

HAVE A QUESTION REGARDING RESEARCH?

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HOW DO YOU FORMULATE A RESEARCH QUESTION

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Every research starts with a question. The success of any research process relies, in part, on how well investigators are able to translate a clinical problem into a research question—a task that is not so simple.

What is a research question?

A research question is a statement that identifies the phenomenon to be studied. A good research question defines the investigation, sets boundaries and provides direction for data collection and analysis. Developing a researchable question can be challenging if you do not know what you really want. Remember: "A question well-asked is a question well-answered"

Where to start?

Forming and framing the right question should be seen as an iterative process that is well informed by literature

and peer inputs. You could provide an angle for your research through insights stemming from your personal experience, contemporary issues and engagement with literature and guidance from mentors / peers. Narrowing, clarifying and even redefining your questions are also part of the iterative process of research question development.

Ask yourself the 5W's (Who, What, When, Where and Why). A strong research idea should pass the "so what" test. Think about the potential impact of the research you are proposing. What is the benefit of answering your research question? Who will it help (and how)? If you cannot make a definitive statement about the purpose of your research, it is unlikely to be funded.

Research directions are not always at the full discretion of the researcher. Be mindful of the practicalities, appropriateness of the topic, and the ability to get peer/ mentor and funding support.

How to frame the research question?

The PICO approach

PROBLEM	<ul style="list-style-type: none"> The patient, population, or conditions of your interest.
THE INTERVENTION	<ul style="list-style-type: none"> This could be, for instance, a treatment or diagnostic test, a prognostic factor, or an exposure.
A COMPARISON	<ul style="list-style-type: none"> This is usually an alternative intervention with which to compare the intervention of interest. In studies of treatment effects this will usually be a comparison with accepted standard therapy - or if no such therapy exists then with placebo.
THE OUTCOME OF INTEREST	<ul style="list-style-type: none"> This could be, for example, pain relief, quality of life or survival. Defining the outcome precisely is critical as sample size for the research study and statistical methods are determined by this.

A well-structured research question should usually contain four parts and be contained within a single sentence. The process of framing a research question can be summarized by remembering the acronym PICO - Problem, Intervention, Comparison and Outcome.

Example: In adults, is binge drinking compared with no binge drinking associated with an increase in mortality?

PICO	Elements
Patient	Adults
Intervention	Binge drinking
Comparator	No Binge drinking
Outcome	Mortality

What are the characteristics of a good research question? "FINER" the better

The FINER criteria state that a research question must be feasible, interesting, novel, ethical, and relevant. When you think you may have a good idea/ question, apply the "FINER" criteria to it to see if the question is good enough.

Components	Question
F - Feasible	Is the question answerable? Do you have access to all the materials you will need to do the study? Do you have access to enough subjects? Will you have enough time and money? Do you have the expertise to do this study or can you collaborate with someone who does?
I - Interesting	The question has to be interesting to the investigator, but should also be interesting to others.
N - Novel	Has this study been done before? Does it add to the current body of medical knowledge?
E - Ethical	Can the study be done in a way that does not subject subjects to excess risks? Will an IRB approve the study?
R - Relevant	Will it further medical science? Will the results change clinical practice, health policy or point towards further avenues of research?

If your question fails on any one of these 5 criteria, it is probably not worth putting much effort into.

Conclusion

It is hard to formulate a good answer to a bad question, so spending time on formulating and refining an interesting, important, well-structured, ethical, and practical research question is worthwhile. It will influence the choice of study design, the interpretation of results and the writing-up of the research report.

References

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