

# Continuing Medical Education

## Designing Questionnaire - A Research Instrument

Date & Time: 06.01.2019, 8.00 am  
Venue: Prof. AHM Ahsanullah Lecture Gallery  
(Level - 15, Hospital Building)

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Organized by  
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# **Designing Questionnaire - A Research Instrument**



# Presentation Outline

- ▶ **Research Instrument**
- ▶ **Questionnaire**
- ▶ **Functions of questionnaire**
- ▶ **Pre requisite for developing questionnaire**
- ▶ **Types of questionnaire**
- ▶ **Steps of developing a questionnaire**

# What is Research Instrument?

- ▶ **The paper/document on which data is collected is known as Research Instrument.**

# Manners of Research Instrument

- ▶ A research instrument can be designed in any of the following manners:
  - ✓ A form with no questions
  - ✓ A check list
  - ✓ A questionnaire

# Form

- ▶ Form do not have any questions addressed to the person who is filling the form.
- ▶ Only points for recording particular information are printed.
- ▶ [form.docx](#)

# Checklist

- ▶ The researcher or interviewers put tick marks against the particular point
- ▶ An instrument used when observing some situation.
- ▶ [Check list.docx](#)

# Questionnaire

- ▶ A questionnaire is an instrument in which all required information is collected by putting questions to the person from whom the data is sought.
- ▶ [questionnaire Image.docx](#)



# Designing Research Instrument

- ▶ Research instrument can be designed using any of the single manners.

Or

- ▶ In one single research instrument, different sections may be designed differently using any of the manners.

**A questionnaire is the most common  
type of research instrument used for  
survey**

# Functions of questionnaire

- ▶ A questionnaire serves four functions:
  1. Enables data collection from respondents
  2. Lends a structure to interviews
  3. Provides a standard means for writing responses and
  4. Help in processing collected data

# Designing questionnaire

- ▶ In developing a questionnaire, a lot depends on the choice of interviewing technique.
- ▶ The format and type of questions will be different for personal interviews, focus groups, telephonic interviews and mailed questionnaires.

# Designing questionnaire ...

- ▶ **Personal interviews:** the respondent should be clearly told the details and the form of answers the questions require.
- ▶ **Telephonic interviews:** questionnaires to be brief and to the point.
- ▶ **Mail survey questionnaires:** should give clear instructions about the type of details that are desired.

# Questionnaire administration technique

- ▶ **Interviewer-administered questionnaire or Interview schedule**
- ▶ **Self-administered questionnaire**

# Questionnaire administration technique ...

- ▶ **Interviewer-administered questionnaire or Interview schedule**
  - ✓ better suited for use in surveys where the population has a mix of people with different educational level and understanding.

# Questionnaire administration technique ...

## ▶ Self-administered questionnaire

- ✓ personal or private matters
- ✓ personal opinion
- ✓ employing interviewers is relatively more expensive and time consuming
- ✓ employing interviewers is likely to influence responses.



# Prerequisite for developing a questionnaire

- ▶ Hypothesis, objectives and all variables of interest should be known
- ▶ Operational definitions of the variables should be clear and stated

(An operational definition is how the researcher decide to measure their variables in their study. Such as height in feet or in metre, knowledge by asking question or using any standard scale)

- ▶ Decision scaling or categories of variables should be made

(Age in number or in category)

# Types of questionnaire

- ▶ **Structured questionnaire**
- ▶ **Unstructured questionnaire**
- ▶ **Semi structured questionnaire**

# Types of questionnaire ...

## Structured questionnaire

1. How old are you?
  - a. 12 - 15 years old
  - b. 16 - 25 years old
  - c. 26 - 35 years old
  - d. 36 - 45 years old
2. Which religion do you follow?
  - a. Islam
  - b. Hinduism
  - c. Christianity
  - d. Buddhism
3. ...

# Types of questionnaire

## Unstructured questionnaire

1. How old are you? \_\_\_\_\_ years.
2. Which religion do you follow? \_\_\_\_\_.
3. ...

# Types of questionnaire

## Semi structured questionnaire

1. How old are you? \_\_\_\_\_ years.
2. Which religion do you follow?
  - a. Islam
  - b. Hinduism
  - c. Christianity
  - d. Buddhism
3. ...

# Pros and cons of structured questionnaire

Pros	Cons
<ul style="list-style-type: none"><li>• Easy and quick to answer</li><li>• Answers across respondents easy to compare</li><li>• Answers easier to analyze on computer</li><li>• Response choices make question clearer</li></ul>	<ul style="list-style-type: none"><li>• Can put ideas in respondent's head</li><li>• Many choices can be confusing</li><li>• Can't tell if respondent misinterpreted the question</li></ul>

# Pros and cons of unstructured questionnaire

Pros	Cons
<ul style="list-style-type: none"><li>· Permit unlimited number of answers</li><li>· Respondents can qualify and clarify responses</li><li>· Reveal respondents thinking processes</li></ul>	<ul style="list-style-type: none"><li>· Respondents give answers different level of detail</li><li>· Coding responses is subjective and tedious</li><li>· Requires more response time and effort</li></ul>

# Parts of a questionnaire

**A title**

**An introductory remark**

**Instructions**

**An identification number**

**The questions**

**The ending**

▶ **[Questionnaire.docx](#)**



# Parts of a questionnaire

## A title

Should be clear and brief

▶ Questionnaire.docx

# Parts of a questionnaire

## An introductory remark

Briefly telling something about the survey and what is expected from the respondent and assurance about confidentiality

▶ [Questionnaire.docx](#)

# Parts of a questionnaire

## Instructions

For studies involving interviewers other than the researcher, necessary instructions and directions to the interviewer should be provided on the questionnaire

▶ [Questionnaire.docx](#)

# Parts of a questionnaire

An identification number

▶ [Questionnaire.docx](#)

# Parts of a questionnaire

## The questions

All relevant questions in logical sequence

▶ [Questionnaire.docx](#)

# Parts of a questionnaire

## The ending

All respondents are doing a favour to the researcher by answering the questions. It is therefore proper and an obligation to thank them. Therefore say thank you for helping in this study

▶ [Questionnaire.docx](#)

# Steps to design a questionnaire

1. Develop a study protocol
2. Draw a plan of analysis
3. Determine the objectives of the study
4. Design different parts of the questionnaire
5. Write the questions
6. Decide on the order of the questions asked
7. Complete the questionnaire
8. Verify the content and style of the questions
9. Conduct a pilot study
10. Refine questionnaire

# Steps to design a questionnaire ...

## 1. Develop a study protocol

► This involves

- ✓ getting acquainted with the subject
- ✓ making a literature review
- ✓ decide on objectives
- ✓ formulate a hypothesis, and
- ✓ define the main information needed to test the hypothesis.



# Steps to design a questionnaire ...

## 2. Draw a plan of analysis

- ▶ The plan of analysis should contain the measures of association and the statistical tests that we intend to use.

# Steps to design a questionnaire ...

## 3. Draw a list of the information needed

- ▶ From the plan of analysis we can draw a list of the information we need to collect from participants. In this step we should determine the type and format of variables needed.

# Steps to design a questionnaire ...

## 4. Design different parts of the questionnaire

- ▶ We can start now designing different parts of the questionnaire using this list of needed information.

# Steps to design a questionnaire ...

## 5. Write the questions

- ▶ The number of question should be reasonable and essential minimum.

# Steps to design a questionnaire ...

## 5. Write the questions ...

- ▶ Question should be in logical order.
- ▶ For example: One does not ask about the number of children before being sure that the respondent is married.

# Steps to design a questionnaire ...

## 5. Write the questions ...

- ▶ Language of the question should be simple and clear.
- ▶ For example: better to say “the tire of your cycle is punctured” instead of “the cylindrical apparatus which supports your vehicle is no longer inflated”.

# Steps to design a questionnaire ...

## 5. Write the questions ...

- ▶ Question should be specific not vague.
- ▶ For example: asking question “Do you say prayers five times every day?” is more specific than merely asking “Do you say prayers regularly?”

# Steps to design a questionnaire ...

## 5. Write the questions ...

- ▶ Double barreled questions should be avoided.
- ▶ For example: question like “Do you and your husband use contraceptives - “yes - no” will not give correct idea about who uses the contraceptives.



# Steps to design a questionnaire ...

## 5. Write the questions ...

- ▶ Do not ask questions suggestive of answers
- ▶ For example: it is now established that smoking is bad for health. “What is your opinion about effects of tobacco use?” is a form of questions that is suggestive of answer.

# Steps to design a questionnaire ...

## 6. Decide on the order of the questions asked

- ▶ Start from easy, general and factual to difficult, particular or abstract questions.
- ▶ The most sensitive question(s) should be placed in the middle or towards the end of the questionnaire.
- ▶ Not to put the most important item last.

# Steps to design a questionnaire ...

## 7. Complete the questionnaire

- ▶ Add instructions for the interviewers and definitions of key words for participants.
- ▶ Insure a smooth flow from one topic to the next one (ex. "and now I will ask you some questions about your own health...").
- ▶ Insert jumps between questions if some questions are only targeted at a subgroup of the respondents.

# Steps to design a questionnaire ...

## 8. Verify the content and style of the questions

- ▶ Verify that each question answers to one of the objectives and all objectives are covered by the questions asked.
- ▶ Delete questions that are not directly related to objectives.
- ▶ Make sure that each question is clear, unambiguous, simple and short.
- ▶ Check the logical order and flow of the questions.
- ▶ Make sure the questionnaire is easy to read and has a clear layout.

# Steps to design a questionnaire ...

## 9. Conduct a pilot study

- ▶ Always conduct a pilot study among the intended population before starting the study.

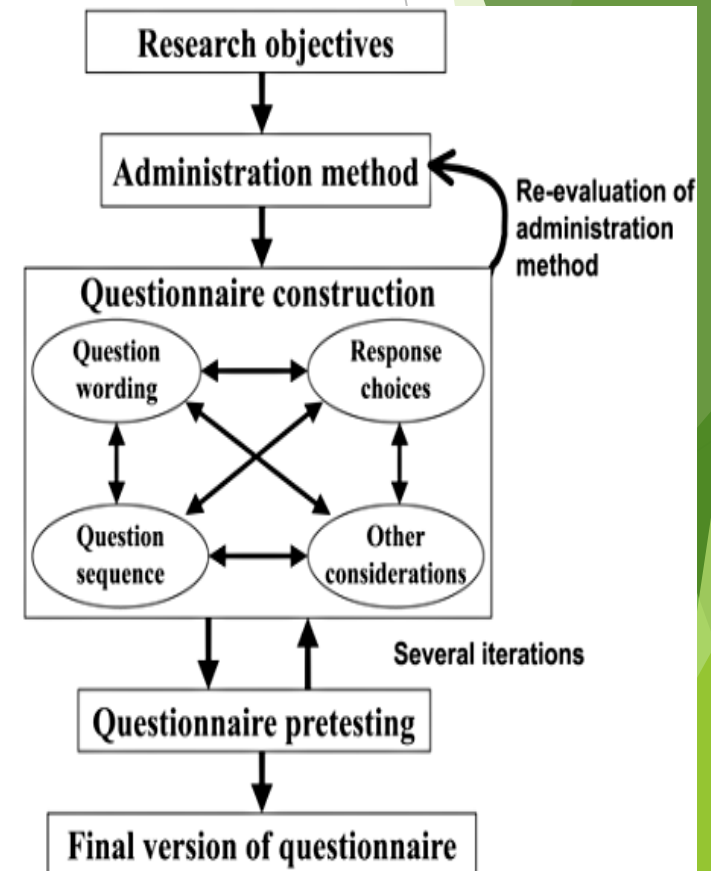
# Steps to design a questionnaire ...

## 10. Refine questionnaire

- ▶ Depending on the results of the pilot study, may need to amend the questionnaire before the main survey starts.

# Take home message

- ▶ Hypothesis, objectives, variables of interest and plan of analysis should be made before developing questionnaire.
- ▶ Choose appropriate administration method.
- ▶ Always conduct a pilot study among the intended population before starting the study.



The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the frame, creating a modern, layered effect. The rest of the background is plain white.

**Thanks.**



