What do we understand by evidence-based practice?

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Abstract
Against the background of increased demands for health care and quality in a resources constrained environment, nurses and midwives have the responsibility to practice in an evidence-based manner. Evidence-based practice (EBP) is crucial in promoting excellence in nursing and midwifery and provides a systematic approach to decision-making that supports best practice and accountability. When the best available evidence is considered critically, the chances of doing the right thing at the right time for the right patient improves. EBP entails the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. EBP further requires integrating individual clinical expertise with the best available external evidence from systematic research, available resources and patient preferences. The crux of EBP is to continuously consider the link between patient care and outcomes (mortality, morbidity, clinical, functional and economic) and best evidence to improve the quality of health care and the care individual patients receive. To convince the community that nurses and midwives care with their hearts and minds, each one of us continuously needs to reflect on our practice: To what extent is my practice evidence-based? How can I improve the evidence-based quality of my practice? The aim of this paper is to clarify the concept of EBP. The 5-step process of evidence-based practice is illustrated using a scenario. Finally, the implementation of EBP is described and some sources nurses and midwives can use are given.

Introduction
Professional nurses and midwives have a legal, professional and moral obligation to ensure that they do the right thing for the right patient at the right time.1 Professional nurses and midwives are faced with ever increasing demands for accountability and quality in terms of cost-effectiveness, safe and appropriate care amidst resource constraints and the diverse health needs of patients. Nearly ten years ago Closs and Cheater2 warned that the health needs of people are changing as the effects of ageing, obesity, chronic cancers and AIDS become more prevalent. At the same time we are expected to be empathic communicators who are highly educated, critical thinkers, and expected to stay abreast of all important research findings. Nurses and midwives need to “care with their hearts and minds”.3

The professional nurse is accountable for her actions and omissions.4 EBP provides a systematic approach to decision-making that supports best practice and accountability.4 When the best available evidence is considered critically, the chances of doing the right thing at the right time for the right patient improves. The ability to make evidence-based decisions is a required core skill for professional nurses and midwives and is becoming an integral component of undergraduate curricula, postgraduate education and clinical practice.5

EBP is an important strategy to ensure excellence in nursing and midwifery care. Heater et al6 conducted a meta-analysis designed to determine the contribution of evidence-based practice to patient outcomes and found that patients who received evidence-based nursing and midwifery care showed “sizeable gains” compared with those receiving routine care.

The crux of EBP is to continuously consider the link between patient care and outcomes (mortality, morbidity, clinical, functional and economic) and best evidence to improve the quality of health care and the care individual patients receive. We need to ask ourselves to what extent is nurses and midwives practice still based on rituals and traditions. How do we ensure that our knowledge remains current and relevant and is not primarily based on initial education, textbooks and opinions? How many of us read professional scientific journals on a regular basis? To what extent are these journals evidence-based? How can we share the latest research findings and discuss the appropriateness in our context? Are the conferences we attend focussing on the latest research findings?

The aim of this paper is to revise the concept of evidence-based practice, argue the importance of evidence-based practice in nursing and midwifery in South Africa and provide resources for evidence-based practice that may help the practitioner.

What is evidence-based practice (EBP)?
Evidence-based practice in nursing and midwifery is closely linked to evidence-based medicine. Archie Cochrane and David Enkin were pioneers in this field. Other professions soon followed realising the importance of EBP to bridge the gap between theory and practice and to ensure excellence in practice. Prominent leaders in the field of evidence-based practice in nursing and midwifery are DiCenso, Calhoun, Ciliska, Melnyk, Fineout-Overholt, Estabrooks and Pearce, primarily in the United States of America, Canada and the United Kingdom.

Evidence-based practice developed from evidence-based medicine (EBM) and was originally defined as “conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. Evidence-based medicine means integrating “individual clinical expertise with the best available external clinical evidence from systematic research”. The definition was later adjusted to “the integration of best research evidence with clinical expertise, and patient values”.5 EBP as we use it in
this article means that the practitioner (clinical expert) uses his or her experience and expertise to select the appropriate action based on the best available evidence, patient expectations and preferences as appropriate in the context (local priorities, policies and available resources). The relationship between the components of EBIP is illustrated in Figure 1.

Figure 1: Relationship between the components of evidence-based practice

In clinical decision-making nurses and midwives use a variety of sources of knowledge, such as tradition, expert opinion, rituals, intuition, personal experience and research evidence. Often personal knowledge is the only evidence available. However, when a practitioner does not have the required knowledge and experience to deal with the identified problem, more experienced colleagues in the multi-disciplinary team can be consulted. In doing so, the practitioner has to remember that the status of ‘expert’ is formed by opinions and perceptions, and may not be valid. For example, obstetricians are more likely to be considered experts in childbirth than are midwives or women themselves. Experience brings with it authority that may be difficult to dispute, whereas expertise brings with it authority that may be difficult to dispute, whereas expertise relies on a rigorous and systematic approach to the development of knowledge.

In nursing and midwifery practice runs the risk of becoming characterised by an uncritical use of evidence. Even excellent external evidence may be inapplicable to or inappropriate for an individual patient or in a particular context. Antibiotic treatment for asymptomatic bacteriuria has shown to be effective in reducing the risk of pyelonephritis in pregnancy as shown by Smaill and Vazquez; however the strategy is only feasible when routine screening for asymptomatic bacteriuria is practically and financially possible.

Using a recipe, protocol or guideline as a standard procedure is NOT EBIP, even if the protocol or guideline is evidence-based. True EBIP incorporates clinical expertise balanced with the risks and benefits of alternative treatments for each patient and should take into account the patient’s unique circumstances and preferences, as well as the available resources. The evidence-based guidelines must be adapted for each individual patient. Patients have always exercised their preferences for care by choosing alternative treatments, refusing treatment, preparing advance directives (“living wills”), and seeking second opinions. Today patients have greater access to clinical information than ever before, and some become more knowledgeable about their conditions than their care providers, particularly those with chronic conditions. Although the patient’s role in clinical decisions is usually not formalised and is sometimes ignored by care providers, it is an important component of most clinical decisions. Clearly, the best possible scenario is one in which the patient is able to play a full part in making decisions about his or her own health care, having been given accurate information on the current state of knowledge.

Except for the misperception that EBIP uses a cookbook approach, practitioners often feel that findings of randomised controlled trials (RCTs) are seen as superior to research findings of the other types of studies. Many of our practices have been shown to be of no value and even harmful when evaluated by RCTs e.g. the use of gowns in newborn nurseries and shaving before surgery. Systematic reviews are valuable to obtain a quick and accurate answer for a clinical question. A systematic review provides an answer based on a number of methodologically sound studies related to a specific topic and is regularly updated by experts in the field. A statistical analysis of the pooled raw data from these studies (meta-analysis) is a more powerful tool than the results from a single study. However, just as randomised trials and systematic reviews are the best research designs for evaluating nursing and midwifery interventions, qualitative studies are the best design to better understand patients’ experiences, attitudes and beliefs. A RCT cannot tell us about the barriers to patient compliance with the intervention, or how the treatment affects the patient’s everyday life, the meaning of illness for the patient, or the adjustment required to accommodate a lifelong treatment regimen.

In nursing and midwifery most of the problems are complex in nature. We can never be entirely sure of what is going to happen. There is no direct, linear effect between what we do, and what results. Perhaps the best, or the most familiar, example of a complex problem is parenting. Formulas, recipes, and guidelines have limited application. Expertise in parenting can help, but is not enough.

Not all research provides good quality evidence. Best available external evidence refers to the latest research findings of well-designed studies. Nurses and midwives need to be able to critically appraise studies in order to decide whether the findings are credible and of practical value to the patients in their care. Best available external evidence often supports current practice, but there are times when it invalidates previously accepted practices, and replaces them with new practices that are more effective, efficacious and safe. A well-known example in midwifery was research changing the previous well accepted practice of routine episiotomy to that of ‘protect the perineum’.

Nurses and midwives practising in evidence-based practice use their clinical expertise and the best available external evidence as neither is enough on its own. Without clinical expertise, nursing and midwifery practice runs the risk of becoming characterised by an uncritical use of evidence. Even excellent external evidence may be inapplicable to or inappropriate for an individual patient or in a particular context. Antibiotic treatment for asymptomatic bacteriuria has shown to be effective in reducing the risk of pyelonephritis in pregnancy as shown by Smaill and Vazquez; however the strategy is only feasible when routine screening for asymptomatic bacteriuria is practically and financially possible.
Practising the EBP way

To practice in an evidence-based manner, the practitioner utilises the following 5-step process:\(^{16}\)

1. **Formulation of the information needed regarding a specific patient problem or situation as an answerable question.** An example of the format of such a question is given in the scenario following Table I.
2. **Using the question referred to above to systematically search for research-based evidence that could help to answer the question.**
3. **Critically appraising the studies for credibility, validity and value in the context.**
4. **Integrating the best available evidence, the practitioner's expertise, patient's preferences and perspectives, and available resources to decide in conjunction with the patient on a care plan.**
5. **Evaluating the success of the plan against the outcomes by means of reflection, audit, peer- and patient-assessment.**

Scenario:

A 60 old year asthmatic lady visits your clinic for follow-up. Her blood pressure was raised at two previous visits. You advised her to cut down her salt intake which she has done. This time her blood pressure is even higher and you refer her to the attending physician for treatment. You explain to her that there are two ways to decrease her blood pressure – ACE-inhibitors and diuretics. Diuretics are the starting point of treatment as it is better tolerated by patients. Your patient enquires about which treatment is the best to prevent coronary heart disease (scenario adapted from CASP\(^{17}\)).

**Table I:** The PICOT question

<table>
<thead>
<tr>
<th>Patient/problem</th>
<th>The clinical condition and relevant patient population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>The cause, outcome, intervention and/or screening tool you are considering</td>
</tr>
<tr>
<td>Comparison</td>
<td>The alternative intervention such as standard care, no intervention or alternative intervention</td>
</tr>
<tr>
<td>Outcome</td>
<td>What you and your patient would like to achieve as a result of the intervention</td>
</tr>
<tr>
<td>Time</td>
<td>In what period do you want to achieve the outcome?</td>
</tr>
</tbody>
</table>

**Table II:** Example of PICOT question

<table>
<thead>
<tr>
<th>P</th>
<th>I</th>
<th>C</th>
<th>O</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient or problem</td>
<td>Intervention</td>
<td>As compared to</td>
<td>The outcomes you and your patient want to achieve</td>
<td>The time period in which the outcomes can be achieved</td>
</tr>
<tr>
<td>How would I describe a group of patients similar to mine? Is the setting important?(^{20})</td>
<td>Which option is available in my setting?</td>
<td>Which alternative is available in my setting?</td>
<td>In what outcome is my patient interested?(^{22})</td>
<td>Is time relevant to the outcome?</td>
</tr>
<tr>
<td>Female asthmatic patients with hypertension</td>
<td>ACE-inhibitor</td>
<td>Diuretics</td>
<td>Prevention of coronary heart disease</td>
<td></td>
</tr>
</tbody>
</table>

Make a list of all the important concepts using the PICOT format

Your PICOT question may be the following:

*In female patients with hypertension, do ACE-inhibitors as compared to diuretics prevent coronary heart disease?*

The next step involves deciding which type of research would provide the best answer to the question. Is the question about diagnosis, prognosis, cause, prevention, treatment, or the patient’s experience or quality of life? The type of evidence needed is determined by the type of question.

Finding the evidence you are looking for may be problematic as you may not have the time or skills or the necessary access to the information required.

If evidence is found then each research study must be critically appraised to determine if the research methodology is of sufficiently high quality to be considered. Various instruments are available to assist the practitioner in critical appraisal, although basic knowledge and skills of research methods are needed.

**Implementation of EBP**

The process of incorporating good quality research findings into nursing and midwifery practice is, however, not straightforward. According to DiCenso et al\(^{3}\) the lack of implementation of evidence-based practice can be ascribed to lack of high quality research, limited skills of practitioners in finding and appraising research evidence, inability to access published research and the inappropriateness of some research findings within the context of the problem. Furthermore, barriers preventing the implementation of EBP may include time constraints, limited access to literature, lack of training in information seeking and critical appraisal skills, a professional ideology that emphasizes practical rather than intellectual knowledge, and a work environment that does not encourage information-seeking.\(^{13}\)

A great deal of evidence exists but is not utilised in practice. This can be seen in nursing and in medicine. One can understand that in terms of cost-effectiveness managers start asking the following question: Why generate more research if that which already exists is not acted upon?\(^{23}\) The aforementioned in turn leads to the following question: How can we ensure that research is acted upon? A knowledge-to-action approach is imperative to convince colleagues that EBP can be effectively implemented.

The challenge to stay updated with the latest research evidence has become extremely demanding. Even if one can read at least one journal article per day, it would be impossible to grasp the
essence of the latest evidence as knowledge is becoming more available and accessible.

Principles that are of value in the implementation of EBP are the following:

- Champions with a passion to facilitate research in action must drive EBP in a unit.
- EBP is part of the strategic plan of the organisation.
- Organisational support is needed to overcome barriers to the implementation of EBP.
- Staff need to be supported and mentored in practising the EBP way using strategies such as research capacity development and communities of practice (CoPs) where groups of nurses and midwives sharing a practice concern work together.

EBP can be implemented using the principle of ‘champions’ who drive the implementation in practice from within the organisation. Communities of practice (CoPs) refer to small groups of people, usually from one organisation which develop a common sense of purpose and vision to share skills and knowledge by means of intense communication, and is also a valuable principle to use. Such a group is primarily interested in a given practice, for example the care of preterm infants. Members of a CoP build one another’s capacity and learn together.

Resources for evidence-based practice

Nurses and midwives need to access published studies and best practice guidelines to inform their practice. This is often not easy given the lack of internet access in practice. Over the years an international commitment to evidence-based health care has resulted in a number of initiatives to improve access to research findings such as the Cochrane Library, Reproductive Health Library, Joanna Briggs Institute Database and evidence-based journals.

A number of websites exist to assist practitioners with speedy access to information. In accessing these databases, nurses and midwives will also need access to academic libraries. Access to these libraries can be negotiated between universities and healthcare services. These libraries are situated at universities and at least some nurses and midwives may be able to access information in this way. Outreach programmes for academic institutions should disseminate the latest research findings to areas where access is difficult. An example of such an initiative is reader-friendly summaries of evidence distributed at hospitals and clinics by the School of Nursing Science of University of KwaZulu Natal, a collaboration centre of the Joanna Briggs Institute.

Practitioners also need skills in order to make use of available resources. Various initiatives such as critical appraisal skills teaching programmes, centres for evidence-based practice and research utilisation conferences can assist to improve practitioners' skills. In South Africa the North-West University (Potchefstroom campus) established an EBP niche area in the School of Nursing Science to develop best practices in health sciences. The School of Nursing Science presents a number of short courses to develop the capacity of health practitioners and researchers in the field of evidence-based practice.

Conclusion

EBP is crucial in promoting excellence in nursing and midwifery. Against the background of increased demands for health care and quality in a resources constrained environment, nurses and midwives have the responsibility to practice in an evidence-based manner. Evidence-based practice entails the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. EBP further requires integrating individual clinical expertise with the best available external evidence from systematic research, available resources and patient preferences. The same approach also applies to problem-solving in other aspects of nursing and midwifery practice such as management and education.

To convince the community that nurses and midwives care with their hearts and minds, each one of us continuously needs to reflect on our practice: To what extent is my practice evidence-based? How can I improve the evidence-based quality of my practice?

Key messages

1. The nurse and midwife practitioner use their experience and expertise to select the appropriate action based on the available best evidence, patient expectations and preferences together with available resources and policies.
2. Evidence-based practice entails the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients.
3. EBP requires integrating individual clinical expertise with the best available external evidence from systematic research, available resources and patient preferences.
4. The same approach also applies to problem-solving in other aspects of nursing and midwifery practice such as management and education.
5. Convince the community that nurses and midwives care with their hearts and minds.
6. Reflect on your practice: To what extent is my practice evidence-based? How can I improve the evidence-based quality of my practice?

References: