



How to get the most out of your surveys: Designing and using questionnaires

WORKBOOK

Developed by the University of NSW as part of the NSW Primary Health Care Research Capacity Building Program. Revised 2005



Introduction

This workbook is designed to be used in conjunction with the development of a specific questionnaire for a project or program.

The workbook is divided into separate sections, covering a number of topics which need to be addressed when designing a questionnaire, including the deciding the type of information to be collected, how the questions should be worded and ordered, and the overall layout.

Each section is divided into three parts. The first provides a summary of the main points for each topic and the second covers either more detail about some of these points, or some provides some examples or tips relevant to each topic. The third part is a key question which you need to answer with respect to your own questionnaire.

This workbook has been developed as part of the NSW Primary Health Care Research Capacity Building Program, which is funded by the Department of Health and Aged Care. The NSW Primary Health Care Research Capacity Building Program aims to develop the capacity for doing and using the results of research and evaluation in general practice and primary health care. One of the major strategies being used as part of the Program is to provide education about research and evaluation to staff of divisions of general practice, community health services and other primary health care practitioners.

Questionnaires

A questionnaire is a **standardised, structured instrument** which is **administered in a standard way** to a desired sample of a population of interest. Questionnaires are best used when:

- there are a **large number** of respondents in many locations;
- you want fairly **straightforward** information;
- you want standardised data from **identical** questions;
- you are more interested in **what** occurs **rather than why or how**.

Other methods of collecting data from individuals such as semi-structured interviews or focus groups may be more useful if you are interested gaining a more in depth understanding of particular issues, or where particularly sensitive information is sought. These may also be useful when developing questionnaires by identifying issues of concern.

Questionnaires can be administered either by **mail**, **telephone** or **face-to-face** interviews. Table 1 compares the characteristics of these three modes of data collection. All of these methods have strengths and weaknesses, and the method you choose to collect the data will depend on the resources available and the purpose of the survey.

Table 1: Comparison of three modes of data collection with questionnaires

	Mail	Telephone	Face to face
Cost	Cheapest method per respondent	Low to medium cost per respondent	Most expensive method per respondent
Coverage	Can reach a widely scattered sample	Can reach a widely scattered sample, but only those with telephones or listed numbers	Depends on personal contact
Response rate	Lowest, especially with groups of low socioeconomic status	Medium response rate	Highest response rate
Standardisation	Standardised	Standardisation depends on interviewer	Standardisation depends on interviewer
Privacy for asking sensitive questions	Good, least likely to cause embarrassment	Some "anonymity" for giving replies	May be difficult
Probing	Does not permit clarification, misunderstandings will go undetected	Allows for probing, reduced misunderstanding and missed answers	Allows for probing, reduced misunderstanding and missed answers
Literacy	Requires literacy	Not restricted by literacy, but language skills important	Not restricted by literacy, but language skills important
Observation	No observation possible	Listen to respondent	Listen to and watch respondent

Notes

Key questions:

What is the purpose of collecting this information?

What is the best way of collecting the information you want?

Types of questions used in a questionnaire

Broadly there are two types of questions used in surveys:

- **open-ended questions** – no answer choices, respondents are able to answer in their own words;
- **closed-ended questions** – answers structured so they only fit into previously established categories.

Questions can also be **partially closed**, where respondents can choose from fixed categories and add their own response if desired. The advantages and disadvantages of different types of questions are shown in Table 2.

Choice of type of question will depend on the subject matter. For example, clinical and epidemiological studies may require quick coding methods and minimal detail, therefore closed-ended questions may be more suitable. Social assessments or needs assessments may require a greater appreciation of individual differences or underlying issues and open-ended questions may be needed. Open-ended questions are often useful at the beginning of studies to develop response categories for closed-ended questions.

Table 2: Advantages and disadvantages of different question types

	Advantages	Disadvantages
Open questions	<ul style="list-style-type: none"> • useful for exploratory research to generate range, meanings, new ideas • very flexible – can achieve depth, gives respondents freedom • validity can be high • use to formulate questions • useful to solicit suggestions and clarify positions • useful when the expected number of respondents is low 	<ul style="list-style-type: none"> • requires some skill in asking the questions, and in interpreting the results • answers often lack uniformity – requires some skills to categorise, count and compute • more time consuming to fill in and time consuming to analyse, particularly with a large number of respondents • can be unsuited to mail surveys • illegible handwriting
Closed questions	<ul style="list-style-type: none"> • useful for statistical analysis – easy to count and compute • easy to interpret (if questions are clear) • neat • quick • reliability can be high • useful is a large number of respondents expected 	<ul style="list-style-type: none"> • may not have catered for all possible answers • questions may not be relevant, or important • requires pre-testing and prior open-ended research to ensure choices offered are the relevant ones
Partially closed	<ul style="list-style-type: none"> • useful if options overlooked 	<ul style="list-style-type: none"> • “other” category often yields little

Notes

Key question:

What type of questions could be used in this survey to get the information you want?

Examples of different types of questions

1. A statement

What do you think about the quality of the discharge summaries from the local hospital?

2. A list

Please list the issues you feel are the most important for your organisation to address in the next 12 months:

3. A yes/no answer

Have you ever conducted a literature search as part of the development of a project?

- Yes
 No

4. Agree/disagree with a statement

Do you agree or disagree with the following statement?

Community health is in danger of being absorbed by hospital acute care services.

- Agree
 Disagree

5. Multiple choice, with one possible answer

What is the most common reason for attendance at a general practice?

- diabetes
 asthma
 hypertension

6. Multiple choice, allowing multiple responses

Which of the following symptoms have you experienced in the last month?

- headache
 dizziness
 fever
 vomiting
 inability to sleep
 skin rashes
 shortness of breath

7. Rank order

Please number the following health problems in the community in order of importance.

1= most important, 2= second most important, ... 5=least important.

- alcohol and drug dependence
 youth suicide
 motor vehicle accidents
 pollution
 depression and mental illness

8. Likert Scale (respondents asked to rate the extent to which they agree or disagree with a statement)

Complementary therapies are a valid management option if used appropriately

Strongly agree Agree Neutral Disagree Strongly disagree

9. Rate items

How significant would you rate the following factors in determining whether a GP joins a corporate practice?

	Not significant			Very significant			
increased income	1	2	3	4	5	6	7
decreased workload	1	2	3	4	5	6	7
decreased paperwork	1	2	3	4	5	6	7
less autonomy	1	2	3	4	5	6	7
pressure to refer	1	2	3	4	5	6	7

10. Guttman scale (respondents select from a cumulative scale – ie. if they choose c, it should follow that they have achieved a+b)

What is the highest level of education you have completed?

- School certificate
 Higher school certificate
 Undergraduate degree
 Postgraduate degree

11. Graphical scale

Please indicate the extent to which you agree with the following statement:

Patients should be allowed to determine the pattern of their day in hospital

Strongly agree Strongly disagree

Table 3: Examples of common problems with question wording

Avoid the use of leading questions where the question suggests an answer or prompts the respondent to give a particular type of answer	Leading: Do you prefer being examined by a doctor of your own sex? Better: Would you rather be examined by a male or female doctor, or doesn't it matter which?
Avoid vague questions	Vague: Taken altogether, how happy are you with your stay in hospital? Better: Taking all things together, how would you describe the care you received in hospital?
Avoid biased questions	Biased: Do you think that pornography is vile and disgusting? Unbiased: What do you think about pornography?
Avoid questions some respondents might find objectionable or sensitive	Objectionable: How many times per week do you drink alcohol? Unobjectionable: Which of the following best describes how many alcoholic beverages you drink per week? none / 1-2 / 3-5 / > 5
Don't make unwarranted presumptions in the questions	Presumptive: Do you use electronic decision support software? Better: Do you have a computer on your desk? Does it have electronic decision support software? Do you use it during the consultation?
Avoid hypothetical questions	Hypothetical: Would you use a breast screening mobile unit if one was set up locally? Better: Do you get your breasts screened regularly? Do you travel outside the local area to get them screened? Would you prefer to stay in the local area to get your breasts screened?
Do not include two concepts in the one question	Double question: Have you had a neck ache or back ache since your last visit? Yes / No Better: Since your last visit have you had: neck ache / back ache / both
Ask positive rather than negative questions	Negative: Doctors should not be required to see patients outside surgery hours: Agree / disagree Positive: Doctors should be required to see patients outside surgery hours: Agree / disagree
Make sure the wording is completely unambiguous	Ambiguous: Would you consider that it is very often, frequently, seldom or hardly ever that you visited an out-patient clinic? Better: How often do you visit an outpatient clinic: very often, frequently, seldom, hardly every
For questions requiring recall have as narrow a reference range as possible	Time frame too broad: Do you eat vegetables regularly? Better: Did you eat any vegetables yesterday?
Don't make questions too complex	Too complex: On a scale of 1 to 10, please rate for each of the 12 categories listed below, your level of knowledge, confidence and experience. Better: Please complete the table below about your level of knowledge, confidence and experience in area of the following areas.

Notes

Ordering questions

The sequence of the questions should be **logical** to the respondents, and **flow smoothly** from one question to the next. Questions tend to flow from:

- general to specific;
- impersonal to personal;
- easy to difficult.

The sequence of questions should not lead the respondent towards “inevitable” answered, where the answers to later questions are effectively predicated on the answers to earlier ones. **Sensitive questions** should not be placed at the beginning of the questionnaire. They should be placed in a section where they are meaningful in relation to the surrounding questions. This can act as buffer to help the respondent feel more comfortable with the sensitive questions. **Filtering** can be used to ensure that the respondents answer only those parts of the questionnaire that are relevant. Filter questions direct respondents to skip questions which do not apply to them.

The quality of the data collected will be maximised if the wording and order of the questions are designed to motivate respondents and facilitate recall. This includes avoiding questions which are difficult to answer, time-consuming, embarrassing or personally threatening.

Examples and tips about ordering questions

Filter questions

Unfiltered question: If you use a medical software program, which one do you use?

Filtered questions:

Do you use a medical software program?

No – jump to next question

Yes – which one do you use?

Different topics

- Questions relating to a specific topic should be grouped together.
- Complete questions on one topic before another topic.
- Use a transitional question of passage when moving to a new topic.

Placement of background questions

- No fixed rules about whether questions about sociodemographic variables should be at the end or the beginning.
- If the questions about education, income or age are likely to be sensitive, but the issues being explored in the questionnaire are not, then they should be placed at the end.
- If the questionnaire is about more sensitive issues, they should be placed at the beginning.

Notes

Key question:

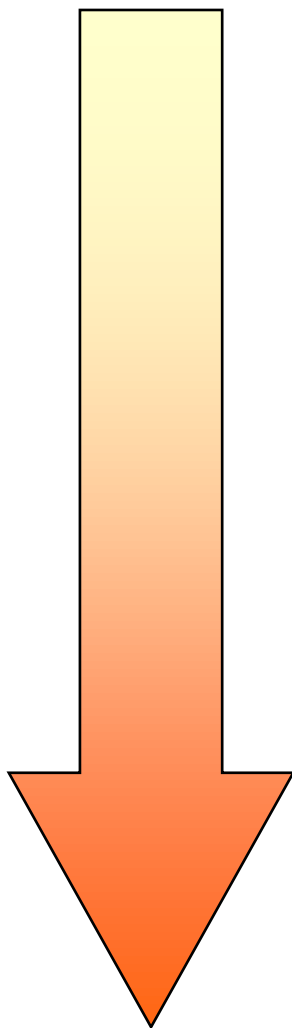
Are the questions ordered appropriately to lead the respondent through the questionnaire?

Summary: Conducting surveys in practice

A possible general process for designing a questionnaire is listed below. It includes the topics covered in this workbook, as well as some other steps not included here:

1. **Decide what information you need:** depends of aims and objectives of your program or study;
2. **Select items for inclusion:** check that each item can be related directly to your program or study;
3. **Design the individual questions:** considering issues such as the type of question, and how the survey will be administered;
4. **Compose wording:** questions should be clear and precise;
5. **Design layout and presentation:** making sure the layout encourages the respondent to complete the questionnaire;
6. **Think about coding:** code questions in advance if possible;
7. **Prepare a first draft and pretest:** circulate to a small number of people in the first instance;
8. **Pilot and evaluate:** pilot with a small sample of your target population;
9. **Perform the survey.**

Designing questionnaires is only a small part of conducting a survey. There are many other issues that also need to be addressed before you can be sure that the data and information you have collected is useful. The steps required in conducting a questionnaire are illustrated below.



Define purpose of the survey: why is it being done and how will the results be used?

Determine what population will be surveyed

Decide on a sampling strategy, including the required sample size and the sampling frame, and how to deal with non-response

Decide on data collection methods: mail, interview, telephone, other?

Design the questionnaire

Pilot and modify questionnaire in response to feedback

Examine and consider the response rate and potential bias

Process data prior to analysis: coding, data entry, cleaning

Analyse data, including summarising data and conducting appropriate statistical tests

Interpret the results of the analysis, taking into account potential confounders and sources of error

Present and use the results

