14.1: Introduction to questionnaires

The collection of information by asking questions of members of the study population is likely to be a component of any health intervention trial. Such information may be relatively simple and straightforward to collect (for example, a census of the study population in which the name, age, and sex are recorded for the members of each household in the study area) or may be very difficult to elicit reliably from respondents (for example, beliefs about the causes of illness or details of income or sexual behavior). The focus of this chapter is on quantitative surveys, in which data are collected by asking the same questions to multiple members of the study population. The responses are recorded in a standardized way, either on paper or electronically, and analysed later. Qualitative approaches to investigate the beliefs, attitudes, and practices of members of a study population, such as anthropological studies based on participant observation, in-depth interviews, or focus group discussions, are discussed in Chapter 15. In this chapter, we discuss key issues related to the methods of collection of quantitative survey data. The selection, training, standardization, monitoring, supervision, and support of the interviewers to ensure that they do a good job of collecting the data are discussed in Chapter 16.

The commonest approach to the collection of quantitative survey data is through face-to-face interviews where an interviewer asks each of the questions and records the participant’s answers, either on paper or electronically. The major advantages of this method are that the participants do not need to be literate and will usually be familiar with this approach. However, it is relatively labour-intensive, since each participant has a questionnaire administered by an interviewer on a one-to-one basis.

In literate populations, questionnaires may be ‘self-administered’, i.e. either a paper questionnaire is distributed to study participants that they are asked to complete themselves or the participant is given an electronic device such as a computer (desktop, laptop, tablet, PDA) or mobile phone on which they read each question and enter the answer. These methods can be ‘audio-assisted’ where the participant can listen to each question being read out and select the answer from a list. Such approaches have been successfully used with semi-literate participants where the participants can listen to the pre-recorded questions and possible answers and only need to be able to identify and select the answer.
code (such as A, B, or C) (Langhaug et al., 2010).

The basic principles of planning and designing self-administered questionnaires are similar to those for the interviewer-administered questionnaires. Interviews of several respondents at the same time (group interviews or focus group discussions) are discussed in Chapter 15, Section 3.3.

In addition to asking questions, an interviewer may carry out observations. For example, questions about the use of bed-nets could be supplemented by inspection, and observations on their location and state of repair. Similarly, the participant may be asked to demonstrate how they do something. For example, in a study of diarrhoea, they might be asked to show how they would prepare oral rehydration salts or how they wash their hands.

The methods outlined in this chapter are most appropriate when information on a relatively small number of well-defined subject areas is required, for which the responses to enquiries are either numerical (for example, number of pregnancies) or may be classified into a small number of different categories (for example, current feeding mode of an infant). Even simple items of information may be difficult to elicit accurately, unless adequate research has been conducted to find out how questions should be asked and phrased in the study community. The methods described in Chapter 15 to obtain such background information are relevant here.

In a particular trial, the study subjects may be visited and interviewed once only or, more commonly, several times. Simple cross-sectional surveys provide an example of the former. An example of the latter would be the collection of regular information on child morbidity from the mothers of study children through weekly or fortnightly interviews such as might be used for the evaluation of the efficacy of a vaccine against diarrhoeal disease. The first interview might be more extensive, with a shorter list of questions asked at each subsequent visit. Intervention trials often involve an initial cross-sectional survey, followed by periodic surveys of either the same or different individuals from the trial population, the frequency of which will be determined by the nature of the outcome variables under study.

In this chapter, the different components of a questionnaire survey are reviewed. The formulation and validation of questions to be included are considered in Section 2. Section 3 deals with the construction of the complete questionnaire; Section 4 deals with the interviewers, their selection, training, and standardization; Section 5 discusses the alternative ways of ‘capturing’ the data, using pen and paper or electronic methods, while Section 6 discusses factors relating to the actual interview.

As with most aspects of field research, there is no satisfactory substitute for experience to know how to formulate and administer a questionnaire satisfactorily. The inexperienced investigator would be well advised to seek guidance of those who have previously conducted surveys in the study area, if possible, as well as searching for examples of questionnaires that have been extensively validated in similar contexts such as national censuses and Demographic and Health Surveys (DHS). Those with social science, statistical, and data processing skills are also likely to make important contributions. A recently updated guide to questionnaire construction and question design is Woodward and Chambers (2012).