

## Evidence-based practice

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My undergraduate physiotherapy training seems like a long time ago. Almost everything I learned back then in the 1980's was based on a pathophysiologic rationale and on knowledge provided by respected authorities in the field. I was convinced that courses on statistics and methodology were just curriculum fillers, because hardly any research seemed available in the area of physiotherapy. Now there is a plethora of studies relevant to our field available to the interested clinician. It seems as if every year the amount of studies doubles. Applying sound research evidence on the most effective and efficient means of diagnosis, prognosis, and intervention in the management of our patients is an obvious necessity, both from the aspect of securing the best possible outcomes and from the aspect of allocation of limited health care resources. But how does the busy clinician keep up with all this new evidence continuously being produced?

Evidence-based practice (EBP) as introduced in the 1990's represented a paradigm shift away from the traditional paradigm of physiotherapy education as described above. EBP does not hold authority-based knowledge in the same high regard the traditional paradigm did. It states that intuition, unsystematic clinical experience, and pathophysiologic rationale do not constitute sufficient grounds for clinical decision-making. Instead, it stresses the examination of evidence from clinical research based on a formal set of rules to help clinicians effectively interpret the results of clinical research<sup>1</sup>.

Does this mean we discard all we once held dear in terms of authority-based and experience-based knowledge? Does it mean that patient or clinician preference for a specific diagnostic or therapeutic intervention is irrelevant? Sackett et al<sup>2</sup> defined EBP as the process of integrating the best research evidence available with both clinical expertise and patients' values. Guyatt et al<sup>1</sup> suggested defining evidence as any empirical observation about the apparent relation between events. So, obviously clinician experience and basic science research are still sources of evidence, albeit that they are located low in the hierarchy of possible evidence in the EBP paradigm<sup>1</sup>. The patient still ultimately makes the decision after a comprehensive education on potential harm or benefit from a diagnostic or therapeutic intervention. And, of course, professional responsibility and clinician expertise determine whether a clinician applies a specific intervention even after obtaining informed consent from the patient.

EBP offers the clinician quick access to an ever-expanding body of literature by way of preprocessed evidence in the form of randomized clinical trials, systematic reviews, meta-analyses, and clinical practice guidelines<sup>1</sup>. Its potential for improved patient care is evident (albeit often unproven). So why is there such resistance in medicine and allied health to adopting this new paradigm? Of course, there is the fear that

clinical prediction rules and clinical practice guidelines will take away the autonomy of the individual clinician. We have already seen that this is a misconception. There are more substantial criticisms to EBP<sup>3</sup>. Differing values among researchers can lead to differing clinical interpretations despite identical evidence. We may be confronted with the fact that no relevant direct evidence from basic or applied research exists to answer our specific question. We may question external validity of research and, therefore, relevance to our patient population. Meta-analyses and systematic reviews may provide inconclusive or inconsistent evidence. Limited health care resources may pose financial boundaries to the implementation of EBP recommendations. EBP requires the clinician to acquire and develop new skills in literature searching, critical appraisal, and statistics despite seemingly ever more limited clinician time and lack of technical resources.

So where do we go from here? Can we ethically afford to ignore EBP? In my opinion, we cannot ignore the potential for improvement in patient care that EBP has to offer. Do our objections to EBP hold true? Increased access to computerized databases allow for relatively quick review of the available literature. Clinical practice guidelines for physiotherapy are available full-text on the Internet. This issue provides information on multiple aspects of EBP. An N-of-1 randomized controlled trial, the highest level of evidence for treatment decisions<sup>1</sup>, may be possible in your clinical setting, but even a less methodologically rigorous narrative case report or other form of clinical research provide evidence. Narrative or systematic reviews can be produced by any clinician and can form the basis for further discussion and research. Clinician expertise, authority-based knowledge, and pathophysiologic rationale still provide handholds for patient management and can produce research topics. In my opinion, a continued emphasis on all aspects of EBP in entry-level and post-graduate physiotherapy education, a personal commitment from clinicians to developing skills and knowledge related to EBP, and a grassroots involvement in the production of evidence pertinent to physiotherapy clinical practice seems to be the logical implication of the introduction of the EBP paradigm in physiotherapy.

### References

1. Guyatt G, et al. Introduction to the philosophy of evidence-based medicine. In: Guyatt G, Rennie D, Eds. *User's Guide to the Medical Literature: A Manual for Evidence-Based Clinical Practice*. Chicago, IL: AMA Press, 2002.
2. Sackett DL, et al. *Evidence-Based Medicine. How to Practice & Teach EBM*. New York, NY: Churchill Livingstone, 1997.
3. Straus S, et al. Expanded philosophy of evidence-based medicine. In: Guyatt G, Rennie D, Eds. *User's Guide to the Medical Literature: A Manual for Evidence-Based Clinical Practice*. Chicago, IL: AMA Press, 2002.