STUDY DESIGNS

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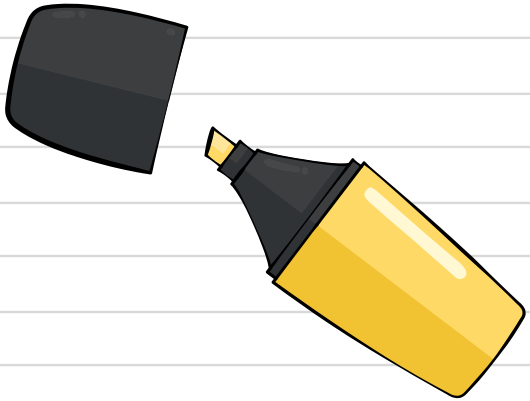
Objectives



- Define a study design.
- Classify different study designs used in research.
- Classify quantitative study designs.
- Explain with examples .

All the electricity was out in the town and none of the street lights and traffic light has power

A man was driving his black car with its headlights broken .A buffalo suddenly stepped on to the street ,although there was no moonlight ,yet the driver stopped .To let the buffalo cross the street

How did the driver see the buffalo ????????

Study design

A study design is a specific plan or protocol for conducting the study.

which allows the investigator to translate the conceptual hypothesis into an operational one.

Classification Of Study Designs

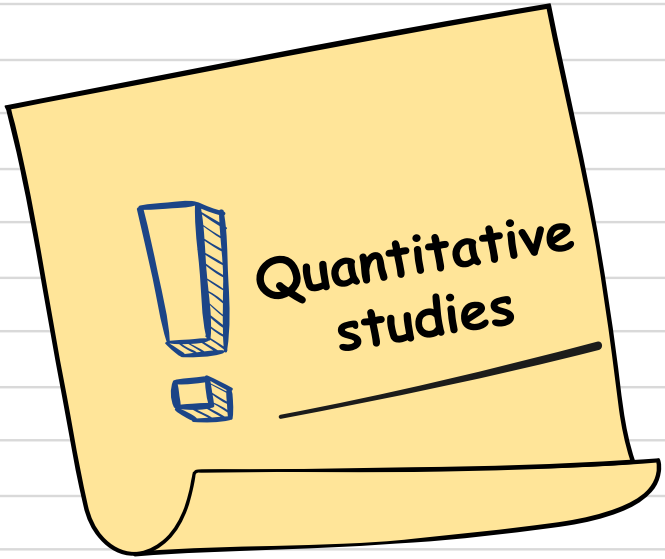
Qualitative

- Basic qualitative research
- Ethnographic
- Grounded theory
- Phenomenology
- Philosophical research
- Critical social research
- Ethical inquiry
- Foundational research
- Historical research

Quantitative

- Non-experimental studies/non-interventional studies/observational studies

- Experimental studies/ Interventional studies



Quantitative research is the process of collecting and analyzing numerical data .It can be used to find patterns , averages ,make predictions, test causal relationships and generalize results to wider population

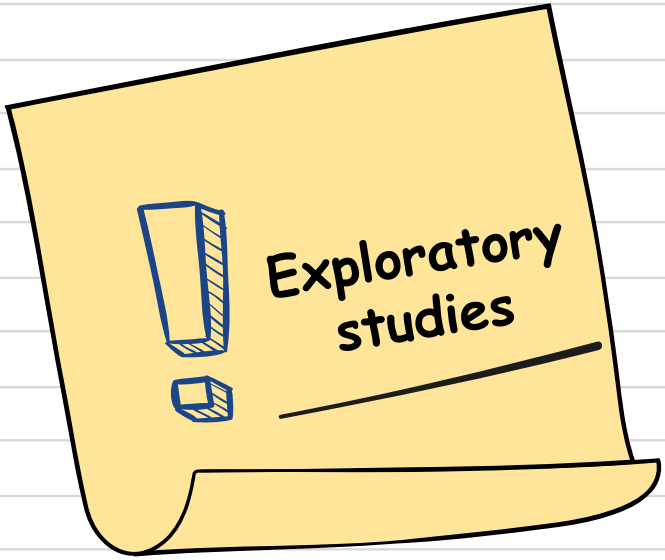
Classification Of Quantitative studies

Non-interventional / observational studies

- Exploratory studies
- Descriptive studies
- Comparative (analytical) studies

Interventional/experimental studies

- Experimental studies
- Quasi-experimental studies



It is a small scale study of relatively short duration ,which is carried out when little is known about a situation

Example :

A National AIDS control program wishes to establish counselling services for HIV positive and AIDS patients but lacks information on specific needs patients have for support .

To explore these needs an exploratory study would be undertaken to know their needs of various categories and possibilities for action.

Descriptive studies involve systematic collection of data to give a clear picture of a particular situation . It can be carried on a small scale or large scale .

Descriptive studies can be

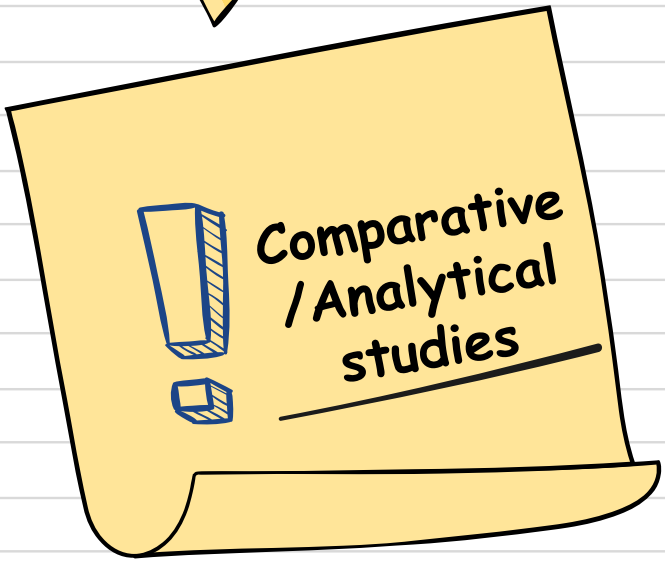
A case may be

A patient ,a health center ,a village
It is most common in social sciences management.
In clinical medicine an unrecognized illness May be documented as a case study

Cross-sectional surveys

It aims at quantifying the distribution of certain variables in a study population at a point of time.
They may cover prevalence survey or evaluation of coverage.
Knowledge, attitude ,practices (KAP) study behavior of people in a population

Surveys cover sample of a population .If it covers the Total population it is called Census.



It attempts to establish causes or risk factors for certain problems this is done by comparing two or more groups ,some of which has develop the problem and some of which have not .

Comparative / Analytical studies

Cross-sectional comparative studies

Many cross-sectional
Surveys focus on
Comparing as well as
Describing groups.

Case-control studies

Compares one group with a problem to another group called a control without a problem .

Cohort studies

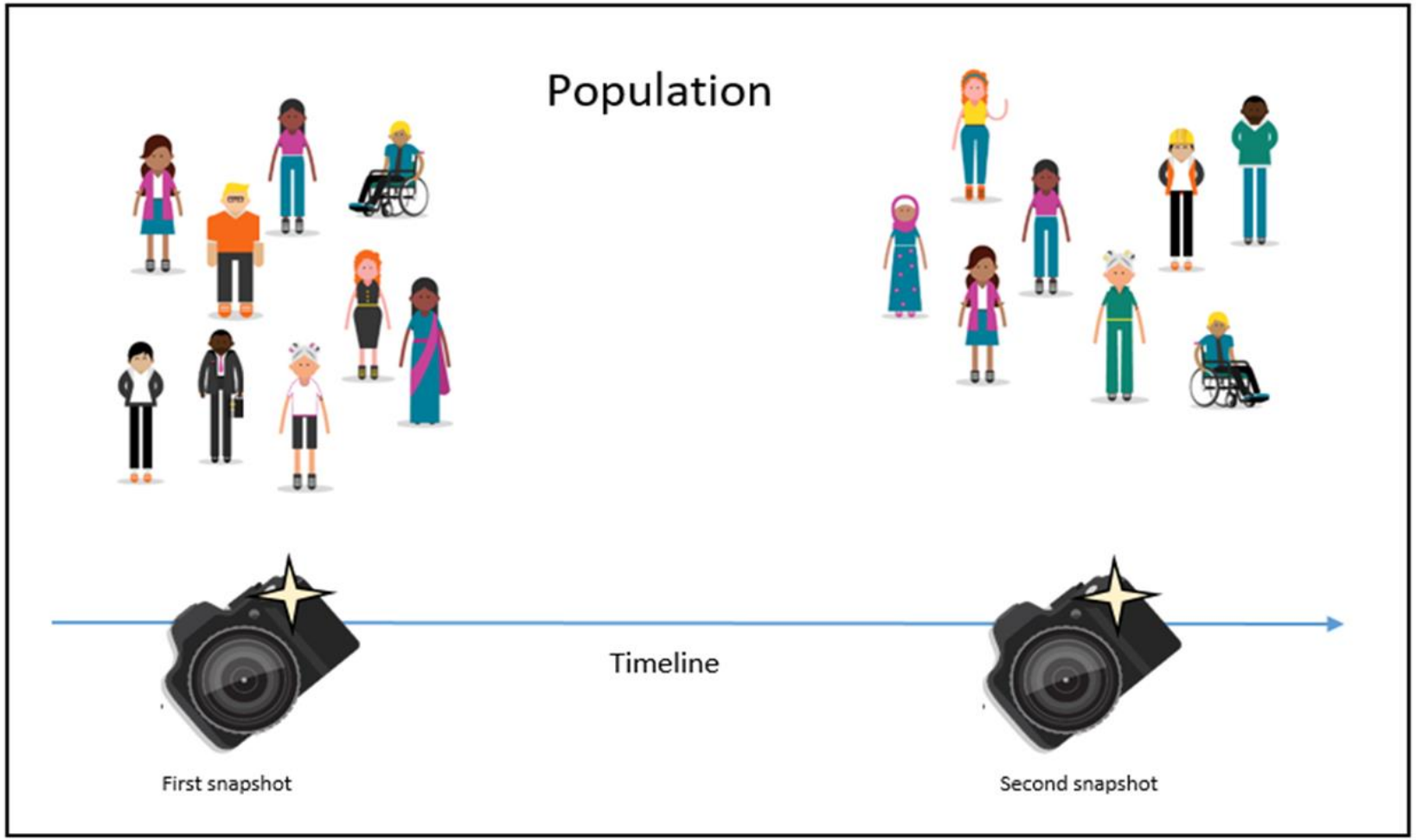
Follow a group of people under study who are exposed and those who are not exposed and compare them .

Cross-sectional comparative studies

EXAMPLE

A survey on Malnutrition may wish to establish

- The % of malnourished children in a certain population.
- Socioeconomic , physical ,political variables that influence the availability of food.
- Feeding practices and
- The knowledge ,beliefs and opinions that influence these practices

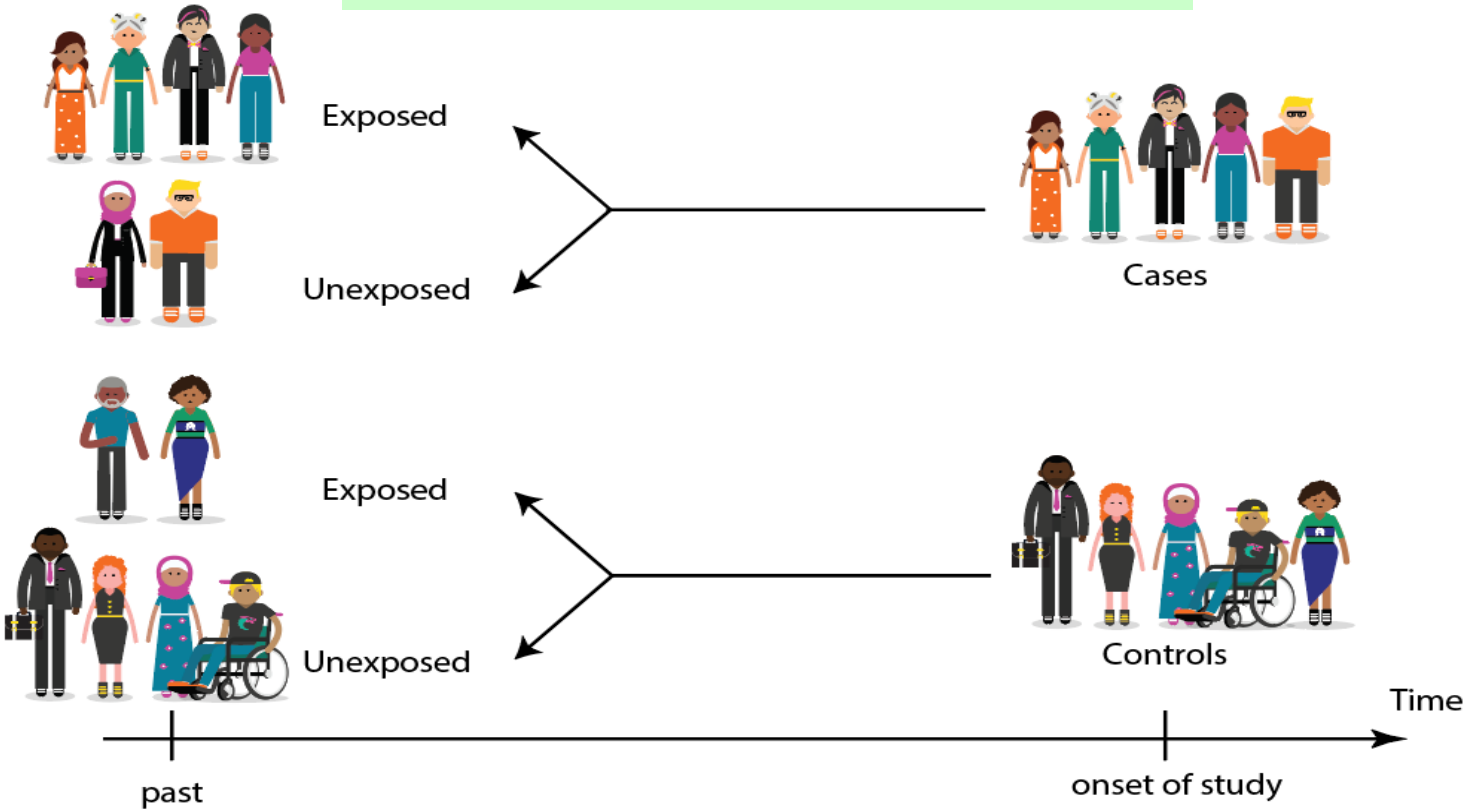

Population
Timeline
First snapshot
Second snapshot

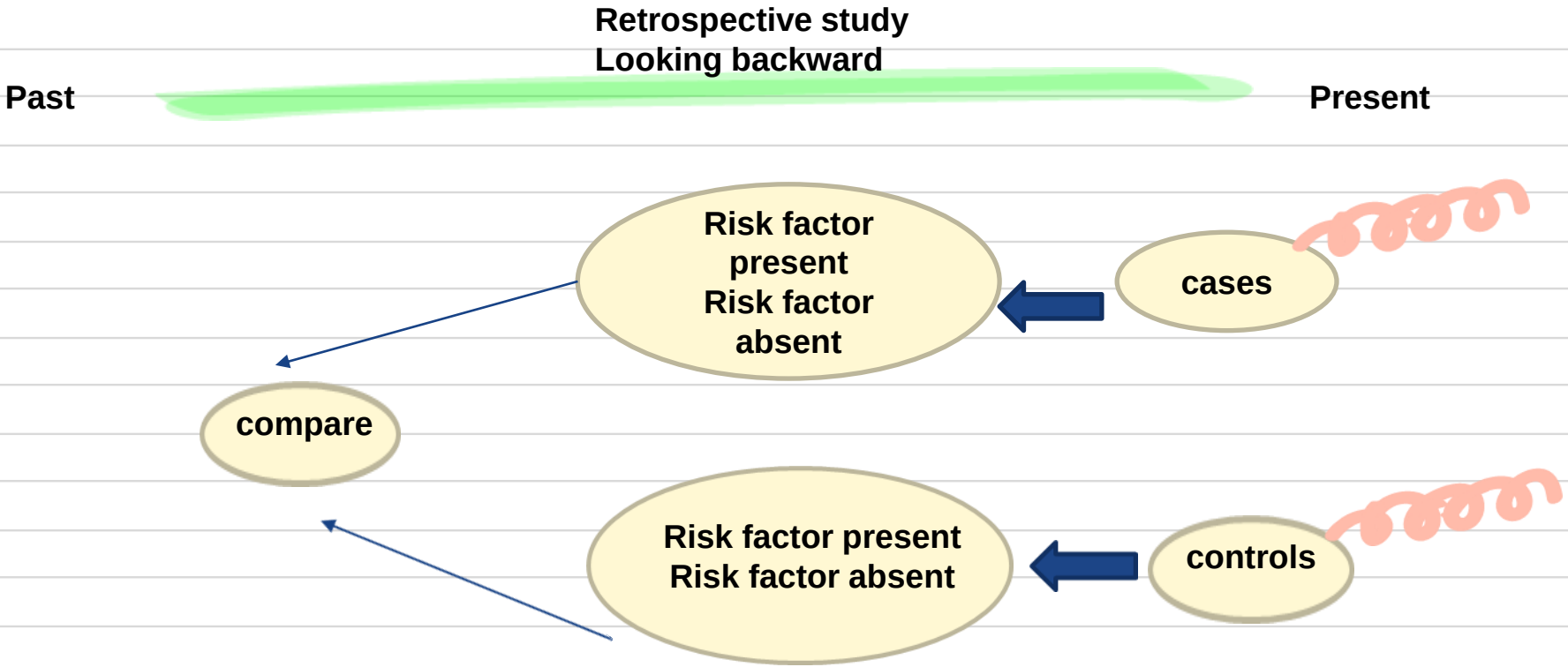
Case-control Studies

In this study the investigator compares one group with a problem with other group without problem called a control group or comparison group.

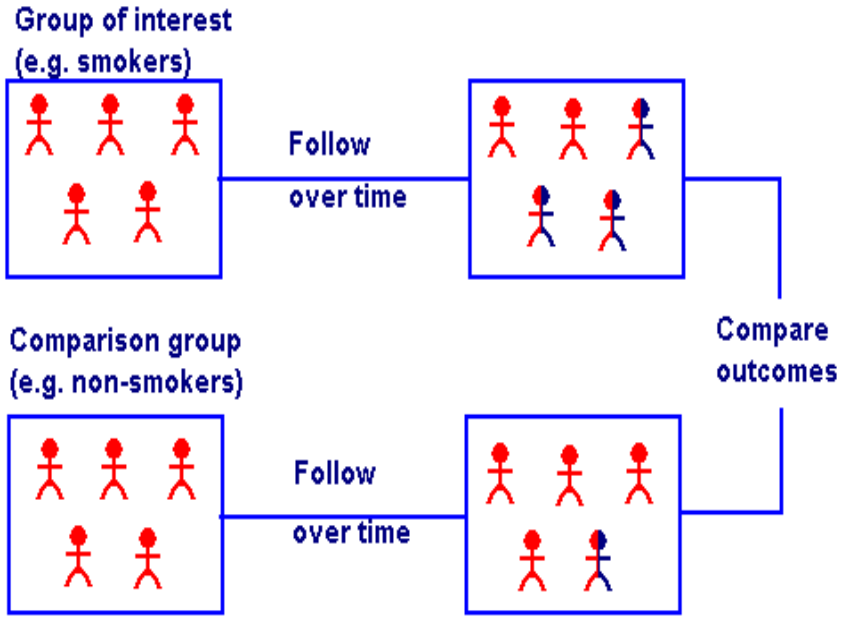
It is used to help determine the cause of a disease, particularly when investigating a disease outbreak or a rare condition.

Case control studies




Retrospective study
Looking backward
Past
Present
Risk factor present
Risk factor absent
cases
compare
Risk factor present
Risk factor absent
controls

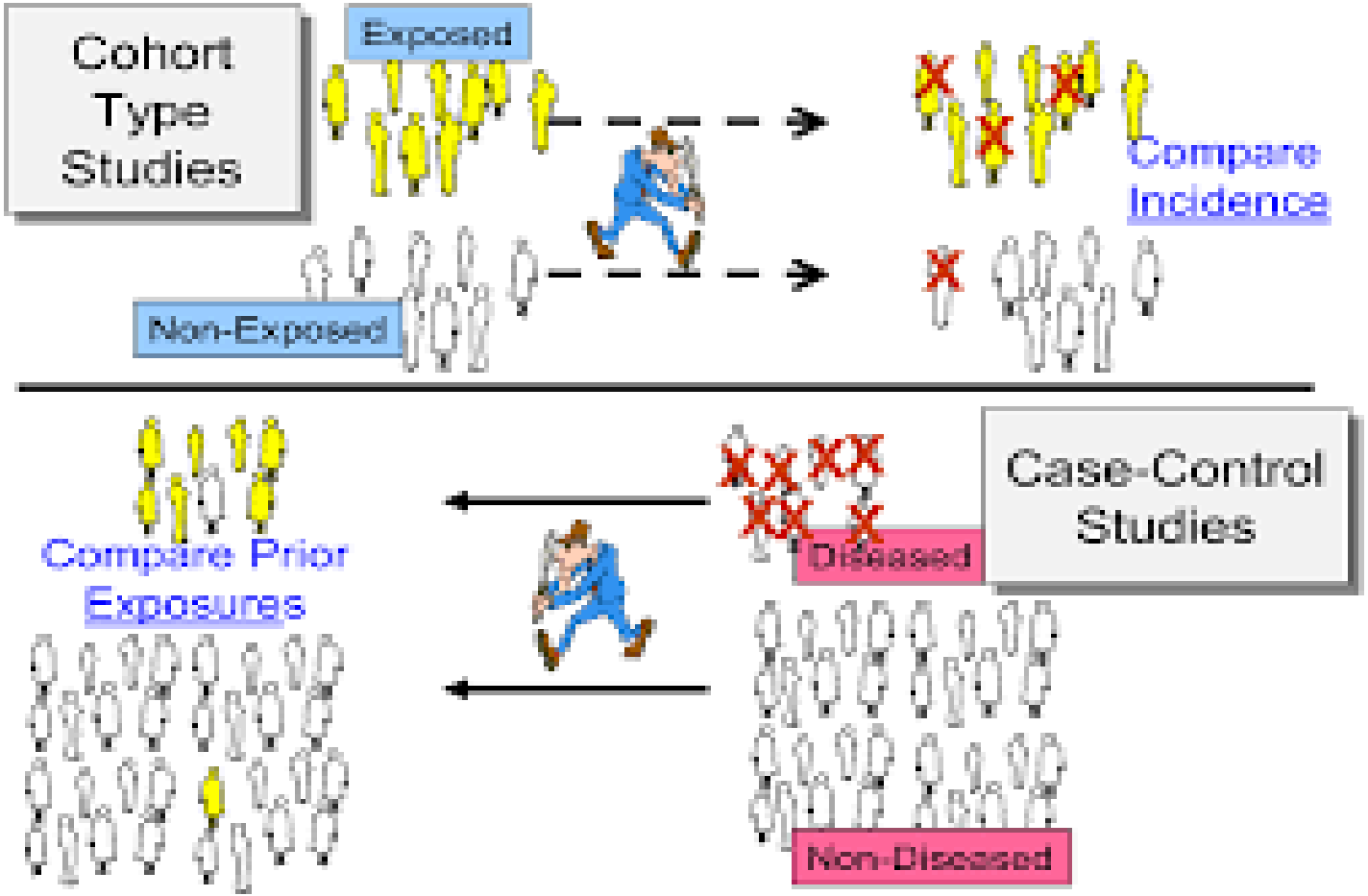
Cohort studies



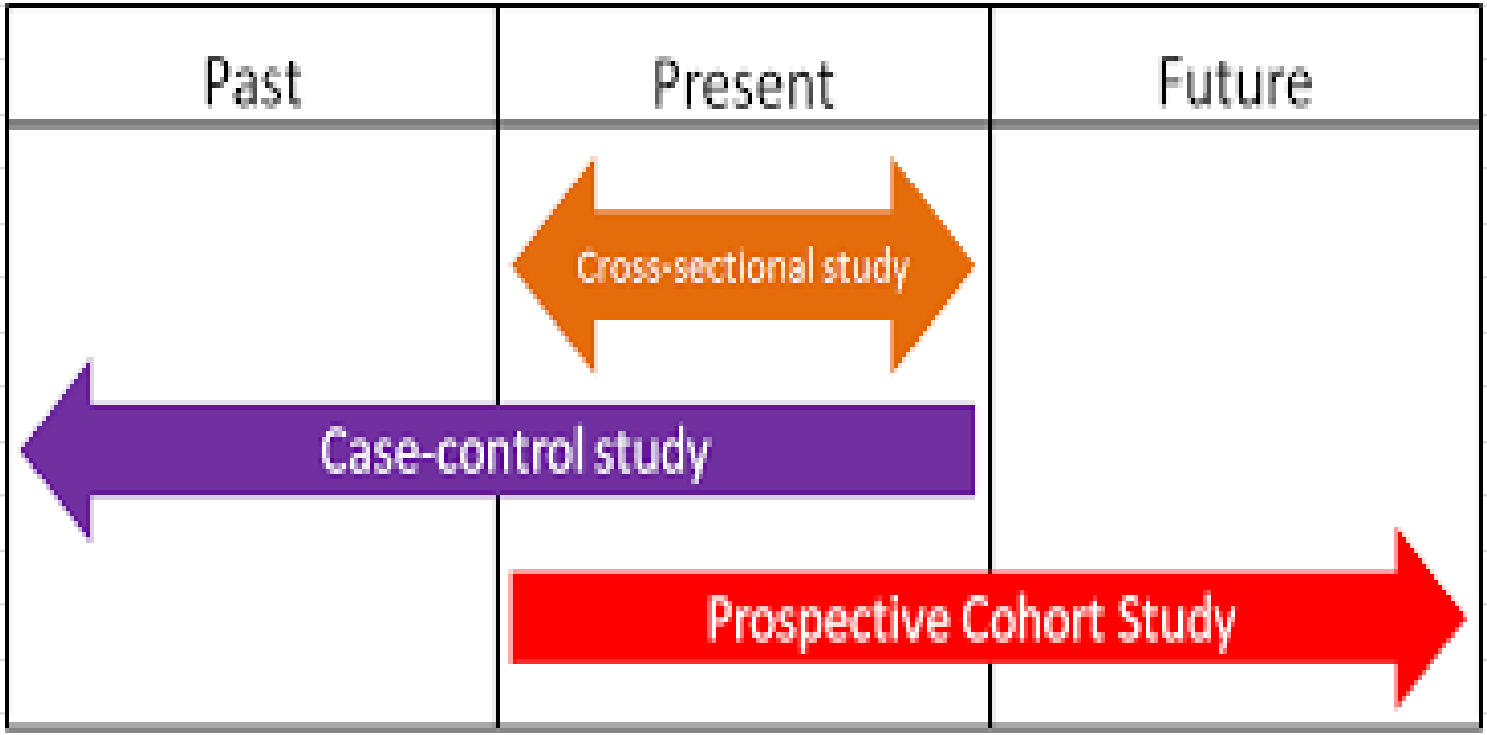
- **Cohort studies** are a type of medical research used to investigate the causes of disease and to establish links between risk factors and health outcomes
- They can be forward-looking (prospective) or backward-looking (retrospective).
- These long-term studies are sometimes called longitudinal studies.

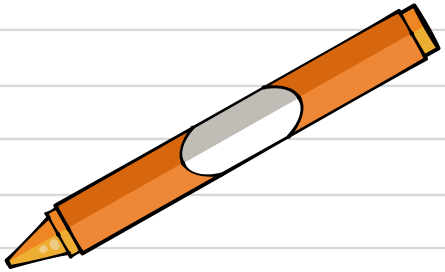
Example

- **Framingham Heart Study**
- which recruited over 5,209 male and female participants in 1948 from around the area of Framingham. It has continued to serve as a source of data for cardiovascular risk factors.
- A second cohort was recruited in 1971 and a third in 2002.
- The study has made important contributions to the understanding of heart health. The researchers are now looking into how genetic factors may affect cardiovascular risk.

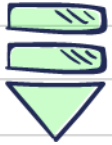

Cohort Type Studies
Exposed
Non-Exposed
Compare Incidence
Case-Control Studies
Diseased
Non-Diseased
Compare Prior Exposures

Review


Past
Present
Future
Cross-sectional study
Case-control study
Prospective Cohort Study



Experimental studies/ intervention studies



Experimental studies

Quasi-experimental studies

experimental

This is the only study design that can actually prove causation.

Individuals are randomly allocated to at least two groups.one is subjected to intervention ,while the other group is not .

The classical experimental study has three characteristics

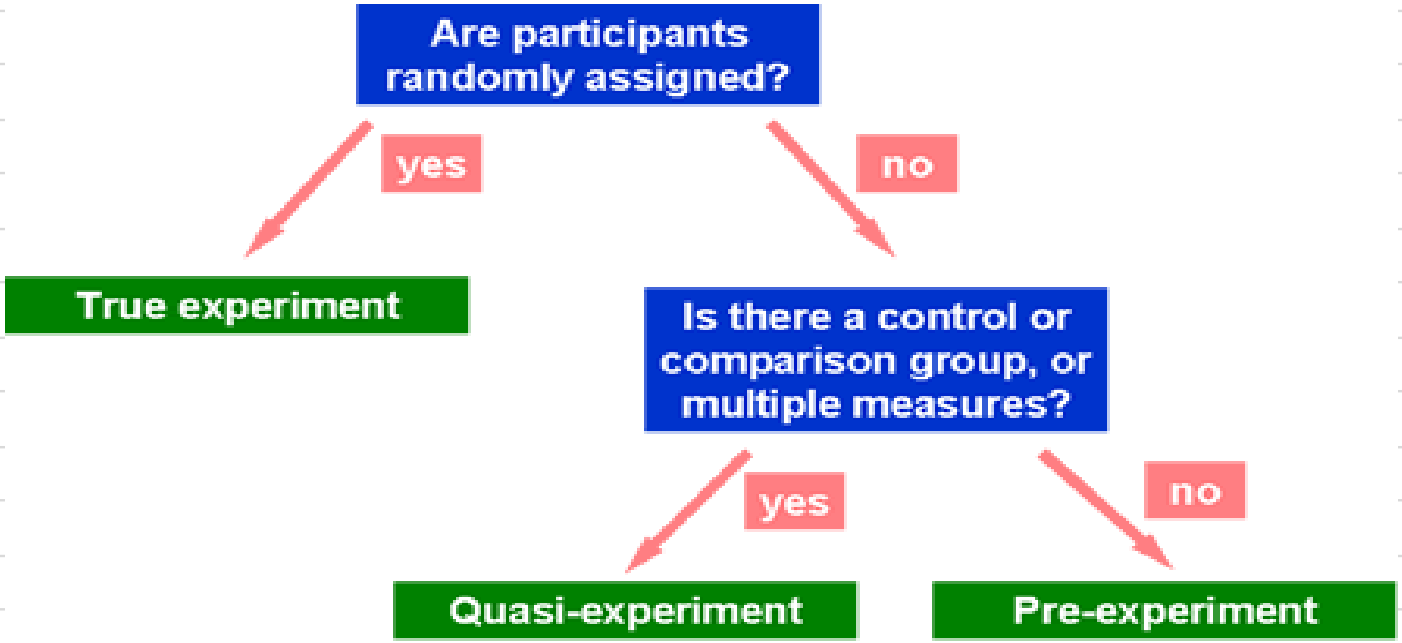
- Manipulation
- Control
- Randomization

QuestionPro

Types of **experimental research design**

- Pre-experimental research design
- True experimental research design
- Quasi-experimental research design


A
B
Compare
Incidence


Are participants randomly assigned?
yes
no
True experiment
Is there a control or comparison group, or multiple measures?
yes
no
Quasi-experiment
Pre-experiment

Thanks!

Any questions?