

Section One

# **Preliminary Considerations**

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# Introduction to Mixed Methods Research for Nursing and the Health Sciences

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## **Learning objectives**

After reading this chapter, you will have an understanding of the:

- a) Research process related to mixed methods research in nursing and the health sciences.
- b) Current trends in nursing and health sciences research, including the changes in the nature of research (for example: the complexities of research problems, requirements of funding bodies) and support for new approaches to research.
- c) Key terms used in mixed methods research including a definition of mixed methods.

## **Introduction**

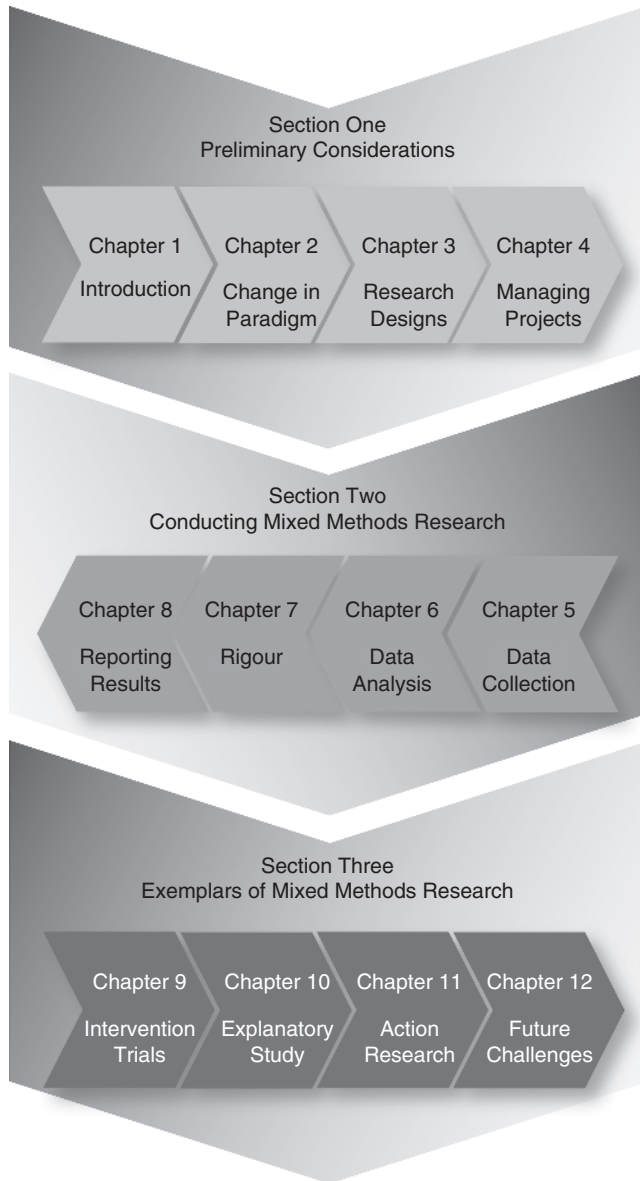
In recent years there has been an increased interest in formal mixed methods research, although for many years researchers have reported the findings of qualitative and quantitative data collection methods within the one study. As a methodology, mixed methods is more than simply the ad hoc combination of qualitative and quantitative data in a single study. It involves the planned mixing of qualitative and quantitative methods at a predetermined stage of the research process, be it during the initial study planning, the process of data collection, data analysis or reporting, in order to better answer the research question.

Mixed methods research has reached a critical point in its evolution. A growing body of literature debates the philosophy behind using mixed methods and reports the findings of studies conducted using mixed methods designs. However, this body of literature seldom provides detailed descriptions of the practical aspects of how the mixing of methods can be rigorously achieved. Additionally, our observations, from a range of conferences and meetings where mixed methods research has been presented, identify significant issues in the implementation of mixed methods designs, particularly concerning the ways of integrating mixed methods data and the presentation of study findings. To ensure that mixed methods research is considered as rigorous as qualitative or quantitative designs, it is essential that those implementing it consider the implications of their methodological choices. This is not to say that there is only one way of conducting mixed methods research; indeed, researcher creativity is an important component of mixed methods designs. However, adequate planning must be undertaken to ensure rigour and quality within the project.

This book aims to provide a practical guide to conducting mixed methods research in nursing and the health sciences, and importantly outlines processes for methodological rigour. As such, it will provide much needed scholarly and practical discourse related to the design, conduct and reporting of mixed methods research in nursing and health sciences research.

## **Organisation of the book**

Mixed methods is a relatively new design for many researchers, and it is necessary to introduce the approach, provide specific guidance relating to how to implement the design and information about the specific procedures involved (Creswell and Plano Clark 2006). This book seeks to provide this information to the researcher in a practical format, relating the philosophical and methodological considerations of mixed methods research with practical advice as to how these considerations can be implemented in nursing and health sciences research. Figure 1.1 depicts the three sections and twelve chapters of the text. Section One consists of four chapters that discuss the preliminary considerations in using mixed methods research in contemporary nursing and health sciences research. Section Two contains four chapters, each of which describes a specific aspect of the research process in a mixed methods investigation. Section Three consists of the final three chapters that describe how mixed methods has been implemented in intervention trials, action research and a sequential triangulated mixed methods design, and contains the concluding chapter which highlights contemporary and future issues for mixed methods researchers.



**Figure 1.1** Structure of the text. (Figure designed by J. Rolley.)

## Current trends in nursing and health sciences research

It is currently an exciting time in health service delivery across a range of disciplines. Rapid social change, the pressures of contemporary living, an ageing population and an increase in complex and chronic disease all have a significant impact on the health and well-being of the community (Andrew and Halcomb 2006). Such issues also impact upon the delivery of health care and have created an urgent need to review the roles of various clinician groups, service delivery and models of care to promote the delivery of best practice interventions that will deliver the optimal treatment in the most resource efficient manner. The spiralling costs of the health care system are forcing health professionals to demonstrate the effectiveness of their interventions in terms of the cost to the system and benefit to the patient (Gaziano et al. 2007). To accomplish these goals, health care professionals need to access and critically analyse new knowledge and, where appropriate, incorporate the findings into clinical decision making (Wirtz et al. 2006). Mixed methods research offers a way of conducting research that will meet the needs of health care professionals.

Contemporary health care is increasingly seeking to implement evidence-based practice across disciplines. Although evidence can be drawn from a diverse range of sources, it is generally accepted that the findings of methodologically rigorous research are optimal for guiding decision making (National Health and Medical Research Council (NHMRC) 2007). Once it is accepted that research evidence is required to seek a solution to a clinical dilemma, then the debate centres around the relative weights of each methodological approach. It is not the purpose of this chapter to debate the relative merits of qualitative and quantitative research. Rather, this chapter seeks to assert, that for some research problems a mixed methods approach is the optimal means of providing a balanced approach to understanding the relative issues and their impact on the research problem. The multifaceted nature of the phenomena that contemporary health care professionals are concerned with investigating frequently demands the use of a similarly multifaceted approach to develop understandings and insights (Coyle and Williams 2000; Andrew and Halcomb 2006) and increase the evidence base for health care practitioners (Flemming 2007). Mixed methods research offers a means by which to achieve this aim whilst still providing a rigorous methodological framework (Andrew and Halcomb 2006).

When considering the role of mixed methods research it is also important to consider the transcendence of paradigms. Some health care researchers are concerned with generating understandings at the micro level while others are concerned with the macro level. Those in the former group emphasise the agency of those they study through

an emphasis upon studying the subjective interpretations and perspectives of individuals. However those working at the macro level are concerned with larger-scale patterns and trends and seek to pose structural explanations. Despite this observation all health care researchers aim to understand groups or individuals in society. If one is to conceptually transcend the micro and the macro levels, then methods must be developed to reflect this transcendence (Kelle 2001). Thus the application of qualitative and quantitative methods may depend upon the extent to which researchers seek to produce different levels and types of explanation. Whether these levels of explanation are commensurable may become less important than the fact of bringing them together.

## **Impetus towards a greater use of mixed methods**

Despite evidence that the '*paradigm wars*' between qualitative and quantitative research are still in progress, the use of a combination of methods, whether within a single paradigm (multimethod) or across paradigms (mixed methods), is becoming an increasingly accepted research approach (Bryman 2006). At the same time it is important to recognise that the underpinning of mixed methods research is nothing new but has always been part, at least implicitly, of many researchers' repertoires particularly in the health sciences. What are new, are the emerging impetuses that are leading researchers to methodological change and advancement. Where previously people were reluctant to disclose this combination of approaches, researchers are now discussing frank and meaningful information regarding methodological issues leading to innovation and the greater potential to have a repertoire of skills appropriate to a range of research questions.

The impetus driving healthcare researchers to critically analyse their methods comes from many directions, including: 1) increased reflexivity about researcher–researched relationships; 2) increased political awareness about what and who research is for; 3) growing formalisation of research governance and ethics procedures; 4) the availability and ease of new technologies; and 5) international research collaboration (Brannen 1992; Brannen 2008). Such forces are likely to make researchers reconsider their tried and tested ways of doing research and to invest in a range of innovative data collection methods.

### *Increased reflexivity in relationships*

The increased evidence of sensitivity and reflexivity on the part of nursing and health science researchers may reshape their choices about

research methods. As some argue, reflexivity is not solely about checking for researcher effects but also refers to researchers' relationships with those whom they seek to study, and how researchers themselves relate to both the research methods and to other members of the research team (Koch and Harrington 1998; Northway 2000). Giddings and Grant (2007) caution that mixed methods researchers must use and report their reflexivity in their research, as omission of this information may lead to the suspicion of mixed methods research as a 'trojan horse for positivism'.

### *Increased political awareness*

A second impetus concerns the increased emphasis on the politics of research and the research process. At one end of the spectrum, there is a demand that all research, at least to some degree, be useful in terms of policy making and/or clinical practice development. In Chapter 2, Muncey elaborates how 'useful' has tended to be synonymous with the quantitative paradigm where randomised controlled trials are accepted as the gold standard. Moreover, this type of research is favoured by major funding organisations. Further along the spectrum are 'participatory methods' where the emphasis is on social awareness and change by giving a voice to the gendered, disadvantaged and disempowered groups. In recent years, participatory methods have become increasingly popular in nursing research.

### *Growing formalisation of research governance*

A third impetus to methodological change concerns research governance and ethics. Choice of research methods has always been open to ethical scrutiny in terms of their effects on research participants. However, formal frameworks for research governance are increasingly being implemented, with an expansion in mandatory Human Research Ethics Committees through which researchers have to seek permission to conduct their research. In addition to institutional human research ethics committees, researchers may also need to meet the requirements of funding bodies and the agencies that provide access to potential participants. Such processes may significantly influence the researchers' choice of research method. This may prompt the researcher to adopt mixed methods research designs when they previously would have conducted a purely qualitative or quantitative investigation. In Chapter 9, Creswell and colleagues discuss how a



randomised controlled trial can incorporate qualitative data to develop a mixed approach to a study.

### *New technologies*

A fourth impetus that may more directly influence the range of methods employed in researchers' repertoires has to do with the potential for methodological innovation created following the development, expansion and refinement of new technology. The integration of data so that it is truly 'mixed', to form a hybrid of numbers and words, is a real possibility with computer programs such as NVivo. In Chapter 6, Bazeley discusses the role of computer technology to integrate and analyse mixed methods data. Other technologies are discussed by Brannen and Halcomb in Chapter 5.

### *International research collaboration*

There is growing interest in international research collaboration, which has occurred as globalisation and international issues attract greater attention. Additionally, funding bodies are increasingly calling for international partnerships for specific projects. Cross-national research often requires a number of different data sources. Such data sources are likely to emanate from a range of very different methods of data collection and need to be considered within the parameters of cultural acceptability and appropriateness.

## **Mixed methods terminology**

### *What is mixed methods research?*

Although the notion of mixing data has been in existence for around 40 years there have been significant developments not only in the science but also in the terminology of mixed methods research. From its early nomenclature of multiple operationalism (Campbell and Fiske 1959) to triangulation (Jick 1979), between-method triangulation (Denzin 1989) and multimethod research (Brewer and Hunter 1989), the term mixed methods has emerged. In this book we have adopted the simple definition of mixed methods as research which collects both qualitative and quantitative data in the one study and integrates

these data at some stage of the research process. This definition is expanded and developed in the chapters of the book. For example, in Chapter 2 Muncey defines and debates the paradigm issues related to mixed methods. In the final chapter, Andrew and Halcomb present their views on how this definition can be refined to incorporate the debates and contemporary developments in mixed methods research.

We have adopted Tashakkori and Teddlie's (2003) definition of 'multimethod' research as being a combination of methods from the same paradigm. The distinction between mixed methods and multimethod research is illustrated in Box 1.1.

### **Box 1.1 Research in action**

A mixed methods study of caregiver grief used (qualitative) interviews informed by descriptive phenomenology and (quantitative) standardised instruments to measure distress and grief while caring for a person with a terminal illness and during bereavement (Waldrop 2007).

A multimethod study used observation and interviews to explore maternal experiences of using kangaroo holding in a neonatal intensive care unit (Johnson 2007).

### *Methods versus methodology*

Methods and methodology are other terms that are frequently used (or abused) by researchers. In this text we prefer the definitions proposed by Giddings and Grant (2007) where methodology is defined as a '*thinking tool*' that is the worldview (paradigm) that influences how a researcher presents a research question, and decides on the methods and data analysis to employ in a study. Methods, by comparison, are considered the '*doing tools*', i.e. the way data are collected and analysed (Giddings and Grant 2007). For example, a phenomenological study used interviews to explore the lived experience of the ICU nurse caring for clients having treatment withdrawn or withheld (Halcomb et al. 2004). The methodology would be phenomenology, whilst the method would be semi-structured interviews.

### *Research design*

Another term used throughout the book is research design. The design is the overall approach to a study which encompasses the aim, methods

and the anticipated outcomes (Thurston 2006). A research design should be congruent with the methodology chosen for the study. Research designs in mixed methods are varied and Kroll and Neri present some popular mixed methods designs and practical considerations for their implementation in Chapter 3. In Chapters 9, 10 and 11 examples of research designs are presented. Creswell and colleagues present a mixed methods design that combines qualitative data with a randomised controlled trial in Chapter 9. The latter two chapters are based on doctoral programmes where the primary authors have adopted a multistage mixed methods approach. These chapters have been included, not only as exemplars, but also to provide encouragement to other higher degree students and researchers who have taken the mixed methods path. We hope this book will assist you with some of those practical decisions on your research journey.

## Conclusion

In this chapter we have introduced the reader to the current trends in mixed methods research, and to the terminology that will be expanded and refined during progress through the text. We wish you well in your research and studies and look forward to watching the science of mixed methods develop and grow in the future.

## References

- Andrew S. and Halcomb E.J. (2006) Mixed methods research is an effective method of enquiry for working with families and communities. *Contemporary Nurse*, **23**, 145–153.
- Brannen J. (1992) *Mixing Methods: Qualitative and Quantitative Research*. Aldershot: Bower.
- Brannen J. (2008) The practice of a mixed methods research strategy: personal, professional and project considerations in Bergman M. (ed.) *Advances in Mixed Methods Research: Theories and applications*. London: Sage Publications.
- Brewer J. and Hunter A. (1989) *Multimethod Research: A Synthesis of Styles*. New York: Sage Publications.
- Bryman A. (2006) Paradigm peace and the implication for quality. *International Journal of Social Research Methodology*, **9**, 111–126.
- Campbell D.T. and Fiske D.W. (1959) Convergent and discriminant validation by the multitrait–multimethod matrix. *Psychological Bulletin*, **56**, 81–105.
- Coyle J. and Williams B. (2000) An exploration of the epistemological intricacies of using qualitative data to develop a quantitative measure of user views of health care. *Journal of Advanced Nursing*, **31**, 1235–1243.

- Creswell J.W. and Plano Clark V. (2006) *Designing and Conducting Mixed Methods Research*. Thousand Oaks, California: Sage Publications.
- Denzin N. (1989) *The Research Art: A Theoretical Introduction of Sociological Methods*, 3rd edition. Chicago: Aldine.
- Flemming K. (2007) The knowledge base for evidence-based nursing: a role for mixed methods research. *Advances in Nursing Science*, **30**, 41–51.
- Gaziano T.A., Galea G. and Reddy K.S. (2007) Scaling up interventions for chronic disease prevention: the evidence. *Lancet*, **370**, 1939–1946.
- Giddings L.S. and Grant B.M. (2007) A trojan horse for positivism? A critique of mixed methods. *Advances in Nursing Science*, **30**, 52–60.
- Halcomb E.J., Daly J., Jackson D. and Davidson P. (2004) An insight into Australian nurses' experience of withdrawal/withholding of treatment in the ICU. *Intensive and Critical Care Nursing*, **20**, 214–222.
- Jick T.D. (1979) Mixing qualitative and quantitative methods: triangulation in action. *Administrative Science Quarterly*, **24**, 602–611.
- Johnson A.N. (2007) The maternal experience of kangaroo holding. *JOGNN: Journal of Obstetric, Gynecologic, and Neonatal Nursing*, **36**, 568–573.
- Kelle U. (2001) Sociological explanations between micro and macro and the integration of qualitative and quantitative methods. *Forum: Qualitative Social Research*, **2**, <http://www.qualitative-research.net/fqs-texte/1-01/1-01kelle-e.pdf>.
- Koch T. and Harrington A. (1998) Reconceptualizing rigor: the case for reflexivity. *Journal of Advanced Nursing*, **28**, 882–890.
- National Health and Medical Research Council (NHMRC) (2007) NHMRC standards and procedures for externally developed guidelines. Retrieved 10 December from: [http://www.nhmrc.gov.au/publications/synopses/\\_files/nh56.pdf](http://www.nhmrc.gov.au/publications/synopses/_files/nh56.pdf). Canberra, ACT: Australian Government.
- Northway R. (2000) Disability, nursing research and the importance of reflexivity. *Journal of Advanced Nursing*, **32**, 391–397.
- Tashakkori A. and Teddlie C. (eds) (2003) *Handbook of Mixed Methods in Social and Behavioral Research*. Thousand Oaks, California: Sage Publications.
- Thurston W. (2006) Methodological congruence in complex and collaborative mixed method projects. *International Journal of Multiple Research Approaches*, **1**, 2–14.
- Waldrop D.P. (2007) Caregiver grief in terminal illness and bereavement: a mixed-methods study. *Health and Social Work*, **32**, 197–206.
- Wirtz V., Cribb A. and Barber N. (2006) Patient–doctor decision-making about treatment within the consultation – a critical analysis of models. *Social Science and Medicine*, **62**, 116–124.