PHARM.D • YEAR 4

Clinical Pharmacy

CHAPTER 9

Critical Evaluation of Biomedical Literature



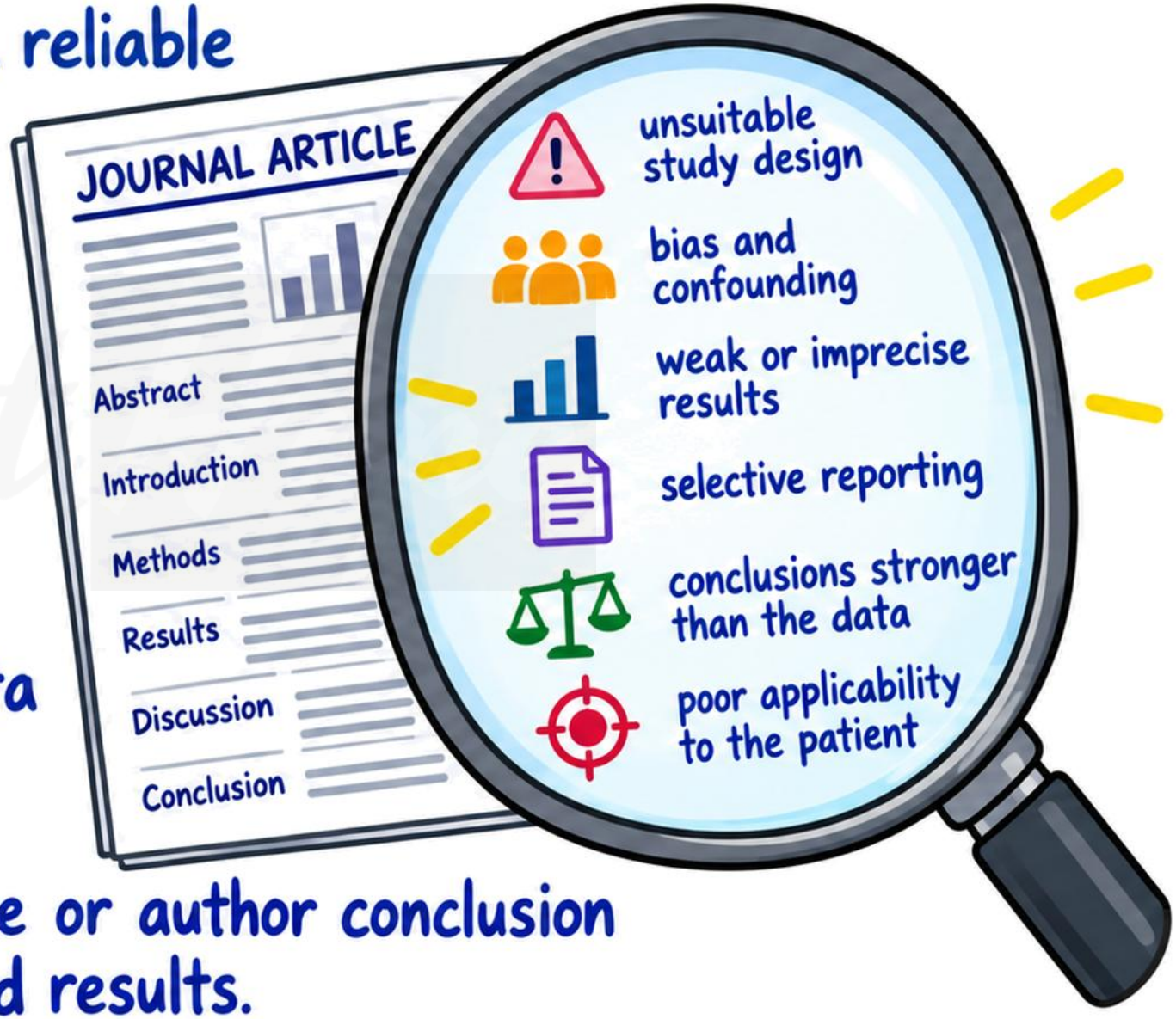
PPT CHAPTER COVER

WHY CRITICALLY EVALUATE LITERATURE?

Clinical decisions should use valid, reliable and relevant evidence.

Critical evaluation helps detect:

- unsuitable study design
- bias and confounding
- weak or imprecise results
- selective reporting
- conclusions stronger than the data
- poor applicability to the patient

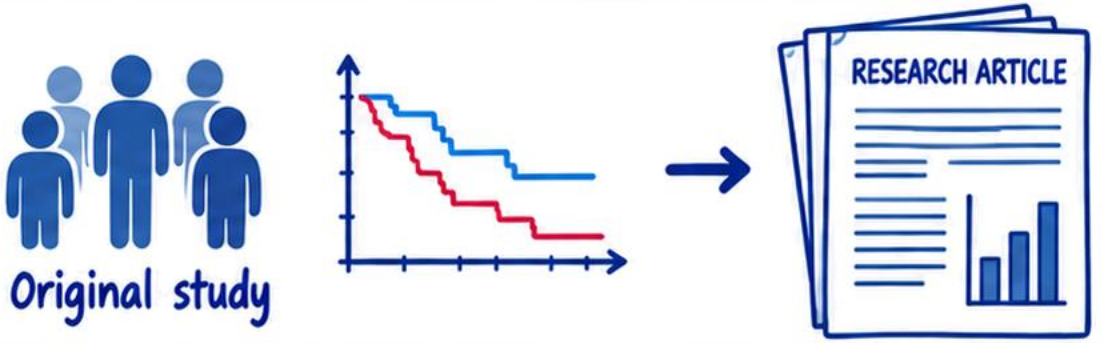


Do not accept an abstract, headline or author conclusion without examining the methods and results.

THREE LEVELS OF LITERATURE

Primary literature:

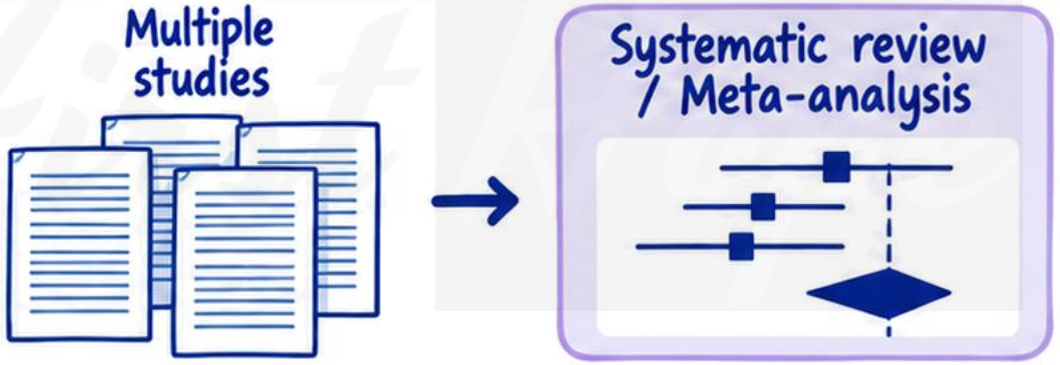
original trials, cohort studies, case-control studies and case reports.



Primary studies need detailed appraisal.

Secondary literature:

systematic reviews and meta-analyses that synthesize primary studies.



Secondary reviews require appraisal of their question, search and synthesis.

Tertiary literature:

textbooks, guidelines, monographs and summarized references.

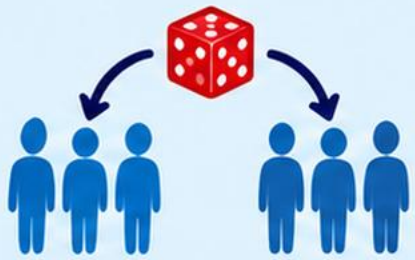


Tertiary sources are useful for orientation but may lag behind new evidence.

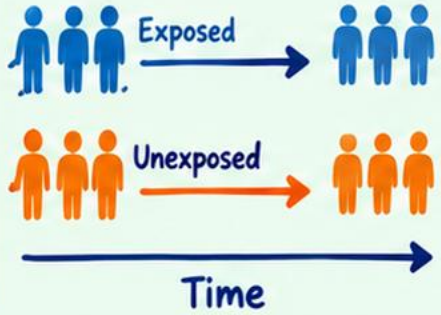
MATCH DESIGN TO THE QUESTION



Randomized controlled trial: compares interventions and reduces confounding through randomization.



Cohort study: follows exposure groups over time.



Case-control study: compares prior exposures in people with and without an outcome.



Cross-sectional study: measures a population at one time; useful for prevalence.

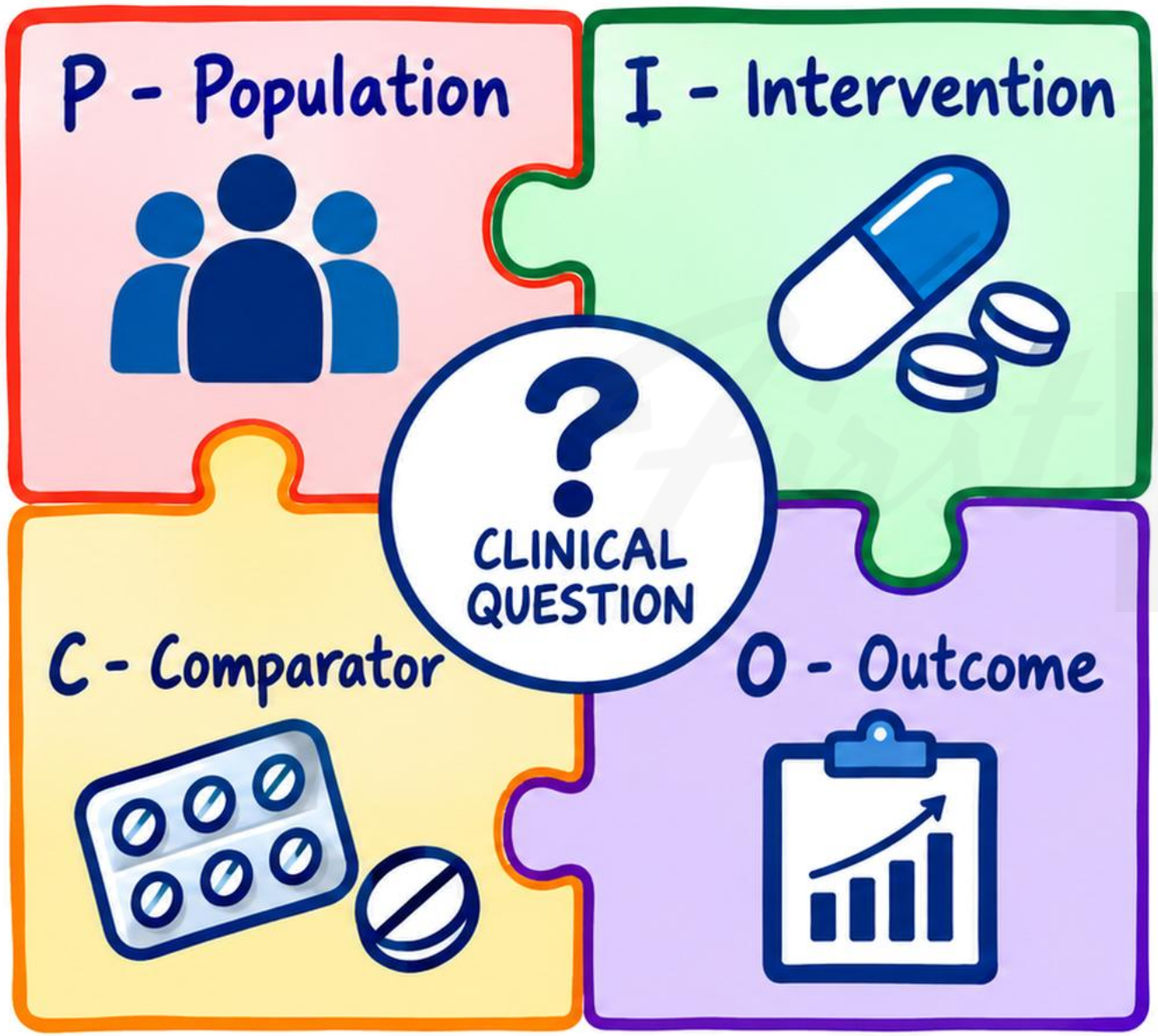


Case report or series: describes unusual observations and may generate signals.



Design determines what conclusions are justified.

START WITH PICO & POPULATION



Ask:

- - Is the research question clear and testable?
- - Are inclusion and exclusion criteria appropriate?
- - Is sample size adequate?
- - Do participants resemble the patients of interest?
- - Are dose, route and duration relevant?

PICO keeps appraisal focused on the decision.

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