Figures 4.2 to 4.4 operationalise Steps 1–7 with examples from different academic disciplines (health, social work/social sciences and community development).

The formulation of research objectives

Objectives are the goals you set out to attain in your study. Since these objectives inform a reader of what you want to achieve through the study, it is extremely important to word them clearly and specifically.

Objectives should be listed under two headings:

- main objectives;
- subobjectives.

The main objective is an overall statement of the thrust of your study. It is also a statement of the main associations and relationships that you seek to discover or establish. The subobjectives are the specific aspects of the topic that you want to investigate within the main framework of your study.

Example 1: Suppose you want to conduct a study in the area of alcoholism. In formulating your research problem take the following steps.
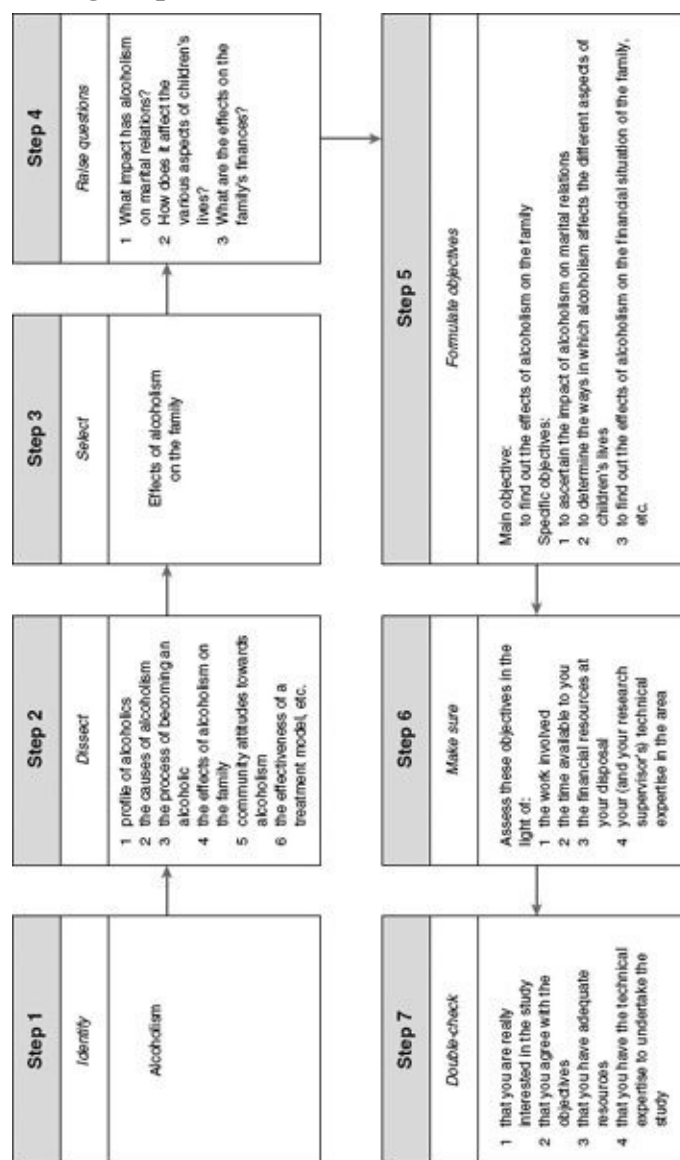

Step 1
Identify
Alcoholism

Step 2
Dissect
1 profile of alcoholics
2 the causes of alcoholism
3 the process of becoming an alcoholic
4 the effects of alcoholism on the family
5 community attitudes towards alcoholism
6 the effectiveness of a treatment model, etc.

Step 3
Select
Effects of alcoholism on the family

Step 4
Raise questions
1 What impact has alcoholism on marital relations?
2 How does it affect the various aspects of children's lives?
3 What are the effects on the family's finances?

Step 5
Formulate objectives
Main objective:
to find out the effects of alcoholism on the family
Specific objectives:
1 to ascertain the impact of alcoholism on marital relations
2 to determine the ways in which alcoholism affects the different aspects of children's lives
3 to find out the effects of alcoholism on the financial situation of the family, etc.

Step 6
Make sure
Assess these objectives in the light of:
1 the work involved
2 the time available to you
3 the financial resources at your disposal
4 your (and your research supervisor's) technical expertise in the area

Step 7
Double-check
1 that you are really interested in the study
2 that you agree with the objectives
3 that you have adequate resources
4 that you have the technical expertise to undertake the study

FIGURE 4.2 *Steps in formulating a research problem – alcoholism*

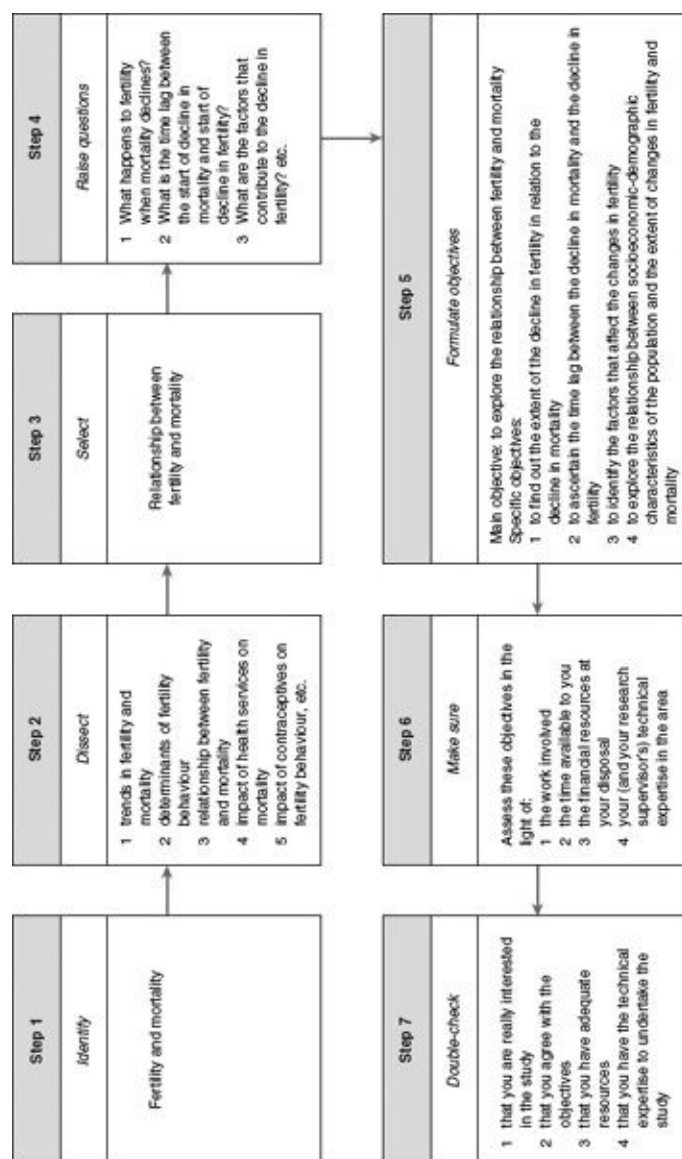**Example 2:** Suppose you want to study the relationship between fertility and mortality. Follow these steps.

FIGURE 4.3 *Formulating a research problem – the relationship between fertility and mortality*

Example 3: Suppose you want to conduct a study in the area of health. Follow these steps.
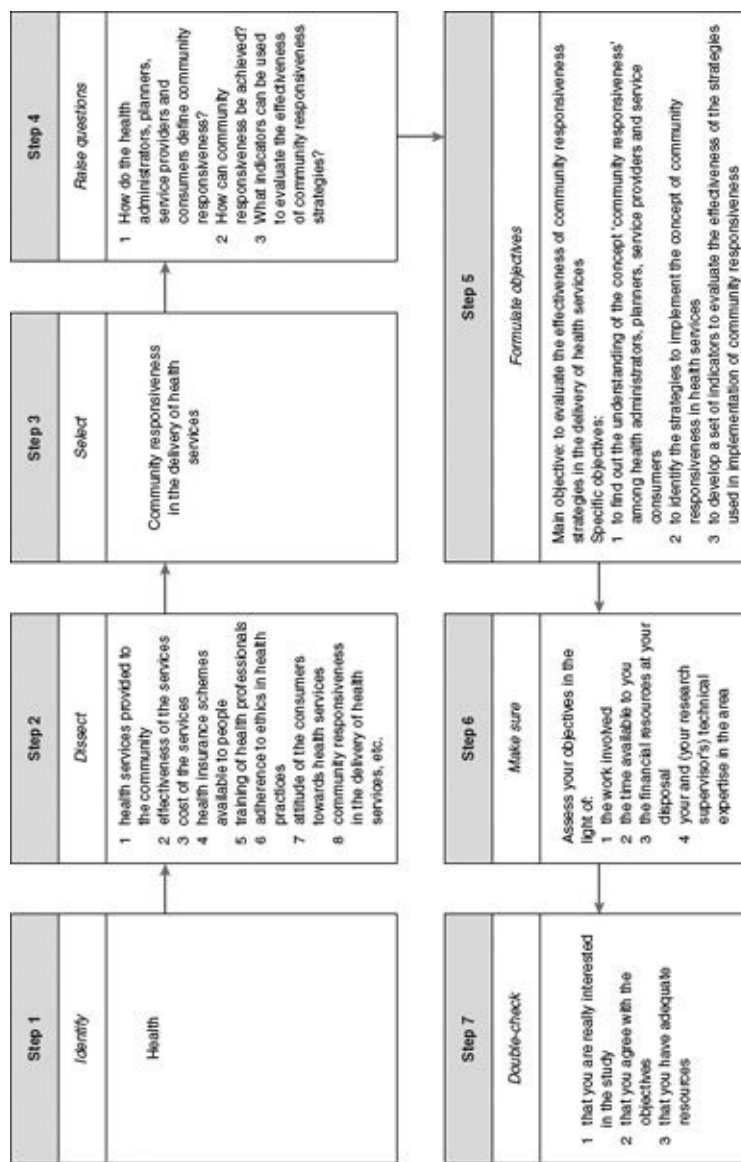
Step 1

Identify

Health

Step 2

Dissect

1 health services provided to the community
2 effectiveness of the services
3 cost of the services
4 health insurance schemes available to people
5 training of health professionals
6 adherence to ethics in health practices
7 attitude of the consumers towards health services
8 community responsiveness in the delivery of health services, etc.

Step 3

Select

Community responsiveness in the delivery of health services

Step 4

Raise questions

1 How do the health administrators, planners, service providers and consumers define community responsiveness?
2 How can community responsiveness be achieved?
3 What indicators can be used to evaluate the effectiveness of community responsiveness strategies?

Step 5

Formulate objectives

Main objective: to evaluate the effectiveness of community responsiveness strategies in the delivery of health services
Specific objectives:
1 to find out the understanding of the concept 'community responsiveness' among health administrators, planners, service providers and service consumers
2 to identify the strategies to implement the concept of community responsiveness in health services
3 to develop a set of indicators to evaluate the effectiveness of the strategies used in implementation of community responsiveness

Step 6

Make sure

Assess your objectives in the light of:
1 the work involved
2 the time available to you
3 the financial resources at your disposal
4 your and (your research supervisor's) technical expertise in the area

Step 7

Double-check

1 that you are really interested in the study
2 that you agree with the objectives
3 that you have adequate resources

FIGURE 4.4   *Narrowing a research problem – health*

Subobjectives should be numerically listed. They should be worded clearly and unambiguously. Make sure that each subobjective contains only one aspect of the study. Use action-oriented words or verbs when writing your objectives. The objectives should start with words such as 'to determine', 'to find out', 'to ascertain', 'to measure' and 'to explore'.

The way the main objectives and subobjectives are worded determines how your research is classified (e.g. descriptive, correlational or experimental). In other words, the wording of your objectives determines the type of research design you need to adopt to achieve them. Hence, be careful about the way you word your objectives.

Irrespective of the type of research, the objectives should be expressed in such a way that the wording clearly, completely and specifically communicates to your readers your intention. There is no place for ambiguity, non-specificity or incompleteness, either in the wording of your objectives or in the ideas they communicate. Figure 4.5 displays the characteristics of the wording of objectives in relation to the type of research study.
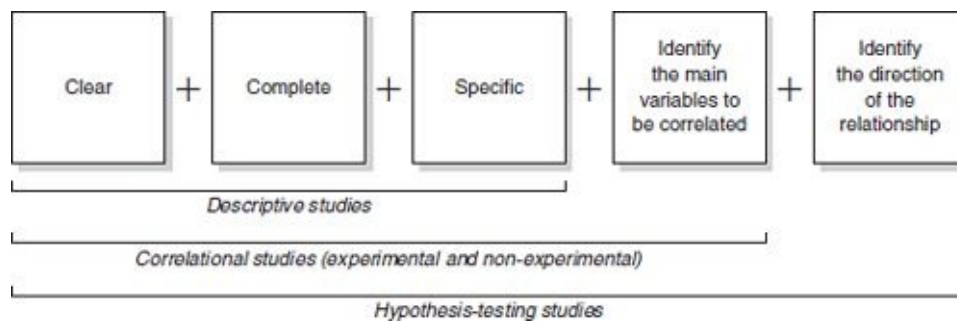
FIGURE 4.5 *Characteristics of objectives*

If your study is primarily descriptive, your main objective should clearly describe the major focus of your study, even mentioning the organisation and its location unless these are to be kept confidential (e.g. to describe the types of treatment programme provided by [name of the organisation] to alcoholics in [name of the place] *or* to find out the opinion of the community about the health services provided by [name of the health centre/department] in [name of the place]). Identification of the organisation and its location is important as the services may be peculiar to the place and the organisation and may not represent the services provided by others to similar populations.

If your study is correlational in nature, in addition to the first three characteristics shown in Figure 4.5, the wording of the main objective should also include the main variables being correlated (e.g. to ascertain the *impact of migration* on *family roles* or to compare the effectiveness of *different teaching methods* on the *comprehension of students*).

If the overall thrust of your study is to test a hypothesis, the wording of the main objectives should also indicate the direction of the relationship being tested (e.g. to ascertain if an *increase in youth unemployment* will *increase the incidence of street crime*, or to demonstrate that the provision of maternal and child health services to Aboriginal people in rural Australia will *reduce infant mortality*).

The study population

So far we have focused on only one aspect of a study, the *research problem*. But every study in social sciences has a second aspect, the **study population**, from whom the required information to find answers to your research questions is obtained. As you narrow the research problem, similarly you need to decide very specifically and clearly who constitutes your study population, in order to select the appropriate respondents.

Suppose you have designed a study to ascertain the needs of young people living in a community. In terms of the study population, one of the first questions you need to answer is: 'Who do I consider to be a young person?' You need to decide, in measurable terms, which age group your respondents should come from. Is it those between 15 and 18, 15 and 20 or 15 and 25 years of age? Or you may be interested in some other age group. You need to decide this before undertaking your research journey. Having decided the age group that constitutes your 'young person', the next question you need to consider is whether you want to select young people of either gender or confine the study to one only. In addition, there is another dimension to consider: that is, what constitutes the community? Which geographical area(s) or ethnic background should I select my respondents from?

Let us take another example. Suppose you want to find out the settlement process of immigrants. As a part of identifying your study population, you need to decide who would you consider an immigrant. Is it a person who immigrated 5, 10, 15 or 20 years ago? You also need to consider the countries from where the immigrants come. Will you select your respondents irrespective of the country of origin or

select only those who have come from a specific country(ies)? In a way you need to narrow your definition of the study population as you have done with your research problem. These issues are discussed in greater depth under 'Establishing operational definitions' following this section.

In quantitative research, you need to narrow both the research problem and the study population and make them as specific as possible so that you and your readers are clear about them. In qualitative research, reflecting the 'exploratory' philosophical base of the approach, both the study population and the research problem should remain loose and flexible to ensure the freedom necessary to obtain varied and rich data if a situation emerges.

Establishing operational definitions

In defining the problem you may use certain words or items that are difficult to measure and/or the understanding of which may vary from respondent to respondent. In a research study it is important to develop, define or establish a set of rules, indicators or yardsticks in order to establish clearly the meaning of such words/items. It is sometimes also important to define clearly the study population from which you need to obtain the required information. When you define concepts that you plan to use either in your research problem and/or in identifying the study population in a measurable form, they are called **working definitions** or **operational definitions**. You must understand that these working definitions that you develop are only for the purpose of your study and could be quite different to legal definitions, or those used by others. As the understanding of concepts can vary markedly from person to person, your working definitions will inform your readers what exactly you mean by the concepts that you have used in your study. The following example studies help to explain this. The main objectives are:

1. To find out the number of *children* living below the *poverty line* in Australia.
2. To ascertain the impact of immigration on *family roles* among *immigrants.*
3. To measure the *effectiveness* of a retraining programme designed to help *young people*.

Although these objectives clearly state the main thrust of the studies, they are not specific in terms of the main variables to be studied and the study populations. You cannot count the number of children living below the poverty line until you decide what constitutes the poverty line and how to determine it; you cannot find out the impact of immigration on family roles unless you identify which roles constitute family roles; and you cannot measure effectiveness until you define what effectiveness is. On the other hand, it is equally important to decide exactly what you mean by 'children', 'immigrants' or 'young'. Up to what age will you consider a person to be a child (i.e. 5, 10, 15 or 18)? Who would you consider young? A person 15 years of age, 20, 25 or 30? Who would you consider to be an immigrant? A person who immigrated 40, 20 or 5 years ago? In addition, are you going to consider immigrants from every country or only a few? In many cases you need to develop operational definitions for the variables and concepts you are studying and for the population that becomes the source of the information for your study. Table 4.2 lists the concepts and the population groups to be operationalised for the above examples.

TABLE 4.2   *Operationalisation of concepts and the study populations*

| Study | Concept to be studied | | Population to be studied | |
	Concepts	Issues	Study populations	Issues
1	Poverty line	What constitutes 'poverty line'?	Children	Who would you consider a child?
2	Family roles	What constitutes 'family roles'?	Immigrants	Who would you consider an immigrant?
3	Effectiveness	What constitutes 'effectiveness'?	The young	Who would you consider a young person?
You must:	Operationalise the concepts: define in practical, observable and measurable terms 'poverty line', 'family roles' and 'effectiveness'		Operationalise the study population: define in identifiable terms 'children', 'immigrants' and 'young'	

In a research study you need to define these clearly in order to avoid ambiguity and confusion. This is achieved through the process of developing operational/working definitions. You need to develop operational definitions for the major concepts you are using in your study and develop a framework for the study population enabling you to select appropriate respondents.

Operational definitions may differ from day-to-day meanings as well as dictionary or legal definitions. These meanings may not be helpful in identifying either your study population or the concepts you are studying. Though in daily life you often use words such as 'children', 'youth' and 'immigrant' loosely, you need to be more specific when using them in a research study. You should work through your own definitions.

Operational definitions give an operational meaning to the study population and the concepts used. It is only through making your procedures explicit that you can validly describe, explain, verify and test. It is important to remember that there are no rules for deciding if an operational definition is valid. Your arguments must convince others about the appropriateness of your definitions.

Formulating a research problem in qualitative research

The difference in qualitative and quantitative studies starts with the way you formulate your research problem. In quantitative research you strive to be as specific as possible, attempt to narrow the magnitude of your study and develop a framework within which you confine your search. On the other hand, in qualitative research, this specificity in scope, methods and framework is almost completely ignored. You strive to maintain flexibility, openness and freedom to include any new ideas or exclude any aspect that you initially included but later consider not to be relevant. At the initial stage you only identify the main thrust of your study and some specific aspects which *you want to find out about*. Qualitative research primarily employs inductive reasoning. In contrast to quantitative research, where a research problem is stated before data collection, in qualitative research the problem is reformulated several times after you have begun the data collection. The research problem as well as data collection strategies are reformulated as necessary throughout data collection either to acquire the 'totality' of a phenomenon or to select certain aspects for greater in-depth study.

This flexibility and freedom, though providing you with certain advantages, can also create problems in terms of comparability of the information gathered. It is possible that your areas of search may become markedly different during the preliminary and final stages of data gathering. During the initial developmental phase, many researchers produce a framework of 'reminders' (a conceptual framework of enquiry) to ensure that key issues/aspects are covered during discussions with the respondents. As the study progresses, if needs be, issues or themes are added to this framework. This is not a list of questions but reminders that are only used if for some reason the interaction with respondents lacks discussion.

Let us take an example to detail the process of formulation of a research problem in qualitative

research:

Once I supervised a student who was interested in attention-deficit hyperactivity disorder (ADHD). She wanted to find out, as she put it, 'What does it means to have a child with ADHD in the family?' Of course my first question to her was, 'What do you mean by "what does it mean"?' She paused for a while and then said, 'it means what it means'. I asked her to treat me as one of her respondents and ask the question. She asked me, 'What does it mean to have a child with ADHD?' to which my answer was, 'I do not understand your question. Could you please explain to me the meaning of "what does it mean"?' She found it difficult to explain and immediately realised the problem with the question. What she thought was very clear to her became quite difficult to explain. It took her a while to explain to me what she had in mind. During the discussion that followed, though she could explain some of the things she had in mind, she realised that she could not go to a respondent with her initial question.

The student knew a family who had a child with ADHD from which her interest in the topic had probably stemmed. I suggested that she have a talk with the mother. She did, and, to her surprise, the mother asked her the same question that I had.

I advised her to read some literature on ADHD and also have informal talks with two families who have a child with ADHD. We decided to select one single mother family and the other where the father and the mother both take responsibility for the child. She was advised to record all the issues and aspects that reflected her understanding of 'what does it mean', relating to bringing up a child with ADHD in the family. After going through the above, she developed a list three and a half pages long of the aspects and issues that, according to her, reflected her understanding of 'what does it mean'. She did not construct any specific questions around these aspects or issues. They served as background for her to raise with potential respondents in case respondents did not come up with issues or aspects for discussion in terms of 'What does it mean to have a child with ADHD in the family?'

This list brought immense clarification to her thinking about 'what does it mean' and served as the basis of her interviews with the families. A number of times during the supervisory sessions she had mentioned that she would not have been able to do much without the conceptual framework. You should not confuse it with the interview guide. The list is a conceptual construction of the thoughts that serve as background and become the basis of discussions in case there is insufficient dialogue with your potential respondents.

Summary

The formulation of a research problem is the most important step in the research process. It is the foundation, in terms of design, on which you build the whole study. Any defects in it will adversely affect the validity and reliability of your study.

There are no specific guidelines but the model suggested in this chapter could serve as a useful framework for the beginner. The seven-step model helps you to narrow your broad area of interest to enable you to decide what specifically you want to study. It is operational in nature and follows a logical sequence that takes the beginner through the complexities of formulating a research problem in a simple and easy-to-understand manner.

It is important to articulate the objectives of your study clearly. Objectives should be specific and free from ambiguity, and each one should relate to only one aspect of the study. They should be under two headings: main objective and subobjectives. Use action-oriented words when writing your objectives.

Formulation of a research problem in qualitative research follows a different path. You do not predetermine the exact nature and extent of the research problem you propose to find answers to. You continue to modify it as you start finding out more about it. However, it will help you if you develop a conceptual framework of the different aspects of a problem to serve as a backdrop for issues to be discussed with potential respondents.

Developing operational definitions for the concepts that you propose to study is extremely important. This enhances clarity about the issues you are trying to find out about and about the study population you plan to gather information from. It is important that you operationalise both the main variables you are proposing to study and the study population.

For You to Think About

- Refamiliarise yourself with the keywords listed at the beginning of this chapter and if you are uncertain about the meaning or application of any of them revisit these in the chapter before moving on.
- Identify two or three potential research questions, related to your own academic field or professional area, that would fall under each of the four Ps (as outlined in Table 4.1):

  - people;
  - problems;
  - programs;
  - phenomena.

- For each of these hypothetical research questions, identify which concepts and study populations would need to be operationally defined. Consider what problems might occur if this was not done.
- Select a broad subject area of interest to you and 'dissect' it into subareas.