

Topic: Research Concepts

Learning Objective/Outcome:

Keywords/Questions	Notes
Define validity.	How well a method measures what it is intended to measure.
Define reliability.	How consistent a method of measurement is.
How can it be determined that a method is reliable?	If the method is repeated and the measurements obtained are the same or very similar, the method is reliable.
What is a placebo?	A product that looks like a drug but lacks any active ingredients. It has no medical effect on the taker.
Do people know when they are receiving a placebo?	No, they should not know.
Explain the placebo effect.	It is a psychological phenomenon that happens when patients taking a placebo drug report that it has helped them to feel better, even though in reality it has no medical effect on their symptoms.
Why might the placebo effect cause the results of a clinical trial to be not valid?	If the drug being tested in the clinical trials is actually ineffective in treating a condition, the placebo effect may cause patients testing out the drug to report that it helped them even though it really didn't.
What is a blind trial?	A clinical trial in which the patients do not know whether they are getting a real treatment or a placebo.
Why may a blind trial help to decrease the influence of the placebo effect on the results?	Because patients will not know if they are taking a real drug or a placebo, they will not automatically believe that the product they are taking will work before they try it. Therefore, the results they report will be less affected by bias.
How is a double-blind trial different from a blind trial?	In a double-blind trial, both patients and researchers are not aware of who is receiving the real drug and who is getting a placebo.
What are the benefits of having researchers blinded along with the patients?	Researchers who strongly hope or believe a drug will work may show bias as they carry out the clinical trial. If they are also blinded, researchers won't be subconsciously biased in administering treatment or interpreting results to cause the drug to appear more effective than it really is.

Define bias.	Allowing personal opinions to influence judgment, thereby supporting or opposing something in an unfair way.
What is randomization?	The process of randomly assigning patients to groups in a clinical trial.
What sorts of groups may clinical trial patients be sorted into?	Patients may be put in a group that receives the experimental drug or treatment, one that gets a standard, approved treatment, or one that gets a placebo.
Why should randomization be used in clinical trials?	It helps reduce bias, since researchers may subconsciously assign sicker patients to one group or accidentally influence the results in another way if the groups are not assigned randomly.
Why are clinical trials that use randomization ended as soon as one treatment is proven to be more effective?	So, patients receiving the less beneficial treatment can switch to the proven, more effective treatment.

Summary

Researchers must use certain additional techniques in their experiments to make sure that results are valid and reliable. Some of these techniques include placebos, blind trials, double-blind trials, and randomization. They help to reduce bias from patients and researchers that may influence the experimental results or the way they are interpreted.