

# Questionnaire Development and Pilot Study



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- Select items
  - + Literature search
- (Back-translation)
- Layout
- Pilot testing



# Which questions to include?

- Check out previous studies to decide which items to include.
- Try to find “standardized” questions.



*When borrowing a set of questions, DO NOT CHANGE its wordings, layout, response categories, etc.*

*Pay attention to the copyright note.*

- Only the questions related to study objective should be included. (You should have a clear idea of what kind of results you want to obtain.)
- Temptation to include additional questions should be resisted (Lower response rate. Waste of time and money).
- Make sure that you include:

ID number of subject

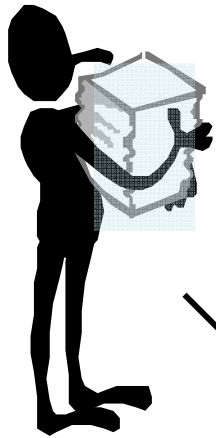
Interview date

Name of interviewer

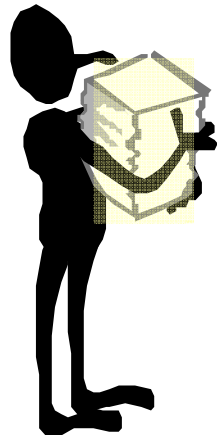
Space for interviewer to  
comment

# Back-translation

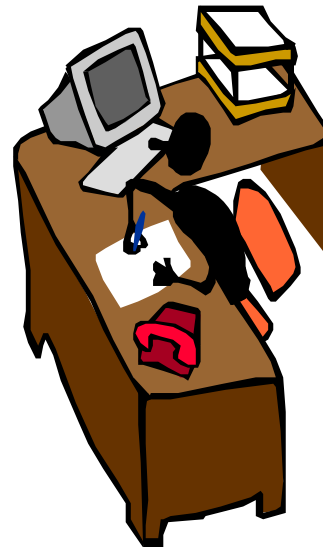
**Step 1**  
Translation  
Eng. to VN



**Step 2**  
Back-Translation  
VN to Eng.



**Step 3**  
Compare original and back-  
translated version, and  
address any differences in  
meaning.



**Step 4**  
Pilot Study



# Formulating questions

## QUESTIONS

\* Type of questions

- Open-ended question

How have you been feeling this past week?

- Close-ended question

How have you been feeling this past week?

1. Very well 2. Well 3. Not well 4. Not well at all

\* Define your questions clearly.

e.g. Do you take health checkup regularly?

→ Have you had a health checkup last year?

\* Use informal and simple wordings.

e.g. What is your subjective health?

→ What do you think about your health?

\* Avoid long questions.

\* Avoid leading questions.

e.g. Is your health behavior good?

\* Be careful of sensitive questions.

(Especially for reproductive health research.)

## RESPONSES

\* Type of responses

- Continuous or discrete number

- Yes / No

- Rating

1. Very well 2. Well 3. Not well 4. Not well at all

- Categorical

1. 0-4 years old 2. 5-9 years old 3. 10-14 years old



- Likert scale

“I feel totally exhausted all of the time.”

1. Strongly agree 2. Agree 3. Neutral

4. Disagree 5. Strongly agree

\* Consider if you should include “don’t know” or “others”.

\* 4-point scale or 5-point scale with a neutral point?

strongly  
agree

1	2	3	4	5
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strongly  
disagree

# List questions in an appropriate order

- Start with easy basic demographic information.  
e.g. Age, sex, residential region, etc.
- Place the “sensitive” questions toward the end.  
e.g. Reproductive items, income, education, etc.
- Watch out for chronological order and order of importance.
- Watch out for placing the questions that may influence the answers for other questions.  
e.g. Past medical history influences subjective health.

## Something wrong with the questions...

- How is your subjective health?
- Aren't you smoking too much?
- What is your hobby (e.g. reading, traveling, etc.)?
- How many times have you had abortions or miscarriages?

## Something wrong with the answer options...

- How old are you?
  - 1) 20-39
  - 2) 40-59
  - 3) 60-79
- How often do you exercise?
  - 1) Very often
  - 2) Sometimes
  - 3) Rarely
- Has your husband visited hospital for sexually transmitted diseases?
  - 1) Yes
  - 3) No

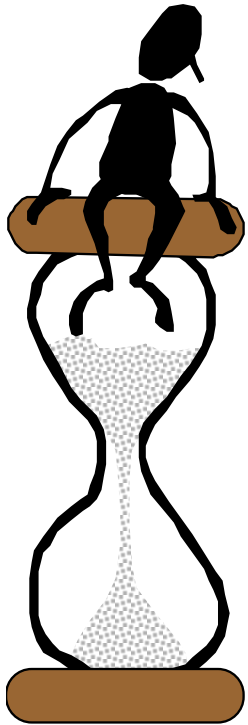
Something wrong with the order of questions...

1. Tell us your household annual income.
2. How old are you?
3. Do you drink alcohol?
4. Do you smoke?
5. Do you visit a gynecologist when you have gynecological symptoms?
6. How many times have you been pregnant?
7. **Tell us about the timing and contraceptive use around the time you last became pregnant. (MAIN QUESTION)**
8. How is your general health condition?
9. Which school did you graduate?
10. What is your occupation?

# Method of administration

- Face-to-face (personal) interview
  - X Personnel cost
  - O Intimacy increases willingness to participate
- Self-administered survey
  - X Skipped questions, misunderstanding
  - O Good for sensitive topics
- Mail survey
- Telephone survey
- (Email survey)

# Amount of questions



- \* Self-administered survey  
10-20 min
- \* Personal interview  
Less than 60 min  
(I would recommend less than 30 min)

# Layout

- Make sure that there is enough space for study subjects (survey staff) to circle or fill in.
- Make sure that which question to answer (ask) is clear.
- Watch out for letter fonts and size, paper color and quality, etc. Try to make a “friendly” questionnaire that is easy to read and fill in.



# Cover letter

State:

- Who you are.
- What the purpose of the survey is.
- How the study results are used.
- How study subjects' privacy is kept.
- How and when the questionnaire should be returned.
- Name of the contact person, address, tel number, etc.
- Signature or an official seal of the person or institution responsible for the questionnaire.

# Manual

- Where and how the questionnaires are distributed and collected (interviews are conducted). For self-administered questionnaire, should the answers be put into envelopes and sealed by respondents before collection?
- How and who explain about the survey and obtain informed consent.
- How can respondents' privacy be kept when they are filling the questionnaire (during an interview).

- For self-administered questionnaire, should the answers be checked for missings before collection?
- If you are distributing little gifts or thank you letters, how and when should they be distributed.
- Who is responsible for answering questions regarding the survey? If the person is away from office, who is going to take his/her place?
- What should be prepared: desks, chairs, pencils, erasers, envelops, stamps, etc.

## For advanced learners

If an appropriate standardized questions were not found for the main items:

1. Develop your original questions
2. Test the questionnaire to check wordings, layout, if questions are understood correctly, time to complete, etc.
3. Conduct pilot studies to examine reliability and validity of the questions
4. Finalize the questionnaire

# Reliability and validity

## Developing a question to ask pregnancy intention in JPN

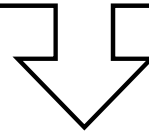
When you learned of your pregnancy, how did you feel?

(1) Pregnancy was at the right time

(2) Pregnancy was too soon

(3) I wanted a child but the pregnancy was too late

(4) I did not want to have a (any more) child even in the future



(1) and (3) = Intended Pregnancy

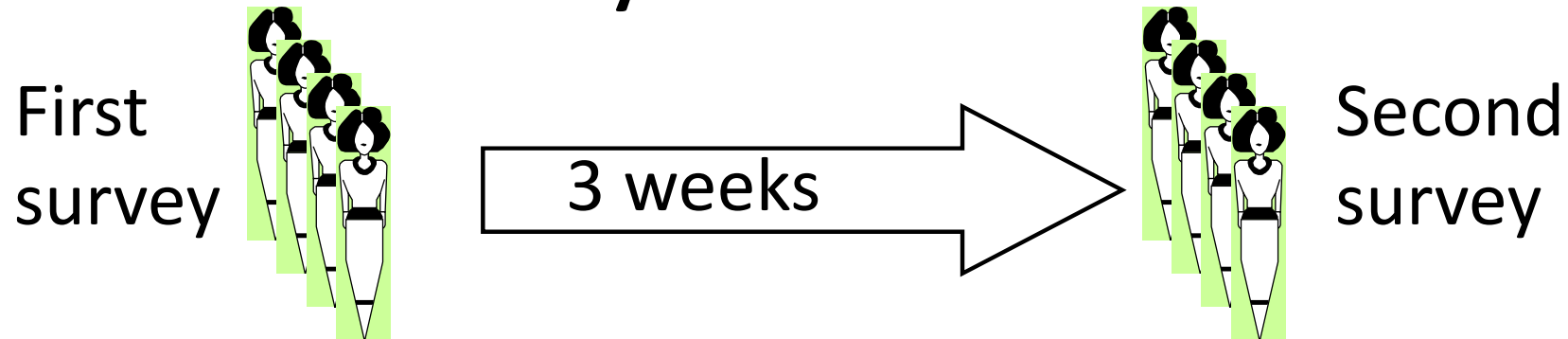
(2) = Mistimed Pregnancy

(4) = Unwanted Pregnancy

\* Based on the definitions of intended, mistimed and unwanted pregnancies used in the National Survey of Family Growth (NSFG) in the United States

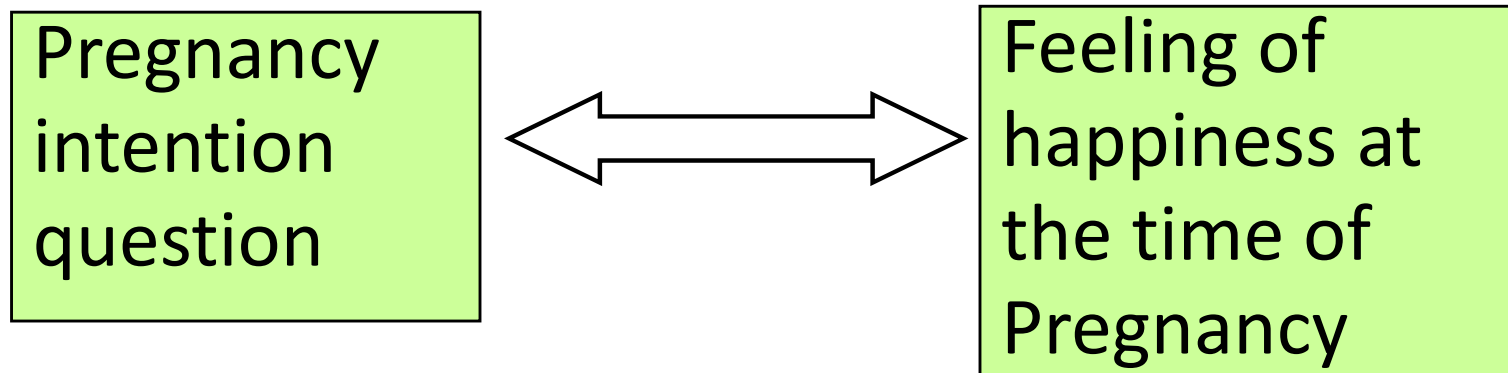
## Reliability = Reproducibility

### Test-retest reliability:



## Validity = Is your data *true*?

### Convergent validity:



\* The same method was applied in the NSFG.

## Test-retest reliability...

Experience of unintended pregnancy		Second survey	
		Yes	No
First survey	Yes	27	4
	No	3	22

Expected

Agreement    Agreement    **Kappa**    Std. Err.    Z    Prob>Z

-----  
 87.50%    50.38%    **0.7481**    0.1335    5.60    0.0000

## Kappa

= Measure which quantifies the extent of agreement.

(The extent to which the observed agreement exceeds that which would be expected by chance alone.)

Interpretation of kappa:

< 0.00	Poor agreement
0.00-0.20	Slight
0.21-0.40	Fair
0.41-0.60	Moderate
0.61-0.80	Substantial
0.81-	Almost perfect



## Validity...

	Intended	Mistimed	Unwanted
	N=153	N=36	N=8
Feeling of happiness at the time of pregnancy [Median (min, max)]	10 (1, 10)	8 (3, 10)	5 (4, 8)

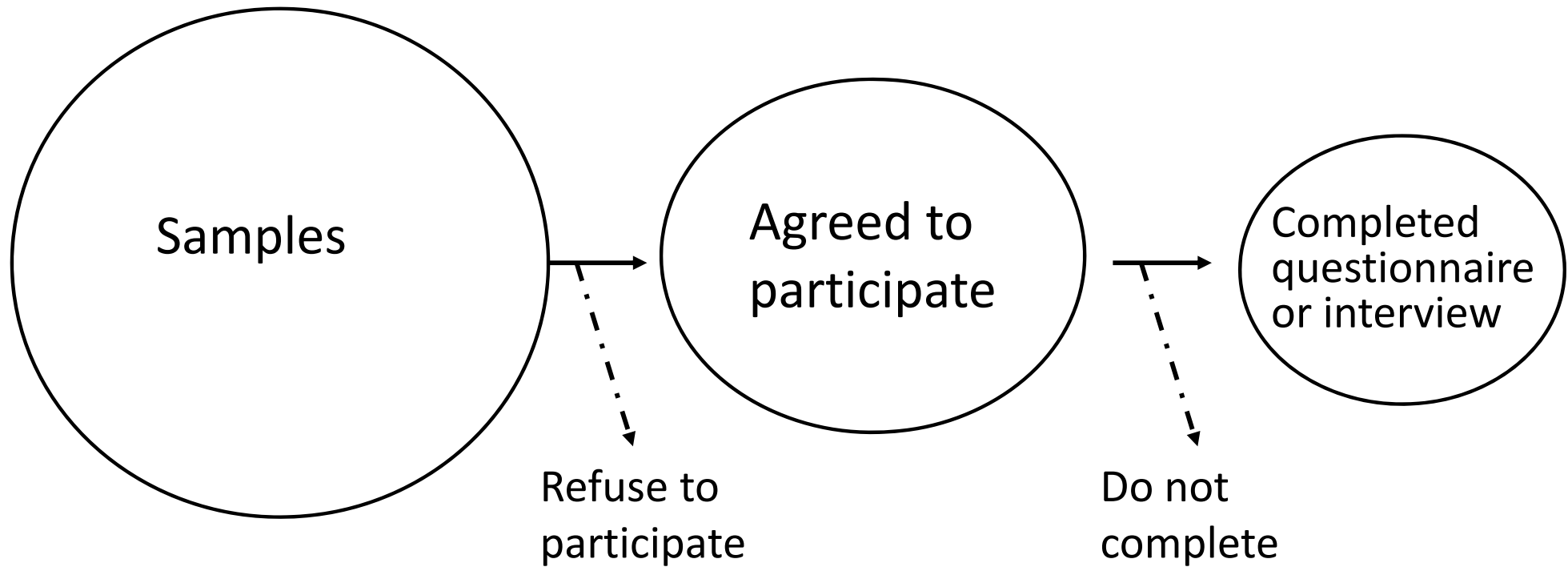
# Pilot study

## Purposes

- To revise the questionnaire.
- To check *acceptability* of the survey.
- To *rehearse* in the real survey setting.
- (To see preliminary results of the pilot study data, and calculate *sample size* for the main survey.)

# Acceptability

## 1. Is acceptability high enough?



## 2. Are there any questions with too many missing answers?

Number of missings for each questions in the questionnaire

	Missing [N (%)] (Total N=86)
<hr/>	
Sociodemographic items	
Age	2 ( 2)
Marital status	5 ( 6)
Education	8 ( 9)
Occupation	8 ( 9)
Income	12 (14)
▪	
▪	
▪	

# Rehearsal

Eg. Reproductive tract infection survey in Nghe An

We conducted a pilot study and found:

- Lab staff can diagnose RTIs accurately.
- Survey staff were allocated as planned.
- Actual number of pregnant women was much higher than the registered number!
- Some drugs were difficult to obtain in Nghe An.
- 14 out of 39 survey equipment were not prepared on time. (e.g. Survey staff misunderstood “swabs”.)

etc. etc.