

SYLLABUS :-

Measurements and descriptive statistics in medical research and practice: Data types and scales of measurement: continuous vs. enumeration data, Sampling distributions - normal distribution (continuous data), binomial distribution (proportions, based on enumeration data), Measures of central tendency-mean, median, mode Measures of variability-standard deviation and standard error, Probability and odds Confidence limits on the mean Disease incidence and prevalence, Sensitivity, specificity, positive and negative predictive values Risk measures-relative risk, attributable risk, odds ratios, risk factors, Survival curves. Sampling : Concept of a source population, Random sampling, Estimation of population statistics, Standard error of a sample mean and of a proportion, and their differences, Confidence intervals Regression and Correlation: Simple, Partial and Multiple Correlation, Simple Linear / Nonlinear Regression, Logistic Regression for dichotomous variable. Statistical Inference and Hypothesis Testing: Hypothesis generation, Null hypothesis, Type I and II errors, Statistical Power, Interpretation of P-values and confidence intervals, Statistical and clinical significance. Comparing 2 or more groups: Comparing means of two populations with the t-test (continuous data), Comparing proportions of responders in two populations (enumeration data), Chi square with corrections (goodness of fit, test of independence). One - Way ANOVA: F-test, Treatments and Factors.