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Are dentists considering a career in orthodontic clinical academia? Summary of: A qualitative study conducted in a British Dental School and Hospital in 2018 into the factors influencing a career in orthodontics.

Authors:

1. JL Jopson – Speciality Training Registrar in Orthodontics, Bristol Dental Hospital
2. AJ Ireland – Professor in Orthodontics, Bristol Dental Hospital
3. PV Fowler –Senior Clinical Lecturer in Orthodontics, Bristol Dental Hospital
4. JR Sandy – Emeritus Professor in Orthodontics, Bristol Dental Hospital
5. P Neville – Lecturer in Social Sciences, Bristol Dental Hospital

Abstract

Introduction Dental clinical academics are essential members of the dental workforce with roles in teaching, research and scholarship. There is currently a national shortage of UK dental clinical academics, with difficulties recruiting to all grades. In addition, there is evidence of gender inequality within academia with segregation at a horizontal and vertical level.

Aim To investigate the factors that influence a career in orthodontic clinical academia and highlight ways to improve recruitment and retention.

Method A qualitative research study utilising focus groups. Purposive sampling was carried out to recruit participants at different stages of an orthodontic career. A total of eight, face-to-face focus groups were conducted with 26 participants. Focus groups were split by gender and career stage. An inductive thematic analysis was used to generate themes.

Results Three major themes were generated: academic career options, motivations, and barriers to pursuing a clinical academic career.

Conclusion This paper sheds light on the current factors affecting a career in orthodontic clinical academia. Worryingly most dentists do not strive for an academic career and the barriers to pursuing this career option are discussed. Ways of addressing the issues facing recruitment and retention of individuals to orthodontic clinical academia are suggested.

Key points

- Discusses the current recruitment issues facing dental clinical academia.
- Reports the main findings of a qualitative study on the factors influencing a career in orthodontics with respect to clinical academia.
- Highlights the challenges facing recruitment and retention in clinical academic dentistry and suggests ways to attract dentists to a clinical academic career.

Introduction

Clinical academic dentists are essential members of the dental workforce. In addition to performing clinical duties, clinical academics have significant roles in teaching, research and scholarship. Teaching responsibilities may include course development, organisation, quality assurance and review of teaching provision at both undergraduate and postgraduate levels. There is an expectation that clinical academics undertake high quality research that aids the delivery of patient care, creates stimulating learning environments and contributes significantly to the local and possibly national economy.¹

Currently the United Kingdom (UK) dental profession is experiencing a national crisis in the recruitment of dentists to clinical academic posts.^{1,2} In a 2018 survey on clinical academic staffing levels, of the 16 UK dental schools that returned data, there were 40 full time equivalent (FTE) vacant clinical academic positions across 12 dental specialities. Within the dental speciality of orthodontics, six dental schools reported difficulties in recruiting clinical academics to all grades.² Concerningly these issues are longstanding. Since the 1990s there has been ongoing concern regarding the future of academic dentistry. As a result, significant steps have been undertaken within the National Health Service (NHS) and universities to address these issues.³ Amongst a number of initiatives was the introduction and implementation of the *Walport Report*, which was published in 2005. The report outlined several recommendations to reform clinical academic training, including the creation of the National Institute for Health Research (NIHR) in 2006.⁴ NIHR aims to support those in NHS academic careers by providing funding for research development, health service research and academic training.⁵ Worryingly, fifteen years on from the *Walport Report*, there are still some concerns over the recruitment of clinical academics and whether NIHR is meeting the requirements to develop the clinical academic workforce. To address this, Health Education

England (HEE) has been undertaking a review of the way dental education and training is provided.^{6,7}

The 'crisis' in clinical academic recruitment coincides with the feminisation of dentistry, where the number and proportion of women entering the dental workforce has significantly increased.^{8,9,10,11} Alongside the feminisation of dentistry there has been increasing recognition within the UK of the challenge's female academics face in higher education in progressing their careers. Initiatives such as the 2005 Advance Higher Education Athena Swan Charter, which recognises institutions for advancing female representation in higher education, has helped to address some of these issues.¹² Women currently contribute to 57% of the clinical academic dental workforce under the age of 46 years and occupy a greater proportion of junior academic positions.² It could be hypothesised that over time, as women in junior positions of academia move along the clinical academic pipeline they will progress into these senior positions. However, there is data to suggest that this may not be the case, as senior clinical academic positions are not only left unfilled, but void of women. There are currently five FTE vacancies across the dental specialities at professorial level and only 22% of professors are female. This equates to one female professor in orthodontics.² The overrepresentation of women in junior positions of academia, is demonstrative of a process known as horizontal segregation, where careers or job roles become dominated with either women or men.¹³ The underrepresentation of women in senior positions of academia is evidence of vertical segregation whereby gender, age or ethnicity prevents career progression.¹⁴ This occurrence is often referred to as the 'glass ceiling', which is a metaphor used to illustrate the unseen barriers that prevent women from progressing into the most esteemed and senior positions within careers. Collectively, segregation at a horizontal and vertical level is known as occupation segregation, which has significant implications on the workforce in terms of gender equality.¹³

This study posits that research needs to be conducted into why qualified dentists are not considering a career in clinical academia and explore the extent, if any, the feminisation of dentistry might be contributing to this issue. Interestingly, this research question has not been widely researched, until now. The study reported here represents part of a larger project recently undertaken by the principal author (JJ) as part of the research component

of her orthodontic speciality training. As a result, it will focus on the issues pertaining to the recruitment of clinical academics in orthodontics.

Aim

The aim of the study was to investigate, using qualitative research methods, the barriers and facilitators that influence an orthodontic career from initial choice of specialisation to career progression.

Method

Study design

This study was undertaken at Bristol Dental School and Hospital, Bristol, UK, utilising qualitative research methods and principles. Focus groups were chosen as the method of qualitative data collection due to the ability to gain a detailed insight and understanding into the collective experiences and thoughts of groups of people. Focus groups were carried out with participants at different stages of an orthodontic career to explore the barriers and facilitators to a career in orthodontics. To help explore what impact gender may have on this career decision making process, focus group participants were organised according to gender and career stage. By organising the focus groups in this way, it was hoped that the impact of gender on participant responses would be neutralised. Topic guides and participant information sheets were designed prior to the focus groups and tailored for each career stage.

Participants

Non-probability purposive sampling was utilised to select participants at different stages of an orthodontic career. Selected career stages were:

1. Fourth year undergraduate dental students interested in pursuing an orthodontic career.
2. Junior Orthodontic Speciality Training Registrars (StR) i.e. trainees working towards gaining a Certificate of Completion of Specialist Training leading to registration as an Orthodontic Specialist with the General Dental Council.
3. Senior Orthodontic StRs i.e. trainees who have gained their specialist title and are working towards becoming an NHS Hospital Consultant.

4. NHS Orthodontic Consultants and clinical academics. As clinical academics have appointments with both the University and the NHS and are usually employed by the University but with honorary NHS Consultant contracts, a decision was made to include orthodontic clinical academics with NHS Consultants for the purposes of the focus groups.

Stage of orthodontic career	Females	Males	Total
Fourth year undergraduate dental students	3	2	5
Junior Orthodontic Speciality Training Registrars	6 (including one academic trainee)	3	9
Senior Orthodontic Speciality Training Registrars	3 (including one academic trainee)	3	6
NHS Consultants and clinical academics	3	3 (including one Professor in Orthodontics)	6
Total	15	11	26

Table 1: Distribution of focus group participants

Potential participants were sent an email invitation to participate in the study. The email included a copy of the consent form and participant information sheet. Once participants had expressed an interest in participating, a time, date and location of the focus group was arranged. In total 26 participants were recruited to the study. Table 1 provides details regarding the distribution and number of participants within each focus group. Of those recruited, there were two female orthodontic StRs that were pursuing formal clinical academic training and one male Professor in Orthodontics.

Data collection, transcription, and analysis

Face-to-face focus groups were facilitated by JJ, an author of this paper and PN an experienced qualitative researcher acted as note taker. PN was present for all but one focus group (male Senior StRs) due to unavailability. At the start of each focus group, written

informed consent was collected from the participants with the reminder that participation in the study was voluntary and that data collected would be securely stored and anonymised prior to analysis. Participants were asked to be respectful of their colleagues by maintaining confidentiality after the focus groups had finished. Eight focus groups were conducted between June-November 2018. No time limit was set for the focus groups, allowing the session to reach a natural end. Table 2 provides details regarding the length of each focus group.

Focus group	Participant identification codes	Duration of focus group
Female fourth year undergraduate dental students	DSF	34 minutes
Male fourth year undergraduate dental students	DSM	28 minutes
Female junior Speciality Training Registrars	JRF	29 minutes
Male junior Speciality Training Registrars	JRM	45 minutes
Female senior Speciality Training Registrars	SRF	49 minutes
Male senior Speciality Training Registrars	SRM	42 minutes
Female NHS Consultants	CF	41 minutes
Male NHS Consultants and clinical academic	CM	42 minutes

Table 2: Duration of focus groups in minutes with details of participant identification codes

The focus groups were audio recorded using an encrypted audio recorder to maintain participant confidentiality. In qualitative research, the quality of the transcript can be influenced by several factors, these include, the quality of the audio recording, the choice of transcriber and the transcription review process.¹⁵ In this study, the focus groups took place in a quiet office space which helped to minimise background noise. As part of a quality assurance process and to ensure audibility of the data, the audio recorder was tested prior to commencing each focus group. Transcript quality can be compromised by factors relating to the transcriber, for example, professional competence, transcriber knowledge of the

subject area and communication of the relevant discourse between the interviewer and the transcriber.¹⁵ To optimise transcript quality and reduce bias, data was transcribed verbatim prior to analysis by JJ, who was the lead researcher and interviewer. Occasionally within qualitative research, participants are invited to review transcripts to improve validity and identify any notable errors that may impact upon the findings of the research. The process can highlight areas where participants may provide further clarification and insight into the subject area. Despite these advantages, research has identified that when participants are involved in the transcription review process, there are no significant benefits in the accuracy of the transcriptions. Significantly, valuable data is at risk of being retracted by participants. Whilst on a personal and ethical level this has advantages, the retraction of data means the transcript is no longer a complete or precise reflection of the spoken discourse, which has wider implications on data analysis and research communication.¹⁶ Therefore, in this study, transcripts were not reviewed by participants. Instead transcripts were reviewed by PN to improve validity and transcript quality. Data was anonymised prior to transcription, with each participant being allocated an individual identification code. Coding was denoted by three identifiers, abbreviated career stage, gender and participant number. To help explain this, female fourth year undergraduate dental student would be given the identification code, DSF. Table 2 provides further details on assigned participant identification codes.

An inductive thematic analysis approach was used to analyse the data.¹⁷ Data analysis was undertaken by JJ and PN to reduce single researcher bias. Steps involved in the analysis included:

1. Familiarisation of the data. Transcripts were independently read and re-read.
2. Independent coding. Interesting elements within the data were identified as codes.
3. Theme generation. Once codes had been determined, JJ and PN made associations between the codes to generate overarching themes.
4. Theme evaluation. Themes were reviewed against the coded data to check for reliability and clarity.
5. Matrix framework production. A document was produced with themes, codes and inserted quotations from the transcriptions.

Results

The inductive thematic analysis identified three major themes related to a career in orthodontic clinical academia.

Academic career options

None of the participants, except for those pursuing a clinical academic career, expressed any interest in undertaking this career option. It was clear that these participants often associated a clinical academic career with roles in research rather than teaching. Despite not wishing to pursue a formal clinical academic career, most participants expressed an interest in acquiring roles in education and teaching:

"I would really like to teach, [...] my Dad's Mum was a teacher and it was always this blood in the family." (DSM1)

"I quite like the idea of teaching and I like the idea of doing something that is just not being in a single surgery all day." (JRF1)

The participants currently undertaking clinical academic training had a good awareness of the roles involved in clinical academia and perceived that by undertaking a clinical academic training post they had increased their career opportunities:

"I wanted to carry on in all three strands of orthodontics. I wanted to do some more research, some more training and also some teaching. So, doing the pathway I chose, which was the academic clinical lecturer pathway, allowed me to keep all of those options open." (SRF2)

Motivations to pursuing a clinical academic career

The two clinical academic trainees discussed their motivations behind pursuing a clinical academic career:

"Variety again, you have got such a varied week, which I really like. I really enjoy the research and that is probably lucky because I have come from a research background." (JRF4)

“I really enjoyed the study part and I quite liked fitting it all together. As it happens my research is now outside of my clinical field in a way, which I didn’t expect it to be.” (SRF2)

There was a recognition amongst the StRs that by continuing in a training pathway following initial specialisation, additional job security would be provided:

“It keeps your options open for the future as well [additional training], especially with the climate and that things keep chopping and changing all the time, at least there’s a bit more security for the future.” (SRF2)

Barriers to pursuing a clinical academic career

Overwhelmingly, several barriers to a clinical academic career were reported. Amongst those were the perceptions of what a clinical academic career would entail:

“From what I gauge, I think the academic work wherever you do an academic post is somewhat prescribed to you and I think if I have little say in it then I’d struggle with it.” (JRM3)

“In terms of, doing academia to be doing research in the long run, no, because I wouldn’t want the pressures of having to bring in a certain of income into the university and get things published.” (SRM3)

Previous negative research experiences and a lack of undergraduate research experience were barriers to pursuing a clinical academic career:

“The experience of going through ethical approval and jumping through all of those hoops I’ve found tough previously and I don’t know that it is necessarily my cup of tea.” (JRF1)

“I think as an undergraduate as well having more exposure to it [academia] [...] would be better, I think that is the way of introducing it. [...] the more you know about things, the more you are interested in them.” (JRF3)

Across all grades, a reason to not pursuing a clinical academic career was related to the diminishing effect this would have on clinical time:

"The entire reason why I went into orthodontics is because it's clinical. I do enjoy the academic aspects of the course but the academic part for me is the theory behind why I'm doing the clinical work and the bit of the job that I enjoy is the clinical work. I don't enjoy academic work for academic works sake. My least favourite part of anything is writing."

(JRM2)

"No. I don't enjoy it, research is something I've done because it is part of the course and I'm more of a clinical person, a hands-on person and I find research quite difficult so I wouldn't do it." (SRF2)

"I always wanted to be an NHS Consultant and I didn't really want the pressures of an academic role. My passion is treating patients, not writing research papers. When you take an academic role, you reduce the amount of clinical time and that is where my interest and my focus is." (CF1)

For some participants, the length of the clinical academic training pathway was a barrier to undertaking formal clinical academic training:

"I think I would like to go out into the world, rather than carry on training, I think I would have had enough by then." (DSM2)

"I didn't want to be a 60% trainee, 40% research or 50:50. For more logistical reasons more than anything else. I think it's harder to organise part time life. It would have extended training. My view is that if I want to do a PhD in the future then that option is still open if you still have contact with a medical or dental school." (SRM1)

In this study, all the junior StRs, except for those on an academic training pathway, were unsure how to pursue a clinical academic career:

"I definitely don't think there is a lot of awareness around it, like I didn't know there was going to be an academic trainee with us, I didn't even know that was a thing, so I think there is a lack of awareness." (JRF1)

There was greater awareness of the routes into academia amongst the senior StRs, with knowledge of the options available to undertake a PhD or training on a clinical teaching pathway:

“I think it’s a relatively new thing but education in the university side is becoming more important to them [...] which is becoming kind of a separate pathway to research academia. Almost in two separate pathways but I’m not really aware of that as a thing in Bristol.”
(SRM3)

One of the female NHS Consultants discussed how she had considered pursuing a clinical academic career but felt this was not a possibility for her due to the negative impact on achieving a work life balance:

“So, I thought about it, briefly, I think as a follow up after my SpR [historical term for speciality training] training. I think at the time I had a young family, for me, I felt split in too many ways, [...] trying to balance a young family on top of that, the time it would take out of my family time to complete a PhD for me, it was a lot extra work and I couldn’t quite see the benefits being enough.” (CF2)

This perception was contrasted with the experiences of a Professor in Orthodontics who despite having a family was able to pursue a career in clinical academia:

“I have a very understanding wife, who has supported me all the way through, who has never said why are you doing that. This is what I want to do and its fine. [...] I did a PhD [...] and we had two kids, but you make it work. If your partner is supportive it can work. If you can’t, I don’t know how you do it because there is an awful lot to do. The course is intense, [...] you do need an awful lot of support. You just take it for granted when it is happening.” (CM2)

Discussion

One of the striking findings of this study are the considerable number of conflicts that people experience when considering whether to pursue a clinical academic career (Figure 1). The conflicts reveal pragmatic concerns about the suitability and sustainability of the work culture of academia and the desire to achieve a work-life balance. As a result, the

shortage of clinical academics can be explained as a rational response to known workplace restrictions and stressors. These findings also highlight the value participants placed on the clinical aspect of orthodontics.

Figure 1: Diagrammatic representation of the conflicts associated with clinical academic careers

One of the significant findings in this study was that people enter orthodontic careers to become orthodontists, not with the primary aim of becoming clinical academics. It was surprising to find that the junior StRs, considering numerous round of national recruitment, had very little knowledge of the clinical academic training pathways. Usually qualitative research generates a rich and deep understanding into the personal experiences of individuals. However, it was clear that the junior StRs in this study found it difficult to discuss this career option at length, possibly owing to a lack of awareness of the career. Information related to clinical academic training pathways can be found in the HEE Clinical Academic Careers Framework: A framework for optimising clinical academic careers across healthcare professions, and on the National Institute for Health Research website.^{6,7} Awareness of clinical academic training pathways was slightly better at a senior StR level. However, it could be argued that this is far too late for people to become aware of this career option. The training pathway from an undergraduate dental student to an

orthodontic clinical academic, can take up to 17 years.¹⁸ Therefore, it is not surprising that the length of the clinical academic training pathway was a deterrent to becoming a clinical academic. Considering these findings, it is imperative that more needs to be done at an earlier stage of dental training *e.g.* undergraduate level, to inspire people to become clinical academics. It is recommended that universities ensure dental students are equipped with knowledge of the different clinical academic career options and are provided with positive research opportunities.

It was concerning that the dental students and most of the StRs were not considering pursuing a clinical academic career. Barriers to an academic career included the ability to achieve a work life balance, the bureaucracy associated with undertaking research and a lack of positive undergraduate research experiences. These findings are consistent with the literature, which highlights that less than 1% of United States senior dental students were considering a career in academia.¹⁹ A survey carried out in 1993 demonstrated that only 7% of UK orthodontic trainees were interested in pursuing an academic career.²⁰ Despite government initiatives to address the issues facing recruitment of clinical academics to posts, very little has changed in the career ambitions of orthodontic trainees with respect to clinical academia and it remains an unattractive career option.^{3,4} It could be hypothesised that the lack of interest in clinical academia is a consequence of the negative perceptions associated with an academic career. An academic career is often characterised by intense workloads, long working hours, and negative effects on work life balance and psychosocial wellbeing.^{21,22} These factors are not unique to dentistry or orthodontics but widespread amongst all areas of academia. The findings in this study demonstrate a concerning fate for the future of orthodontic clinical academia. Significant changes are urgently required to address the current shortages of clinical academics to posts. Academic institutions and organisations need to consider the structural changes that can be incorporated into careers that strive to improve longstanding academic workplace cultures *e.g.* flexible working practices. Academics should be provided with support and guidance on how to manage workloads and create boundaries between work and home life.²¹

Within this study more women than men were interested in pursuing a formal academic career. This finding would appear to be consistent with the literature regarding the overrepresentation of female dentists within junior positions of clinical academia.² At a

superficial level, initiatives such as the introduction of the Athena Swan Charter seems to have improved female representation in academia.¹² However, once women obtain these positions, they are at risk of vertical segregation and collectively struggle to break through the 'glass ceiling'.¹⁴ As previously described an academic career is associated with negative implications on work life balance and for some women finding this balance is unachievable.^{21,22,23} One of the female NHS Consultants in this study expressed a desire to pursue a clinical academic career but felt this was not possible due to family commitments. There is a perception in academia of the 'ideal worker' which is characterised by a person who is devoted to their career and available to work long hours and travel.²⁴ Therefore, the notion of a '9-5' job in academia does not exist, which often results in work 'spilling over' into the evening and weekends.²² These factors combined with longstanding stereotypes, regarding a mother's responsibility to maintain a consistent family life, leads to feelings of guilt both at work and at home. The realities of an academic career are sometimes viewed as an impossible burden that is not compatible with family life. To aid recruitment and retention in academia further sectoral changes are required to change workplace cultures, such as flexibility regarding maternity and family leave.^{21,22,23,24} In addition, career breaks often result in a reduction in research output and there should be a focus on the quality not quantity regarding published academic work.²⁵

Limitations

A limitation of the study was that participants were recruited through Bristol Dental Hospital and School. Therefore, the findings in this study may not be generalisable to the rest of the UK. A second limitation was the relatively small sample size and participant group. Recruitment of undergraduate dental students was particularly challenging. As most of the participants in this study were not undertaking or interested in pursuing a formal clinical academic career, their perceptions and experiences of academia were limited, which may have impacted upon generating rich and insightful data. Finally, all participants of the study knew each other and apart from the dental students knew the lead researcher. Despite the researchers ensuring confidentiality and asking the participants to respect the confidentiality of their colleagues it is possible that this could have affected participant responses.

Conclusion

This paper reports the findings of a qualitative study investigating the factors influencing a career in orthodontic clinical academia. The paper concludes:

- People are motivated towards pursuing a clinical academic career due to the increased research opportunities, career prospects and academic stimulation.
- Most of the participants in this study were not interested in pursuing a clinical academic career. This is concerning considering the current issues with recruitment and retention to orthodontic academia and the substantial roles clinical academics undertake.
- Research experiences (negative or absent) and the reduced clinical time are perceived as barriers to considering a clinical academia career.
- There was generalised lack of awareness of clinical academic training pathways amongst participants. It is imperative that there is more and improved signposting to information regarding clinical academic training pathways, with positive research opportunities incorporated into the early stages of training.
- Sectoral changes within institutions and organisations are required to change longstanding work-place cultures and perceptions regarding the 'ideal academic'. Academics should be coached into the ways of improving the boundaries between work and home life.
- There has been seldom research into the factors influencing career progression in dental clinical academia. Further research is required to help understand the issues facing recruitment and retention. Future work could include a longitudinal study that follows up the participants in this study over time and a nationwide qualitative study into the career motivations of clinical academic orthodontic StRs.

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