2012; 34: e476–e482 MEDICAL TEACHER

WEB PAPER

Attracting healthcare professionals to remote and rural medicine: Learning from doctors in training in the north of Scotland

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Abstract

Background: Research exploring the experiences of trainee doctors in remote and rural locations is scarce. Our aim was to gain an understanding of the experiences and perceptions of Foundation Programme (FP) doctors training in placements in remote and rural areas of the north of Scotland.

Methods: FP doctors training in remote and rural areas in Scotland took part in a qualitative study (focus groups and individual interviews) exploring their training experiences and career plans. To make sense of a potential multitude of factors, we selected social cognitive careers theory (SCCT) to underpin data collection and analysis.

Results: A total of 20 trainees participated. Using data-driven analysis, three themes relevant to the SCCT emerged. These are the educational experience (e.g., opportunities to develop skills, greater responsibility), geographical isolation factors (e.g., the impact of staff shortages, poor accommodation, travel) and personal factors (e.g., social isolation, attitudes towards the experience).

Conclusion: Many factors impact on trainees' experience of learning and living in remote and rural medicine (R&R) environments. These experiences can be very positive for some individuals but factors external to the educational environment influence the perception of the overall experience. SCCT helps clarify the interaction between individual and contextual factors in career decision making.

Introduction

There is a shortage of doctors in rural practice across the developed world (e.g., Tholl 2001; British Medical Association 2005; Australian Institute of Health and Welfare 2006). Research indicates that the professional and social isolation that accompanies a rural placement is viewed as unattractive, with maintenance of skills and professional development seen as particularly problematic (e.g., Richards et al. 2005). Furthermore, increased or perceived increased hours of work are unappealing in a society where lifestyle is as important as professional satisfaction (Dorsey et al. 2003; WONCA 2004; Van der Horst et al. 2010).

To date, most research into R&R recruitment and retention has been conducted in Australia, the United States and Canada (e.g., Cutchin et al. 1994; Williamson et al. 2003; James et al. 2005; Mayo & Mathews 2006; Worley et al. 2008; Jones et al. 2009; Worley & Murray 2011). Although the remote areas of Scotland and other UK regions are geographically less isolated than some of the remote communities in Australia and North America, they are similarly characterised by low population density and 29% of the Scottish population can be considered to be rural.

The same problems with recruitment and retention of healthcare professionals apply in Scotland as are found in other countries and there have been various governmental and healthcare initiatives to address staffing issues (Temple 2004). However, lack of desire to work in R&R areas of Scotland is apparent early on in medical training. National Health Service (NHS) Education for Scotland (NES) North of Scotland Deanery is one of 18 UK Deaneries and covers a geographical patch with some of the most sparsely populated areas of Scotland (for example, eight people per square kilometre in the Highlands). It is, for some programmes, consistently the least popular in the country for postgraduate medical training (data from NES Selection and Recruitment Reports). Similarly, medical students in the north of Scotland are substantially less likely to indicate a desire to work in this area on completion of training compared to students in the densely populated "central belt" of Scotland (Cleland et al. 2012). These data have obvious implications for the recruitment and retention of

Practice points

- Research exploring the experiences of trainee doctors in R&R locations is scarce.
- These locations offer trainees increased opportunities to participate in learning, but factors such as isolation and additional expenses negatively colour the overall experience.
- Some barriers could be addressed using practical measures but more research is required to identify individual differences which may be relevant to R&R recruitment and retention.

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ISSN 0142–159X print/ISSN 1466–187X online/12/070476–7 © 2012 Informa UK Ltd.
DOI: 10.3109/0142159X.2012.668635

trainee doctors in Scotland, and meeting the Scottish NHS's (NHS Scotland) needs in terms of delivering trained doctors to provide R&R healthcare.

Extrapolating from undergraduate and Australasian research, do doctors in Scotland not wish to train in these areas simply because of a lack of experience of rural living (e.g., Laven & Wilkinson 2003)? Are there reasons related to their undergraduate experience (e.g., Farmer et al. 2003; Williamson et al. 2003; Wilson & Cleland 2008); worries about additional costs due to distances to travel (Deuville & Grant 2011); perceived limits on career progression depending on which speciality pathway they wish to follow (Nichols et al. 2004); anxieties about social isolation (e.g., Deuville & Grant 2011) or fears about the quality of educational experience? Unfortunately, to the best of our knowledge, only one empirical study has looked at the R&R experiences of doctors who have just graduated. Nichols et al. (2004) surveyed over 100 doctors in their first 3 years following graduation who participated in a Rural and Remote Area Placement Programme (RRAPP) in Australia. Over 70% of respondents felt that RRAPP had positively influenced their career choice. However, a proportion of respondents identified barriers to training or working in rural practice, including having partners in urban-based training or employment.

In short, perceptions of rural placements have been extensively researched in undergraduate medical education and in general practice training. However, this research has lacked any clear conceptual framework, which makes it difficult to generalise results or systematically plan change. A programme of work using a theoretical approach is required to provide a more fundamental understanding of the issues to be addressed in recruiting and retaining doctors to remote and rural posts. Additionally, while there may be some similarities, findings from North America and Australia cannot necessarily be transferred to settings which differ in terms of geography as well as organization and delivery of healthcare. Furthermore, studies of postgraduate doctors in training who have not yet chosen their speciality training (ST) programme are scarce, and the perspective of this group has not been researched in the United Kingdom.

Our aim in this study was to gain an understanding of the experiences and perceptions of Foundation Programme (FP) doctors training in placements in remote and rural areas of the north of Scotland using a social cognitive careers theory (SCCT) perspective (Lent et al. 1994). The SCCT focuses on the idea that people, their behaviours and their environment interact and influence each other to facilitate, or limit, careers choice. Each learner brings values, knowledge, beliefs, goals, perceptions of personal efficacy, skills and all previous experience to the learning interaction. The environmental interaction reflects all aspects of the student learning environment (curriculum/hidden, faculty, resources). The behavioural aspects include learners' work, interactions with others and developing skills/knowledge. The SCCT postulates that people with interests in a particular career path are unlikely to pursue that path if they perceive barriers to entering or advancing that career. These barriers can be internal or external. For example, drawing from what is known already in the area of recruiting doctors to remote and rural medicine, an internal factor might be a lack of confidence about moving away from family and friends. An external factor may be lack of opportunity (or perceived lack of opportunity) to fully advance training in a particular speciality outwith centres of population density. Thus, we utilised this theoretical perspective in our qualitative study, in order to understand the experiences and perceptions of trainee (FP) doctors working in remote and rural areas.

Methods

The context

FP training covers the first 2 years following graduation. It aims to ensure that recently graduated doctors acquire a broad generic spectrum of clinical knowledge and skills to equip them to practise safely and to a high quality, while being ready to embark on later ST in hospital medicine or general practice. It is a 2-year programme of six successive 4-month placements over various clinical and geographical locations. Most programmes are predominantly hospital practice-based. Foundation training is followed by core and ST programmes.

Medical students apply for the FP via a national (UK-wide) allocation system, where they rank their preferences for specific programmes. Applicants are ranked by the information they provide on a standard application form (e.g., educational achievements, clinical knowledge and skills). These applications are scored on the basis of the applicant's first-choice programme (with some programmes more competitive than others). An application to one foundation school can be linked to that of another person to the same foundation school. Individuals can also be pre-allocated to a particular school on the basis of special circumstances (e.g., being the parent of a child under 18 years).

General practice speciality trainees (GPSTs) are appointed to a 3- or 4-year programme via a national selection and recruitment process. Core trainees in medicine speciality trainees in surgery were selected and recruited in a Scotland-wide process. Trainee medical staffing in the Scottish Rural General Hospitals on which this study focuses is a mixture of foundation, core and speciality trainees, the latter in early years of training.

At the time of collecting data for this paper, all eligible applicants to the UK FP were highly likely to be appointed to, but were not guaranteed, one of their preferred training places.

In the north of Scotland, more than 20 training locations (see below for further detail of the area and its healthcare organization) are used to provide community or hospital training experience. While the number of rotations does not vary per programme, where the trainee doctor carries out these rotations differs depending on the specific programme. Most programmes involve at least one 4-month period spent outside the base cities of either Aberdeen or Inverness, but some programmes involve several remote and/or rural attachments.

It is relevant to mention that doctors on the UK FP must work in compliance with the European Working Time Directive (EWTD) that limits time worked to 48 h per week. As a result of this regulation, young doctors in the United Kingdom now predominantly work shift patterns and systems.

The study was carried out in the north of Scotland (Aberdeenshire, Moray, Highlands and Islands), an area of approximately 970,000 people served by several health boards and nearly 200 general practices. Trainees are based in either the tertiary hospital in Aberdeen (not included in this study) or one of several district general hospitals (e.g., Inverness) or rural general hospitals (e.g., Wick, Oban).

Setting and participants

Data was collected from FP doctors in the NES, North of Scotland Deanery (Grampian, Highland, Orkney, Shetland and Western Islands), Scotland.

Data collection

In the absence of prior UK empirical work, we selected qualitative methodology (focus groups and face-to-face interviews) to explore influences on trainee doctors' locality of training and their plans for future training and employment, with particular reference to locality preference.

Sampling was purposive. We targeted doctors in training in the north of Scotland Deanery during 2009–2011. In order to capture as diverse a sample as possible, we recruited a range of FP doctors who had experience of working in different contexts (district general hospitals, general practices), in different specialities, in different places (e.g., remote mainland, islands) and for different lengths of time (e.g., several placements versus one rotation).

Invitations and information were sent by email outlining the study background and purpose, and the commitment required. Potential participants were told that they did not need to give a reason for declining to participate, and there would be no penalty for doing so.

Those indicating willingness to take part in the study were asked to provide details of their availability in terms of annual leave and working hours. Focus groups and interviews were planned on the basis of locality, and at a time when the majority of those willing to participate from that locality could attend. The number of focus groups and/or individual interviews was not preset: rather data collection stopped when saturation occurred.

We used the same semi-structured discussion guide for all focus groups and interviews. The questions in this guide were based on SCCT (Lent et al. 1994) and explored individual and environmental factors, barriers and facilitators, and interactions between factors. Participants were asked for their views on the positive and negative aspects of R&R placements; how these differed from working in large urban hospitals; whether their experiences (where applicable) were what they expected; any difficulties peripheral to the placement itself which influenced their experience; what could be improved and what plans they had for future training and working in terms of locality and speciality. Demographic details were collected from participants (gender, speciality/programme, stage of training).

Data analysis

The focus group discussions and interviews were taped, transcribed verbatim, anonymised and a framework approach was used for analysis (Ritchie & Spencer 1994). This analysis focused on the talk around factors influencing their attitudes towards R&R training and practice. We considered only the content (what participants said) of participants' talk – process-oriented themes (how they said it) are not analysed or presented in this paper. Two focus group transcripts were selected for initial analysis and analysed independently by two of the authors (JC and LW) using an inductive data-driven approach. Three of the authors (JC, LW and PJ) then met to discuss these initial independent analyses, and to compare, contrast and negotiate themes and sub-themes. This process led to the development of a full coding framework, which was then used by JC and LW to code all the transcripts, analyse the data and compare the data with SCCT (Lent et al. 1994) elements.

Ethics permission

The north of Scotland Research Ethics Committee provided full ethics permission for this study. Written, informed consent for data collection and publication of anonymous data was obtained from all participants.

Results

Participants

A total of 20 doctors in training took part in the project. In all, 13 participants were female, 7 were male. In all, 9 participants took part in one of the three focus groups, while the remaining 11 participants were interviewed face-to-face on an individual basis.

Themes

While we did not aim to determine the frequency with which specific difficulties were experienced, only topics discussed by several individuals are presented. Several themes emerged from the data. These can be categorised broadly into the educational experience, other work-related factors and personal factors. Quotes are provided as exemplars of each theme. Quotes are labelled by individual (e.g., FD01 = foundation doctor 1) or group (e.g., FG01 = focus group 1) to illustrate that the themes presented reflect broad themes, not just the views of a sub-section of the participants.

The educational experience

Participants with experience of training in R&R locations identified many positive education-related factors. These included more responsibility, better teaching and learning, being "known", and friendly and supportive colleagues.

The data indicated that working in a locality with a relatively small number of trainee doctors provided more opportunities to develop as a doctor than were perceived to be available in a "busy teaching hospital". Participants discussed how senior staff has different views and expectations as to what each doctor in training can, and should, do, in places where there are doctors in training at each grade (the "busy

teaching hospital"). This was linked to perceptions that every trainee needed to gain certain grade-specific types of experience. In the R&R settings there was less competition for clinical experience, and trainee doctors were given more responsibility and with more support, and also with encouragement to take more responsibility for clinical decision making.

> Because there was no middle grade, no registrar between SHOs and consultants, I got all the opportunities to do all the things that I would never get to do in a large hospital. (FD04)

This greater sense of responsibility could be quite anxiety-provoking initially, but most participants reported that it helped them develop and mature as doctors. The anxiety stemmed from being in a position to make decisions and take the personal and professional responsibility and the implications of any issues arising as a result, until the next interaction with a senior doctor, possibly the following day. The novelty of this situation was both challenging and stimulating and the development of clinical acumen and resultant confidence was seen as a very positive aspect of working in a R&R post.

> Much as I probably was a bit freaked out about it at the start, it was good in that you got more experience – things that would be handled by, say, a registrar [ST] in Aberdeen were very much . . .. The FY2's were expected to do singlehandedly . . . it made us a bit more confident by the end of the block. (FD06)

It was clear that having more responsibility was seen positively at least in part because the support and feedback received by trainee doctors in R&R localities was good. The feeling of being trusted by seniors coupled with the realisation of the clinical and professional implications of this permitted trainees to be more willing to take decisions.

> There was a lot of support available if you wanted it but at the same time you were also encouraged to stick your neck out. (FD01)

Support and feedback came mainly from consultants because there were, relatively speaking, few senior trainees. While new trainee doctors could find this intimidating, the overwhelming impression from the data was that consultants in R&R environments were very approachable, and this added to the quality of the learning experiences available in these environments.

> Because there are no middle grades you have to go straight to the consultants and they are alright with that: you can learn directly from the source. (FD04)

The scale of the working environment had another advantage: trainees got to know other team members and be known personally. They viewed this as facilitating communication and team working between the various staff members and groups, and it also helped trainees feel welcome and part of the local team, aiding continuity of care/knowledge of the patient population.

> Being in a smaller place with like one medical ward, you know everybody else so much better. You feel much more part of a team, you don't feel so lost. (FG01)

However, not all the job-related aspects of working in an R&R environment were positive. There were clear issues to do with general staff shortages because of difficulties recruiting healthcare professionals, including other doctors in training, to R&R environments. Rotas in Scottish rural general hospitals are, at best, tight and so if one trainee is absent or if a post is vacant, there are immediate consequent effects on other participants in the rota.

> It's my third job with a rota shortage. . . . I don't mind helping out, but it's getting to the stage where we're all just exhausted and fed up and it's really colouring our enjoyment of the place. (FG03)

General staff shortages were not just stressful in terms of putting pressure on those who were working. They also had a knock-on impact on other aspects of training. For example, inflexible and short-term rotas (only given a rota covering a few weeks at a time) made it very difficult for trainees to attend protected-time teaching, interviews for future posts and get leave for preparation for postgraduate medical examinations, and had an impact on leisure time as they could not plan ahead. These difficulties are exacerbated by the availability of travel to population centres (for many trainees, their home-base). For instance, flights to and from some R&R locations are infrequent and often affected by adverse weather, leading to delays and cancellations with resultant implications for the professional or social activities planned by trainees.

> But quite often they were so inflexible with my shifts, I either didn't get to the teaching, or had to drive down just because I couldn't fit in the flight time. There were times I was meant to have been scheduled off, but they were so short-staffed I just had to stay. (FD06)

It was clear that experience mattered: those who had positive experiences of R&R placements were more likely to consider R&R posts in the future. Equally, having a negative experience had the opposite effect.

> I enjoyed it. Made me want to do another rural year so am going to Shetland. (FD01)
>
> . . . After being in xxxx, I have no desire to ever do a remote and rural placement ever again. (FD09)

There was the view that higher level ST other than general practice or general medicine training was not available outside urban environments.

> There aren't training jobs in the rural hospitals, apart from GP training, which is not what I want to go into straightaway. So it's actually quite frustrating, because I've loved these two years, but there's nothing to go into afterwards, so that's why I'm going away. (FD04)

Those wishing to train in other specialities – radiology, surgery and public health were named, for example – believed not just that they could not train outside urban centres but that they would gain much more experience by training in areas of

population density where there were many hospitals, patients and colleagues.

Geographical isolation factors

Many trainees were put off further R&R placements because they involved travelling long distances between different placements, which required them to regularly move, often being away from their main home for long periods. This was viewed even more negatively if the doctor had a family or partner and is in accord with points noted above.

> There's the risk that you could be put kind of anywhere, people don't want to take that risk, so they apply for the south. In the centre of that you could live in one place and you could travel to five different hospitals. (FD08)

Many people also disliked the uncertainty about where exactly a R&R placement may take them, as the placements were spread between different locations such as Lerwick (Shetland), Fort William (West Highland) and Stornoway (Western Isles).

> Within one rotation I could have gone to Western Isles, Oban, Fort William or Shetland I think it was. There's quite a lot of difference between the four of them and you don't know what season you are going to go in. (FDP07)

Some participants interviewed also said that it can be very difficult to travel across these large geographical areas and between placements, especially in the winter time.

Not wishing to travel or move house was linked to incurring personal costs. Some participants felt that it was more expensive doing R&R placements, for a variety of reasons. They felt there were often hidden travelling costs (e.g., travelling up and down for interviews). Others felt aggrieved paying rent, Council (housing) Tax or a mortgage in Aberdeen on top of rent and Council Tax while on rotation, often for what many considered to be poor accommodation.

> Accommodation could be better. There's no Internet access at all, so we struggle to do our DOTS modules [compulsory online learning]. We don't even have a telly (television) that works . . . these home comforts are actually fairly important. (FG03)

A clearer, more transparent expenses system was also important to interviewees working remotely. Overall, being on a R&R rotation which might mean moving every 4 months was seen as an expensive, time-consuming "hassle".

Personal factors

Participant views of remote and rural posts were very diverse. For some, they were seen as offering high quality of life, particularly in terms of outdoors activities for those to whom this is appealing.

> I just made the most of it. I really enjoyed going from a big city to being in the outdoors, learned how to sail, went hiking lots, and just made the most of it. (FD03)

Smaller friendlier workplaces (see earlier) and communities were also an attraction but, conversely, some people felt socially isolated in R&R environments. This was often mentioned in combination with other themes such as the distance it takes to travel between sites and being away from friends and family and the lack of local amenities. There was also a lack of cultural diversity which was seen as particularly isolating by non-Scottish doctors.

> It's very far away socially. I expected to be quite socially isolated. (FD06)

Most interviewees took into account significant others when deciding where to train, or where to continue their training. Specific factors mentioned were the location of a partner's job and not wishing to uproot school-aged children. Generally, people wanted posts to be near their family and friends.

> I've got family, I've got weans and nephews that are babies you know that I kind of like to see. (FD07)
>
> You can't whack a four year old out of school that easily and uproot him to Shetland . . . a lot of people who have children, don't want to work here for that reason. (FG02)

Interestingly, if their partner was also a doctor in training, individuals were quite happy to be based somewhere R&R, as long as their partner was based in the same place. However, it was clear from the data that many people applied for foundation training in the north of Scotland because they needed, or wanted, to stay in this region for personal reasons. However, they did not want to be sent on rotations outside Aberdeen and were often very unhappy if they obtained a place on an FP which had several remote rotations.

> You're not guaranteed one in Aberdeen; you have to kind of take what you get given. I think like, yes, if it was like just Aberdeen, then there maybe wouldn't be such a big problem, but because there's the risk that you could be put kind of anywhere, people don't want to take that risk, so they apply for the south. In the centre of that you could live in one place and you could travel to . . . even if you go to five different hospitals, you've not got to move house. (FG01)

Furthermore, some individuals had not wished to carry out the FP in the north of Scotland, but this is what they had been allocated, possibly on the basis of low ranking in the application process.

Discussion

This is the first UK study exploring the views and experiences of remote and rural practice from doctors in training in R&R environments in Scotland. The data highlighted apparent conflicts. Many of the doctors who participated in this study enjoyed "flying solo", taking more responsibility for patients and decisions than might have been the case in

urban medical environments, but were in a position (e.g., being "in training") where they were at pains to reassure others, and perhaps themselves, that they were being closely supervised. Furthermore, they were willing, or had a sense of duty, to stay late and work in excess of rostered hours. This brought them into conflict with what is expected from a trainee (e.g., compliance with the 48-h week) versus what is actually happening. There seemed to be a conflict between what is enjoyable and stimulating professionally and how this often positive experience differs from expectations and how they are told to behave, at least in part, as trainee doctors.

However, other environmental factors negatively coloured trainees' often very positive educational experiences, and hence their overall R&R experience. Isolation, additional expenses and poor accommodation were frequently discussed. Thus, it was not just the educational experience itself that mattered but the quality of the R&R experience as a whole which influenced career decision making. Some participants just did not want to be on a FP which involved non-urban rotations but they had no choice due to the nature of the allocation system. Some made the best of it, and found to their surprise that the whole experience was enjoyable, for others it merely confirmed a dislike of remote and rural working – although more often than not what they disliked was the isolation and being away from friends and family rather than the educational or professional practice experience.

Our identification of issues to do with isolation and additional costs to the individual reflect those found in other studies (e.g., Farmer et al. 2003; Deuville & Grant 2011). These issues are compounded by the poor quality of what are seen to be essential communication methods (e.g., band width for Internet connection, Wi-Fi; see also Maley et al. 2006, 2009), which may be driven by concern that social relationships will be damaged by distance. The wish for a "controllable lifestyle" (Dorsey et al. 2003; Van der Horst et al. 2010) and the "pull" to urban living (Jones et al. 2009) are very relevant here.

Implications

The data also illustrate the challenge of making R&R practice attractive. There is a "catch 22" situation where shortage of staff can impact negatively on the overall educational experience. Coupled with logistical, financial and isolation issues this discourages young doctors who may already have an interest in R&R practice (e.g., those who did preference programmes incorporating this training when they applied for the FP) from continuing their training in R&R environments. Thus, despite the fact that such issues are similarly prevalent in urban settings, problems with recruitment and retention of staff are perpetuated.

What are the practical implications of this study for recruitment and retention to R&R placements in Scotland? In keeping with previous research from other countries, financial assistance should perhaps be provided for learners on R&R placements (Maley et al. 2009). Rostering clinical duties to protect sufficient time to both attend and safely travel to and from teaching is essential. Positive R&R experiences may also be supported by investment in hospital-linked accommodation (e.g., providing pleasant surroundings and broadband Internet access including Wi-Fi) and subsidising the cost of accommodation for young doctors. Allocating couples simultaneously to the same location may also lead to enhanced R&R experiences. However, providing practical supports addressed only part of the problem, as it is clear that the overall experience of an R&R placement depends on a multitude of factors – the educational experience itself, and wider environmental factors, but also individual factors. For example, those who grasped the full range of opportunities available, gained hugely and had positive attitudes towards R&R medicine.

Further research

The qualitative research described has identified relevant issues and concepts in terms of factors important to young doctors training in the north of Scotland. Compared with previous work, our methodological approach added value in that it facilitated a richer exploration of the issues to be addressed in recruiting and retaining doctors to remote and rural post. While practical measures to address these issues will no doubt be welcomed, it is important to explore further some of the themes identified that mapped onto SCCT. For example, it may be that a certain "profile" of a future R&R doctor can be identified, which is related not just to geographical origin (WONCA 2004) or exposure as an undergraduate (e.g., Williamson et al. 2003; Wilson & Cleland 2008) but to specific behaviour traits, such as altruism, or other intrinsic motivation factors (WHO 2010).

We suggest that SCCT may serve as a valuable framework for understanding career decisions in terms of not just R&R medicine but medical careers generally, as well as providing basis for developing strategies that support medical students and young doctors to achieve their potential in a very changing external environment.

Limitations

This study has some strengths and limitations. The study took place with a specific population in one geographical area. The research team brought a range of expertise to the work. Those who chose to take part in the study may have done so because of a particular interest in the topic. Saturation was reached in terms of the themes and sub-themes identified in data collection. One potential weakness of this study is that the focus groups were not facilitated by the same people. Some facilitators chose a more narrative approach than others in that they asked for stories. Others seemed to drive the conversations more towards attitudes about the subject. However, this range of facilitator styles resulted in the data being a mix of both personal incident narratives and attitudes and opinions, which provides a rich picture of views and experiences. We looked for cases which did not concur with the emerging theory, but there were few differences in the responses given by different groups of young doctors suggesting that data collection may have been enriched by comparing the views of the FP doctors in this study with, for example, those from another geographical area.

Conclusions

The experience of training in a R&R environment is different from the norm, and once young doctors adjust to this, the learning environment can be very positive. However, factors external to the educational experience are very influential in the perception of the R&R experience as a whole, and often act as barriers to considering a R&R career. The SCCT helps clarify the interaction between individuals' belief systems and contextual factors in young doctors' career decision making and related behaviour.

Acknowledgements

Our thanks to Mari Todd, Fiona French and Judy Wakeling, NES, for their help with data collection. Our thanks also to Dr Murray Lough, NES, for supporting this research, and to the doctors in training who took part in the study. This work was funded by a grant from the Higher Education Authority (HEA) Subject Centre for Medical, Dental and Veterinary Medicine (MEDEV).

Declaration of interest: The data analysis was carried out by JC and LW who have no formal links with NHS Education for Scotland and no interest in the data other than from the perspective of adding to the existing body of knowledge on this topic.

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JC and PJ had the original idea for the study. JC wrote the grant application for funding and this was reviewed by PJ and GN. JC and PJ were involved in the data collection. JC and LW carried out the data analysis, with input from PJ. JC prepared the initial draft of this paper and all authors commented on the manuscript.

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