

Data Collection Methods

Dr. Wan Nor Arifin

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



Last update: Jun 16, 2025

Outlines

- Data
- Data sources
- Data collection methods

Learning outcomes

- Identify data sources
- Identify data collection methods

Data

- Information collected via research activities or other reliable sources
- Gathered from observational studies, experiments, surveys etc.
- Types:
 - Primary
 - Secondary

Data Sources

- Primary data:
 - Data collected directly during a study
 - Specific to the objectives of the study
- Secondary data:
 - Previously collected data i.e. not directly collected during a study
 - May/may not be specific to the objectives of the study

Data Collection Methods

Primary	Secondary
Direct observations	Health records Databases Registries
Self-reported measures	Data from previous studies

Direct observations

- Clinical observations
- Physical examinations
- Clinical equipment – BP, SpO₂
- Laboratory investigations – FBC, creatinine level
- Medical imaging – X-ray, ultrasound, MRI
- Clinical assessment tools – GCS, MMSE

Self-reported measures

- Questionnaires – common
- Diaries, self-reports – e.g. food diaries
- Interviews, focus group discussions – qualitative data

Health Records, Databases and Registries

- Patients' records – clinic visits, hospital admissions, ICU observational records
- Databases – electronic health records, WHO and CDC databases
- Registries, surveillance – communicable disease notifications (e.g. TB, dengue), disease registries (e.g. cancers, thalassemia etc.), clinical trials registries etc.
- Official documentations – birth and death certificates
- Population and Housing Census Malaysia – Department of Statistics Malaysia

Data from previous studies

- Small scale – clinical trials, medical research, epidemiological studies, surveys
- Large scale – National Health & Morbidity Survey (by National Institutes of Health Malaysia)

Primary vs Secondary Data

Primary	Secondary
New data	Reused data
Specific to study	Not specific to study
Control information required	No control over available information
Costly	Cheaper
Time consuming	Readily available

References

- Mazhar, S. A., Anjum, R., Anwar, A. I., & Khan, A. A. (2021). Methods of data collection: A fundamental tool of research. *Journal of Integrated Community Health*, 10(1), 6-10.
- Morgan, G. A., & Harmon, R. J. (2001). Data collection techniques. *Journal-American Academy Of Child And Adolescent Psychiatry*, 40(8), 973-976.
- Paradis, E., O'Brien, B., Nimmon, L., Bandiera, G., & Martimianakis, M. A. (2016). Design: Selection of data collection methods. *Journal of graduate medical education*, 8(2), 263-264.

Acknowledgment

- This lecture note was adapted from the original lecture note by Prof. Dr. Norsa'adah Bachok, 2023