

Advancing Dental Care (ADC) Academic Strategy Workstream Report



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Contents

Executive Summary	p. 3
Recommendations	p. 4
Background	p. 6
Objectives	p. 10
Methodology	p. 12
Results and Conclusions -	
Objective 1. Definition and scope	p. 15
Objective 2. Post registration Academic Training	p. 19
Objective 3. Pre-registration Academic Training	p. 41
Objective 4. Academic Primary Care	p. 43
References	p. 45

Appendices (in supplementary evidence document)

Appendix 1. Academic Strategy Workstream Terms of Reference

Appendix 2. Academic trainee stock take

Appendix 3. Walport survey results

Appendix 4. Dental Academic trainee survey results

Appendix 5. HEE regional opportunities for academic training

Appendix 6. Trainee focus group findings

Appendix 7. Academic stakeholder group workshop findings

Appendix 8. Dental registrants survey results

Appendix 9. DCP survey results

Appendix 10. Academic DCP stock take

Appendix 11. Academic training pathways tube map

Executive Summary

This workstream was undertaken with close collaboration between English Dental Schools, through nominated representatives from Dental Schools Council and the NIHR Academy Integrated Academic Training.

Dental Schools Council annual academic workforce collection data shows a 40% increase in the number of full time clinical academic staff from 2004 to 2018 (2.2% since 2016) the number of clinical academics at professorial level has declined, and there is instability of staff on research active contracts. The increase in academic staffing is from investment in academic staff on teaching contracts. There is a need to grow research clinical academics to continue to develop the evidence required to improve oral and general health and improve the quality and efficiency of oral/dental care to the population.

The workstream undertook surveys and focus groups of GDC registrants at all levels to establish the incentives and barriers to undertaking an academic (research) career. A survey was also undertaken to establish fully English Dental Schools had implemented the Walport recommendations.

The results of these surveys and focus groups showed that research training opportunities needed to be embedded in every stage of structured post- registration training outside of academic training post.

Dental Schools should be proactive in encouraging undergraduates to become involved with research and to consider academic careers. Structured opportunities should be available to undergraduate dentists and therapists with academic interests and potential.

The academic training pathways and academic career options need to be promoted, to all dental registrants throughout their careers, by all stakeholders and consideration needs to be given to flexible and run through training. This includes ensuring transparency and consistency of recruitment to academic posts, linking to national recruitment requirements and timelines.

There is a lack of dental research based in primary dental care settings, promotion of the establishment of regional primary care research networks will help promote and encourage general dental practitioners and dental care professionals to become involved in research. Dental Contract reform and flexible commissioning should be considered to support dentists undertaking research in primary care. The introduction of self-employed NIHR Academic Clinical Fellows and Clinical Lecturers from April 2020 may help encourage established general dental practitioners to undertake structured research training.

Recommendations

The following recommendations are made by the academic core group and need to be considered by all stakeholders. Where consensus exists, all stakeholders need to work collaboratively to implement to ensure the future of oral health researchers to deliver high quality evidenced based effective oral healthcare to patients.

1. HEE should work with HEIs and Trusts to embed research training and opportunities at every stage of structured post-registration training (Dental Foundation, Core and Specialty) outside of academic training posts. Consideration should also be given to run through posts.
2. Dental Schools should endeavor to be proactive in encouraging undergraduates to get involved in research and consider academic careers. Structured opportunities should be available to those undergraduates with academic interests and identified potential. Examples include:
 - a. INSPIRE programmes should be promoted in all dental schools and be inclusive of dental undergraduate therapy students.
 - b. Promotion of research that is taking place within the dental school/medical faculty etc. to undergraduate and post-registration trainees
 - c. Promotion of opportunities available for students allied to dentistry to undertake research.
3. All stakeholders need to be involved in promotion of and embracing flexibility in the academic training pathway and academic career options available to all dental registrants throughout their careers. This may be achieved by:
 - a. Input into the academic career pathway infographic
 - b. Production of a fact sheet on academic careers to include the benefits/ motivators of an academic career as well as the perceived barriers
 - c. Clear and consistent signposting for information and advice on academic opportunities available especially to dental registrants in a primary care and non-teaching trusts.

4. HEI's and HEE need to ensure transparency of recruitment to academic posts. There should be consistency as to where posts are advertised and adherence to national recruitment requirements, including timelines wherever possible.

5. Primary dental care research networks need to be established across all regions to promote and encourage engagement of primary dental care in research:
 - a. Consideration should be given by NHSEI to promote research in primary dental care through contract reform or other financial support

 - b. Provision of academic mentors to support and guide primary care researchers

 - c. Promotion of opportunities to gain research experience/training in clinical research for primary care dentists and DCPs e.g. NIHR schemes, grant calls and career pathways for academic GDPs

 - d. Clinical competencies for integrated clinical academic training in primary care need to be developed

Background

This workstream was established to undertake the associated academic recommendations of the Phase One initial ADC report listed below:

C6. To develop a dental academia workforce strategy in both the dental schools and primary care based on a survey of projected workforce supply of dental and DCP academics.

C6.1 This work should fully engage with the National Institute for Health Research (NIHR).

Workstream scope and purpose

To develop an academic strategy to ensure that there are opportunities to develop academic dental clinicians and dental care professionals (DCPs) to lead dental research and innovate in both university dental schools/hospitals and in primary dental care. This is with a view to delivering improvements in the quality of care for patients and the delivery of evidence-based teaching and training of both undergraduate and postgraduate dentists and DCPs.

The focus will be the provision of clinical academics (research/ teaching pathways) and identifying research opportunities for Dental Care Professionals to develop an academic workforce. Clinicians employed on a sessional basis to provide clinical supervision of undergraduates will not be in the scope of this work stream.

Core group

The membership of the core group and Terms of Reference (ToR) are listed in appendix 1. This group required the full engagement of Dental Schools Council (DSC) and the National Institute for Health Research (NIHR) Academy Integrated Academic Training (IAT) team. The lead Postgraduate Medical Dean for academia, The British Dental Association, dental care professionals and academic trainees were all represented.

The group has met by teleconference, virtually or face to face as shown in Figure 1. There has been one meeting with the wider academic stakeholder group.

Figure 1. Table to show core group meetings

Date	Type of Meeting
08/10/2018	Initial Teleconference
04/12/2018	Virtual meeting
01/02/2019	Face to face
08/05/2019	Wider stakeholder meeting
13/01/2020	Core group teleconference sign of Report
20/01/2020	Core Group Sign Off of Recommendations

Following the first two meetings the following Scope and Purpose of the workstream and Terms of Reference were agreed by the core group. Presentations, survey results, actions and recommendations were always circulated to the entire group and there was an opportunity for each group member to add to or comment on the recommendations.

Current dental clinical academic workforce

The workstream has scoped the current status of clinical academia in dentistry as a basis to recommend ongoing improvements.

The Dental Schools Council has collected data on the academic dental workforce on an annual basis since 2004 and the most recent survey has been reviewed by the workstream.¹ Although data shows a 40% increase in the number of full time clinical academic staff from 2004 to 2018 (2.2% since 2016) the number of clinical academics at professorial level has declined, and there is instability of staff on research active contracts. The increase in academic staffing is from investment in academic staff on teaching contracts. The 2018 survey showed a 13% rise in senior clinical teachers since 2016. There is a need to grow research clinical academics to continue to develop the evidence required to improve oral and general health and improve the quality and efficiency of oral/dental care to the population.¹

The number of reported vacancies in academic posts in the 2018 survey was 6.1% (40 WTE). The vacancies occurred in almost all dental specialties with the largest number in restorative dentistry (12.6 WTE) followed by paediatric dentistry (8.0 WTE)

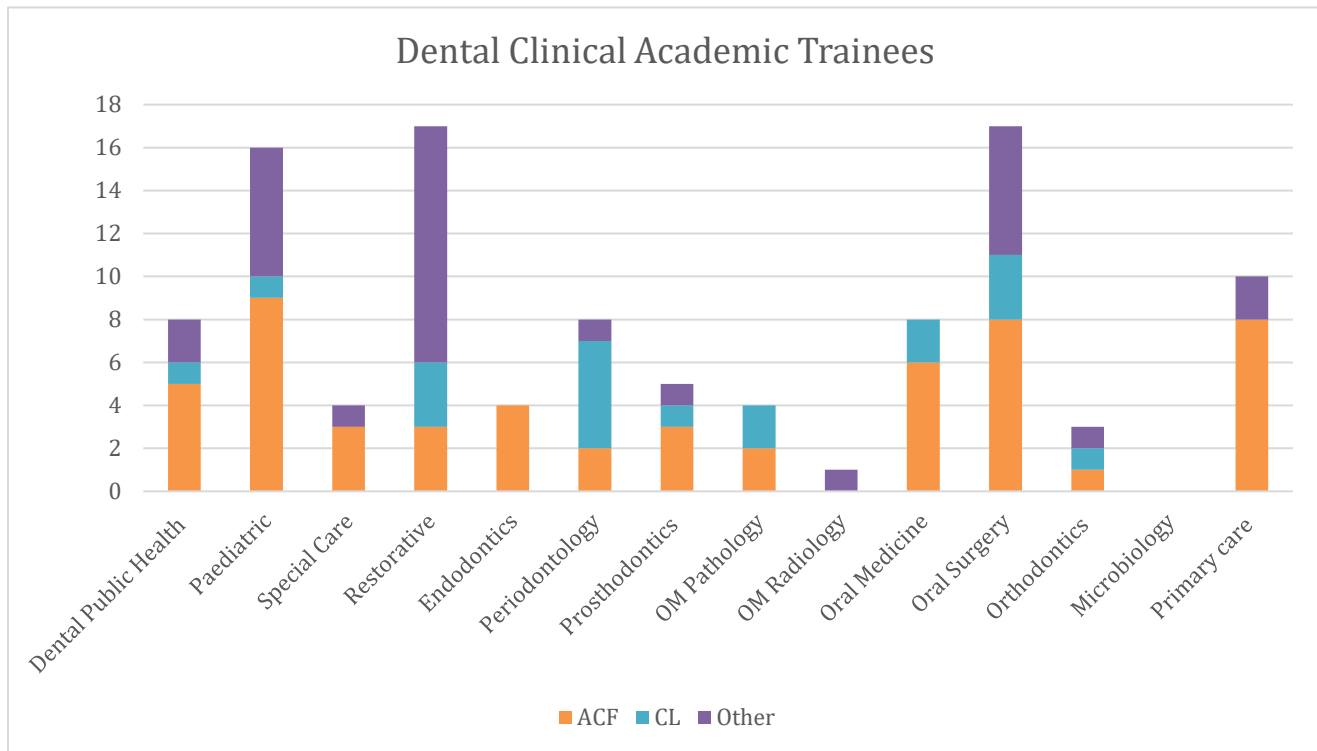
Since 2009, there has been an increase in clinical academics who are between the ages of 36 to 45, becoming the largest group in 2017. The number of female academics has increased markedly since 2004 increasing from 130 rising to 273 whole time equivalents in 2017 and females now make up 45% of the academic workforce (49% of Dentists registered with the GDC were female in 2017). Less than 22% of clinical academics are from an ethnic minority.

The Medical Schools Council Report on the dental clinical academic Staffing Levels 2018², does raise concern over the number of staff on research-active contracts. Specifically, an overall decline in professors and only small recoveries for reader/senior lecturer and lecturer staff, which previously has shown a decline since 2004. The losses have been compensated with a rise in teaching only staff suggesting an evolution of the clinical academic team to a sharper focus on teaching. The most significant concern emerging from the survey was the ongoing difficulties recruiting to vacancies, particularly to more senior research active roles.²

The results of an academic trainee stocktake (appendix 2) showed that, as of September 2018, there were 105 academics in clinical training across 11 English dental schools. Fifty-five were NIHR academic clinical fellows and 19 NIHR clinical lecturers and 32 other academic trainees who were mainly university funded.

Except for Oral Microbiology, the remaining 12 dental specialties all had academic speciality trainees with the largest number in Restorative, Paediatric Dentistry and Oral Surgery. There were 10 academic trainees attributed to primary care dentistry. The spread of dental specialties with academic trainees is illustrated in Figure 2.

Figure 2. Histogram to show spread of dental specialties with academic clinical trainees in England



Most dental schools in England are allocated funding for two NIHR academic clinical fellows (ACF) a year, for three years and one clinical lecturer (CL) for four years (exception UCLAN). Of the total number awarded to schools 82% of ACFs and 58% of CL positions had been recruited. The conversion of NIHR funded ACF to CL is well below the NIHR funded capacity. Workforce planning requires a national focus on those specialities which have very few academic trainees and trainers, e.g. Oral and Maxillofacial Radiology and Pathology, to ensure there are enough academics in these specialities in the future. Training may need to be rotational between centres that have the training expertise.

Objectives

The core group has identified 4 main themes with specific objectives:

1. Definition and scope

- a. Definition of a dental clinical academic and agreement on categories before any data collection or interpretation of data occurs
- b. To review recommendations of Walport report and current level of implementation in relation to dentistry (template/questionnaire through Dental Schools Council to all dental schools)

2. Post registration academic training

- a. To establish how research and academic opportunities are promoted to dental foundation/dental core and speciality trainees and to identify academic training opportunities at all levels of postgraduate training
- b. To establish motivators and barriers to academic training
- c. To undertake a stocktake of DCPs in academic roles and to scope out the opportunities available for DCPs to undertake academic training

3. Pre-registration academic training

- a. To establish how dental schools currently promote and identify students to intercalate, and give research experience to dental undergraduates and generally promote academic careers
- b. to establish current understanding of academic careers in dentistry and any perceived barriers to pursuing an academic career

4. Academic Primary Care

- a. To scope the amount of research (including clinical trials) that is currently being undertaken in primary dental care compared to primary dental care research carried out within a dental school
- b. To identify models to support and promote research in a primary dental care setting
- c. To establish how much primary dental care research is currently being carried out and the barriers and motivators
- d. Share data at a wider stakeholder event which will direct 2020/21 objectives

Methodology

- A review of appropriate published literature was undertaken to inform surveys and focus groups including the Advancing Dental Care Phase 1 report. ³
- Dental Schools' Council undertook a workforce review on an annual basis and the reports from the last two years were accessed together with a report from the medical deans. ^{2,4,5}
- An academic stock take of academic trainees was undertaken. A template was sent to all dental schools requesting information about the number, stage of training, specialty and funding of academic trainees (appendix 2).
- An online survey was developed and agreed with Dental Schools' Council to establish if and how each dental school had implemented the recommendations of the Walport report 2005 (appendix 3). ⁶
- An online survey was developed with Dental Schools' Council and NIHR Academy to send to current academic trainees to assess the quality of academic and clinical training, to establish the facilitators and barriers they found in academic training and to ask what had inspired them to pursue academic training. (appendix 4)
- Local HEE offices were contacted to establish what academic opportunities were available in their dental training programs (appendix 5).
- Focus groups were run in the south of England. Although geographical location was limited to the south there were graduates from a wide number of schools present. Participation was opt-out with members able to decline to contribute or leave the session. Focus groups were held after stakeholders had received dedicated training in scan-focus-act methodology.

- Groups included academic specialty trainees, foundation trainees, dental core trainees, non-academic specialty trainees, general dental practitioners and community dentists. (appendix 6)
- A further workshop was undertaken at the Academic Stakeholder group meeting focusing on 3 questions. (appendix 7)
 1. How can we inspire more dental undergraduates to consider clinical academic dentistry?
 2. How do we improve research opportunities during training?
 3. Academic DCP career pathways, what are they?
- Responses from the academic survey, focus groups and workshop were collated and recommendations formulated. These were commented on and agreed by the stakeholder group virtually.
- Two online surveys were designed for GDC registered dentists (appendix 8) and dental care professionals (DCPs) (appendix 9) to establish understanding of academic careers, opportunities for research and careers advice received. They also focused on perceived incentives and barriers to academic careers. The surveys were distributed as widely as possible through the Advancing Dental Care network.
- Through DCP societies and DCP schools an academic DCP stock take was undertaken (appendix 10). We are grateful to many third-party organisations for helping to distribute the surveys multiple times and engage with the wider dental workforce.

- An attempt was made, through established dental hospital based primary care research groups and through the oral & dental NIHR Clinical Research Network, to scope research (including clinical trials) that is currently being undertaken in primary dental care compared to primary dental care research carried out within a dental school. This was also aimed at identifying motivators and barriers to research in the primary care setting

Results

Objective 1:

1a. Definition of a dental clinical academic (as agreed by the core group)

A clinical academic would normally:

- Have a substantive academic contract of employment with a HEI as their major contract
- Be required, as a condition of their employment, to hold GMC and/or GDC registration (dentist or DCP)
- Undertake research and /or teach undergraduate and/or postgraduate dental students and/or dental care professionals
- And, where relevant, provide clinical activity with an NHS Trust or NHS England

1.b To review recommendations of Walport report and current level of implementation in relation to dentistry (template/questionnaire through Dental Schools' Council to all dental schools).

The full results of the responses can be found in Appendix 3.

- There are currently 11 undergraduate dental schools in England, 10 of the 11 schools completed the survey on implementation of the Walport recommendation. One school declined to complete the questionnaire; the reason given was because they were a graduate entry school.
- All schools that completed the survey indicated that they had fully (40%) or partially implemented (60%) of the Walport recommendations.

- All schools promoted academic careers in the final year of the BDS course through careers sessions, lectures and mentoring with 80% also having events in year 4 and 50% in every year of the course.
- When asked how academic opportunities were embedded into the undergraduate course the majority (90%) utilised research based elective projects and/or research driven by the undergraduate in their own time.
- 80% of schools also promoted through intercalated degrees, although only 20% of schools had fully implemented and 50% partially implemented the recommendation that intercalated degrees should be supported through scholarships and bursaries. However, other than support for year 5 and 6, university fees, being covered by the NHS, only one school reported that financial support was available.
- The number of undergraduates that had intercalated in the last five years ranged from 0 to 20, with two schools reporting 16-20 students, the remainder 0-7 (on average <2% of undergraduate dental students intercalate).
- The number of graduate entries BDS students in the last five years ranged from 10-75 for the non-graduate entry schools that completed the survey. One school which had previously been only graduate entry now had approximately 20% graduate entry each year.
- 60% of schools had INSPIRE programmes to promote research.
- Of the schools running INSPIRE programmes 78% ran conferences, 67% research taster sessions, 56% a lecture series and 44% student led publications.
- The number of undergraduates engaged in the INSPIRE programmes over the last five years varied considerably between schools with one having 250, three between 25 and 50. One school did not have the data but did report a high number of research studentships in the last year.
- Three schools reported that INSPIRE programmes funded student research projects.

- 80% of schools reported that there were opportunities for academic mentoring and role modelling, and all felt that this was very helpful to inspiring academics. Most of these schemes were not formal, and student driven.
- The survey suggests there is a lack of evidence between intercalation and INSPIRE programmes promoting and inspiring young dentists to consider an academic career, although nearly all schools thought it was very likely to contribute. There was evidence from one school to suggest that students who have intercalated are more likely to enter an NIHR pathway.
- The survey showed inconsistencies in implementation of Walport recommendations.

From the survey:

- 90% of schools felt that:
 - a. research opportunities should be embedded throughout the undergraduate programme.
 - b. an undergraduate fact sheet on academic career pathways would be useful in promoting academic careers particularly targeted at 4th and 5th year students
 - c. academic run through from DCT to speciality training similar to medicine should be considered
- 80% of schools felt that academic DCT posts would encourage interest in academic training pathways (non NIHR posts)

Objective 1. Conclusions

6. Schools need to be more proactive in encouraging undergraduates to get involved in research and consider academic careers. Although most schools have systems in place these are often informal, and student driven. Accepting that not all undergraduates will aspire to be academic researchers or educationalists, structured opportunities should be available to those undergraduates identified with potential
7. Academic DCT posts (non NIHR) should be considered and academic run through from DCT to specialty
8. Fact sheet including an infographic should be available on academic career pathways

Objective 2.

Post registration academic training

2a. To establish how research and academic opportunities are promoted to dental foundation/dental core and speciality trainees and to identify academic training opportunities at all levels of postgraduate training

There are seven HEE Dental Postgraduate local offices in England; North East, / Yorkshire & Humber, North West, Midlands & East of England, London & Kent, Surrey, Sussex, Thames Valley, South West. The local offices were surveyed regarding research opportunities available in training (appendix 5).

There were few formal research opportunities at all levels of dental postgraduate training in NHS funded posts.

Currently 2 offices include an option to undertake a research project during Foundation Training and 2 offices had DCT posts linked to research outside of NIHR ACF posts.

DCT posts in dental hospitals and schools were reported to have opportunities to engage in research projects, case reports and to write papers for publication or give posters or presentations at specialist meetings.

Specialty training posts had more formal opportunities to learn about research methodology and critical appraisal skills, no specialty trainees appeared to have taken out of programme research time, except for academic trainees.

Orthodontic specialty trainees and some other specialities were reported as having time to undertake a taught master's programme alongside training.

Nearly all offices included academic careers in careers events which were mandatory for dental foundation trainees and optional for DCT's. Except for one office, these were face to face events.

Nearly all offices stated that they would consider developing research opportunities at all levels of training, as the majority of posts were one-year contracts, several offices described either DFT/DCT run through or DCT1/DCT 2 run through as potentially providing a better opportunity for research opportunities.

The NIHR IAT scheme provides opportunity to gain experience in research whilst continuing in clinical training or general dental practice.

This programme appears to be working well in most schools (appendix 4). It is clear from the surveys undertaken that these programmes need to be promoted more widely and communication of when they are advertised and where should be clearer.

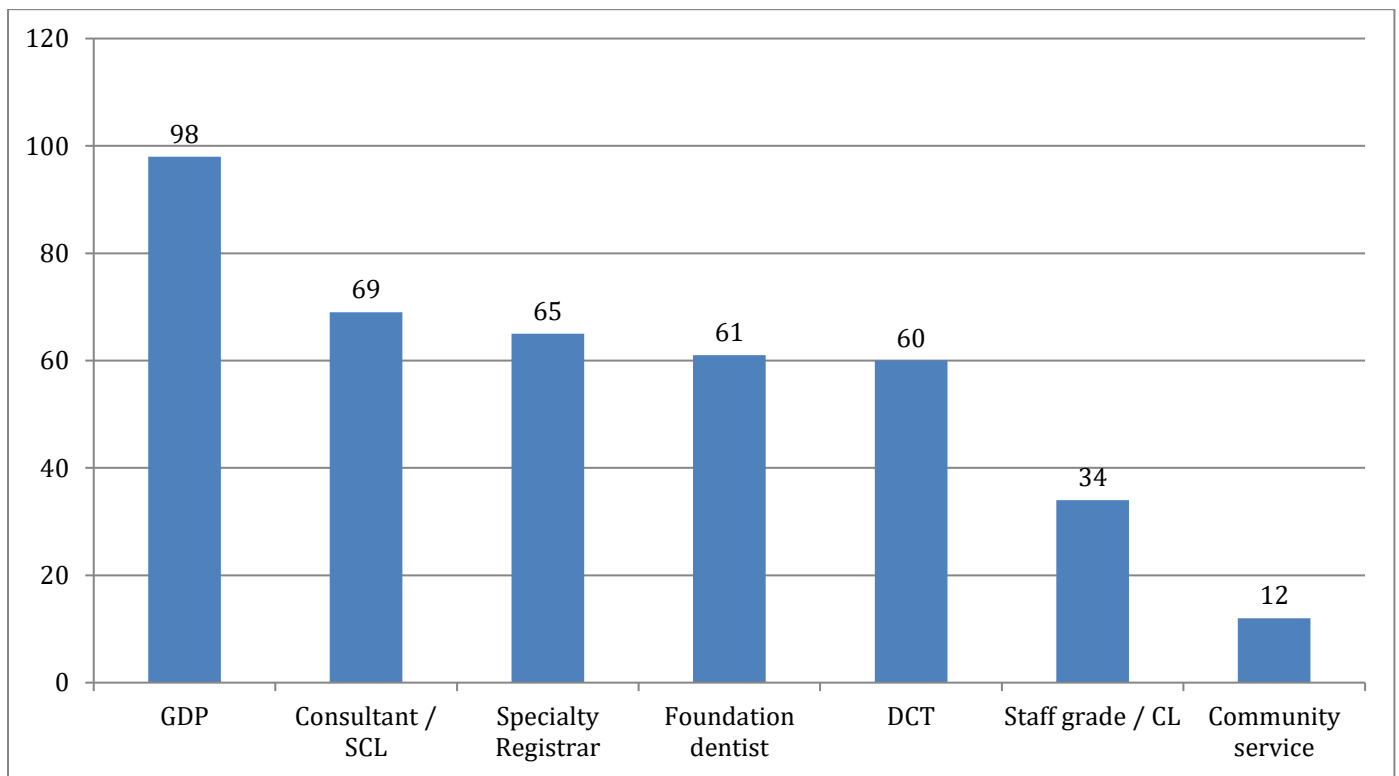
Providing opportunities to undertake research experience prior to application for an NIHR ACF was cited as being beneficial from the surveys, as this allows dentists to experience research to confirm whether they would like to undertake academic training and also provides them with valuable evidence that is felt to enhance application for an ACF.

The Academic stakeholder workshop (7) strongly supported embedding academic/ research opportunities within all levels of dental training, this was supported by focus group feedback (appendix 6).

2b. To establish motivators and barriers to academic training

The online survey for GDC registered dentists (Appendix 8) was completed by 403 registered dentists and the breakdown of job roles is included in figure 3.

Figure 3. Table to show numbers of dentists in each job title in postgraduate dentist’s survey



Motivators

The motivators for pursuing academia in dentistry are becoming clearer as a result of our research. In the online survey for postgraduate dentists (Appendix 8), 71% of respondents who answered the question ‘Would an academic component attract you to a post?’ replied positively. Although the respondents come from a variety of professional backgrounds this suggests that many dentists are interested in academia alongside their clinical work.

From our qualitative data, motivators for academic involvement in dentistry can be broadly categorised into the following groups and specific examples to illustrate these motivations are included:

1) A sense of contribution to the advancement of dentistry

a. Online survey of postgraduate dentists, appendix 8

‘Evidence based dentistry is a corner stone of what drives the profession’

‘Having a wider impact through both education and research’

‘I like the idea of being able to influence care at the patient level (clinical) but also, the wider level through generating research outputs to change clinical practice’

b. Academic Specialty Trainees Focus Group, appendix 6

Impactful and exciting projects are valued

2) Variety in a job role

a. Online survey of postgraduate dentists, appendix 8:

'I chose to pursue an academic career as I like the variety this brings'

'I chose to pursue an academic career as the balance of clinical work, research and teaching. I found the fact I would not be doing the same thing everyday appealing.'

b. Academic Specialty Trainees Focus Group, appendix 6:

"Flexibility is valued"

3) Personal development

a. Online survey of postgraduate dentists, appendix 8:

'Intellectual stimulation and development'

'Interest in research and academic curiosity, research is fulfilling'

b. Academic Specialty Trainees Focus Group, appendix 6:

Protected time to pursue research interests is valued

4) Interactions with others

a. Online survey of postgraduate dentists, appendix 8:

'Working in collegiate environment'

'I found primary care dentistry monotonous and enjoy working in a multidisciplinary setting'

'Because I like the interaction with students'

b. Academic Specialty Trainees Focus Group, appendix 6:

Peer interaction is valued

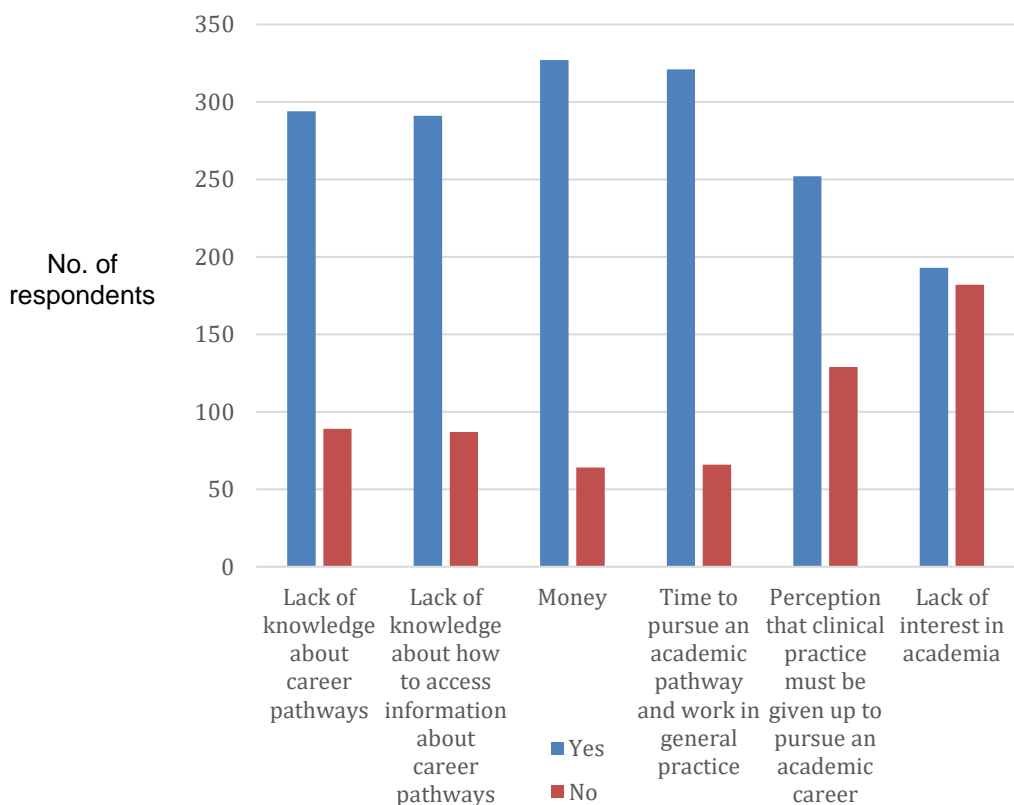
Barriers

Barriers to academic training have been identified in our research in both qualitative and quantitative data. In the postgraduate dentists’ survey (appendix 8) responses to the question ‘What barriers do you think there are to pursuing a career in academia?’ were collected to produce quantitative data as illustrated in figure 4.

Interestingly, a lack of interest in academia was not one of the strongest barriers (192 responded it was a barrier, 183 not a barrier) which suggests that postgraduate dentists who are interested in academia are experiencing other challenges in pursuing these pathways.

Figure 4.

Histogram to illustrate responses to the question ‘What barriers do you think there are to pursuing an academic career?’ (Postgraduate dentists survey, appendix 8)



Many different barriers to academic training were discussed in all the focus groups and 80 comments relating to barriers were included in free text in the postgraduate survey (appendix 8). The barriers can be themed into the following categories and examples of discussion points and comments from the surveys and focus groups related to each barrier are included.

Barriers identified by academic trainees whilst undertaking academic training were different (Appendix 4), with flexibility balancing/flexibility between clinical and research time and support and understanding of non-academic staff of the research component of the post.

The lack of opportunity to engage in research as a dental student, lack of clarity and knowledge of the academic career pathway were also recognised as barriers by academic trainees.

Career pathways

Discussions around academic career pathways suggested that pathways were often not clear and not well communicated to clinicians.

Online survey of postgraduate dentists, appendix 8:

- *'A lot of trainers and units don't understand the pathway and how it works'*
- *'ACF (academic clinical fellow) posts seem to change via institute'*
- *'There is a lack of understanding about ACF posts'*
- *'Poor publicity about academic careers'*

Signposting for post-training pathways is needed:

- A need for better structures and clarity of expectations in academic posts was expressed (Academic Dental Specialty Trainees Focus Group, appendix 6)
- Centralising advertising of ACF jobs with DCT and speciality training posts would help
- Improved awareness and signposting of existing projects would help. (Dental Core Trainees Focus Group, appendix 6)
- There are also perceptions about academic career pathways that have been mentioned in several data sets.

Online survey of postgraduate dentists, appendix 8:

- *'Slow process'*
- *'It is a very demanding career path'*
- *'The perception that clinical skills will deteriorate if focus on academic work'*

Opportunities

Opportunities for academic training was a subject discussed in all the focus groups conducted. Barriers to opportunities have been identified from the focus groups and the postgraduate dentists online survey which strongly request more opportunities for involvement in research, particularly in the early years of postgraduate training and in primary care dentistry. Examples of barriers relating to opportunities are outlined below.

Online survey of postgraduate dentists, appendix 8:

- *'More opportunities for academia and research as a DCT*
- *'Primary care opportunities'*

Academic Dental Specialty Trainees Focus Group, appendix 6:

- Impactful and exciting projects would help attract junior researchers

Dental Specialty Trainees Focus Group, appendix 6:

- Difficult to get prior experience for job applications
- Academic jobs at the end of training are not appealing – more work for less reward

Foundation Dental Trainees Focus Group, appendix 6:

- Comparison to medical trainees made – opportunity and time for research seems better in medical training.

Finances

Finances were reported as a barrier to pursuing academic training in the postgraduate dentist's survey and some of the focus groups. Examples of comments and discussion points are given:

Online survey of postgraduate dentists, appendix 8:

- *'The expense...You are a long way behind on the financial ladder on this route'*
- *'There needs to be better financial incentives to go into academia than specialist practice where the financial rewards are greater'*
- *'Funding for a PhD'*

Academic Dental Specialty Trainees Focus Group, appendix 6:

- Better funding for fellowships and PhD's would be appreciated

Dental Specialty Trainee Focus Group, appendix 6

- Salary during research posts need to be better to match general practice
- Study budgets are available but often not enough

Dental Core Trainees Focus Group, appendix 6

- Perception that academic jobs are less well paid and may influence choice for people

Time

Academic trainees valued protected time to carry out their research work however time for academia was raised as a barrier in several data sets as illustrated in the following comments.

Online survey of postgraduate dentists, appendix 8:

- *'Prolonged and protracted pathways'*
- *'The hours are really long'*
- *'Need to spend a lot of personal time to achieve success'*
- *'Research is often quite a slow process in comparison with service commitments'*
- *'Academic pathways always seem longer therefore and therefore will not be as attractive to women wanting to finish clinical training before starting a family'*

Academic Dental Specialty Trainees Focus Group, appendix 6:

- Clinical and academic training can take a long time

Dental Specialty Trainee Focus Group, appendix 6:

- Training takes too long with clinical and academic

Dental Core Trainees Focus Group, appendix 6:

- Time and funding incentives need consideration especially in general dental practice

Foundation Dental Trainees Focus Group, appendix 6:

- Time out for research risks clinical deskilling

Mentorship

Academic trainees reported that academic mentorship worked well however several sources of data reported that mentorship could be improved and does act as a barrier to pursuing academia.

Online survey of postgraduate dentists, appendix 8:

- 'Lack of mentorship'
- 'I find that getting someone to help with the academic side of things is very difficult'

Dental Core Trainees Focus Group, appendix 6:

- More academic leader role models needed

Inflexibility

Several data sets referred to a lack of flexibility in clinical and academic work or lack of flexibility for part-time work as a barrier to academic careers. Examples below illustrate this.

Online survey of postgraduate dentists, appendix 8:

- *'To be able to come into this pathway after working in general dental practice for several years is perceived as impossible by many'*
- *'The system in the UK makes it almost impossible to combine practice and academia'*
- *'The bodies that create the pathways are not flexible in their approach to completing programmes/courses in a certain time frame'*

Academic Dental Specialty Trainees Focus Group, appendix 6:

- More options for primary care would be good for the future

Dental Specialty Trainee Focus Group, appendix 6:

- Flexibility in training needed, part-time options

Culture

The culture of academia in dentistry was raised as a barrier by responders in our research by both those who currently work in academia and those who do not. Examples to demonstrate this are below:

Online survey of postgraduate dentists, appendix 8:

- *'Astounding amounts of bureaucracy'*
- *'Pressure to publish'*
- *'The reputation of academia that it is a dog eat dog world'*
- Improvements in culture especially in recognition of a work-life balance

Academic Specialty Trainees Focus Group, appendix 6:

- Recognition of academic activity by non-academics would help improve culture

2c. To undertake a stocktake of DCPs in academic roles and to scope out the opportunities available for DCPs to undertake academic training.

Through the network of Dental Care Professional pre-registration training schools located in NHS Trusts and HEIs, specialist DCP associations/ societies and the DCP online survey (Appendix 9 limited information was obtained regarding Academic DCPs

Stocktake

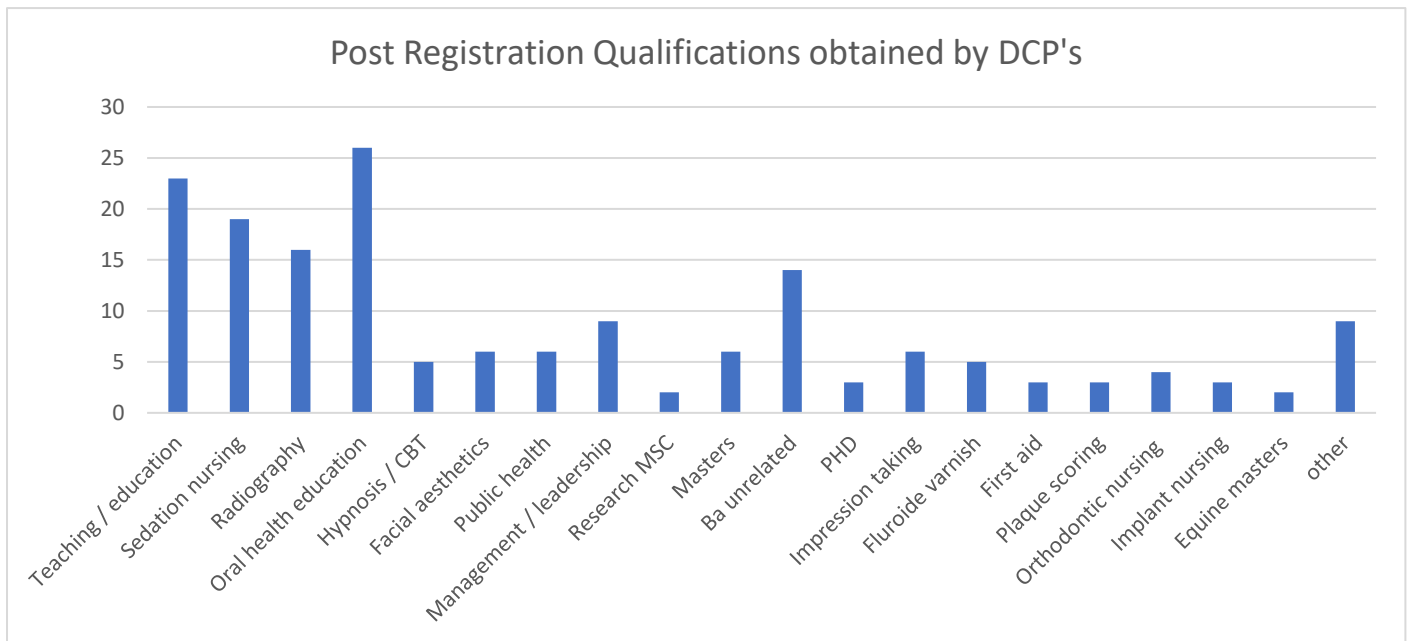
There are several DCPs throughout the country with higher academic qualifications, at least 8 have completed or are undertaking PhDs. (Appendix 10). These are mainly dental therapists but included a dental nurse and dental technician. A further 3 DCPs had undertaken master's degrees in research. These individuals are all based within HEIs and the majority have teaching and leadership roles within DCP training and education, although 2 (20%) had research only roles. There was no consistency to their academic titles: senior clinical teaching fellow; senior lecturer; senior teacher; and director were all reported titles. This suggests that there is no recognised academic career pathway for DCPs who obtain academic postgraduate qualifications and wish to pursue an academic career.

Although the stocktake information was limited, the DCP questionnaire provided further evidence (Appendix 9). 253 DCPs completed the online survey, 56% were dental hygienists, 26% therapists and 16% dental nurses, however it should be noted that this represents fewer than 1% of GDC registered DCPs.

It was clear from the survey that some DCPs are highly motivated to advance their careers with 60% undertaking additional qualifications.

36% of therapists and 57% of hygienists who have further qualifications also had a dental nurse qualification. This suggests that hygiene / therapy is an opportunity for dental nurses to progress their careers.

The largest number of additional qualifications were in oral health education, teaching and education (PG cert / PGCE), sedation and radiography. Three had undertaken PhD's, 6 Masters and 2 a Research MSc. 6 had public health qualifications and 9 leadership and management qualifications (PG cert / MA), 14 had unrelated Bas (shown in Figure 5 below)

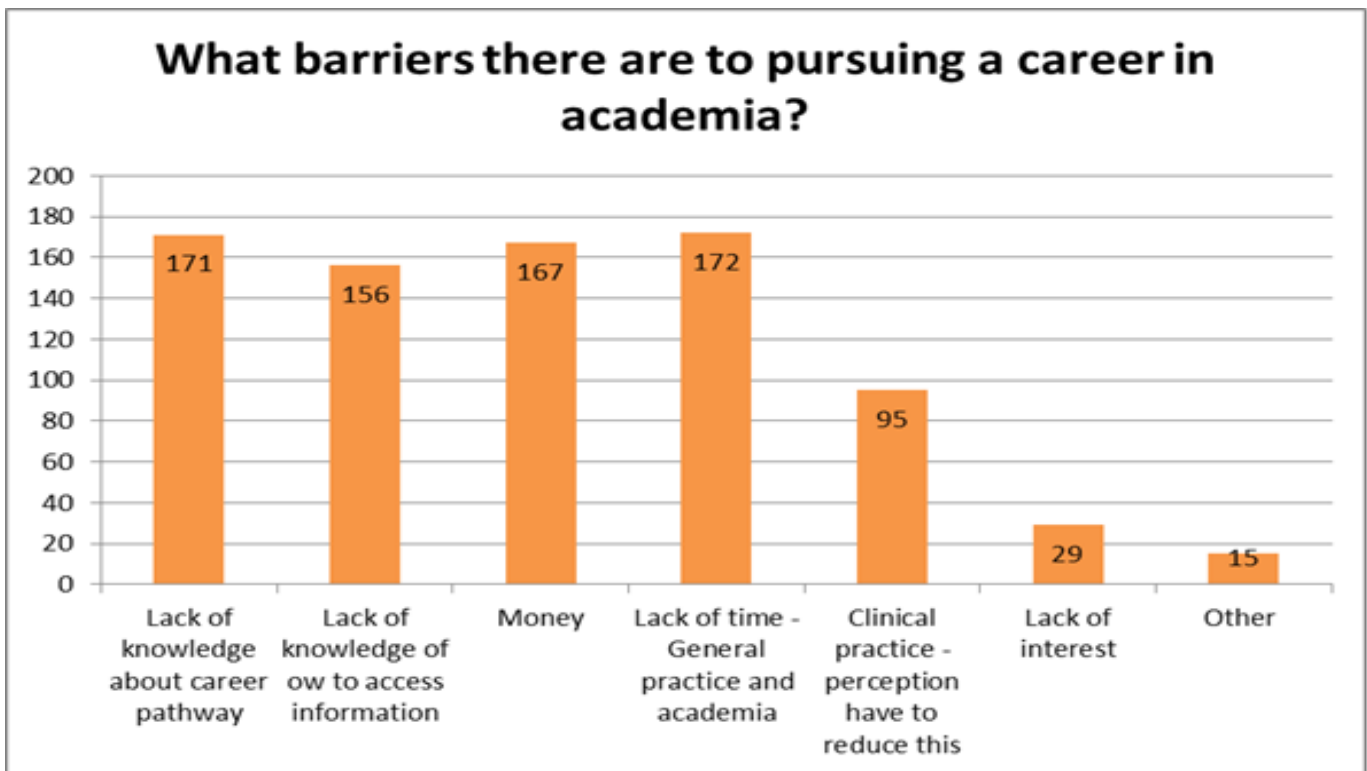


Opportunities available for DCPs to undertake academic training

Opportunities for DCPs in academia are present, this can be seen from the stocktake, and encouragingly the survey suggests opportunity for further development of DCP participation in academia. 73% reported that they would be interested in conducting primary care research with appropriate support and 81% reported that they would be attracted to a post that had protected time to complete research and / or education activities.

Perceived barriers to DCPs undertaking academic training

Overall, the DCP survey raised the same issues as the previous dental focus groups and survey. The barriers to academia revealed the same common themes of lack of career pathway knowledge, finance, time, and lack of mentorship (see Figure 6 below)



80% of DCPs reported no formal advice or teaching of academic career options suggesting formal research opportunities are not promoted. 59% felt that they had poor understanding of the options available.

62% of respondents reported a disparity with access to training support on academic subjects compared to those on a dental undergraduate programme.

60% of respondents had not had any opportunity to become involved in research as an undergraduate, 33% reported they had undertaken research-based projects within their programme. Those that had opportunities through the INSPIRE programme had good research experience as an undergraduate and had gone on to undertake PhD's.

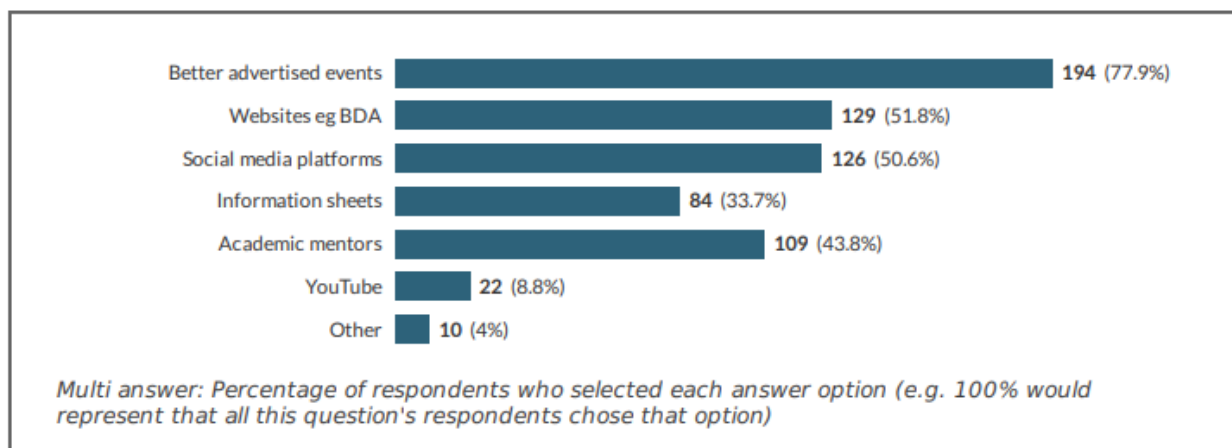
58% reported that it would have been beneficial to have further information on research and 64% Education Masters and PhD programmes

Lack of knowledge about how to access information about the career pathway., money, Time – unable to pursue academic pathway as well as work in general practice. (Dental Nurse) (please see appendix 8)

Information on academic career pathways for DCPs should be readily available to undergraduate students during their University years. Perhaps, the presence of hygiene and therapy academicians and them taking on lecturing/teaching/mentoring/research roles would encourage DCPs to be more involved in academia. There should be at least for now, an incentive / help of some sorts for wanting / pursuing a career in academic given that the starting salaries for a teaching fellow / early lecturers / researchers are less, compared to what a new graduate could potentially earn in a practice environment. More importantly, any potential passion for academic career and research activities could potentially dry up once a graduate starts out in practice during the first couple of years of graduation, especially if the working environment is not such that stimulates or foster an individual's passion for research. (Dental therapist)

Respondents made a variety of suggestions of ways in which access to information could be improved (See Figure 7 below).

What could improve your access to this information?



79% of respondents reported that they were not aware of the Oral and Dental Research Trust (ORDT) and/or National Institute for Health Research (NIHR).

90% were unaware of any funding available to them and only 7% of respondents were aware there is NIHR funding available to support research training for DCPs.

Eight respondents, four dental hygienists and four therapists (3%) had received funding for research projects, two from the Medical Research Council, two ORDT, one HEI's and one NHS Trust. These respondents all went on to complete master's or PhD's.

72% of respondents thought that having an academic mentor might encourage them to explore wider career opportunities.

Certainly, would like to see mentor ship for hygienists and therapists. More post grad courses but these are limited due to GDC stating what we can do. (dental therapist)

Full assurance that support is and will be readily available as appropriate to each level' (dental hygienist)

Several respondents reported culture and lack of flexibility being a barrier to training in free text responses.

- *I think it is perceived that we don't have the necessary skills to be academic. That we are "just" hygienists and / or therapists. (dental therapist)*
- *Realistic career pathway for dental nurses, realistic banding for progression, meaningful inclusion in research by clinicians. Give more information to us as there is none available now. (dental nurse)*
- *More opportunities to train without restriction. Most employers only support what is useful to them and what they can exploit and give no financial incentive to complete rather than those that will aid career progression and lead to bigger better things. (dental nurse)*

Objective 2. Conclusions

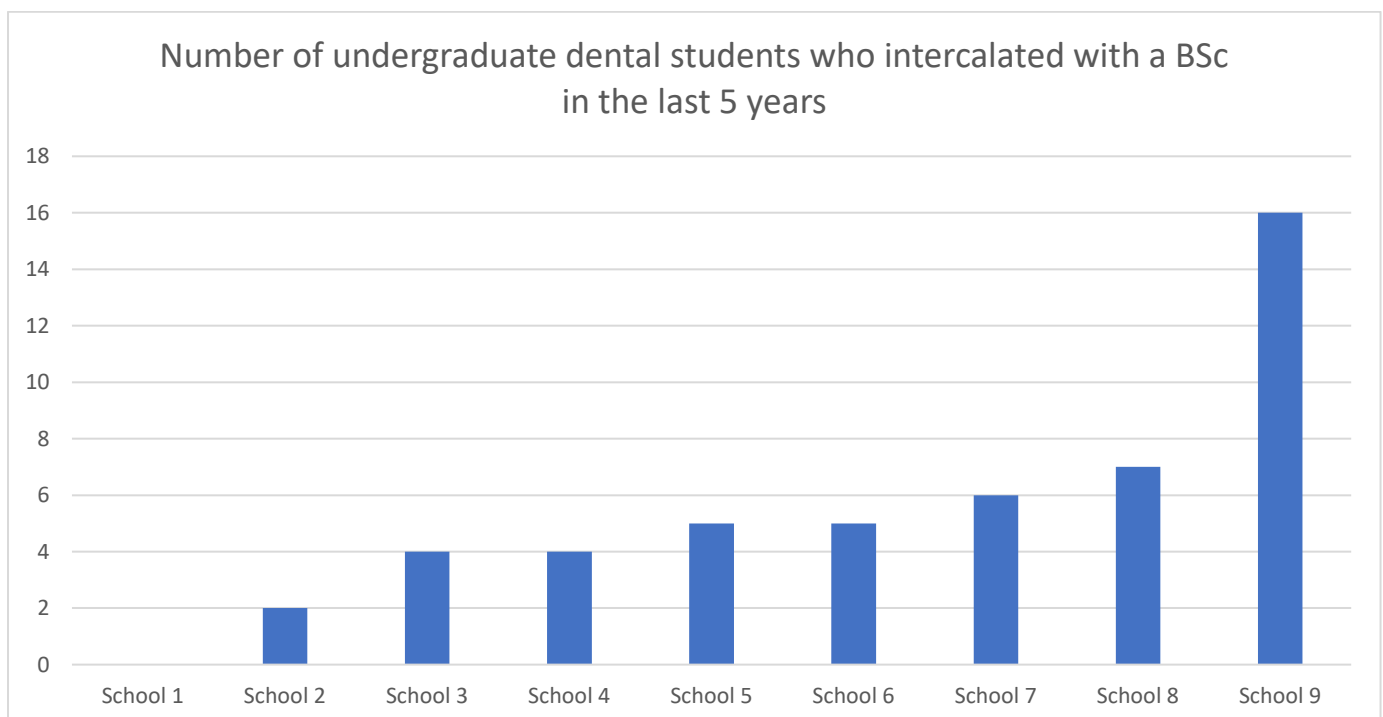
- Motivators for academic training should be used to encourage interested individuals to pursue academia
- Motivators include a sense of contribution to the advancement of dentistry, variety in a job, personal development and interaction with a wide range of people
- Barriers to academic training need to be acknowledged and addressed where possible
- Clarification of academic pathway options and effective communication of these to interested individuals is needed
- More opportunities for primary dental care research should be considered
- Expand the role of mentors in identifying and supporting those interested in academia
- Develop the flexibility of academic pathways so interested individuals have opportunities to balance their clinical practice and lifestyles with academic activity
- Aim to improve the culture around academia to appeal to clinicians from a range of backgrounds
- The survey suggests that many DCPs are interested in being involved with research and education but have little understanding of academic careers and opportunities available
- The promotion of academic opportunities at pre-registration level is well below that of dental undergraduates
- Few DCPs have had opportunities to undertake research training but those who have appear to have been successful in achieving master's or PhD level postgraduate degrees.

- Other than those who have undertaken research training there is little, if any, knowledge about NIHR funding of research training for DCPs through the Integrated Clinical Academic (ICA) programmes
- DCPs that have achieved research training are employed under many different titles suggesting that there is no recognised academic career progression for DCPs

Objective 3. Pre-registration academic training

- a. To establish how dental schools currently promote and identify students to intercalate, and give research experience to dental undergraduates and generally promote academic careers
- b. It was clear from the academic stakeholder workshop (Appendix 7) that some schools were more successful than others in promoting research opportunities and inspiring academics, and that schools could learn from each other. All felt that improvements could be made to how research understanding and opportunities to take part in research could be promoted to undergraduates.

Figure 8



Promotion of academic careers by schools

It is clear that dental schools in England are aiming to educate dental students about careers in academia however there is variation in how and when this is done in undergraduate programmes as demonstrated in the Dental Schools Survey (appendix 3 section 1.2). This issue around inconsistency of exposure to research as undergraduate students is also reflected in comments made in the Foundation Dentists Focus Group (REF).

Although dental students have not been surveyed as part of this research it seems that academic pathways in dentistry are unclear to recently graduated dentists as evidenced in the Foundation Dentists Focus Group (REF) and the Dental Core Trainee Focus Group (appendix 6 and discussed in part 2 b).

It is also evidenced from the surveys and focus groups carried out that many dentists find the academic training pathway complicated with many perceived and real barriers and are unaware of opportunities available to experience research. (Appendices 3,4,6,7,8,9)

The responses from the dental schools alluded to in 2a) suggest that engaging dental students with academia whilst at dental school can influence their involvement in academia after graduation, with most schools reporting that students who intercalated or were involved in INSPIRE activities would be more likely to go on to pursue an academic career. In addition to this, one of the discussion points from the Dental Core Trainees Focus Group (Appendix 6) was that 'low level' research such as elective projects should be recognised and opportunities to follow-up such smaller projects after graduation would be welcome.

Objective 3. Conclusions

- Dental schools should aim to continue promoting academic careers and pathways to undergraduate dental students, they should share good practice.
- Opportunities should be offered for involvement in research through intercalation, engagement with INSPIRE and elective projects at dental school.
- Recognition of research involvement as an undergraduate should be taken forward after graduation and possibilities for continuation of research projects considered.
- Consistency in exposure to, and funding of, academic opportunities for undergraduate dental students in dental schools in England can be improved.

Objective 4. Academic Primary Care

a. To scope the amount of research (including clinical trials) that is currently being undertaken in primary dental care compared to primary dental care research carried out within a dental school. 3

No research including clinical trials was identified as being led and carried out entirely within primary dental care. The key barriers identified was sponsorship, previously Primary Care Trusts (PCTs) could be approached to act as sponsors for General Dental Practitioners (GDP's) wanting to conduct practice-based research. Since the dissolution of PCTs it is not clear who would sponsor practice-based research.

Current and future funding of research in the primary care setting may be conducted in partnership with HEIs but led by primary care so that the HEI can act as a sponsor for the research.

Two HEE regions currently have optional Dental Foundation Research projects that are led by clinical academics in dental schools (appendix 5).

NIHR Academic Clinical Fellows (ACF) can be appointed to primary dental care posts, these 3-year appointments are 25% research and 75% clinical and support the fellow to gain research experience and training to secure a grant application to fund a PhD project. From the academic stocktake (Appendix 2) there were 8 NIHR funded ACFs in primary care, the research element of training is supported by University Dental Schools and the clinical component of training is in a primary care setting either as a salaried GDP or salaried community services.

In 2018 there were no NIHR funded Clinical lecturers in primary dental care.

The salaried nature of the clinical component of the fellowship at the level of a Speciality Trainee may be a disincentive to an established GDP. NIHR are considering introducing a self-employed model which would allow the dental practitioner to continue working in their dental practice being salaried for 25% of their time, this may make ACF posts more attractive to established GDPs.

b. To identify models to support and promote research in a primary dental care setting (Appendix 8)

Motivators to engage dentists in primary care research include evidenced based practice, improved quality of care for patients and the variability it provides to practitioners from their regular clinical work.

Barriers include time required in practice, funding, sponsorship, research training and career pathways.

The Oral and Dental NIHR Clinical Research Network (CRN) has the purpose of increasing studies carried out in the primary care setting on the NIHR portfolio and had been endorsed by the British Society of Oral & Dental Research (BSODR). The NIHR CRN has supported 66 studies on oral and dental health, 25 were commissioned in 2018/19.

An academic primary dental care Special Interest Group (SIG) has been established within the Society of Academic Primary Care by two primary dental care researchers to try and identify and engage with general dental practitioners and primary care researchers (including NIHR trainees) who wish to engage in research.

Development of flexible commissioning models to fund research in primary dental care is also being considered

Objective 4. Conclusions

- Establishment of regional primary dental care research networks.
- Financial support for dental research in primary dental care.
- Promotion of opportunities to gain research experience/training in clinical research for primary care dentists and DCPs e.g. NIHR schemes career pathways for academic GDPs.

References

1. Council DS. *Survey of Dental Clinical Academic Staffing Levels.*; 2018. www.dentalschoolscouncil.ac.uk. Accessed July 24, 2019.
2. Medical Schools Council. Medical Schools Council Clinical academic survey. <https://www.medschools.ac.uk/clinical-academic-survey>. Published 2018. Accessed October 5, 2019.
3. Health Education England. *Advancing Dental Care: Education and Training Review Final Report Advancing Dental Care: Education and Training Review.*; 2017. https://www.hee.nhs.uk/sites/default/files/documents/advancing_dental_care_final.pdf. Accessed January 9, 2019.
4. Dental Schools Council. *Survey of Dental Clinical Academic Staffing Levels.*; 2018. <https://www.dentalschoolscouncil.ac.uk/wp-content/uploads/2018/08/clinical-academic-survey-dental-2018.pdf>. Accessed October 5, 2019.
5. Dental Schools Council. *Survey of Dental Clinical Academic Staffing Levels 2017.*; 2017. <https://www.dentalschoolscouncil.ac.uk/wp-content/uploads/2017/07/Survey-Dental-Clinical-Academic-Staffing-Levels-2017.pdf>. Accessed October 5, 2019.
6. Report of the academic career's subcommittee of modernising medical careers and the UK clinical research collaboration March 2005. *Medically and Dentally Qualified Academic Staffing Levels. Recommendations for Training the Researchers and Educators of the Future.*; 2005. http://www.ukcrc.org/wp-content/uploads/2014/03/Medically_and_Dentally-qualified_Academic_Staff_Report.pdf. Accessed October 5, 2019.