Evidence-based practice: A framework for clinical practice and research design

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The evidence-based practice (EBP) framework emerged in the early 1970s as a means of improving clinical practice. This shift towards EBP allowed health professionals to move from a culture of delivering care based on tradition, intuition and authority, to a situation where decisions were guided and justified by the best available evidence. Despite the many advantages of EBP, many practitioners remain cautious about embracing the model. Part of this opposition is due to a misunderstanding of EBP, which this paper aims to address.

Key words: decision-making; evidence, evidence-based medicine.

INTRODUCTION
Evidence-based practice (EBP) is a formal problem-solving framework that facilitates ‘...the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients’. Apart from the implications on clinical practice, the capacity of EBP to link study findings to a professions body of knowledge also indicates that EBP is a useful theoretical framework for research, and might therefore provide an effective solution to the research–practice divide.

Archibald Cochrane, a Scottish medical epidemiologist, conceived the concept of best practice in the early 1970s. However, it was not until after Cochrane’s death in the late 1980s that medicine began to demonstrate an interest in the EBP paradigm with the establishment of the Cochrane collaboration. Since then, professional interest in EBP has grown. This shift towards EBP has allowed health professionals to move from a culture of delivering care based on tradition, intuition, authority, unsystematic clinical experience and pathophysiological rationale, to a situation where decisions are guided and justified by the best available evidence. EBP therefore limits practitioner and consumer dependence on evidence provided by privileged persons and authorities by bestowing clinicians with a framework to critically evaluate claims. Even so, there remains some debate over the definition of evidence in the EBP paradigm.

DEFINING EVIDENCE
Evidence is a fundamental concept of the EBP paradigm. Even so, there is little agreement between practitioners, academics and professional bodies as to the meaning of evidence. Indeed, the insufficient definition of evidence and the different methodological positions of clinicians and academics might all contribute to these discrepant viewpoints. From the broadest sense, evidence is defined as ‘... any empirical observation about the apparent relation between events’. Whereas this definition suggests that most forms of knowledge could be considered evidence, Romyn et al. assert that the evidence used to guide practice should be ‘... subjected to historic or scientific
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Hence, not all evidence is considered the same. These differences in the quality of information are known as the hierarchy of evidence.

The hierarchy of evidence informs practitioners which information is likely to provide the greatest impact on clinical decisions. According to Table 1, decisions based on findings from randomized controlled trials (RCTs) might therefore be more sound than those guided by case series results. However, when findings from controlled trials are unavailable or insufficient, decisions should be guided by the next best available evidence. The hierarchy of evidence can also be used to identify research findings that supersede and invalidate previously accepted treatments and replace them with interventions that are safer, efficacious and cost-effective. For these reasons, clinical decision-making might benefit from using EBP and the hierarchy of evidence.

THE EBP FRAMEWORK

The EBP paradigm consists of a series of steps that assist the practitioner in finding a solution to a clinical problem (see Fig. 1). The five-stage process begins with the identification of a clinical problem and the subsequent formation of a structured and answerable question. Following the problem stage, the literature is searched for the best available evidence to answer the proposed question. The evidence is then critically appraised for its validity, quality and generalizability. Once evaluated, the best available evidence is integrated into clinical practice in conjunction with clinical expertise and available resources. In addition to considering the availability of resources, the EBP paradigm also requires the judicious application of research findings in the patient context and an understanding of the values of persons involved in clinical decisions. Hence, studies only investigating the clinical efficacy of an intervention might not meet all the requirements of the EBP framework. This is because clinical evidence provides only one element of the decision-making process. Clinical decisions should therefore take into account client preferences, values and expectations. In other words, effective decision-making depends on the provision of professional expertise, clinical evidence, economic justification and consumer perspective. Figure 2 further illustrates the relationship between the EBP paradigm and clinical decision-making.

RATIONALE FOR EBP

There are many benefits to practitioners, consumers and the health-care system in adopting the EBP paradigm. For instance, EBP gives rise to a more transparent clinical decision-making process. Although practitioners might not welcome this increased level of scrutiny, greater accountability over decision-making is likely to benefit consumers. So, as patient expectations increase and practitioners become more accountable for their actions,
the traditional sourcing of inconsistent and incomplete information from peers and procedure manuals might become outdated.\(^1,18\) EBP therefore challenges existing procedures and facilitates the integration of new and effective interventions into clinical practice. Yet, unless practitioners are adequately informed and motivated about EBP, and resources are made available for staff to access evidence-based material, clinicians might have difficulty in adopting an EBP approach.\(^19,20\)

Evidence-based practice might also improve client outcomes and the quality of care, and reduce the costs of treatment, the risk of medical error and patient mortality through improved decision-making.\(^2,6,9,11,12,14,21\) Although these cost savings might be attributed to the elimination of unnecessary and ineffective interventions,\(^9\) the provision of high-quality evidence does not necessarily equate to cost reductions.\(^7\) Instead, the cost-effectiveness of alternative interventions should be evaluated using cost–benefit analysis.

The disparate practices across institutions are another concern in health care. According to Montori and Guyatt, the need for more consistent approaches to patient problems is long overdue.\(^1\) To address the inconsistencies in clinical practice, practitioners should be encouraged to adopt an EBP approach.\(^1,9,15,18\) Failure to use EBP might delay the integration of innovative treatments into clinical care,\(^1,8\) which could contribute to adverse client outcomes.\(^11\) In addition to EBP, new interventions might be more readily incorporated into practice by identifying and addressing barriers to implementation through the use of feasibility studies.

Failing to deliver EBP might also reduce the credibility of a profession and, in turn, isolate members of the profession from the multidisciplinary team. In other words, practitioners choosing to ignore EBP might not confidently justify the continuation or changing of clinical practices.\(^3,14,22\) Hence, EBP might not only improve multidisciplinarity and consistency of clinical care, but also more effectively meet the health-care needs of individuals.\(^14\) Despite the benefits to both practitioners and consumers, however, EBP is not without limitations.

**LIMITATIONS OF EBP**

There are many critics of EBP, but as yet, these arguments hold little coherence or strength.\(^4\) Some of the resistance in accepting EBP has been attributed to the underlying positivist philosophy of EBP with concerns that a reductionist approach oversimplifies or inadequately addresses complex patient situations.\(^4,21\) There is also an assumption that hard science is the only evidence accepted in the model.\(^8,23\) However, the belief that EBP relies only on evidence from RCTs is a common misconception. Although the RCT is particularly useful for evaluating the effects of an intervention, it can be less effective in answering questions about patient attitudes, experience, prognosis and diagnosis.\(^6,10\) Therefore, the criticism towards EBP might not necessarily be directed at the model, but with the type of evidence accepted. A major challenge for EBP is to then recognize that other types of data, such as qualitative findings, are also valid forms of evidence.\(^4\) To address these concerns, the type of evidence adopted should therefore be dictated by the type of question asked.\(^7\)

There is related concern that EBP might also produce dehumanized, routine and decontextualized care\(^4\) by ignoring clinical expertise and client preference.\(^8,11,12,21\) Yet, in addition to respecting patient choice,\(^17\) EBP also requires research findings to be considered alongside clinical expertise.\(^7,8,22\) EBP is therefore patient-centred,\(^18\) individualized\(^1\) and accommodating of practitioner and client needs.

The paucity of high-quality, coherent and consistent scientific evidence in nursing and wound care might explain why some clinicians have difficulty engaging in EBP.\(^1,6,8,10\) Although systematic reviews have attempted to resolve this problem, clinical experience and traditional evidence are still relied on in areas where data are absent or ambiguous.\(^9,10\) EBP therefore uses the best available evidence to guide decisions, and does not just rely on the use of data from clinical trials.\(^6,10\) In fact, if nurses only used techniques that were based on sound clinical evidence, nursing practice would be considerably limited.\(^6\)

Other barriers to adopting EBP are a lack of motivation, disagreement with findings, lack of autonomy, and inadequate research and critical appraisal skills.\(^3,4,10,11,19\) The lack of time, resources and authority to make changes are also major obstacles to the introduction of EBP.\(^1,4,6,10,11,19\) Yet, the delivery of EBP might eliminate the time, costs and resources allocated to harmful or ineffective treatments\(^4,7,10,18\) and, in effect, improve patient outcomes and the future demand on clinician time.

**CONCLUSION**

Even though some health professionals are cautious about embracing EBP,\(^23\) these practitioners need to be assured that EBP simply provides a useful and ‘...
framework within which to identify and answer priority questions about the effectiveness of . . . health care’. As well as guiding clinical practice, the EBP paradigm also helps to close the research–practice divide. Integrating findings into clinical practice, however, might only eventuate if practitioners undergo further education, and if future trials examine a wider range of treatment aspects, including the clinical efficacy, cost–benefit and feasibility of an intervention.

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