

The language of research (part 2): methodologies and methods

KEY WORDS

- ▶ Empirical knowledge
- ▶ Method
- ▶ Methodology
- ▶ Qualitative
- ▶ Quantitative
- ▶ Research

In the first paper in this series, the nature of research paradigms was examined. As discussed, there are broadly speaking two approaches to seeing the world; the quantitative and the qualitative. These world views (paradigms) can influence the types of questions we ask and help us to frame the overarching approach we adopt when seeking to investigate a topic/answer a research question (Ellis, 2014a).

In this article, we will examine the nature and purpose of defined research methodologies and why these are important in guiding the design and practice of research in the health and social care setting specifically. Associated with the various research methodologies are research methods — these are the tools for undertaking the research. Any given methodology may use more than one method for data collection depending on the nature of the question being asked; for example, ethnography (the methodology) may use interviews, observation and questionnaires (the methods). The choice of method being strongly dictated by the nature of the research being undertaken and the methodology chosen.

METHODOLOGIES

When deciding on how to undertake a piece of research, or how to critically evaluate research, one must first look at the question being asked or the topic being investigated, and then determine what the philosophical underpinning of the question is, before choosing the research methodology (as with paradigms).

Methodologies are the broad approach to a research investigation that the researcher has chosen in order to investigate a topic or question of interest (Ellis, 2013). Different methodologies are used to address different research questions and, therefore, the choice of research methodology is an important aspect of planning research. Put another way, if the researchers select the wrong methodology, then they will not answer the research question they have set out to answer.

The articulation between the choice of methodology and the research question is quite logical and, therefore, straightforward. If the

examination of a cause and effect relationship is needed then a suitable research methodology must be employed, for example, a randomised control trial or cohort study. Alternatively, if the experience of a patient or client is required, a methodology that captures their expressed experience must be selected, for example, a phenomenological or general qualitative study.

Specific methodologies are associated with answering very specific questions. This is true even within the paradigms and therefore the methods employed do differ significantly. So, for example, within the qualitative paradigm, while phenomenology is interested in understanding the nature of the lived experience of the individual, ethnography is interested in describing and understanding reality. Meanwhile, in the quantitative paradigm, if one is interested in cause and effect, one might use a randomised controlled trial, cohort study or experiment; but if one is interested merely in the prevalence of some phenomenon, then a cross sectional study would be the recommended methodology.

Having an understanding of the correctness of the methodology used in a piece of research helps the reader of the research make specific judgements about the quality of what they are reading and whether the study is fit for purpose. Secondly, an understanding of the methodologies helps the individual to make an informed judgement about the appropriateness of the research data collection method the researchers have used (Macnee and McCabe, 2008). Together, these are important questions to ask of research that may be relied upon to inform a change in practice.

In later papers in this series, some of the different research methodologies will be explored in detail along with the various elements of research design, including methods.

METHODS

If the paradigm of the research is impacted by the nature of the worldview implicit in the research question, and the methodology is associated with the exact nature of the research question, the methods used are a compromise between the

usual methods associated with the methodology in question, the exact nature of the question and practical considerations.

It is perhaps worth taking a diversion to help explain and understand that all research is, to some extent, tempered in its execution by the need to respond to reality. Although this series will present an idealised version of how to undertake research, this does not always represent the reality of the situation. Sometimes this is the result of a lack of time, money or other resources on the part of the researcher, while at other times this is a practical response to an ethical dilemma, for example, it is probably unethical to study abuse without making some effort to intervene.

Methods are the exact tools by which the data needed for the research study is captured. In broad terms, it could be concluded that quantitative studies (concerned with reality, number and proof) require the use of methods that involve counting things. Commonly used methods in quantitative studies include questionnaires (especially ones which have multiple choice answers) and in the clinical setting studies that measure certain variables, such as rates of healing and length of hospital stay, for example.

On the other hand, qualitative studies (concerned with people’s interpretations, opinions and beliefs) require methods that seek to capture how people experience/feel about things and, therefore, require the researcher to talk to people (Creswell, 2007). Commonly used methods of qualitative research are various forms of interview and focus groups.

Example

In their study of the absorbency effects of barrier creams, Fleming, Zala and Ousey (2014) used a blinded experimental methodology in order to examine the transfer of barrier cream from the patient to an absorbency pad and the impact of this transfer on the absorbency of the pad itself. The issues under scrutiny require that the methodology chosen uses an approach that:

- ▶ Creates an equality of the test procedure
- ▶ Allows cause and effect to be measured
- ▶ Optimises the chances of the measures being conducted objectively (hence the blinding — there will be more on these issues later in this series).

The methods employed within this study allow the measure of interest to be undertaken in a

Table 1: The most popular methodologies that are associated with the two research paradigms.

| Quantitative | Qualitative |
|-------------------------------|----------------------------------|
| Randomised controlled trial | Phenomenology |
| Cohort study | Grounded theory |
| Case-control study | Ethnography |
| Cross-sectional study | Biography |
| Ecological study | Case study |
| Experiments/quasi experiments | Nonspecific qualitative research |

repeatable, quantifiable manner. For example, the same measured amount of cream was applied to the same measured area of skin, and the continence pad applied under uniform pressure for a measured amount of time. The amount of cream transferred was then measured using precision scales.

The points illustrated in this study demonstrate how the choice of methodology and methods are important in providing the study with some credibility. Credibility is important, especially when the study might be used to inform subsequent clinical practice.

CONCLUSION

In this article, the author has identified the need for research to use a methodology to guide the overall approach to answering a research question. This methodology *must* fit the nature of the research question being. The importance of selecting the appropriate tools of data collection has also been discussed. Where research is undertaken and this is not the case, questions need to be asked about the quality of the research and whether its findings inform what clinicians do.

In subsequent papers in this series, some of the methodologies and methods commonly used in nursing and health and social care research will also be examined.



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