

MD candidates want better training in research

ABSTRACT—A survey of MD candidates in one teaching hospital and two postgraduate institutes was undertaken to determine their initial training needs, and their preferred methods of learning about the conduct of research. Fifty-six respondents (53% response rate) replied to a piloted questionnaire. Their replies indicated a need for intensive initial research training, offered at local level by the supervisor. The supervisor's subsequent role throughout the research period should be to provide ongoing specific critical help and support. It is concluded that teaching materials and designed teaching sessions might be provided for supervisors to assist them in this new role.

The place of research in medical education has become an important topic in the light of the Calman proposals [1] for higher specialist training which will disallow activities and rotations of low educational merit. Nonetheless, in many specialties the MD/MS degree is seen as an important adjunct to clinical competence in securing promotion to senior registrar grade. For those seeking a career in academic medicine, the MD/MS plays a more central part in career development.

Some argue that the MD is of limited value in judging a junior doctor's suitability to be a consultant physician [2]. It may well be that, in future, a taught research appreciation course will replace the MD for doctors who do not intend to follow an academic career. Already, views diverge about the necessity of undertaking research as part of higher specialist training [3,4]. In subjects outside medicine and academia, demand by employers for doctoral graduates has already been shown to be insignificant [5]. Appropriate skills are preferred.

Despite such doubts, it is certain that the MD does have a role in the training of future researchers. The

quality of that training, therefore, merits attention and analysis. Guidelines and codes of practice for research supervisors and doctoral students abound within universities [6,7] and university departments [8] as well as emanating from Research Councils [9]. It has generally been the case that theses for the Doctorate of Philosophy (PhD/DPhil) are increasingly stringently supervised, but this has not been so for MD candidates, nor for their supervisors, although this is slowly changing. The University of London, for example, will now require supervision for the MD.

With these factors in mind, a limited survey was undertaken amongst candidates registered for the MD degree in two postgraduate institutes and one teaching hospital in London.

Aims of the study

The aims of the study were to

- survey attitudes and opinion among current MD candidates about the training needed to undertake research
- determine whether attitudes and opinions differed between institutions
- consider responsibility for research training, topics for training, duration and timing of formal training, sponsorship, learning methods and the role of the supervisor.

Subjects and methods

First, semi-structured interviews were conducted with 15 MD candidates, 12 consultants and eight academics in the Thames Regions to determine the content of the survey questionnaire. Then, a draft questionnaire was circulated to 14 similar individuals for comment and amendment. The final, piloted questionnaire comprised seven sections and 73 individual response items. The questionnaire was designed as a Likert scale with a 6-point choice scale per item.

All together 106 questionnaires were distributed to registered MD candidates at two research institutes and one teaching hospital; 56 replies were returned, yielding an overall response rate of 53% (70% at the teaching hospital, 49% elsewhere). Since χ^2 tests revealed no significantly different results between types of institutions, the responses were amalgamated and treated as one group.

Results are presented as average scores per item (maximum score 5, minimum score 0), comparing items within sections where appropriate.

JANET GRANT, MSc, PhD, *Professor of Education in Medicine, Joint Centre for Education in Medicine, London*

RODNEY GALE, DPhil, MBA, *Independent Adviser in the Management of Research, Rodney Gale Associates, Hampton*

ROBERT H ANDERSON, MD, FRCPath, *Professor of Paediatric Cardiac Morphology*

CHRISTINE ANDERSON, BSc, *Research Assistant*

MARION KIMBERLEY, MSc, PhD, FIMA, *Administrative Dean, National Heart and Lung Institute, London*

Table 1. Opinions about responsibility for training new recruits to research. Average endorsement per option.

Responsibility should lie with	Score*
The supervisor	4.46
The host institution	4.18
The postgraduate dean	2.99
The individual candidate	2.95
Basic scientists	2.66
Medical schools	2.65
The Royal Colleges	2.42
The health authority	1.52

*Maximum score 5; minimum score 0.

Results

Responsibility for training

Table 1 shows that respondents preferred the responsibility for training new recruits to research to lie with the host institution and the supervisor. The health authority was the least supported option, preceded by the Royal Colleges.

Topics for initial training

Table 2 shows respondents' endorsement of possible topics for initial research training. The level of

Table 2. Topics for initial research training. Average endorsement per option.

	Score*
Formulating a research question	4.56
Methods of statistical analysis	4.52
Designing the experiment	4.44
Reviewing the literature	4.39
Producing a thesis	4.23
Choosing a supervisor	4.15
Research ethics	4.12
Handling and storing data	4.08
Choosing a host institution	4.02
Writing research reports	3.92
Managing time effectively	3.79
Using libraries for data searching	3.73
Basic laboratory skills	3.32
Publicity and publications	3.18
Managing complex projects	2.86
Managing other people on a project	2.76

*Maximum score 5; minimum score 0.

endorsement tends to reflect the chronology of undertaking a research project. The list also reflects the uncertainties of the inexperienced. The topics offer few surprises and should present no difficulty in being met from the body of experience vested in teaching hospitals and research institutes. Choosing a supervisor and a host institution, however, requires some knowledge before initial training.

Learning methods

Table 3 shows that respondents were clear that the supervisor should be the key person in training the new researcher, and that working with a group of peers is also highly valued. Active, interpersonal learning methods were preferred. Table 3 shows only the top ten preferred learning methods. Generally discounted were reading lists, videos and distance learning.

Trainees also want to have critical sight of other research projects. It may well be that the MD candidate has never seen an MD thesis. The ten learning methods they preferred would make a balanced, coherent approach to teaching the initial training topics identified in Table 2. They offer considerable scope for the design of stimulating and effective courses.

Duration and timing

Respondents were asked when and how long their formal training should be. They favoured a short, intensive course in the first month (3.5 average rating), closely followed by a short intensive course before starting their training (3.33). A few hours per week over the first six months received a moderate rating (2.38), while a few hours per week throughout the project and a full-time taught course with project work were both rejected (1.96 or less).

Table 3. The ten most preferred learning methods for initial research training. Average endorsement per method.

	Score*
Discussion with peers	4.33
Tutorials with the supervisor	4.29
Studying examples of research projects and reports	3.52
Short intensive course	3.48
Attending well-structured lectures	3.48
Having a named teacher in the unit	3.45
Reading constructive critiques of research projects	3.38
Regular 'clinics' with experts	3.28
Self-assessment and remedial learning	3.15
Regular teaching sessions over a few weeks	3.04

*Maximum score 5; minimum score 0.

Sponsorship

In the face of hard-pressed study leave budgets and research already being largely undertaken on soft money, the crucial question is who should pay for specific training in research methods. The possibility of the researcher paying was emphatically rejected (0.55). Respondents were realistic that the study leave budget could not cover the cost (1.92); neither did they expect it from the regional R&D director (2.18); the postgraduate dean (1.81); or the relevant Royal College (1.56). Instead, respondents felt that the host department or institution (3.92), the research funder (3.67) or the employer (3.08) should pay. In the end, these might be the only realistic options.

The role of the supervisor

The most favoured option is for training at the place where the research is conducted, with both a teacher and a peer group. Supervision arrangements have hitherto been somewhat informal and variable. Respondents were asked what the role of a supervisor should be. Table 4 shows their opinion, which is clearly in favour of the supervisor as tutor, teacher and adviser.

Conclusions

This study was not an evaluation of current practice but a gathering of opinion for the future design of training for researchers. It shows that MD candidates want specific research training provided locally by a tutor, and undertaken with peers.

Respondents do not want specific training throughout their period of research, but prefer an intensive preparatory course, supplemented by ongoing specific and critical help from the supervisor. The intensive course should cover, at a minimum, the formulation of a research question (a skill which should be developed by all doctors in training, regardless of their career intentions), methods of statistical analysis, experimental design and the process of producing a thesis. Table 2 indicates additional options to be considered for early research training.

The respondents' rejection of self-instructional methods suggests that a centrally produced course would not be an appropriate development. The changed role for supervisors might also be welcome, but perhaps not simply attained.

The results strongly suggest that what is required is not so much training material for the researcher as support for the training role of the supervisor. The key supervisory role indicated by our findings is one for which no doctors, let alone medical academics, have received any training. Appropriate action would be the

Table 4. The role of the supervisor. Average endorsement per option (scores above 2.5 only).

	Score*
A source of advice and guidance	4.81
Assisting with project design	4.52
A critic	4.52
A teacher of research skill	4.11
An interface with the rest of the institution	3.84
Maintaining standards	3.77
Responsible for securing project funding	3.74
A research collaborator	3.71
Responsible for project design	3.53
Responsible for project management	3.34

*Maximum score 5; minimum score 0.

production of teaching materials and designated teaching activities to support supervisors in the roles identified by respondents. This strategy may well be more fruitful than providing an impersonal training course for each researcher.

References

- 1 Department of Health. *Hospital doctors: training for the future. The report of the working group on specialist medical training*. Heywood: Health Publications Unit, 1993.
- 2 Harvey RF, Burns-Cox CJ, Heaton KW. The MD thesis in the training of a consultant physician. *J R Coll Physicians London* 1992;26:380-2.
- 3 Izaguirre J. Expectations of prospective senior registrars and those who appoint them. *Psychiat Bull* 1993; 17:612-4.
- 4 Junaid O, Staines J. Career progression in psychiatry: Perceptions and realities. *Psychiat Bull* 1990;14:486-9.
- 5 Pearson R, Seccombe I, Pike G, Connor H. Employer demand for doctoral social scientists? *Studies in Higher Education* 1993;18:93-104.
- 6 Open University Research Degrees Committee. *Code of practice for supervisors and research students*. Milton Keynes: Open University, 1993.
- 7 Open University Higher Degrees Office. *Guidelines for supervisors of research degree students*. Milton Keynes: Open University, 1993.
- 8 Jones A. *Memo to research students: Planning ahead*. 1993 Internal report. Open University Institute of Educational Technology.
- 9 Science and Engineering Research Council. *Postgraduate PhD students. A guide for supervisors*. Swindon: SERC, 1992.

Address for correspondence: Professor Janet Grant, Joint Centre for Education in Medicine, 33 Millman Street, London WC1N 3EJ.