Evidence-based practice: compatibility with nursing

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Summary
This article explores the compatibility of evidence-based practice with nursing. The generation of relevant research evidence in nursing and determining best evidence are discussed. The article concludes that different forms of research, other than randomised controlled trials, are valid and in many cases more applicable to nursing practice, and that nurses need to determine what constitutes relevant and best evidence for the profession.

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Evidence-based practice and nursing
Whether implicitly, or explicitly, the concept of evidence-based practice is influencing patient care. However, there has been little professional debate about its compatibility with nursing practice. There has been no discussion or consensus about the meaning of ‘nursing evidence’ (Fawcett et al 2001, French 2002) and there is no agreed definition of evidence-based practice in the literature (French 2002). The lack of a single definition that is acceptable to all healthcare professions means that the concept continues to be driven by the underpinning medical philosophy that: ‘evidence-based medicine (practice) is the integration of best research evidence with clinical expertise and patient values’ (Sackett et al 2000). This is a concern because the way in which the medical profession perceives which evidence is relevant and best is influencing nursing practice.

The concept of evidence-based practice is currently represented as a five level hierarchy with the introduction of the hierarchy used to determine ‘relevant’ and ‘best’ evidence for evidence-based practice. This article focuses on research evidence and discusses the compatibility of evidence-based practice with nursing, and explores value judgements of ‘relevance’ and ‘best’ in relation to nursing research evidence.

The discussion is based on two premises: that the concept of evidence-based practice is determining the provision of health care and, therefore, nursing; and that evidence-based practice is being led by the medical profession because of its historical origins in evidence-based medicine. The author suggests that:

- Evidence-based practice in its current form may not be compatible with nursing.
- Nursing requires a pluralistic approach – whereby research methodology is determined by the knowledge being sought – to the generation of relevant research evidence.
- Nurses need to judge which evidence is best in any one patient episode, using appraisal skills and clinical judgement.
controlled trials) being the gold standard at level 1, and expert opinion based on laboratory research or biomedical markers being the lowest, at level 5 (NHS Centre for Reviews and Dissemination 2005). The hierarchy guides the value system that underpins judgement of relevant and best evidence. Qualitative methodologies such as phenomenology are not included. This focus is problematic because it excludes evidence from legitimate sources outside (medical) science (Buetow and Kenealy 2000). It is especially important that evidence in nursing is generated across the whole research spectrum from randomised controlled trials to phenomenology (Flemming and Fenton 2002). For example, to be able to understand a patient’s experience of an illness episode would provide insight on how to care for other patients in similar circumstances, and so would have relevance in nursing. However, this form of knowledge could not be established through quantitative methodology. The exclusion of qualitative methodologies from the hierarchy implies that such methods are not considered relevant or best for generating evidence to inform practice because they are not scientific. There is, therefore, the potential for substantial areas of nursing knowledge to be excluded in favour of scientific knowledge that can be determined through quantitative means.

**Art or science**

The concept of evidence-based practice has arisen from the need for clinical decisions in medicine to be based on scientific evidence and not intuition (Timio and Antiseri 2000, Jennings and Loan 2001). However, nursing is often considered to be an art rather than a science. Edwards (2002) reviews the art versus science debate, which is particularly relevant to the need for evidence to support the art of nursing, where art is the act of nursing that is underpinned by ‘ethical, intuitive and tacit knowledge’.

Edwards (2002) proposes that, in addition to traditional research methods, nurses use reflection as well as techniques such as written dialogue and narratives to generate knowledge. The outcomes of these activities can then be used to identify areas where research is necessary. This links the process of reflection to research design with the goal of developing evidence for practice (Rolfe 1996, Warelow 1997). Nursing as an art uses science to inform practice along with a range of other forms of knowledge, such as intuition, ethical, experiential and personal knowledge, all of which exist within practice. This does not fit the current view of evidence-based practice depicted in the hierarchy of evidence and its focus on empirical science and associated methodologies. Therefore, the demand for evidence-based practice in its current form is problematic for nursing.

It has been suggested that the main focus of nursing is holistic care (Dossey et al 1995), rather than the reductionist approach of medicine (Liaschenko 1998). A holistic approach is necessary in nursing because patients’ experiences extend beyond the effects of illness; treatment alone cannot resolve patients’ needs in a caring situation (Dossey et al 1995). This is evident in the nursing paradigm as well as the widely accepted fundamental patterns of knowing (Carper 1978) that underpin nursing:

- **Empirics** – the science of nursing, which is based in traditional science with the aim of developing abstract and theoretical explanations.
- **Aesthetics** – the art of nursing, which is about understanding the patient and how to care for him or her as a whole person.
- **Personal knowledge** – which is focused on the nurse-patient relationship and the concept of ‘self’ and the ‘self’ of others, for example, the patient.
- **Ethics** – the moral component, which is based on philosophy and seeks to resolve ethical problems and dilemmas.

Nurses need evidence to be related to theory in these forms of knowing (Fawcett et al 2001), not just empirical knowledge, if practice is to be truly evidence-based but also retain a holistic focus. The concept of intuition is opposite to the highest levels of evidence-based practice where decision making is scientifically based. Personal, aesthetic and experiential knowledge do not readily fit with the traditional view of science. The knowledge-based evidence in nursing needs to extend beyond the scope of traditional science (Jennings and Loan 2001) and associated reductionist processes (Upton 1999). All relevant forms of knowledge, including experiential and intuitive forms, need to be explored so that nursing is appropriately evidenced. These arguments suggest that evidence-based practice in its current form may not be appropriate for nursing. Therefore, nursing should either reject evidence-based practice or discipline-specific strategies need to be explored for the development of appropriate evidence.

Evidence-based practice may have the potential to create inter-professional conflict because of its origins in medicine, unless the nursing profession is clear about what it considers relevant and best evidence, particularly because this may be different from the views held in medicine. Judgements of what constitutes
relevant and best evidence are intimately linked, although dealing with them separately may help to explain how the nursing profession can determine the use of relevant and best research evidence to inform practice.

Generating relevant research evidence

The nature of research for any healthcare discipline should be based on current knowledge, if it is to generate evidence that will inform practice. This means that the nature and processes of research are likely to be different for each professional discipline. Medicine and nursing have different epistemological roots, indicating the need for different research paradigms.

Medicine has an extensive knowledge base primarily concerned with cause and effect, and the results of treatment (Liaschenko 1998). The knowledge base lends itself to research using traditional experimental, empirical designs in the form of randomised controlled trials. The range of research design necessary for generating this form of evidence in medicine is relatively narrow. Research designs are categorised in a hierarchy in which a double-blind randomised controlled trial is considered the gold standard against which the merits and findings of research are judged.

This hierarchy has been transferred from medicine to nursing and defines what is considered to be relevant and best evidence in health care, resulting in other research designs being undervalued. Despite this, qualitative research is as necessary as quantitative in the generation of research-based nursing knowledge and therefore evidence to inform nursing practice. For example, research to inform the development of the personal component of nursing knowledge, that is, self, may be qualitative in design and may necessitate hermeneutic research methodology. Measuring the relative merits of wound healing techniques would probably necessitate a quantitative approach such as trial design, provided that a large enough sample can be obtained. Nursing needs research-based evidence that is generated from a much wider range of methods than those present in the five level hierarchy of evidence that currently exists.

The randomised controlled trial is not always applicable to nursing practice but its influence can result in nurse researchers using randomised controlled trials when another method would be more appropriate. Funding, and the demand for numerically focused data in the health service continues, with the notion that trials generate the best evidence. Funding is already driving knowledge development in the United States with the result that areas of nursing knowledge have been left unexplored (Meleis 2001). These factors are having an inappropriate impact on research design. The research method used in a design should logically emerge from the question posed or the issue to be investigated so that the knowledge that is sought determines the appropriateness of design and method, not funding, the drive for statistics or other external factors such as ethical approval. Problems will arise if a researcher chooses the method first, because there can be no guarantee that the desired knowledge will be generated and the findings may be weak and of little use. When trials methodology is chosen as the starting point of the research process, the researcher tries to make it fit the issue to be investigated and the research may be flawed as a result. Randomised controlled trials have a place in nursing when the knowledge sought logically leads to this choice of design.

McDonald and Daly (2000) noted the limitations of randomised controlled trials in capturing wider medical knowledge, and their artificial nature, which can cause difficulty for medical colleagues when applying findings to practice. In particular, McDonald and Daly (2000) identify problems that may arise when trying to apply trial findings:

- To an individual, given his or her specific personal circumstances.
- In local settings, where the local context of care is influenced by factors not present in the trial, for example, different levels of clinician skill.
- To the diagnostic process which is complex.
- To the differing levels of performance and skill of technicians and others performing and interpreting diagnostic tests.

The major criticism of the randomised controlled trial as a research method is that its focus is so narrow that it is removed from the reality of practice. This can result in the exclusion of important psycho-socio-cultural and health status issues (McDonald and Daly 2000, Jennings and Loan 2001).

A pluralistic approach In contrast to medicine, development of the knowledge base in nursing has a comparatively short history and it remains relatively underdeveloped (Kitson 1997). Nursing has a broader knowledge base than medicine (Liaschenko 1998), one which is seated in the nurse-patient relationship and the reality...
of each individual’s experience of illness and being a patient, rather than cause and effect, or intervention results. Couple this with the different forms of knowing (Carper 1978) that underpin the art of nursing and the need for a pluralistic approach to generating nursing research evidence is raised. The choice of research method used should depend on the issue being researched, so a pluralistic context-driven approach to generating research evidence is more appropriate for nursing.

Continued focus on clinical trials as the gold standard for generating evidence in the NHS will drive research funding. There is the potential for this to impede the ability of nursing to generate evidence with clinical relevance for nursing practice if, as has happened in the US, the quest for funding becomes the driving force for research activity to the detriment of the development of nursing knowledge (Meleis 2001). If high-level evidence-based practice is the only accepted form of research, the development of the knowledge base of nursing will be seriously affected (Jennings and Loan 2001) because research evidence may not become available for large areas of practice. Nurses should explain the need for a pluralistic approach to research at all levels in health care and especially to colleagues in the multidisciplinary team.

Adopting innovative approaches, for example, collecting patient stories, or acquiring experiential knowledge through clinical supervision, to generating evidence or a pluralistic approach to research does not mean nursing evidence is less rigorously obtained than that of medicine. It is indicative of the fundamental differences between the two forms of practice and the extent of development of each specific knowledge base.

Nursing is primarily interested in the whole experience of the patient so nursing research needs to focus on the reality of each patient’s situation such that phenomenological and hermeneutic approaches become fundamental. Without the possibility of a gold standard for generating research-based evidence in nursing, other measures need to be adopted to determine best evidence. Evidence that is relevant to nursing should be generated using research and other techniques, for example, reflection, group reflection and collecting patient stories. Relevant research-based evidence should arise from a broad research base, including narrative and experimental designs. Research-based evidence should also be derived from all forms of knowledge needed by nurses to inform practice because all are equally relevant to practice. The research-based evidence of nursing is complex and therefore a hierarchy of evidence with a gold standard is inappropriate. All research methods have their place and the research question should determine the design and method used to ensure research is relevant to nursing practice.

**Determining best research evidence**

Best evidence is usually considered to be evidence that promotes the most clinically effective practice. Any judgement about what is best needs to consider the patient’s individual circumstances, preferences and concerns.

The usefulness of evidence generated by research is determined by the integrity or scientific validity of the research design. It is important that ‘the right research design is used to answer the question posed’ (DiCenso and Cullum 1998). All research methods have limitations, even randomised controlled trials, but there are various mechanisms that can be adopted for each design to promote integrity. Minimising design weaknesses and acknowledging limitations promote trustworthiness, reliability, validity and ultimately, usefulness in practice.

The usefulness of findings is dependent on the quality and purpose of the research (Closs and Cheater 1999) as well as clinical significance. Forbes et al (1999) suggest there are three features that make research evidence useful. These can be applied regardless of the research design:

- The use of accepted research procedures resulting in logical derivation of findings.
- Corroboration of evidence through scrutiny and replication.
- Adequacy of evidence.

Following this approach could be valuable, although it does raise additional questions:

- To whom are the research methods acceptable?
- How long does corroboration have to continue? At what point does replication become unethical?
- What constitutes adequacy and who will determine its presence?

The answer to the first question must be the individual profession. If research is the means of generating and/or proving the theory that informs practice (Dickoff et al 1968), then the nature of practice must determine the research focus and associated procedures. The issue of corroboration and replication of studies is difficult because it can be argued that all knowledge is tentative (certain at a given moment of time) such that ultimate proof is unattainable (because knowledge changes with
time). Repeated replication is possible in laboratory-based experiments but is likely to be unethical in health care because patients are vulnerable and should not be repeatedly asked to participate in research or be involved in research that is not going to generate new knowledge. However, the intention of evidence-based practice is to use best evidence, which implies the nature of evidence is itself tentative. What constitutes the best will be determined by the clinical context, and therefore the evidence used to underpin care may change from patient to patient, even where they have the same disorder. The nurse exercising clinical judgement where decision-making is an informed process is the focal point of evidence-based practice rather than the need for the corroboration and replication of the research. The skill of the nurse in determining the integrity of the available research or evidence and its clinical significance, that is, critical appraisal, is crucial. It is essential that nurses are skilled in critical appraisal if they are to judge the usefulness of the evidence in relation to practice (Hamer 1999, Flemming and Fenton 2002).

The usefulness of the findings should dictate whether it is appropriate to change practice. Nurses should be able to justify their decisions based on the evidence rather than accepting the evidence because it has been derived from certain procedures. Rejection of evidence by the nurse because it is not useful is a legitimate element of evidence-based practice (McKenna et al 2000) provided the decision to do so has been made in an informed and skilled manner and can therefore be justified.

Evidence cannot be used in the absence of clinical judgement or acknowledgement of the patient’s values, concerns and preferences (Sackett et al 2000). McDonald and Daly (2000) imply that this judgement is affected by a number of issues that may result in research not being applied in practice. The nurse using evidence to support practice needs to evaluate the available evidence and consider this in the light of the patient’s values, concerns and preferences, as well as the knowledge gained from personal experience of caring for this type of patient, when making a clinical decision. This may mean that although the available evidence is sound, the patient’s circumstances may necessitate a different approach. It is not always possible to apply evidence to practice (McDonald and Daly 2000). Evidence-based practice is concerned with the ‘conscientious, explicit and judicious use of best evidence’ (Sackett et al 2000), which must be appropriate in the context of practice. The nurse should make an informed choice about what, if any, research evidence is appropriate in any given situation. In practice, every patient encounter can be considered to be unique. This uniqueness may mean that it will be difficult to apply scientific evidence to practice, which may be one reason why research evidence does not seem to change practice. It may be that the concept of evidence-based practice is not viable in nursing (French 2002).

Sackett et al (2000) define evidence-based medicine as ‘the integration of the best research evidence with clinical practice and patient values’. They state that the best research evidence is equivalent to the findings from clinically relevant research; clinical expertise is defined as the clinical skills and experience to assess patients’ individual situations; and patient values are ‘the unique preferences, concerns and expectations of the patient’. It seems that the quest for evidence-based practice may have become unbalanced, with key elements of the process advocated by Sackett et al (2000) disappearing. In particular, the nurse’s role in exercising clinical judgement, skill in assessing each patient’s unique situation and the need for patient involvement. Nurses need to be equipped with skill and supporting structures to aid sound decision-making, and care processes must actively involve the patient.

Determining what is best in a given situation involves nurses making conscious judgements about the available evidence. This will be influenced by personal clinical experience, skill in decision making, autonomy and accountability. It should be remembered that not all ‘hard’ evidence is research-based. Such evidence is also available from patients, satisfaction surveys, audit and continuous quality improvement strategies (Rosswurm and Larrabee 1999, McKenna et al 2000). Therefore, the value judgement of what constitutes best evidence should be determined by the nurse weighing up the merits of all of the available evidence in the immediate context of patients’ individual situations and not just research evidence.

**Conclusion**

Evidence-based practice is a complex concept which is assumed to be compatible with nursing practice. It is based on what is relevant and best, value judgements that are determined by medicine. However, nursing practice can be considered an art that cannot be evidenced in a purely scientific way. The concept of evidence-based practice in many ways opposes this view.
Nursing needs to clarify acceptable forms of evidence while determining how these, as well as the more traditional research-based evidence, will be generated.

The nature of relevant, and therefore acceptable, research evidence in health care is discipline-specific. In nursing, the focus is on patients’ experiences, encompassing a wide range of knowledge that requires a pluralistic, context-specific approach to generating evidence.

Pluralistic research is driven by the clinical problem and context of care rather than any one particular method (Jennings and Loan 2001). Each nurse needs to determine best evidence by considering all the available evidence and in particular the usefulness of the research evidence and weighing this against the context of the patient’s specific situation. Nurses’ skills in critical appraisal are important because nurses have to determine the applicability of evidence. By exercising clinical judgement in consideration of all available evidence, experience and patients’ particular circumstances, concerns and preferences, nurses need to determine whether or not it is appropriate to use the research evidence. Clinical judgement and expertise should determine which evidence is best for each individual patient.

Some authors have called for widening the debate on evidence-based practice in nursing (Fawcett et al 2001, French 2002). Nurses and the nursing profession need to take control of how evidence-based practice affects nursing practice and, therefore, patient care, through discussion. Nursing needs to be constructive about evidence-based practice. Perhaps one way to proceed would be to generate a set of guiding principles that encompass the key concepts associated with evidence-based practice, while acknowledging the individual requirements of each health profession in respect of what constitutes relevant and best evidence.

References


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