

**BRIEF COMMUNICATION****EVIDENCE-BASED CLINICAL PRACTICE - A CRITICAL ANALYSIS  
OF ITS JUSTIFICATION AND LIMITATIONS**

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**A lot has been said and debated about evidence-based clinical practice. What is it really and why so much of significance is attached to it? Is all the evidence from clinical trials relevant and reliable? How about experience-based clinical practice? How much of our practice is influenced by clinical data and how much of it by years of practice and number of patients managed? The clinician will still need to exercise common sense when treating patients and they must always remember that each individual patient is unique and a clinician's approach will have to be catered to their needs. After all, the caveat is that we are treating individuals with feelings and emotions and not textbooks or journal articles.**

***Keywords:* Evidence-based, clinical practice, justifications, limitations**

**Introduction**

Evidence-based clinical practice is an organized mean to obtaining clinically essential information about the causes and diagnoses of illnesses, their outcomes and management.

It integrates the best research evidence with clinical expertise and patient values:

- **Best research evidence** means clinically relevant research, often from the basic sciences of medicine, but especially from patient oriented clinical research into the accuracy and precision of diagnostic tests (including the clinical assessment), the power of prognostic markers, and the efficacy, safety and tolerability of therapeutic, rehabilitative and preventive interventions. New evidence from clinical

research both invalidates previously accepted diagnostic tests and treatments and supplants them with new ones that are more powerful, more accurate, more efficacious, and safer.

- **Clinical expertise** refers to the ability to use our clinical skills and past experience to rapidly identify each patient's unique health state and diagnosis, their individual risks and benefits of potential interventions, and their individual values and expectations.

- **Patient values** refers to the unique preferences, concerns and expectations each patient will have during a clinical consultation and which must be integrated into clinical decisions if they are to serve the patient.

When these three elements are integrated, clinicians and patients form a diagnostic and therapeutic alliance that can possibly optimize clinical outcomes and enhance quality of life.

The evidence based approach is a process in which the following steps are applied:

- Formulation of an answerable clinical conundrum
- Identification of the best evidence
- Critical appraisal of the evidence for validity and utility
- Implementation of the findings
- Evaluation of the performance

The principles of evidence based clinical practice can be applied to a variety of medical procedures. For psychiatry, its main use in this day and age is assessing the value of therapeutic interventions.

Other uses for evidence-based clinical practice have been recognized:

- It reinforces the need for, and mastery of the clinical and communication skills that are required to gather and critically appraise patients' narratives, symptoms and signs and to identify and incorporate their values and expectations into therapeutic alliances
- It fosters generic skills for use in finding, appraising and implementing evidence from the basic sciences and other applied sciences
- It provides an effective, efficient framework for postgraduate education and self-directed, lifelong learning; when coupled with "virtual libraries" and distance learning programmes, it supplies a model of worldwide applicability.

- Although not its primary purpose, by identifying the questions for which no satisfactory evidence exists it generates a immensely practical agenda for applied health research.

- It provides a common language for use by multidisciplinary teams whose effective collaboration is essential if patients are to benefit from new knowledge.

The fundamental assumption of evidence-based practice is that some kinds of evidence are better (that is more valid and of greater clinical applicability) than others. This view is most easily elaborated for questions about therapy. A commonly used hierarchy is as shown below:

Hierarchy of research for treatment studies:

I(a). Evidence from a systematic review of randomized controlled trials

I(b). Evidence from at least one randomized controlled trial

II(a). Evidence from at least one controlled study without randomization

II(b). Evidence from at least one other type of quasi-experimental study

III. Evidence from non-experimental descriptive studies, such as comparative studies, correlation studies and case control studies

IV. Evidence from expert committee reports or opinions and/or clinical experience of respected authorities.

In this hierarchy, randomized evidence is regarded as more valid than non-randomized evidence with systematic review of randomized trials seen as the gold standard for answering clinical questions in the most objective way possible (1). This assumption has itself yet to be tested systematically but

at present seems likely to be true. It is important that clinicians are trained in critical evaluation of systematic reviews before applying them to their clinical practice (2).

### **Why the sudden interest in evidenced-based clinical practice?**

These ideas have been around for a long time. This is evident from post-revolutionary Paris (when clinicians like Pierre Louis rejected the pronouncements of authorities and sought the truth in systematic observation of patients. For us, Louis's most dramatic rejection was the authoritarian pronouncement that venesection was good for cholera), and a colleague has nominated a much earlier origin in ancient Chinese medicine. During the reign of Emperor Qianlong, the method of "kaozheng" ("practising evidential research") was used to interpret ancient Confucian texts (3). In the current era, they were consolidated and named EBM (evidenced-based medicine) in 1992 by a group led by Gordon Guyatt at McMaster University in Canada(4). Since then, the number of articles about evidence-based practice has grown exponentially (from 1 publication in 1992 to about a thousand in 1998) and international interest has led to the development of 6 evidence-based journals (published in up to 6 languages) that summarize the most relevant studies for clinical practice and have a combined world-wide circulation of over 175,000.

The subsequent rapid spread of EBM has arisen from 4 realizations and is made possible by 5 recent developments. The realizations, attested to by ever-increasing numbers of clinicians, are:

1. Our daily need for valid information about diagnosis, prognosis, therapy and

prevention (up to 5 times per in-patient (5) and twice for every 3 out-patients (6).

2. The inadequacy of traditional sources for this information because they are out-of-date (textbooks)(7), frequently wrong (experts)(8), ineffective (didactic continuing medical education)(9) or too overwhelming in their volume and too variable in their validity for practical clinical use (medical journals)(10).

3. The disparity between our diagnostic skills and clinical judgement, which increase with experience, and our up-to-date knowledge (11) and clinical performance (12) which decline.

4. Our inability to afford more than a few seconds per patient for finding and assimilating this evidence (13) or to set aside more than half an hour per week for general reading and study.(14)

Until recently, these problems were insurmountable for full-time clinicians. However, 5 developments have permitted us to turn this state of affairs around:

1. The development of strategies for efficiently tracking down and appraising evidence [for its validity and relevance].(15)

2. The creation of systematic reviews and concise summaries of the effects of health care (epitomized by the Cochrane Collaboration (16).

3. The creation of evidence-based journals of secondary publication [that publish the 2% of clinical articles that are both valid and of immediate clinical use].

4. The creation of information systems for bringing the proceeding to us in seconds.(13)

5. The identification and application of effective strategies for life-long learning and improving our clinical performance.(17)

### ***Justifications for evidence-based clinical practice***

There are two main related problems in clinical practice which can be helped by the application of evidence-based practice:

- The difficulty in keeping up to date with clinical and scientific advances
- The tendency for practitioners to work in peculiar ways that are not justified by available evidence

With the swelling number of clinical scientific journals, it's impossible even for the most diligent of clinicians to keep up to date with all relevant articles let alone the field of his specialty. Clinicians therefore have to rely on information gathered from other sources which might include, for example, unsystematic expert reviews, opinions of colleagues, information from pharmaceutical representatives and their own clinical experiences and beliefs. This can lead to wide variations in practice, for example, those described for the use of electroconvulsive therapy and various kinds of drug treatment. (18; 19)

### ***Limitations of evidence-based clinical practice***

The examination of the concepts and practice of evidence-based practice by clinicians and academics has led to negative as well as positive reactions. The resulting discussion and debate has reminded us of three limitations that are universal to science (regardless of basic or applied) and medicine—

- The shortage of coherent, consistent scientific evidence

- Difficulties in applying any evidence to the care of individual patients

- Barriers to any practice of high quality medicine.

The debate has also identified certain limitations that are unique to the application of evidence-based clinical practice:

- The need to develop new skills in searching and critical appraisal can be daunting, although evidence based care can still be applied if only the former has been mastered and directed towards pre-appraised sources.

- Busy clinicians have limited time to master and apply these new skills, and the resources required for instant access to evidence are often pathetically inadequate in clinical settings.

- Evidence that evidence-based clinical practice works has been late and slow to come.

- Publication bias. Evidence indicates that studies showing positive treatment effects are more likely to be published than negative studies. If negative studies are not included, the effect of treatment will be inflated.

- Duplication of publications. Just as negative studies may go unpublished, positive studies may be published several times in different forms, sometimes with different authors. This, again, will falsely elevate treatment effects if the same study is included more than once.

- Heterogeneity of studies. As noted above, individual studies may vary widely in the results obtained because of subtle differences in study design, quality and patient population. If such heterogeneity is

not recognized and accounted for, misleading conclusions will be drawn.

On the other hand, the ensuing discussion and debate has clarified some “pseudo limitations” that arise from misunderstandings of the definition of evidence-based clinical practice. An examination of the definition and steps of evidence-based clinical practice quickly dismisses the criticisms that it devalues clinical expertise, is limited to clinical research, ignores patient’s values and preferences, or promotes a cookbook approach to medicine. Moreover, it is not an effective cost-cutting tool, since providing evidenced-based care directed toward maximizing patients’ quality of life often increases the costs of their care and raises the displeasure of health economists. In addition, the self-reported employment of the inquisitive approach by a great majority of front-line GPs dispels the notion that evidenced-based clinical practice is an ivory tower concept. Lastly, concerns that evidence-based clinical practice leads to therapeutic nihilism in the absence of randomized trial evidence has been put to rest.

Finally, does providing evidence-based care improve outcomes for patients? No such evidence is available as yet. On the other hand, population-based outcomes research has repeatedly documented that those patients that do receive evidence-based therapies have better outcomes than those who don’t.

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