

WORKSHOP OUTLINE

STATISTICAL METHODS FOR RESEARCH WORKERS

In many disciplines researchers wishing to publish are asked to provide a statistical analysis. Reviewers are often specific about what statistical measures they want included. Why wasn't an ANOVA done? What is the power of the test?

Researchers will probably have a statistical package available to them. How does one decide which is the appropriate procedure? What do all the pages of printout mean?

This workshop provides an overview of statistical design and analysis for researchers. Emphasis is on understanding the concepts of statistical procedures (with an absolute minimum of mathematics), choosing the correct analysis and interpreting computer output. This course is designed to help you, the researcher. It assumes you did an undergraduate statistics subject which you have completely forgotten.

The statistical computer package SPSS will be used. Relevant web-sites that provide on-line statistical calculations will also be given.

TOPIC	DETAILS
Data	Definitions, types, scales, normality.
Graphs	Bar charts, histograms, box plots.
Statistical Measures	Mean, Median, mode, standard deviation, variance, standard error, range, confidence intervals, sample size.
Concepts of testing	Hypotheses, significance, power, p-values
Categorical Data	Contingency tables, chi-squared test, Fisher's exact test, McNemar's test, relative risk, odds ratio, sample size.
Quantitative Data – Comparing Two groups	t-test, Mann-Whitney test, paired t, Wilcoxon's signed rank, sign test, sample size.
Quantitative Data-More than Two Groups	ANOVA- one way, two way with interaction, Multiple Comparison Tests, Experimental Design, sample size.
Quantitative Data - Relationships	Correlation, Simple Linear Regression, Multiple Linear Regression.