Study Designs



Observational

The researcher is not intervening, only observing phenomena. (Possibly observing an intervention introduced by another entity)

Descriptive

The question is about describing the study sample as it is, with *no comparison* involved;

No testing of a hypothesis

Case report Case series

Analytic

Answering the question involves comparisons between groups and assessing associations between variables (<u>exposure</u> and <u>outcome</u>); Involves generating or testing a hypothesis

What is the **exposure**? What is the **outcome**?

Interventional

The researcher is introducing an intervention (e.g., medication, vaccine, program, policy... etc.)

Non-randomized

Investigator assigns the exposure status for each individual through a process other than randomization

Quasi-experimental designs

Pre-post, difference-in-difference, interrupted time-series

Randomized

Investigator assigns the exposure status for each individual through randomization

Randomized control trials (RCTs)

Single-, double-, triple-blind RCTs Cluster randomized trails (CRTs)

Time disregarded

Data on **exposure** and **outcome** are collected in the same point/period of time (no time stamp)

Time considered

The way data collected takes into account that **exposure** happened <u>before</u> the **outcome** (time stamp present)

Retrospective

The **outcome** has already happened, the researcher **never** moves forward in time after starting data collection

Classify based on **outcome**

Compare exposure in the past

Case-control

(Mainly for **rare** outcomes/diseases; Can be applied to study **multiple exposures**; Can **neither** calculate incidence nor prevalence)

Classify based on exposure

Compare *outcome* by the time of study

Retrospective cohort

(Eliminates the need to wait for outcomes; Can be applied to study **multiple outcomes**; Can be used for calculating **incidence**)

Prospective

The **outcome** has not yet happened at the time of starting data collection, the researcher **moves forward** in time

Classify based on **exposure**

Compare *outcome* in the future

Prospective cohort

(Duration depends on time before outcome; Can be applied to study **multiple outcomes**; Can be used for calculating **incidence**)

Cross sectional

(Crude associations between any number of exposures and outcomes;
Can be use for calculating **prevalence**)