# QUESTIONNAIRE DESIGN WORKSHEET

CMED 6203, January 2015

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**OBJECTIVES**

- **PART 1: THE IMPORTANCE OF CLEAR OBJECTIVES**
  - Stages of Research
  - Questions for class discussion
  - Development of the WHOQOL

**PART 2: CHOOSING A DATA COLLECTION METHOD**

- Options
- Mail, Telephone and Personal Interviews
  - Factors affecting Choice of Interview vs. Mail
  - Telephone vs. In-Person
- Unobtrusive Measurements
- Qualitative Data

**PART 3: DESIGNING THE QUESTIONNAIRE**

- Design Guidelines
- Pretesting a Questionnaire

**PART 4: WORDING QUESTIONS**

- The Fragility of Question Replies
- Framing
- Guidelines for Phrasing Questions
- Basic Attributes of Questions

**PART 5: CHOOSING RESPONSE SCALES**

- Some Options:
  - Beware of Yes - No responses
  - Should you include a Middle Category?
  - Likert Scales
- Scale Values
  - Verbal Frequency Scales
  - Forced Ranking Scale
  - Paired Comparisons
  - Numerical Scale
  - Visual Analogue Scale
  - Skip Patterns

**PART 6: ACCURACY OF THE RESPONSES**

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- Bias
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Objectives

This is a classroom interactive presentation, intended to engage students in proposing solutions to common questionnaire design challenges. By the end of the session, participants will

1. Be aware of different approaches to questionnaire design and how these are suited to differing study purposes. For example:
   - how may survey questionnaires differ from those for clinical trials?
   - how do hypothesis generating and hypothesis testing questionnaires differ?

2. Understand, and know how to apply, basic principles of questionnaire design. For example,
   - The importance of clarifying study objectives & linking these to the questions to include
   - Formulating clear questions
   - Understanding the concepts of bias, validity & reliability and how to apply these in phrasing questions
   - Ways to encourage accurate responses
   - Ways to encourage high response rates
   - The process of pretesting a questionnaire.
**Part 1: The Importance of Clear Objectives**

Decide what kind of information you wish to collect. Set clear objectives!

(Under universal rule: vague objectives lead to endless arguments over question wording)

Ask yourself repeatedly "Precisely what information do I want to obtain from this question?" E.g., are you measuring attitudes, opinions, beliefs or values? Needs or desires, or satisfaction? Disability or handicap?

One guideline is to ensure your objectives are SMART: specific (e.g. not “to survey the opinions of patients at this hospital”), measurable, achievable (i.e. not “to prove the existence of God”), realistic (not too broad, not too narrow) and timely (i.e. can be answered within the time-frame of the study).

Note that the phrasing of objectives, and therefore of questions in a questionnaire, typically varies according to the ‘stage’ of your research. How do you conceptualize your study?

**Stages of Research** (adapted from the drug trial stages, National Cancer Institute)

- **Stage I** - Hypothesis development; exploratory or pilot studies; initial survey of health problems to establish more precise study objectives, etc. Often qualitative, exploratory methods (small group discussions, unstructured interviews, open-ended questions). This stage may be sub-divided into steps that progress from less to more structured (class exercise: think of some examples)

- **Stage II** - Methods development. Refining the design of the intervention, developing questionnaires or health measurement tools, etc.

- **Stage III** - Hypothesis testing - evaluation studies that focus on efficacy, generally using RCTs in selected samples of people. This is tight research in the quantitative tradition, with an emphasis on internal validity. Uses closely structured, standardized questionnaires.

- **Stage IV** - Defined population trials: the beginning of effectiveness studies. Still using relatively rigorous research methods, but now in the general population rather than on carefully selected patients. May include open-ended questions, for example to identify possible side-effects or other issues not previously the central focus of attention.

- **Stage V** - Demonstration project: general dissemination, studying how well the intervention can be administered under normal population circumstances. Often very brief data collection questionnaires – “Rate your overall feelings of healthiness on this 1 to 10 scale.”

The last, diffusion, stage can be broken into steps:

- **Stage V-1** – raising awareness among decision makers of the programme
Stage V-2 – adoption by decision makers, so studies of how they change their behaviour.

Stage V-3 – implementation phase: use by some providers (possibly use non-interview data, such as sales figures).

Stage V-4 – maintenance: retention by the organization, and continued use (routine data collection via sales figures, etc).

Questions for class discussion:

- At which stage would you most likely use interviews rather than written questionnaires?
- When would you be most likely to use a pre-structured health measurement tool?
- At which stage would the interviews typically be the longest?
- At which stage(s) might mechanical data collection methods be useful?
- Why would you use a ready-made measurement scale rather than develop your own questionnaire?
Development of the WHOQOL

Story time: Be aware of the time-line for developing a good health measure.

(W.H.O. Quality of Life instrument)

The WHO began by preparing a detailed protocol that specified the general form and content of the WHOQOL; it would be a health profile measure covering broad domains of quality of life (physical, emotional, financial, role performance ...), each divided into facets. Domains and facets would be chosen to be applicable across cultures. An iterative discussion process then involved focus groups in 15 field centres in 9 regions of the world. This led to the selection of six broad content domains, and produced definitions for 24 facets within the domains. The six original domains included physical and psychological health, level of independence, social relationships, environment, and spirituality, religion and personal beliefs.

Each field centre then formed an item writing panel which prepared objective and subjective questions representing each facet. Questions were to cover three complementary aspects of each facet: first, perceived objective questions would describe the person's behaviour or capacity (e.g., "How do you sleep?"). Second, subjective questions would cover satisfaction or dissatisfaction ("Are you satisfied with your sleep?"), and finally questions were written to cover the perceived importance of the topic ("How important is sleep to your overall quality of life?"). Questions were phrased to be applicable to healthy people as well as to those with severe impairments.

The questions written in each field centre were pooled, producing about 1800 non-duplicate items, from which 276 questions covering 30 facets (up from the earlier 24) were selected for a first test version. Field trials involved over 4,500 respondents in the 15 centres, and led to the production of the final, 100-item version. The 100 core items (which are cross-culturally applicable) can be supplemented by additional items of relevance to local settings. Time-line for this? About 5 years.

References


Part 2: Choosing a Data Collection Method

There are many ways to collect information on health; perhaps ideal to use a variety of methods (methods triangulation). There are no set rules, but the data collection methods should be suited to the study topic, the people being studied, to the study setting and the budget.

Options:

- Ask questions (written, in personal interviews, via web, etc); collect data by observation; use photography; ratings by an expert using a check-list; use automatic recording devices; consider unobtrusive measures.
- Do not automatically conclude you need a questionnaire!
- If questionnaires, then choose between
  - personal interview
  - meet the person & leave a questionnaire for completion later (discussion point: when might this be useful?)
  - telephone interviews
  - mail a questionnaire (with repeat mailings to non-responders)
  - web administration
- Or a combination: Perhaps different at different stages of a study, or use different methods for different types of respondent? (Discussion point: what are potential problems with this?)

How will you choose? Classify these approaches in a logical structure: what dimensions can we arrange them around: what are the contrasting attributes of different data collection methods?

Some examples:
- Accuracy (susceptibility to bias, validity)
- Efficiency (cost per unit of information)
- Directiveness of the procedure (will the data collection influence the responses?)
- Acceptability to respondents
- Ethics of using each approach.

(Discuss pay-offs between these: which is most important?)
Here is an example of just one of these topics:

**Directiveness:**
Consider the progression from
- Structured Interview → Open Interview → Survey questionnaire → Participant Observation → Observation → Unobtrusive Measurement → Secondary Analyses of Records (but the records may have been collected using structured interviews, so may be biased).

(Discuss advantages & disadvantages of each way of collecting the data; a comparison is on the next page. You may want to modify this)
<table>
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<tr>
<th>Description</th>
<th>Advantages</th>
<th>Disadvantages</th>
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<tr>
<td>Face to face interviews</td>
<td>- allows for full range of attitudes to be expressed can probe for detail</td>
<td>- respondents may not have time to reflect - time and resource intensive requires skilled interviewers</td>
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<tr>
<td>Self-completed questionnaires</td>
<td>- quicker and less costly - avoids interviewer bias - data can be collected quickly if done in person (not for mail surveys) - allows large number of respondents to be surveyed - respondents may feel more comfortable answering sensitive questions</td>
<td>- questions must be well-structured - richness of detail is limited to written comments - questions cannot be clarified - not sure who completed it! - response rates usually low if mail survey; varies depending on topic and participants - literacy level may restrict use may need to translate</td>
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<tr>
<td>Telephone interviews</td>
<td>- requires less time and expense than face-to-face - reduces nonverbal interviewer bias - instructions &amp; questions can be clarified - eliminates personal risk to interviewer</td>
<td>respondents may not have time to reflect on answers - easy for respondents to break interview before end - can be seen as invasive, but less so than face-to-face interview - respondents may not answer sensitive questions truthfully respondents have to have a phone</td>
</tr>
<tr>
<td>Observations</td>
<td>- allows observation on nonverbal behaviour occurs in natural environment</td>
<td>- little control over extraneous factors that may affect data hard to quantify information expensive, so limited sample size</td>
</tr>
<tr>
<td>Focus groups</td>
<td>- allows investigation of wide range of perceptions about topic - can collect in-depth information and opinions - all participants can contribute - structured coverage of topics can be inexpensive if existing groups used</td>
<td>- limited number of structured questions can be used - some lines of questioning can stall with some groups some participants may dominate - personality conflicts can arise between group members - only represents those participants can be expensive if large number of groups</td>
</tr>
<tr>
<td>Case study</td>
<td>- rich in detail - useful to understand context of a program</td>
<td>takes time to complete variation in how people record details of program not generalizable</td>
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Mail, Telephone and Personal Interviews
(Adapted from Dillman, p. 74)

<table>
<thead>
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<th>Interview</th>
<th>Mail</th>
<th>Web</th>
<th>Phone</th>
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<td>Sampling list available</td>
<td>***</td>
<td>***</td>
<td>0</td>
<td>***</td>
</tr>
<tr>
<td>If widely dispersed</td>
<td>0</td>
<td>***</td>
<td>***</td>
<td>**</td>
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<td>In special locations</td>
<td>***</td>
<td>*</td>
<td>*</td>
<td>**</td>
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<tr>
<td>Control over selection</td>
<td>***</td>
<td>*</td>
<td>0</td>
<td>***</td>
</tr>
<tr>
<td>Finding the people selected</td>
<td>**</td>
<td>*</td>
<td>0</td>
<td>***</td>
</tr>
<tr>
<td>Response rates</td>
<td>***</td>
<td>**</td>
<td>*</td>
<td>***</td>
</tr>
<tr>
<td>Avoiding bias from refusals</td>
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| Questionnaire design              |           |      |     |       |
| Permissible length                | Long      | Short| Medium| Medium |
| Complexity of questions           | ***       | **   | **   | *     |
| Open ended questions?             | ***       | *    | **   | **    |
| Control of sequence               | ***       | *    | *    | ***   |
| Tedium questions                  | **        | 0    | 0    | **    |
| Avoids item non-response          | ***       | *    | ***  | ***   |
| Use visual stimuli                | **        | ***  | ***  | 0     |

| Accuracy of answers               |           |      |     |       |
| Avoids social desirability        | *         | **   | **   | *     |
| Avoids interviewer error          | 0         | ***  | ***  | **    |
| Avoids contamination               | **        | *    | *    | ***   |
| Can respondent consult someone else? | **        | ***  | ***  | *     |

| Administration                    |           |      |     |       |
| Skills required                   | **        | *    | *   | ***   |
| Costs                             | ***       | *    | 0   | ***   |
Factors affecting Choice of Interview vs. Mail:

Do you need to interact with the respondent? (e.g. to administer short-term memory tests)

Does the topic tend to influence the response rate (e.g. drug use, sex, etc)? If so, use interviews

Is an accurate, recent mailing list of qualified respondents available?

Does your study have to be done in a specific location (e.g. a classroom, or a clinic)? If so, personal interviews!

Can the respondents both provide and record their answers? (The more complex a questionnaire, the less feasible is a mail survey)

Are the respondents widely dispersed? If so, mail will reduce costs.

Is complete anonymity necessary? Would respondents be threatened by talking to someone, beyond merely recording their answers? If so, mail is preferable.

Telephone vs. In-Person:

Does your study have to be done in a specific location (e.g. a classroom, or a clinic)? If so, interviews!

Does the interview require showing the respondent something (e.g. the geometric designs used in various assessments of cognitive impairment)?

Do you have to see the respondent to judge if they should be in the study? Is there a quota based on appearance or observed behaviour of the participant? If so, personal interview is necessary.

Is it possible that the interviewers may bias their selection of respondents? If so, use phone.

Is it possible that others may overhear the interview and to influence the way the person responds? If so, use telephone, as others are less likely to overhear.

The possibility of establishing greater rapport makes the personal approach preferable for a long interview.

Is there an adequate telephone number list, or can random digit dialling be carried out efficiently?

If interviews are to cover a wide geographic area, telephone is preferable.
Unobtrusive Measurements

These are data collection procedures which, unlike questionnaires or interviews, do not require active involvement of the respondent.

This has been called "non-reactive" measurement, meaning that people are unlikely to modify their behaviour, attitudes, etc, if they are not aware that they are being observed.

Cf. Heisenberg & quantum mechanics: we cannot truly know the state of a system as the process of measurement alters whatever we are trying to measure.


- Floor tiles around museum exhibit showing hatching chicks have to be replaced every six weeks, compared to years in other parts of museum.
- Gerry Morris London bus drivers study: recorded the waist size of pants issued to bus drivers and to the ticket collectors. (Drivers, being sedentary, had larger waist-band measurements and this correlated to CVD risk).
- Garbology (e.g. looking for whisky bottles in trash cans) to infer consumption patterns in the area.
- Distortions in children's drawings to indicate their attitudes towards the topic (e.g. size of mother & father in a drawing).
- Observing the face or other body posture of your patient to look for signs of pain, rather than asking them.
- Using data on work attendance & productivity rather than asking them about their level of disability or handicap.
- Racial attitudes indicated by degree of clustering of black and white students in lecture hall.

Unobtrusive measures may be under-used in health research: can you think up some ideas for your field? What about measuring the dietary habits of teenagers?

Discuss advantages and limitations to unobtrusive measures. How to validate?
Qualitative Data

Qualitative data can supplement quantitative, especially in the early stages of research, and in guiding decisions about content of eventual questionnaire (see presentation on qualitative & quantitative methods in Index of Course Notes). The challenge in qualitative analysis lies in standardizing data reduction.

Analysis (e.g. of transcripts) is carried out sequentially; provisional analysis of early phases of data collection guides the design of subsequent stages.

Stages:

1) Observe & listen to evidence made independently of the observer (i.e. volunteered, rather than elicited by probing questions). For example “What is their conception of health-related quality of life?”

2) Identify & define the concepts proposed by respondents; classify these into key themes; the classification should come from them, not from your ideas. You may propose initial hypotheses, which then guide further observations.

3) Use probing questions to check on the relevance of your listing of concepts (e.g. physical, emotional, spiritual, financial quality of life, etc). Establish how consistently respondents identify with these concepts; are there sub-categories within them?

4) Incorporate these findings into a provisional and evolving model of HRQOL.

5) Present findings.

Reference; Berg BL. Qualitative research methods. Boston; Allyn & Bacon, 1989.
Part 3: Designing the Questionnaire

Design Guidelines

1. Consider three major parts: introduction, body, and concluding section.
   a. What should these include for your questionnaire?

2. Importance of the introduction: most refusals will come at the start. The initial questions set the stage and influence the respondent's expectations about what is to come. Phrasing of the introduction orients the respondent (Health survey? Disability survey?) and affects responses.

3. Start with questions most likely to be seen as relevant by the respondent. Avoid any that might be threatening or difficult to answer. Do not start with an open-ended question (too demanding), or with a long and complex question. Make sure the first question is neutral; it should be applicable to everyone (“How would you describe your health in the past week…?”).

4. Themes should flow easily from one to the other: place questions in a logical sequence. Group questions on the same topic together; avoid jumping from subject to subject. Place interesting and informative items first; place potentially objectionable questions in any topic area at the end of that section. Consider placing items that use the same answer scales together.

5. In sequencing questions, consider whether to go from general to specific questions, or vice-versa. For example, in asking about abortions, 2 groups were asked whether they would accept an abortion if a birth defect is suspected. The “yes” response was 84% and 83% from the 2 groups, so they were equivalent. A general question on acceptance of abortion was asked in one group before, and in the other group after, the specific question. 61% accepted abortion in general when the question was asked after the question on birth defects; it was 48% when the general question came first. The response to every question is influenced by the preceding questions; assume that order effects are the rule; beware of general attitude questions!

6. Sensitive questions, sometimes including demographic material, are generally saved for last. Do not, however, place them on the back cover of the questionnaire where they may get missed (and be seen by others).

7. Never ask questions that are irrelevant; biased; embarrassing; or that cannot be answered accurately by that person.

8. Give clear and full instructions.

9. In a written questionnaire, limit the use of branching; make branch
instructions very clear. Computer assisted interviewing is valuable here.

10. Format the questionnaire to clearly indicate where the person responds (e.g., use a different font for answers). Arrange answer categories (male, female) on separate lines, especially where answers are expected on several lines (see the first example below). This way, categories are less likely to get missed. However, where the same response scale is used in several questions, these are normally written horizontally (cf. Likert scales)

11. In interviews, you can make use of cue cards to assist the respondent (i.e., write the answer options on a card and hand to the respondent). Note, however, that using cue cards alters responses. For example, people are more likely to choose complex responses (e.g. combinations of categories) when written on a cue card than when read out.

12. Do not overestimate motivation!

Pretesting a Questionnaire

An indispensable step, but too frequently overlooked! Plan enough time to do this: the fourth hazard of questionnaires is that you may have sufficient time and funding either to test the questionnaire thoroughly, or to administer it in the study, but not both).

Things you will check during pre-testing:

1. Have you included all questions necessary to test your hypothesis? Suggestion: run some analyses to make sure that you will get the information needed to answer all of the research questions or hypotheses.

2. Conversely, do you have a clear rationale for asking each question? For example, the interpretation of some questions in the Functional Living Index - Cancer seems unclear. In the light of mental imagery in cancer therapy, what is the correct answer to "How much time do you spend thinking about your illness?"

3. Check: do people understand all the words? Interview them afterwards and ask them to tell you what they understood by some of the questions. ("Do you feel sad or blue?" was understood by some to mean sad or cold).

4. Do all closed questions have an answer category that applies to each respondent? Are there "Not applicable" or "Don't know" or "Undecided" replies?

5. Are there other problems with the questions, such as double meanings, or multiple issues embedded in a single question?

6. How good was the response rate; did any questions irritate people? Does the questionnaire create a positive impression and motivate people to answer it?

7. Does any part suggest bias on the part of the researcher?
8. Consider talking to some of the respondents about how they found the questionnaire.

9. How long will it take to complete an interview? A rule of thumb that has proved reasonably accurate is "4 ticks per minute" - 4 answers (not requiring writing sentences) in an interview setting take one minute. Difficult questions take longer, shorter ones ("what is your age"?) take less time. If your questions involve the respondent looking at a card with pre-set answer categories, it can take 45 seconds or more per item.
Part 4: Wording Questions

The Fragility of Question Replies

Questions may seem simple, but are they? "Do you own a car?"

Other examples:
"How long do you normally work each day on your job?"

Positive versus negative question phrasing makes a crucial difference to responses:

In 1940 Donald Rugg asked two questions:
"Do you think the US should allow public speeches against democracy?"
and
"Do you think the US should forbid public speeches against democracy?"

Support for free speech was 21% in the first question (21% said "yes"), but 39% in the second version (i.e., 39% said "no": they did not want to countenance the prohibition). Likewise, questions on favouring more assistance to the poor receive more positive reaction than questions on increasing welfare.

Thus, phrasing a question positively does not give you the opposite response compared to phrasing it negatively.

Framing

Kahneman and Tversky introduced the concept of "framing" questions. As we just saw, a question and its obverse are not perceived as being opposite, so the way a choice is presented influences the response:

Presentation I: Imagine you are preparing for an outbreak of an unusual disease that is expected to kill 600 people. Two interventions have been proposed with the following outcomes:
Program A: 200 people will certainly be saved [72% favoured this option]
Program B: There is a 33% chance that 600 will be saved and a 67% chance that no one will be saved [28% favoured this option]

Presentation II: same scenario, but:
Program A: 400 people will die [22% favoured this option]
Program B: There is a 33% chance of 0 deaths, and a 67% chance of 600 deaths [78% favoured this program].

Here is a classic reference on framing:
Guidelines for Phrasing Questions

Unfortunately, there are many rules, admonitions and principles guiding how to phrase clear questions, but these tend to conflict with each other! For example, we wish to make questions brief, but also use simple words; questions should be made simple yet we should not talk down to respondents; we should not ask vague questions, but nor should we be too specific ...

Some guides:

- Bear in mind the population for whom you are writing the question. Phrases that are too difficult for some may be appropriate for others.

- Bear in mind the purpose of the study (or phase of the research); a question that is vague may be just right for an exploratory study, but not an analytic one.

- Unstructured (open-ended) vs. structured (closed) questions. Structure a question whenever possible – at least in the quantitative tradition.

- Verbatim responses to unstructured questions are hard to interpret.
- Consider semi-structured, specifying range of alternative answers.
- Recognize that unstructured questions increase the response task.
- Always try to use a numeric reply scale if possible: for education, do not say "high school / college / postgraduate", but ask "How many years of formal education have you had?"
## Common Problems with Questions

<table>
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<th>Problem</th>
<th>Example</th>
<th>Solution</th>
<th>Example</th>
</tr>
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<tbody>
<tr>
<td>Loaded questions</td>
<td>'Do you support laws for bicycle helmets to save human lives?'</td>
<td>Tone it down</td>
<td>Do you feel that bicycle helmet legislation is required to reduce injuries from bicycle crashes or collisions?</td>
</tr>
<tr>
<td>Compound questions</td>
<td>'How satisfied were you with the time and location of the sessions?'</td>
<td>Break it down</td>
<td>How satisfied were you with the time of the sessions? How satisfied were you with the location of the sessions?</td>
</tr>
<tr>
<td>Double-barrelled questions</td>
<td>'Do you breastfeed to save money?'</td>
<td>Ask in stages</td>
<td>Do you breastfeed? If yes, why?</td>
</tr>
<tr>
<td>Double negatives</td>
<td>'Do you agree or disagree with the following statement: “Lack of measles immunisations is not a problem in Ontario”.'</td>
<td>Remove a negative!</td>
<td>Do you agree or disagree with the following statement: Measles immunisation is a problem in Ontario</td>
</tr>
<tr>
<td>Leading questions</td>
<td>'Most doctors believe that lack of exercise leads to heart disease. Do you agree?'</td>
<td>Get rid of the bias</td>
<td>Do you agree or disagree with the following statement? Lack of exercise leads to heart disease.</td>
</tr>
<tr>
<td>Jargon or technical terms</td>
<td>Determinants of health</td>
<td>Say what you mean in everyday language</td>
<td>Factors which affect your health</td>
</tr>
<tr>
<td>Foreign phrases or slang</td>
<td>Raison d’être</td>
<td>Explain what you mean</td>
<td>Purpose</td>
</tr>
<tr>
<td>Acronyms and abbreviations</td>
<td>PHN</td>
<td>Spell it out</td>
<td>Public Health Nurse</td>
</tr>
</tbody>
</table>

Basic attributes of questions

1. **Focus.** Ask as precisely as possible exactly what it is you want to know. Think & speak like a lawyer! For example:

   **Wrong:** When do you usually go to work?
   **Better:** What time do you normally leave your apartment to go to work?
   (Note that the first does not indicate the metric in which the respondent is to answer; they could simply reply "Just as soon as I get up")

2. **Brevity.** Short questions reduce errors! Omit "or," "not" and strings of items:

   **Wrong:** When was the last time that you went to the doctor for a physical examination on your own or because you had to?
   **Better:** How many months ago was your last physical examination?

3. **Clarity** (does everyone understand the question in the same way?)

   **Wrong:** Ordinarily, do you take aspirin when you feel some discomfort or when you feel actual pain?
   **Better:** Do you usually take aspirin as soon as you feel some discomfort, or only when you feel actual pain?
   (This question was intended to present a dichotomy, which got lost in the verbiage of the original version. The respondent might respond "Yes, I do.") Vague questions produce vague, maybe hypothetical, answers!

4. **Vocabulary.** (Note the use of reading age formulae, etc.)

   **Wrong:** With what frequency have you experienced this of late?
   **Better:** How many times have you had this happen recently?

   **Wrong:** About what time do you ordinarily eat dinner?
   **Better:** About what time do you ordinarily dine in the evening?
   (People in the eastern US eat breakfast, lunch and dinner. Many in the Midwest eat breakfast, dinner, and supper).

   Use simple words: work instead of employment; hard instead of difficult; help instead of assistance; nearly instead of virtually, and so on.
   Beware of value-laden words: best, believe, democracy, bureaucracy, abortion, welfare, all, none, etc. Avoid loaded words such as "crisis," "disaster," which seem to call for a particular type of response.
Unfortunately, simplifying language may require longer questions – Oh Dear!

Dillman offers this example:

"Should the state sales tax on prescription drugs be reduced from 5% to 1%? Should we ‘simplify’ this to:

"Should the state sales tax on medicines that can only be bought under a doctor’s order be lowered so that people would pay 1 cent tax instead of 5 cents tax for every dollar they spend on such medicine?" (Good luck with that one!)

5. **Grammar.** The best questions are simple sentences (subject and predicate).

**Wrong:** What would you do when you had only a few things to buy and there were a lot of people in the checkout line?

**Better:** Suppose you have only a few things to buy. There are a lot of people in the checkout line. What would you do?

6. **Show criteria by which person should respond:**

**Wrong:** How important is it for the pharmacy to carry a large number of different brands of analgesic? (Here, some respondents may answer in terms of what is best for the store’s marketing policy, regardless of their personal preference).

**Better:** How important is it to you that this pharmacy carries a large number of different brands of analgesic?

7. **Time referents:** beware referring to time unless questions will be used in a very narrow time window:

**Wrong:** How many times have you played golf this year?

**Better:** How many times did you play golf during 2014?

8. **Giving examples** will increase frequency of selection of that example:

**Wrong:** What minor symptoms, such as headaches or soreness, have you experienced during the past month?

**Better:** Aside from major illnesses, what other minor symptoms have you had this past month?

9. **Double barrelled (or compound) questions:**

**Wrong:** Do you regularly take vitamins to avoid getting sick? (This is actually 2 questions. How should someone answer who takes vitamins, but not to avoid sickness?)

**Better:** Do you regularly take vitamins? Why or why not? (or, "If so, why do you take..."
Other examples: "Do you often get headaches and stomach aches?" "Do you and your family often go to the movies?" (How does a single person reply?)

10. **Leading questions** ("Don't you think that the nurses ought to be paid more?") These suggest a particular answer. "Virtually everyone experiences mild depression once in a while. Do you sometimes feel depressed?" (The introduction was an attempt to make it easier for the respondent to admit to a depression, but it seems to go too far.)

11. **Loaded questions** may be worded such that one type of response may appear preferable:

   **Wrong:** Do you advocate a lower speed limit to save human lives?
   **Better:** Does traffic safety require a lower speed limit?

12. **Demanding questions** expect too much of the respondent.

   **Wrong:** What percentage of your monthly income do you spend on rent or mortgage payments?
   **Better:** How much is your monthly rent (or house payments)? How much is your average monthly income?
Summary: Composition of Survey Questions Focus

precisely. Every item should address one specific topic.

Keep the questions brief.

Strive for clarity. Every respondent must know exactly what is being asked. Use words understood by the least educated respondent.

Use simple sentences; two or more simple sentences are preferable to one compound sentence.

Avoid common sources of bias and error.

Use structured (closed) questions. Unstructured questions generally provide large quantities of poor quality data.

Choose appropriate answer categories.

Use answer scales imaginatively and appropriately.
Part 5: Choosing Response Scales.

Response categories are every bit as important as question stems. It is irritating to a respondent when answer categories don’t quite match the question stem.

Some Options:
   a) Open-ended questions. (Discussion point: List advantages & disadvantages):

   b) Closed questions with ordered answer categories – numerical or adjectives

   c) Closed with unordered answer categories (e.g. symptom check lists)

Beware of Yes - No responses:
- Many things do not fit into absolute categories, so Yes/No causes discomfort (a typical aggressive lawyer’s tactic – “Just answer Yes or No, please”).
- Yes/No questions give little information; further questions have to be asked to provide finer detail of response.
- Bias may occur owing to "Yea-saying" or "Nay-saying" – acquiescence bias.
- Yes/No is susceptible to confusion because of double negatives.
- An alternative to consider is the expanded Yes/No format:
  1 YES
  2 PROBABLY YES
  3 UNCERTAIN
  4 PROBABLY NO
  5 NO
  6 HAVE NOT CONSIDERED THE ISSUE
Should you include a Middle Category?

If you choose ordered answers (Mild, Moderate, Severe), there is the question of whether to have a middle category. Many studies have shown that adding a middle category tends to draw respondents (between 15% and 49%, according to the question) away from the side categories.

But having only 2 categories (called "forced choice") is at times a deliberate tactic. It can be used to get people to reveal their underlying attitude ("Do you think doctors are paid too much?"). This may or may not work and so most questionnaires use an odd number of answers, often 5 or 7. People probably cannot discriminate into many more than 9 categories, so using a 1 to 100 scale probably just introduces error variance. Probably order categories from negative to positive, or in the order people are used to seeing them.

Here are some examples:

**Likert Scales.**

Please pick a number from the scale to show how much you agree or disagree with each of the following statements:

"The emergency department should function as a walk-in clinic for anyone who comes."

1 = STRONGLY AGREE
2 = AGREE
3 = NEUTRAL
4 = DISAGREE
5 = STRONGLY DISAGREE

"There were adequate numbers of doctors on duty ..."

**Guides**

- Likert scales actually refer only to opinion questions on the Agree/Disagree continuum. Calling a “Frequently, Sometimes, Never” scale “Likert” is not (strictly speaking) a Likert scale. Rensis Likert was a social psychologist who measured social attitudes in the 1930s; he developed ways to turn the 1 – 5 scale into z-scores (see below).
- Use this format for several items.
- Compose "typical" statements.
- Use diverse items that cover the theme (e.g. satisfaction with care).
- About half the items should be positive, half negative.
- Make very sure that the answer categories match the question; often they are contorted! (Do not say “I like the University of Hong Kong: Strongly Agree, Agree, Neutral, ...”)

**Scale values** (a more advanced topic!)

You can simply use the 1 – 5 numbers and treat them as an ordinal scale in your analysis.

An alternative is to calculate scores relative to an overall distribution of scores. Begin by calculating the cumulative frequencies across the 5 response options. Assuming a normal distribution for the latent trait being measured, translate the observed proportions into z-scores. The distribution of responses establishes the interval widths; the z-scores normalize the scale and creates something closer to an interval scale.
For example: Here are the cumulative proportions answering categories on a 9-point scale:

```
    .01  .03  .09  .15  .28  .54  .84  .97  1.0
```

Z-scores:
```
  -1.9  -1.3  -1.1  -.58  .10  .99  1.9
```

Then, estimate the widths of the above intervals by subtraction (e.g. 0.6 between the first two z-scores). Do this calculation for several items in the questionnaire, to get a general indication of the widths (irrespective of items) of the gaps in the scale. In the study from which this example was taken, it turned out to be 0.8 for the first interval, 1.5 for the next, etc. Once this is known, then the intensity scale values of individual statements can also be calculated as the means of the cumulative proportion distributions on the continuum. (Edwards AL. Techniques of attitude scale construction. New York: Appleton-Century-Crofts, 1957, p. 129).

However, this is a lot of effort and you get very comparable results by simply scoring responses 1, 2, 3, 4, and 5.

**Verbal Frequency Scales.**

Similar to Likert, but with frequency response options such as “Always / Often / Sometimes / Seldom / Never”. Problems are that you cannot translate the words into frequencies. For example, "sometimes" could mean anything from 30 to 70 percent of the time, and the interpretation will vary according to the topic under discussion. Beware these “vague Quantifiers”! Years ago, Normal Bradburn reported on wide variations in the interpretation of the adjectives, and a more recent study that did the same thing was by S.M. Case. (“The use of imprecise terms in examination questions. How frequent is frequently?” Academic Medicine 1994; 69(10): S4-S6)

The horizontal line in each box indicates the median response; the vertical width of the boxes includes 50% of the responses. The vertical lines extend to the highest and lowest values indicated. For example, the median response for “frequently” indicated 70% of the time; half believed “frequently” means between 45% and 75% of the time; actual responses ranged from 20% to 80%, almost overlapping with "rarely."
**Forced Ranking Scale.**

E.g., “Please rank the Colas listed below in their order of preference. Put a number 1 beside the one you prefer, a number 2 beside your second choice, and so on...”

- Use this for fewer than 10 items – it gets very hard to rank large numbers of items.
- Shows only relative rankings, not absolute positions.
- There must be a single ranking criterion – you cannot rank fruits, wine and restaurants.

**Paired Comparisons.**

(A special case of forced rankings). “Do you prefer beans or meat? Rice or potatoes? Beans or rice?” etc. This can be used to discover the dimensions people consider in making preferences. (E.g., choice between rice and potatoes may be made in terms of cultural familiarity; beans and rice in terms of preference for protein or carbohydrate foods; beans or meat in terms of cost, etc.)

**Numerical Scale.**

"How important is each of these issues to you?"

Having the pharmacy open 24 hours per day:

<table>
<thead>
<tr>
<th>Extremely Unimportant</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely Important</th>
</tr>
</thead>
</table>

**Visual Analogue Scale**

This replaces numbers with a line, generally defined by adjectives or phrases:

“How bad is your pain, right at this moment?”

<table>
<thead>
<tr>
<th>pain</th>
<th>pain as bad</th>
</tr>
</thead>
<tbody>
<tr>
<td>no</td>
<td>pain as bad</td>
</tr>
</tbody>
</table>

Typically they are 10 cm. long, but beware xeroxing them, for this can alter the length of the line and make measurement difficult!
Some Formatting Examples:

Unacceptable:
Q.34 Number of children you have in each age group: _ under five years
   5-13  14-18  19 and over

Better:
Q.34 Number of children in each age group who live in this house. (If none, write "O")
   Number of Children
   ___ UNDER 5 YEARS OF AGE
   ___ 5 TO 13 YEARS
   ___ 14 TO 18
   ___ 19 AND OVER

(Note: here the author decided to put answers in CAPITALS to indicate more clearly where the person is supposed to write their answer. Consider this (or use a different font) – but it may also make it look as though you are shouting at them!)

Skip Patterns

Skip patterns are more feasible in an interview (especially if computer assisted) than a self-completed questionnaire. Make them very clear in a questionnaire; look at various Statistics Canada questionnaires for examples: they typically draw lines from the response to the next question to be answered.

Complex branching is easiest with computer-assisted interviewing. This can also be necessary if responses need to be scored during the interview: e.g., if further questions are to be asked contingent upon the person’s score on a test battery.
Part 6. Accuracy of the Responses

It is one thing to get a high response rate to your questionnaire; quite another to ensure that the replies are accurate!

How does the class to define reliability and validity?

Reliability is:

Validity is:

Bias is:

How many kinds of bias can you list?
Checking Validity of Responses during survey
- Use probes (e.g. "could you explain a little more about your answer?") after a random selection of closed questions to assess whether the respondent interprets the question in the same manner as the researcher. Responses to probes are classified as: (A) clear and accurately predict closed response; (B) unclear but probably predict initial response (C) explanation unclear, and does not lead to prediction of original response; (D) explanation seems clear, but leads to wrong prediction of response, or answer is "don't know," or respondent changed response away from original.

Bias.
Bias refers to any effect that tends to produce results that differ systematically from true values. Contrast with random error. (Discussion point: how does bias relate to reliability and validity?)

Questionnaire biases can be subdivided into design biases, response or administration biases, and biases arising during analysis of the answers. Some examples of areas in which bias can arise (not a complete list: fill in others yourself!)

Design biases:
- Title of the questionnaire ("Patient Complaints Checklist"?!)  
- Design, layout, presentation effects  
- Order effects among questions  
- Unbalanced response scales (e.g., Extremely satisfied / Very satisfied / Satisfied / Neutral)  
- Consider whether or not to keep all of the positive responses on the left side of the questionnaire  
- Ceiling or floor effects (e.g., Extremely sick -- Very sick -- Sick -- OK)  
- Framing (see page 16)  
- Biases in scale weights.

Administration biases:
- Recall bias  
  Yea saying  
- Observer & blinding issues  
  Interviewer expectancy effects  
  Rounding digits; digit preferences  
  Response sets  
- Social distance between interviewer and respondent
Analysis biases:

- How do you handle missing values?
- Ordinal responses treated as interval?

Some more detail on selected Categories of bias:

1. Social desirability: Most respondents wish to appear respectable or socially acceptable ("I'm fine, thank you"), or to raise their prestige in the interviewer's eyes. Over half the population rate themselves as "above average drivers". Many exaggerate their ownership of library cards, their charitable donations, voting in the last election, etc. Social desirability bias is highest in personal interviews, especially if the interviewer seems to represent a particular orientation toward the content of the study. Therefore, consider carefully who should do the interviewing: would you have a clinic nurse carry out interviews on patient satisfaction with the clinic? Bias probably lower in telephone interviews, lowest in mail questionnaires – but consider carefully whom you identify the survey with.

2. Contextual Characteristics: the context and expressed purpose of the study can influence how people respond. In general people try to be helpful, so if you are doing a study of food poisoning following eating chicken, people may not include the diarrhoea they experienced after Grandma's turkey dinner last week end. An example of this arose in a study that compared patient responses to a questionnaire and replies given following probes and requests for more detail. The study involved a cancer Quality of Life Questionnaire (QLQ-C30). A question on pain showed low agreement, apparently because respondents were trying to answer according to their perception of the goals of the study. They replied in terms of the pain due to their cancer, and not to all causes of pain, leading to an under-reporting.

3. Acquiescence: a general tendency towards assent rather than dissent. Reply based on respondent's perception of what would be desirable to sponsor; thus, patient satisfaction surveys commonly find high degrees of satisfaction with medical services. In an agree-disagree scale, the average of all answers will tend to lie on the agree side. Resolution: word some questions positively and some negatively.

4. Yea-saying and Nay-saying: global tendency to give positive or negative answers.

5. Hostility: response influenced by feelings of anger or resentment due to response task.
6. **Mental set**: perceptions based on previous items influence the reply to later ones. For example, a survey might include two questions: "How many times have you consulted a doctor for depression in the past five years?" and "How many times have you been admitted to hospital?" The respondent may tend to answer the second question as though it had specified a five-year span.

7. **Recall bias**: meaningful events are remembered more fully.

8. **Status quo bias**: questions that state or imply the prevailing conditions may encourage people to favour the current conditions, or to feel compelled to conform to what is "normal".

9. **Primacy-Recency**: In a long list (e.g. list of brands of shampoo you prefer, read over the telephone), the respondent may recall the first and last few items more readily than the middle ones. A typical example is that item X was selected 27% of the time when presented first, 17% when in the middle, and 23% of the time when it was at the bottom of a list. One remedy is to break up long lists into separate questions and ask yes/no for each item.

**Interviewer Distortion**: interviewers have been known to fill in questionnaires themselves! Ahem! They can get tired or bored, and this can flavour the way they present their questions. You can conduct mini-reinterviews with respondents to find out if the interviewer has given you accurate information. Use mainly as a deterrent! **Supervise** telephone interviewers!

**Contamination by Others**: the respondent gets input from others in answering the questions. A problem mainly for mailed questionnaires; least for telephone interviews, in which only the respondent hears the question.

**Who answered the Questions?** Did the replies you think came from the person you sent the questionnaire to actually come from them? Note that consultation may be desirable to give accurate information (e.g. to help recall the number of physician visits last year). Consultation and access to records easiest for mail questionnaires, although in a telephone interview you could call back.

**Suggestions for Sensitive Questions**
- Explain to the respondent the reason for asking
- Make response categories as broad as possible
- Word questions non-judgmentally
- Guarantee confidentiality and reassure as to how information will be used
- Consider an estimation procedure, such as randomized response techniques.
(Here, respondent is asked whether the answers to two questions are the same or different; they are not actually asked to answer the question. For example, pair
"Were you born in February" and "Have you taken cocaine in the past year?" As we can estimate the population probability of being born in February, we can estimate the population probability of drug use, but not whether this person used drugs.)

An alternative is the list technique in which two versions of the questionnaire are produced, distributed randomly to respondents. In one ask: "Did you have a birthday, or get a parking ticket, or buy something costing more than $300 last month? Answer "Yes" if any of the above occurred to you". In the other list, add using drugs. The difference between the two proportions indicates the drug use.

Part 7: Administering the Questionnaire.

Designing a Mailed Questionnaire

Use good quality, fairly heavy paper; avoid paper which allows print to show through.

The colour should be white, off-white, light grey or beige paper, using black ink. Avoid bright or unusual colours.

Use letter-size paper; avoid legal sizes, and also avoid small paper.

Use a clear font, proportional spacing, with ample white space (e.g., wide margins and 1.3 spacing). Consider suitable use of graphics.

For binding, saddle staple questionnaire to make it resemble a booklet, as long as it opens up well. Single sheets stapled at top left corner are unimpressive.

Cover letters

Try listing topics that should be considered in the letter before looking at the next page:

Questions a Cover Letter Must Answer
  o What is this about?
  o Who wants to know?
  o Why do they want this?
  o Why was I picked?
  o How important is this?
  o Will this be difficult?
  o How long will it take?
  o Will it cost me anything?
  o Will I be identified?
Style of Letter

Remember that the respondent is likely to accept or reject the survey within the first few seconds.

Use a conventional business letter style and format for the cover letter. Make it look professional.

Avoid an overly formal style; avoid hackneyed phrases ("your response will contribute to the progress of science"). Speak directly: avoid passive voice, etc.

Ensure that the language is comprehensible to the least sophisticated reader, but don't talk down to them. Hence, letters will vary in style according to the sample.

Show respect for the readers, for their time and effort; do not be presumptuous or overly demanding.

Do not beg the reader to help you; do not exaggerate the importance of the information.

Keep the letter friendly and cordial. Nearly all recipients are likeable, cooperative people.

Issues in Interviewing

Interviewers play several roles: actors, directors, choreographers. They may have to switch roles during an interview. Attitudes significantly influence success; repertoire should be broad. Protect your interviewers: inform police that a household survey is going on; ensure emergency support.

Interviewing Techniques

1. Putting Participant at his ease
   Location: comfortable, quiet, familiar ... Be like a thoughtful host. Assure privacy: soundproof room, no interruptions, set up of room. Have formal identification available (letter of information, ID badge, etc). Status distance and threatening questions tend to be answered in direction the respondent feels will conform with opinions or expectations of interviewer. Role performance of interviewer is therefore important.

2. Informed interviewer
   Particularly in open or qualitative interviews, be knowledgeable on the topic.
3. **Establishing Rapport**  
Treat respondent as friend or a guest. Courtesy, interest in them as a person, eye contact (if culturally appropriate). Project a positive image: smile, dress neatly, be self-confident, anticipate that they will cooperate.

4. **Sequence of Topics**  
Build up to sensitive topics; drop any line of questioning that becomes sensitive, maybe taking it up again later.

5. **Mental Status**  
Recognize the respondent's mental status; do not try to interview them if intoxicated, acutely depressed, etc.

6. **Recording Information**  
Record material directly, in the presence of the research participant where possible. Do not rely on your memory to record what they said. During the 1950s it was suggested that writing material down interrupted the interview process, but there is quite a lot of evidence that this is not true. But make very fast notes: do not allow your note taking to delay next question. Ask questions reasonably rapidly (which may help avoid fabrication); ask cross-checking questions to validate the history being given.

7. **Qualitative Research Interviewing**

Standard questionnaires assume that everyone understands the question in the same manner. Unstandardized interviews (by contrast) assume that we do not know in advance all the relevant questions to ask; they assume that people use different vocabularies, so questions must be tailored to the situation. They allow researcher to approach the world from viewpoint of the respondent. 
(Discussion topic: which gives more valid information?)

**Beginning an Interview**

1. In a face to face interview, keep the greeting as short as possible, rather than including a lot of information about the survey.
2. Ask the first question quickly, to engage the respondent's attention and get then started right away.
3. Do not ask the respondents if they have time to be interviewed, and never ask for permission.
4. Ask questions to determine if the person is qualified to be included, if that cannot be determined in advance.
5. Anyone has the right to refuse, but the vast majority are friendly and cooperative and will not decline.
6. Be confident that once a respondent begins to respond, they will rarely stop before completion.
Example:
"Good morning [afternoon, evening]. My name is _____ [first name only] and I'm calling for Field Research, Inc. I'd like to ask you some quick survey questions about your favourite candidate for mayor." [Then ask first question immediately].

**Interviewer Training**

1. Train both supervisors and interviewers
2. Provide an overview of the project and its purposes.
3. "Walk through" the questionnaire and other materials, describing each element and its use.
4. Provide copies of all materials in a binder for future reference. This should contain answers to all foreseeable (and most unforeseeable!) questions the interviewer may be asked. This will help to standardize how difficult situations are handled. Give phone numbers for assistance when in the
5. Illustrate how the interviewer is to approach the respondents, how to explain the nature of the study.
6. Explain how data are to be recorded, and any scoring that has to be done.
7. Do a trial run by conducting a mock interview of one of the supervisors or interviewers.
8. Answer any questions that arise.
9. Question supervisors and interviewers to ensure they understand each aspect of the task. Maybe use a formal quiz (e.g., including videotaped examples of bad interviews for them to criticize)
10. Have each interviewer conduct one or two interviews with each other, while monitoring how they perform.
11. Review reimbursement methods and office organization.

**Interviewer Payment Schedules**

Reimburse direct costs (travel, meals, pencils, etc). Discuss options:

Pay either by the hour or per interview. Payment per interview implies a roughly equal task for each interview (e.g. all eligible respondents will get the same number of questions). It seems more equitable, and makes accounting, and the initial cost estimation, easier.

On the other hand, payment per interview may encourage cheating, hurrying respondents, or avoiding people who should be included. But hourly pay requires more supervision because hourly paid workers may be prone to waste time.
Part 8: Response rates.

What is the acceptable response rate? Probably no clear answer (other than 100%): they vary widely.
Can you give examples of response rates, and discuss factors influencing these? ......
A friend obtained a 105% response rate for a study in the military. Upon investigation, he learned that some of the soldiers were allowed to miss hard training to fill in the questionnaire. Apparently some of them expressed a clear preference!
In our Canadian Study of Health and Aging we noted clear contrasts in response rates between rural areas (higher rates) and inner-urban dwellings (much lower rates). Why do you think this may have occurred?

Class Participation Time!
You are asked to consult on a survey of the prevalence of high risk sexual behaviours, in order to assess the risk of HIV transmission.
Propose methods to enhance response, and again try to identify the underlying principles.

General principles of obtaining a high response

There is no complete answer, and different approaches will suit different circumstances.
Dillman (p. 18) lists the following ideas, and I have left space for you to add notes from the discussion

Treat the Respondent Respectfully:
- show positive regard give verbal appreciation
- use a consulting approach, rather than appearing aloof
- support his or her values offer tangible rewards
- make the questionnaire interesting
- establish a sense of valuing the respondent: pay attention to their opinion
- (e.g. in wording of reminder letters; use personal rather than form letters; it may be useful to use special delivery mail)

Consider Possible Motives to Respond:
- advantage to participant (gains access to something such as care, information)
- altruism, feeling of belonging, contributing (e.g., to science, or to helping other patients like them)
- the participant is inherently interested in the topic
Practical Considerations:
- make it simple to respond
- be careful with time between follow-up letters (see below)
- foot-in-the-door technique involves first sending a small request that is simple to comply with, then follow it with a "reward" of the real questionnaire
- awareness of the study: plenty of reminders
- legitimacy (letter head, reputation, assurances of confidentiality

Reduce Costs to Respondent
- make the task appear brief
- reduce physician and mental effort required eliminate any chance for embarrassment avoid any implication of subordination eliminate any direct monetary cost

Consider the Ethical Issues
- some ethics committees will not tolerate use of repeated reminder letters

Encouraging Response to Mailed Questionnaires

Put yourself in the place of a person receiving a mailed questionnaire. What questions will you ask yourself?

1.
2.
3.
4.
5.

Now, your questionnaire will have to meet this challenge!

Think of a mailed questionnaire. Why may it not get answered?
• The questionnaire never reached its destination (wrong address, etc)
• It arrived, but was discarded unopened because it resembled junk mail
• It was opened, but the person opening it failed to bring it to the attention of the person supposed to complete it
• The instructions (e.g. concerning who should answer it) were unclear, so nobody bothered to fill it in
• The desired person received the questionnaire but saw no convincing reason to complete it and threw it away
• The respondent decided to fill it in, but laid it aside and never got back to it
• The questionnaire was filled it, but the return address was misplaced, or it was too far to get it to the mail box and it was never posted back

Scary, eh?
Reminder Letters for Mail or Web Surveys

Dillman method:
1. Mail cover letter with questionnaire. Record date letter sent to each respondent!
2. Post card to all, 1 week after initial mail-out, thanking those who have responded and reminding those who have not.
3. Second reminder mailed to non-respondents 3 weeks after original mailing. Letter informs them that their questionnaire has not been received, and repeating original request. Enclose replacement questionnaire and another return envelope.
4. Third and final mail-out to non-respondents 7 weeks after the first mailing, including cover letter and still another questionnaire and return envelope. Send by certified mail to emphasize importance.

You could also consider a phone contact at the time of #3, above.

Should you pay the respondent?

1. Send any inducement with the original mailing, rather than later on.
2. Do not make the gift contingent upon completion of the questionnaire.
3. Be sure people view the gift as a token or appreciation, not as meagre pay for their work.
4. Avoid any form of inducement that might influence the way people answer questions, introducing bias.
5. Do not use money as an inducement unless it is perfectly clear that it will be effective. Instead, use a unique gift that the person would not normally be able to obtain; perhaps something individualized. One study of STDs raffled off a box of designer condoms ...

Establish Trust
- provide a token of appreciation in advance
- identify with a known organization that has legitimacy
- build on other exchange relationships.
References


