The standard of newly qualified dental graduates – foundation trainer perceptions

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In brief

Demonstrates foundation trainer concerns for the current standards of new dental graduates.

Identifies areas of concern in particular clinical standards, and trends of both improvement and decline in certain areas.

Suggests a lack of congruence between dental schools, foundation training and the GDC with respect to the training of undergraduates.

Background There have been anecdotal concerns that the skill mix of recently qualified graduates is very different to those qualifying several years ago, in particular that the clinical skills on qualification are less. If true, such changes may have ramifications for providers of undergraduate training, postgraduate training, particularly at foundation training level, and ultimately the public. **Aim** The aim of this study was to assess changes in perceived standards of newly qualified graduates as reported by foundation trainers. **Method** A cross-sectional survey was conducted using a self-completed internet-based survey tool sent to all foundation trainers (FTs) in England, Northern Ireland and Wales. **Results** A total of 312 responses were obtained covering all postgraduate deaneries. There was mixed opinion regarding standards of new graduates, with 51% reporting that the overall standard of those entering foundation training was 'unsatisfactory'. Standards in key clinical areas were considered unsatisfactory by large proportions of respondents. Eighty-five percent considered standards to be unsatisfactory in 'crown and bridge', 75% in 'extraction of teeth', 74% in endodontics, 67% in removable prosthodontics, and 62% in treatment planning. Experienced trainers identified a decline in standards in particular clinical areas. **Conclusions** A large proportion of foundation trainers consider the current standard of new graduates to be unsatisfactory for entering foundation training. There are a number of key clinical areas of concern and a perception of declining standards.

Introduction

There are a growing number of anecdotal reports expressing concern that current newly qualified graduates are entering the care system with lower levels of clinical skills than in previous years. Discussions between clinical tutors and particularly FTs suggest a possible trend in certain areas of patient care. If this is indeed the case it places a greater reliance on the dental foundation training (DFT) practices to address any shortcomings as they are largely responsible for the initial development of newly qualified dentists. Furthermore, if valid, there may be increased risks associated with patient care. Published literature on the issue is limited although exceptions exist. Patel *et al.*[1] (2006) identified that undergraduates felt that their course was lacking in training that would allow them to fulfill certain competencies stipulated by the General Dental Council (GDC), and that on entering foundation training their trainers felt that the trainees needed more experience. Of particular concern were the clinical areas of crown and bridgework, and endodontics. Other work also suggests problems particularly relating to newly qualified graduates' skills in endodontics,[2,3] prosthodontics[4,5] as well as other disciplines.[6,7]

The GDC is primarily concerned about the protection of the public and in consequence has the responsibility for quality assuring entry to, and removal from the dental register. As part of this process, the GDC undertakes assessments of the qualities of education and training, a process that is essential to protecting patients and ensuring that dental professionals are well prepared to meet the GDC's professional standards throughout their careers. The GDC has published *Standards for education*[8] setting out the requirements of UK undergraduate training programmes, the successful completion of which lead to initial registration. The GDC published learning outcomes for dentists in *The first five years*[9] that now appear in *Preparing for practice*,[10] a broader document that covers all registrants. The GDC has endorsed DFT as a process but has to date had limited input into it.

Although the GDC acknowledges that DFT plays an important role in the development of skills, their current publications (*The first five years*, and *Preparing for practice*) focus on the requirements of a graduate. DFT is delivered in accordance with *Dental foundation training curriculum*,[11] which is published by the Committee of Postgraduate Dental Deans and Directors (COPDEND).

As early as 1998, the then editor of the *British Dental Journal*, Mike Grace[12] said

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Refereed Paper. Accepted 19 January 2017
DOI: 10.1038/sj.bdj.2017.226
©British Dental Journal 2017; 222: 391-395

'dental students ain't what they used to be'. This assertion of changing standards was essentially opinion. While there is some evidence in the published literature concerning graduates' standards, there is nothing that substantiates the anecdotes that assert diminishing standards. A large number of FTs have many years of experience in training graduates and are therefore eminently placed to comment on their experiences over extended periods of time. The aim of this research therefore considers the evolution of graduates' standards and asks two important questions of trainers, first is the standard of current graduates satisfactory for entering foundation training and second, has there been a trend in the abilities of new graduates over time?

Materials and methods

The cohort of dentists most closely associated with new graduates are FTs and those with many years of experience were considered likely to have views not only on standards at a given juncture, but also potentially changing over time. Nottingham University determined no requirement for ethical approval for the study. A questionnaire was devised and considered by a group of twelve experienced dentists involved in a post-graduate course at the University of Sheffield. Included in the group were four current FTs and two university tutors familiar with educational research. The questionnaire was therefore considered suitably validated. It was piloted with the same cohort and accordingly revised.

The questionnaire was converted to an electronic version in an online survey service, 'Survey Monkey' and used to canvas the opinion of all current trainers in postgraduate deaneries in England, Wales and Northern Ireland, on the standards of graduates based on their experience of training foundation dentists (FDs). The survey sought to seek opinion on both current standards, and changes in standards. Trainers were asked two fundamental questions. First, are standards satisfactory for entry to foundation training, both generally and in various areas of practice? Secondly, experienced trainers, defined as those with training experience of at least three years, were asked if there has been an increase or decline in standards in various areas of practice. In order to maximise the data set relating to trends in standards, and with little prior insight into the length of time many trainers have been training, 'experienced' was considered as a minimum of three years as a trainer and the minimum period over which a trend could be opined.

The questionnaire allowed respondents to answer closed questions by way of drop-down boxes and enter a value on a Likert-type scale in sixteen areas. These represented the four domains of clinical, communication, professionalism, and management and leadership. The clinical domain was further broken down into sub-domains based around outcomes set out in the GDC's *Preparing for practice*, adopted by COPDEND in its curriculum for foundation training. Finally, there was the opportunity for 'other comments' in a text box. The survey structure utilised 'skip logic' to allow the use of contingency questions and in this way, it was possible to avoid inexperienced trainers answering questions about changes over time. The online survey was constructed to allow only a single response from any IP address in order to ensure, as far as possible, respondents could only take part once.

The survey was distributed to COPDEND secretariat for forwarding to all trainers via Deans. The email had an embedded hyperlink to the survey and was sent to all Deans, all dental business managers and dental foundation training administrators in the deaneries in England, Wales and NI. (Scotland has a separate administration for foundation training). Repeated telephone contact with COPDEND ensured distribution to all trainers.

Data were collected between 7 March 2015 and 18 April 2015, and the collected data were exported to a spreadsheet in Microsoft Excel (2007). This allowed the generation of tabulated data and descriptive statistics. Where respondents were asked to rate trends, by applying a numerical score to the Likert-type ratings where 1 is associated with an opinion of 'high decline' and 5 is 'high improvement', numerical values can be generated. These values allow the ranking of any trends. Data concerning trends were therefore tabulated in rank order. The qualitative data were coded and analysed manually using thematic analysis. No pre-ordinate themes were defined and the data were therefore used to allow issues to emerge.

Results

A total of 336 respondents were recorded. Of these, 312 completed the survey, the remainder abandoning it only partly completed. Given an estimate of potential respondents being around 1100, this represents a response rate of around 28%. There was representation from all deaneries including a single response from the Defence scheme with the largest representation from the London Dental Education and Training deanery incorporating North East, North West and South London with 72 responses representing 23.1% of respondents. The distribution of responses is shown in Table 1.

Of the 312 usable responses, 240 (76.9%), had at least three years' experience as a trainer and were considered 'experienced' for the purposes of the study. The mean 'years of experience' as a trainer was 9.88 years. The distribution of post-graduate experience, and experience as a trainer is shown in Table 2.

Asked whether 'Overall, do you think the standard of current graduates is satisfactory for entering foundation training?' of the 312 usable responses, 49% (153) said yes, with 51% (159) saying no. Within the cohort of experienced trainers, a clearer majority of 57.7% felt that the overall standard of graduates entering foundation was not satisfactory.

Considering the sixteen areas canvassed individually, there were considerable differences. When asked 'Do you think the standard of current graduates is satisfactory in the area of crown and bridge?' only a very small minority (13.5%) felt that it was and just over three quarters (76.6%) felt that it was not (9.9% were unsure). This represented the largest majority of respondents feeling the standard was unsatisfactory. In contrast, when asked 'Do you think the standard of current graduates is satisfactory in the area of health promotion and disease prevention?' a huge majority (95.2%) felt that it was and only 2.9% felt that it was not. Only 1.9% were unsure. In nine of the sixteen areas, a majority felt standards were satisfactory, but there were seven areas where a majority felt them to be unsatisfactory. The numbers of responses are set out in Table 3 with the valid percentage of respondents who said 'Yes' allowing the areas to be set out in rank order.

Within the 240 experienced trainers, experience was as much as 28 years as a trainer. The mean training experience was 10.8 years. A total of 194 felt there had been a trend in the abilities of new graduates. Taking comments in the same sixteen areas, and attributing scores to the rating scale, (1 for high decline, 2 for some decline, 3 for no change, 4 for some improvement, 5 for high improvement), a numerical value can be generated for the purpose of ranking the various areas in order of any trends. Table 4 shows this ranking and shows that the most acute trend for a

Table 1 Distribution across postgraduate deaneries

Distribution across postgraduate deaneries	N
Northern Ireland Medical and Dental Training Agency (NIMDTA)	5
Defence	1
Health Education North East	31
Health Education North West (Manchester)	31
Health Education North West (Mersey)	18
Health Education East Midlands	27
Health Education East of England	20
Health Education Kent, Surrey and Sussex	26
Health Education South West	19
Health Education Thames Valley & Wessex	15
Health Education West Midlands	10
Health Education Yorkshire and the Humber	15
London Dental Education and Training, Health Education England incorporating NE, NW and S London	72
Wales Deanery	22

Table 2 Years of postgraduate experience and experience as a trainer

	N	Minimum	Maximum	Mean	Std. Deviation
How long have you been qualified?	312	5	45	22.07	9.631
For how many years have you been a VT/FD trainer?	240	3	28	9.88	5.837

perception of declining standards is in crown and bridge, with a score of 1.75. In contrast, health promotion and disease prevention enjoys a score of 3.89 suggesting an improvement over time. Notably, the rank table shows endodontics, fillings, removable prosthodontics and extraction of teeth sharing the lower reaches of the table.

Given the opportunity to write free text, 161 respondents offered comments allowing the collation of qualitative data from which some eight themes emerged. These are set out below with representative quotes from trainers.

General lack of clinical experience, skills and confidence was the clearest theme to emerge.

'[...] their lack of clinical experience is frightening. Many have never done a surgical [*sic*], they have not seen a swelling they have done very few fillings some have never done a class 3 composite!'

Many commented on variation between individuals and dental schools.

'Too much variation in undergraduate clinical experience from different dental schools. Graduation with too little / no experience in certain procedures is a worrying trend.'

Specific lack of skills were commented on, especially in the areas of oral surgery, endodontics, crown and bridgework, prosthodontics and treatment planning.

'Need much more surgical practice.'

'[…] lack of experience in such things as endodontics, prosthodontics and advanced restorative work.'

There were numerous comments concerned with a lack of basic clinical skills, 'incomplete training', and the possible ramifications for trainers.

'It is not until they do a Master's course that they actually have to do what we were taught as basics. Please please help these new graduates to obtain these skills at undergraduate level.'

'Trainers used to be there to enhance clinical skills, it seems that we are now expected to train graduates in the most basic clinical skills. Is that why we have been renamed Educational Supervisors?'

Some opined a general trend of diminishing standards.

'I have noticed a decline in the clinical abilities in all areas of the VTs over the last 9 years when they enter the VT scheme.'

There was a notable paucity of positive comments. However, often good theoretical knowledge was identified, but contrasted with difficulties in its application and lack of clinical or practical skills.

'[…] as an observation new graduates are very aware of the theory, but often lack the practical experience.'

Other themes concerned a lack of alignment of training with the NHS system in general practice and a concern about a climate of threatening litigation.

'At least one London school no longer teaches amalgam fillings to undergraduates who are going to work in NHS practices. Are they serious?'

'They are more medico-legally than patient centric [*sic*].'

Discussion

There was good evidence that all deaneries had engaged with the distribution of the questionnaires, but a relatively low response rate of 28% is likely typical of online surveys. While it questions sample representativeness, there is no obvious reason for the respondents to not represent the trainer cohort. With 312 usable responses, the respondents represented a large cohort of trainers over the whole of England, Wales and Northern Ireland, but the resultsv must be treated with caution. The cohort of respondents in this study included a large majority (76.9%) of experienced trainers. As a cohort of dentists, these respondents were clearly eminently placed to comment. There was mixed opinion on the issue of standards with an almost even split of 51% feeling that overall the standard was not satisfactory. This is an alarmingly high proportion and in itself raises many questions as to why this might be the case. Of the sixteen areas considered, only nine scored better than 50% for trainers feeling the standard was satisfactory. Notable results were high scores for health promotion (97% felt satisfactory), professionalism (91%) and communication (89%). Of the sixteen areas, these three, along with management and leadership can be considered the 'soft skills'

of dentistry. The remaining twelve areas are essentially clinical practice.

Table 3 effectively ranks the areas of practice in increasing order of concern. At the bottom of the table, in position 16, is 'crown and bridge' with an enormous proportion (85%) of trainers feeling that standards were unsatisfactory. Position 15 is 'extraction of teeth' (75%) followed, in order, by endodontics (74%), removable prosthodontics (67%) and treatment planning (62%). These proportions are extremely high and can only represent a serious concern for standards in these particular five clinical areas. In addition to these statistics, the figures for the other clinical areas are of concern: over 50% of trainers felt that graduates' management of acute conditions including pain was unsatisfactory and over a third (37%) for fillings. There could be an argument that crown and bridgework is 'advanced'. However, management of a patient in pain is absolutely fundamental to a dentist's clinical practice. Similarly, fillings, extractions and dentures are basic components of a dentist's repertoire. It is surely a serious concern for the profession to demonstrate that graduates are entering foundation training in such large proportions without satisfactory skills in these basic areas of clinical practice.

Eighty percent of experienced trainers felt there had been a general trend in the abilities of new graduates allowing the opinion of 194 experienced trainers to be considered. With such a large cohort and a mean of 11 years as a trainer, the resultant data are extremely valuable in considering trends in standards. An enormous proportion (79%) of these trainers felt there had been a decline in the standard of extractions. There is an even more alarming finding with regard to crown and bridgework. Eighty-five percent of these trainers felt they had experienced a decline; 41.2% felt it had been a 'high' decline. There was a strong opinion that standards were falling in many areas of clinical practice as shown in Table 4. By applying numerical values to ratings in the questionnaire, a ranking is generated. In the lower ranks, the bottom five positions are, in descending order, endodontics, fillings, removable prosthodontics, extractions and crown and bridgework. The themes emerging from the qualitative data echo and reinforce the numerical data. There appears, therefore, to be worrying voids in the skills of graduates and trends that can surely only represent a significant concern for all stakeholders in undergraduate and foundation training.

Table 3 Responses to 'Do you think the standard of current graduates is satisfactory in the area of…?'

Area	No	Yes	Total	Valid percentage of respondents who said 'Yes'	Rank
Health promotion and disease prevention	9	297	306	97	1
Professionalism	26	270	296	91	2
Communication	33	268	301	89	3
Management and treatment of periodontal disease	49	241	290	83	4
Patient assessment	57	245	302	81	5
Management of mucosal disease	75	181	256	71	6
Management of the developing dentition	88	175	263	67	7
Filling	107	183	290	63	8
Diagnosis	113	175	288	61	9
Management of acute oral conditions including pain	136	132	268	49	10
Management and leadership	140	127	267	48	11
Treatment planning	172	103	275	38	12
Removal prosthodontics	185	91	276	33	13
Endodontics	208	72	280	26	14
Extraction of teeth	219	74	293	25	15
Crown and bridge	239	42	281	15	16

In 2006, Patel *et al.*[1] identified weaknesses in treatment planning skills as perceived by trainers but noted that there was not consistent alignment between trainers' and trainees' perceptions. They identified inadequate undergraduate experience in particular areas: orthodontics, surgical extractions, crown and bridgework and molar endodontics. Again, these same clinical areas were flagged up and having reviewed the evidence available at the time, the authors went as far as to comment 'the issues remained unaddressed.' The findings from this research appear to harmonise with the currently available literature. The findings in this research are consistent with those of Patel *et al.*[1] and the issues still remain unaddressed after ten years! There is a clear pattern evident through this and previous research that there are weaknesses on graduation in certain clinical areas. This research goes further and suggests that this remains unaddressed and the areas of weakness are becoming ever weaker.

Recently, Ali *et al.*[13] identified low experiences of new graduates and discussed the concept of a 'safe beginner', a term that emerged from the GDC.[10] Arguably, there appears to be a conflict at the GDC. It describes the 'safe beginner', and acknowledges the important role of foundation training to develop the safe beginner to become an independent practitioner. Simultaneously, it expects the dental schools to produce graduates that are suitable for immediate registration and the potential for immediate entry to unsupervised private practice. There is lack of formal acknowledgement that the dental schools are not preparing graduates for independent practice. Presently, the GDC has no particular input into the administration of foundation training and makes no comment on its content or remit. However, in response to some obvious concern about the potential threat to the public from

Table 4 Trends: rank order of trends (1 for high decline, 2 for some decline, 3 for no change, 4 for some improvement, 5 for high improvement)

Area	Average score	Rank
Health promotion and disease prevention	3.89	1
Communication	3.48	2
Management and treatment of periodontal disease	3.37	3
Professionalism	3.27	4
Patient assessment	3.07	5
Management of mucosal disease	3.07	6
Management of the developing dentition	2.82	7
Management and leadership	2.71	8
Diagnosis	2.65	9
Treatment planning	2.41	10
Management of acute oral conditions including pain	2.39	11
Endodontics	2.27	12
Filling	2.19	13
Removal prosthodontics	2.03	14
Extraction of teeth	1.94	15
Crown and bridge	1.75	16

inexperienced dentists, work was commissioned to investigate patient safety in the transition from graduation to fully unsupervised practice. The work culminated in recommendations of the 'Transition to Independent Practice Task and Finish Group'.[14] With regard to performance of new graduates, in broad terms, the findings were similar to those in this particular research.

Conclusions

This new research offers two areas of insight into the issue of changing standards. First, there is a large number of FTs, around half, that feel the standard of current graduates is not satisfactory for entering foundation training. There are five areas of particular concern: crown and bridge, extraction of teeth, endodontics, removable prosthodontics and treatment planning. Secondly, there appear some trends in ability in certain clinical areas. There appeared to be a notable improvement in health promotion and disease prevention. However, the evidence suggests five particular areas of concern: crown and bridge, extraction of teeth, removable prosthodontics, fillings and endodontics, all suffering some alarmingly high rates of decline. Eighty-five percent of opining trainers felt there had been a decline in the standards of crown and bridgework. Notably, the areas of overall poor standards are almost identical to the areas of decline.

The findings of the research are consistent with previous work but go further and demonstrate trainers' perceptions of some trends in standards. Some of the 'soft skills' would appear to be improving but there are apparent declines in important clinical standards. It is hoped that the research will encourage exploration of the apparent lack of congruence between output from dental schools, entry to foundation training and the position of the GDC. It has been previously stated that we need robust data to challenge undergraduate training.[15] This research adds considerably to the available data and there seems to be little doubt that there are some fundamental weaknesses in the clinical skills of new graduates. The problem is worsening and we believe now is the time to make such a challenge.

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