Questionnaire Development

Dr Wan Nor Arifin

Unit of Biostatistics and Research Methodology,
Universiti Sains Malaysia.
wnarifin@usm.my / wnarifin.github.io

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Outlines

1. Development
2. Designing questions and responses
3. Pre-survey evaluation

Development

Development

- **Why we want to measure?**
- **What we want to measure?**
- **Who we want to measure?**
- **How we want to measure?**

Development

- **Objective?**
  - ???
- **Outcomes?**
  - ???
- **Target?**
  - ???

→ Content.

Content

Content

- **Focus on the study objectives. [Why?]**
- **Focus on the outcomes. [What?]**
- **Focus on target respondents. [Who?]**
- **Sources for content:**
  - Expert opinion.
  - Focus groups.
  - Qualitative studies.
  - Literature – theories & research findings.

Development

- **How to measure the outcomes?**
  - Types of questionnaire.
  - Methods of administration.
  - Types of question and response options.

Types of Questionnaire

Types

1. Self-administered
2. Interviewer-administered

Methods of administration

Methods of administration

1. Self-administered:

- Pen-and-paper – direct, mail.
- Computerized – Google Form, Survey Monkey, pdf Form.

2. Interviewer-administered

- In-person interview
- Phone

Types of question

Questions

- **Types:**
  - Open
  - Closed

Open

- **Fill in the blank – self-administered.**
- **Short answer, elaborate – interviewer-administered.**
- **Allows many possible responses.**
- **e.g. demography, opinion etc.**

Open

Name: _____

Date of birth: __ / __ / ____

Number of children: ___

Occupation (please specify): _____

For the past 1 week, on average, how long did you spend for exercise per day? _____ minutes.

What is your opinion on SST? _____
_____
_____
_____
_____
_____
_____

Closed

- **Fixed, predetermined responses.**
- **Limit respondent to the choices.**
- **Easy for data entry, analysis, interpretation.**
- **Give clue to respondent as to how to answer.**
- **Must include ALL possible responses.**

Closed

- **Choices:**
  - Dichotomous (Yes/No)
  - Multiple choice
  - Checklist
  - Ranking of response options
  - Rating
  - Likert Scale
  - Visual analog scale

Closed

Have you ever attended Dr Arifin's lecture before? Yes/No

Gender: Male [ ] Female [ ] Not sure? [ ]

Food categories for past 1 week:
Grains [ ] Poultry [ ] Vegetable [ ] Fruits [ ]

Rank your favourite food from 1 (most prefered) to 5 (least prefered):
Nasi Ayam [ ] Nasi Goreng [ ] Nasi dagang [ ] Nasi Kerabu [ ] Nasi Kandar [ ]

Please rate your experience using HotelBooking.com.my:
[1] [2] [3] [4] [5] [6] [7]

I enjoy Dr Arifin's lecture.
Strongly Disagree[ ] Disagree [ ] Neutral [ ] Agree [ ] Strongly Agree [ ]

Please rate your boredom level right now:

|----------|
Not bored at all Smartphone is my best friend :-)

Designing questions and responses

Design Objectives

- **To ensure quality response, 5 general objectives (McDonald et al., 2003):**
    1. Consistent meaning.
    2. Expected response.
    3. Ability to response.
    4. Willingness to response.
    5. Same type & mode of administration.

Consistent meaning

- **Meaning as understood by respondent, other respondent and researcher itself should be similar.**
- **Simple, clear, straight-forward words.**
- **Language level suitable for respondent.**
- **No “OR” – multiple concepts.**
- **No ambiguous term “kadang-kadang” vs “jarang-jarang”. Specify frequency.**
- **Overlap. “w/in 1 year” vs “w/in 2 years”?**

Expected response

- **Be specific.**
- **Open-ended question may suffer.**
- **“When?” could mean age, date, year, period of time etc.**

Ability to response

- **Ask something that respondent can easily recall and answer.**
- **“How many cigarette have you smoked for the past 10 years?”**

Willingness to response

- **Ask something that respondent can provide answer honestly.**
- **Respondent may withhold the information or answer dishonestly. Socially desirable answer.**
- **“Have you ever robbed anyone? Yes/No”**
- **“I never ever lie to anyone? Yes/No”**

Same types and methods of administration

- **The way interviewer ask question should be standard.**
- **The way respondents answer the questionnaire is similar – self-administered vs interviewer-administered; pen-paper vs mail vs online.**
- **The form of presentation of questionnaire similar for all – format, method.**

Pre-survey evaluation

Pre-survey evaluation

- **Evaluation by (McDonald et al., 2003):**

1. Review by other researchers and experts.
2. Focus group discussion (FGD).
3. Cognitive debriefing.
4. Field pretest.

1. Review by researchers and experts.

- **Covers the most important and extensive part of content evidence of validity.**

2. Focus group discussion (FGD).

- **Consists of representative sample of target population.**
- **Focused on general feedback on comprehension of key/problematic items – to ensure consistent meaning.**
- **Problematic items → consider suggestions from the respondents – improve wording.**

3. Cognitive debriefing.

- **Individual interview.**
- **More on how the respondent understand and answer questions.**
- **Understanding – ask him to rephrase and explain the questions.**
- **Answer – how they arrive at the answers.**
- **More intensive than FGD.**

4. Field Pretest / pilot study

- **Field testing the complete questionnaire**
- **Representative sample**
- **Evaluate:**
  - the form:
    - Wording – understanding, grammar, syntax
    - Formatting – well edited and professional looking (don't use Comic Sans!)
    - Flow – logical and organized

4. Field Pretest / pilot study

- **Evaluate (cont.):**
  - the administration process:
    - Length
    - Timing
    - Interviewer/Rater training & reliability
    - Flow of questionnaire administration
    - Logistic
  - the data entry preparation:
    - Coding
    - Data entry procedure
    - Frequency of item non-response

References

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education (1999). Standards for educational and psychological testing. Washington DC: American Educational Research Association.

Fletcher, R. H., Fletcher, S. W., & Wagner, E. H. (1996). Clinical epidemiology: the essentials (3rd ed.). Maryland: Williams & Wilkins.

McDonald, J. A., Burnett, N., Corodano, V. G., & Johnson, R. L. (2003). Questionnaire design. Georgia: Division of Reproductive Health.