

VII SEMESTER

Textbook of
**NURSING RESEARCH
& STATISTICS**

For B.Sc. Nursing Students

(As per Revised Syllabus of Indian Nursing Council)

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EMMESS Medical Publisher Private Limited

'Jnana Dayini Building' S-1337, 3rd Cross, Bharatnagar 2nd Stage,
Near Karnataka Bank, Magadi Main Road, Herohalli, Bengaluru - 560091.

Phone : 080-23490849 E-mail : emmessmedpub@yahoo.co.in

www.emmessmedpub.com

Published by :

Manjunath S. Hegde

Managing Director

EMMESS Medical Publisher Private Limited

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- **Dr. Nisha Clement**

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Pages : VIII + 536 = 544

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First Edition : 2025

ISBN : 978-93-49373-56-3

Printed at : Print Point

PREFACE

In the ever-evolving field of healthcare, nursing professionals are required not only to provide compassionate patient care but also to base their practice on sound scientific evidence. Nursing research and statistics form the foundation for evidence-based practice, enabling nurses to make informed decisions, improve patient outcomes, and contribute to the advancement of healthcare knowledge. This book has been designed to introduce nursing students to the essential concepts of research methodology and statistical analysis, fostering a strong understanding of how research findings can be translated into clinical practice.

The need for research in nursing cannot be overstated. As healthcare challenges become more complex, nurses must be adept at identifying problems, formulating research questions, and evaluating scientific evidence. A strong grasp of research methodology equips nursing students with the skills to critically appraise published studies, apply relevant findings, and even participate in research projects themselves. This process not only enhances clinical competence but also encourages a culture of inquiry and continuous learning within the nursing profession.

Equally important is the understanding of statistics, which serves as the language of research. Statistical knowledge enables nurses to interpret quantitative data, recognize trends, and make accurate decisions based on evidence rather than intuition. From calculating sample sizes to analyzing outcomes, statistical tools help bridge the gap between raw data and meaningful conclusions. By incorporating statistical concepts alongside research methodology, this book empowers nursing students to approach clinical problems with analytical rigor and confidence.

Ultimately, the integration of nursing research and statistics into education ensures that future nurses are prepared to meet the demands of modern healthcare. This book aims to demystify these subjects, presenting them in a clear and practical manner tailored to the learning needs of nursing students. It is our hope that by developing a strong foundation in research and statistical principles, students will not only excel academically but also emerge as competent, evidence-based practitioners who contribute significantly to the quality and advancement of nursing care.

Dr. Nisha Clement

ACKNOWLEDGEMENT

I am thankful to the Almighty, who strengthens me with his abundant blessings through innumerable means, helping me in all my accomplishments. I thank my dear parents Mr Babu Jacob and Mrs Kunjumol Babu, for their powerful prayers and blessings that always strengthen my life. I convey my sincere thanks to my beloved sister and brother-in-law Mrs Sheeba Babu and Mr Sathesh. I take this opportunity to thank my little ones, Cibin, Cynthia and Cavin. I thank my dear husband Dr I Clement, the power force behind me and the man behind the successful release of this book.

My sincere thanks to my guru BT Basavanthappa (Principal, Rajarajeshwari College of Nursing, Bengaluru) and PV Ramachandran (Chairman, College of Nursing, Sri Ramachandra University, Chennai, Tamil Nadu, India), a great philosopher and an internationally renowned teacher of nursing, who helped me in discovering the world of knowledge. I am also grateful to Dr Sanjeeva Reddy (Head, Department of Obstetrics and Gynaecology, Sri Ramachandra University, Chennai) and Dr OS Ravendran (Professor, Counselling Psychology, Sri Ramachandra University, Chennai).

Special thanks to Dr Jeyaseelan Manickam Devadasan (Dean), Dr Tamilmani (Principal), Professor Mrs Jessie Sudarsanam (Head, Department of Medical Surgical Nursing), and all my teachers and students of Annai JKK Sampoorani Ammal College of Nursing, Namakkal, Tamil Nadu. Sincere heartfelt gratitude to Mr. Manjunath Hegde, Publisher and Chairman EMMSS Medical publisher and Mr. Amitkumar Editor for the support in preparing the manuscript.

Dr. Nisha Clement

SYLLABUS

PLACEMENT: VII SEMESTER

THEORY: 2 Credits (40 hours)

PRACTICUM: Lab/Skill Lab: 1 Credit (40 hours) Clinical Project: 40 hours

DESCRIPTION: The Course is designed to enable students to develop an understanding of basic concepts of research, research process and statistics. It is further, structured to conduct/ participate in need-based research studies in various settings and utilize the research findings to provide quality nursing care. The hours for practical will be utilized for conducting individual/group research project.

COMPETENCIES: On completion of the course, students will be competent to

1. Identify research priority areas
2. Formulate research questions/problem statement/hypotheses
3. Review related literature on selected research problem and prepare annotated bibliography
4. Prepare sample data collection tool
5. Analyze and interpret the given data
6. Practice computing, descriptive statistics and correlation
7. Draw figures and types of graphs on given select data
8. Develop a research proposal
9. Plan and conduct a group/individual research project

COURSE OUTLINE

T – Theory, P – Practicum

Unit	Time (Hrs.)		Learning Outcomes	Content	Teaching/ Learning Activities	Assessment Methods
	T	P				
I	6		Describe the concept of research, terms, need and areas of research in nursing Explain the steps of research process State the purposes and steps of Evidence Based Practice	Research and Research Process <ul style="list-style-type: none"> • Introduction and need for nursing research • Definition of Research & nursing research • Steps of scientific method • Characteristics of good research • Steps of Research process – overview • Evidence Based Practice – Concept, Meaning, Purposes, Steps of EBP Process and Barriers 	<ul style="list-style-type: none"> • Lecture cum Discussion • Narrate steps of research process followed from examples of published studies • Identify research priorities on a given area/ specialty • List examples of Evidence Based Practice 	<ul style="list-style-type: none"> • Short answer • Objective type

II	2	8	Identify and state the research problem and objectives	Research Problem/Question <ul style="list-style-type: none"> • Identification of problem area • Problem statement • Criteria of a good research problem • Writing objectives and hypotheses 	<ul style="list-style-type: none"> • Lecture cum Discussion • Exercise on writing statement of problem and objectives 	<ul style="list-style-type: none"> • Short answer • Objective type • Formulation of research questions/objectives/hypothesis
III	2	6	Review the related literature	Review of Literature <ul style="list-style-type: none"> • Location • Sources • On line search; CINHAL, COCHRANE etc. • Purposes • Method of review 	<ul style="list-style-type: none"> • Lecture cum Discussion • Exercise on reviewing one research report/article for a selected research problem • Prepare annotated Bibliography 	<ul style="list-style-type: none"> • Short answer • Objective type • Assessment of review of literature on given topic presented
IV	4	1	Describe the Research approaches and designs	Research Approaches and Designs <ul style="list-style-type: none"> • Historical, survey and experimental • Qualitative and Quantitative designs 	<ul style="list-style-type: none"> • Lecture cum Discussion • Identify types of research approaches used from examples of published and unpublished research • Studies with rationale 	<ul style="list-style-type: none"> • Short answer • Objective type
V	6	6	Explain the Sampling process Describe the methods of data collection	Sampling and data Collection <ul style="list-style-type: none"> • Definition of Population, Sample • Sampling criteria, factors influencing sampling process, types of sampling techniques • Data – why, what, from whom, when and where to collect • Data collection methods and instruments <ul style="list-style-type: none"> ▪ Methods of data collection 	<ul style="list-style-type: none"> • Lecture cum Discussion • Reading assignment on examples of data collection tools • Preparation of sample data collection tool • Conduct group research project 	<ul style="list-style-type: none"> • Short answer • Objective type • Developing questionnaire/ Interview Schedule/ Checklist

				<ul style="list-style-type: none"> ▪ Questioning, interviewing ▪ Observations, record analysis and measurement ▪ Types of instruments, Validity & Reliability of the Instrument • Research ethics • Pilot study • Data collection procedure 		
VI	4	6	Analyze, Interpret and summarize the research data	Analysis of data <ul style="list-style-type: none"> • Compilation, Tabulation, classification, summarization, presentation, interpretation of data 	<ul style="list-style-type: none"> • Lecture cum Discussion • Preparation of sample tables 	<ul style="list-style-type: none"> • Short answer • Objective type • Analyze and interpret given data
VII	12	8	<p>Explain the use of statistics, scales of measurement and graphical presentation of data</p> <p>Describe the measures of central tendency and variability and methods of Correlation</p>	Introduction to Statistics <ul style="list-style-type: none"> • Definition, use of statistics, scales of measurement. • Frequency distribution and graphical presentation of data • Mean, Median, Mode, Standard deviation • Normal Probability and tests of significance • Co-efficient of correlation • Statistical packages and its application 	<ul style="list-style-type: none"> • Lecture cum Discussion • Practice on graphical presentations • Practice on computation of measures of central tendency, variability & correlation 	<ul style="list-style-type: none"> • Short answer • Objective type • Computation of descriptive statistics
VIII	4	5	<p>Communicate and utilize the research findings</p> <p>40 Hrs (Clinical Project)</p>	Communication and utilization of Research <ul style="list-style-type: none"> • Communication of research findings • Verbal report • Writing research report • Writing scientific article/paper • Critical review of published research including publication ethics • Utilization of research findings • Conducting group research project 	<ul style="list-style-type: none"> • Lecture cum Discussion • Read/ Presentations of a sample published/unpublished research report • Plan, conduct and Write individual/group research project 	<ul style="list-style-type: none"> • Short answer • Objective type • Oral Presentation • Development of research proposal • Assessment of research Project

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