Overview: Study Designing

Correlation study
Cross-sectional study
Case-control study
Cohort (follow-up) study
Intervention study (Clinical trials)
1. Descriptive analysis of available data
2. Cross-sectional study
3. Case-control study
4. Cohort study
5. Intervention study

Incidence, prevalence
P-value, confidence interval
Relative risk, odds ratio
Levels of evidence

- Randomized controlled trials
- Cross-sectional
- Case series, Case reports
- Qualitative studies
- Ideas opinions
- Case-control
- Cohort studies
- Systematic review

Occurrence of diseases/health-related events

1. Cohort study $\rightarrow$ Incidence
2. Cross-sectional study $\rightarrow$ Prevalence
3. Qualitative study/open-ended question $\rightarrow$ Experiences
4. Secondary data analysis (eg. ecological study)
Incidence vs Prevalence

Prevalence at the starting point = ? / 6

(Cumulative) Incidence = ? / 5 during one year
Descriptive analysis of available data


According to the outpatient record of the Nghe An MCH/FP Center in 2002, around 40% of the gynecological patients were diagnosed with vulvitis, vaginitis or cervicitis and treated without identifying the pathogens. The results from a situational analysis of the reproductive health services in Nghe An Province revealed that the RTI treatment given was based mainly on clinical symptoms. The information suggests a lack of proper laboratory techniques and standardized case management in the region.
Correlation study of available data

Ecological fallacy

Fertility rate: http://www.ipss.go.jp/syoushika/tohkei/Popular/Popular2014.asp?chap=4&title1=%87W%81D%8Eo%90%B6%81E%89%C6%91%B0%8C%89%E6
• Def.
  Study that compares disease (health related event) frequencies between different populations based on some factor of interest.

• Strengths
  Utilize existing data.
  Quick and inexpensive.

• Limitations
  Provide data not on individuals.
  Can not control for confounding factors.
Cross-sectional study

pregnancy → delivery → 6 months

Follow-up (cohort) study
Prevalence of and factors associated with reproductive tract infections (RTIs) among pregnant women in Nghe An

The research team goes to a target community to:
1) interview pregnant women
2) examine them for RTIs.
Analysis

1. Descriptive analysis:
   - Prevalence of RTI

2. Analytical analysis:
   - Factors associated with RTI
Advantage

Cross-sectional study is very useful for health policy development.

30% were Hep B positive in Nghi Thuy

Urgent need of Hep B prevention!

3% were Hep B positive in NamThanh

Hep B is not a serious problem
Limitation

Example result:

Douching was associated with endogenous infections.
Summary

Def.
Study that assesses both the exposure and disease status of an individual at a specific point in time.

• Strengths
  Data on individuals.
  Important for public health planning, because it can assess prevalence.

• Limitations
  No temporal sequence.
  Can not assess incidence.
Follow-up (cohort) study

Influences of pregnancy intention on parenting

- Baseline survey
  - Unintended pregnancy
  - Intended pregnancy

- Follow-up survey

(Follow and observe parenting outcomes)
Def.
Subjects who are free from studied disease/event are selected, classified based on exposure status, and followed to observe disease development.

Strengths
– Can observe temporal relationship.
– Can examine multiple outcomes.
– Can assess incidence.
– Can minimize bias.

Limitations
– Not useful when the disease is rare.
– Expensive and time consuming.
– Losses to follow-up may occur.
Factors associated with induced abortion among primigravid women in Ho Chi Minh City

Cases
(Abortion clients)

Controls
(Antenatal care attendants)

Ask about PAST reproductive related behaviors
Def.
Subjects are selected based on disease/event status and previous exposure status is assessed.

Strengths
– Useful when the disease is rare.
– Can examine multiple exposures.
– Quick and cheap.

Limitations
– Can not assess incidence and prevalence.
– Prone to bias, especially selection, observer, and recall bias.
Effectiveness of a parenting support for mothers with poor psychological status

**Baseline survey**

Intervention group (Program participants)

Control group (Non-participants)

**Follow-up survey**
Dr. Y is in the second year of a PhD course. He would like to investigate how well a newly introduced PWV can predicts occurrence of stroke. He works at a tertiary general hospital with a health checkup center. This will be his thesis work. How would he design his study?
Dr. C is in the third year of a PhD course. She would like to find ways to promote early hospitalization of stroke patients. She works at a tertiary general hospital. How would she design her study?