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RESEARCH IN NURSING

The care provided by nurses must be based on up-to-date knowledge and research that supports the delivery of the highest standards of care possible. Nurses are developing their own professional knowledge base with strong foundations built on research. Nurses have a responsibility in some way to contribute to the development of the profession's knowledge through research.

The term 'research literate' or 'research aware' is used by many to describe the way that nurses should be in the 21st century. This means:

- having the capacity for critical thought
- possessing analytical skills
- having the skills to gain access to relevant research and evidence
- having a critical understanding of research processes
- being able to read and critically appraise research and other types of evidence
- having an awareness of ethical issues related to research.

By possessing these skills and being 'research literate', nurses should be able to assess 'the appropriateness of using specific types of evidence in their daily practice. It should be a natural activity for nurses to keep up to date and use research findings and evidence in their work, and being 'research literate' is one of the basic skills.

In this chapter we consider the historical context of nursing research, the nature of nursing research, including different definitions and the development of evidence-based practice.

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Learning outcomes

This chapter is designed to enable the reader to:

- Understand the nature and historical context of nursing research
- Define research in nursing
- Identify the three elements of evidence-based practice
- Identify the five stages of evidence-based practice

KEY TERMS

Capacity building, Capability building, Evidence-based practice, Hierarchy of evidence, Nursing research, Research literacy

The historical context of nursing research

Florence Nightingale is often seen as the very first nurse researcher. Her research in the 1850s focussed on soldiers' morbidity and mortality during the Crimean War. Nightingale identified 'research' questions in practice and undertook a systematic collection of data to try to find answers to the problems. Her 'research' eventually led to changes in the environment for sick people including cleanliness, ventilation, clean water and adequate diet. However, Nightingale's contribution is seen as atypical with Kirby (2004) pointing out that the development of **nursing research** in the United Kingdom really only started with the inception of the National Health Service (NHS) – now the world's largest publicly funded health service – in the late 1940s. Prior to this, the development of nursing research had relied on a few highly determined individuals and was bound up with the professionalisation of nursing, the demands for suitable nurses, and the raising of educational standards for nurses (Kirby, 2004). Furthermore, in the 1950s, sociologists and psychologists were more likely to be undertaking research into nursing and nurses; only a small number of pioneering nurses were researching nursing and nurses themselves, one being Marjorie Simpson, who started the first self-help group for nurse researchers in 1959 called the Research Discussion Group (Hopps, 1994). This went on to become The Research Society of the Royal College of Nursing, which continues today. The Royal College of Nursing is the body in the UK that represents nurses and nursing, promotes excellence in practice and shapes health policies.

Tierney (1998) presented a picture of the development of nursing research across Europe. She identified the UK, Finland and Denmark as having developed in a similar

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way over the past 30 years, with Estonia, Lithuania and Slovenia only developing in the last 10 years. Growth was particularly evident in the 1980s and 1990s. It can be seen that though overall growth has been slow, it has been more rapid in developed European countries. Many factors have affected this growth, such as the lack of resources and funding to support research, slow development of research training, **capacity** and **capability building**, and the low status of nurses relative to other health professions, particularly medicine. Tierney pointed out that there are four elements that support development: 'bottom-up' initiatives by forward looking individuals; 'top-down' initiatives through government support; growth of a research infrastructure as seen through universities; and a strategic approach rather than ad-hoc initiatives.

In the 1970s, serious consideration of nursing research in the UK came with the publication of the Briggs report (DOHSS, 1972) that recommended nursing should become a 'research-based' profession. This is often seen as a turning point in the historical context of nursing research, and as something that was badly needed for professional status. However, in the decades following the publication of the Briggs report, many suggested that nursing had not become 'research-based', nor had research made an impact on the daily practice of nurses (Hunt, 1981; Thomas, 1985; Webb and Mackenzie, 1993). Specifically, the arguments were that nurses did not read or understand research, nurses did not know how to use research in practice, nurses did not believe research, nurses were not able to use research to change practice, and nurse researchers did not communicate well. It is interesting to think about the current position: Do nurses read research? Do they understand research? Is research impacting on practice?

In 1993 the *Report of the Taskgroup on the Strategy for Research in Nursing, Midwifery and Health Visiting* (DoH, 1993) was published. It sought to address many of the deficiencies noted earlier about nursing becoming a 'research-based' profession. It was suggested that nurse education, support and research infrastructure needed to be developed to support progress. The report did not suggest that all nurses should be undertaking research, rather it recommended that all nurses should become **research literate**, an essential skill for knowledge-led nursing practice. It became much clearer that all nurses needed to become equipped with the skills of understanding the research process, and an ability to retrieve and critically assess research findings, increasing capacity, with only a few nurses needing to be prepared to undertake research, increasing capability.

Changes in research preparation and training have been seen at all levels of nurse education. Research is now fully integrated into the pre-registration curricula (UKCC, 1986) and there are changes to post-registration provision that include research education (UKCC, 1994). The move of nurse education into higher education institutions in the 1990s has supported ongoing academic development at Master and Doctoral levels, with 900 nurses registered on PhD programmes in 2005 (Higher Education Statistics Agency, 2005). Despite these developments there

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remains a shortfall of research-capable nurses (Rafferty et al., 2003), recognised by the Higher Education Funding Council, a body that promotes and funds high-quality, cost-effective teaching and research in higher education in England (HEFCE, 2001). The under-funding of research for nurses and allied health professions led to the HEFCE supporting capability building for both professional groups following the 2001 Research Assessment Exercise (RAE). The RAE is an audit of research volume and quality, soon to be superseded by the Research Excellence Framework, which allocates research funding to higher Education Institutions based on the quality of research activity. Nursing departments scoring 3a and 3b in the 2001 RAE received funding to through the Research Capability Fund. The results of the 2008 RAE and subsequent funding allocations are yet to be announced (at the time of going to press). Attention has also been given to developing the clinical research workforce. The UK Clinical Research Collaboration (UKCRC) reported in 2007 on 'Developing the best research professionals. Qualified graduate nurses: recommendations for preparing and supporting clinical academic nurses of the future'. This report was part of the agenda to modernise nursing careers, developing and preparing nurses to lead in a modernised healthcare system (DoH, 2006). The report recommends the establishment of a range of research training opportunities including masters and doctoral studies and fellowships, career flexibility that allows the combination of research and clinical practice and information provision to promote career opportunities for nursing. Programme work related to the implementation of these recommendations is planned for 2008.

The development of nursing research has also been aided by nursing organisations both nationally and internationally. This is acknowledged by Tierney (1997), who suggests that national nursing associations across Europe have been instrumental in strengthening the support for nursing research. In the UK the Royal College of Nursing has a well-established Research and Development support resource that can be accessed via the World Wide Web as well as the Research Society, an Institute, and occasional funding for research projects. In the UK the Foundation of Nursing Studies and the Queen's Nursing Institute are just a couple of the organisations that support nursing research. The Department of Health has occasional streams of funding specifically for nursing research as well as multi-disciplinary health research funding opportunities. Nurses now compete on a national basis with other disciplines for research funding, and European research funding is becoming easier to access.

Rafferty (1997), however, argues that we cannot ignore the 'politics' of nursing research, particularly the economic and organisational factors that influence research priorities. In nursing, these influences are powerful and there is no doubt that they affect the direction and development of nursing research in the UK.

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Economic, political and organisation factors influence the types of research that nurses undertake and can influence where the research funding is allocated.

The nature of nursing research

Though the growth of nursing research has been slow it continues to develop and is broad ranging, relating to practice, policy, education and management. It encompasses, for example, research about the effectiveness of nursing care, the development and evaluation of new types of care delivery, the expansion of nursing theories and concepts, the impact of policy on practice, new roles, and new ways of educating the nursing workforce. Nursing research is interested in what patients and clients feel and experience, how nurses learn and develop throughout their careers, how multi-disciplinary working and learning contributes to the care of patients, and the outcomes of nursing practice. The nursing profession is continually striving to develop its own body of research, and to contribute to health services research and the social sciences.

The nature of nursing research is complex. We have already suggested that nursing research is broad and wide ranging, capturing research into practice, care outcomes, education and management issues. Additionally, it should be remembered that nurses work as part of interprofessional teams and in different Healthcare settings. A number of research issues and questions might therefore arise that relate to interprofessional working. These factors impact on how nursing research is defined. Definitions of nursing research reflect the perspective of those researching nursing.

Bowling, in describing research on health and health services, defines research as '... the systematic and rigorous process of enquiry which aims to describe phenomena and to develop explanatory concepts and theories. Ultimately it aims to contribute to a scientific body of knowledge' (2001: 1). She then goes on to acknowledge the importance of multi-disciplinary health services research, which includes anthropologists, epidemiologists, health economists, medical sociologists and statisticians amongst those who conduct such research. They would each come with their own perspective on what defines research and how it should be conducted. Thus in defining nursing research there must be recognition of the potential multi-disciplinary nature of research teams and the consequential wide range of 'qualitative' and 'quantitative' research methods that will be employed to address the broad range of research issues.

Before moving on to consider definitions of research it is important to understand the main research approaches used, qualitative and quantitative, and to appreciate that often to address the complexity of nursing research both approaches can be combined

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within one study. The research approach is the whole design, which includes the researcher position and assumptions, the process of inquiry and the way data is collected and analysed. Qualitative research is part of an interpretivist or constructivist position that has long been part of social and behavioural sciences (Guba and Lincoln, 1982). The approach is used to describe and understand individual perspectives and experiences. For example, qualitative research may be used to answer questions about the patient experience or staff perceptions of new ways of working or new roles in nursing. Qualitative research can explore questions such as: What are patient's experiences of NHS direct?, How do patient's feel about the development of local NHS services? To gather information about personal views and experiences, research methods such as interviewing and observation are used, collecting textual or visual data for analysis.

Quantitative research has its origins in a scientific paradigm and roots in positivism, which believes human phenomena can be subjected to measurement and objective study. In nursing research quantitative approaches can be used to measure whether one treatment has a better effect than another. For example, quantitative designs might answer research questions such as 'Is treatment A better than treatment B?' The researcher may be guided by a hypothesis, a statement for testing (see Chapter 6), for example, 'Adults classed as clinically obese receiving an exercise programme of 30 minutes per day will have greater weight loss within two months of starting the programme than those undertaking a 10 minute exercise programme for two months.' Quantitative research takes a formal approach to the collection and analysis of numerical data.

In this book we discuss the different types of research in detail, identifying the strengths and limitations of each (see Chapters 11 to 18, 20 and 21). In doing this we introduce the readers to the range of research methods that might be used either independently or as part of a mixed-methods approach.

Given the complex nature of nursing research, finding one definition that achieves consensus in one is difficult. However, in most definitions of research there are some core elements:

- a systematic process
- a search for new knowledge or deepening understanding
- activities that are planned and logical
- a search for an answer to a question.

We use the following basic definition for the purposes of this book:

A systematic approach to gathering information for the purposes of answering questions and solving problems in the pursuit of creating new knowledge about nursing practice, education and policy. (Hek and Moule, 2006: 10)

Who does research in nursing?

As mentioned previously, researchers from other disciplines carried out much of the early nursing research in the 1950s, 1960s and early 1970s, including sociology, psychology, social and welfare policy, and history. Research was undertaken from a discipline perspective and nurse researchers at the time learnt about a wide range of research approaches and methods. Nurse researchers developed their research skills from social scientists and health researchers who included them on research teams. Historians, economists, statisticians, epidemiologists, geographers and anthropologists also brought their own approaches and techniques to nursing research.

This position has changed in the last 30 years or so, with many nurses now leading and undertaking their own research as well as being involved in multidisciplinary research teams. Increasingly, health services research involves multi-disciplinary teams including health professionals, statisticians and health economists. Nurses can be part of these teams, directly employed on a specific project; for example, a clinical trial examining the effectiveness of a nurse-led service, or an evaluation looking at what works in family support or child protection. Nurse researchers are more likely to have a larger input into studies rather than seen in the past, when nurses may have been employed as data collectors. Nurses can undertake project design and management, as well as data collection and analysis. We could think about local examples: of research that might provide further evidence of this change, for example: Are there research projects in practice that involve nurses? What are the roles of nurses in these projects?

As mentioned at the beginning of this chapter, all nurses need to become 'research literate'. Nurses studying at diploma level are most likely to undertake activities such as designing a questionnaire or interviewing colleagues as exercises to help them understand research methods and the research process. Most commonly nursing students will practice skills to enable them to find and critically appraise research literature. All nursing students are likely to write essays using research findings and evidence, and all these activities are important and necessary in helping nurses to become 'research literate'. Some nurses, particularly at degree level, may undertake their own literature-based review or research study. This may be a small individual research project as part of a pre- or post-qualifying degree course or can involve being a member of project team, exploring an aspect of practice.

An increasing number of nurses are educated to Master's level, with the number aspiring to Doctoral level education increasing (Higher Education Statistics Agency, 2005) both in Higher Education Institutions and clinical practice settings. This is a major change from 30 years ago when Doctorates and Master's level nurses were less common. This means that nurses have undertaken major pieces of research to a high

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level, and as nurses improve their capabilities as researchers they are more likely to lead research projects and teams and secure external funding through competitive tendering for major sources such as the Department of Health and Research Councils. There are many more Chairs in Nursing (Professors) than ever before and nurses are holding senior board level positions in higher education, the NHS, and other healthcare organisations. This all signals a healthy situation for nursing research with nurses becoming more deeply involved in research, though with still some way to go (UKCRC, 2007). We can probably find evidence to support these changes in the local setting, for example: Are there nurses studying for Masters degrees and Doctorates in the locality? Are Professors of nursing employed in the hospitals or local universities? Is nursing literature published by Professors and those completing Doctorates and higher studies?

What is evidence-based practice?

Making decisions about the type of nursing care to give to patients and clients is not easy. It may mean making choices between a number of alternative actions that involves treatment choices, provision of services or efficiency.

One definition of **evidence-based practice** suggest it is the use of best evidence in making decisions about patient care (Sackett et al., 2000).

From this definition we can see that the decision should be based on the current best evidence, as well as using the practitioner's own expertise, and that the decision should be made explicit.

These days, the view of the patient or client is seen as paramount to any decision that is made about the provision of healthcare for an individual. Therefore, it is reasonable to say that there are three clear key components to evidence-based practice. When making an 'evidence-based' decision about the care of a particular patient, the nurse should:

- use the best available current evidence
- consider the preferences of the individual client/patient
- use their own expertise and experience to make decisions.

In making decisions about how to care for a patient, the nurse should search for and use the best available evidence in their practice, they should consider the requirements, values, circumstances and preferences of the patient and they should integrate their own professional experience, expertise and judgement when making a decision. All three elements need to be used together, although the importance of each may vary in different situations. The overriding principle is that of giving the most effective care to maximise the quality of life for an individual.

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How do you 'do' evidence-based practice?

Evidence-based practice is seen as comprising five explicit steps:

- 1 Identify a problem from practice and turn it into a specific question. This might be about the most effective intervention for a particular patient, or about the most appropriate test, or about best method for delivering nursing care.
- 2 Find the best available evidence that relates to the specific question, usually through a thorough and systematic search of the literature.
- 3 Critically appraise the evidence for its validity (closeness to the truth), usefulness (practical application) and methodological rigour.
- 4 Identify and use the current best evidence, and together with the patient or client's preferences, and the practitioners expertise and experience, apply it to the situation.
- 5 Evaluate the effect on the patient or client, and reflect on the nurse's own performance.

Current pre-qualifying nurse education helps students address all these stages, but specifically practitioners need to learn how to search effectively for appropriate evidence and research through a range of literature sources (see Chapters 7 and 8) and how to critically appraise research (Chapters 7, 8 and 9).

Origins and development of evidence-based practice

Evidence-based practice rapidly emerged in the space of 10 years since the early 1990s and has had a significant impact on the health services including nursing. Evidence-based medicine was the starting point of the movement (Reynolds, 2000), and this was swiftly adopted in other professional groups including nursing (Trinder, 2000a).

The successful emergence of evidence-based practice so rapidly has been argued by those within the movement as being due to the obvious, simple, sensible and rational idea 'that practice should be based on the most up-to-date, valid and reliable research' (Melnik and Fineout-Overholt, 2005). The context in which it has developed may go some way to explain why the movement has been flourishing in many areas of healthcare practice. Within recent years there has been a cultural shift within the healthcare professions from one of trusted professional judgement-based practice to that of evidence-based practice.

Glicken (2005) suggests that there are a number of contributing factors including: growth in an increasingly well-educated and well-informed public; increasing awareness of the limitations of science; growth in consumer and self-help groups; intensive media scrutiny; explosion of the availability of different types of information and data; developments in information technology; increasing emphasis on productivity and competitiveness; emphasis on 'value-for-money' and audit; increase

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in scrutiny, accountability and regulation of professional groups; lawsuits and compensation; and major adverse events within the health services.

This cultural shift has resulted in an explosion of evidence-based initiatives and new terminology within the health services since the mid-1990s. These include initiatives such as Evidence-based Child Health and Evidence-based Mental Health; specialist 'evidence-based' journals; websites and web-based discussion lists. It also includes the NHS Centre for Reviews and Dissemination at York (2001) that undertakes the review and dissemination of research results to the NHS and the UK Cochrane Centre that collaborates with others to build, maintain and disseminate a database of systematic, up-to-date reviews of randomized controlled trials of Healthcare. This has had an effect on how research and evidence is considered and used by nurses and how evidence and practice drives (and is driven by) practice and policy more than ever before.

Criticisms of evidence-based practice

The growth of evidence-based practice has critics across all areas of the healthcare, and there is limited consensus on the merits of evidence-based practice. Critics point out that there is no evidence that evidence-based practice actually works; that it constrains professional decision-making and autonomy; that it is too simple and is 'cook-book' practice; that it is a covert method of rationing resources; that it exalts certain types of research evidence over other types of knowledge and evidence and that research trials are usually not directly transferable (Jenicek, 2006). There are also concerns that the effective implementation of evidence-based practice has been hindered by the **hierarchy of evidence** that promotes randomised control trials as the highest form of evidence and neglects to recognise the value of reflection in developing best practice (Mantzoukas, 2008). Nurses need to be aware of the debates surrounding evidence-based practice both within their own professional group and more generally in the health and social services (see Trinder, 2000b for a useful critique).

There are limitations with evidence-based practice in all aspects of healthcare but particularly with nursing. First, there is a shortage of research in some areas of nursing, that is useful in identifying the 'effectiveness' of nursing care. In other words, whether a particular nursing activity 'works' or not, or is effective. There are many reasons for this, including time and resources to undertake the type of research needed such as controlled trials, the skills and training of nurse researchers to conduct this type of research, and the cultural barriers in health organisations and the organisation of nursing education. Second, nurses may not be appropriately trained in the skills of evidence-based practice, such as literature

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searching and reviewing, critical appraisal, audit and change-management. Third, nurses in practice may be hampered in their search for evidence as limited access to literature searching facilities in some clinical settings remain.

It is possible to overcome some of these barriers, particularly through education and training. Also, there is research examining the barriers to evidence-based practice, and ways to overcome them. Finally, there are ways of finding evidence that has already been reviewed and appraised. These include evidence-based clinical guidelines from: Cochrane Reviews (systematic reviews of healthcare interventions and promotes the search for evidence in the form of clinical trials and other studies of interventions), Effective Healthcare Bulletins (based on a systematic review and synthesis of research on the clinical effect, cost-effectiveness and acceptability of health service interventions), and National Institute for Clinical Excellence (NICE) (an independent organisation responsible for providing national guidance on promoting good health and preventing and treating ill health).

Hierarchy of evidence and research

The idea of a hierarchy of evidence has evolved as a response to the notion that some research designs, particularly those using quantitative methods, are more able than others to provide robust evidence of effectiveness, that is, what works. The most common type of hierarchy therefore places evidence gathered through research at the top, with a systematic review of evidence from multiple randomised controlled trials being the pinnacle:

- 1 Evidence from a systematic review of multiple well-designed randomised controlled trials.
 - 2 Evidence from one or more well-designed randomised trials.
 - 3 Evidence from experiments without randomisation or from single before-and-after studies, cohort, time series or matched case-controlled studies or observational studies.
 - 4 Evidence from well-designed descriptive studies or qualitative research.
 - 5 Opinions from expert committees or respected authorities based on practice-based evidence.
 - 6 Personal, professional and peer expertise and experience.
- (See Gray, 1999; Khan et al., 2003; and www.vork.ac.uk/inst/crd/ NHS Centre for Clinical Reviews and Dissemination, for more detailed types of hierarchy.)

This hierarchy of evidence is only appropriate for research questions that are seeking an answer about what works. For example, if a nurse wanted to know the best way to dress a particular type of wound, say a burn, then the above would help in making decisions about the best type of evidence. This would be well-designed randomised controlled trials, or even better, a systematic review of randomised

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controlled trials. However, if nurses wanted to develop understanding about what it feels like have severe burns, so that they could develop their communication and empathetic skills, then qualitative research would be more informative.

Chapter summary

- Nursing research today has been shaped by its historical roots, and political economic and organisation influences.
- Defining 'what is research' is not easy, and debates surround the nature of nursing and health services research.
- The recent development of evidence-based practice has been rapid and influential.
- All nurses must become 'research literate' and learn the essentials of evidence-based practice.
- Some nurses will become researchers as part of their role in practice, or through a career in teaching, policy development or leadership.

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