

Book Review

Basic Methods of Medical Research:

ABHAYA INDRAYAN

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As a graduate and postgraduate medical student, very little is taught about medical research. Fortunately, situation is slowly changing. Dr Abhay Indrayan has put his long experience into this book. The book is organized into 11 chapters, in each chapter author has explained in simple text with help of boxes, tables and flowcharts which enables the reader to grasp the subject. At the end of each chapter, summary and key references are given which has increased the utility of the book. Glossary of methodological terms has been given at the end.

First Chapter on understanding the basics of Medical research has covered the various topics like research protocol, which includes the research problem, its objective and hypothesis, has been explained at length. Details of medical research protocol have also been summarized in boxes so that one can quickly refer and understand. The ethical problem related to humans as well as animals have also been taken care off. The concept of Epidemiology and biostatistics has added to the usefulness of this book.

Second Chapter on 'The review of existing information' chapter explains the various sources of literature database available and how to identify the relevant literatures and how to use them. An attempt has been made to clarify the various sources of biases, its magnitude and how to control these uncertainty (basics) have been documented briefly.

The chapter on controlling the uncertainty needs special mention. The author has tried to incorporate the measures of controlling the biases and its comparison will definitely add to the knowledge of beginner's medical students / researchers. The concept of confounder and interaction variable has been dealt with examples and explained nicely.

The chapter dealing with sample size calculation deals with various concepts of methods of sample size especially for each type of studies. The term like a sampling / non-sampling error, point estimate of

SE has been given. The sample size techniques with formulation in annexure for various studies for descriptive and analytic studies have been documented nicely.

The various factors and the relevant indices in assessing the health of disease are placed at one place by which can have snapshot idea of burden of disease and the health studies.

The 'chapter eight' throws some light on the various measures of degree of uncertainty in terms of odds and risk ratios. The idea of diagnostic threshold ascertains to have cut-off value to discriminate between diseased or non diseased. The concept of validity of diagnostic test, receiver operative characteristic (ROC) curve, attributable risk are important topics needs worth mentioning.

The parametric as well non parametric statistical procedures for hypotheses testing are also incorporated. The statistical significance for proportions, chi-square test of goodness of fit, trend analysis for ordinal categories has been mentioned. In quantitative measurement in two or more groups or level cross classification, ANOVA and ANCOVA has been explained in detail.

The concepts of standard error, power of the test and the significance level and 95% confidence interval are explained. The assessment of clinical agreement needs worth mention in which all statistical techniques including multivariate analysis has been explained in simple text which is rarely seen in a medical statistical book for medical researchers.

This economically priced book has been written in simple and lucid text. This book would be useful for medical students particularly post graduates, researchers, scientists and administrators.

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