

9. Critical Appraisal of scientific papers

Learning objectives

- Understand the principles of critical appraisal and its role in evidence based practice
- Be able to appraise quantitative research and judge its validity
- Be able to assess the relevance of published research to your own work

What is evidence based practice?

Evidence-based practice is the integration of

- individual clinical expertise
with the
- best available external clinical evidence
from systematic research
and
- patient's values and expectations



Three important components of evidence based healthcare

The evidence-based practice process.

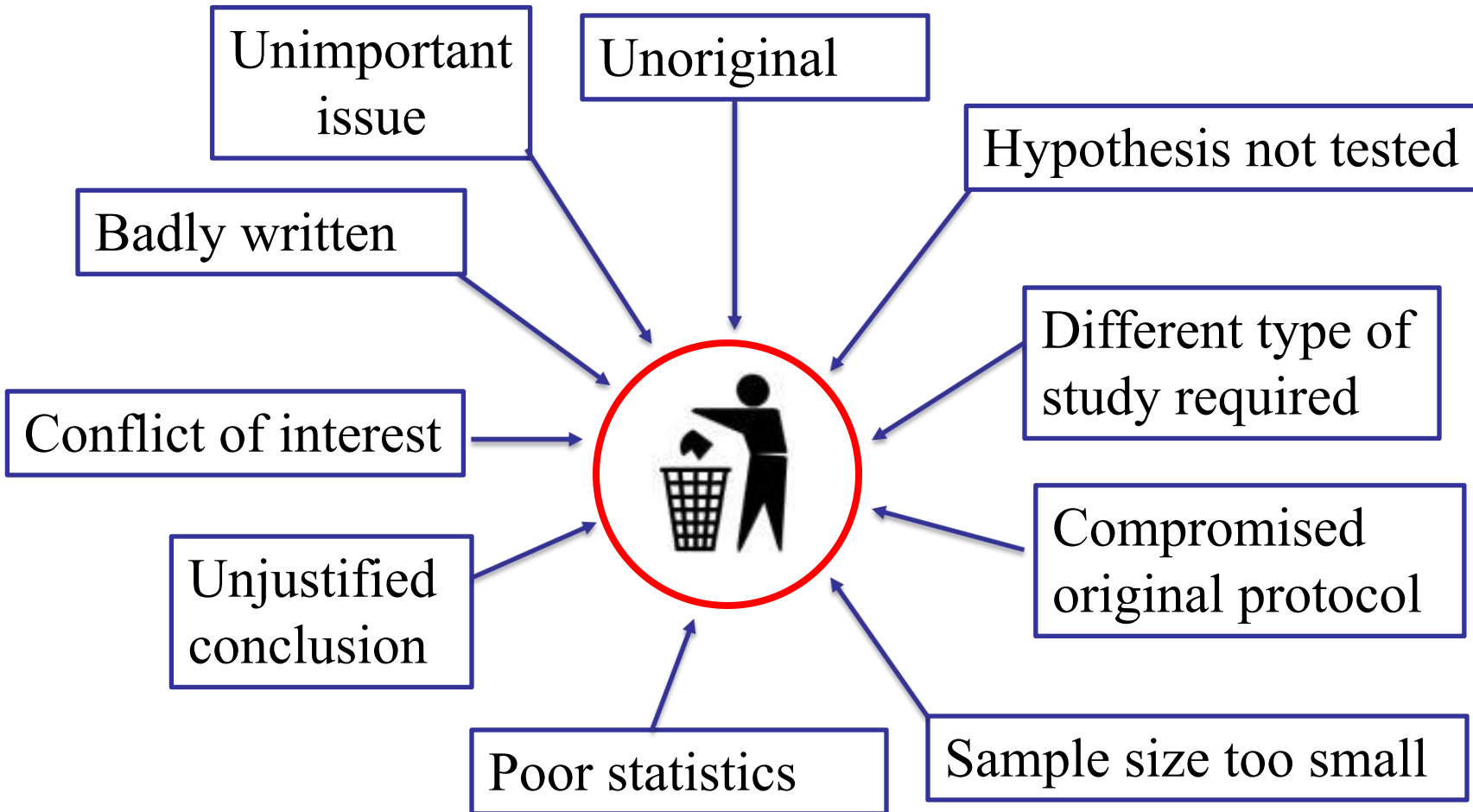
- Decision or question arising from a patient's care.
- Formulate a focused question.
- Search for the best evidence.
- **Appraise the evidence.**
- Apply the evidence.

Why does evidence from research fail to get into practice?

- 75% cannot understand the statistics
- 70% cannot critically appraise a research paper

- Using research for Practice: a UK experience of the barriers scale.
Dunn, V. et al.

The science of 'trashing' a paper



What is Critical Appraisal?

- **Critical appraisal** is the process of carefully And systematically analyze the research paper to judge its trustworthiness, and its value and relevance in a particular context.
- “**Critical appraisal** is the process of systematically examining research evidence to assess its **validity, results, and relevance** before using it to inform a decision”

(Hill and Spittlehouse, 2001, p.1).

What is critical appraisal?

- Weighing up evidence to see how useful it is in decision making
- Balanced assessment of benefits and strengths of research against its flaws and weaknesses
- Assess research process and results
- Skill that needs to be practiced by all health professionals as part of their work

What critical appraisal is NOT

- Negative dismissal of any piece of research
- Assessment of results alone
- Based entirely on statistical analysis
- Only to be undertaken by researchers/statisticians