

A research instrument:

THE QUESTIONNAIRE

Malcolm A. Fernando

**Board of Study in Community Medicine
Postgraduate Institute of Medicine
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1. Preparation of Questionnaire

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FOREWORD

Several study programmes at the PGIM include a research project and many students use as their instrument of investigation the questionnaire.

The ultimate aim of research is to pursue a hypothesis, explore hitherto unexplored possibilities, to delve deep below the surface and arrive at the truth. The instrument in search of truth must be reliable and valid and its design meticulous, checked and rechecked by both student and supervisor.

Many research projects chosen by PGIM trainees are extremely relevant to health care issues in the country and hence the greater need to extract from the study the absolute truth.

The globalization and internationalization of education have emphasised the need to adhere to accepted global standards in all aspects of education and higher education including research.

I am grateful to Professor Malcolm Fernando for having focused on the questionnaire as a research instrument. This is the second book authored by him to be published by the PGIM – the former being “Guidelines for the preparation of a Thesis/ Dissertation”.

I hope with his valuable experience in the field of research and medical education, there will be more such publications which will uplift the quality of research conducted by PGIM trainees.

Professor Lalitha Mendis
Director
Postgraduate Institute of Medicine
June 2003

Preface and Acknowledgements

In this booklet I am presenting some guidelines on how to prepare for, and construct a questionnaire – as a research instrument. This is necessary for all types of research especially so for survey research. If the instrument is faulty then the information obtained may not be reliable and valid, and therefore the interpretations, inferences drawn and the conclusions made may be erroneous.

In the text I have often used the question form, some of them are unanswered while most of them are explained. I have given a sample questionnaire which is not precoded, and consisting of twenty-nine examples and a variety of questions to demonstrate common errors in their wording or construction. I have also made one or more comments and given the correct or revised questions.

This booklet on the questionnaire complements a recent publication by the author titled “Guidelines for the preparation of a thesis/dissertation” published in 2002 by the Postgraduate Institute of Medicine (PGIM), University of Colombo.

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1. INTRODUCTION

The collection of primary data requires research instruments such as check lists, interview report forms and questionnaires, to record and later process the information. The instrument commonly used is the *questionnaire*. It consists of a series of orderly arranged standardized questions based on the *specific objectives* of the study. It should be so constructed to obtain *reliable* and *valid* data. It may also include measurements, findings of clinical examinations, and laboratory investigations.

The questionnaire may be administered in several ways. It may be *self administered* by an individual or in a group under supervision. It may be *mailed or hand delivered* to the respondents. It may also be *interviewer administered* by telephone and other electronic devices or face-to-face. Each method has its advantages and disadvantages. The researcher should decide which method to use to obtain reliable data and a reasonable response rate.

I will deal with the face-to-face interviewer administered questionnaire. However most of what follows is applicable to the others with a difference in the method of collecting the information.

The *face-to face interviewer administered questionnaire* has its advantages and disadvantages.

Advantages

1. The same stimulus is applied to each respondent since it has uniform wording, order of questions and relevant instructions given to the interviewer.
2. The respondent is more likely to accept the assurance of confidentiality given by the interviewer than by other methods.
3. Illiteracy is not a bar to a successful completion of the questionnaire.
4. When necessary, the interviewer could explain or clarify the question, without interfering with the content of the question.
5. The response rate is high since there is personal involvement and revisits are possible.
6. The interviewer could tactfully prevent the presence and interference of others during the interview.
7. The interviewer could not only get the answers but could also observe how it is said and the body language. An assessment of the reliability could be noted.
8. A trained interviewer could get reliable answers to sensitive questions.
9. The interviewer could control and direct the respondent from straying when an 'open' question is asked.

Disadvantages

1. The introduction given to each respondent may vary if not written at the head of the questionnaire.

2. The respondent may not like the interviewer and vice versa affecting the reliability of the data.
3. Biases of the respondent or the interviewer or both may affect reliability.
4. The respondent has to give a quick answer to an 'open' question.
5. The time and social environment may not be conducive to the respondent to give thoughtful and accurate answers.

There is no perfect questionnaire, however the researcher should strive to make it as perfect as possible irrespective of the type of study: be it survey or clinical. Designing and constructing a questionnaire requires time and effort since it means several drafts, testing and re-testing. The time spent will not be in vain. A faulty or poorly constructed questionnaire will result in the collection of unreliable and invalid data, leading to incorrect interpretations and erroneous conclusions.

2. PLANNING THE QUESTIONNAIRE

2.1 General

I will assume that the researcher has decided on the topic of study, given a tentative title to it, stated the general and specific objectives, identified the required variables and operationalized them, selected the appropriate sampling method, determined the size of the sample, decided on the geographic location for the study and the study population. If it is a community study it is assumed that the Principal Investigator (PI) has obtained the necessary clearance from the concerned authorities, met the community leaders and obtained their approval and felt the pulse of the community for acceptance of the study.

Planning the design, construction and administration of the questionnaire is *sine qua non* in order to obtain reliable and valid information, to administer with ease and process the data effectively.

The questions should be numbered serially in arabic numerals and typed or printed taking care to provide adequate spacing between sections and subsections and also to permit the interviewer to record the answers verbatim to open-ended questions.

Both interviewer and respondent should be conversant with the language used in the questionnaire. If the study units are heterogeneous language-wise, it may be necessary to have the questionnaire in more than one language, and

suitable interviewers. It is not recommended to permit the interviewer to translate to the language familiar to the respondent at the time of the interview, although both interviewer and respondent may be able to cope with more than one language.

It is not recommended to include questions requested by colleagues and others, which are not relevant to the study. The questionnaire should be short but long enough to obtain all the information required for the study. Technical terms, other terms and phrases that are unfamiliar to some of the respondents should be avoided, even though prompts and probes are provided.

It is recommended that in the planning stage the researcher should identify the Research and Ethical Committee to which the research protocol will be submitted for clearance, especially if it involves invasive procedures and or if it contains special sensitive questions.

2.2 Study type

The construction of the questionnaire will depend on the envisaged type of study. Is it to be descriptive of one community or more, a comparison between two or more special groups in communities? Is it on knowledge, attitudes and practices (KAP) and will this also include beliefs, desires, wants and recommendations of the respondents? Will it be exploratory, epidemiological, clinical or health systems research? Will it be an intervention study? If

it is the latter it could be a post intervention only or a pre and post one. If the post-intervention interview is taken immediately or shortly after, there is insufficient time for changes in behaviour or practices. In this case some of the post-intervention questions may have to be worded to obtain anticipated changes. However if a second interview is taken after a reasonable length of time, then changes may be expected to have occurred. It is suggested that the intervention package be planned and formulated before constructing the questionnaire because this will eliminate the use of redundant questions.

2.3 Study units and Respondents

The *study units* are the subjects of the study. They may be individuals, families, households or institutions. How will they be selected and what will be the inclusion and exclusion criteria? The *respondents* will be those who provide data on the units. If the respondents are school children, could they provide the required information? In a family, who will be the designated respondent, and if not available and a proxy is permitted, who will this be? At which visit (1st, 2nd, 3rd) should the proxy be used? If a household is composed of two or more families living together, which one family will be interviewed or will all the families be study units? If more than one family in a household is interviewed, the environmental data may be the same, for all, how will this be linked? If the unit is an institution, who will be the respondent?

These questions are relevant to the study and should be decided before constructing the first draft of the questionnaire.

2.4 Information required

Write what information is required based on each specific objective, preferably in the form of tentative questions. Information that is not relevant or may not be analysable should be deleted, hence, the importance of preparing “dummy” tables. Will the respondent have the required information, and will it be given, especially if sensitive questions are included? This may be checked at a pretest.

2.5 Type of questions

Is the questionnaire to be structured and precoded? Will it contain “closed” (fixed alternative) or “open ended” or both types of questions? If both types are to be used, some of the open ones may be converted to the closed type after a pretest. Both types have their advantages and disadvantages.

Advantages of the closed question

1. The respondent is made to focus on the subject under study.
2. The list of options given remind the respondent of the possible answers and that one or more (if multiple choice) should be selected giving the closest answer/s.

3. It is easy for the respondent to select the option and the interviewer to record it by ticking the relevant box.
4. The answers recorded are easy to analyse (especially if precoded) at the end of the study; hence it is less expensive.

Disadvantages of the closed question

1. The list of options may not be complete or may not be mutually exclusive. It may not include the answer that the respondent wanted to give.
2. The options given may influence the respondent to concentrate only on those and select one of them because the respondent thinks that this is what is expected.

Advantages of the open question

1. Permits the respondent to give the answer in her own way and in her words, which makes it more valid because options and suggestions are not given.
2. Permits the respondent to answer in depth. This may give information on some aspects that were not considered by the researcher
3. The erroneous responses given may indicate ignorance that may help in subsequently formulating a health education package for the study population.

Disadvantages of the open question

1. The verbatim recording of the answer given (which is obligatory) is tedious and time consuming. It may therefore not be recorded accurately.
2. The respondent may forget to give some required information and may also give irrelevant information. This may be overcome to some extent by the use of directed or structured open questions, including prescribed prompts and probes.
3. The respondent may not have an answer but is forced to say something as there is no other option such as 'Don't know'.
4. The responses may be vague and subjective making it difficult to categorise, code and analyse the data.
5. It is difficult to estimate the space to be provided to record the answer, which will depend on its length and also the space required by the interviewer to write without being cramped.

In this article, the principal investigator, interviewer and respondent will be considered a female, although it is applicable for males.

2.6. Structure of Questions

Having decided on the information to be collected, the researcher should decide on the structure of questions. Write the possible questions and examine each of them for the following:

- Is the question very general or highly specific? The former may not extract what is required and the latter may be difficult to respond.
- Is the question too long or too short? The former may be confusing and the later not clear.
- Is the question clear, unambiguous and understandable by the least educated of the respondents? If not, reword the question.
- Will the information required be readily available to the respondent?
- Is the question fair, reasonable, neither offensive nor embarrassing to the respondent?
- Is the question placed in a position to ensure an orderly and logical sequence?
- Is the question personal or impersonalised? The PI should make a decision on which would give more reliable information.
- Is the question one that requires recall? Determine the most suitable recall period. Some events such as the onset of menarche of Sri Lankan women

may be easily recalled but morbidity and types of food consumed have a short recall period. Hospitalisations are better recalled than outpatient visits. Factors influencing the accuracy of recall are age of the respondent (older people are more forgetful) the time lag and the relative importance of the event recalled.

- How would a sensitive question be “couched” or “funnelled”? Would the answers to the pre-empted questions be also used in the analysis?
- Does the question require prompting and or probing? If so, prepare these to be included in the questionnaire
- Is the question meant to check for consistency? If so, where will it be placed in the questionnaire? It should not be too close to the question being checked. It may be open or closed, with a change in the wording.
- Will the answer to the question be influenced by a previous one, by seasonality, by a recent event such as a bomb blast killing many civilians, by a natural disaster or by a memorable good event?

2.7. Administration of the Questionnaire

Planning the administration of the questionnaire involves the selection and training of interviewers, pretesting the questionnaire, scheme for editing,

coding and processing of the data, and conducting a pilot study.

2.7.1. *Interviewers*

The selection and number of interviewers should be considered. Are they suitable and the number adequate for the study? Are they to be females, males or both? Are they to be medically oriented such as public health personnel or are they to be non-medical, such as sociology students, schoolteachers and persons from the community? It has been observed by survey researchers that doctors, medical students, hospital matrons and nurses tend to be authoritative when asking questions from respondents, which may be attributed to the manner questions are asked from patients. Further, some medical questions may be answered so as to please them. Will the interviewer be known to the respondent? Consider the advantages and disadvantages based on the purposes of the study. Will their ethnicity and or religion affect the responses given to some questions? What age group of interviewers is best for the study? The very young and the very old may have some disadvantages.

How many interviewers are required? If the sole interviewer is to be the principal investigator (PI), she has the flexibility to correct any misconceptions and misunderstanding of the questions by respondents and also to clarify the prompts and the probes if necessary. However the inherent disadvantage is the unidirectional bias that may exist from knowing the detailed objectives and the anticipated outcomes of the study.

If more than one interviewer is to be used there could be either or both intra and inter-interviewer biases in addition to those of the respondents. How could these be overcome? Will they conduct interviews each day of the week or only during weekends and holidays? Based on the estimated time required to complete a questionnaire, travel time from one respondent to another, repeat visits, the terrain and allowing time for inclement weather, the PI should calculate the approximate number of days or weeks it would take to complete all the interviews. Will those selected be available for training, pretesting and the pilot study?

If one or more are unable to conduct the interview, how will they be replaced? Will there be stand-by or reserve interviewers? If so, will they also be trained with the others or individually if and when required?

Who will monitor and check on the performance of the interviewers, especially whether the respondents answered the questionnaire fully or only some questions or not at all?

Where will the interviews be conducted? If in the home of a respondent how will privacy be ensured? If in a hospital, clinic or in an institution, arrangements should be made at the planning stage, to ensure privacy and an undisturbed interview.

If the questionnaire includes clinical examinations, anthropometric measurements, laboratory tests etc. who will obtain this information? Will the interviewers (with different backgrounds) be trained to perform these tasks or will it be done by trained

technicians? The latter are preferable. If several laboratories and technicians are to be used, how will the intra and inter laboratory/technician variability be controlled?

Will the interviewers, helpers, technicians and supervisors be paid for their services? If so, how much? What arrangements will be made for financial support?

2.7.2. Training

Having constructed the first draft of the questionnaire which has been discussed with colleagues and necessary changes made, each interviewer should be given a copy, some days before the scheduled training programme, requesting them to study it and come ready to offer any comments.

Who will conduct the training? Is it the PI only or a team? If more than one trainer is to be used they should be trained on its conduct to avoid inter-trainer variability. Where and when will it be held? If some are unable to attend what alternate arrangements should be made to train them?

At the commencement of training the trainer should indicate the purposes of the study either in detail or in general. It is ethically sound to give details but may cause a bias in favour of the anticipated outcome.

What methods are to be used in training? Will they be one or more of the following: didactic lectures, reading out each question and clarifying where necessary, indicating the correct use of prompts and probes, use

of audio visual aids, role playing, taking a few questionnaires in the field under supervision?

How should the interviewer behave when conducting the interview? She should remember that the respondent is doing a favour by replying to the questions. The respondents activities at the time should not be unduly disturbed, hence the need for patience and tact by the interviewer.

What techniques should the interviewer use? The questions should be asked as given, and in the same order, in a monotonous tone of voice and not showing any surprise, disappointment, anger either verbally or by body language at the answers given.

2.7.3. *Pretest*

“ A pretest” is a try out of the questionnaire to see how it works and whether changes are necessary before the start of the full scale study’ (Ref. 1). The draft questionnaire should be pretested one or more times. Who will do it and where? The selected interviewers should conduct it in a community not too close to the study area, to prevent contamination or the “spill over” effect. What is the role of the PI or supervisor? It is to monitor the fieldwork, check whether the questions were clear and understood by the respondents. The answers given to open questions should be studied to convert some of them, if not all, to closed ones. Conduct a “mini reproducibility” study and also check for inter-interviewer variability. If differences exist what may be the reasons? It may be necessary to obtain the comments of the interviewers. If many changes are made a second training of a

shorter duration may be required. A further pretest may be necessary.

2.7.4. Editing

Editing is a continuing process of scrutinizing the data obtained at the interview. During training the obvious and possible errors that require editing could be discussed by the trainer, giving examples. Editing should be done on site by the interviewer immediately after taking the questionnaire and before leaving the respondent for completeness, missing data, possible wrong answers given intentionally or otherwise, accuracy and consistency. Examine the answers given to "check" questions. The PI on receiving the completed questionnaire should re-edit it for those mentioned above and for inappropriate responses, legibility of the handwriting to the open questions and whether the name of the interviewer and the date of interview is given. If errors are detected that could only be corrected by a revisit to the respondent, such forms should be returned, indicating the errors there in. How would you ensure that a revisit was made, or that the interviewer made the corrections on her own? Will it be necessary to conduct a random spot check to determine whether the revisit has been made? In spite of these efforts if certain answers are missing they should be categorised as "non response"

2.7.5. Coding

"Coding is the transformation of the information contained in the questionnaire into a form that can be used in data processing"(Ref. 2). If precoded closed questions are used, the relevant numericals could be entered direct into a computer. However if the

response to one or more questions fall into the "dumping" category of "other-specify" and these are sizeable the PI should consider whether valuable information will be lost if those "specified" are not considered. The additional options thus created may be coded and used in the analyses.

The responses to open-ended questions will have to be hand coded. How is this to be done? Read the answer given, using an adequate random sample of questionnaires and construct generic categories, convert them into options and code them as for single or multiple response questions. Who will do this? Would it be the PI (not recommended) another person who is familiar with the subject or a panel of researchers? The codes should be entered in the relevant boxes meant for this purpose and placed in the right hand margin of the questionnaire. It is suggested that this margin be used even for precoded questions which makes it convenient for the data entry operator and will therefore result in less mistakes being made. How will the answers to multiple response questions be coded? This may be done using a derived code (Ref 3). It will be useful to prepare a coding manual. It is suggested that a data entry operator be consulted.

2.7.6 Processing

The raw data may be processed by hand in a small study or by computer for a larger one. Who will enter the data into the computer and process it? How will the confidentiality of the information obtained be maintained? What statistical tests will be used and are they relevant to the study? What software

packages will be used? Are they available and are you familiar with them? If a friend or commercial service is to be used what information should be provided? The objectives of the study, methodology, analysis, type of significance tests to be used and what tables are required. Give dummy tables which may be helpful to avoid redundancy. The advice of a statistician should be obtained at the planning stage and not wait until the data has been collected.

2.7.7. Pilot study

“A pilot study is a dress rehearsal of the drama of data collection and analysis”(Ref 4). It is the precursor to the study proper. This is also a final pretest and all the requirements mentioned before should be observed. For this purpose the final pretested questionnaire is used. Who will do it and where? It should be conducted by the selected interviewers in an area outside and not too close to the study area, but having similar characteristics of the study respondents. It should be monitored in the field by the PI (preferable) or a field supervisor. During the pilot study the PI should especially observe interviewer respondent reactions and the technique of conducting the interview. If found wanting, these may be corrected if possible or in the alternative those interviewers should be tactfully kept away from the study proper.

The results of the pilot study should be quickly processed and information that is not analysable could be excluded even at this stage. The time taken for the interview and between interviews should be noted and the GANT chart or timetable may have to

be revised. The pilot study will also indicate the delays and difficulties faced by the interviewer. The PI may have to re-estimate the cost of the study.

2.7.8. *Reliability (Repeatability)*

The data collected should be reliable. However, a high reliability may not mean a high validity. How will you ensure a high reliability? This is achieved chiefly through the use of a well-constructed pretested questionnaire and employing proper techniques of extracting information by well trained interviewers. How will the repeatability test be done, by whom and when? A small random sample of respondents are selected and with their consent, fresh questionnaire blanks are completed with the person who responded initially without perusal of the original. If that person is not available or refuses to participate a replacement may be taken from an over sample of the sub sample. The entire questionnaire or some of the important questions may be used for this purpose. If it is the latter the PI should indicate which questions should be repeated. Do not leave it to the interviewer to do so.

This may be conducted by the PI, members of the research team, or by selected motivated interviewers. However an interviewer who completed the questionnaire initially should not be used to interview that respondent for the repeatability study. The repeat should be conducted after a lapse of time, neither too short nor too long after the first interview. It may be an ongoing process during the study or immediately after it is completed, if the study is of short duration. The degree of agreement should be

calculated for each repeated question either by calculating the percentage agreement or the kappa index.

If measurements and laboratory tests are to be done as part of the study how will such data be tested for reliability? If one person is taking the reading will it be the mean of two consecutive readings? If two persons are reading independently, will the mean be taken? Whether one or two persons are used and if the differences in the two readings are substantial, what remedial action will be taken? If laboratory tests are needed how many technicians will be used? How will you test for intra and inter technician variability? It is necessary to plan ahead to ensure reliability.

Reliability is increased by standardizing the instruments, regular checking, training the users and constant monitoring of the techniques used. Validity of certain questions and instruments (regular or modified) used in studies should be checked for *sensitivity and specificity*. Sensitivity is the rate of true positives while specificity is that of true negatives.

3. CONSTRUCTION OF THE QUESTIONNAIRE

3.1 Introduction

The top left hand corner of the questionnaire should have the word *confidential* in bold type, and on the right should be the *serial number* or unique number for the respondent. This number should be written on each page of the questionnaire to facilitate bringing together any dislodged pages and is also necessary for record linkage. The *title of the study* should be on the top of the page

The interviewer should make an introduction at the commencement of the interview. This could be explained at training or given in the *instructions manual*. If it is a self administered mail questionnaire, it may be necessary to give the following instructions at the head of the questionnaire or given as a note in the letter sent to the respondents along with the questionnaire:

1. Name and designation of the Principal Investigator (PI) or the organization conducting the research
2. The general objectives of the study
3. The information given will be confidential
4. If measurements, clinical examinations laboratory tests, taking specimens of faces, urine and especially blood are to be done, indicate when and where these will be carried out, and mention their non-maleficence.

The promised confidentiality could be made explicit if the name and address of the respondent is placed first

in this section, the detachable part shown to the respondent, and stated that this part will be detached by the PI before processing the completed questionnaire. In this situation the unique number should be placed below the detachable line.

3.2. Design and layout

The design and lay out of the questionnaire is important for ease of its administration, editing and for processing the data. It include sections and subsections, each of them well spaced with relevant questions in each section given in an orderly form. It may also include instructions to the interviewers, such as to cue the respondent before each section, when and how to use prompts and probes. The sample questionnaire given below is not pre-coded. Consult a data entry operator.

The first section usually deals with identifying and demographic information and others depending on the study.

Example

- Section 1 Identifying and demographic information
- Section 2 Knowledge, attitudes, practices, beliefs etc.
- Section 3 Use of health care services, etc.

Section 1 - Identifying information

This information may be considered under two subsections

- (1) General
- (2) Personal

(1) General Information

Relates to geographical location, province, district, sector (urban, rural and estate or plantation) Medical Officer of Health area family health worker area, village, name and address of school etc If the predetermined respondent or an acceptable proxy cannot be contacted at the first visit, the interviewer may have to make revisits. If the PI has decided that it should be no more than three visits, include a "boxed format" for this purpose in the questionnaire. It should include the name or number allotted to the interviewer, dates of visits and the results. Prescribed codes given in the questionnaire should be indicated as a number in the "results box".

The codes may be as follows: -

Code Number

1. Interview completed
2. Respondent not available at time of visit
3. House closed or demolished
4. Not a dwelling
5. Dwelling not located
6. Moved out of the area
7. Refused
8. Other (specify)

If the respondent refused to be interviewed it is suggested that at least the basic identifying personal information be obtained.

I will assume that the study unit is the nuclear family and the respondent is the female head of the family or

a permitted proxy. Unless stated otherwise, indicate who the respondent was.

Mark a 'X' in the relevant box

Respondent?	
Wife	<input type="checkbox"/>
Husband	<input type="checkbox"/>
Wife and husband	<input type="checkbox"/>
Daughter \geq 16 years	<input type="checkbox"/>
Other	<input type="checkbox"/>

2. Personal

Personal identifying information is based on universal variables (operationalised where necessary) such as age, sex, ethnic group, religion, marital status, education, occupation and income.

In this article I will give *examples* (Ex), *questions* (Q), *comments* (C), and *revised question/s* (RQ) where necessary.

Ex 1. Q. What is your age?

C. Appears to be straightforward but it is vague and not clear

RQ. What was your age at the last birthday?

OR What was the age you completed?

OR What will be your age at the next birthday?

Age in years Unknown Estimate

[Instructions to the interviewer. Check birth certificate or National Identity Card. If not available and the age is unknown give an estimated age with

reference to known events. If the birth certificate is available, copy]

Day

Month

Year

Note : Do not have age groups, this could be done later.

Ex 2. Q. To which ethnic group do you belong?

[Interviewer: The ethnic group required is that of the *respondent*, the husband may belong to another group. The respondent may be a child of parents of mixed ethnicity, then he/she belongs to that of the father].

Sinhalese

Sri Lanka Tamil

Indian Tamil

Moor

Other

.....(specify)

Ex. 3. Q. What is your marital status?

C. Vague – it may be misunderstood

RQ₍₁₎ Are you married? (by registration or customary is accepted)

Yes

No

—— Skip Q 2

[Interviewer – Refers to the most recent marriage if more than once]

RQ₍₂₎ [If yes] are you living together? Yes No

[If No] are you separated
divorced
spouse abroad
spouse dead

Ex 4. Q. What is your educational level? (Refers to a person who has completed her education)

C. Vague – operationalize this and ask for grade/year completed

RQ₍₁₎ Have you ever been to a regular school?

Yes No → Skip Q.2

RQ₍₂₎ (If yes) What was the grade/year you completed?

Grade or Year

Note -Do not group the data, it could be done later if necessary.

Given below are examples of questions some of them require rephrasing and or rewording. The sub-headings given for the following examples indicate the type of question and possible errors.

1. Vague and ambiguous

Ex 5. Q. 1 What is your weight?

C. It appears to be a simple question. The degree of accuracy required is not given and when it was last taken and what type of weighing scale was used is not

asked. In addition the time of day when taken, and clothing worn may make a difference.

RQ₍₁₎ Do you think that you have gained or lost weight during the last 3 months?

Gained Lost Don't know

RQ₍₂₎ Did you weigh yourself during the last 3 months?

Yes No — Skip Q3 & 4

RQ₍₃₎ [If yes} Did you weigh yourself using a spring or beam balance.? [Interviewer – indicate difference].

Spring Beam Don't know

RQ₍₄₎ What was the weight at the most recent weighing within the last 3 months?

Kilograms Pounds

Note: If weight is an important variable the researcher should weigh using standard instruments and techniques.

Ex 6. Q. Did X who is 3-4 years old have a diarrhoea?
C. Vague - diarrhoea should be operationalized and the time period indicated.

RQ. Did X who is 3 - 4 years old have three or more watery stools within 24 hours during the last 7 days.

Yes

No

Don't Know

Ex 7. The following two questions are taken from a questionnaire used to evaluate an orientation programme for doctors

Q1. What was the duration of training you received during the orientation programme?

Days

Q2. In your opinion, if the duration is unsatisfactory recommend the ideal duration.

Days

C. The two questions are vague and ambiguous. In Q1 the duration may mean the number of working days (excluding the weekends and holidays) or it may be the total duration of the course, which include non-working days. In Q2 the reference is "If the duration is "unsatisfactory", it is better to use the term inadequate rather than unsatisfactory. The term "ideal" is subjective.

RQ₍₁₎ How many working days of training did you have during the orientation programme?

Days

RQ₍₂₎ In your opinion was the number of days of

training you had, adequate or inadequate?

Adequate Inadequate No opinion

RQ₍₃₎ [Ask only if the answer to Q2 is inadequate]
What do you think will be an adequate number of working days of training ?

Days

Ex 8. Q Are most people you know satisfied with the medical services given at the health clinic in your area?

Yes No Don't know

C₍₁₎ "Most people you know" is vague. Does it refer to the clinic users? The respondent may not have attended the health clinic in her area. If she has attended the clinic for the first time she may not know many attendees.

C₍₂₎ The term 'satisfied' is subjective. If the answer is Don't know what does it mean?

C₍₃₎ This question should be replaced by more than one question. It is preferable to personalize this question.

RQ₍₁₎ Have you attended the "health clinic" in your area?

Yes No No clinic in the area

Don't know [If not yes] Skip Q 2 and 3

RQ₍₂₎ [If yes] In general were you satisfied or not with the services given at the health clinic?

Satisfied Not satisfied Don't know

RQ₍₃₎ In general, do you think that most of the others attending this clinic were satisfied or not?

Satisfied Not satisfied Don't know

2. Evoking a desired response

Ex 9. Q. You don't think that a breast fed baby should be weaned as early as six weeks after birth

Yes No Don't know

C- The question evokes a negative [No] response especially when the words "as early as" is used and if stressed by the interviewer

RQ. Do you think that a breast fed baby should or should not be weaned at six weeks after birth?

Should Should not Don't know

Ex 10. Q. Don't you think that a baby should be given only breast milk for at least the first three months after birth?

Yes No Don't know

C. Evokes a positive (Yes) response, the words “ don’t you think” and “at least” in the question evokes this response.

RQ. Do you think that a baby should or should not be given only breast milk for the first three months after birth?

Should Should not Don’t know

3. Compound (“double barrelled”)

Ex 11. Q. How many living children do you have and how many are going to school?

C. If the answer is “none” – does it mean that she has no living children, or that she has, but they are not of school age, or even if some are of school age, they are not attending a school. Clarify by asking several questions.

RQ₍₁₎ Do you have living children?

Yes No Skip Q2,3, and 4.

RQ₍₂₎ [If yes] How many?

RQ₍₃₎ How many in the following age groups?

0-5 years
6-12 years If 0 skip Q4
>12 years

[Mark the three boxes, if none mark 0]

RQ₍₄₎ How many of these 6-12 years of age are attending a regular school?

Number [Interviewer check with Q₍₂₎ and Q₍₃₎]

Ex 12. Q. Did any of the doctors and nurses at the clinic answer your questions regarding the prescribed treatment schedule?

Yes No

C. It is a “double barrelled” question. The doctor may have and not the nurse, the nurse may have and not the doctor or both have or have not answered the questions. It is assumed that the person has asked questions.

RQ. Ask two questions, one refers to doctors and the other to the nurses.

RQ₍₁₎ Did any of the doctors at the clinic answer your questions regarding the prescribed treatment schedule?

Yes No Questions not asked from Dr

RQ₍₂₎ Did any of the nurses at the clinic answer your questions regarding the prescribed treatment schedule.

Yes No Questions not asked from Nurse

4. Hypothetical

Ex 13. Q What would you do if your house caught fire?

C- This is a hypothetical open question. It is hypothetical since the respondent could only imagine what she may do in this situation. The answer may change from one time to another. Avoid hypothetical questions

5. Double-negative

Ex 14. Q Do you not think that polluted drinking water is not a problem in this community?

Yes No Don't know

C- There are two negatives and the question is not clear.

RQ. Do you think that polluted drinking water is or is not a problem in this community?

It is It is not Don't know

6. Preferences

Ex 15. Q. Do you prefer mangoosteen to mango?

Mangosteen Mango

No preference Unspecified

C- Tends to evoke the response in favour of mangosteen. It is assumed that the respondent has

eaten both recently.

RQ₍₁₎. What is your preference between mangosteens and mangoes?

Mangosteen Mango

No preference Unspecified

Ex16. Q. What is your preference between caviar and dried fish?

Caviar Dried Fish

No preference Unspecified

C₍₁₎ Only a few elite have eaten caviar which is pickled sturgeon roe. It is unknown versus known and in addition they are not comparable.

RQ₍₂₎ Which is your preference between caviar and cod roe?

Caviar Cod roe

No preference Unspecified

C₍₂₎ They are both roe of fish and hence comparable. It is a silly question to be asked from most people in this country. Avoid such a question.

Ex 17. Q₍₁₎ What is your preference between giving breast and other milk for an infant 6-12 months of age.

[Interviewer explain what is meant by other milk]

Breast other milk Skip Q2 & 3

(If breast milk is the answer an additional question may be asked if necessary)

Q2. Please mention the reasons why you prefer to give breast milk to other milk?

<u>Reasons</u>	<i>Mark as many</i>
Nutritious	<input type="checkbox"/> 1
Clean	<input type="checkbox"/> 2
Inexpensive	<input type="checkbox"/> 3
No preparation of bottles	<input type="checkbox"/> 4
Other	<input type="checkbox"/> 5specify

C- It is a multiple response closed question.
More reasons may be added after the pre-test
[If more than one reason is given a further question may be asked]

Q3. Which one of these reasons is the most important.

Number

7. Recall

During the planning stage the most suitable recall period for each question to be asked should have been tentatively decided. This could be checked and

corrected, if necessary, at the pre test.

EX18. Question for Sri Lankan females (age 12 years or more)

Q 1 Have you attained menarche (first menstrual period) ?

Yes No Skip Q2 & Q3

C₍₁₎This question may be worded to be clearer or the most appropriate term used in the local language

[If yes]

Q. 2 What was your age when you had the first menstrual period.

Age in years Don't know Skip Q3

C₍₂₎ If the purpose is to determine the mean age at menarche, it is preferable to use female school children 12 years or more.

Q.3 Can you give the year month and first day of your first menstrual period?

Year month day

[Mark what is known]

Ex 19. Question to a mother with 4 living children all of them less than 10 years of age. The index child is X who is 5 years.

Q. How many times was X ill or had an injury?

Times

C₍₁₎ It is a poor question. The period is not specified and the severity of the illness or injury not defined.

RQ₍₁₎ Was X hospitalised for periods more than 24 hours for an illness or an injury during the previous 12 months.

Yes

No

Skip Q2

C₍₂₎ At the pretest check whether 12 months recall is appropriate or not.

[If yes]

RQ_[2] How many times for an illness

RQ_[3] How many times for an injury

8.1. Agree/Disagree

[Introduction by interviewer – Now I will make some statements, please tell me whether you agree, disagree neither agree nor disagree, with them].

Ex 20. Q. A woman should not have a head bath during the entire duration of the menstrual period.

Agree Neither agree nor disagree Disagree No answer

Q₍₂₎ If a girl is a virgin she should have bleeding from the vagina at the first vaginal sexual intercourse

Agree Neither agree nor disagree Disagree No answer

8.2. True/False (correct/incorrect)

Ex21. [Introduction – I will make some statements, please tell me whether you consider them to be true or false (correct/incorrect, right/wrong)]

Q₍₁₎ Fish liver is a good source of vitamin A.

True False Don't know

Q₍₂₎ Colostrum causes stomach problems in the newborn

[Interviewer – explain. Colostrum is the breast milk secreted during the first few days after the birth of the baby]

True False Don't know

Q₍₃₎ A person who gets rabies will die from this disease

True False Don't know

NOTE - In a series of statements such as in 8.1 and 8.2, arrange them in a way that there is a mix in the answers (about equal in number) so that a trend of positive or negative is not evident to the respondent.

9. Ranking

The responses to a question may be ranked either from low to high or vice versa. These may also be on a scale (0-10%, 21-30%,.... 91-100%) or have a score weighted or otherwise, which will permit calculation of a cumulated score for a series of related questions. This is useful for questions on attitudes.

The questions given below relate to the degree of satisfaction expressed by a client attending a specialized clinic; as part of an audit of care services provided, such as in a diabetic clinic.

Ex22. Q Were you satisfied with the history taking of your condition by the doctor at your first visit to the clinic?

Very satisfied 1 Satisfied 2 No opinion 3

Dissatisfied 4 Very dissatisfied 5

C₍₁₎ The question may evoke a positive response therefore use both extremes in the question.

RQ₍₁₎ Were you satisfied or dissatisfied with the history taking by the doctors at your first visit to the clinic?

Very satisfied 1 Satisfied 2 No opinion 3

Dissatisfied 4 Very dissatisfied 5

C₍₂₎ The question does not ask for the degree of satisfaction/dissatisfaction

RQ₍₂₎ How satisfied or dissatisfied were you with the history taking by the doctor at your first visit to the clinic ?

Very satisfied 1 Satisfied 2 No opinion 3

Dissatisfied 4 Very dissatisfied 5

C₍₃₎ If at the repeatability test taken at an

appropriate time interval, the degree has moved from one extreme rank to another, that response may be considered to be unreliable.

C₍₄₎ The scoring of the above answers gives a low score for “satisfied” but if the scale is reversed then the score will be high..

C₍₅₎ During analysis the five ranks may be amalgamated to three ranks such as :-

Satisfied No opinion Dissatisfied

Note: The responses may tend to be at the two extremes. This may indicate doubtful reliability.

10. Attitudes

Attitude questions are difficult to construct because often they border on being questions on knowledge.

Ex 23. Q₍₁₎ How strongly do you agree or disagree that it is better to stay at home rather than do a job for a small salary?

Strongly agree 1 Agree 2 No opinion 3

Disagree 4 Strongly disagree 5

Q₍₂₎ Will you object or not to schoolteachers giving information on human reproduction to year/grade 8 students.

Yes No No opinion

Q₍₃₎ Do you agree or disagree that all patients with AIDS should be isolated in camps meant for this purpose?

Agree No opinion Disagree

Q₍₄₎ How strongly do you agree or disagree with the statement “if a woman has an unwanted pregnancy and request termination before the 20th week of gestation a medical doctor should be legally permitted to do so”

Very strongly agree 1 Strongly agree 2

Neither agree nor disagree 3

Strongly disagree 4 Very strongly disagree 5

11. Sensitive

11.1 Family income

The question on family income may be a sensitive one to some respondents especially those having low or high incomes and those receiving government or other aid from a non-government organization.

Ex 24. Q What is the monthly income of your family? (asked from the female head of the family).

Rs. Don't know

C₍₁₎ The question is vague The variable income should have been operationalized.

Many families, such as those self-employed, farmers, businessmen, part time workers may not have a regular monthly income. It is better to ask for an annual income and calculate the average monthly income if so desired.

RQ. What was the income of your nuclear family for the last 12 months? (Probe)

	Rupees
Your income, salary and or from self employment	<input type="text"/>
Your husband's income	<input type="text"/>
Money received from children	<input type="text"/>
Money received from rents, leases, land etc.	<input type="text"/>
Money received from all other sources	<input type="text"/>
Total income	<input type="text"/>

[If not known mark N.K. in the relevant box, if Nil mark 00]

C₍₂₎ Data on income may be grouped since it is difficult to obtain details. However, make the group lengths equal (if possible) so as to calculate the mean income for a group of respondents. It is suggested that this question be asked at the end of the interview.

A socio-economic matrix, which includes ownership of vehicles, television, radios, telephone, mobile phone, etc. may be a better index of the socio-economic status of the family.

11.2. Personal

Sensitive personal questions may require desensitisation, cloaking, couching or funnelling [The interviewer to state; “Now I will ask you a few personal questions. Please answer them accurately. You may also refuse to answer them. Remember that your answers will be kept strictly confidential.]

Ex 25. Q. Have you at any time had an abortion done?

Yes

No

No answer

C₍₁₎ In this form the question is blunt, not clear and embarrassing. The answer will probably be ‘No’, even though it should be ‘Yes’

C₍₂₎ “Funnelling” is asking a few innocuous but related questions, which are asked before the required one.

RQ. If a married or unmarried woman has an unwanted pregnancy she may want that pregnancy terminated, this is called an induced abortion. Have you heard of it?

Yes

No

Skip Q2 & 3

PROMPT - Explain the difference between natural and induced abortion – if necessary

RQ₍₂₎. [If yes] Have you heard or known that any of your friends, neighbours or relatives had such an abortion done?

Yes No Don't know No answer

RQ₍₃₎. Have you at any time had such an abortion done by a medical or non medical person?

Yes No No answer

Ex 26. [The following question relates to a sexually active married woman]

Q How frequently do you have sexual intercourse?

C₍₁₎ This is blunt and vague. The type of sex (many types possible) and the time period to which the question relates is not mentioned.

C₍₂₎ Desensitizes with some innocuous questions before the required one.

RQ₍₁₎. How many years is it since you got married?

Years

RQ₍₂₎. Are you living together as husband and wife?

Yes No Skip Q3 and Q4

[If yes] Interviewer state – some couples have sexual intercourse often, while others not often, and still others rarely or not at all

RQ₍₃₎ How many times (approximately) did you have sexual intercourse during the last 4 weeks?

Times [if none mark 00]

C₍₃₎ The type of intercourse and whether it was with the spouse is not mentioned.

C₍₄₎ The respondent may be a sex worker or a promiscuous person having extramarital sex.

C₍₅₎ If the study is for purposes of family planning or family formation the interest is regarding vaginal sexual intercourse with the spouse.

RQ₍₄₎ How many times did you have vaginal sexual intercourse with your spouse during the last 4 weeks?

Times [If none mark 00]

C₍₆₎ The respondent woman may have had the menstrual period during the last 4 weeks or be pregnant, therefore due to cultural reasons may not have had vaginal intercourse. Some others may be in the inter menstrual period during part of the last four weeks. Therefore, preliminary questions may be required.

C₍₇₎ Questions used for desensitising and funnelling may or may not be processed.

12. Probes and Prompts

The required probes and prompts should be included in the questionnaire. Do not leave it to the interviewer to do so.

EX 27. Q₍₁₎ How many weeks pregnant were you when the baby was born?

Less than 28	<input type="checkbox"/>
28-37	<input type="checkbox"/>
38-40	<input type="checkbox"/>
41 or more	<input type="checkbox"/>
Don't know	<input type="checkbox"/>

[If don't know – PROBE]

- (1) Was the baby born early or late?
- (2) How early or late was the baby born?
- (3) What was the weight of the baby at birth?

Q₍₂₎ Were there any problems in the baby when it was born?

Yes No Don't know

[If Yes] What were the problems? (This is an open question)

.....
.....
.....

[PROMPT if necessary]

Were the problems such as difficulty to initiate breathing, feeble cry, jaundice, congenital abnormality etc.

EX 28. Q. There are modern and traditional methods to delay or prevent an unwanted pregnancy; what methods have you heard of?

[Interviewer - Tick those mentioned in the given list of all the methods.] The list should be given in the questionnaire.

PROBE [Interviewer to state – Just to make sure that you have understood the methods available, I will describe each of the available methods, including those that you have mentioned, please tell me if you have heard of it and also whether you or your husband has ever used it].

Pill - One way a woman can delay or prevent a pregnancy is to take a pill each day as prescribed by a health worker.

Have you heard of this method?

Yes No Skip question 2 on use.

[If yes] Have you ever used this method or not?

Yes No

Condom - A man can wear a rubber sheath known as a condom, to cover the erect penis during vaginal sexual intercourse to prevent the partner getting pregnant

Have you heard of this method?

Yes No Skip question 2 on use.

Has your partner ever used this method?

Yes No Don't know

C₍₁₎ Repeat in the same manner for each method.

C₍₂₎ In the probe there is an extra question (Q2) on ever use. If the study is on 'knowledge only' this question on use may be omitted, also if not heard. However the use question may be a check on heard
Note: This section may be given in tabular form in the questionnaire?

Method	Description	Heard		Ever used	
		Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
		Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
		Yes <input type="checkbox"/>	No <input type="checkbox"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

13. Check Question

Ex 29. [If the respondent has children]

Q₍₁₎ How many living children do you have?

Number (e.g. 4)

To check for repeatability introduce a check question further down in the questionnaire

Q₍₂₎. How many girls and boys do you have?

Girls	<input type="text"/>
Boys	<input type="text"/>
Total	<input type="text"/>

C. The total in the check question should be 4. If there is a difference the interviewer should probe.

14. Skip/Jump/instructions

A skip instruction given in the questionnaire is one that indicates the question that is not relevant and hence should "jump over" or be skipped. These may be one or more. There are various ways of giving such an instruction e.g.: [if no] go to question X or skip questions X and Y. You may also do it by "boxing " and use of arrows. The skip is always down and never up the questionnaire. Examples of skip instructions are given earlier.

15. Language of the questionnaire

The language of the questionnaire depends on the researcher, interviewer and the respondents. The researcher may construct it in a preferred language-say it is in English. Having done so, have someone who is proficient in both English and Sinhala to translate into Sinhala (The language to be used in the interview) and have a third person translate it back into English. The procedure is similar if the required language is Tamil.

There may be differences, ambiguities or there is no suitable word in Sinhala or Tamil for the English equivalent. However the meaning of the question should not change due to translation.

If the study is for a thesis or dissertation in partial fulfilment for the postgraduate degree, the

questionnaire should be given as an appendix. If it is for a journal article this may not be necessary, however the editor or a reader may call for the questionnaire from the author.

4. References

1. Selltiz C, Jahoda M, Deutsch M and Look S.W. Research Methods in Social Relations. Henry Hott and Company Inc. U.S.A. 1959;550.
2. WHO Division of Family Health. A workbook on how to plan and carry out research on the risk approach in Maternal and Child Health including family planning, experimental edition. FHE/MCH/RA.84.1 Geneva 1984;147.
3. Chalmers J, Lutz M. Presenting Survey Information, International Epidemiological Association. Printed in Switzerland 1989;11-26
4. Sivagnanasundram C. Learning Research, Print Graphics. 4 Nelson Place, Colombo 6. 1999; 116.

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