UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Research Statistics

2627-1-K0102D001-K0102D00101

Aims

The course aims to provide students with the fundamental concepts and statistical methods required for research. Upon completion of the course, students will have acquired the basic knowledge and skills necessary to describe and analyse data, and interpret results of a statistical analysis, as well as to understand the statistical methods commonly used in nursing research and healthcare.

Contents

Introduction to descriptive and inferential statistics. Main descriptive and inferential statistical methods used in nursing and healthcare applications.

Detailed program

Statistical units, populations and samples, variables and data, construction of tables and graphs. Descriptive statistics: measures of central tendency and measures of variability; random and systematic errors as related to any measurement process: indices of precision and accuracy; correlation and simple linear regression. Probability: probability rules, conditional probability and independence; diagnostic test. Random variables, Binomial and Gaussian (Normal) distributions. Introduction to statistical inference: point estimation and sampling distributions; confidence intervals, hypothesis testing. The logic of hypothesis testing, Type I and Type II errors, p-values, the relationship between confidence intervals and hypothesis testing, statistical significance versus clinical significance, and examples of the statistical tests most commonly used in healthcare research.

Prerequisites

None.

Teaching form

6 lectures with practical exercises, 4 hours each, delivered in person and 1 lesson of 4 hours delivered remotely.

Textbook and teaching resource

Bland M. (2019) Statistica Medica, Apogeo;Pagano M., Gauvreau M. (2003) Biostatistica, Idelson-Gnocchi; Bossi A., Cortinovis I. (1996) Statistica medica. Esercitazioni, Città Studi Edizione.

Semester

First year, first semester

Assessment method

Open-ended questions (including problem-solving exercises) and/or multiple-choice tests.

Office hours

By appointment, arranged via email with the teacher.

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | DECENT WORK AND ECONOMIC GROWTH