

Evaluating the Evidence in Evidence Based Practice: The Case for Quality Criteria

Not all evidence carries the same weight of truth that is systematically collected from a carefully crafted sufficient sample that decreases biases and promotes generalization. Not all evidence tests a hypothesis in the most relevant and effective way that demonstrates that differences seen did not happen by chance alone. Whether guidelines from experts that consolidate and synthesize evidence or descriptive qualitative evidence that captures a particular reality, scientific investigation in the health sciences requires criteria for evaluation that hold investigators and readers to a standard of excellence.

The development of protocols, practice guidelines, reviews, theses, and proposals sends health providers and researchers to the search and evaluation of the work of others. The following formal reporting guidelines and evaluative tools offer a variety of means to evaluate the rigor and weight of the evidence necessary for evidence based practice and independent research. A number of tools and checklists provide readers a way to assess the quality of the evidence and to construct and report their own studies. The first CASP group helps evaluate studies in journals. The Criteria that follow offer a more rigorous standard for the construction, reporting, and review of studies.

- **Critical Appraisal Tools for the Evaluation of Published Studies**
<http://www.phru.nhs.uk/Pages/PHD/resources.htm>
Called the CASP (Critical Appraisal Skills Program) Tools of the Public Health Research Unit of the National Health Service (UK)
(Separate Study Evaluation Tools for systematic reviews, randomized controlled trials, economic evaluation studies, qualitative studies, cohort studies, case control studies, diagnostic test studies)
- **Qualitative Research**
 - **COREQ (Consolidated criteria for reporting qualitative research)**
http://www.ncbi.nlm.nih.gov/pubmed/17872937?ordinalpos=2&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum
- **STROBE (Strengthening the Reporting of Observational Studies)**
<http://www.strobe-statement.org/Checklist.html>
(For Observational Studies: cohort, case-control, and cross-sectional studies)
- **CONSORT (Consolidated Standards of Reporting Trials)**
<http://www.consort-statement.org/>
(For Randomized Controlled Trials - RCTs)
- **STARD (Standards of Reporting Diagnostic Accuracy)**

<http://www.stard-statement.org/>
(For Diagnostic Test Studies)

- **QUORUM (Quality of Reporting of Meta-Analyses)**
<http://www.consort-statement.org/index.aspx?o=1346>
- **AMSTAR (A Measurement Tool to Assess Systematic Reviews)**
REF: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2131785>
- **MOOSE (Meta-Analyses of Observational Studies in Epidemiology)**
REF:
http://www.ncbi.nlm.nih.gov/pubmed/10789670?ordinalpos=14&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum
- **AGREE (Appraisal of Guideline Research and Evaluation)**
<http://www.agreecollaboration.org/>
(For Guidelines) Those looking for clinical guidelines are reminded that the US National Guideline Clearinghouse (<http://www.guideline.gov/>) is one source, but other sources beyond the US offer guidelines as well. Example: the UK National Institute for Clinical Excellence (**NICE**)
<http://www.nice.org.uk/nicemedia/pdf/word/CG021NICEguideline.doc>
Those who are reviewing guidelines should look broadly.
- **Minimal Registration Data Set for Clinical Trials Registry Recommendations**
http://www.icmje.org/clin_trialup.htm

** The **Equator Network** (<http://www.equator-network.org/?o=1028#guidance>)
Is a Resource Center for improving research reporting, ethics, and dissemination of publishing standards as well as posting reporting criteria.

To assist in literature searches, the ADEPT distance learning course teaches search strategies:

<http://www.shef.ac.uk/scharr/ir/adept/>

As a last reminder, a number of sites offer critical appraisal tools and remind us how to classify the types of study and rank the hierarchy or levels of evidence they produce. The Centre for Evidence Based Medicine at Oxford is the first established for that purpose: <http://www.cebm.net>