

Research skills for nurses and midwives



Note

Health and social care practice and knowledge are constantly changing and developing as new research and treatments, changes in procedures, drugs and equipment become available.

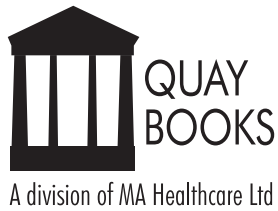
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Research Skills for Nurses and Midwives

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Contents

Preface	vii
Acknowledgements	xi
Chapter 1	
Understanding the language of research	I
Chapter 2	
Qualitative research: an overview of methods	17
Chapter 3	
Qualitative research: data collection and analysis	37
Chapter 4	
Qualitative research: quality and ethics	53
Chapter 5	
Quantitative research: experiments	63
Chapter 6	
Quantitative research: surveys	93
Chapter 7	
Quantitative research: data analysis	115
Chapter 8	
Other strategies and evidence	155
Chapter 9	
How to do research in the real world	185
References	213
Index	221







Preface

When we wrote our first book, *Fundamental Aspects of Research for Nurses* (2010), we drew attention to the Prime Minister's Commission on The Future of Nursing and Midwifery in England, published on 2 March 2010, which stated that nurses and midwives must renew their pledge to society to deliver high-quality, compassionate care, thus placing quality of care at the top of the healthcare agenda. We wrote our book for student nurses who were committed to taking the first steps in research awareness in light of both this report and the changes taking place within nurse education, namely the move to an all-graduate profession. From September 2012 all pre-registration nursing programmes will have a degree-level target, requiring students to understand, use and undertake research as a prerequisite for thinking innovatively to influence system design in healthcare, and to impact positively on service delivery. Of course, midwifery has been ahead of nursing in this respect, having made a similar move in 2010, so we are delighted to have broadened the scope of this book to embrace both nurses and midwives in a joint research enterprise!

In the intervening two years, and with the change of government to a coalition in May 2010, the NHS has undergone some of the most radical restructuring in its history. The changes, completed in 2012, include the disassembling of the Strategic Health Authorities, the abolition of Primary Care Trusts, and the move by all NHS trusts to Foundation Trust status, with the commissioning of healthcare services becoming the responsibility of GPs working within Clinical Commissioning Groups (CCGs), overseen by the NHS Commissioning Board.

With regard to education and training, a function previously the responsibility of the SHAs, the Government within its White Paper 'Liberating the NHS: Developing the Healthcare Workforce' (DH, 2010a) proposed the establishment of Local Education and Training Boards (LETBs) to provide a forum for workforce development to support research and innovation, coordinate workforce planning activity, and commission education and training locally. A new body, Health Education England (HEE), has been commissioned to authorise and to support LETBs to promote high-quality education and training.





Preface

The overarching principles enshrined in the new legislation refer to the need to make the NHS more responsive, efficient and accountable, with a culture of research that is embedded at every level in both the NHS and in public health. The Health and Social Care Act 2012 places new duties on the Secretary of State for Health, the board and clinical commissioning groups to have regard to the need to promote research within the health service by explicitly providing the legal basis for research in the new NHS architecture. Under this provision the Secretary of State has a duty to promote research on matters relevant to the health service and the use in the health service of evidence obtained from research. Clearly, healthcare professionals, including nurses and midwives, who are at the forefront of healthcare delivery, need to be aware of and skilled in research in order to fulfil the requirements of the Health and Social Care Act, and in meeting the needs of patients and clients within the new landscape of health and social care.

This book aims to provide nurses and midwives with a sound theoretical knowledge base for understanding, critically appraising and undertaking research in all areas of health service provision. A comprehensive insight is provided into the philosophies, methodologies and methods used in social science research, where we locate the disciplines of nursing and midwifery, using examples from these distinct professions where appropriate. We include a new chapter which takes a pragmatic approach to research and offers a ‘how to do’ section, which nurses and midwives, beginning to engage with research for the first time, should find useful.

Once again we take the view that nurses and midwives are autonomous and curious learners, prepared to supplement their reading with other sources. To this end we offer suggestions throughout for further reading, plus a number of exercises to develop research skills. The book introduces student nurses and midwives to research, taking, as in our first edition, a conventional approach. Qualitative and quantitative methodologies are considered separately.

We begin in Chapter 1 with an overview of research philosophies and paradigms, including a consideration of mixed methods as a paradigm in and of itself, as opposed to simply a combination of methods. However, we recognise the place of mixed methods in our discussion of research design, strategy and data collection; therefore we refer to mixed methods throughout the book. We consider the importance of the research question and the literature review in determining the research design, before introducing quantitative, qualitative and mixed methodologies.

Chapter 2 provides an overview of qualitative research methods, focusing on ethnography, phenomenology, grounded theory, action research, feminist



research and narrative methods. We illustrate the text with examples from published nursing and midwifery research where different research approaches have been used. Chapter 3 discusses methods for collecting qualitative data, including sampling strategies and methods for data analysis. Chapter 4 concludes the section on qualitative research, considering issues of quality and ethics in qualitative research.

Chapters 5 and 6 are concerned with quantitative research, including an exploration of the two most popular types: the classic scientific experiment and the use of surveys to explore populations. Quantitative data analysis is discussed in Chapter 7, which includes some exercises for those who are wary of statistics. In Chapter 8, we pay particular attention to mixed methods in research, in acknowledgment of the shift away from strict adherence to one particular approach to one which places the research question central in determining the most appropriate research design. The role of research as a source for evidence which can be used to develop healthcare is also addressed.

In Chapter 9 we take a ‘how to do it’ approach to preparing to write a research bid, writing a research proposal, and running a small-scale research project. We are of the belief that even though all nursing and midwifery courses cover research within the curriculum, often a theoretical approach is employed to the detriment of practical engagement in research. While it may not be feasible for undergraduate students to undertake empirical research for reasons of limited time and preclusive ethical issues, the consequences are that students may be well versed in the theory of research, but less so in how to carry it out. Dissertations are often library-based knowledge reviews, which compounds the problem. In essence, what we have is a perpetuation of the theory–practice gap. In Chapter 9 we show you, step by step, how to undertake a small research project from the initial stages of thinking about your project and looking for sources of funding, through to preparing and submitting your bid, thinking about good research governance, leading your research team, and finally sharing, through dissemination, your research findings.

We acknowledge our narrative is a theoretical account as, after all, we have written a research ‘textbook’. Therefore we are reliant on you, the student, to put our ideas into practice, in other words to bridge the theory–practice gap and ‘have a go’ at doing research. Good luck!

SD and PN 2013





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Thank you to all the nursing students who, over the years, have been recipients of my research teaching. I hope to have made a difference, at least in terms of encouraging an interest in research.

Thanks to my mum who has in recent months helped me understand the meaning of dignity and fortitude – well done Mum. This book is dedicated to you.

Peter would like to thank his wife, Sarah and their children, Catherine and John, who are working their way through their A levels at the time of writing this second edition.

This is an expanded edition, so I will similarly expand the acknowledgments (apologies). My father Tom remains in our thoughts, but this is also a good opportunity to thank my stepmother Olive for her grammatical rectitude and kindness. Thanks again to my brother Alan, to my sister in-law Gwen, and to Roger and Sue Blackwell for enlivening our holidays and being unflagging advocates for their grandchildren.

Time has flown, but despite all (and possibly against my better judgment), I remain grateful to the late Carlos Castaneda, who introduced me to the *curandero*, Don Juan of New Mexico.







CHAPTER I

Understanding the language of research

Introduction

The preface to this book indicates the level of importance we place on an understanding of research for nurses and midwives. More now than ever, in the changing face of healthcare provision and delivery, it is imperative that nurses and midwives – indeed all those at the interface between service provision and service delivery – need to have a sound knowledge of research, including how to seek out and understand the best available evidence to underpin and facilitate the highest quality practice. Students of nursing and midwifery are keen to know their discipline, to become expert in that discipline and to make a difference to the patients, clients and families they come into contact with. In essence our students want to learn the ‘tools of their trade’, so to speak.

However, while we believe research to be the key to advancing knowledge of our subject, essential in helping make the right decisions regarding care delivery, and most important of all, vital to the creation of new knowledge within our discipline, our experience over many years of teaching research to nurses and midwives tells us that often the language of research is off-putting at the outset. When we introduce the topic of research early in the nursing and midwifery curriculum, students are not always ready to embrace it as an essential element of their discipline, being keen to learn the theory of their subject and to develop the necessary skills required for practice. What we have then, is a tension within the curriculum around when to introduce the topic of research, and how to teach it in a meaningful way.

The Nursing and Midwifery Council (NMC) requires students first and foremost to be competent and safe practitioners. An essential element of com-





competency in practice is an understanding of the evidence base for practice at a level which ensures sound decision-making in relation to care delivery. This requires students to be able to read research, critically appraise what they are reading, and be confident that the methods described are the correct ones in relation to a given research problem or question; that the research process was carried out systematically, with due diligence paid to ethical issues, and that the findings can be relied upon as grounded in good research practice. These are our goals when teaching research within the nursing and midwifery curriculum; hence our book is based on achievement of these goals and written in such a way as to support research teaching, however and wherever it is manifest in your degree programme. While we accept that the language of research may be unfamiliar, we ask for your perseverance. You will become conversant with the language of research through reading this and other books about research for nurses and midwives.

As a nursing or midwifery student, you will be familiar with the language of nursing and midwifery practice, including well-known acronyms – for example BP (Blood Pressure), TPR (Temperature, Pulse and Respiration), CPR (Cardiopulmonary Resuscitation), A/N (Antenatal), Cx (Cervix) and CTG (Cardiotocograph). You may recall being introduced to this language early in your studies and wondering how you would ever come to understand and use it in a familiar and confident manner. Now that you are some way through your course, you will be familiar with this ‘language of practice’ and will have more than likely forgotten how it felt to be excluded and isolated by healthcare professionals who are experienced at using the language of practice as they go about their business. Moreover, like many healthcare professionals, you may view the acquisition of this language as a ‘rite of passage’ which students, yourself included, must traverse as part of the process of socialisation into the profession. We do not subscribe to this view, being of the mind that inaccessible language creates barriers that are both unnecessary and damaging to healthcare practice (including research), and in particular to nursing and midwifery students who are attempting to understand and undertake research perhaps for the first time. We will therefore take the time to describe as clearly as possible what we mean by certain terms and how we are using them, in order that you can begin to understand the language of research and its centrality to your practice.

In this chapter, we introduce the ‘language of research’, including research philosophies, research paradigms, methodologies and methods.





Research philosophies

Researchers are often asked to explain the philosophical basis for their research, whether this be funded research or research undertaken as part of research degree studies. Philosophy is generally concerned with questions about reality, existence, values, reason, mind and language; whereas research philosophy is concerned with how the world is perceived and how best we can come to understand the world. By this we mean to what extent researchers believe that, on the one hand, we are active in creating or shaping the social world in which we live, or on the other hand, that the social world exists independently of what we may think of it. On first reading this paragraph you might already feel lost, thinking that research is too deep, complicated and complex, and not for you. This is understandable if you are new to research and has much to do with unfamiliar terminology for what are actually quite straightforward ways of thinking about important questions and how best to find the answers. While research may be detailed, can be complex, and may involve groups of people with very different views about a particular issue, it is nevertheless something you can undertake. The most important point to make here is that you can come to understand the philosophical basis of research and begin to understand how your own worldview shapes the kinds of research you may want to undertake.

It is important to note that the approach advocated in this chapter is not without its critics. Authors have pointed out that holding fast to a philosophical position at the outset can inhibit our understanding, as it precludes the possibility of an alternative viewpoint (Dyson and Brown, 2006). For example, if we were to ask student nurses and midwives for their views on being supported in the practice setting by academic teachers we would be taking the philosophical position that it is possible to understand the social world in which the student lives, and therefore we would be prepared to accept the student's view on this matter. The alternative position is that it is not possible to understand how the student perceives the world with any degree of certainty; therefore we need other forms of knowledge to answer the question posed in order that we can be sure of or convinced by the information (data) gathered. Our method of enquiry, should we view the world this way, might be to collect information (data) about how many times students were visited in practice by academic teachers, how long these encounters lasted, and whether or not a formal assessment was conducted.





In spite of criticisms of an approach where the researcher has a predetermined idea of how we can come to know the world, an advantage is that the researcher can more readily apply a structured and logical approach to designing and carrying out the research. Certainly, for beginning researchers this is a most useful approach. However, it is important (and indeed the position taken in this book) that the beginning researcher strives to keep an open mind. Dyson and Brown (2006) sum up this position when suggesting that researchers who adopt a philosophical viewpoint at the outset may use it as a cloak against other philosophical positions. While this approach has the attraction of consistency, it may lead the researcher to believe they have found the one ‘true’ philosophical position, to the exclusion of all others (Dyson and Brown, 2006, p. 3).

When placed in the context of research, philosophy is about how we can come to know the social world in order to understand why practitioners and users of health and social care services think and subsequently act in the way they do. For example, we may ask the question why, in spite of evidence to the contrary, do individuals continue to engage in unhealthy practices such as smoking, excessive drinking and overeating? Similarly, why do a significant number of health and social care practitioners engage in similar practices when we could argue that although the first group may be excused through lack of exposure to health-promoting messages, the second group should really know better, through exposure to specific health education – some of which they may actually teach! Of course, this is to oversimplify what is occurring, as we know there are many factors influencing individual health behaviour. For researchers in health and social care, interested in exploring these phenomena or manifestations of behaviour, we need to know something about research philosophy if we are to understand the fundamental problems for practitioners and users of health and social care services and to ask the right questions in the right ways.

Until recently, it was generally accepted that there are two main ways of coming to know the social world, by which we mean the world inhabited by social beings or communities as opposed to the world of the individual. These distinct philosophies gave rise to two paradigms (patterns of thought) referred to as the positivist and interpretivist paradigms. However, researchers now recognise the place of mixed methods research (in particular the notion of pragmatism within mixed methods) as offering an alternative but legitimate paradigm within research (we will return to this later). Before we look at the characteristics of positivism, interpretivism and mixed methods, we need to consider exactly what we mean by a paradigm and how we have arrived at a position whereby researchers generally associate themselves, rightly or wrongly, with one or another paradigm. This is important, as we need to be able to articulate how our





view has informed our subsequent decisions about research design to those who share our interests and are, in turn, interested in our research findings.

Research paradigms

A paradigm is a set of assumptions, concepts, values and practices constituting a view of reality. In terms of research a paradigm represents a view shared by a scientific community about how we can come to know the essence of things (*ontology*) and how we can come to know what is true, and what is false (*epistemology*). Over time, scientific communities have come to hold a common set of assumptions and values and to follow certain rules in pursuit of solutions to problems in the real world.

The EQUANS study

The writing that follows will draw on an example of research to provide some context to what might otherwise be a quite abstract discussion. Research undertaken for the National Sickle Cell and Thalassaemia Screening Programme (a scientific community) sought to establish whether the costly processes of antenatal screening of women for sickle cell and thalassaemia genes could be targeted by focusing on women who answered an ethnicity question and placed themselves into a group at higher risk of carrying such genes (economically but potentially inequitable), or whether all women, irrespective of an answer to an ethnicity question, should be offered such screening (equitable but economically expensive), comparing different population groups undergoing different treatments across different periods (Dyson *et al.*, 2006).

The assumption underpinning the first phase of the Ethnicity and Antenatal Screening Study (EQUANS) was that it would be possible to answer the research question by undertaking a randomised controlled trial (a positivistic paradigm: more of this later). In the EQUANS study a category-based ethnicity screening question was shown to be more effective than a binary plus open-ended question. Study data were analysed using statistical tests to understand whether an ethnicity question would be sufficiently valid and reliable as a screening question to ascertain risk status for sickle cell/thalassaemia in an antenatal screening programme.





The paradigm underpinning this research is positivism, because the researchers do not intend to ask the participants (in this phase of the EQUANS study) about their experiences, feelings or views regarding screening, but rather have chosen to gather numerical data, which can be subjected to statistical tests to measure the error rate between midwife and participant (pregnant women) assignment of ethnicity. In utilising an essentially positivistic approach the EQUANS study was able to show that using the more effective question, 5.74% (CI 2.34–11.46%) of significant haemoglobinopathies will be missed in a selective screening programme, and 4.33% (CI 2.63–6.68%) of replies to an ethnicity screening question will be unreliable when compared to information given upon re-interview (Dyson *et al.*, 2006).

Positivism

Positivists believe the goal of science is to uncover the truth. Consequently, a positivist would view science as a means of getting at the truth in order to understand the world well enough to predict and control it. Stereotypically, scientists are depicted wearing white coats and based in laboratories. This image was certainly true in the past, supported by popular imagery such as television and film. Positivistic scientists are interested in observing what can be seen (phenomena), describing what is seen and measuring what is seen. Knowledge of anything beyond the observed, described and measured is impossible to the positivist. Taking this a step further, a positivist would argue those things not directly observed (for example, thoughts, feelings and emotions) are not legitimate subjects for study. A fundamental positivist would argue what cannot be measured is irrelevant. Positivists believe empiricism (the pursuit of knowledge by observation and experiment) to be central to scientific endeavour. Hence positivistic research is usually of an experimental design and uses quantitative approaches to data collection such as those described in the first phase of the EQUANS study (Dyson *et al.*, 2006).

Post-positivism

In recent times (since the mid-20th century) thinking about science has undergone a marked shift, with a rejection of the positivistic view that science works through observation and experiment and that this is distinctly different from how every-





day life is experienced. In an era now defined as post-positivism scientists do not view scientific reasoning and common sense reasoning as mutually exclusive, but as part of the same process, namely an attempt to make sense of the world.

Scientific research relies on results, which are verifiable, accurate and consistent. Although common sense reasoning does not always proceed in a systematic way, it is often underpinned by observation and measurement. When thinking about everyday healthcare practice you will be able to recall occasions when you knew your patient's condition had deteriorated long before any clinical observations confirmed your suspicions. This is intuitive practice, and while not underpinned by evidence in the scientific sense, it is based on observations of similar patients with similar conditions over considerable periods. Indeed, Patricia Benner's classic work recognised that nurses arrive at an understanding of patient care over time, not only through a sound educational base, but from a multitude of experiences (Benner, 1984).

The most common form of post-positivist thinking is a philosophy known as critical realism, which attempts to reconcile the position taken by the positivist and that taken by the interpretivist. By way of an example, the second phase of the EQUANS study sought to understand from the pregnant women and their midwives what it is like to be asked and to ask an ethnicity question, during the first meeting of mother and her midwife, namely at the 'booking in' antenatal visit. The research team observed the interaction between mother and midwife and followed this up with an interview. The midwife was asked to describe the experience of asking pregnant women to describe their ethnicity in order to assess their risk of carrying genes associated with sickle cell disorder, and the pregnant women were asked to describe their experience of being asked an ethnicity question. The assumption underpinning this phase of the EQUANS study was a belief in the possibility of knowing another person's experience by asking that person to describe their experiences, and furthermore that this is a legitimate form of knowledge.

Interpretivism

As we have shown, the positivist researcher places emphasis on explanation, prediction and control. Enquiry using a positivistic approach answers questions that readily lend themselves to numerical measurement: for example, how many nursing and midwifery students use the library facilities at the weekend, and during which hours. These types of questions are important, as we need to be able to predict library usage in the future and to ensure supply can meet demand.





Important questions around the provision of healthcare services lend themselves to positivistic enquiry: for example, the length of time that patients and clients may be waiting for healthcare services. Answers to these questions are important in order to ensure that users of services receive the care they need in a timely fashion in the most cost-effective manner (you can think of many more important questions that lend themselves to this type of enquiry). What positivist approaches to enquiry cannot tell us is how the individual, whether student or service user (or indeed individuals in any social situation) perceives, interprets and makes sense of the situation.

To continue with the earlier examples, we might also want to know what students think about the library's weekend opening times, how this relates to their view of the university as a whole, and how it helps or hinders their overall study experience. Similarly, we need to know how service users feel about waiting for healthcare services, how this influences their experience of health (for example pregnant women experiencing antenatal care) and illness (for example patients experiencing coronary heart disease), and how they make sense of these experiences now and the likely impact of this on future health behaviour. Collecting numerical data to help predict and control will not shed light on these important questions. For this we need a different approach, namely an interpretive approach to enquiry.

The interpretive approach to enquiry links with philosophy and the human sciences. Researchers adopting an interpretivist approach think of individuals as existing not in isolation, but as inseparable from the wider context of their everyday lives. Students at university are not separate from the wider social context in which they live; they bring the context of their lives with them, and their experience of university occurs within this context. Each student will have a unique university experience, while at the same time sharing similar experiences with other students. Similarly, service users and patients bring the wider context of their lives with them to the healthcare setting, and this shapes and colours their experience of health and illness.

Social scientists are concerned for the most part with understanding the unique world in which the individual lives. While social scientists may use numerical data to inform their enquiry, emphasis is placed on understanding the world of the 'other' rather than explaining that world. Social scientists use interpretivist approaches to gain access to an individual's experience and perception of reality. Social scientists are interested in qualitative expression, rather than quantitative measurement. Consequently, interpretivist researchers use qualitative approaches to data collection.





Critical realism

Critical realism recognises that observation is always fallible and prone to error; therefore theory can always be revised. The critical realist is critical of our ability to know reality with any degree of certainty. Of importance to the critical realist is the idea of holding fast to an attempt to get it right about reality rather than uncovering the truth, simply because we may never know the truth for sure.

A critical realist will attempt to use multiple methods (triangulation) to observe and measure reality in an effort to understand what is happening in the real world. These varying methods may have different types of errors within them; you may have your view of the world based on your experience and I will have mine. For example, you may observe the practice of your colleagues as being different from what you understand as good practice based on what has been taught in the classroom setting. In essence, this is the theory–practice gap, so often alluded to. Practitioners often refer to this as the reality of practice. Our view is that in order to make sense of the reality of practice and to maintain the integrity or truthfulness required for good practice, one must first know with a degree of certainty the evidence for a particular practice, in order to ‘hold fast’ to your view of what constitutes best practice. While your perception will not change, you may come to understand the perspective of the other person, recognising it as constructed by their experience. Thus you will be well placed to influence not only your practice but the practice of others for the better.

Critical realism allows multiple fallible sources to get a better view of what is going on by acknowledging that all observations, including those of scientists, are theory-laden and biased by experience. At this point you may well be asking how we can conduct research in any objective way if we allow multiple sources to inform our understanding of what is occurring (the phenomenon being studied), especially since these have been shown to be very different. A critical realist would argue that objectivity is not exclusive to an individual but rather belongs to a social group. Objectivity is what we strive for when we criticise each other’s work. In this sense, we may never achieve true objectivity, but as a community of truth seekers we can approach objectivity through scrutiny. Those theories that survive scrutiny are theories we can be most confident in.

For example, if we listen to our patients, who consistently tell us they fear going into hospital because of the risk of infection, we can develop a theory





that patients are concerned about the risk of hospital-acquired infection. The actual risk may be low in terms of total number of patients admitted to hospital. However, anxiety and stress are known to lower resistance to disease, making it more likely that anxious patients will be less resistant to infection. Using multiple sources of evidence, some of which may be fallible, allows for theory to be generated. For example, patients whose fears and anxieties around hospital-acquired infection are recognised and addressed are less likely to succumb to infection in the hospital setting.

Mixed methods

You may recall that we mentioned a third philosophical position, which has gained in popularity since the 1980s because it bridges the divide between the positivist and interpretivist philosophical positions. Mixed methods research, also known as mixed methodology or multi-methodology, focuses on research questions that call for real-life contextual understandings, multi-level perspectives and cultural influences, whereby rigorous quantitative and qualitative research methods are integrated to draw on the strengths of each, thereby framing the investigation within the philosophical and theoretical positions of both approaches in the pursuit of pragmatism (linking theory and practice).

Mixed methods research has been seen as transformative in being able to use pragmatism to employ what works, using diverse approaches, giving primacy to the importance of the research problem and question. Critics of mixed methods are usually those who hold fast to a philosophical tradition, believing it impossible to hold more than one philosophical position as the 'true' position at the same time, thereby making the mixing of methods at best ineffective and at worst untenable.

In summary, we have looked at philosophies of research as a starting point for thinking about how we might undertake research to underpin our practice: an important part of the role and responsibilities of nurses and midwives to service users and patients, which is as important as updating clinical knowledge. We began by thinking about how we might come to know the social world in which we live. It is generally accepted that there are three philosophical positions, two of which have opposing views, namely positivism, with its emphasis on the observable and objective way of knowing the social world, and interpretivism, a subjective view of knowing the social world. We introduced the concept of critical realism, where





emphasis is placed on understanding the ‘real’ world, as it is experienced by those we are interested in knowing more about.

A third philosophical position (often subscribed to by the critical realist) is said to underpin ‘mixed methods’, which attempts to bridge the divide between the two well-established philosophies in the name of pragmatism. Whichever view is subscribed to on a personal level, the key point is to think about the research question, i.e. what do we want to know, and to design the research study in a way that best enables the question to be answered.

For example, a researcher seeking to understand students’ experience of using the library would design a study grounded in interpretivism, whereby it is possible to come to know what it is like to use the library from the students’ perspective. On the other hand, a researcher wishing to know peak usage time for the library would design a study within the positivist paradigm and observe students using the library during certain times of the day. Both are useful pieces of research, but for different reasons and for different audiences. It is useful for library staff to know how students experience the library, so that they can facilitate improvements. However, if the question is one of how to make the best use of available resources, a different audience will be interested in the results, namely those responsible for resourcing the library and capital expenditure. A critical realist might use a mixed methods approach in order to understand the realities of library services for users within the context of an organisations diminishing resources. What is suitable for one research study may not be suitable for another depending on the question and the targeted audience for the research findings.

The research question

The research process begins when there is a problem in need of a solution, with the aim being to design a research study that will enable the problem to be solved. This is true irrespective of the preferred methodology, be it quantitative or qualitative. Identifying research problems in healthcare is relatively simple, as most of us have worked in the field in some capacity. Consequently, our exposure to and experience of healthcare situations means that we are best placed to identify problems of interest to the real world of healthcare practice.

Often the identification of a research problem arises from a disagreement or discussion: for example, how nursing and midwifery care should be organ-

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ised, how health services should be delivered, or what treatments and care patients and clients require or desire. The researcher then translates these disagreements or discussions into a researchable question and proceeds to design a research study using the most appropriate methodology to address the research question. In general, research ideas and questions arise from existing theories or previous research. Similarly, research questions in nursing and midwifery can arise from everyday practice, past nursing and midwifery research, or theory.

One of the most fruitful areas for research ideas is everyday nursing and midwifery practice. Practitioners continually have to make decisions about how to organise care, when to alert medical staff to a change in a patient's condition, when there are issues for a mother in labour, and (more often these days) how to make best use of available resources. Practitioners will be constantly observing and reflecting on their practice and the practice of others and thinking about how best to solve clinical and practice problems. Situations and experiences such as these, and many others you can think of, can be turned into research questions with the aim of improving practice for the benefit of patients and clients.

Previous research studies are another source of research ideas and questions because they often recommended further research in a subject. An interesting feature of research is that it tends to generate more questions than it answers. In addition, from reviewing and analysing research articles as a student you may have found issues in the published research that are problematic. In this case, your critique may be a good starting place to propose further research, which in turn adds to the body of nursing and midwifery knowledge.

The necessity to test or build theory is another source of research ideas and/or questions. Theory is an explanation of how a phenomenon operates and why. Theory serves the purpose of making sense out of current knowledge by integrating and summarising what is currently known. Theory building goes beyond what is currently known and attempts to suggest new relationships and make new predictions. New research studies can confirm or disconfirm nursing and midwifery theory.

Identifying a research idea or problem does not mean that this will be the exact focus of your research study, because the issue may have already been researched sufficiently for theory to become accepted practice. Alternatively, you may have identified a broad topic area from experience or observations of everyday practice, from previous research or from existing theory that now requires a different or innovative approach to investigation. Identification of the research topic is the beginning of the sequential process that leads to the





generation of the research question and culminates in the design of the research study. Refining the research question and designing the research study require a review of the research literature.

The literature review

Once the research topic has been identified, the next stage is to find out what is already known about the area to be investigated. The aim here is to refine the topic into a researchable question, to ensure that the research study will add to what is known about the issue, and to avoid repeating the limitations of previous research studies.

Reading and reviewing the literature to find out what is known about a subject can involve a number of sources, such as previous research studies published in academic journals, anecdotal accounts of practice, or textbooks and documentary sources. Reference can also be made to sources such as radio, television and audiovisual media, such as slides and photographs. Online databases are a good source of information, as are Internet sources. However, the researcher should exercise caution and maintain a degree of scepticism regarding the validity and reliability of online sources until the quality of the material can be verified. Cross-checking and referring to sources other than the Internet (for example published papers), is one way of doing this.

The literature review also serves the purpose of providing a rationale for a research study. Researchers may claim that the reason for undertaking research is that little or no research exists in a particular area. In this case, the literature review provides evidence that this is in fact the case, with literature cited that relates to the proposed study, but drawn from a broader subject area. The researchers are then able to justify the need for more focused research. A further reason for undertaking a literature review is to provide a context for the proposed research. In this case, the literature review locates the current study within the context of what is already known in the subject area.

The value of information to a given research study depends on whether it is a primary or secondary source. Original literature is a primary source: for example, a government report or textbook, or where the researcher has access to the original publication of a research study. Secondary sources are those where a person other than the person who undertook the original research reports on research. Both sources are useful. However, it is important where





possible to draw on primary sources, as secondary sources may misinterpret, misreport or distort the original literature. Where it is not possible to acquire the primary source, secondary sources are useful in shedding light on or conveying the essence of the original source. The researcher must make it clear, using recognised referencing techniques, whether sources of material are primary or secondary, and should as far as possible avoid over-using secondary sources.

The extent of a literature review depends on the target audience. For example, the review might be undertaken as part of original research for a programme of study, such as a Master's degree or a PhD. In these circumstances, the extent of the literature review is constrained by convention. In externally funded research projects the extent of the literature review may be determined by available resources and the requirements of funding bodies. Researchers will not be able to write about all the literature concerning a subject and will need to make a judgement regarding what *must* be included, what *could* be included, and what can reasonably be *omitted*. In most cases there will be literature that is integral to the proposed research and is deemed a classic text, the omission of which would seriously affect the integrity of the review. In most literature reviews, the researchers refer to the scope of the review, indicating the period it covers, the countries covered and any other distinguishing features of the review.

We note here that some research studies consist entirely of a systematic review of the literature, whereby the researcher reviews and evaluates what is already published in a given area. Systematic reviews are an accepted research approach and can serve as research in their own right or as an integral part of the literature review for a new study.

Research methodologies

A research paradigm is a worldview including philosophical and socio-political issues, whereas a research methodology is a general approach to scientific inquiry involving preferences for broad components of the research process (Teddle and Tashakkori, 2009). Research methodology refers to the principles guiding the researcher's choice of strategy and procedure for undertaking research. A researcher chooses a methodological approach to carrying out the research, based on a preferred research philosophy. As we have seen, research





philosophy is a set of beliefs about how we can come to know the world, namely positivist or interpretivist. Positivistic methodologies are quantitative in nature, whereas interpretivist methodologies are qualitative in nature. Mixed methods, as the name implies, use a combination of quantitative and qualitative methodologies in order to address the research question in the most effective manner. Methodology then, is a general approach to a scientific inquiry.

Quantitative methodology

Quantitative methodology is used in research studies in which the data are analysed numerically. Relatively large data sets are used, which are representative of the broad population being studied. Statistical tools (which are often complex) are used to analyse the data in order to give additional meaning to the research findings. Statistical tests are used to describe data in a meaningful way or to infer from the study population the things that may pertain to the whole of that population.

Quantitative approaches to research are useful in understanding trends and are used in the field of public health to look at underlying patterns of disease and to predict future requirements for the provision of healthcare services. Quantitative research will not explain or shed light on how individuals think about healthcare services, or indeed what they prefer to be available. Without this information, healthcare planners may make inappropriate choices for service provision, to the detriment of patient satisfaction.

Qualitative methodology

Qualitative methodology is used in research which seeks to understand the individual's point of view. Large data sets are not necessary, as the aim is not to generalise or infer from the findings to the whole of the population for that study. Rather, the aim is to understand from the individual respondent how the phenomenon is experienced. The sample size may be relatively small in qualitative research, depending on the method of data collection. Data from qualitative research are not subject to statistical tests, as respondents usually tell of their experiences, or feelings, in their own words. Common methods for collecting qualitative data are interviews and focus groups, transcribed verbatim (word for word).





Conclusion

This chapter looked at research philosophy and research paradigms. We have learnt that researchers usually hold a philosophical position about how we can come to know the social world around us. On the one hand, the social world is understood only through knowledge from direct observation and measurement, while on the other hand the social world can be understood through knowledge from accounts of individual experience.

We considered the centrality of both the research question and the literature review in decisions about research design. Researchers who come from a scientific background usually, although by no means exclusively, are consistent with a set of assumptions, concepts, values, and practices consistent with the positivist paradigm. These researchers generally undertake research using quantitative methodologies, which involve collecting numerical data. In contrast, researchers coming from a social science background, including health and social care, will more than likely adhere to a set of assumptions, concepts, values and practices consistent with the interpretivist paradigm. These researchers generally undertake research using qualitative methodologies, which involve collecting descriptive data. We considered the concept of mixed methods, describing this approach as bridging the gap between the well-recognised philosophies of positivism and interpretivism, and often adopted by critical realists in an effort to understand or come to know reality. In the next chapter, we provide an overview of qualitative research methods.

Further reading

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