Practical research: a basic outline for mid-level eye personnel

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Research plays an important role in the work of mid-level eye health personnel who want to provide the best possible care based on accurate and relevant evidence. For example, Isaac Baba, eye co-ordinator of Bawku Presbyterian Hospital in Ghana, describes a simple research exercise to understand and improve patient satisfaction with the eye care offered in the outpatient department.[1]

Mid-level personnel might get involved in research in different ways:

- they can conduct research themselves
- they can assess the quality and usefulness of other people's research
- they can play an active role in large-scale multidisciplinary research projects.

Understanding the processes and methods of research is fundamental to each of the above.

What follows is a brief overview of the steps involved in research. Before embarking on a research project, you will need to consult and read research textbooks for more detailed descriptions and explanations.

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Choosing a topic

The important question is: what do you want to find out? This will help you formulate your research question, the question your study will be designed to answer. You should also think about the amount of time you have for carrying out this research and whether you have any resources (including human resources) that may assist you with this work. Be realistic.

Choosing the title

Research projects need a descriptive title, which should be as clear as possible. When other eye care practitioners or researchers look at what research has been done, the project title helps them decide whether they want to read about it. Consider your title a 'work in progress' until the project is finished: you may find that you need to change the title as your thinking evolves.

Reviewing the literature

It can be a challenge to discover what other people have written about a topic. If possible, find and visit a resource centre or a library. If you have access to the internet, there are a number of ways to search for relevant literature.[2,3]

A literature review should help to give you a context for your planned research. This means looking at the existing literature on your research area to find out what has already been written about your chosen topic.

Plan your literature review. This can be divided into three areas: defining your topic, selecting relevant keywords, and setting limits to your search. You can do the last by deciding, for example, how far back in time you wish to start the search, or by limiting the geographical location (e.g. using only studies done in a particular region).

In reviewing the literature, a researcher is required to read with a critical eye. Were there any limitations to previous work, or any mistakes? What did the research conclude? Were there useful recommendations?

If you are to do a careful review, you must systematically organise the literature you find. Make sure you record exact references on cards, in a notebook, or in a dedicated, computerised reference database. Note the name of the author(s) and the year of publication. If it is a book, record any editor(s), the title of the book, the edition, the chapter, and the publisher. If it is a journal, record the title of the journal article, the name of the journal, and the volume and page numbers. Later, when you write up your report, you will have the exact reference details at hand. This will help you avoid making mistakes or rushing back to the library for a last-minute check.

Designing the study

The question your research aims to answer will determine how your study should be designed (the methodology) and what methods you should use to collect your data. This is a very important part of the research process and has to be considered at the very beginning of the planning stage.

For example, if you wanted to find out whether patients were satisfied with their care, you might randomly select patients on discharge from hospital or in follow-up clinics and interview them with the help of a questionnaire or data collection form (an example of a quantitative method).

If you wanted to find out how you could help patients cope better with instilling their own eye drops, you would choose a different approach. In this case, you could hold focus groups where patients can discuss the difficulties they have experienced, or you could do an observational study of patients instilling the drops.

These examples are by no means complete, but they illustrate the need to think carefully about the correct methods for your study.

Methods should be chosen to ensure that:

- you are efficient and practical
- you collect the best evidence to support, or disprove, the case you are researching
- you conform to the ethical considerations of the project when collecting evidence from people.

Writing the research proposal

It is important to gain approval to conduct your research. Write clearly and accurately about what exactly you aim to achieve and how you intend to do this. You will also need to consider who should supervise your work, so the proposal should indicate what expertise your supervisor should have.

Ethical issues

It is essential to find out about local ethics committees and their rules for conducting research, and to gain ethical approval for your study before you start.

It is important to remember the following:

- patients must not be subjected to badly designed research
- patients have the right to confidentiality and autonomy
- patients must not be forced into participating in research
- patients must be given clear explanations in order for you to obtain their informed consent.[4,5]

Obtain the approval of the officer, nurse and/or medical consultant in charge of your department; it is only courteous to do so. This should also help to avoid a clash between your research and another project already being conducted in the department.

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Collecting and analysing data

A great deal of preparation has to be carried out before you set off into the field (where the study is to take place) to collect your data. You may have to negotiate your access to the field and work to gain everyone's confidence.

You only have one opportunity to collect the data, so be careful and keep good and accurate records. You run the risk of introducing bias if you rely on your memory to fill in any gaps.

It is a good idea to run a pilot study; this is a smaller version or 'practice run' of what will eventually become the main study. Doing so will help identify practical obstacles or problems with your design.

Data analysis follows on from data collection. Depending on the methods used, data analysis will explain the findings in a numerical (quantitative) way, in an interpretive (qualitative) way, or in a combination of these two ways.

Reporting your findings

Whatever the circumstances, you will have to produce a dissertation or written report. Many institutions provide clear guidelines as to how this should be done. You can disseminate your research findings by giving a presentation or by submitting the research to a journal. All journals provide guidelines about how to prepare articles. These will give the length required and the referencing system used.

The development of human resources, as part of the VISION 2020 initiative, should include opportunities for mid-level personnel to develop awareness of research, particularly with regard to patient perceptions and satisfaction. Courses and workshops should also consider including research-based approaches to improve patient care.

References

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A research assistant runs a focus group discussion on traditional treatments of children's eye conditions. GHANA