Clinical Evidence Hierarchies

Jane D. Saxton
Dir. of Library Services
Bastyr University
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Example 1: Pyramid model

Randomized Controlled Double Blind Studies

Cohort Studies

Case Control Studies

Case Series

Case Reports

Ideas, Editorials, Opinions

Animal research

In vitro ('test tube') research

Systematic Reviews and Meta-analyses

SUNY Downstate University: http://library.downstate.edu/EBM2/2100.htm
Example 2: Pyramid model
Points about evidence “pyramids”:

• Model a hierarchy of research methodologies for clinical decision-making;
• Top tiers (most rigorous) include methodologies that reduce or eliminate researcher bias;
• Randomized controlled trials are considered the “gold standard”, but…
  – RCTs were founded on a pharmacological model of therapy to test efficacy;
  – Issues with validity when applied to complex, non-pharmacological and/or whole system interventions, e.g. physiotherapy, surgery, naturopathic medicine, TCM
“The evidence hierarchy is too simplistic for much of medicine and for the complex interventions in many CAM practices. As every clinician knows, patients recover for complex and interacting reasons, many of which are not additive and cannot be isolated in controlled environments.”

Jonas, 2005.

Wayne Jonas is a former director of NCCAM/NIH and currently President and CEO of the Samueli Institute.
Alternative model 1: the Evidence Circle

Points about the Evidence Circle:

- A circle has no preferred orientation.
- Complementary use of multiple methods is superior to a single “gold standard” for assessing complex interventions such as CAM.
- Upper half of circle:
  - experimental methods that test efficacy, e.g. RCTs
  - high internal validity (results relevant to the carefully selected participant population, but not easily generalized to individual patients)
- Lower half of circle:
  - observational, quasi-experimental methods that assess effectiveness, e.g. case-control, cohort
  - high external validity (results more easily generalized to individual patients)
- Shading within the circle indicates complementary methods
Alternative model 2: the Evidence Funnel

Points about the *Evidence Funnel*:

- Models the crucial role that research literacy plays in linking a non-hierarchical evidence structure to evidence-informed patient care.
- Emphasizes incorporating best evidence, in addition to clinical expertise and patient values, in clinical decision-making.
- Reflects the diversity of information sources that enter into patient-care decisions.
“Research methodologies are tools that we use and not tools that use us.”

Jonas, 2005

References:

