

Designing research questions & objectives

Susan Ramsey

Research questions are questions that can be answered by collecting and analysing evidence.

- 1) What is a good research question?
- 2) How do you develop a good research question?
- 3) Example
- 4) How do you write a good research question?
- 5) Research objectives

1) What is a good research question?

- Feasibility
- Social importance
- Scientific relevance

(King, Keohane & Verba, 1994)

1) What is a good research question?

Feasible

Interesting

Novel

Ethical

Scientifically **R**elevant

2) How do you develop a good research question?

- Choosing a topic
- Immersing yourself in the literature
- Critically analysing the existing research

2) How do you develop a good research question?

- Gap spotting
- Extending or complementing existing work
- Challenging/testing existing hypotheses
- Personal experience

2) How do you develop a good research question?

- Write down an initial set of questions
 - Focus on the most interesting and feasible
 - Refine them into more focused research questions
- Good research questions are **developed**: they change and become more focused over time

3) Example:

- TOPIC: Population health
- LITERATURE REVIEW: Evidence of gender, race and class disparities in relation to a wide range of health outcomes
- EXISTING HYPOTHESES: differences in health seeking behaviour, health behaviours, bias in health care systems

3) Example:

- INITIAL QUESTION: Are there sex and race differences in health care provision that could explain the comparatively poor health outcomes for these groups?

3) Example:

Feasible

Interesting

Novel

Ethical

Scientifically **R**elevant

3) Example:

- INITIAL QUESTION: Are there sex and race differences in health care provision that could explain the comparatively poor health outcomes for these groups?
- MORE FOCUSED QUESTION: Are there sex and race differences in the evaluation and treatment of young adults presenting to emergency departments with chest pain?

3) Example:

- (Banco, D. et al., 2022) Sex and Race Differences in the Evaluation and Treatment of Young Adults Presenting to the Emergency Department with Chest Pain. Journal of the American Heart Association. 11: e024199
- Stagnant or rising levels of heart attack among young people (esp. women). Poorer outcomes following heart attack among women and people of colour.
- Women and people of colour (aged 18-55) who presented with chest pain, waited longer to be evaluated by a physician. Women were also less likely to be admitted to the hospital or observation than men.

3) Example:

- *“[D]ifferences by sex and race in the early evaluation and management of chest pain warrant further study to evaluate their association with clinical outcomes and to identify opportunities for improvements in clinical care.”*

□ The authors took an interesting, novel and scientifically relevant question and developed it into a much more focused question that was also feasible and ethically sound.

□ Success here is not guaranteed: some things depend on you but some times it also depends on things that you cannot always control.

4) How do you write a good research question?

- PICOT framework can help to structure a research question and avoid vague, untestable questions.

Population

Intervention

Comparison group

Outcome of interest

Timeframe

4) How do you write a good research question?

- PICOT framework was developed for clinical research and the elements of the framework reflect this.
- It is best to think of PICOT as a guide rather than a checklist.
- Not all parts are relevant but you should use it to try to structure your question and give it as much detail as possible.

5) Research objectives

- Research objectives break down the overarching question into more manageable pieces.
- They give the research structure and ensure it meets its aims.
- Research objectives should always have a clear link to the overarching research question.

5) Research objectives: example

General objective: To identify factors that affect the acceptability of Voluntary Counselling and Testing (VCT) services and to assess community attitudes towards comprehensive care and support for people living with HIV/AIDS.

Specific objectives:

- To assess knowledge, attitudes and practice of the community towards HIV/AIDS and VCT services.
- To identify barriers and concerns related to VCT and its uptake.
- To assess the awareness and perception of the study community regarding comprehensive care and support for people living with HIV/AIDS.

Summary

- Research questions are developed by immersing yourself in a field and thinking critically about the existing research corpus.
 - During this process you should try to develop an initial set of questions
 - You should then refine the most interesting and feasible questions into more focused research questions, which have as much detail as possible about the proposed study.
- Developing a good research question is not an easy process. It takes time, a solid understanding of the existing literature and a clear understanding of your own perspective.

Exercise

- Think of a topic that you might be interested in researching.
- Take some time to try and develop an initial research question.
- What sorts of things might make it hard to develop this into a good, actionable research question?

- Rising teen suicide and the impact of social media on young people's mental health.
- Widespread educational underachievement of young men and boys.
- Remote work and its impact on gender equality.