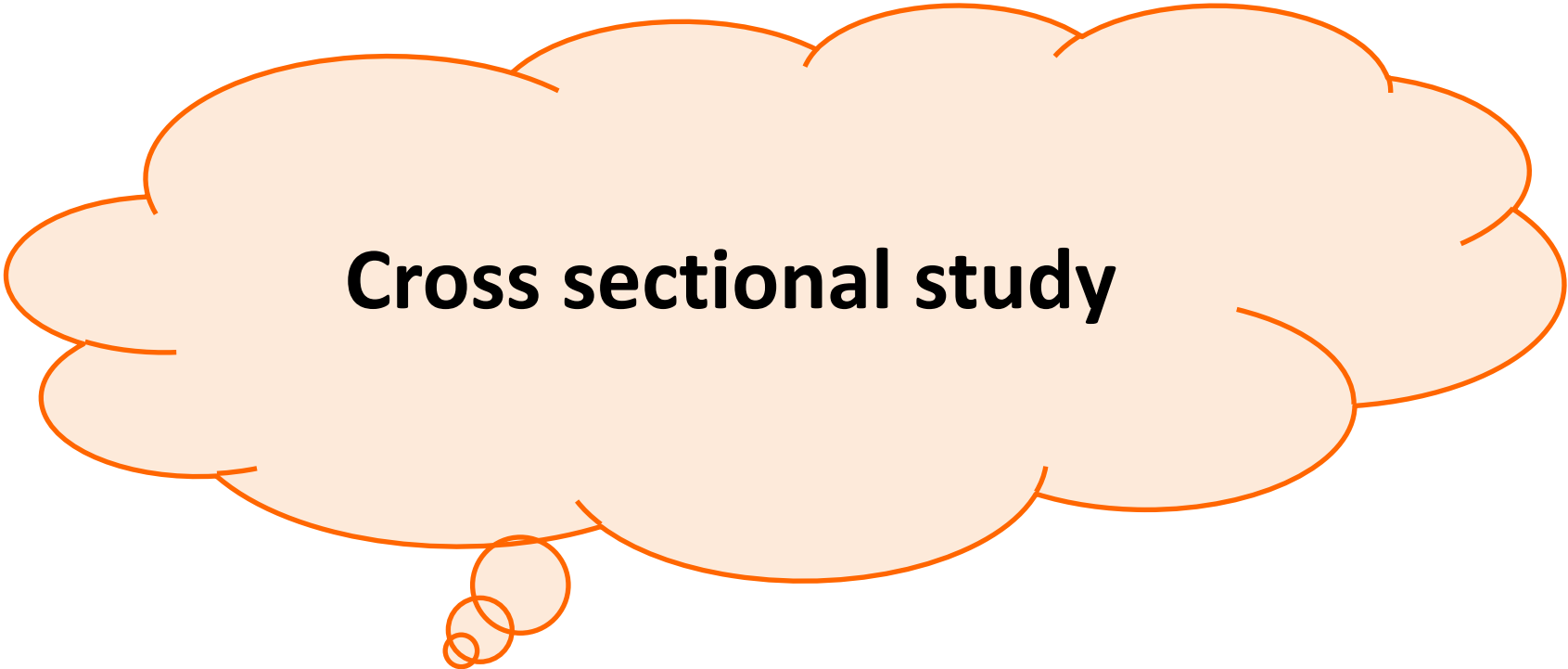


**In the name
of
Allah**



Observational study

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Cross sectional study

- ✓ carried out at one time point or over a short period
- ✓ prevalence of the outcome of interest for a given population
- ✓ Data can also be collected on individual characteristics, including exposure to risk factors
- ✓ 'snapshot' of the outcome and the characteristics associated with it, at a specific point in time.

- ✓ **The purpose of the study is descriptive, often in the form of a survey.**
- ✓ **the aim is to describe a population or a subgroup within the population with respect to an outcome and a set of risk factors.**
- ✓ **The purpose of the study is to find the prevalence of the outcome of interest, for the population or subgroups within the population at a given time point.**

- ✓ Cross-sectional studies are **sometimes** carried out to investigate associations between risk factors and the outcome of interest.
- ✓ They are limited, however, by the fact that they are carried out **at one time point** and give **no indication of the sequence of events** — whether exposure occurred before, after or during the onset of the disease outcome.
- ✓ **it is impossible to infer causality.**

- ✓ The **sample frame** used to select a sample and the **response rate** determine how well results can be generalised to the population as a whole.
- ✓ The sample used in a large cross-sectional study is often taken from the **whole population**. This is the optimum situation.
- ✓ if the sample is selected using a **random technique** it is likely that it will be highly representative.
- ✓ **Nonresponse is a common problem in wide-scale surveys**; techniques to minimise nonresponse include **telephone** and **mail** prompting, second and third mailing of surveys, letters outlining the importance of replying.

- The **level of nonresponse** is one concern, but a greater one still is that of **biased response**, where a person is more likely to respond when they have a particular characteristic or set of characteristics.
- **Bias will occur when the characteristic in question is in some way related to the probability of having the outcome.**
- The response rate of a survey conducted by **door-to-door** interview looking at a particular disease, for example, may be highest in the **elderly and unemployed** because these groups are more likely to be in their home during the day. These two groups are also more likely to experience **higher levels of disease**, therefore biasing the results.

Advantages of cross-sectional studies:

- **Relatively inexpensive**
- **takes up little time to conduct**
- **Can estimate prevalence of outcome of interest**
- **Many outcomes and risk factors can be assessed**
- **Useful for public health planning, understanding disease etiology and for the generation of hypotheses**
- **There is no loss to follow-up**

Disadvantages of cross-sectional studies:

- **Difficult to make causal inference**
- **Only a snapshot: the situation may provide differing results if another time-frame had been chosen;**
- **Prevalence-incidence bias (also called Neyman bias). Especially in the case of longer-lasting diseases, any risk factor that results in death will be under-represented among those with the disease.**



Thank you