Types of Studies

EXPERIMENTAL STUDIES

Clinical Trials: Randomized and Nonrandomized
Clinical trials are often grouped into two major classifications, randomized and nonrandomized studies. A randomized trial is defined as an experiment in which therapies under investigation are allocated by a chance mechanism. Randomized clinical trials are comparative experiments that investigate two or more therapies. Nonrandomized clinical trials usually involve only one therapy, on which information is collected prospectively and the results compared with historical data. Comparing prospective data with historical control data introduces biases from many sources. These potential biases are usually of such magnitude that the results of nonrandomized studies are often ambiguous and not universally accepted unless the therapeutic effect is very large. These same biases are not present to the same degree in randomized trials.


Blind and Double-Blinded Trials
Blind - subjects are not aware of the type of treatment they are receiving.
Double-Blind - neither the subjects nor the experimenters are aware of the type of treatment.


OBSERVATIONAL STUDIES

Cohort Study
A cohort [study] is a time-dimensional design to examine sequences, patterns of change or growth, or trends over time. A cohort is a group with common characteristics or experiences during a given time period. Cohorts generally refer to age groups or to groups of respondents who follow each other through formal institutions such as universities or hospitals or informal institutions such as a family. Populations also can be classified according to other time dimensions, such as time of diagnosis, time since exposure to a treatment, or time since initiating a behavior.

Case-Control Study
A case-control study is a retrospective epidemiological study in which subjects who have contracted a particular disease (the ‘cases’) are compared with similar subjects who did not contract the disease (the ‘controls’). The term disease is often used quite liberally to include such things as having an abortion or failure to follow a prescribed regimen of medication. The cases and the controls are often matched on one or more variables that might otherwise confound the comparison.


Cross-Sectional Study
In its more restrictive technical sense, a cross-sectional study is a type of study that involves the comparison of two or more groups (e.g., age groups) at one point in time, as opposed to a longitudinal study that traces a cohort of people across time.