

Survey of research activity, training needs, departmental support, and career intentions of junior academic general practitioners

HELEN E LESTER

YVONNE H CARTER

DAWOOD DASSU

F D RICHARD HOBBS

SUMMARY

Background. Recent changes in the organization of the National Health Service have created new roles and responsibilities for academic general practice. Previous work on the constraints and opportunities of a career in academic general practice is largely anecdotal and is often based on the views of more senior members of the profession.

Aim. To survey the research activity, perceived level of training, support needs, and career intentions of junior academic general practitioners (GPs).

Method. A postal, validated, semistructured questionnaire was sent to the 121 eligible junior academic GPs in the academic departments of general practice in the United Kingdom and Dublin. Main outcome measures were 'research activity score', as measured by publications in peer-reviewed journals and involvement in research projects, 'training score' devised from 13 skills required for both research and teaching, and perceived level of departmental support assessed by six different support mechanisms.

Results. Response rate was 89% (n = 108). Forty-six responders (43%) had no publications. Twenty-five responders (23%) had no principal project. Thirty-nine responders (37%) had a mentor. Research activity appeared to be dependent on sex, having a predominantly research role rather than a full-time teaching role, and a positive perception of academic training ($P < 0.05$). Increasing departmental 'support scores' and length of time in the department were both significantly associated with more positive perceptions of academic training ($P < 0.05$). Only 29 (27%) responders wanted to progress to senior positions within academic general practice.

Conclusion. Training and departmental support and guidance available to junior academics in primary care are perceived as variable and often inadequate. If academic general practice is to thrive, improved academic training is required, such as taught Master's degrees, supervised personal projects or 'apprenticeship' as a co-investigator, and improved methods of departmental support.

Keywords: questionnaire survey; research; training; career intentions; academic general practice.

Introduction

RESEARCH in general practice has a long and honourable history from Smellie in the early eighteenth century through Jenner and Mackenzie to Pickles and Huygen in the twentieth century.^{1,2} However, most general practitioners (GPs) regard research as a minority option³ and, for the few with research aspirations, there remain limited opportunities to pursue a career in academic general practice.⁴ Moreover, the recent changes in government policy, resulting in a shift of emphasis and patient care towards a 'primary care-led' National Health Service,⁵ underline the need to strengthen the academic base of general practice.

Previous reports on the constraints and opportunities of a career in academic general practice have been largely anecdotal and often based on the views of more senior members of the profession.^{6,11} No data exist on the perceptions of an academic career structure in general practice among the doctors occupying the junior career. The aim of this research was, therefore, to survey the research activity, perceived level of training, support needs, and career intentions of junior academic GPs.

Method

In January 1996, a postal questionnaire together with a reply-paid envelope was sent to all eligible responders in the 29 undergraduate and three postgraduate departments of general practice in the United Kingdom (UK) and Dublin. Practitioners were eligible if they were medically qualified, had entered academic general practice for the first time since 1990, and were a lecturer, research fellow, or equivalent career grade based within a department of general practice. Honorary post holders were excluded.

The 1995 Association of University Departments of General Practice (AUDGP) list of members was used to identify the cohort. To validate the identified sample and to check the comprehensiveness of the AUDGP list, all departments were contacted by telephone by HL on two separate occasions. In a pilot study in October 1995 within the five undergraduate departments of general practice in the south-west AUDGP region (SWAUDGP), 30 of the 31 potential responders (97%) returned their questionnaires, validating the practicality of this method of recruitment.

Our analysis focuses on two main academic characteristics: the personal perceptions of prior research and teacher training (the training score), and the levels of personal research activity (the research activity score). The 'training score' was devised by modifying a questionnaire tool used in a previous study on the development of research skills in academic departments of general practice (A Avery, personal communication). That questionnaire scored perceptions of research training received in eight skill areas and collected additional open text responses on unlisted research skills. The 'training score' in this study incorporated six of the original research skills plus the five most frequently mentioned additional skills in the Avery questionnaire. Two of

H E Lester, MB, BCH, MRCP, RCGP, Midland Faculty clinical research fellow, Department of General Practice, The Medical School, Birmingham. Y H Carter, BSc, MBBS, MD, FRCGP, professor, Department of General Practice and Primary Care, St Bartholomew's and the Royal London School of Medicine and Dentistry at Queen Mary and Westfield College, London. D Dassu, MSc, statistician, and R Hobbs, MB, ChB, FRCGP, professor, Department of General Practice, The Medical School, Birmingham. Submitted: 5 March 1997; accepted: 15 December 1997.

© British Journal of General Practice, 1998, 48, 1322-1326.

the original questions (interview techniques and project management) were not used because they were felt to be less relevant to the aims of this research. Perceived skills in role play and small-group teaching were also included in our questionnaire.

Responders were asked to rate how well each of the 13 academic skills had been covered in their postgraduate training, scoring from 1 to 4 on a four-point Likert scale (1 = taught very well, 2 = quite well, 3 = not very well, and 4 = inadequately). An individual's 'training score' was derived from the mean of the 13 components. Given the direction of the Likert scale, lower training scores correspond with more positive perceptions of training.

The validity of the 'training score' was tested by assessing the agreement between the individual mean training scores of the 19 responders in the SWAUDGP who returned both the pilot and the main questionnaire. The mean difference between the main and pilot scores was -0.12 (SD = 0.38) but was not significantly different from zero ($t = -1.43$, $df = 18$; $P < 0.17$). The intraclass correlation coefficient, a measure closely related to the kappa measure of agreement, was good at more than 0.79.

A pragmatic 'research activity score' for each individual was devised, scoring 0.33 for involvement as a co-investigator and 1.0 for each publication and principal investigator position. The decision to assign 0.33 or 1.0 was based on the study team's perception of expected workload and the time implications of each activity.

The degree of departmental support was also calculated as a score, based on six items, derived from the most frequent answers to the pilot study question 'how would you change your current post?' and from the most consistently mentioned free text comments in the Avery study of methods considered helpful for developing research skills (Table 1). Individual 'support scores' were calculated, with one point for each aspect except availability of a junior academic support group, which contributed 0.5, producing a range of 0 to 5.5.

The main questionnaire also collected data on demographics, number of sessions spent in research, teaching, and service practice; length of contracts; departmental activity; possession of or registration for higher degree; and open questions on initial attraction to academic general practice, conflicts between academic and service roles, and future career plans. A second questionnaire was sent out after four weeks to non-responders.

Stata¹² statistical software was used to perform various parametric and non-parametric statistical tests, including *t*-tests and the Kruskal-Wallis test, and chi-squared tests on contingency tables. Descriptive regression models were fitted using a backward stepwise procedure to find factors associated with research activity and training score. Qualitative data from open questions were analysed using a grounded theory approach.¹³ Quotations selected illustrate the major themes.

Results

The searches identified 156 eligible practitioners. Thirty-five responders identified themselves as ineligible against the chosen

Table 1. Level of departmental support (number and percentage of responders with support in these areas).

	No.	(%)
Career goals discussed with senior	70	(65)
Project supervision	62	(58)
Formal appraisal	60	(56)
Mentorship	39	(37)
Junior support group	32	(30)
Strengths/weaknesses discussed with senior	30	(28)

criteria. Of the remaining 121 academic GPs, 108 (89.3%) from 28 departments returned their questionnaires. The 13 non-responders were from 11 different departments.

Demographic information

Seventy of the responders were men (65%) and 38 were women (35%). Mean age was 35.7 years, (SD = 5.4, range 28 to 63 years). Mean number of academic sessions was 4.5 (SD = 2.3, range 1 to 10). Mean length of contract was 2.7 years (SD = 1.3), with only two people in tenured posts. Thirty-one (28%) were lecturers, 65 (60%) were research fellows, and 12 (11%) held a variety of posts including specific training fellowships.

In terms of clinical service arrangements, 55 (47%) were profit-sharing partners, 21 (20%) were salaried partners, 22 (21%) were assistants (compared with 2% nationally), and six (6%) were locums.

Attractions of academic general practice

The main attractions of academic general practice for 31 (29%) of the responders were the opportunities to pursue research ideas:

I consider research a hobby for which I am now getting paid! (R42)

Twenty-four (22%) were attracted by a desire to teach:

Academic general practice is a chance to empower medical students. (R12)

Twelve people (11%) appeared to have entered academic general practice as a default position, as an easier option than service general practice, or because they were undecided which career path to follow:

It's a chance to do something other than nine surgeries a week for 30 years. (R113)

Seven responders (6%) specifically mentioned part-time academic practice as a means of avoiding burnout.

Teaching commitments

Sixty-nine (64%) responders spent less than 20% of their academic time teaching and 25 (23%) more than 40%. Sixteen (15%) responders were full-time teachers. Full-time teachers appeared to have slightly different characteristics from their research counterparts. Their median number of academic sessions per week was two compared with five for the rest of the cohort (Kruskal-Wallis test $\chi^2 = 7.10$, $df = 1$; $P < 0.01$). They were far less likely to have a previous degree (two [13%] compared with 40 [44%] $\chi^2 = 5.50$ $df = 1$; $P < 0.02$): or be registered for a degree (three [19%] compared with 45 [50%] $\chi^2 = 5.35$, $df = 1$; $P < 0.02$). Eleven of the 16 full-time teachers were women ($\chi^2 = 9.28$, $df = 1$; $P < 0.002$).

Higher degrees and departmental career support

Twenty-six responders (24%) were registered for an MD and five (5%) held, or were registered for, a taught degree (Table 2).

The mean departmental support score was 2.59 (SD = 1.26). Thirty-nine responders (37%) had a mentor, although 51% used their mentor only for project supervision. No one used their mentor in a career guidance role, and only 31% of mentors were perceived as having a pastoral role (Table 1).

Level of perceived training and research activity

The mean 'training scores' for each academic skill are shown in Table 3. The overall mean 'training score' was 2.53 (SD = 0.7),

Table 2. Possession of, or registration for, a higher degree.

Degree	Held	Registered
BSc	25	0
MSc	7	6
MMedSc (taught)	1	4
MMedSc (research)	0	2
MPhil	1	1
PhD	0	6
MD	1	26
Other	8	2
Total	43(40%)	47(44%)

which is midway between 'quite well' and 'not very well' on the Likert scale. The mean 'research activity score' was 3.8 (SD = 4.0). The median number of papers published was one, but 46 (43%) responders had not had work published. Twenty-five responders (23%) had no principal project, and 48 (44%) had one project. Forty-six (43%) had no involvement as a co-investigator (Table 4).

Backward stepwise regression was used to find the most important predictors of research activity and training (Table 5). The following predictors were included: age, sex, time in the department, teaching commitments, possession of a higher degree, registration for a higher degree, support score, and, in the model for research activity score, training score was also included as a predictor.

Males, responders who were predominantly involved with research rather than full-time teaching, and those with better perceptions of their academic training, all had significantly greater 'research activity scores'. Increasing departmental 'support scores' and length of time in the department were both signifi-

cantly associated with more positive perceptions of academic training. This suggests that junior academic GPs who perceived their training to be more comprehensive were also better supported within their departments.

While those with higher degrees had marginally higher research activity and training scores, when adjusted for other factors, such as time in the department and prior possession of a higher degree, did not have a significant effect on training score or research activity at this stage in a junior's career. Refitting the models after removing extreme cases or 'outliers' did not alter the results. While the *r*-squared value models were low, the aim of these models was to assess the relative strength of possible predictors of research activity and perceived training, not to fit models for prediction. Model checking did not reveal any major deviation from the usual assumptions.

Perceived problems of being a service and academic general practitioner

Seventy-two (67%) responders perceived a conflict between their role as service and academic GP. Altogether, 83% of partners said there were conflicts compared with 52% of the non-partners ($\chi^2 = 9.53$, *df* = 1; *P* < 0.002). The most frequent conflict, mentioned by 38 responders (53%), was pressure on time from the demands of dual roles:

I effectively have three jobs — teaching, a GP with on call, and researcher. Each one of these could be a full-time job, and I'm being pulled in too many directions. (R20)

Personal career goals

Sixty-three (60%) responders wanted to stay in academic general practice and 38 (37%) were undecided. Only three (3%) men-

Table 3. Training scores (after Avery) for each academic skill.

Likert scale Skill	1	2	3	4	Total No. (%)	Mean (SD)
	Very well No. (%)	Quite well No. (%)	Not very well No. (%)	Inadequate No. (%)		
Small group teaching	31 (30)	36 (35)	18 (17)	18 (17)	103 (100)	2.22 (1.07)
Designing a project	29 (29)	34 (34)	18 (18)	20 (20)	101 (100)	2.29 (1.08)
Questionnaire design	26 (26)	31 (31)	24 (24)	19 (19)	100 (100)	2.36 (1.07)
Literature searches	21 (21)	39 (39)	23 (23)	17 (17)	100 (100)	2.36 (1.00)
Presentation skills	19 (19)	42 (41)	26 (25)	15 (15)	102 (100)	2.36 (0.95)
Role play	22 (22)	33 (33)	20 (20)	26 (26)	101 (100)	2.5 (1.10)
IT skills	12 (12)	36 (37)	26 (27)	24 (24)	98 (100)	2.63 (0.99)
Grant applications	20 (20)	23 (23)	30 (30)	2 (27)	100 (100)	2.64 (1.09)
Qualitative methods	14 (14)	31 (31)	31 (31)	24 (24)	100 (100)	2.65 (1.00)
Coding and data entry	13 (13)	29 (29)	29 (29)	29 (29)	100 (100)	2.74 (1.02)
Use of statistics	13 (13)	30 (30)	26 (26)	31 (31)	100 (100)	2.75 (1.04)
Writing for publication	12 (12)	25 (25)	35 (35)	27 (27)	99 (100)	2.78 (0.99)
Time management	6 (6)	19 (19)	32 (32)	42 (42)	99 (100)	3.11 (0.92)

Table 4. Research activity.

No. of projects	Principal investigator No. (%)	Co-investigator No. (%)	No. of publications	Publications per person No. (%)
0	25 (23)	46 (43)	0	46 (43)
1	48 (44)	22 (20)	1	19 (18)
2	19 (18)	22 (20)	2	11 (10)
3	11 (10)	9 (8)	3	8 (7)
4	4 (4)	8 (8)	4	9 (8)
5	1 (1)	1 (1)	5	8 (7)
6	0	0	6	1 (1)
7	0	0	6+	6 (6)
Total	108 (100)	108 (100)		108 (100)

Table 5. Predictors of research and training scores.

	Estimated regression coefficient	P value (standard error)
'Research activity score'		
Sex (males have a higher mean score)	1.55 (0.75)	0.04
Researchers (F/T teachers have a lower score cf. researchers)	-2.3 (1.00)	0.03
Training score (less training = less activity) $r^2 = 21\%$	-1.3 (0.49)	0.01
'Training score' (lower = better)		
Support score (more support = better training)	-0.12 (0.05)	0.02
Time in department (years) (increase for each extra year) $r^2 = 15\%$	-0.15 (0.05)	0.001

tioned a career in the postgraduate network. Twenty-nine responders (27%) saw their career goal as senior lecturer or a chair.

There were no significant differences in support, activity, and training scores between the 29 responders who wanted to progress to senior academic positions and the other responders. However, 19 (66%) of this group described themselves as successful academic GPs compared with 24 (30%) of the other responders, perhaps implying the importance of personal motivation.

Discussion

One limitation of this study is the lack of an up-to-date list of academic GPs and the possibility that the surveyed cohort may be incomplete. Some caution should therefore be exercised in the interpretation of the results. The inaccuracy of the AUDGP list is unavoidable as membership is voluntary and therefore varies between academic departments of general practice. In this study, failure to validate the AUDGP list would have resulted in the inclusion of a further 39 ineligible responders and the exclusion of 53 eligible responders. A good response rate of 89% was achieved.

A further limitation of this study is the cross-sectional design, which does not allow us to draw firm conclusions about the exact nature of the relationship between research activity and perceived training. In the regression model, we have assumed that training influences research activity and, therefore, have fitted the training score as an explanatory variable for research activity.

The main findings of this research are that the training and departmental support and guidance available to junior academics in primary care are perceived as variable and often inadequate. Although most GPs enter academic general practice for positive reasons, only a minority of current junior academics plan to progress to senior positions within academic general practice. The heavy workload created by dual academic and service commitments is highlighted as a major problem of a career in academic general practice.

Education and training initiatives

There are a number of national initiatives addressing some of the problems of academic general practice careers highlighted in this questionnaire. The Royal College of General Practitioners has promoted the idea of higher professional training¹⁴ and the provision of research training fellowships and research general practices.¹⁵ The Culyer Report¹⁶ made positive and helpful recommendations about career structure and funding. The AUDGP has also long advocated the development of a core academic career structure.¹⁷ The lack of departmental support structures and the

perceived inadequacies of training, however, suggest that some of the problems perceived by junior clinical staff could be addressed at a departmental level and are not dependent on the inevitably slower pace of national initiatives.

Developing research skills

The results of this survey found that research activity, in terms of published work and project involvement that was positively associated with training score.

A higher degree is often perceived as the key to higher professional training¹⁸ and perhaps a senior post. This survey found that the possession of a prior degree or registration for a higher degree was not significantly associated with a higher training or research activity score. Twenty-six responders were registered for an essentially unsupervised MD, but only five out of 108 responders held or were registered for a taught MMedSc degree, in which research and teaching skills can be acquired at an appropriate pace with feedback on progress and areas of individual weakness. Departments might consider extending the availability of taught Master's degrees or even build the degree into junior training posts to help juniors to acquire the most appropriate skills. Forty-six (43%) juniors had no formal involvement as co-investigators on studies and, therefore, less opportunity for apprentice-style incremental learning. Departments could also encourage training through closely supervised project involvement, in which juniors contribute to research from inception to completion under the direction of experienced researchers.

Research environment

Research activity is affected by both personal and environmental characteristics. New junior members of academic departments are thrown into the competitive environment of deadlines, grant applications, and the pressure 'to publish', which are all contributors to stress and burnout.¹⁹ Encouraging doctors to give and expect support from professional colleagues and the promotion of mentorship could decrease some of the stress associated with academic general practice.

The results of this questionnaire suggest that support through aspects such as mentorship is an important co-factor of academic training and could be extended. However, mentoring needs to be more closely defined to involve career and pastoral guidance rather than its currently perceived supervisory role.

Service commitments

Academic GPs were seeking or retaining partnership status with the consequential service load, despite the acknowledged time

and workload pressures of both commitments. This may have been to alleviate some of the recognized financial disparities. Action on national initiatives such as the Culyer Report is required to address this fundamental issue.¹⁶ At a departmental level, specific training in 'time management' could be made available; the skill currently perceived by responders as the least well taught.

Howie²⁰ has said that GPs and their aggregate of unanswered questions and untested impressions remain one of the most significant sources of research potential available to contemporary medicine. However, if academic primary care is to advance and thrive, motivated and well-trained GPs working in supportive departments are needed. This questionnaire has highlighted some of the barriers to achieving this. The results may also have training implications for trainees in other medical specialities.²¹

References

1. Mackenzie J. *The principles of diagnosis and treatment in heart infections*. London: Hodder & Stoughton, 1916.
2. Pickles W. *Epidemiology in country practice*. Bristol: John Wright, 1939.
3. Buckley EG. Research for all in general practice. *Br J Gen Pract* 1990; **40**: 357-358.
4. Pereira-Gray D. Research in general practice: law of inverse opportunity. *BMJ* 1991; **302**: 1380-1382.
5. NHS Executive. *Towards a primary care-led NHS*. Leeds: National Health Service Executive, 1994.
6. Rashid A, Allen J, Styles B, Pereira-Gray D. Careers in academic general practice: problems, constraints and opportunities. *BMJ* 1994; **309**: 1270-1272.
7. Handysides S. Morale in general practice: is change the problem or the solution. *BMJ* 1994; **308**: 32-34.
8. Beecham L. Medical academics' falling morale despite job satisfaction. *BMJ* 1992; **304**: 73.
9. Baldwin CD, Levine HG, McCormick DP. Meeting the faculty development needs of generalist physicians in academia. *Acad Med* 1995; **70**: S97-103.
10. Hooper J, Dowell AC, Kinnersley P. Academic departments of general practice at the cross-roads? *Br J Gen Pract* 1990; **40**: 268-269.
11. The Academic Medicine Group. Academic medicine: problems and solutions. *BMJ* 1989; **298**: 573-579.
12. StataCorp. *Stata statistical software: release 4.0*. College Station, TX: Stata Corporation, 1995.
13. Glaser BG, Strauss AL. *The discovery of grounded theory. Strategies for qualitative research*. Chicago: Aldine, 1967.
14. Styles W. Education and training for general practice; Royal College of General Practitioners' policy statement. *Br J Gen Pract* 1994; **44**: 542-543.
15. Pereira-Gray D. Research general practices. *Br J Gen Pract* 1995; **45**: 516-517.
16. Research and Development Task Force. *Supporting research and development in the NHS. A report to the minister for health by a research and development task force chaired by Professor Anthony Culyer*. London: HMSO, 1994.
17. Working Party of the AUDGP. *A career structure for academic general practice*. Leicester: AUDGP, 1994.
18. Smith FPL. Higher professional training in general practice: provision of master's degree courses in the United Kingdom in 1993. *BMJ* 1994; **308**: 1679-1682.
19. Chambers R. Avoiding burnout in general practice. *Br J Gen Pract* 1993; **43**: 442-443.
20. Howie JGR. *Research in general practice*. London: Chapman and Hall, 1979.
21. Calman K. *Hospital doctors: training for the future. The report of the working group on specialist medical training*. London: Health Publications Unit, 1993.

Acknowledgements

This research was undertaken during the first author's RCGP Midland Faculty clinical training fellowship.

Address for correspondence

Dr Helen Lester, Department of General Practice, The Medical School, Edgbaston, Birmingham B15 2TT.

Distance Learning Course in Brief Psychotherapy and Counselling Skills for GPs

sponsored by the
**Division of General Practice
Royal Society of Medicine**

An 8-month course with tutor Dr Mary Burton,
Clinical Psychologist and Psychotherapist.

Readings, monthly tutorials and written feedback
on audio- or video-taped consultations.

Tailored to individual needs, PGEA approved.

Fee £1250 RSM members, £1350 non-members.

For further information, Tel/Fax: 0171 586 9708.

ROYAL MEDICAL BENEVOLENT FUND

A nationwide support service for doctors in
need, their wives, husbands and children



We hope
you never
need our
help

Help the medical profession help themselves

Donations and enquiries to:

The Secretary

Royal Medical Benevolent Fund

24 King's Fund, Wimbledon, London SW19 8QN

Tel: (0181) 540 9194 Fax: (0181) 542 0494