

**Writing methods sections for
health research papers
(research proposals
dissertations)**

Research paper structure

- Introduction: why ask this research question?
- **Methods: what did we do?**
- Results: what did we find?
- Discussion: what might it mean?

The purpose of the methods section

Tell readers what you did (or planned to do) so as to:

- Make it possible for your work to be:
 - duplicated, assessed and compared with other studies
- Reassure the reader that what you did was appropriate to answer the research question or meet the research aims
- Reassure readers that it was conducted robustly so that results are likely to be:
 - internally valid (robust) for the sample you studied and
 - externally valid (generalisable)

Avoid using the term methodology

Methodology refers to a branch of the Philosophy of Science which deals with scientific methods, not to the methods themselves.

**Check the instructions to authors in your
target journal**

What to include

A typical methods section provides key information on the following:

- Setting, location
- Participants (e.g. characteristics, how sample selected)
- Study design (including planned sample size)
- Interventions (or exposures)
- Outcomes (variables, type of data, how they were measured)
- All statistical methods (which statistical analysis and software used)
- Ethical issues (e.g. consent).

Use PECO/PICO structure

- P - which patients, which population, what problem(s)?
- I or E - which intervention(s) or exposure(s)?
- C – which comparison group? Any randomisation or stratification?
- O - what outcome(s) or endpoint(s)? Define primary and secondary outcome(s)

Use international guidance on reporting methods by study design

- CONSORT: randomised trials
- STROBE: observational studies in epidemiology
- STARD: diagnostic accuracy studies
- COREQ: qualitative research
- SQUIRE: quality improvement studies
- COGS: clinical practice guidelines
- PRISMA: systematic reviews

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Use the
STROBE-NUT
guideline

to report observational
studies in nutrition



Ethical aspects of the research methods

- Give information about any ethics/research governance approvals and information if relevant about informed consent.

Make it easy to read

- Avoid too much detail
- Use **subheadings**
 - Divide the “Methods” section to help the readers follow the section better.
- Visual elements like schematic diagrams, flowcharts, and tables help the readers follow and understand your study design better.

Things to avoid

- Too little detail so cannot be duplicated
- Too much detail:
 - No more background focus more on how a method was used to meet the objective and less on mechanics
- Leave information on problems you encountered to the results/discussion sections.
- Use the active voice and avoid complicated and fused sentences.

Protocol

- Try and get the protocol registered (RCTs and SRs)
- Try to get it published
 - Another publication on CV
 - Reduces the amount of detail needed in the main paper as can reference
 - Reassures peer reviewers of the main paper that your methods have been robustly reviewed.

e.g. BMC medical research methodology, Trials, Plos journals, BMJ open etc etc