

Research by trainees

A strategy to improve standards of education and supervision

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Trainees in psychiatry often feel impelled to undertake research. One driving force is the knowledge that their career progression is decided by senior staff who regard trainees' research activity with enthusiasm. More altruistically, future consultants wish to train themselves to assess the scientific and promotional literature – so they can ensure that their own work keeps up with the best available knowledge. How can the interested trainee obtain education and supervision in research?

Unfortunately, senior psychiatrists rarely have research experience of their own and few NHS consultants have active research programmes. Even in teaching centres the reasonably eager (rather than exceptional) trainee is unlikely to join a research team and take part in a project or help prepare it for publication. Consequently, many trainees face the unrealistic expectation that they should carry out research without sufficient knowledge, skills or supervision; it is not surprising that most do not succeed and many never start.

If there is a need for better research training, why is it so rarely available? Some blame lies with low levels of research funding. However, while more money for psychiatric research is badly needed it would make only a small impact on research training. There are more fundamental deficits: too little education about basic concepts and skills; and too few people equipped to provide adequate supervision of trainees' research projects. Any remedy for these ills must be administered in stages.

Improving education in research

First, organisers of Membership or Masters Degree courses in Psychiatry need to find substantial space in the timetable for research methods, data analysis and statistics and – most of all – clinical epidemiology. Once the

basic principles are learnt they allow more efficient independent study and the result is less need for didactic teaching. Time can be found within the curriculum. In our own course, principles and skills of research have become one of the largest components, with more than 40 timetabled hours over three years – largely problem-based learning and practical computer classes.

Second, clinical tutors can reinforce such formal teaching by aiming at high standards of debate about published research during journal clubs or similar sessions. Critical appraisal of the literature is a necessary skill for clinicians as it is for those purchasing care for patients (Sheldon *et al*, 1993). It is risky to accept the 'bottom line' of a research study unless the findings are true and important; only the method of the study will reveal whether they are. We have found that a useful resource in teaching critical reading is the series of guides for reading research articles which can be found in the excellent book by Sackett and his colleagues (Sackett *et al*, 1992). This rigorous approach to reading individual papers should be complemented by a basic understanding of formal (systematic) reviewing of the literature on specific topics (Egger *et al*, 1993).

Third, the College examiners can exert influence by placing more emphasis on research knowledge and skills in the MRCPsych examinations. The research option, an alternative to the essay paper, sets a high value on research but achieves little because of negligible take-up by trainees. Since the introduction of the short-answer paper there have been a commendable number of questions about clinical epidemiology, statistics and research design. The Part II MRCPsych examiners could go further, and set candidates the critical appraisal of a previously unseen research paper.

Table 1. Knowledge and skills required to read about or undertake research

Task	Knowledge and skills required
Posing the research question	Turning general aims into specific hypotheses.
Choosing a method to answer the question	Grasping the principles of the various types of study (for example: single case study, case series, cross-sectional study, case control study, cohort analytic study, clinical trial).
Choosing the subjects for the study	Knowing how to select populations, samples and controls; and how to deal with bias and confounding.
Detecting, defining or measuring the variables being studied	Understanding validity (sensitivity, specificity and predictive value) of scales and schedules; measures of agreement; screening.
Expressing results in terms of rates and risk	Knowing how to calculate and use raw and category-specific rates, relative and attributable risks, odds ratios.
Demonstrating whether the study findings are true and important	Using basic statistics: recognizing different types of data (categorical, ordinal, continuous, etc); estimating using confidence intervals; understanding simple hypothesis tests; type I and II errors and calculating the power of studies.
Knowing how to collect and analyse data	Understanding how data may be collected and coded, and how to analyse it using the microcomputer.
Understanding systematic reviews	How studies are selected for systematic reviews and results displayed; the principles (but not the mathematics) of pooling data in meta-analysis.

Improving supervision in research

Supervision is as important as education. Good research (like good clinical work) cannot be undertaken without the opportunity to collaborate with others who have a reasonable standard of expertise. A research supervisor should feel confident to offer advice and training in basic research methods, clinical epidemiology, statistics and computing. Plainly, if there is to be consistently good supervision across the country there is much to be done.

The need to provide better support for research is increasingly recognized in College circles, and schemes to promote research by trainees are frequent matters of report and debate in the *Psychiatric Bulletin* (Bartlett & Drummond, 1992; Sims, 1992; Atkinson, 1993). The Research Committee is trying to improve supervision by establishing a network of locality research co-ordinators around the UK and Ireland (Freeman, 1992). The Research Committee has also, for many years, organized an annual training course in basic research methods. This course is usually over-subscribed. Many of those who attend are not relatively inexperienced registrars – the

original target group – but are senior registrars or consultants who will soon be expected to supervise others.

With little modification, the research methods course could serve as a mechanism for promoting uniformity of approach by the College's research co-ordinators and by the next generation of research supervisors – by setting a core curriculum in research methods and offering training in its delivery.

The content of a research curriculum

The College could go further. As it has done in several clinical areas, it might seek a consensus statement on standards for research education and supervision. Over the last few years in Yorkshire region we have spent time discussing how to improve the research dissertation component of the University of Leeds Masters Degree, undertaken by almost all Yorkshire region senior house officers and registrars in parallel with their College examinations. Lately we have also had to pay attention to the demands of academic audit and the likely standards it will set. As a consequence we have

defined (Table 1) the research concepts and skills which we teach; we think they are prerequisites for undertaking a research study and for critical reading of published work. We offer this summary to touch off a debate about the areas of research practice in which the College might set standards for trainees and (by implication) supervisors.

Once they are armed with a set of standards, research co-ordinators, approval panels and examiners may combine to guide trainees and supervisors towards better research practice.

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Comment

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In general I found this piece a constructive approach to the problems of training trainees in research methods. I would not dispute the importance of research training for future consultants. There are, however, issues as to when and how such training should take place – whether in general or higher professional training. There is certainly need for clarification about the extent to which all trainees should be involved with a research project involving data collection, rather than devising a research protocol or learning to critically review the literature. There is always competition for teaching time.

The editorial will also raise debate about the balance between Master's degree teaching and MRCPsych teaching. Increasingly I recognise areas of overlap but also recognise specific differences. Training to pass the Membership,

which includes a strong academic content, is a different task from working for a University Master's degree. Universities, for example, vary in their approach to the duration and content of Masters' degrees. Keele, for example, has a part-time two year taught course *with* a research protocol which includes a full review of the literature; it also has specific MPhil and MD research degrees. Other universities, such as Leeds, Birmingham and Edinburgh have more prolonged Masters' degrees, with formal requirements for course attendance, and an expectation of completing a research project. Some medical schools also offer Masters' degrees open to non-medical graduates – an important innovative development which has specific advantages.

The MRCPsych examination undergoes continuous review, and is likely in future to