

Engaging Clinicians in Research: Issues to Consider

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Abstract

The beginning of nursing research is attributed to Florence Nightingale whose research during the Crimean War in the 1850s ultimately shaped health care, including nursing practice. Modern research, like clinical care, is influenced by technological, societal, organisational and environmental changes. However, 'nursing research' is a simple term that may not encompass complex inter-related concepts and practices and various research methods: quantitative, qualitative, implementation science, evaluation and audit. All research methods follow a similar basic 'research process,' but the way the process is applied and rigor is demonstrated differs among the methods. All nurses must engage in research on some level, given they practice in a climate of evidence-based care and are expected to adhere to evidence-based protocols and guidelines. In addition, they need to be able to implement evidence-based best practice and use clinical judgement to treat each person as an individual.

Keywords: Research; Nursing; Clinicians; Engagement; Methods; Researchers

Historical Background

Florence Nightingale established the importance of critical enquiry, audit and research during the Crimean War in the 1850s. Her research led to practice changes that improved mortality and morbidity rates in Scutari Military Hospital, albeit against a great deal of opposition from the doctors and hospital authorities. Later her research led to changes in the medical curriculum of the day to include research. Despite the significance of Nightingale's work, research was not included in nursing curricula for more than 150 years later.

When I trained as a nurse in the 1960s, terms such as proven, scientific and evidence-based were not a part of the nursing vocabulary. The focus was on established rituals and astute observation enshrined in Doherty, Searle and Ring's general nursing textbook (consigned to history) and Maggie Miles' [1] (still in press). However, we were taught to listen, observe, question, assess, to consider alternatives and to document assiduously-all key aspects of research.

Later, at my graduation, Dr Barry Eggins, a local general practitioner who gave the oration, outlined how nurses would need 'even more good qualities' in addition to compassion, intuition, and devotion. He indicated nurses should honour tradition, but realise that, 'if tradition can preserve wisdom, it can also preserve error and folly.' He spoke of 'the winds of change blowing through the hospital corridors' that would radically change nursing and medical practice. The 'winds of change' were research and meant nurses would be expected to 'observe, experiment, confirm and refute' accepted nursing practices [2].

My training, and Dr Eggins' comments, awakened my interest in research. However, it was several years before I was able to actively participate in research, before research was formally included in undergraduate nursing curricula, and before pioneer nurse researchers began to undertake research and contribute to the evidence base for nursing. The focus on nursing research increased when nurse education moved to universities and Honours, Master's and Doctoral degrees were included in nurse education and research career pathways emerged. Early exposure to research at undergraduate level meant clinicians began to collaborate with and value research and understand the role of academic researchers based in universities.

Nursing research has become increasingly complex and sophisticated, which reflects the changes in clinical care and the health care environment. Nurses now lead interdisciplinary research teams and attract significant funding from competitive grant sources. The

evidence they generate is incorporated into nursing and medical care as well as other areas of health care. Despite these changes, most clinical nurses do not actively engage in or feel responsible for research, beyond providing evidence-based care.

One could regard research as a professional responsibility in which nurses have a duty of care to contribute to developing the evidence base of the profession; given the focus on evidence-based care and organisational compliance with safety and quality, and standards of care. In fact, the taskforce group on the UK Strategy for Research in Nursing, Midwifery and Health Visitors [3] recommended all nurses should be research literate. Terms such as 'research aware' and 'research literate' are used to define one of the competencies modern nurses require [4]. Many factors affect clinical nurses' capacity to engage in research (Table 1). Most of these factors or barriers are common to other health disciplines as well as non-health disciplines.

What is Research?

Research is defined in many ways. Most definitions encompass systematic inquiry, the search for new information to fill knowledge gaps and generate new knowledge and the need to answer relevant questions. For example, 'Research refers to a systematic process of investigating and reinvestigating problems and questioning existing practices that enables progress and innovation to occur' [5]. Likewise, the American Association of Nursing Colleges [6] position statement indicates:

Nursing research worldwide is committed to rigorous scientific inquiry that provides a significant body of knowledge to advance nursing practice, shape health policy, and impact the health of people in all countries. The vision for nursing research is driven by the profession's mandate to society to optimize the health and well-being of populations

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Barriers	Ways to address the barriers
Insufficient knowledge and skills	Ask questions Seek out mentors Read research and discuss the studies with colleagues and researchers.
Lack of resources especially funding and statistical advice in clinical areas.	Challenging. Work with established researcher to learn the process, develop a track record. Apply for small grants first. Ask for comments if the grant application was not acceptable.
Moving from clinician to researcher or combining both roles'	Negotiate some dedicated research time. Have a clear position description that clearly articulates the research role. Seek and consult a mentor.
Clinical infrastructure does not support research.	Collaborate with colleagues to make a business case for time and resources to undertake research. Ensure the research issues is clinical relevant and linked to the organisation's strategic plan.
Managing the ethics process 'Best to not go there.'	Learn about the ethics process. Talk to the 'ethics committee' and experienced researcher colleagues.
Priorities of researchers and clinicians are not aligned.	Engage with each other early. Openly discuss relevant issues and problem-solve.

Table 1: Factors that affect nurses ability to undertake research-barriers to undertaking research.

Quantitative	Qualitative	Audit and evaluation
Regarded as the highest level of evidence. Include randomised controlled trials, which can be blinded or double blinded and are considered to be the highest form of evidence	Usually regarded as the lowest level of evidence Interested in examining people's perspective and lived experiences. There are many qualitative methods including grounded theory, phenomenology,	Often continuous process or repeated at intervals to monitor standards, services or programs. Measure structure and process as well as impact/ outcome and can be formative, summative or both. A key part of monitoring compliance with guidelines, standards and other requirements as well as quality improvement.
Inform the 'science' of practice used to develop clinical practice guidelines, policies, evidence based-practice and establish standards of care.	Inform the 'art' of practice.	Enable services and practices to be benchmarked against other services or practice, improvement on previous performance and can be conducted internally or by external bodies.
The ultimate aim of quantitative studies is to generalise the findings after testing an hypothesis or theory to demonstrate associations, causes, safety and quality, effectiveness compared to a control, which might be 'standard care.'	May generate theories that can be tested using quantitative methods or evaluation studies that encompass implementation science.	Can be used to demonstrate the need for a service, product or resource. Demonstrates performance Identifies strengths and areas to be improved. Shows how new products and other research findings perform when implemented in practice
Use power calculations to determine sample size and specific sampling techniques to enable the findings to be generalised outside the study.	Findings not usually generalizable but may be transferable depending on the rigor, heterogeneity of the sample, methodological integrity and member checking. Repeated studies can contribute cumulative evidence.	May require a specific sample size and may incorporate quantitative and qualitative methods.
The inclusion criteria need to be considered because the sample may not be representative of the population or the clinical issues nurses are considering. Drop outs and non-responders usually need to be accounted for.		

Table 2: Overview of the three main research methods, the types of research question they address, and their contribution to clinical care.

Research also encompasses systematic literature reviews, meta-analysis and meta-synthesis of existing literature. Literature reviews and synthesising relevant data from the literature is an essential step in developing clinical guidelines.

Nursing research is underpinned by a range of philosophies and nurses use a range of methods to investigate the complex inter-related factors that affect clinical practice from patient-related, health professional-related and organisation-related perspectives. Thus, the practice environment, society, and political and organisational issues on an individual and population basis influence nursing practice and nursing research. Significantly, being able to frame an answerable research question/s is an essential research skill. The research question/aim/hypothesis guides the research method, data collection and data analysis processes, the findings, discussion and ultimately the conclusion.

Table 2 summarises the three main research methods: quantitative, qualitative and audit/evaluation studies. Put simplistically, 'quantitative

research establishes 'what to do,' qualitative research explains people's beliefs and helps determine whether new service delivery methods and treatments 'will suit the target audience.' Evaluation studies and audits identify what happens when research findings are implemented in practice and can form part of translation research, which is increasingly being referred to as implementation science.

A critical issue for nurses, and many other health professionals, knows how to critically appraise the quality of the evidence research generates. Quality is rated according to specific criteria that denote the degree to which bias and confounders have been controlled and/or accounted for. Currently, there is a 'hierarchy of evidence' where randomised controlled trials are regarded as the highest level of evidence, even when they have methodological flaws and other limitations.

Qualitative studies are regarded as low level of evidence, and audit and evaluation studies are often not classified as research at all. However, all four methods follow the same process: formulating a

research question, developing an appropriate method to answer the question, collecting and interpreting data and making conclusions and suggesting recommendations based on the findings. All methods must be rigorous and minimise bias: although the method of achieving rigour differs among the various methods. Likewise, all methods must use valid, reliable data collection tools.

No single method is likely to address the complex issues encompassed in a clinical situation/problem: thus, mixed and triangulated methods are commonly used to examine different aspects of the phenomenon/phenomena under study. Dunning [5] described a holistic circular Yin Yang research model, which has no beginning or end or hierarchical structure, to show the equal value of all research methods and the specific contribution they make to the whole. Likewise, researchers often adopt a multi-method approach and research is often undertaken by interdisciplinary research collaborations.

As indicated, there are a number of barriers to undertaking research (Table 1) [4,5]. Despite these barriers, clinicians contribute to research based-clinical care in a number of ways and most nurses have many of the skills needed to participate in research or can learn such skills, see Appendix 1.

How can clinicians engage in research?

Nurses ideally placed to:

- Identify problematic clinical practice issues.
- Help develop research questions to address the issues.
- Provide information about the feasibility of implementing the proposed research method in the clinical setting.
- Help implement the study e.g. recruitment.
- Help collect data.
- Ensure clinicians' perspectives are encompassed in the findings and recommendations arising from the study [7].

Such collaboration between clinicians and researchers enhances clinician's interest, knowledge and competence in research processes, contributes to clinically relevant research that is likely to improve clinical practice and patient safety and builds research capacity and sustainability. Formal partnerships (joint appointments) between universities and clinical agencies can be very effective. For example, Deakin University in Melbourne, Australia has such partnerships with most of the major Melbourne hospitals.

Significantly, the researchers who hold joint appointments are based in the clinical setting, which makes them accessible to nurses and raises the profile of nursing research among the disciplines. The researchers also act as role models and some combine research with clinical practice, which increases their credibility with clinicians. Appendix 2 outlines some ways clinicians can engage in and contribute to research and box 3 suggests some ways researchers can support clinicians to engage in research.

However, research needs to be actively supported by the clinical agency in terms of resources, documented in the organisation's strategic plan and importantly, in clinicians' position descriptions, which increases research engagement [8] (Appendix 3).

Summary

Research drives innovation and addresses a range of clinical, social, economic, environmental and technological issues that influence practice. Clinicians can actively participate in generating evidence as well as reviewing the risks and benefits and the clinical relevance of research: that is, use the evidence to inform clinical care. However, clinicians need knowledge, skills, resources and support to become research literate and research active. Collaborations between researchers and clinicians can enhance the process, build sustainability and make a significant contribution to the evidence base for safe, quality clinical care.

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