed by 73% of hygienists. Thus, the development of e-learning packages should be pursued, as should the evolution of 'satellite' centres for delivery of continuing education. Once again, there is no reason to believe that these findings do not apply to the United Kingdom as a whole.

The need for creche facilities for those with young children was highlighted. In an era where professionals are being actively encouraged to return to work, this option should be investigated, as the cost of childcare facilities often negates the possibility of resuming employment, thus depleting an already inadequate workforce. In keeping with the remainder of the UK, the most commonly cited reason for ceasing employment as a dental hygienist was in relation to raising children.[1]

Historically, dentists were viewed as the principal providers of oral care, but this situation is changing with extension of the legally permitted duties for dental hygienists and therapists. Indeed, the recent publication produced by the Scottish Executive, 'Workforce planning for dentistry in Scot-



Argyll and Clyde	12
Ayrshire and Arran	15
Dumfries and Galloway	6
Fife	21
Forth Valley	20
Grampian	22
Greater Glasgow	65
Highland	25
Lanarkshire	16
Lothian and Borders	51
Orkney	1
Shetland	2
Tayside	19
Western Isles	1
	n=276

Fig. 5 Geographical location of employment

land – a strategic review',[5] comments that dentists and hygienists will have the most impact on dental services in the next decade. In addition, the document 'An action plan for dental services in Scotland',[6] indicates that professionals complementary to dentistry involved in clinically-based activities will play a major role in the treatment of priority groups ie the young and elderly, in years to come. The authors see an expansion well beyond these patient groups. In addition, given the drift of dentists from the general dental services to the private sector, it is envisaged that a significant proportion of routine oral healthcare will, in the future, be provided by PCDs as members of an expanded dental team.

Perhaps not surprisingly, the opportunity to undertake training to acquire therapy skills was welcomed by 59% of hygienists. Should this additional training become available, it would herald the advent of individuals with wide clinical skills, who would be able to join forces with dentists in addressing the unacceptable levels of oral disease in many parts of the United Kingdom. Indeed, the future of this group should not be underestimated in terms of their role in the management and prevention of disease in years to come. Given the shorter time-period required for additional training, workforce numbers could be increased in a matter of months.

In Scotland, not only is there an issue relating to numbers of dental hygienists, but equally as important, is their distribution throughout the so-called 'central-belt' region between Glasgow and Edinburgh. This clearly creates problems of access to care in more remote areas which workforce planning will need to address.

This investigation has revealed that the advent of CPD for PCDs has been well received, but that a number of problems exist. These have been highlighted in this study and should be addressed by those able to facilitate positive change.

CONCLUSIONS

1. This survey of 381 registered dental hygienists with postal addresses in Scotland elicited 290 replies (76%).
2. Just over half of the respondents worked full time, many in more than one location.
3. Dental hygienists had responded very positively to the introduction of expanded clinical duties.
4. The majority of respondents had attended a continuing education course recently, but generally did so at their own expense.
5. The majority of those investigated were interested in additional training in dental therapy, should this become available.

1. Gibbons D E, Corrigan M, Newton J T. A national survey of dental hygienists: working patterns and job satisfaction. *Br Dent J* 2001; **190**: 207-210.
2. Callis P D, Wohlgemuth B G. Career patterns of dental hygienists in Scotland. *Br Dent J* 2000; **189**: 32-34.
3. Hillam D G. A survey of hygienists qualifying from the Liverpool School of Dental Hygiene 1977-98. *Br Dent J* 2000; **188**: 150-153.
4. Hillam D G. Career patterns of dental hygienists qualifying from the Liverpool Dental Hospital School of Dental Hygiene. *Br Dent J* 1989; **166**: 310-311.
5. Scottish Executive Health Department. *Workforce planning for dentistry in Scotland – A strategic review. Interim report and recommendations, September 2000.*
6. Scottish Executive Health Department. *An action plan for dental services in Scotland, August 2000.*

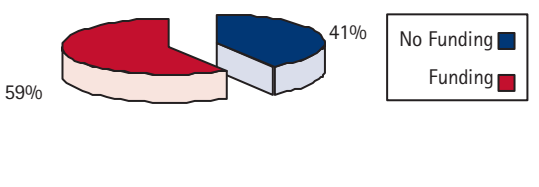


Fig. 6 Funding issues