

Training matters

The trainee's guide to research methodology

CHRIS FREEMAN, Consultant Psychotherapist and Senior Lecturer in Psychiatry, University of Edinburgh; and PETER TYRER, Consultant Psychiatrist, St Charles' Hospital, London W10 6D2

This short paper is an aperitif that touches on the main issues involved in research methodology for the psychiatric trainee but which understandably cannot explore any of them in depth. It accompanies publication of a book published simultaneously by the College (Freeman & Tyrer, 1989), the orientation of which has been affected greatly by experience gathered during a series of courses in research methodology organised under the auspices of the Research Committee. These courses have demonstrated the need for a basic text on research methodology that is sensitive to the aims and resources available to trainees and also a guide that helps to avoid the pitfalls in research that often are discovered too late to be overcome.

Reasons for research

There are many reasons for carrying out research that are far removed from thirst for knowledge. For the psychiatric trainee a major reason is the wish to contribute at least one entry to what sometimes appears to be a vast empty space on application forms, that referring to 'research and publications'. This is by no means an ignoble reason, but it must be accompanied by other motivations, including the promotion of critical attitudes to one's own clinical practice, awareness of the implications and limitations of other published work, and the belief that the proposed project is worth doing.

Unless these other motives are also present the research work is unlikely to be completed satisfactorily. Contrary to popular belief, research is only occasionally exciting, often tedious, and invariably frustrating, and staying power is essential if obstacles are to be overcome. These qualities and motives can be shared within a research team; if they are not present in a single researcher he or she is advised not to proceed alone.

Principles of research enquiry

All good research involves risk and doubt because the findings cannot be predicted in advance. Ground-

breaking research often breaks many established tenets precisely because it does not follow conventional procedures. Nevertheless, there are five general rules that are worth following to avoid disaster.

- (a) Develop a clear research design that has been discussed critically with others.
- (b) Unless you are experienced in research it is valuable, if not essential, to have a supervisor.
- (c) Design your study to collect as much information as you can at the start and as little as possible later.
- (d) Commit all your ideas, expectations and findings to paper from the beginning.
- (e) Try to organise your project so that if it goes badly wrong there is still a fall-back position that allows some valuable information to be retrieved and presented for publication.

Some of these rules may appear self-evident and not worth repeating. We stress them because in our experience much well-intentioned work never appears in print because the rules are ignored or abandoned. It is essential to review the literature on a subject before planning a study to avoid needless repetition, to have well-defined objectives and a clear design that is statistically sound, and to have appropriate measures for recording diagnostic status and change. All too often these are overlooked or deliberately omitted because of pressures to proceed with a study. Ethical issues are becoming increasingly important in research and it is unwise to assume that an ethical committee will approve an uncontentious study automatically, particularly if it is badly presented. Increasingly such committees are regarding poorly designed research as unethical, even if there are no apparent risks to subjects, because the inconvenience caused by the research cannot be justified if no useful knowledge is likely to accrue from the study.

Writing up research

There is an unfortunate tendency to regard the writing up of research as beginning only after a study has

been completed and the data analysed. This attitude leads frequently to poor research which is never published. The writing of a research project begins at the earliest stage; in the drafting of the protocol. Indeed, such is the pressure on research funding nowadays that many investigators regard the writing of the protocol as a much more difficult and exacting task than the writing of the completed study for publication. Quite apart from the usual need to write a protocol in order to generate funding for the project the exercise of committing ideas to print exposes them to the cold light of scrutiny and allows an opportunity for constructive criticism and improvement of the methodology.

It is also a useful exercise to anticipate the results by at least sketching out draft papers that (a) produce the findings you are expecting (b) produce findings that are entirely opposite to what was expected. Exercise (a) is relatively easy but (b) may be much more important although difficult to contemplate initially.

A good study is one that is going to produce valid and useful data, and whether these are predicted or unexpected does not affect their value.

Writing an application to an ethical committee is not only necessary for all research involving human subjects but also extremely valuable in forcing attention to the fundamental issues of the project as well as its presentation. Most ethical committees now have at least one lay member, and certainly will have many with no significant knowledge of psychiatry. It is therefore necessary to write simply and clearly in your application and to provide a summary in language entirely free of jargon. Although this may lead to some feelings of irritation it is surprising how often important matters of detail or even major questions of design may become apparent when writing an ethical submission. In many instances it is wise to submit the application to the ethical committee even before the formal protocol as grant approval is dependent on prior ethical approval.

By the time the research is under way it should be possible to write at least half of the intended paper for publication even though no data are available. The introduction and background to the project should have already been well researched and the methodology is determined. Many who are unfamiliar with or unhappy about medical writing entertain the hope, or even the belief, that an original paper will somehow write itself once the project has done all its work and released its hard-earned data to the

investigator. These unfortunates do nothing until the project is completed and then seem to be inseparable from paper concertinas of computer print-outs that grow yellow with age as increasingly frantic attempts are made to convert meaningless numbers to logical writing. The careful investigator anticipates this; completed data pass steadily from analysis to interpretation to presentation, and by the time they are received all the hard work has been done.

Much publishable research by trainees never sees the printed page. This is mainly for two reasons; some papers are written carelessly or badly and do not do justice to their contents, and others fail because of inappropriate journal selection. Some cynical observers might also point out that as some experienced investigators seem to get all their work published, irrespective of its value, that publishability is a reflection of status rather than merit. This criticism can only be overcome by a careful system of blind refereeing. To avoid these pitfalls care is not only needed in preparing the final article using aids to good medical writing (Crammer, 1978) but also close examination of the notes or instructions to contributors, that for the *British Medical Journal* (1989) being particularly helpful as it gives insight through advice to assessors as well as potential authors. Matching paper to journal is quite an art, and much time and frustration is avoided if it is done correctly.

It is sometimes said that every person has the potential to write at least one original work. Certainly the less ambitious axiom that every psychiatric trainee has the ability to carry out (and publish) one piece of research is undoubtedly true. Psychiatry is full of impenetrable imponderables; the experience of research prevents them from becoming intimidating and, just occasionally, solves them. The uncertainties of psychiatry lead us to conclude that some experience of research methodology should not be confined to a few but is close to becoming an essential requirement in the education of the fully trained psychiatrist.

References

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