Overview: Study Designing

Correlation study

Cross-sectional study

Case-control study

Cohort (follow-up) study

Intervention study (Clinical trials)

FUKUSHIMA MEDICAL UNIVERSITY Aya Goto
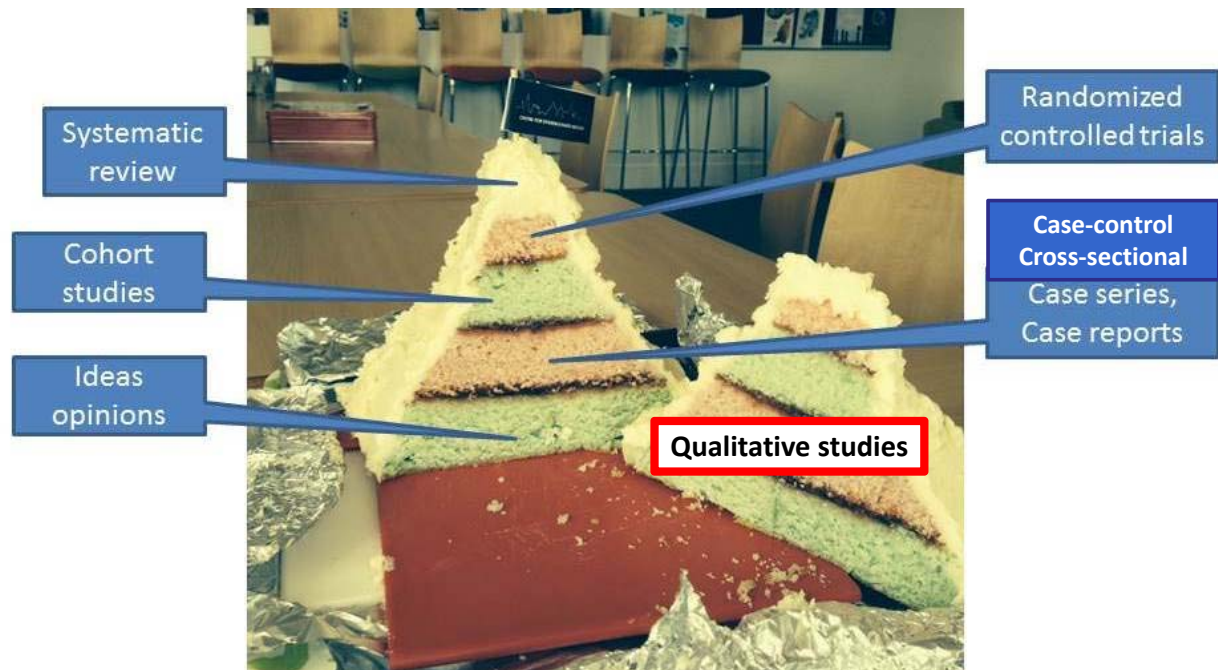

Key words

1. Correlation study

2. Cross-sectional study

3. Case-control study

4. Cohort study

5. Intervention study

Incidence, prevalence

Risk (odds ratio, rate ratio, rate difference)

Levels of evidence

Systematic review

Cohort studies

Ideas opinions

Randomized controlled trials

Case-control Cross-sectional

Case series, Case reports

Qualitative studies
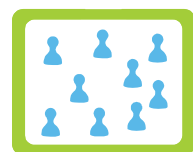
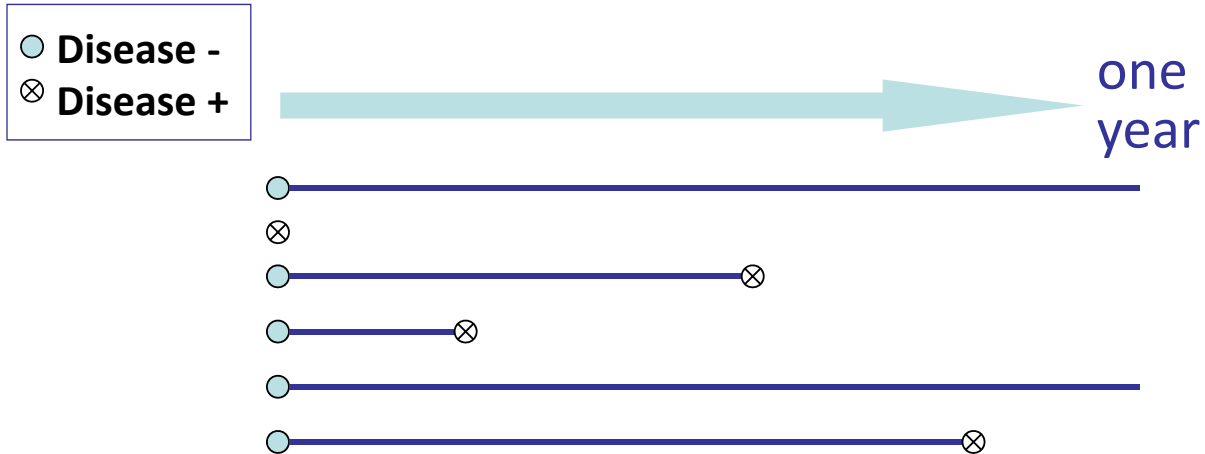http://www.cebm.net/wp-content/uploads/2014/07/Slide11.jpg

Occurrence of diseases/health-related events

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

Incidence vs Prevalence

○ **Disease -**
⊗ **Disease +**

one year

Prevalence at the starting point = ? / 6

(Cumulative) Incidence = ? / 5 during one year

Question

In recent years in Vietnam, we have observed a steep increase in prevalence of patients with diabetes?

What is happening?

Descriptive analysis of available data

Aya Goto, Quang Vinh Nguyen, et al. Prevalence of and Factors Associated with Reproductive Tract Infections among Pregnant Women in Ten Communes in Nghe An Province, Vietnam.

Journal of Epidemiology. 2005; 15: 163-172.

> 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.[10] The information suggests a lack of proper laboratory techniques and standardized case management in the region.

Correlation study of available data

Let's learn from Mr. Terui's study.

- Def.

  Study that compares disease (health related event) frequencies between different <u>populations</u> based on some factor of interest.

- Strengths

  Utilize existing data. →Quick and inexpensive.

  Can draw a hypothesis.

- 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

Research team

The research team goes to a target community to:

1) interview pregnant women

2) examine them for RTIs.

Target community

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.

Douching → Change in normal flora → RTI infection

RTI infection → Discomforts → Douching

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.
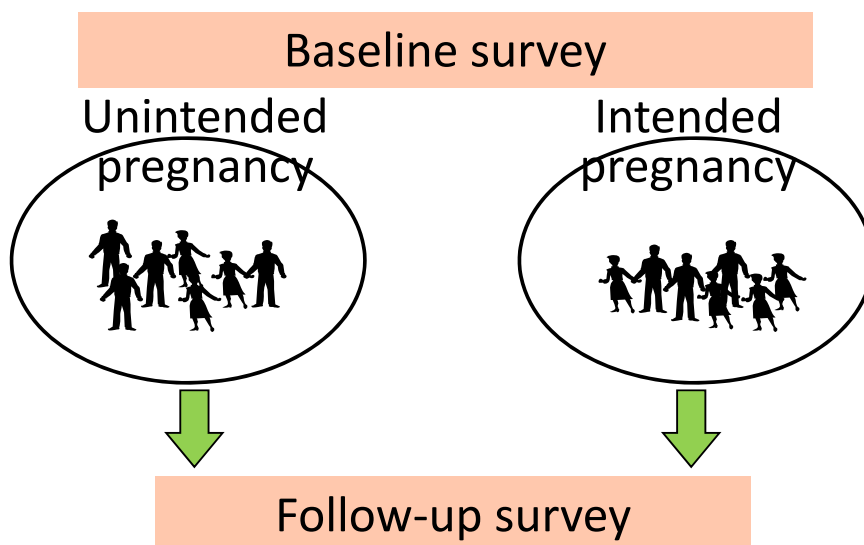
- Limitations

  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.
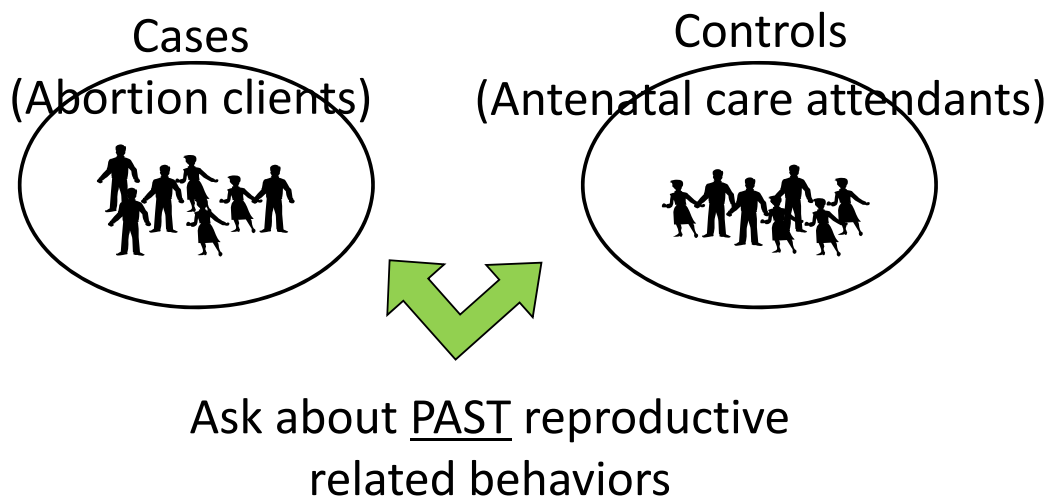- – Can assess incidence.
- – Can minimize bias.

Limitations

- – Not useful when the disease is rare.
- – Expensive and time consuming.
- – Losses to follow-up may occur.

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Case-control study

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

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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.
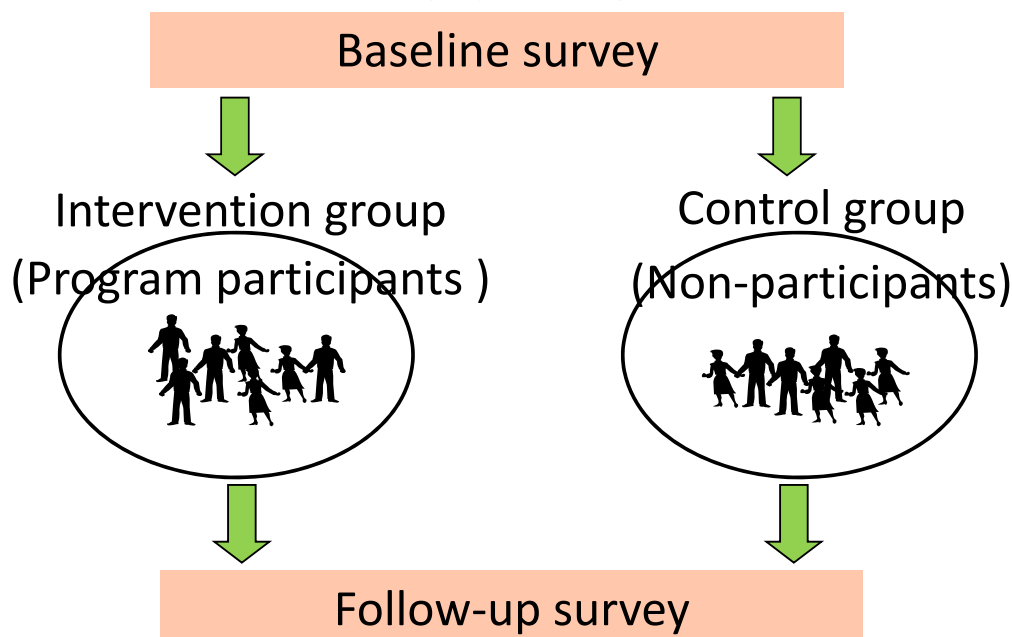
Limitations

- Can not assess incidence and prevalence.

- Prone to bias, especially selection, observer, and recall bias.

Intervention study

Effectiveness of a parenting support for mothers with poor psychological status

Baseline survey

Intervention group
(Program participants)

Control group
(Non-participants)

Follow-up survey

Question

Let's try a case study about research on smoking.