Outcomes Based GRADE appraisal

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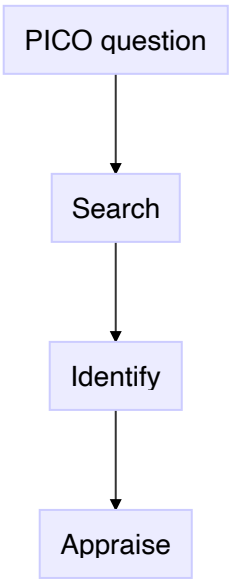
Discuss Evidence, outcomes, and quality appraisal

What we have covered so far



- Frame a PICO question
- Search Literature
- Identify a study
- Appraise

Which one of the following is a PROBLEM with appraising ONE study

- One study may not be comprehensive of every study possible

- A study can be small in size
- A study can have serious biases
- All of the above

Answer to the above question

All of the ideas

- One study is never comprehensive
- Studies vary in size
- If a study has biases, we have a wrong answer
- One study does not support causal inference
- We need high quality evidence

What would you consider?

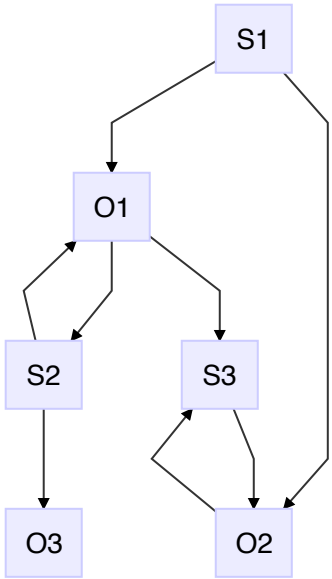
> Suppose you are suffering from high blood pressure and your doctor has prescribed a new Drug (let's say the name of the drug is "Xarista"). He wants to discuss with you. Which of the following is MOST important for you to discuss with your doctor?

- A. What is the effectiveness of the Xarista?
- B. What is the estimate of benefit from Xarista?
- C. How confident is the doctor in these estimates?

Answer to the previous question

- All three, A, B, and C are important
- C, how confident is the doctor, is VERY important!

Quality of Evidence is best discussed in terms of outcomes

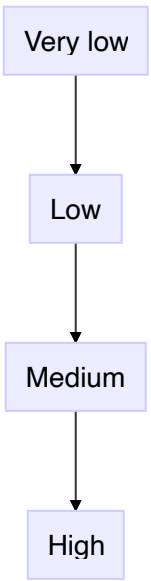


- One study can have many outcomes
- One Outcome can be linked to many studies
- Hence, it is best to pair outcomes with many studies
- For Quality of Evidence Appraisal

Problems of NOT paying attention to Quality

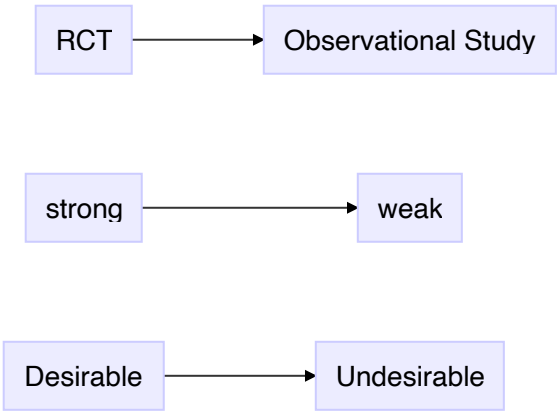
- Relying on low quality of evidence
    - Hormone replacement therapy in women
    - Use of Flecainide for treatment of sudden death
    - Caused by disorders of heart rhythm
    - Both of these were later revised
- **NOT** relying on high quality evidence
    - Example: Blood thinning therapy for heart disease
    - Got delayed for years

How best can we convey information on quality?



- Quality scores are CONTINUOUS
- Making them DISCRETE can lose meaning
- OTOH, making them discrete makes it
    - easy to interpret
    - Vivid
    - Useful

Strength of Recommendations



- Quality of evidence is high
- Desirable effects OUTWEIGH undesirable effects
- Balanced Uncertainty
- Need a simple yet balanced system

Enter GRADE

- Grading of (G)
- Recommendations (R)
- Assessment (A)
- Development and (D)
- Evaluation (E)

What does GRADE do?

- Classifies Quality of evidence in FOUR groups
- Starts with RCT as HIGHEST quality of evidence, then
- Downgrades based on five features

- Study Limitations
- Inconsistency of results
- Indirectness of Evidence
- Imprecision
- Reporting Bias

Quality appraisal criteria

Box 2 | Quality of evidence and definitions

High quality— Further research is very unlikely to change our confidence in the estimate of effect

Moderate quality— Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate

Low quality— Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate

Very low quality— Any estimate of effect is very uncertain

Summary

- Evidence base depends on asking, searching, appraising
- One study is not enough
- We base our quality appraisal on outcomes and many studies
- GRADE is a consolidated system that balances various features