Mental Health Research Proposal Writeshop

Module 5

Plan for Data Collection and Data Analysis

Mental Health Research Proposal Writeshop

Module 5

Part 1: Plan for Data Collection
Part 2: Plan for Data Analysis

Dr. Ma. Carmen C. Tolabing

Professor

Department of Epidemiology and Biostatistics, College of Public Health

University of the Philippines Manila

Learning objectives

Knowledge

Describe the following:

1. different methods of data collection
2. general steps in the development of a data collection instrument
3. elements of the data collection plan

Skill

Write a complete and technically sound plan for data collection

Outline

1. Data collection methods
2. Plan for data collection

Data Collection

- Essential in "**maintaining data integrity**" [a]

  - appropriate data collection method
  - appropriate data collection instrument (developed, existing)
  - instructions for the correct use

  = "quality assurance" and "quality control" [a]

Likelihood of measurement errors reduced

↓

Internal validity

[a] https://ori.hhs.gov

Data Collection

Quality Assurance

activities that take place *before* data collection begins

Quality Control

Activities that take place *during* and *after* data collection

Data Collection

Consequences of **improperly collected data** [a]

_____

https://ori.hhs.gov

Methods of Data Collection

1. Query

II. Observation

III. Review of records

I. Query

1. Interview method (interviewer – respondent)

In-person	remote
	> telephone
	> online

2. Questionnaire method (self-administered)

II. Observation

1. Direct observation

2. Observation using an instrument

- **e.g.** weighing scale, diagnostic instruments,

III. Review of records

Advantage	Disadvantage
Quick Easy Inexpensive	Data quality - validity and reliability difficult to assess - beyond control of researcher

Methods of Data Collection

1. Query

II. Observation

III. Review of records

NOT Data Collection Method

- Type of data
  - Cross sectional data
  - Primary/secondary data
- Research Design
  - Randomized controlled trial/cohort study
  - Qualitative research
  - Mixed methods approach
- Social preparation activities
  - Coordinate with local officials
  - Obtain permission from school authorities or heads of institutions

DATA COLLECTION INSTRUMENT

Data Collection Method	Instrument
1. Query	Questionnaire
	Interview schedule/guide

Method	Instrument
2. Observation	Field note Observation guide
	Checklist
3. Records review	Abstraction form

DEVELOPMENT OF DATA COLLECTION INSTRUMENT

Steps

1) List the study variables

2) Define the study variables operationally

3) Formulate the data collection instrument

4) Pre-test and revise

5) Assess the validity and reliability of the instrument

Use of existing query instrument

1) List the study variables

2) Define the study variables operationally

3) ***Modify and localize the instrument***

4) Pre-test and revise

5) Assess the validity and reliability of the instrument

Step 1: List the study variables

> **Refer to your research objectives**
-- study variables

- **Essential information**
- limit data to be collected to those that are needed (per objective)

- **Define your variables operationally**

Step 2: Define the study variables operationally

= statement of the observable evidence about the variable, basis for

> present or not

> present in different levels or quantity

Operationalizing Variables

- **Conceptual**
  -abstract meaning of a variable

- **Operational Definition**
  - a way of defining a variable that makes it measurable
  - enable measurement of variable as accurately as possible

Ex. Weight

Contexual definition

"measurement of gravitational force acting on an object"

Operational

"result of measurement of a person on a Newton spring scale"

Some variables **invisible** or partially invisible

anxiety, attitude, learning

- cannot be directly observed
- inferred from observable evidence

Variable: Anxiety
Operational Definition?

1. Anxiety is defined as a painful uneasiness of mind over an impending or an anticipated unpleasant event.
2. Anxiety is an undifferentiated fear.
3. Anxiety will be measured by attaching electrodes to the subject and measuring alterations in galvanic skin response.
4. Student anxiety will be assessed by having them agree or disagree on a five-point scale with a series of statements about their level of anxiety.

Qualitative variable

- Define both the variable and each of the categories of the variable

Operational definition

1. **Condom use**

Condom use during the last three sexual intercourse with a commercial sex worker as a response to the question,: Di d you use condom during your last three sexual intercourse with a commercial sex worker

Categories of Condom use

Condom user

= use of condom 100% of the time during the last three sexual intercourse

Non-condom user

=use of condom in <100% of the time during the last three sexual intercourse

2. Acceptability of herbal medicine for cough

Willingness to use herbal medicine of any form

the next time one experiences cough based on response to the questions: “If you experience cough within the next 6 mos, are you going to use this herbal medicine for cough of any form?

Categories of acceptability

2.1 Acceptable

= A response of “yes” to the question …

2.2 Unacceptable

= A response of ”no” to the questions…

Operational Definition: Benefits [b]

1. Transform abstract concepts in concrete terms
2. Way to communicate to the scientific community how the study variable was measured in the study.

   - evaluation of the study

   - replication of the study

[b]Cozby (2011)

"Success or failure of a research project often hinges on how well the variables can be operationalized" *(Ender, P)*

Step 3: Develop data collection instrument

Step 4: Pre-testing of data collection instrument

- administration of the newly developed data collection instrument

  subset of the target population or similar population

Pre-testing: purpose

1. assess clarity of questions/instruction
2. determine feasibility of administering the tool
3. determine potential problems
4. determine length of time to complete administration of instrument

Step 5: Assess the validity and reliability of the instrument

ELEMENTS OF A DATA COLLECTION PLAN

1. List of variables and their operational definition:
   a) study variables
      if qualitative – definition of the variable categories
2. Data collection method and data source of data/respondent
3. Data collection instrument (describe briefly; copy attached as annex)
4. Data collection matrix (for multiple methods of data collection)
   > for each objective, the corresponding variable to be collected, method of data collection and source of data
5. Quality assurance and quality control procedures
6. Potential measurement errors and measures to minimize them

For records review, include the following information

1. Source document and brief description
   - nature of the data (registration, surveillance, research)
   - who collected the data
   - date of collection or frequency of collection (ongoing, periodic, ad hoc)
2. Description of how the document or individual records (patient, employment records) will be accessed

Summary

THANK YOU