

# FOCUSING THE RESEARCH QUESTION

*After identifying a general research topic, the researcher needs to develop a specific research goal and a workable research plan.*

## 4.1 Study Approach

The decision about the exact study question must be made in conjunction with the decision about the study approach to use. At a minimum, a choice must be made early in the research process about how data will be gathered (**Figure 4-1**):

- **Primary study:** New data will be collected from individuals.
- **Secondary study:** An existing data set (or data extracted from existing records) will be statistically analyzed.
- **Tertiary study:** The existing literature will be reviewed.

Each of these three major study approaches has its own critical considerations (**Figure 4-2**).

- If new data will be collected, the researcher has great freedom in selecting study topics but may struggle to recruit adequate numbers of participants.

**FIGURE 4-1** Primary, Secondary, and Tertiary Research

Research Approach	Study Plan
Primary	Collect and analyze new data
Secondary	Analyze existing data
Tertiary	Review and synthesize the literature

**FIGURE 4-2** Key Considerations

Study Approach	Key Questions to Ask
<ul style="list-style-type: none"> <li>• Collection and analysis of new data</li> </ul>	<ul style="list-style-type: none"> <li>• What are possible source populations?</li> <li>• Will it be possible to recruit enough participants?</li> </ul>
<ul style="list-style-type: none"> <li>• Analysis of existing data</li> </ul>	<ul style="list-style-type: none"> <li>• What are possible sources of usable data files?</li> <li>• What questions can be explored with the available data?</li> </ul>
<ul style="list-style-type: none"> <li>• Review of the literature</li> </ul>	<ul style="list-style-type: none"> <li>• Does the researcher have access to adequate library resources?</li> <li>• Can the researcher reasonably expect to acquire <i>all</i> of the needed articles?</li> </ul>

- If existing data will be analyzed, then a pertinent and valid source of data must be identified. The researcher must be prepared to select a study question based on the content of the available data files (and knowledge of which variables in the data set have not already been explored by others).
- If the plan is to synthesize current knowledge by conducting a literature review, the researcher must be prepared to track down the full text of all relevant articles. Researchers with a university affiliation need to check with the university library about its policies (and possible fees) for acquiring articles that are not part of the university's collections. Researchers without a university affiliation must consider the costs involved in accessing all of the required articles.

## 4.2 Conceptual and Theoretical Frameworks

Many research projects benefit from the development of a conceptual model that will inform the design, implementation, and interpretation of the study. A **conceptual framework** is often sketched out using boxes and arrows that illustrate the various relationships that will be evaluated during the study. A variety of established **theoretical frameworks** that are based on extensive reviews of the published literature can inform the components and flows of the conceptual framework for a new research study. For example, several popular theories describe the factors that influence individual health beliefs and behaviors. Conceptual and theoretical frameworks are especially common in the nursing, social science, and educational research literature.

### 4.3 Study Goal and Specific Objectives

The literature review and consideration of a study approach should lead to the selection of one very specific study topic that can be stated in terms of a single overarching study goal or study question. **Figure 4-3** lists several types of common study goals in the health sciences. A **study goal** often includes the specific exposure, disease, and population that will be the focus of the study.

After finalizing the overarching study goal, the researcher should identify three or more **specific objectives**, **specific aims**, or **hypotheses** that stem from the main study goal. Each of these specific objectives should take the form of a measurable question or a “to” statement that uses action verbs. Each should represent a logical step toward answering the main study question. For example, the study goal may be “to assess the impact of lead poisoning on school performance in kindergarten students in southeast Michigan.” The three specific objectives for this study might be:

1. To measure the prevalence of high blood lead levels in a random sample of kindergarten students in southeast Michigan
2. To determine whether children in that sample with high blood lead levels have lower scores on academic tests than children with lower blood lead levels
3. To estimate the total impact of high blood lead levels on kindergarten performance in southeast Michigan by applying the rates in the sample population to the total population of the region

All three of these specific objectives relate to the overall goal of the study, and together they provide a clear pathway for achieving the main goal. Most published

#### FIGURE 4-3 Examples of Study Goals

- To describe the incidence or prevalence of a particular exposure or disease in one well-defined population
- To assess the perceived health-related needs of a community
- To compare the levels of exposure or disease in two or more populations
- To identify possible risk factors for a particular disease in a population
- To test the effectiveness of a new preventive intervention, diagnostic test, assessment method, therapy, or treatment
- To evaluate whether an intervention shown to be successful in one population is equally successful in a second population
- To examine the impact of a program or policy
- To synthesize or integrate existing knowledge

scientific papers list the study goal and specific objectives in the last paragraph of the introduction section. The specific aims of already published papers related to the topic are often helpful resources when refining the research objectives of a new study.

#### 4.4 Checklist for Success

A consideration when narrowing the focus and clarifying the aims of a new research project is the likelihood that the project can actually be successfully completed. **Figure 4-4** summarizes some of the critical questions to ask before committing to a particular project. These concepts are also captured by the acronym **FINER**, which reminds researchers that a good research project is:

- Feasible
- Interesting
- Novel
- Ethical
- Relevant

**FIGURE 4-4** Questions Essential to the Success of the Project

Area	Questions
Purpose and significance	<ul style="list-style-type: none"> <li>• What will the study contribute?</li> <li>• What will be new and noteworthy about the study?</li> <li>• Can the importance and necessity of this project be justified?</li> <li>• How will the study enhance the body of knowledge in its discipline?</li> <li>• Who will benefit from the study besides the researcher?</li> <li>• How will the study help individuals and/or communities live healthier lives?</li> <li>• How might the study contribute to improving health practices and/or policies?</li> </ul>
Scope and feasibility	<ul style="list-style-type: none"> <li>• Is the scope of the intended project reasonable and manageable—neither too broad nor too narrow?</li> <li>• Can the proposed study question actually be answered?</li> <li>• Can the researcher answer the proposed study question?</li> </ul>

FIGURE 4-4 (continued)

Area	Questions
Capacity and collaborators	<ul style="list-style-type: none"> <li>• Does the researcher have the knowledge and skills needed to conduct the study?</li> <li>• Does the researcher have access to collaborators who have the expertise needed for the project? (See Chapter 5 for information on assembling a support team.)</li> </ul>
Money and materials	<ul style="list-style-type: none"> <li>• Are there adequate financial resources to conduct the study?</li> <li>• Does the researcher have access to equipment, space, and other physical requirements?</li> <li>• Given the resources available, can the researcher reasonably expect to conduct a scientifically rigorous and valid study?</li> </ul>
Time	<ul style="list-style-type: none"> <li>• Does the researcher have the time to conduct this study?</li> <li>• Does the researcher have the time to make this an excellent study that does not waste health resources?</li> </ul>
Population or data	<ul style="list-style-type: none"> <li>• If the plan is to collect new data from individuals, does the researcher have access to a reasonable source population and an adequate number of participants?</li> <li>• If the plan is to analyze existing data or to write a review paper, does the researcher have access to a reasonable existing data set and/or to an extensive library collection?</li> </ul>
Ethics	<ul style="list-style-type: none"> <li>• Will the researcher be making good use of the resources available?</li> <li>• Has the researcher considered the relevant ethical issues, especially those related to the collection and use of individual-level data? (See Chapter 21 for the ethical issues that should be considered.)</li> <li>• Is the researcher prepared to conduct culturally appropriate and scientifically rigorous research?</li> </ul>
Target audience	<ul style="list-style-type: none"> <li>• Who is likely to be interested in the findings?</li> <li>• Is the resulting paper likely to be publishable?</li> </ul>