

Analyzing Studies

Vocabulary

Control Group: may be given a *generally accepted* treatment while the experimental group is given the *new* treatment that is being **tested**.

Placebo:

- a. A substance that has positive effects as a result of a patient's perception that it is beneficial rather than as a result of a causative ingredient.
- b. An inactive substance or preparation used as a control in an experiment or test to determine the effectiveness of a medicinal drug.

•
Blind study: A trial in which participants—the subject or the investigator—are unaware as to whether they are in the experimental or control arm of the study

Double blind study: A trial in which neither the subjects or the investigator, know the critical aspects of the experiment. It is used to guard against both experimenter bias and placebo effects. (placebos are worthless if the participants know they are getting it).

Experimenter Bias: bias introduced by an experimenter whose expectations about the outcome of the experiment can be subtly communicated to the participants in the experiment or affect the way data is analyzed.

Ex: A physical therapist may push the patient who is receiving the treatment to work harder, while not encouraging the control group patient as much.

Ex: A researcher may subconsciously check for improvement more carefully in one of the groups.

Experimental vs Observational

- 2 groups
 - control group
 - test group
 - Formal
 - Scientific
- collecting data

**observational doesn't necessarily mean that you observe others. it can be measuring heights, asking questions, or recording observed characteristics*

What are some examples of *treatments*?

** a treatment can be any other variable that can be manipulated and its results measured*

1) Study of music on performance.

- type of music
- volume
- age
- time
- time of day

2) Study of weather on vegetation.

- type of weather
- H_2O
- types of plants
-

3) Study of sugar on attention spans.

- amount of sugar
- type
- age

Video: Advantages/Disadvantages of Research Methods

<https://www.youtube.com/watch?v=fCFoauFu6Lw>

- 1) What types of studies were presented?
- 2) Label each as observational or experimental.
- 3) List ¹ advantages and disadvantages of each one.

13 Advantages vs. Disadvantages

Who/what is included in the sample?

How does the size of the sample affect the result?

Does the sample accurately represent the population?

Are subjects for the treatment group selected fairly?

Is the treatment given fairly?

Are there enough test groups and do they adequately answer/test the variable of interest?

How long is the study being conducted? How does that affect results?

✱ How could you change each study to make it stronger?