

Week 14

Meta Analysis

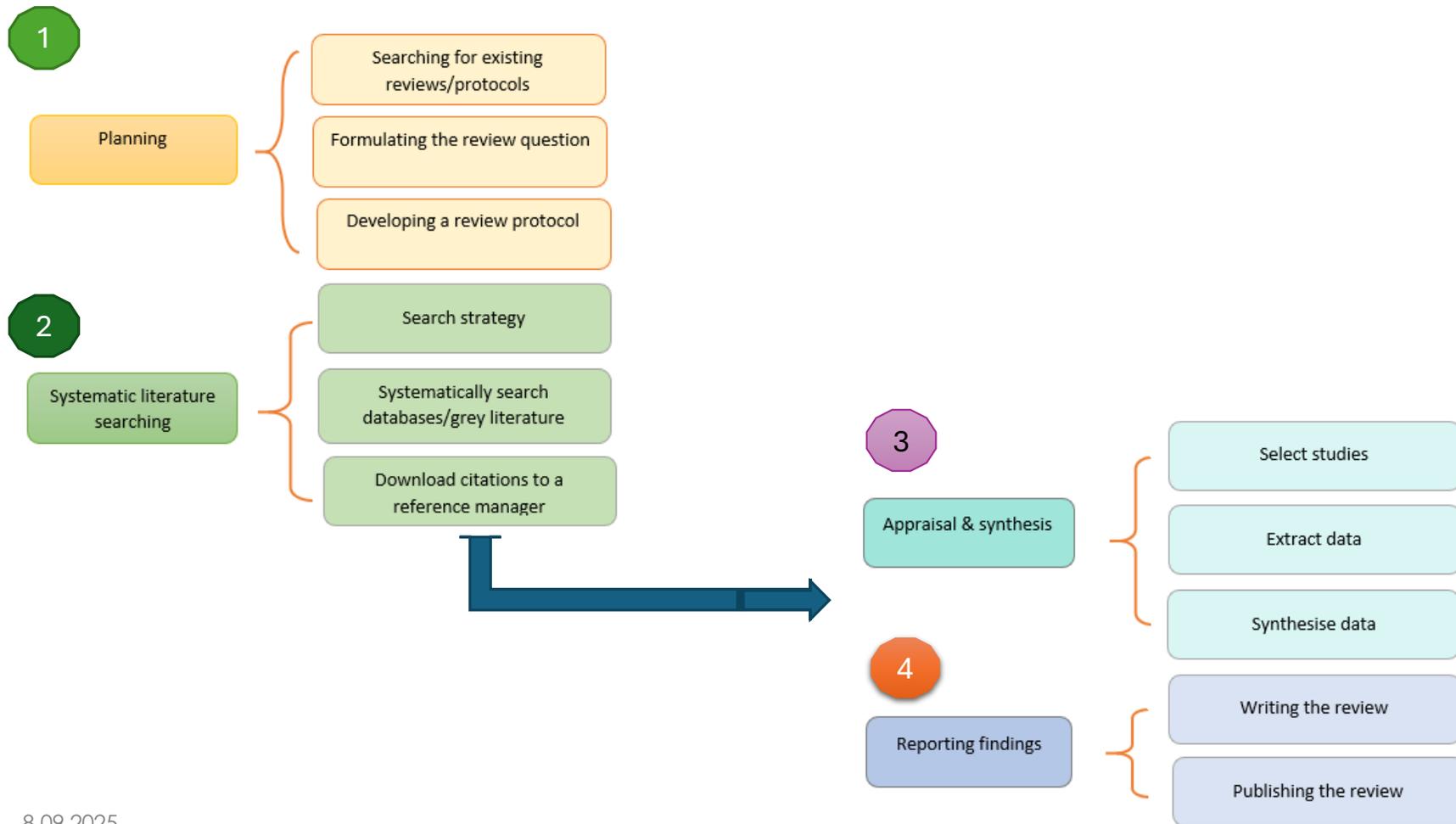
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Systematic review and Meta analysis



- The main reason for systematic review and meta-analysis is to draw meaningful and applicable results from this seemingly complex and contradictory situation.
- Systematic review and Meta-analysis are at the top of the evidence pyramid and provide clinicians and medical researchers with quantitative methods to summarize the results of various studies and to reach consensus by combining the results.

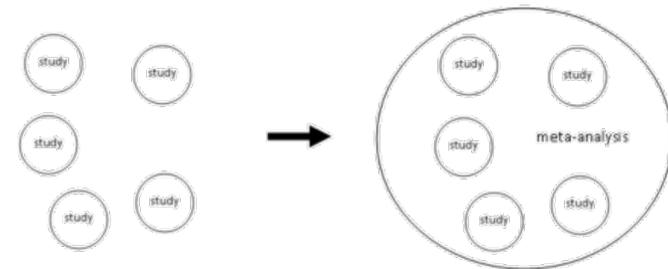
Stages for a systematic review



Why systematic reviews contain more scientific information

- They are more objective, contain less errors and errors,
- Literature review is much more comprehensive and repeatable since it is done with a specific method,
- The methods used for the literature review are clearly stated in the study,
- The criteria used in selecting the studies are clearly stated,
- The quality of the studies included in the review is evaluated,
- Even the smallest evidence/effects are included in the review when combining data from studies.
- Researchers can repeat the systematic review and confirm their results.

The objectives of the meta-analysis



- Increasing the sample size by combining the results obtained from different studies on a similar problem and thus making stronger and more precise parameter estimates for the problem,
- To ensure that the inconsistencies in the results obtained from similar studies are resolved
- To investigate the heterogeneity between studies and to identify the factors that cause this heterogeneity
- To prevent possible bias in studies.

What Are the Advantages of Combining Findings from Multiple Studies in a Meta-analysis?

- If individual studies have similar findings, the validity of the results obtained will be strengthened.
- Individual studies may have too small sample size to get a statistical significance, but a meta-analysis can overcome this by combining the findings of the studies.
- If individual studies have different findings, investigating reasons for these differences may lead to the formulation of new hypotheses.
- If individual studies have similar findings, combining them may provide a better estimate of the strength of other relationships studied or the effect of an intervention.
- It may be possible to compare the effects of various interventions applied in different studies.