Views of academic dentists about careers in academic dentistry in the United Kingdom.

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The aim of this paper is to report the views of academic dentists about careers in academic dentistry assessed by method of a postal questionnaire survey. The subjects of the survey were dentists in academic posts in the United Kingdom.

The incentives in pursuing an academic career which respondents rated most highly were the opportunity to teach and the variety of work in an academic career. The greatest disincentives were competing pressures from service work, teaching and research, and the difficulty of getting research grants. Many would like to spend more time on research and less on service work and teaching. The length of time required for training, and the quality of training, was a concern, particularly for junior academics. Most respondents rated the enjoyment of their job highly but scored much lower on satisfaction with the time their job left for domestic and leisure activities. By contrast with academic medicine, in academic dentistry there is typically greater emphasis on teaching and less on research.

In conclusion, the balance of activities in academic posts, particularly between service work, teaching and research, needs to be regularly reviewed. The development of a more structured training programme for junior academics, which does not disadvantage academic dentists when compared with their NHS colleagues, may be required.

There is current interest in the United Kingdom in the possibility that academic careers within medicine and dentistry are becoming unattractive. In 1995 the House of Lords Select Committee on Science and Technology expressed disquiet about this,¹ and in 1996 the Committee of Vice Chancellors and Principals invited an independent Task Force, chaired by Sir Rex Richards, to investigate these concerns.² As part of its work, the Task Force decided

¹UK Medical Careers Research Group, Unit of Health-care Epidemiology, Institute of Health Sciences, University of Oxford, Oxford. OX3 7LF ²Merton College, Oxford. OX1 4JD. ³St Hilda's College, Oxford. OX4. Correspondence to M Goldacre. REFEREED PAPER received 12.03.99; accepted 15.09.99 © British Dental Journal 2000; **188**: 154–159 to seek the views of doctors and dentists in academic posts. Members of the Task Force invited all medical and dental schools in the United Kingdom to participate in focus group discussions, to obtain participants' views on academic careers. Transcript samples of these sessions were analysed to identify the main themes raised by the discussants.² Because the doctors and dentists who participate in focus group discussions may not be typical of their colleagues, we decided to seek views more systematically on the main themes raised. The themes raised by discussants in the focus groups were therefore developed as statements which were incorporated into a postal questionnaire. We report the results of our national survey of academic dentists here.

In brief

- A national Task Force has recently reported on concerns that careers in academic medicine and dentistry are becoming unattractive in the United Kingdom.
- As background to its work, we undertook a survey of the views of academic dentists about their work.
- Most respondents rated the enjoyment of their job highly, but many would like to spend more time on research and less on service work and teaching.
- By contrast with academic medicine, there is typically greater emphasis on teaching and less on research in dentistry.
- The balance of activity in academic posts in dentistry needs to be regularly reviewed.

Method

Content of the Questionnaire

The topics covered in the questionnaire included pressures of work, training opportunities, and incentives and disincentives in pursuing a career in academic dentistry. Respondents were asked to indicate the extent to which they agreed or disagreed with each of a series of statements on a fivepoint scale ranging from strong agreement to strong disagreement. We also asked respondents to estimate their allocation of time at work based on the number of hours they worked in particular activities during an average week; to specify the number of hours they would like to spend on each activity; to rate levels of enjoyment of their job; and to rate levels of satisfaction with their time available for domestic and leisure activities. Questions used were closed response format questions, with the exception of the question on hours worked, which was a restricted response open format question. The questionnaire sought demographic information (e.g. sex, age, year of qualification) and information about current employment (e.g. specialty within dental surgery, job title, full-time or part-time, funding source). The questionnaire was

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Table 1	Table 1 Percentage of respondents in each specialty						
Specialty		Male (n=284)	Female (n=88)	Total (N=372)			
Dental Pul	blic Health	3.5	12.5	5.6			
Oral and	Maxillofacial Surgery	10.6 5.7		9.4			
Oral Medicine		6.3	9.1	7.0			
Orthodontics		8.1	6.8	7.8			
Paediatric Dentistry		5.6	20.5	9.1			
Restorative Dentistry		49.3	31.8	45.2			
Other		16.5	13.6	15.9			
Total		100.0	100.0	100.0			

piloted among a sample of academic dentists in the Sheffield region and revised in the light of piloting.

Population

The British Dental Association provided us with a list of dentists in its membership who worked in academic departments in the United Kingdom in 1997. Our original intention was to survey dentists who had not vet reached consultant-equivalent level (to parallel our survey of doctors in medical academic posts with specialist registrar status²). However, career details available to us were not sufficient to do this. We excluded dentists designated on the list as professors or heads of departments from our mailing but included all others. This gave us 519 dentists to whom we sent a questionnaire, with a covering letter from Sir Rex Richards. A follow-up questionnaire and letter was sent to nonrespondents. In fact, as our responses revealed, our mailing included dentists at all levels of seniority, including some professors and heads of departments. Detailed analysis showed that there were generally few differences in patterns of responses between these and other

dentists in consultant-status posts. Accordingly we have included data from all respondents in this paper, specifying such differences as were found.

Analysis

Comparisons between groups of respondents were made using chi-square tests where responses to questions or statements were within set categories (e.g. strongly agree, agree, and so on). For the questions on enjoyment of the job and satisfaction with time available for leisure, the KruskalWallis non-parametric test was used to compare mean scores.

Results

Response Rates

390 of the 519 dentists replied (75.1%). Of these, 13 chose not to participate, which gave a usable response rate of 72.6% (377/519). 287 respondents were men (76%) and 90 (24%) women. 323 were employed full time (86%). 29 of the 287 men described themselves as working part-time (10%), as did 21 of the 90 women (23%; $\chi^2_{(1)}$, comparing men and women=10.1, p<0.01).

 Table 2
 Allocation of time at work: actual and preferred numbers of hours worked per week, respondents working full-time

Activity (hours)	Senior D N=185 Mean	entists Median	Juniors v N=33 Mean	with NTN Median	Juniors v N=19 Mean	without NTN Median	
Service actual preferred	17.9 11.8	16 10	20.2 13.9	17 11	10.4 8.4	6 7	
Teaching actual preferred	16.7 12.2	15 12	14.1 9.5	14 9	20.2 13.7	20 12	
Learning actual preferred	4.3 6.4	3 5	5.3 7.6	5 7	4.4 7.6	1 5	
Research actual preferred	12.6 16.1	10 15	13.0 16.9	12 16	15.8 19.9	13 20	
Total actual preferred	51.6 46.5	50 45	52.6 47.9	50 45	50.7 49.6	52 50	

Total N excludes respondents who did not complete bith 'actual' and 'preferred' hours questions for each category of activity; and only includes respondents who indicated they were working full time

Employment Profile

Sixty six and a half per cent of respondents specified that their position was 'wholly or mainly academic', 27.1% specified half academic and half service, and 6.4% specified that their roles were mainly service but had an academic component. The specialties reported by the respondents are shown in Table 1 (excluding 5 repondents who did not report a specialty). Almost half of the men and a third of the women were in restorative dentistry.

The respondents were asked for their job titles and, for junior dentists, whether they had a National Training Number (NTN). Initially we analysed the responses comparing different job titles without grouping them, with individual titles including professor, reader, senior lecturer, lecturer and so on. Differences in responses between the various categories of dentists with consultant status

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Percentage of respondents agreeing or disagreeing with statements about work, training, research and academic careers: all respondents Table 3 Total N Strongly Neither Strongly Disagree Statement Agree disagree (=100%)agree agree nor disagree % % % % 5 293 It is very difficult to combine 54 5 seniors 36 < 1 9 81 47 the competing demands of iuniors 37 6 374 my job . Total 52 36 6 5 1 292 Dentists in clinical academic posts 5 55 7 32 seniors 51 80 tend to be under greater pressure than 13 Δ juniors 31 55 372 1 their colleagues in service posts Total 32 8 Δ 1 289* When under pressure from competing 64 29 3 3 seniors 80* demands, the research aspect of my 57 25 10 4 juniors 4 3 2 369 job is usually the first to suffer 62 28 5 Total 4 289 Training in clinical academic posts 19 17 16 seniors 44 should be more tightly structured juniors 42 37 12 8 1 81 24 14 4 370 . Total 42 16 292* 3 All dentists should complete some 34 11 12 seniors 40 81* research at some stage of their career 13 20 25 6 juniors 36 373 . Total 29 39 13 15 4 8 10 71‡ If I had the choice again, I would professors/heads 48 28 6 11 218± 21 choose to be in an academic other seniors 25 31 12 45 27 11 16 2 dental post juniors with 44 NTN 9 34 21 21 17 juniors without 32 NTN 10 368 29 17 Total 32 12

Totals in final column vary because some dentists did not provide a view on some statements

a difference between professors/heads of departments and other seniors (data only shown separately where differences were significant), p<0,01

were fairly small. For the purpose of this paper, we therefore grouped respondents into three groups: junior dentists with National Training Numbers (NTNs), junior dentists without NTNs, and senior dentists. In some tables, for items where responses from the first two groups were similar, the two are combined as a single group of juniors.

There were 296 respondents in nontraining grade posts as lecturers, senior lecturers, readers or professors, of whom 42 described themselves as part-time or other than full-time workers. There were 46 junior dentists in training with NTNs, of whom two were part-time. There were 35 junior dentists without NTNs, of whom 10 were part-time.

Number of hours worked and the number of hours preferred

The predominant activities of respondents were service work and teaching (Table 2), which each accounted for about one-third of working time. Research accounted for about a quarter. The differences between grades in these respects were fairly small, except that juniors without NTNs did less service work and more teaching than the other grades. Detailed analysis of the senior dentists showed that the professors and heads of department undertook a little more research and service work, and a little less teaching, than other senior dentists. Typically, dentists in all grades reported that they would like to work slightly fewer hours overall (Table 2), that they would like to spend less time on service work and teaching, and that they would like to spend more time on research and personal study.

Views on work, training and research (Table 3)

Most respondents agreed that, when under pressure from competing demands, the research aspect of their job is usually the first to suffer (91% agreed); that it is difficult to combine the competing demands of their job (88% agreed); and that, in their view, dentists in clinical academic posts are under greater pressure than service colleagues (87% agreed).

The majority of respondents agreed that training in clinical academic posts should be more tightly structured (Table 3). This view was more strongly held by junior than by senior dentists. Only 61% of the senior dentists strongly agreed or agreed that they would choose an academic dentistry post, given the choice again. Professors/heads of departments were more likely to agree than other senior dentists (Table 3; $\chi^2_{(2)}$, comparing the two groups=10.2, p<0.01).

Senior dentists were more likely than juniors to agree that all dentists should do research at some stage in their career (74% and 49%, respectively, agreed or strongly agreed: $\chi^2_{(2)} = 18.0$, p<0.01).

Junior dentists' views on training (Table 4) About one third of all juniors said that they frequently had to stand in for a senior academic and about half of those with Additional Duty Hours (ADHs) said that they frequently exceeded these (Table 4). A majority of juniors were dissatisfied - about one-third very dissatisfied - with the training programme designed to help them obtain their Certificate of Completion of Specialist Training (CCST; Table 4). Twothirds were concerned about the length of their training. Juniors without NTNs were more likely to disagree that they were satisfied with training to enable them to obtain their CCST (83% disagreed or strongly disagreed) than juniors with NTNs (34%; $\chi^2_{(2)}$, comparing juniors with and without NTNs=17.7, p<0.01). A greater proportion of juniors without NTNs than those with also strongly agreed that they were concerned about the longer period required for training. Only 32% of juniors agreed that

Table 4 Percentage of responde training: junior dentists	Percentage of respondents agreeing or disagreeing with statements about work and training: junior dentists only							
Statement	Strongly agree %	Agree %	Neither agree nor disagree %	Disagree %	Strongly disagree %	Total N (=100%)		
My service sessions are often exceeded because I have to stand in for a senior academic	17	23	26	27	7	77		
I frequently exceed my contracted number of Additional Duty Hours (ADH's)	34	15	39	7	5	41		
I am satisfied with the training programme devised to enable me to obtain CCST: juniors with NTN juniors without NTN Total	16 0 10	34 10 24	16 6 12	18 37 26	16 47 28	44* 30* 74		
I am concerned about the longer period of training I shall require than my NHS colleagues	28	39	21	12	0	80		
The training I am receiving for the research aspect of my job is good	8	24	25	20	23	79		
A career in academic dentistry is my long term goal: juniors with NTN	52	37	9	2	0	46*		
juniors without NTN Total	34 44	23 31	20 14	9 5	14 6	35* 81		

Totals in final column vary because some dentists did not provide a view on some statements

*differences between juniors without NTN and juniors with NTN (data shown separately where differences were significant), p<0.01.

training for the research side of their job was good.

When questioned about their future careers, 48% of junior dentists planned a wholly or mainly academic career, 25% intended a half academic/half service career, 2% wished to enter a predominantly service career in the NHS and 16% were undecided. Nine percent of respondents indicated 'other' intended careers which included entering private dental practice. A higher percentage of juniors with NTNs were intending either a mainly academic career or half academic/half service career (78%) compared with juniors without an NTN (65%).

Job Satisfaction & Leisure Time

The majority of respondents indicated they were enjoying their current position (Fig. 1): 71% rated enjoyment at 6 or greater (on a scale where 0=not enjoying it at all, 10=enjoying it greatly). The mean rating was 6.5. However, when asked how satisfied they were with the amount of time their current position afforded them for domestic and leisure activities (Fig. 2), 69% of respondents gave scores of

Fig. 1 Respondents' ratings of enjoyment of job. Green, senior dentists; red, junior dentists 4 or less (where 0=not at all satisfied, 10=extremely satisfied), with a mean rating of 3.4. Detailed analysis showed that there were no major differences between holders of different posts in their rating of enjoyment but there were differences in rating of satisfaction with leisure time afforded by work. The lowest mean rating for the latter was given by professors and heads of departments (2.8) and the highest by juniors without an NTN (4.4: Kruskal-Wallis chi-square=9.8, p=0.02). Parttime academic dentists were more satisfied than full-timers with leisure time available (Kruskal-Wallis chi-square=16.4, p<0.01).

Incentives and Disincentives in Pursuing a Career in Academic Dentistry

As shown in Table 5, the stimulation of



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teaching was rated as the strongest single incentive in pursuing a career in academic dentistry, followed by the opportunity 'to have a more varied and stimulating career than that of a full-time NHS dental consultant'. The challenge of research was rated as a strong incentive by 54% of respondents. In contrast, only about 30% of respondents regarded the opportunity to travel, and recognition by peers for achievements in research, as strong incentives.

Competing pressures of service work, teaching and research, and pressures of being assessed in each of the three areas, were seen as strong disincentives by the majority of respondents, as was the difficulty in obtaining research grants (Table 6). The majority did not regard 'less favourable conditions of employment when compared with NHS colleagues' and 'limited opportunities for private practice' as strong disincentives.

Discussion

Our sampling frame comprised academic dentists who were members of the British Dental Association (BDA). No reliable figures are available on the percentage of dentists who are members of the BDA in different branches of dentistry, or indeed overall. We compared lists of academic staff from dental school entries in the British Medical Directory (though not all are dentists) with the British Dental Register (which does not specify the dentist's job). As an approximation we believe that at least 80% of academic dentists are members of the BDA with only small differences between different dental schools. These comparisons probably exclude some dentists below consultant-equivalent level (because they are unlikely to appear in lists of permanent academic staff in the Medical Register): membership of the BDA in this group may be lower. We think that it is unlikely that BDA membership is a source of much bias; but the possibility remains that dentists in our sampling frame may not Fig. 2 Respondents' ratings of satisfaction with time afforded by work for domestic and leisure activities. Green, senior dentists; red, junior dentists

be wholly representative of all academic dentists.

Most respondents at all levels of seniority indicated that they enjoyed their job. The majority of junior dentists indicated that they intended pursuing academic dentistry as a long-term career. Concerns were expressed, however, about hours of work and the pressures of the job. The latter included pressure of being assessed on several areas of work, difficulties resulting from competing demands within their job, and research suffering as a consequence of competing demands. The data on working hours were self-reported estimates and, no doubt, are not wholly reliable. However, some useful general patterns emerge in the relative distribution of work activities. Many respondents would prefer slightly shorter hours and would prefer to spend more time on research and less time on teaching. Despite views on reducing teaching time, and problems with competing demands for time, teaching and the variety of work

Table 5	Incentives when considering a career in academic dentistry						
Statement		Strong incentive %	Some incentive %	No incentive	Total N (=100%) %		
The stimulation of teaching students and young dentists		70	28	2	373		
The opportunity to have a more varied and stimulating career than that of a full time NHS dental consultant		65	27	7	363		
The intellectual environment in an academic unit		57	38	5	370		
The challenge of research		54	42	4	370		
The opportunity to make discoveries which may ultimately be of benefit to patients		51	46	3	367		
The stimulation of supervising research teams: seniors juniors Total		37 26 34	40 61 45	23 13 21	279* 70* 349		
The opportunity to travel to overseas meetings and to meet with foreign colleagues		30	48	22	356		
Recognition by peers for achievements in research:		29	52	19	356		

Totals in final column vary because some dentists did not provide a view on some statements.

* difference between senior and junior dentists (data only shown separately where differences were significant), p<0.01.

Table 6 Disincentives when considering a career in academic dentistry						
Statement		Strong disincentive %	Some disincentive %	No disincentive %	Total N (=100%)	
The pressur of clinical	es of being assessed on all three service, research and teaching	59	33	8	368	
Competing and resea	pressures from service, teaching rch	58	37	5	369	
The difficult	y of obtaining research grants	57	37	6	355	
The small number of senior academic appointments available: seniors juniors Total		41 58 45	42 30 40	17 12 15	285* 77* 362	
The likelihood of a significantly longer training period to CCST when compared with NHS colleagues		43	43	14	329	
Any uncertainty regarding pay parity with the NHS		41	44	15	361	
Less favourable conditions of employment on appointment when compared with NHS colleagues (in respects other than salary)		29	47	24	339	
The limited sen juni Toto	opportunities for private practice: iors iors al	18 32 21	31 26 30	51 42 49	269* 74* 343	
Few opport Duty Hours	unities for Additional (ADH's)	11	24	65	253	

Totals in final column vary because some dentistsdid not provide a view on some statements. * difference between senior and junior dentists (data only shown separately where differences were significant), p<0.02.

in an academic career were also regarded as the strongest incentives in pursuing an academic career (Table 5). Taken together, these findings suggest that the hours worked in academic careers, and the balance between activities, rather than the work itself, are the main concerns. Problems with training for academic dentistry were also apparent, including the length of training required to complete specialist training, the perceived need for more structure to training (which was particularly expressed by the junior dentists), and junior dentists' dissatisfaction with their training programmes.

We have reported elsewhere the findings of our survey of junior doctors in academic posts below the level of the consultant grade.³ Their responses can be compared with those reported here from the junior dentists. The junior dentists reported working an average of just over 50 hours per week (Table 2); academic specialist registrars in medicine without fellowships reported an average of 59 hours and Medical Research Council and Wellcome Foundation training fellows reported an average of 64 hours per week.³ Compared with the academic dentists, the doctors spent much more time on research (25 hours a week reported by the doctors without fellowship and 41 hours a week reported by the fellows) and much less time on teaching (typically about four hours per week). Among the junior doctors the modal value for job enjoyment was 8, compared with 7 for junior dentists. Like the dentists, a majority of junior doctors (65%) agreed that their training should be more tightly structured than it currently is. Many of the doctors were concerned, like the dentists, that they would take longer than their NHS colleagues to train to consultant status. A higher percentage of junior doctors (83%) than junior dentists (63%) said that, given the choice again, they would choose an academic post.

There were differences between the doctors and dentists in their rating of incentives in pursuing an academic career. The strongest incentive rated by the doctors was the challenge of research: 76% rated this as a strong incentive compared with 54% of dentists. Only 34% of the doctors rated the stimulation of teaching as a strong incentive compared with 70% of dentists. Thus, both judged by work profile and the rating of incentives, it is evident that, typically, teaching has a

more dominant role, and research a lesser role, in academic dentistry than in academic medicine. However, while 54% of dentists rated the challenge of research as a strong incentive, many were dissatisfied with their time available for research and wished to spend more time on research activities. Comparing doctors and dentists, disincentives were broadly similar. Uncertainty about pay parity with the NHS was rated a potential disincentive by both; but limited opportunities for private practice was not generally regarded as a strong disincentive by either.

Overall, the academic dentists surveyed appeared to have a broadly favourable opinion of their chosen career, but had concerns over practical and organisational features such as time allocation, dealing with competing demands, and inadequate training. It is also disquieting that only 61% of the senior dental academics, and only 56% of those below the level of professor or head of department, agreed that, given the choice again, they would choose an academic dentistry post. Improvements in training in research, improvements in the structuring of training programmes, and in the distribution of duties within academic work, should help to make careers in academic dentistry more attractive to academicallyminded young dentists.

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