Questionnaires

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If we want to know things about subjects, sometimes the easiest or only way is to ask them. Many clinical studies make use of a questionnaire to elicit some or all of the data.

Because questionnaires are familiar, written in words, and the best ones are designed to be simple and straightforward to complete, researchers sometimes fall into the trap of thinking that they must be easy to design.

Not true.

Designing a questionnaire which is easy to complete, obtains the required information, and is easy to analyse is a difficult and time-consuming process, requiring just as much work as any other part of the research process. Jotting down a few questions in half an hour and passing them on to the typist is a recipe for disaster.

The way in which a question is asked may influence the reply.

We should avoid questions which are:

- ❖ leading,
- ❖ ambiguous,
- ❖ in language which the respondent will not understand.

The way in which a question is asked may influence the reply. Sometimes the bias in a question is obvious.

(a) Do you think people should be free to provide the best medical care possible for themselves and their families, free of interference from a State bureaucracy?

(b) Should the wealthy be able to buy a place at the head of the queue for medical care, pushing aside those with greater need, or should medical care be shared solely on the basis of need for it?

Version (a) expects the answer 'yes', version (b) expects the answer 'no'.

A leading question might start with a piece of apparently factual information:

'Most people think that medical statisticians are grossly underpaid. Do you agree?'

Sometimes questions may lead by implying that an answer is foolish.

'Do you have an unreasonable fear of heights?'

120 women who had just had a cervical smear were asked

'Do you understand the importance of having a cervical smear test?'

Yes No Partly

Not surprisingly, 118 respondents said `yes'.

Ambiguity

Hedges (1978) reports several examples of the effects of varying the wording of questions. He asked two groups of about 800 subjects one of the following:

(a) Do you feel you take enough care of your health, or not?

(b) Do you feel you take enough care of your health, or do you think you could take more care of your health?

Took enough care: (a) 82% (b) 68%

(a) Do you think a person of your age can do anything to prevent ill-health in the future or not?

(b) Do you think a person of your age can do anything to prevent ill-health in the future, or is it largely a matter of chance?

Replies to two similar questions about ill health, by age

	Age (years)			
	16-34	35-54	55+	Total
Can do something (a)	75%	64%	56%	65%
Can do something (b)	45%	49%	50%	49%

Version (b) is ambiguous, as it is quite possible to think that health is largely a matter of chance but that there is still something one can do about it. Only if it is totally a matter of chance is there nothing one can do.

Another type of ambiguity occurs when we want to ask about a number. The following comes from a questionnaire about health checks in general practice:

When was your check-up? (Tick one answer only)
- Less than one month ago
- 1 to 6 months ago
- 6 to 12 months ago

Respondents who had a check 6 months ago would find this difficult to complete. A better version would be

When was your check-up? (Tick one answer only)
- Less than one month ago
- 1 to 6 months ago
- More than 6 months ago but less than one year ago

Two questions confused together:

Would your prefer your smear to be taken by:
- A female doctor
- A male doctor
- A nurse
- I don't mind

The preference for a female and the preference for a doctor are mixed together.

Sometimes the respondents may interpret the question in a different way from the questioner.

Do you (Does your child) usually cough first thing in the morning?

Schoolchildren 3.7% Parents 2.4%.

Do you (Does your child) usually cough at other times in the day or at night?

Schoolchildren 24.8% Parents 4.5%.

These symptoms all showed relationships to the child's smoking and other potentially causal variables, and also to one another.

Respondents may not understand the question at all, especially when it includes medical terms.

Sample of secondary school children:

- smoking causes lung cancer 85%
- smoking is not harmful 41%

The negative statement 'smoking is not harmful' may have confused the children, or they may not see cancer as harmful.

Second sample of secondary school children:

- smoking causes lung cancer 90%
- smoking is bad for your health 91%

Respondents may not understand the question at all, especially when it includes medical terms.

Third sample of secondary school children:

What is meant by the term 'lung cancer'?

- Understand 13%
- Do not know / don't understand 32%

They nearly all knew that lung cancer was caused by smoking, however.

Respondents may not understand the question:

How often have you used this service?

Frequently	Often
Rarely	Never

Source: Deloitte & Touche questionnaire evaluating audio-visual services at St. George's Hospital Medical School.

Is ‘frequently’ more or less than ‘often’?

Deloitte & Touche think more.

Interviews or self-administered questionnaires?

Self-administered questionnaires can be used either through the mail or for subjects who have come to the place of research, e.g. visiting a clinic.

Advantages:

- ❖ cheap and private,
- ❖ can be anonymous.

Self-administered questionnaires

Suitable when the purpose of the study is fairly straightforward and can be explained in a few lines of text.

Questionnaire should be fairly short, particularly for mail questionnaires and the questions must be very clear and unambiguous.

Conditional questions of the form

If ‘yes’ go to question 7, if ‘no’ go to question 23

should be avoided if possible, as they make following the questionnaire difficult for the respondent.

Self-administered questionnaires

Avoid if:

- there is a large amount of information to get,
- the study is difficult to explain,
- there is likely to be a problem of literacy among the respondents, particularly where there are immigrants who may not have good command of the questionnaire language.
- population are poor respondents e.g. people of Asian origin, even when using own-language questionnaires.

Such issues must be explored in pilot studies.

Mail administered questionnaires

Avoid if:

- it is important that the views of only one person are obtained, e.g. the views of a child rather than the parents, or of a patient rather than those of a carer,
- we need a high response rate.

Interviews

Preferable if:

- issues are complex (can probe, explain),
- questionnaire is long,
- high response rate is essential.

Disadvantages

- interviewer bias (interviewers must be trained),
- no anonymity,
- cost.

Interviews and self-administered questionnaires may produce different answers.

Two random samples of GPs. One sample were approached by post and then by telephone if they did not reply after two reminders, and the other were contacted directly by telephone.

	Provided counselling:	
	themselves	health visitor
Postal sample	19%	14%
Telephone sample	36%	30%

The interviewer was able to probe.

Confidentiality

In medical research confidentiality should be a fundamental part of the study design.

We must tell our research subjects that we will respect the privacy of the data with which they provide us, and really mean it.

We must assure our subjects that their replies will not influence any treatment which they may receive.

Anonymity:

- prevents us using interviewers.
- prevents us from following up non-responders In postal surveys,
- prevents us from linking the questionnaire to other records about the subject.

Another problem is that we sometimes want to use our questionnaire to select a sub-sample for further study, for which we must identify respondents.

The linking of anonymous questionnaires can sometimes be done by asking respondents to invent their own serial numbers.

Questionnaire design

- ❖ Questionnaires should be clearly set out and legible.
- ❖ Any branches in the questionnaire should be very clearly indicated.
- ❖ Horizontal rules between questions, or boxes round them, are a useful way of clarifying the structure.
- ❖ Questionnaires should be attractive documents.
- ❖ We should be polite to our respondents, inserting words like 'please' where appropriate.
- ❖ Questionnaires get lost, so use coloured paper. When several questionnaires are used in a study, it is a good idea to make each a different colour.

Types of question

Open:

What one improvement would you make to this course?

_____

_____

_____

Few questions in small surveys, or as therapy for the respondent.

Types of question

Multiple choice:

Please read these statements carefully and tick the one box which best describes you. (Please tick one box only)

I have never smoked a cigarette	❑
I have only tried smoking once	❑
I have smoked sometimes, but I don't smoke as much as one cigarette a week	❑
I usually smoke between one and six cigarettes a week	❑
I usually smoke more than six cigarettes a week	❑

Types of question

Check list:

Has your child ever had any of the following diseases:	YES	NO
bronchitis	❑	❑
croup	❑	❑
hay fever	❑	❑
pneumonia	❑	❑
tonsillitis	❑	❑
whooping cough	❑	❑

Many respondents will tick only the `YES' boxes for the relevant diseases.

Types of question

Check list:

Has your child ever had any of the following diseases (please tick all that apply):

bronchitis	❑
croup	❑
hay fever	❑
pneumonia	❑
tonsillitis	❑
whooping cough	❑

Many respondents will tick only the `YES' boxes for the relevant diseases.

Types of question

Numerical, e.g. age, height, weight, family size, etc.:

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Numerical, e.g. age, height, weight, family size, etc.:

How old are you? _____ years

or

How old are you? ☐☐☐ years

Remember to allow sufficient space for the answer. If you use boxes, give sufficient boxes for the largest number. Units are important:

Would you tell us your weight, please?

_____ stones _____ pounds

OR _____ pounds

OR _____ kilogrammes

Types of question

Numerical:

How old are you? (Please tick one box)

less than 18 years	❑
18 to 44 years	❑
45 to 64 years	❑
65 to 74 years	❑
75 years or more	❑

Such grouping should be avoided unless there is a very good reason for it.

E.g. income.

We can always group afterwards.

Types of question

Opinion:

Are you in good health? YES ❑ NO ❑
(please tick one box)

Fairly crude instrument. Better to use a rating scale with a graded series of options:

Which word best describes your health?
(Please tick one box only)

excellent	❑
good	❑
fair	❑
poor	❑

Types of question

Opinion, Likert scales:

	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
1. A pupil who plays truant or skives from school should be punished.	❑	❑	❑	❑	❑
2. Cigarettes should be harder to get.	❑	❑	❑	❑	❑
3. Others make fun of you if you don't smoke.	❑	❑	❑	❑	❑
4. Sometimes my brother or sister gives me a cigarette.	❑	❑	❑	❑	❑
5. My parents do not mind whom I go around with.	❑	❑	❑	❑	❑
6. Smoking is a dirty habit.	❑	❑	❑	❑	❑
7. Smoking is only bad for you if you smoke a lot.	❑	❑	❑	❑	❑

(27 items altogether.)

Attitude statements:

- ❖ should be single sentences including only one idea.
- ❖ should be short, fewer than 20 words.
- ❖ should avoid absolute terms like 'all', 'none', 'always', and 'never'.
- ❖ should avoid statements which are either true or false.

4. Sometimes my brother or sister gives me a cigarette.

violates two of these principles: it includes two ideas, whether or not the respondent has a sibling and whether or not this sibling gives cigarettes, and it is factual. It would have been better asked in a different way.

Types of question

Opinion, ordered list:

Sometimes we want to know how respondents would choose between a set of items where all might be rated positively (or all negatively) if asked separately.

We can ask respondents to rank the items in order of importance.

Types of question

Opinion, ordered list, example:

The following terms all might be used to describe a GP. Please put them in order of how important they would be to you when choosing a new GP.
Please put numbers 1 to 5 in the boxes, from 1, most important, to 5, least important.

- Keen on preventive medicine ❑
- Good with children ❑
- Up to date with medical research ❑
- Patient ❑
- Friendly ❑

Types of question

Opinion, ordered list, example:

Such questions should be used sparingly, as they are very difficult to analyse.

With only five items there are 120 different possible orderings.

The rank given to each item should be entered into the computer, each item forming a separate variable.

The mean rank for each question can be used to order the items to give a descriptive summary.

Types of question

Subjective numerical scales:

We often ask questions to which there is a graded response, e.g.

How would you describe your health?

1. excellent ❑
2. good ❑
3. fair ❑
4. poor ❑

We would use the numbers 1, 2, 3, and 4 as our data.

It is a short step to thinking of these numbers as a scale of health.

Types of question

Subjective numerical scales:

For example, we used a nine-point scale in a trial where patients with psychological problems were randomized to treatment by a clinical psychologist or by their GP. Subjects were asked to rate the severity of the problem from 0 to 8, with verbal labels being attached to alternate numbers:

0 no problem
1
2 only very slight (and/or occasional)
3
4 fairly severe (and/or quite frequent)
5
6 quite severe (and/or most the time)
7
8 very severe (and/or all the time)

Types of question

We do not need to include labels for points on the scale. We can simply ask for a number.

Can you give the pain a number between one and ten, where 1 means no pain at all and 10 means the worst pain you can imagine?

Pain (1 to 10): _____

Can you give the pain a number between one and ten, where 1 means 'no pain at all' and 10 means the worst pain you can imagine?

Circle the number which best describes the pain:

1 2 3 4 5 6 7 8 9 10

no pain at all — worst pain you can imagine

Types of question

Visual analogue scales:

Can you mark on the line the position which best represents the pain?

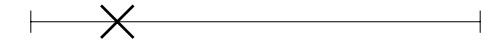
no pain at all — worst pain you can imagine

For convenience, use 10 cm line.

Types of question

Visual analogue scales:

Can you mark on the line the position which best represents the pain?



no pain at all — worst pain you can imagine

For convenience, use 10 cm line.

Coding

Most questionnaires are analysed using a computer program.

Must code the data before you can put it into the computer.

Numeric codes are best.

Coding should be clear, unambiguous, simple, and help us to avoid keying errors.

A simple question with only two possible answers:

Sex: Male Female

We need numeric codes for 'male' and 'female'. The usual choice of codes is male = 1, female = 2.

Coding

We need numeric codes for 'male' and 'female'. The usual choice of codes is male = 1, female = 2.

We should not use male = 0, female = 1. Many programs do not distinguish between zero and blank. It is thus very easy to type a zero by mistake. Zero codes should be avoided if possible.

It is a good idea to record the code on the form itself, lest it be forgotten:

Sex: Male $_1$ Female $_2$

What about the comedian who writes 'Yes, please'? (Every youth who scrawls this thinks that it is highly original!)

We do not know the sex of the respondent, so we need a missing data code. Some programs use a numeric missing data code, some use a special symbol, such as '*' or '.'.

If a numeric code is used, it is conventional to use a string of '9's. Blank and zero should not be used, to avoid input errors.

The next question has several possible answers, but only one choice is allowed:

How many follow-up appointments have you had at the surgery (including attendances at groups)?

one appointment	❑$_1$
2 to 5 appointments	❑$_2$
6 to 10 appointments	❑$_3$
more than 10 appointments	❑$_4$

We can code the answers 1, 2, 3, 4, missing data code 9.

This question should only be answered by patients who had had a check-up, and who were invited back to the surgery for a further visit after the check-up.

These will not be all patients, so we need another code for 'not applicable'. This could be 5.

When the missing data code is 9, the not applicable code is often 8.

Some programs (e.g. SPSS) allow you to define more than one missing data code for a variable, so that 'not applicables' can be excluded from analysis easily if this is required.

The next question has several possible answers, and several possible choices are allowed:

At your check-up, did the nurse or doctor give you advice about any of these things?

Smoking	❑
What food to eat	❑
How much alcohol to drink	❑
Your weight	❑
Exercise	❑
Your blood pressure	❑

We cannot code these as 1, 2, 3, 4, 5, 6. How would we code someone who ticked all the items?

In fact this is not one question, but six.

This is not one question, but six.

It could equally be written:

	Yes	No
Did the nurse or doctor give you advice about smoking?	❑1	❑2
Did the nurse or doctor give you advice about how much alcohol to drink?	❑1	❑2
Did the nurse or doctor give you advice about exercise?	❑1	❑2
Did the nurse or doctor give you advice about what food to eat?	❑1	❑2
Did the nurse or doctor give you advice about your weight?	❑1	❑2
Did the nurse or doctor give you advice about your blood pressure?	❑1	❑2

We therefore code each item separately as yes=1, no=2. The question produces six separate variables.

In this case there will also be a code for not applicable.

This question is open:

If you have any other views on the check-up, please write them in the space opposite:

Questions like this are asked because we do not have a list of options.

If we want to code it, we first carry out a content analysis of either all or a sample of questionnaires.

We then code this with a separate 1 or 2 for each topic.

Questions like this are very useful in pilot studies or in small in-depth surveys, but in large studies they are seldom analysed.

Validity of questions

How well do questions measure what we want them to measure?

For factual questions we can test by checking other sources. E.g. 'Has your child ever had asthma?' - we can compare answers to medical records.

Sometimes there is no other direct source of information. E.g. to a child 'Have you ever smoked a cigarette?'

This is factual but the only available source is the subject. We must rely on reliability or repeatability, i.e. to what extent do the same people give us the same answers, and whether we get consistent relationships with other variables.

Sometimes validity is difficult because the question is ill-defined.

E.g. 'Do you usually cough first thing in the morning?'

What is meant by 'usually', 'cough', 'first thing in the morning'? We can measure reliability, we can compare results of questioning different observers to get their subjective opinions, e.g. children and their parents, and we can test for differences in related objective measurements between those giving yes and no answers, e.g. measured lung function.

When there is no factual component, as in attitude statements, we rely on construct validity. This means that we look for internal consistency between related questions and for expected relationships with other variables.

Questionnaire scales

In medicine we often want to measure ill-defined and abstract things, like disability, depression, anxiety and health. The obvious way to decide how depressed someone is to ask them. However we cannot just ask 'how depressed are you out of 10?', as people would not have a common scale.

We ask a series of questions relating to different aspects of depression and then combine them to give a depression score.

Depression scale of the GHQ:

HAVE YOU RECENTLY

been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
felt that life is entirely hopeless?	Not at all	No more than usual	Rather more than usual	Much more than usual
felt that life isn't worth living?	Not at all	No more than usual	Rather more than usual	Much more than usual
thought of the possibility that you might make away with yourself?	Definitely have	I don't think so	Has crossed my mind	Definitely not
found at times you couldn't do anything because your nerves were too bad?	Not at all	No more than usual	Rather more than usual	Much more than usual
found yourself wishing you were dead and away from it all?	Not at all	No more than usual	Rather more than usual	Much more than usual
found that the idea of taking your own life kept coming into your mind?	Definitely have	I don't think so	Has crossed my mind	Definitely not

Scoring for the depression scale of the GHQ:

been thinking of yourself as a worthless person?	Not at all **0**	No more than usual **1**	Rather more than usual **2**	Much more than usual **3**
felt that life is entirely hopeless?	Not at all **0**	No more than usual **1**	Rather more than usual **2**	Much more than usual **3**
felt that life isn't worth living?	Not at all **0**	No more than usual **1**	Rather more than usual **2**	Much more than usual **3**
thought of the possibility that you might make away with yourself?	Definitely have **3**	I don't think so **2**	Has crossed my mind **1**	Definitely not **0**
found at times you couldn't do anything because your nerves were too bad?	Not at all **0**	No more than usual **1**	Rather more than usual **2**	Much more than usual **3**
found yourself wishing you were dead and away from it all?	Not at all **0**	No more than usual **1**	Rather more than usual **2**	Much more than usual **3**
found that the idea of taking your own life kept coming into your mind?	Definitely have **3**	I don't think so **2**	Has crossed my mind **1**	Definitely not **0**

Scoring for the depression scale of the GHQ:

Questions are scored 0, 1, 2, 3 for the choices from left to right for items 1, 2, 3, 5, and 6, and 3, 2, 1, 0 for items 4 and 7.

The sum of these is the score on the depression scale.

The questions are clearly related to one another and together should make a scale. Anyone who truthfully gets a high score on this is depressed.

The full questionnaire has four such scales.

Questions are formed into a scale as follows:

1. A set of questions which are expected to be related to the concepts of interest is devised, based on experience.
2. The questions are answered by test subjects.
3. The scales are checked for internal consistency.
4. Dubious questions are excluded and the scale tested again.

Validation of the scale is by tests of reliability and by its relationship to other measures of related quantities. For example the depression scale can be given to patients with diagnosed clinical depression, patients with other diagnoses and people with no psychiatric diagnosis, to see how well it distinguishes between them.

Depression scale of the CCEI:

Can you think as quickly as you used to?	Yes	No	
Do you feel that life is too much effort?	At times	Often	Never
Do you regret much of your past behaviour?	Yes	No	
Do you wake unusually early in the morning?	Yes	No	
Do you experience long periods of sadness?	Never	Sometimes	Often
Do you have to make a special effort to face up to a crisis or difficulty?	Very much so	Sometimes	Not more than anyone else
Do you find yourself needing to cry?	Frequently	Sometimes	Never
Have you lost your ability to feel sympathy for other people?	No		Yes

Depression scale of the CCEI:

Can you think as quickly as you used to?	Yes **2**	No **0**	
Do you feel that life is too much effort?	At times **1**	Often **2**	Never **0**
Do you regret much of your past behaviour?	Yes **2**	No **0**	
Do you wake unusually early in the morning?	Yes **2**	No **0**	
Do you experience long periods of sadness?	Never **0**	Sometimes **1**	Often **2**
Do you have to make a special effort to face up to a crisis or difficulty?	Very much so **2**	Sometimes **1**	Not more than **0** anyone else
Do you find yourself needing to cry?	Frequently **2**	Sometimes **1**	Never **0**
Have you lost your ability to feel sympathy for other people?	No **0**		Yes **2**

Depression scale of the CCEI:

In practice, these questions are interspersed between questions related to five other psychiatric scales.

Presenting scales

Some answers go from left is low to right is high, and some the opposite way.

The order of high scoring answers is varied.

This avoids the tendency to always tick the first or last answer.

The order of high and low scoring answers can be varied within the questions, so that sometimes the highest or lowest is in the middle of three options, not at the end.

The answers are varied in wording. This is to avoid monotony and to encourage respondents to read and think about the items.

Sub-scales are mixed up, so that it is less obvious to the respondent what the questions are trying to elicit.

There are many types of scale in regular use. This is one of several possible formats.

Scales are difficult to design and validate, and so whenever possible we use one which has been developed previously, such as the GHQ.

This also makes it easier to plan and to interpret the results of studies, as the properties of the scale are already known.

However, check that the language is appropriate.

Language may change with place.

E.g. ‘doctor’s office’

‘blow me!’

Language may change over time.

E.g. EPI: ‘Do you like gay parties?’

became ‘Do you like lively parties?’

Sensitive questions

People in the UK are remarkably willing to tell their most intimate secrets to complete strangers with clip-boards.

They will tell an interviewer things they would never dream of telling their spouses, and may tell the interviewer how good it is to be able to talk about these topics to someone.

We can rarely be sure what is truthful and what is concealment or exaggeration.

Sometimes respondents are reluctant to tell an interviewer the truth.

Sensitive questions

Topics people might find sensitive:

- ❖ sex,
- ❖ drugs,
- ❖ criminal activity,
- ❖ income and other financial arrangements,
- ❖ politics.

Sensitive questions

Possible approaches:

- assured confidentiality,
- self-administered and anonymous,
- secret ballot,
- randomised response,
- openness with careful question wording.

Sensitive questions

Possible approaches, secret ballot:

Opinion poll: half the subjects were questioned by interviewers about their voting preference and half were given a secret ballot.

	Interview	Secret ballot
Labour	33%	33%
Conservative	28%	35%
Won't say	7%	1%

(Following the 1992 UK general election.)

Sensitive questions

Sensitive questions in questionnaires:

- we must gain the trust of our respondents.
- we must convince them that their replies will remain confidential.
- we must ask the question in a non-threatening way.

Sensitive questions

We can make our sensitive question less threatening by putting it in a group of similar but unthreatening questions. Rather than ask:

Have you ever had gonorrhoea? YES NO

we can place the item in a check list:

Have you ever had any of the following diseases? (please tick all that apply)

measles ❑	German measles (rubella) ❑
chicken pox ❑	gonorrhoea ❑
tuberculosis ❑	bronchitis ❑
scarlet fever ❑	rheumatic fever ❑
syphilis ❑	infectious hepatitis ❑

Sensitive questions

If we want to ask several questions about a sensitive subject, we can include them in the middle of a questionnaire which asks about other subjects.

In a study of volatile substance abuse, questionnaire began with general questions about age, sex, and social circumstances. These were followed by three groups of similar questions: first a group about cigarette smoking, then one about volatile substance abuse, and finally a group about alcohol consumption. The questionnaire finished with some questions about general health. This seemed to work quite well, and the children decided that it was alcohol that we were really after.

Sensitive questions

Sometimes we need to reassure the respondent that the behaviour which we are asking about is not going to shock us. This is blunt:

Do you masturbate? YES NO
(please tick one box)

If YES, how often do you do this?
(please tick one box)

- most days ❑
- most weeks ❑
- most months ❑
- rarely ❑

Sensitive questions

We can start with a reassuring comment:

Most people masturbate. How frequently do you? (please tick one box)

- most days ❑
- most weeks ❑
- most months ❑
- sometimes but not most months ❑
- never ❑

Sensitive questions

A similar approach can be used when we want a numerical answer which respondents might be reluctant to supply.

We suggest to respondents that an answer much more extreme than theirs would not surprise us.

For example, if we want to ask a population of alcoholics how much they drink, we can expect an underestimate if we ask:

How many bottles of spirits do you drink in a typical week?

_____ bottles

Sensitive questions

We can reassure the respondent:

How many bottles of spirits do you drink in a typical week?

- less than one bottle ❑
- one or two bottles ❑
- between three and five bottles ❑
- between six and nine bottles ❑
- between ten and fifteen bottles ❑
- between sixteen and nineteen bottles ❑
- between twenty and twenty-four bottles ❑
- between twenty-five and twenty-nine bottles ❑
- thirty bottles or more ❑

Length of questionnaire

Must not overburden respondents.

Must be long enough not to appear trivial.

Importance of piloting

Test the questionnaire on as many people as possible.

Include people from the population you want to ask.

Often the easiest and best method, if not the only method, of obtaining data about people is to ask them.

When we do it, we must be very careful to ensure that questions are straightforward, unambiguous and in language the respondents will understand.

If we do not do this then disaster is likely to follow.