

**The importance of clinical research
in improving health care practice**

The explosion of technological advances and scientific efforts and opportunities to disseminate new knowledge in the last decade is placing health care professionals in a challenging position to keep themselves abreast of the state of the science. Therefore, it is necessary to use quick criteria to establish priorities regarding publications to be read and to have sufficient knowledge how to critique the literature.

Often, we question ourselves, what are the scientific evidence available and what are the impact of a study's findings to improving clinical practice? Scientific evidence occurs when the research's findings are results of well designed studies with methodological rigor that minimized the chances of bias, a type of error that systematically affects the validity of research's results. The primary scientific evidence is the clinical epidemiology, one of the basic sciences, that relies on both the mathematical and statistical methods associated with the prevention of bias and reliable scientific interpretations of research's findings.

Decision-making approach in health care practice is a complex task and should be based on the best available level of scientific evidence. For example, a systematic review of the literature using meta-analysis generates the strongest scientific evidence. In addition, according to the hierarchy of scientific evidence, a randomized clinical trial also generates strong evidence at the level 1. A cohort and case-control studies are classified at level 2 and level 3, respectively. Thus, health care clinical practice should be guided by the best available evidences that were generated through well designed clinical research.

Evaluation and appraisal of findings from clinical research is a fundamental role of health care professionals. This will lead to the evaluation of current clinical practice and the adoption of the best scientific evidence, which translates into evidence-based practice. One of the greatest challenges in the next decade is to educate and capacitate health care providers to evaluate and appraise the impact of the findings of clinical research and to understand and differentiate statistical and clinical significance. Health care providers must know how to evaluate the effect of a proposed intervention in reducing morbidity and improving quality of life in patients from a health care service.

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