Vision
Develop computer-assisted applications that support Evidence-Based Practice.

Abstract Systematic Review
Educational and Training in Evidence-based Research
- Faculty Professional Education
- Dental Curriculum

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Abstract Systematic Review (ASR) in EBRP (Evidence-based Research and Practice) is an educational and training application for acquiring skills needed in evidence-based research. ASR was developed as a facilitated process that instructs the researcher in critical thinking skills using a stepwise, lock-step quality control process of SR. While SR methodology concepts are similar to ASR, the outcomes are different. However, both are capable of producing outcomes used in developing clinical practice guidelines (CPGs). Since primary source SRs may also develop pooled estimates of best evidence, this is the outcome that allows for association between both methodologies. The novelty of ASR is knowledge management software that provides a quick and facilitated process for scholars to learn and achieve skills in accomplishing a critical assessment and evaluation of the literature. Since abstracts are used, there are no costs to bear by researchers unlike most primary source articles. The outcomes of ASRs are synthesizing the literature to produce clinical practice guidelines and a clinical report in response to a clinician patient generated question posed through the PICOTS template, a standardized form used for this purpose in performing EBR. However, its validation in rendering best evidence for shared decision-making has not been studied.

Clinical Practice Guidelines

CPGs are pictorial displays that include pooled estimates of best evidence from a meta-analysis to provide decision and utility data, taking into account cost, cost-effective and cost-benefit interpretations of treatment options may be provided to patients.

CPGs

CPGs may follow the more specific definition of evidence-based research by Greenhalgh and Donald (Greenhalgh, 2010) as “the use of mathematical estimates of the risk of benefit and harm derived from high-quality research on populations, samples, specific situations, or management of individual patients.”
Initiation of Research

Uncertainty

There are two types of questions that are generally asked during research:

1. Background questions
2. Hypothesis

Background questions are questions that help to define the problem and set the stage for the research.

Hypothesis is a statement that the researcher will test during the research process.

Uncertainty

The PICOTS template is used to guide the research question.

PICOTS Template

<table>
<thead>
<tr>
<th>PICOTS</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Patient problem or population</td>
</tr>
<tr>
<td>I</td>
<td>Intervention (primary) or exposure</td>
</tr>
<tr>
<td>C</td>
<td>Comparison intervention</td>
</tr>
<tr>
<td>O</td>
<td>Outcome of interest</td>
</tr>
<tr>
<td>T</td>
<td>Time it takes to demonstrate outcome or observation</td>
</tr>
<tr>
<td>S</td>
<td>Setting or situation or environment in which outcomes are assessed or observed</td>
</tr>
</tbody>
</table>

Research Question

For Intervention or Therapy:
In P, what is the effect of I on O compared with C within T?

For Etiology:
Are P who have I at (increase/decreased) risk for/of O compared with P with/without C over T?

For Diagnosis or Diagnostic Test:
Are (Is) I more accurate in diagnosing P compared with C for O?

For Prevention:
For P does the use of I reduce the future risk of O compared with C?

For Prognosis/Predictions:
Does I influence O in patients who have P over T?

For Meaning:
How do P diagnosed with I perceive O during T?
Search of Literature

Search
Software develops keywords and performs search using online search Engine specific to discipline. For example, healthcare searches use PubMed.

Search Results

Initial Case Series

Critical Thinking

Timmer Score

Timmer Analysis

Best Case Series

Input Data for Meta-Analysis

EBR Protocol

Data Input

Meta-Analysis
Report

Building Blocks

Software Innovation Agenda

- Systematic review research support Faculty investigations and publications
- Evidence-Based Practice support practitioners in informed consent and treatment planning for patients making vested, optimum decision-making under uncertainty