New UK graduates' knowledge of training and service provision within restorative dentistry – a survey

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In brief

- Identifies scope to improve the understanding of restorative dentistry.
- Highlights the remit of restorative dentistry departments.
- Informs as to referral priorities for restorative dentistry.
- Highlights the need for effective dialogue between specialists and general dental practitioners

Objective To assess new UK graduates' knowledge of training and service provision within restorative dentistry. **Design** A national descriptive cross-sectional survey. **Subjects and methods** An online survey assessing clinicians' knowledge of restorative dentistry, who had graduated within the last four years in the UK, was distributed across the UK via postgraduate dental deaneries. One-hundred responses were accepted as a sample of a potential population of 4,000. **Main outcome measure** How well respondents understood the service provision and training aspects of the specialty of restorative dentistry. **Results** The responses were received from graduates from a variety of dental schools across the UK. Of those respondents, 41 reported receiving career guidance within restorative dentistry. 45 new graduates were confident in their understanding of the specialty, while 53 were confident in the differences between restorative dentistry and monospecialty training. The respondents appeared unaware regarding treatment priorities within restorative dentistry departments. Most respondents felt that receiving teaching on restorative dentistry as a specialty and career pathway would be beneficial. **Conclusion** The results suggest that new graduates may benefit from clarification regarding the specialty of restorative dentistry, however, caution must be taken due to the limitations of the study.

Introduction

Restorative dentistry in the UK is defined as the study, examination and treatment of diseases of the oral cavity, the teeth and their supporting structures. Restorative dentistry includes the dental monospecialties of endodontics, periodontics and prosthodontics (including implantology), and its foundation is based upon how these interact in the management of cases requiring multifaceted care.[1] This is expanded on further by the Association of Consultants and Specialists in Restorative Dentistry as the clinical management, teaching and research into holistic oral healthcare for patients across the full range of age, medical and psychosocial backgrounds. Restorative dentistry is concerned with the oral rehabilitation required due to disease, inheritance and trauma. It is designed to meet the aesthetic, psychological and functional needs of the patient, often requiring a multi-disciplinary team working approach.[2]

While restorative dentistry is a term recognised the world over, it is unique to the UK as a specialty which itself encompasses the specialties of prosthodontics, endodontics and periodontics, focusing on their integration. The authors could not find any information regarding the perception of restorative dentistry from outside of the UK.

This paper primarily focuses on the term as it describes the specialty within the UK. It is recognised as a specialty by the General Dental Council who set the standards for specialists.[3] Restorative dentistry was first established as a specialty in the United Kingdom in 1973; prior to that only oral surgery and orthodontics were recognised as dental specialties.[4] It was borne out of a need to integrate the specialties in order to provide whole patient care and a more comprehensive teaching approach than was previously perceived within departments of conservative dentistry, periodontology and prosthetic dentistry, as they were termed at the time.[5]

The clinical priorities for restorative dentistry departments are complex cases with congenital and acquired defects requiring multidisciplinary care or medical issues preventing patients from being treated in primary care. Care is often provided in conjunction with primary care practitioners where some more straightforward treatment is also required. Providing treatment in a restorative dentistry department is extremely challenging with patients presenting with a myriad of clinical,

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medical and psychosocial backgrounds and each requiring a unique approach to address their needs. The roles of senior clinicians in these departments encompass a range of skills from providing assessment and advice services for simple cases to hands on management of complex cases requiring extensive surgery and multidisciplinary treatment. For example, cases of severe hypodontia will need long term planning with inter-disciplinary management and potentially extensive bone grafting, sinus augmentation procedures and an implant reconstruction. Oncology patients requiring prosthetic rehabilitation require extensive restoration, sometimes even of extra-oral features, with the constraints of severe hard and soft tissue loss and a potential increased risk of osteonecrosis. It is not possible to outline all of the complex cases treated in these departments due to the breadth of the specialty, however, overcoming these unique challenges is immensely rewarding and stimulating. These departments are often also involved with carrying out groundbreaking research, teaching and managing the overall provision of care.[6]

Undergraduate dental students spend five years at dental school learning the fundamentals of evidence-based dentistry and its clinical application. Once qualified, they are required to work independently and refer on where appropriate. In addition, recent graduates are likely to be contemplating the path that they would like their career to take and can be presented with a number of complex options. Options for postgraduate education are vast, ranging from single day courses to full time specialty training programmes.

Awareness of restorative dentistry as a specialty, as a career pathway and restorative specialists as a teaching source is of benefit to new graduates, patients and the specialty itself. This can have an impact on referrals, treatment provided in primary care, career progression, development of clinical skills and knowledge and how restorative dentistry is perceived by other clinicians. Early job experience within restorative dentistry for new graduates can open up career options and provide skills that can be directly applied into clinical practice if returning to primary care or pursuing further hospital experience. These posts are often broad based and provide opportunities for personal and professional development. Enhancing one's skills at an early stage, via hospital experience or postgraduate courses, will increase clinician confidence and job satisfaction. Patients are also more likely to be satisfied with a confident practitioner trained to deliver a high standard of care.

The decision to undertake specialty training can be a difficult one, in view of the considerable financial and time commitments involved. University postgraduate courses of one to three years can vary from approximately £25,000 to £40,000 per year depending on residential status. Ideally, making this decision should be carried out after gaining a thorough understanding of what the training and final job will involve. Those undertaking formal postgraduate training have often recently qualified, leaving little time after graduation to gain the necessary experience to decide upon and apply for a training post. Having a good understanding of the various specialties from an early stage can ease this decision-making process. In the case of restorative specialty trainee registrar training, those clinicians without hospital experience are unlikely to gain a post. As application for DCT posts is often limited to new graduates, those having missed the opportunity early on are unlikely to gain this experience later in their careers. If new graduates are well aware of restorative and monospecialty pathways early on, they would be well advised to apply for a DCT post, as this is usually the first step required in specialising. If all dentists have a clearer understanding of these career options then gaining posts may become even more competitive. Arguably, this may improve the calibre of successful candidates. It could well be that those candidates who take the initiative to seek out the information they need in order to plan their career are more likely to make better adult learners, however, there is no evidence to support this.

The unique issue that faces the specialty of restorative dentistry is the difficulty in easily defining it and its remit, given its breadth and scope. Job roles can vary greatly from one post to another, especially when comparing the service needs for a district general hospital and a teaching hospital. A specialist or consultant in restorative dentistry in the community service will also have a slightly different role. Some teaching hospitals have developed monospecialty consultant posts to cope with specific service or teaching demands.

Evidence from oral and maxillofacial surgery suggests medical undergraduates do not fully understand the career pathway; we wished to assess whether this was also the case for new dental graduates and restorative dentistry.[7] While information regarding restorative dentistry is available, there is a lack of evidence regarding whether new graduates are aware of its content, which was the driving force for this study.[8–14] While there is information available, it may not necessarily always be at the forefront of careers advice provided to new graduates.[15] Anecdotal evidence suggests that dentists often have a misconception or lack of understanding regarding the specialty and career pathways and that this information is not routinely taught to undergraduate students or foundation trainees.[1] This could well be the case given the specialty's uniqueness to the UK and the breadth of its clinical and academic domains.

Aim

To assess UK clinicians who had graduated within the last 4 years' knowledge of training and service provision within the specialty of restorative dentistry.

Method

For the purpose of this survey, new graduates were classified as up to four years qualified, as per recent acceptance for a prize for new graduates offered by the British Society for the Study of Prosthetic Dentistry. Graduating cohorts from 2011 to 2014 were included in the study. The study utilised a similar approach to a recent study assessing undergraduates' awareness of oral and maxillofacial surgery.[6] An online survey, using a recognised survey website (www.surveymonkey.com) was carried out utilising structured and free responses. The target population was approximated at 4,000 graduates, however, not all of these may have received the email due to the deaneries not forwarding it on or the graduates not having received it due to a change in address or reception in a junk email folder.

Online surveys were used due to convenience for both investigators and respondents as it was felt that the population was likely to be computer literate. The limitations of online surveys in this case are that not all of the population may have received them, they are limited in scope and respondents are unlikely to complete much free text.

The questionnaire was constructed by the authors and based on the authors' personal experience and loosely based on a recent study in oral and maxillofacial surgery.[7] This suggests that this method would have a similar level of reliability. The survey was piloted among five respondents before widespread distribution. Respondents' background, their ability

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to recognise priorities for treatment within a restorative dentistry department, their confidence in understanding of the specialty and whether they felt they would benefit from further information regarding the specialty was assessed (see Appendix 1).

Ethical approval was not sought as the survey did not involve patients.

The questionnaire was distributed via email from April to July 2015; it was sent to the postgraduate dental deaneries across the United Kingdom with a request to forward it to the last four years' foundation trainees. Email reminders were sent for the deaneries to forward to maximise responses and a prize draw also acted as an incentive. The authors accept that this may have caused a bias in the responses.

Results

One-hundred responses were received out of a potential of 4,000. Fifty-seven respondents were female. Forty-two respondents were under 26 years old, 43 aged 25–29 years and the remainder aged 30 or older. The year of graduation varied from 2011 to 2015 with most respondents graduating in 2014 (Fig. 1). An even spread of responses was received from all UK dental schools except for Glasgow, Edinburgh and Trinity. Most respondents were working as foundation trainees, with the rest working in dental core training (DCT) posts or as associates in general practice (Fig. 2). Forty respondents had experience of working in secondary care with 23 of those in maxillofacial posts, 12 in mixed posts, two in restorative and two unspecified.

Forty-one respondents reported receiving formal information regarding career options within restorative dentistry. The stage of their dental development at which they received this information varied (Fig. 3).

Forty-five respondents agreed or strongly agreed that they were confident in their understanding of restorative dentistry as a specialty (Fig. 4). Fifty-three respondents agreed or strongly agreed that they felt confident in their awareness of the differences between restorative dentistry compared with prosthodontic, endodontic and periodontal specialty training (Fig. 5).

Respondents had mixed views regarding which cases were appropriate for referral or should be prioritised for treatment in restorative dentistry departments (Figs 6 & 7). Interestingly, 15 respondents felt patients with uncontrolled periodontal disease and poor oral hygiene should be prioritised for treatment in a restorative dentistry department. Considerable numbers of respondents felt similarly about patients with failing treatment carried out abroad, patients who were difficult to manage due to psychosocial issues and patients with a high number of carious lesions.

Fig. 1 Bar chart showing the number of responses for each year of graduation

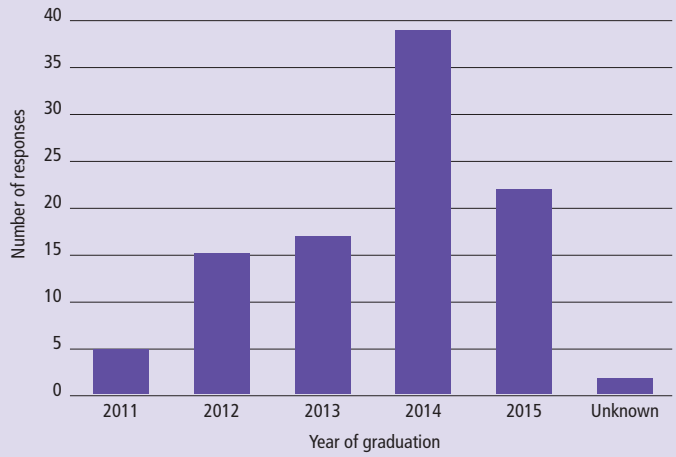


Fig. 2 Bar chart showing the number of responses for each job role

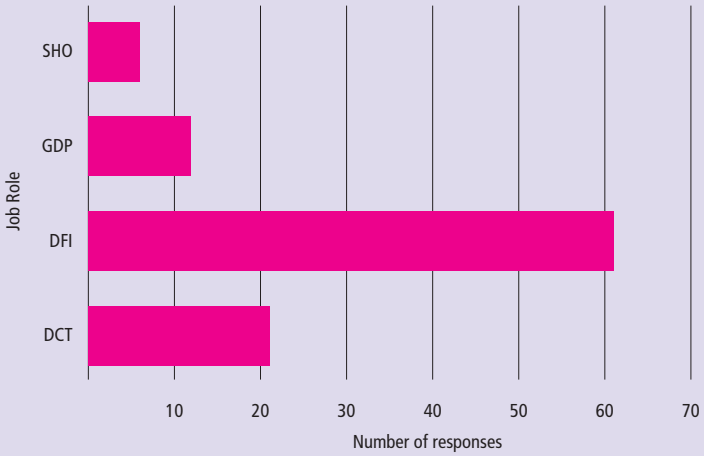
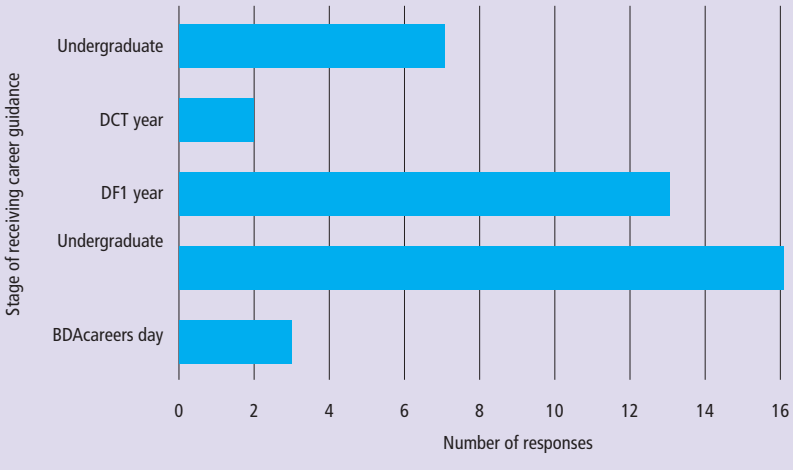


Fig. 3 Bar chart showing the stages at which those who had received careers advice regarding restorative dentistry received it



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Eighty-seven respondents felt that they would benefit by receiving information about restorative dentistry as a specialty and career pathway via courses and 98 respondents felt that they would benefit from receiving teaching from restorative consultants and specialists on clinical dentistry aimed at general practice and DCT.

Eighty-five respondents felt that DCT and other hospital jobs in restorative dentistry are of benefit to dentists pursuing a career in general dental practice and 99 respondents felt that these posts are of benefit to dentists interested in specialising.

In regards to career planning, 45 respondents reported considering working as an associate, 44 were considering specialising and 49 were interested in developing a special interest.

Fig. 4 Bar chart showing how much respondents agreed or disagreed with the statement 'I feel confident in my understanding of restorative dentistry as a specialty'

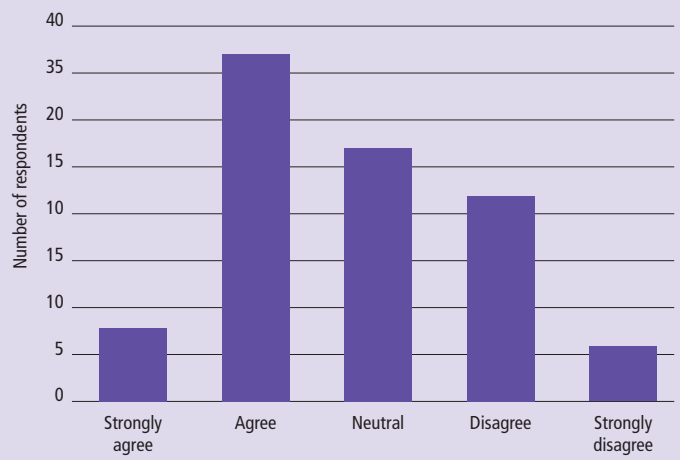
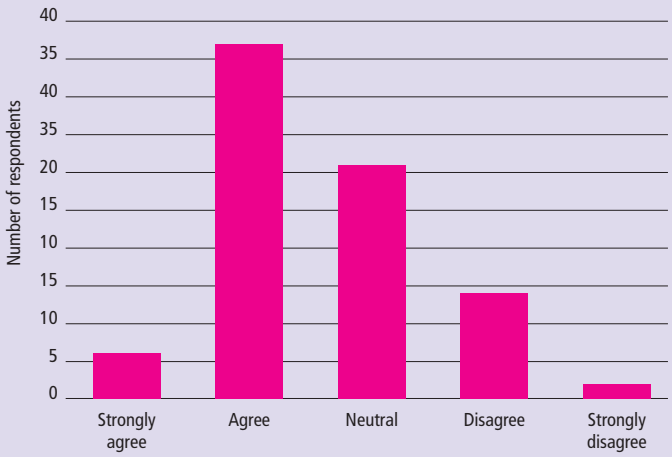


Fig. 5 Bar chart showing how much respondents agreed or disagreed with the statement 'I feel confident in my understanding of the differences between restorative dentistry specialty training and prosthodontics, endodontic and periodontal specialty



Discussion

The population was similar to what was expected of this cohort, however, no responses were received from graduates of three dental schools. A relatively low number of respondents understood the remit of restorative dentistry as a specialty. While considerable information is available to specialty trainees, there may be scope to target information to referrers.[8–14] Providing primary care practitioners with a clearer understanding of the priorities and workings of a restorative department can also facilitate patient care and streamline referrals for those who most need it. This is more cost-effective and allows more appropriate use of time. It could be argued that this dialogue should take place on a local level between individual restorative departments and referring practitioners. If referrers are unaware of treatment priorities and local pathways it can affect smooth provision of patient care; a topic that at time of publication is being developed in the Restorative Dentistry Commissioning Guide. Financial resources are limited in all restorative departments and high demand for advice or treatment lead to the development of waiting lists. Waiting list times vary between provider departments but a common target is to see the patient within 18 weeks of referral. As a guide, many departments will provide advice for all patients but the offer of treatment is usually limited to high priority patients such as:

- Congenital or developmental defects such as cleft lip and palate or severe hypodontia
- Major trauma involving tissue loss
- Oral cancer or other serious pathology
- Serious medical or dental conditions which would require hospital management.

Interestingly, it appears that this sample were less confident in managing cleft, root canal retreatment and tooth surface loss compared to associates surveyed in the Yorkshire region in 1995.[16] The authors speculate that this may be a reflection of new graduates in general, a change in the level of experience undergraduates achieve or a combination of the two.

The demand for further teaching shown in this survey appears encouraging, again suggesting that the issue is due to information not being readily forthcoming, rather than new graduates' reluctance to develop their skills. Alternatively, those that did not respond may not feel they would benefit from further training. Helping referrers to understand the priorities of these departments could well decrease these frustrations, especially if coupled with training on how to complete these treatment plans in primary care. Unfortunately, a major barrier to this is likely to be the lack of financial incentive to carry out extensive and time consuming treatment plans on the current primary care contract. The authors argue that, particularly for this cohort of dentists, taking opportunities to develop the skills to manage slightly more complex cases will have a long-term benefit on their careers, especially if changes to the primary care contract will form a tiered system of treatment for practitioners.

Recent graduates often have less clinical experience or confidence than their counterparts of years past and restorative specialists have an opportunity to help with postgraduate training.[17] A considerable number of responders were interested in specialising or developing a special interest.

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Fig. 6 Bar chart showing which types of cases (if any) respondents felt were appropriate for referral in a restorative dentistry department

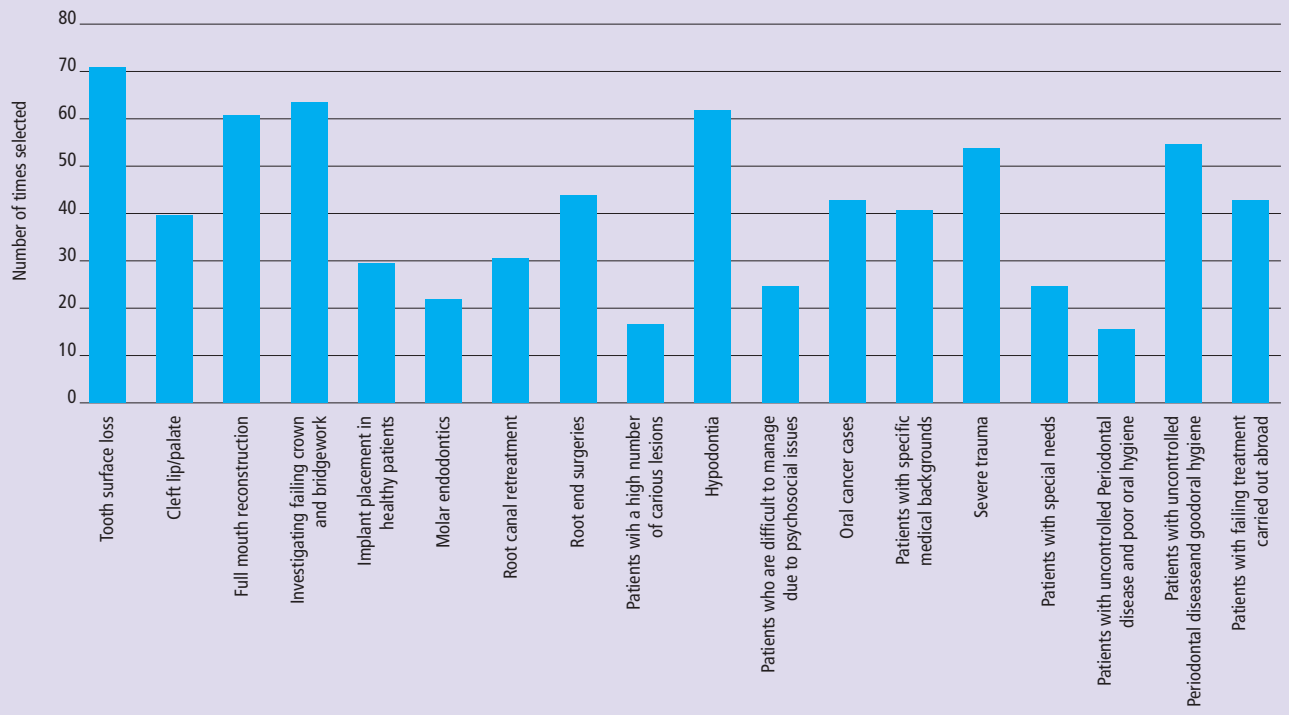
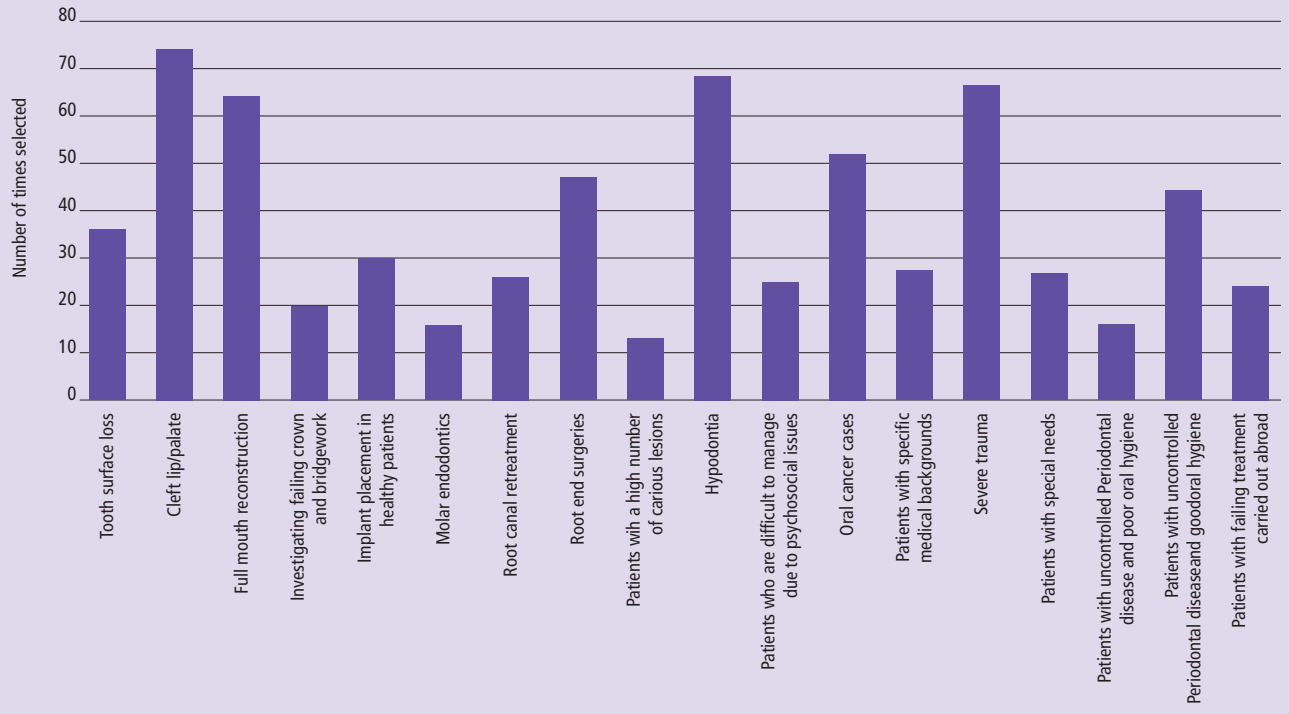


Fig. 7 Bar chart showing which types of cases (if any) respondents felt should be prioritised for treatment in a restorative dentistry department



New graduates are responsible for their own career development. This survey shows that careers guidance is most often provided at undergraduate level or during dental foundation training. The careers guidance provided is likely to vary between universities and foundation training schemes and therefore is not standardised. Further informal advice is probably provided by new graduates' individual mentors, whether based in hospital or primary care.

A weakness of this study is the relatively low number of responses that were received. In addition, no responses were received from graduates of three of the UK dental schools. It is possible that there is a need for clarification

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to this cohort of dentists regarding the specialty as those with less interest in the field may be less likely to respond.

From this sample it appears that new graduates would welcome information on postgraduate training and career development in restorative dentistry. However, there appears to be a need to post more information for new graduates by restorative dentists, including monospecialists, involved in education.

Conclusions

The results suggest that around half of new graduates have received formal careers advice regarding restorative dentistry and are confident in their understanding of the specialty. The sample showed confusion regarding the treatment priorities for restorative dentistry departments and a demand for clarification regarding service provision and training within the specialty. Most respondents felt that DCT posts were of benefit, whether planning to specialise or not. This suggests that there is scope to increase new graduates' awareness of restorative dentistry as a specialty and training pathway. In view of this, the authors have constructed a guidance document on restorative dentistry for new graduates, which is being disseminated by the British Society for Restorative Dentistry and has also recently been published in this journal.[1]

The conclusions are made with caution due to the low response rate achieved and the risk of selection bias associated with this study. A lack of similar work has been carried out previously and the authors feel that there is scope to increase the information regarding restorative dentistry available to this population, followed by a more in depth qualitative analysis utilising a systematic interview process or alternatively, a prospective study. In addition, studies assessing more experienced associates' and specialists' views of restorative dentistry could be of benefit to the adjustment of departments and referral processes.

Further reading
eWisdom website: www.ewisdom-london.nhs.uk
UK Committee of Postgraduate Dental Deans and Directors Website: www.copdend.org
National Restorative Dentistry Recruitment Website: www.nwpgmd.nhs.uk/national_RD_Recruitment

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17. Kelleher M. Current controversies in training and/or education of dentists in the UK. *BDJ* 2014; **216:** 447–448.

Appendix 1: Survey Questions

1. Please state your age: ……
……
2. Please state your gender: Male/Female
3. Please state which year you completed your undergraduate dental degree: ……
……
4. Please state which dental school you attended: ……
……
5. Please state your current job role (for example associate, DF1, DCT, SHO, StR, community, etc): ……
……
6. Please state whether you have ever worked in or are currently working in secondary care? If so please give details of the role(s).
   - Yes ……
   - No
   - ……
   - ……
7. Have you ever received any formal information on the various career pathways within restorative dentistry? If so, please state at which stage of your career/training this was.
   - Yes ……
   - No
   - ……
   - ……
8. Please rate how much you agree or disagree with the following statement: 'I feel confident in my understanding of what a restorative consultant's job involves'
   - Strongly agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree
9. Please select which types of cases you feel should be prioritised for treatment in a restorative dentistry department? Please tick all that apply or state other and give details.
   - Tooth surface loss
   - Cleft lip/palate
   - Full mouth reconstructions
   - Investigating failing crown and bridgework
   - Implant placement in healthy patients
   - Molar endodontics
   - Root canal retreatment
   - Root end surgeries
   - Patients with a high number of carious lesions
   - Hypodontia
   - Oral cancer cases
   - Patients with specific medical backgrounds
   - Severe trauma
   - Patients with special needs
   - Patients with uncontrolled periodontal disease and poor oral hygiene
   - Patients with uncontrolled periodontal disease and good oral hygiene
   - Patients with failing treatment carried out abroad
   - Other (please give details)
10. Please select which types of cases you feel are appropriate for referral for an opinion from a restorative consultant?
    - Tooth surface loss
    - Cleft lip/palate
    - Full mouth reconstructions
    - Investigating failing crown and bridgework
    - Implant placement in healthy patients
    - Molar endodontics
    - Root canal retreatment
    - Root end surgeries
    - Patients with a high number of carious lesions
    - Hypodontia
    - Oral cancer cases
    - Patients with specific medical backgrounds
    - Severe trauma
    - Patients with special needs
    - Patients with uncontrolled periodontal disease and poor oral hygiene
    - Patients with uncontrolled periodontal disease and good oral hygiene
    - Patients with failing treatment carried out abroad
    - Other (please give details)
11. Would you see any benefit in receiving further information about restorative dentistry as a specialty and career pathway via courses, conferences and presentations?
    - Yes/No
12. Would you see any benefit in receiving teaching from restorative consultants and specialists on treatment planning and providing clinical dentistry aimed at general practice and DCT?
    - Yes/No
13. Do you think that DCT/SHO jobs in restorative dentistry are of benefit to dentists pursuing a career in general dental practice?
    - Yes/No
14. Do you think that DCT/SHO jobs in restorative dentistry are of benefit to dentists interested in specialising?
    - Yes/No
15. What are your current career plans? Tick all that apply and please write details if you have selected other
    - Associate
    - Principal
    - Specialising
    - Developing a special interest
    - Community
    - Leaving dentistry
    - Other: ……

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