The difference between quantitative and qualitative research

This paper is one of a series of short papers on aspects of research by Linda Shields and Alison Twycross

The first question asked by any researcher with a new topic to study is: ‘What sort of research should I use?’ Reference to the literature can be confusing: so much research has been done, so many questions asked and sometimes answered, and so many conclusions have been drawn that it can be difficult to sort out one research technique from another. The decision most beginners to research find taxing is: ‘Should I use quantitative or qualitative methods?’

At the most basic level, quantitative research methods are used when something needs to be measured, while qualitative methods are used when a question needs to be described and investigated in some depth. Often, the two methods are used in tandem to provide measurements for comparison and evaluation and to give an in-depth explanation of the meaning of an idea.

Quantitative research

The words themselves hold the clues. Quantitative research includes so-called benchtop science (where experimental tests are carried out), drug trials (where the effects of drugs are measured), epidemiology (where rates of illnesses in populations are calculated), intervention studies (where one technique is used and its effects compared with another), and so on. Quantitative research usually contains numbers, proportions and statistics, and is invaluable for measuring people’s attitudes, their emotional and behavioural states and their ways of thinking.

In one section of a study on child care in hospitals, I asked a group of parents to give a ‘yes’ or ‘no’ response to a range of questions on their attitudes to paediatric hospital care (Shields 1999). I then measured the number of ‘yes’ answers and compared them with responses from nurses and doctors to the same questions. The study showed differences in attitude between parents and staff that could have affected communication between them and influenced the delivery of care. In another example, a researcher in Iceland measured the most important needs of parents during their child’s admission to hospital and found that they rated emotional needs as more important than physical requirements, such as rest and food (Kristjansdóttir 1999).

Qualitative research

Qualitative methods are used when the meaning of something needs to be found. Exploring the question: ‘Who owns a child in hospital?’ (Shields et al 2003), or examining the meaning of an experience, illness, or condition, for example, of what it means to be a mother whose child has died (Laakso and Paunonen-Ilmonen 2001), are all forms of qualitative research. Qualitative research usually has no measurements or statistics but uses words, descriptions and quotes to explore meaning. It can even use arts techniques, such as dance (Picard 2000).

The question to ask when planning a research project, therefore, is: ‘Do I want to count or measure something, or do I want to find the meaning of something, and describe it?’ Which comes first? This is sometimes a chicken-and-egg question but if no one has investigated the topic before, qualitative research is used first to try to tease out ideas, which can then be turned into questions – that can be tested quantitatively.

REFERENCES


