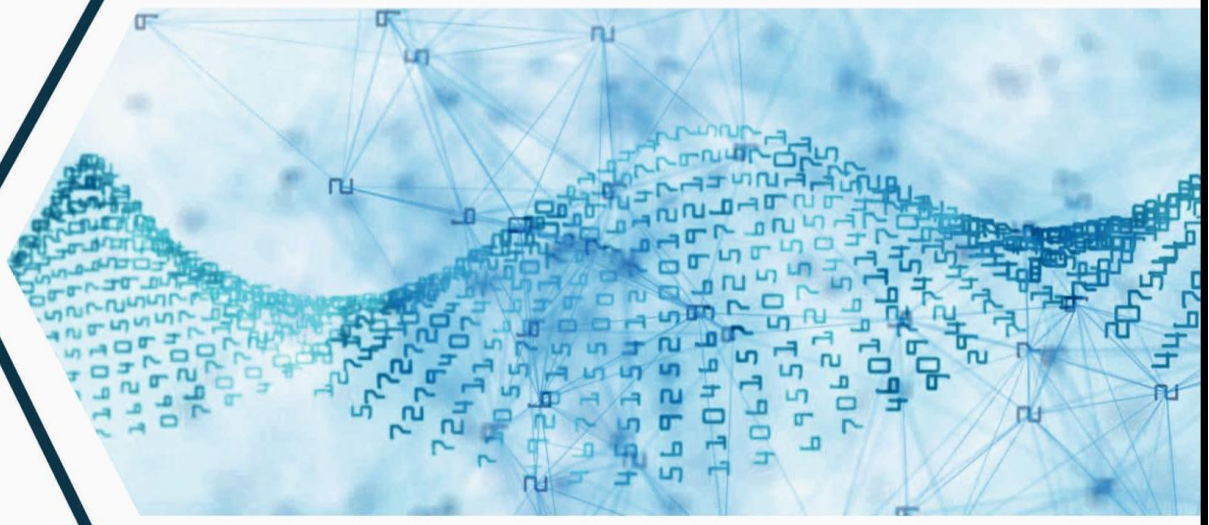
BIOSTATISTICS

AND RESEARCH METHODOLOGY



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BIOSTATISTICS
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PREFACE

This book describes the concepts, principles, methodology, and applications of research methodologies and biostatistics as prescribed by various Universities and the Pharmacy Council of India (PCI) for the subject **"BIODTATISTICS AND RESEARCH METHODOLOGY"** of the B.Pharm., M.Pharm., and Ph.D. programmes.

Biostatistics is a relatively new but rapidly expanding scientific field with numerous applications in pharmacy and pharmaceutical research. Pharmacy is a research-based profession. Knowledge of basic research concepts, research methodologies, experimental designs and protocols, and data analysis resulting in good and meaningful interpretation are all required for successful pharmacy research.

The subject is presented modulated and graded, beginning with basic concepts and gradually progressing from simple to advanced topics, allowing students to progress smoothly, easily, and comfortably. The textbook is unique in that it includes a number of solved problems and case studies at the end of each topic. Experiment designs and protocols for human and animal studies, design of experiments (DOE), tests of significance including non-parametric tests, analysis of variance (ANOVA), optimisation techniques, factorial experiments and optimisation by factorial designs, correlation and regression, probit analysis, and LD50 and ED50 determination are all covered in detail. There is also a chapter on patentable research in pharmacy and patenting procedures with examples.

Abbreviations

Analysis of Variance (ANOVA)

Clinical Research Unit (CR0U)

Code of Federal Regulations (CFR)

Design of Experiments (DOE)

Federal Aviation Administration (FAA)

Good Clinical Practice (GCP)

Java Virtual Machine (JVM)

Key Performance Indicators (KPIs)

National Cancer Institute (NCI)

National Institutes of Health (NIH)

One Factor at A Time (OFAT)

Ordinary Least Squares (OLS)

Pharmaco Dynamics (PD)

Pharmaco Kinetics (PK)

Software Development Life Cycle (SDLC)

Statistical Package Social Sciences (SPSS)

United States Food and Drug Administration’s (USFDA)

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