

Evidence-Based Practice

Evidence-informed Decision-making

Evidence-based practice, evidence-based medicine, evidence-based nursing and evidence-informed decision-making began with Florence Nightingale in the 1850s during the Crimean War. She noted a connection between poor sanitary conditions in the hospital and rising death rates among wounded soldiers (Bite-Sized History of Mathematical Resources, n.d.). “It is Nightingale who developed the coxcomb, a visual display to demonstrate how military deaths could be prevented” (Morin, 2010, p. 2). Her subsequent efforts to sanitize hospitals to save soldiers led to dramatic drops in patient mortality.

Historical Overview

Much of the original work on evidence-based practice (EBP) focuses on EBP in medicine. Although the term “evidence-based medicine” (EBM) reportedly was first used in the 1980s, the practice gained wide recognition in 1992 when the Journal of the American Medical Association published an article by the evidence-based medicine working group on its role in medical education. According to Montori and Guyatt (2008), that article brought both the term and the concept to the attention of a wider medical community. The working group published a series of 25 articles between 1993 and 2000 that outline criteria to evaluate current evidence to support clinical decisions. This body of work forms the basis of most of the critical appraisal tools used today (Guyatt & Rennie, 2002).

The Goal of Evidence-Based Practice (EBP)

The most commonly cited definition of EBP is from Dr. David Sackett, which says the EBP is “the conscientious (careful / though), explicit (clear) and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research.” (Sackett D, 1996)

However, as the technology began to change and [service providers](#) began to think about their purpose in new ways, it became clear that there were better methods for ensuring that they were using the most up-to-date information for making care decisions. This kind of thinking led to the advent of evidence-based practice, the use of which is still growing today.

The Benefit of Evidence-Based Practice

1. Improved Information –
2. Additional Funding –
3. Advanced Technology –

Types of evidence

According to the Canadian Nurses Association, a variety of sources are being used by nurses to facilitate their use of evidence. These sources include systematic reviews, research studies and abstraction journals that summarize valid, clinically useful published studies, and clinical practice guidelines. "Guidelines are based on the most rigorous research available, and when research is not available, they are grounded in expert opinion and consensus" (Canadian Nurses Association, 2010, p. 4)

Types of Evidence

Various systems have been developed to rank evidence. Here are two examples.

The Canadian Institutes for Health Research (2009) created a hierarchy of quantitative evidence:

- systematic reviews of randomized controlled trials;
- randomized controlled trials;
- systematic reviews of nonrandomized or cohort studies;
- cohort studies;
- case control studies;
- case series;
- case report;
- ideas, editorials, opinions;
- animal research; and
- invitro (test tube) research.

Brian Haynes (2007) developed the 5S Pyramid for finding the best evidence with the least amount of time and effort:

Studies are individual studies related to a particular focused question. There are several searchable databases that would help you find individual studies. The most used in Canada include Medline, PubMed and CINAHL, but there are many other specialized databases.

Syntheses include systematic reviews of all studies that could be found on a particular focused question. These include The Cochrane Library, Worldviews on Evidence-Based Nursing, the Agency for HealthCare Research and Quality (AHRQ) Evidence-based Practice Centre Reviews. Both groups have similar, rigorous methods for review. Another source for systematic reviews and summaries about interventions related to public health in Canada is the Effective Public Health Practice Project. Further, Health-Evidence.ca rates reviews that are relevant to public health in Canada, summarizes them and provides recommendations for practice and policy that arise from the reviews.

Synopses are brief reports (1-2 pages) of pre-appraised individual studies or systematic reviews that give key methodological details and results, along with an expert commentary, on issues of applying the results in practice. Examples of synopses are found in 23 evidence-based journals that cover topics such as medicine, nursing, dentistry and health policy (e.g., *Evidence-Based Nursing*).

Summaries are usually text-based and are related to a specific disease or condition (e.g., *Clinical Evidence*).

Systems are electronic systems that can be linked to patient records and prompt practitioners with guidelines for care (e.g., what tests to order, what interventions to provide). For example, for a patient with type 2 diabetes, it would prompt the caregiver that blood work, eye exam, foot exam and diet review need to be done.

Barriers to nursing: Evidence-based practice/Evidence-informed decision-making

Barriers to evidence-based practice involve individual nurse characteristics, organizational characteristics, the nature of research information and the health-care environment. Repeatedly, lack of time is identified one of the most crucial barriers to implementing evidence-based practice in the workplace (Bradshaw, 2010). Other documented barriers include:

Nurse characteristics:*

- lack of the knowledge needed to interpret statistical analyses;
- lack of interest;
- lack of confidence in critical appraisal skills;
- lack of knowledge and skills to confidently conduct computer based literature searches and utilize the research process;
- nurses feeling overwhelmed by the volume of evidence (Wells, Free & Adam, 2007);
- nurses' perceptions that they lack the authority and cooperation to change patient care procedures;
- negative beliefs, attitudes and values; and
- educational preparation.

*Except where otherwise indicated, all items in the above list are from Bradshaw, 2010.

Organizational characteristics:*

- limited or lack of time;
- heavy patient workloads;
- inadequate staffing;
- limited access to resources;
- lack of support from nurse managers;
- different goals for practice between administrators and staff nurses (Van Patter Gale & Schaffer, 2009); and
- lack of evidence-based practice mentors in health-care systems (Bertulis, 2008).

*Except where otherwise indicated, all items in the above list are from Bradshaw, 2010.

Nature of research information:

- “Research is seen as too complicated, too scholarly, excessively statistical, ambiguous, and having limited or no relevance to practice” (Van Patter Gale & Schaffer, 2009, p. 91); and
- “Research reports lack clear practice implications and generalizability” (Wells, Free & Adam, 2007, p. 136).

Health-care environment:

- “Multiple barriers have contributed to the slow uptake of EBP across healthcare systems...traditional approaches to teaching healthcare students the rigorous process of how to do research rather than how to use research to guide best practice” (Wallen et al, 2010, p. 2762).

Strategies to Promote

Strategies to promote evidence-based practice / evidence-informed decision-making by nurses

There are several evidence-based strategies to promote a culture of evidence-based practice or evidence-informed decision-making.

Strategies include, but are not limited to:

- provide nurses with “access to a rich library with nursing and medical journals” (Eizenberg, 2011, p. 33), such as NurseONE.ca;
- provide nurses with “opportunities for working with a computer and for searching the Internet in the workplace” (Eizenberg, 2011, p. 33);
- “system support for searching and reading professional literature” (Eizenberg, 2011, p. 40);
- implementation of a virtual journal club (Lehna, Berger, Truman, Goldman & Topp, 2010);
- “provide nurses with access to evidence-based practice resources via mobile information technologies” (Doran et al, 2010, p. 4);
- implement an EBP mentorship programme with EBP mentors who are “skilled in both EBP and organizational culture and change” (Wallen et al, 2010, p. 2762);
- support nurses to acquire the skills needed to read, evaluate and critically appraise evidence (Eizenberg, 2011);
- establish leadership, a coherent change strategy, and relationships between point of care providers and managers (Baeza, Fitzgerald & McGivern, 2008);
- nurse managers act as role models (Van Patter Gale & Schaffer, 2009, p. 95);
- nurse managers “provide the resources and the support for the work and celebrate success with recognition of unit staff” (Van Patter Gale & Schaffer, 2009, p. 92);
- designate a champion who is “accessible to the nurses, along with other leaders and innovators who can answer questions and reinforce the practice change” (Van Patter Gale & Schaffer, 2009, p. 96); and
- involve the “clinical educator as a part of the support system of the EBP change” (Van Patter Gale & Schaffer, 2009, p. 96).

Sources of evidence and information

As Aveyard (2010: 43) suggests, the literature that will be relevant to your focus will vary according to the direction of your interest. What is important is that you ensure the research is credible. This means that it has been carried out in a rigorous way, thoroughly, ethically and with an honest analysis of the results. It is important to note that 'quality' can mean different things in relation to social work research, and what signifies quality here is the subject of considerable debate (Shaw and Norton 2008). Below are listed the main sources for evidence, with commentary about their strengths for your own analysis. Further tools to help you appraise the quality of each report are given in the section [Critical appraisal](#) assessing research quality'.

Journals

Research that is published in peer-reviewed journals is often the first choice of literature used in student and professional work. In these journals, authors submit their papers to a process of review by two fellow academics, who usually require corrections and additional work before publication. However, this is still not a guarantee of quality, and Jesson et al. (2011: 21) point to some weaknesses in the process, saying that 'the notion of peer review is based on a belief in the reliability of the peer review process, but you should be aware that there are some limitations and drawbacks to it'. Weaknesses of this type include:

- Reviewers might have their own 'perspectives and paradigms [which] can act as a barrier to publishing new and unconventional ideas' (Jesson et al. 2011: 21). This will clearly affect their judgement.
- 'Publication bias' means that researchers do not submit unfavourable results. Therefore the picture of evidence is skewed.
- Sometimes the process falls down and shoddy or deceitful research findings get through.

Despite these potential drawbacks, peer-reviewed journal papers remain a key source of evidence for research and practice. They are the most timely of the published sources, and the research is likely to be more recent and up to date. However, this needs to be assessed as part of an appraisal of each source since it relies on the assumption of authors publishing soon after a project finishes.

It is not just new research which is submitted to journals. Some papers will be theoretical, and others will in themselves be literature reviews of one sort or another. If you are searching an

index and abstract database such as ASSIA, you can choose only to find results from peer-reviewed journals. However, this may exclude other useful sources such as these.

Literature reviews

Literature reviews are often published as journal papers since they can provide a strong synthesis of existing research in an area of interest. They may take a traditional review format, or may be a summary of a systematic review. There are also specific online libraries of systematic reviews. Focuses that will be of interest to social care can be found at the [EPPI-Centre](#), the [Campbell Collaboration](#) Library and in the [SCIE](#) knowledge reviews.

Books

Books can be a useful source of background and theory, but it tends to take longer to get them published than a journal paper or systematic review. For this reason they need to be assessed carefully in terms of the contemporary relevance of the information they contain. However, there will be key texts to allow you to build theoretical frameworks and these will assist you in thinking about the methodologies involved in your project and what you should read.

Monitoring and evaluation data

Monitoring data has been an important source for services and researchers for decades. Data collection has become more sophisticated and extensive as a result of the development of computerised information systems within local and national organisations. On a national scale, statistical information is gathered and analysed by researchers at the government's UK National Statistics Office. Like other government departments, it publishes a range of reports that can assist students and practitioners in their research-minded work.

Evaluations are an important source of evidence to inform practice, but their focus of proving the value of a programme, however this is judged, makes them a particularly political form of research. Monitoring has a political content to it as well. For the research-minded student or practitioner this means you must take a critical approach to the analysis of monitoring and performance data (Dickinson 2008). Questions of bias, validity, relevance and transferability should be addressed. Attainment of performance indicators or targets can demonstrate how standards have been raised, though minimum standards may mean there is a need to go further to show real change.

Other sources

In the section Where to search? a number of useful sources were given which provide additional research reports of use in research-minded work. Orme and Shemmings (2010: 66) list eight kinds of sources beyond journal papers and books in this category. These are:

- regulatory, inspection and policy documents
- practice-oriented briefings, digests and guidance
- user experience/autobiographical literature
- research listings
- research portals
- relevant service-based organizations
- media
- E-alerts.