

# NURSING RESEARCH AND STATISTICS

Total Hours : Theory – 45 Hour

Practical – 30 Hours per Week (Project work to be carried out during internship)

## Course Description:

The course is designed to enable students to develop an understanding of basic concepts of research, research process and statistics and to enable them to conduct/participate in need based research studies in various settings. Further the students will be able to utilize the research findings to provide quality-nursing care.

Total marks – 100

**Specific objectives:** At the end of the course, the students will be able to:

1. Define the terms and concepts of nursing research.
2. Identify needs and scope of nursing research.
3. Define research problems.
4. Locate and list sources of literature review including operational definitions and conceptual framework.
5. Describe different approaches and research designs in nursing research.
6. Describe sample and sampling technique.
7. Develop tool for data collection.
8. Conduct pilot study to confirm reliability and validity of tool before data collection
9. To enumerate steps of data analysis and present data summary
10. Use descriptive and co- relational statistics in data analysis.
11. Conduct group project and write report.

Unit	Time (Hrs)	Learning Objectives	Content	Training Learning Activities	Assessment Methods
I	4	<ul style="list-style-type: none"> <li>• Describe the concept of research, terms, need and areas of research in nursing.</li> <li>• Explain the steps of research process.</li> </ul>	<b>Research and research process</b> <ul style="list-style-type: none"> <li>• Introduction and need for nursing research.</li> <li>• Definition of Research &amp; nursing research.</li> <li>• Steps of scientific method.</li> <li>• Characteristics of research.</li> <li>• Steps of research process -overview</li> </ul>	<ul style="list-style-type: none"> <li>• Lecture Discussion.</li> <li>• Narrate steps of research process followed from examples of published studies.</li> </ul>	<ul style="list-style-type: none"> <li>• Short answer</li> <li>• Objective type</li> </ul>

Unit	Time (Hrs)	Learning Objectives	Content	Training Learning Activities	Assessment Methods
II	3	<ul style="list-style-type: none"> <li>Identify and state the research problem and objectives</li> </ul>	Research Problem/Question <ul style="list-style-type: none"> <li>Identification of problem area. &amp; Problem statement.</li> <li>Stating objectives of the research problem.</li> </ul>	<ul style="list-style-type: none"> <li>Lecture Discussion.</li> <li>Exercise on writing statement of problem and objectives</li> <li><i>Each student selects a research problem</i></li> </ul>	<ul style="list-style-type: none"> <li>Short answer.</li> <li>Objective type</li> </ul>
III	3	<ul style="list-style-type: none"> <li>Review the related literature</li> </ul>	<b>Review of Literature</b> <ul style="list-style-type: none"> <li>Steps in review of literature</li> <li>Identification of Publication</li> <li>Keeping a record</li> <li>Writing the review of literature</li> <li>Writing of Bibliography</li> </ul>	<ul style="list-style-type: none"> <li>Lecture Discussion</li> <li>Exercise on reviewing one research report/article for a selected research problem.</li> <li>Prepare annotated bibliography (5)</li> </ul>	<ul style="list-style-type: none"> <li>Short answer</li> <li>Objective type</li> </ul>
IV	4	<ul style="list-style-type: none"> <li>Describe the research approaches and designs</li> </ul>	<b>Research approaches and designs</b> <ul style="list-style-type: none"> <li>Historical, survey and experimental</li> <li>Qualitative and Quantitative designs</li> </ul>	<ul style="list-style-type: none"> <li>Lecture Discussion</li> <li>Explain types of research approaches used from examples of published and unpublished research studies with rationale.</li> </ul>	<ul style="list-style-type: none"> <li>Short answer</li> <li>Objective type</li> </ul>
V	8	<ul style="list-style-type: none"> <li>Explain the sampling process</li> <li>Describe the methods of data collection</li> <li>Developing and standardizing an instrument</li> </ul>	Sampling and data collection <ul style="list-style-type: none"> <li>Definition of Population, Sample, Sampling criteria, factors influencing sampling process, types of sampling techniques.</li> <li>Data collection Methods and instruments               <ol style="list-style-type: none"> <li>Questionnaire, interview, records &amp; reports and other techniques</li> <li>Validity &amp; Reliability of the instrument</li> <li>Pilot Study</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Lecture Discussion</li> <li><i>Prepare the tool in respect to the selected research problem.</i></li> </ul>	<ul style="list-style-type: none"> <li>Short answer</li> <li>Objective type</li> </ul>

Unit	Time (Hrs)	Learning Objectives	Content	Training Learning Activities	Assessment Methods
VI	15	<ul style="list-style-type: none"> <li>Explain the use of statistics, scales of measurement and graphical presentation of data</li> <li>Describe the measures of central tendency and variability and methods of correlation</li> </ul>	<b>Introduction to statistics</b> <ul style="list-style-type: none"> <li>Definition, use of statistics, scales of measurement</li> <li>Frequency distribution and graphical presentation of data</li> <li>Mean, Median, Mode, standard deviation</li> <li>Normal probability and tests of significance</li> <li>Coefficient of correlation</li> <li>Inferential statistics and types</li> <li>Statistical packages and its application</li> </ul>	<ul style="list-style-type: none"> <li>Lecture, discussion</li> <li>Practice on graphical presentations</li> <li>Practice on computation of measures of central tendency, variability &amp; correlation</li> </ul>	<ul style="list-style-type: none"> <li>Short answer</li> <li>Objective type</li> </ul>
VII	4	<ul style="list-style-type: none"> <li>Analyze, interpret and summarize the research data</li> </ul>	<b>Analysis of Data</b> <ul style="list-style-type: none"> <li>Compilation, Tabulation</li> <li>Classification, summarization, presentation, interpretation of data</li> </ul>	<ul style="list-style-type: none"> <li>Lecture, discussion</li> <li>Preparation of sample tables</li> </ul>	<ul style="list-style-type: none"> <li>Short answer</li> <li>Objective type</li> </ul>
VIII	4	<ul style="list-style-type: none"> <li>Communicate and utilize the research findings.</li> </ul>	<b>Communication and utilization of Research</b> <ul style="list-style-type: none"> <li>Communication of research findings <ul style="list-style-type: none"> <li>- Verbal report</li> <li>- Writing research report</li> <li>- Writing scientific article/ paper- Critical review of published research</li> </ul> </li> <li>&amp; Utilization of research findings</li> </ul>	<ul style="list-style-type: none"> <li>Lecture, discussion</li> <li>Writing group research project &amp; presentation</li> </ul>	<ul style="list-style-type: none"> <li>Short answer</li> <li>Objective type</li> <li>Assessment of group research Project</li> </ul>

Research Project work to be carried out during internship

### References

1. Polit , D.F. & Beck CT, Nursing Research, Principles and Methods,7<sup>th</sup> ed, Lippincott Williams & Wilkins,Philadelphia, 2003.
2. Polit Dennis and Hunglar B P, Nursing research principles and methods, 6<sup>th</sup> edition Lippincott, Philadephia, 1999.
3. Laura A.Talbot, Principles and practice of nursing research, Mosby St. Louis 1995.
4. DorothyYB & Marie TH ,Fundamentals of research in Nursing, 3<sup>rd</sup> ed,Jones & Bartlett Publishers,Boston,2003.

5. Rao TB, Methods in Medical Research, 1<sup>st</sup> ed, Radha Rani Publishers, Guntur AP, 2002.
6. Smith, P ResearchMindedness for Practice> An interactive approach for nursing and health care, Churchill livingstone, New York, 1997
7. American Psychological Association publication manual. 2001.
8. Mahajan Methods in Bio statistics.
9. Trece E.W. & Treece JW: Elements of Research in Nursing, 3<sup>rd</sup> ed The CV Mosby CompanySt, Louis 1986\_

### **Evaluation**

**Internal assessment: 100 Marks (College level qualifying exam to appear in 4<sup>th</sup> year University Exam.)**

**a) Theory:** Maximum marks 50

Midterm	25
Prefinal	25

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Total marks 50

**b) Project:** Maximum marks 50

Assignment: Group project 50

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Total marks 50

# ***INTRODUCTION TO NURSING RESEARCH AND STATISTICS***

## **PRACTICAL EXPERIENCE GUIDELINE AND EVALUATION FOR**

### **4<sup>th</sup> BSc.Nursing**

#### **NURSING RESEARCH: "PROJECT"**

Time Allotted Practical- 45 hrs.

##### Guideline for Research Project

I Aim: Student will identify the role of nurse in conducting research, writing research proposal based on scientific steps and will analyze the data using simple statistical methods. While conducting research project.

II Objectives: Preparing nursing research proposal

- 1) To get an opportunity to select topic or problem to formulate research proposal.
- 2) To follow the steps in research while writing research proposal and conducting project.
- 3) To differentiate and plan specific design in nursing research i.e. experimental and non-experimental including methodology.
- 4) To get an opportunity to frame/construct simple tool or questionnaire to collect data.
- 5) To follow the basic principles of data analysis including simple tables and statistical methods for proceedings and interpretation of data.
- 6) To be familiar to write research report to communicate the findings including bibliography, foot notes and future recommendations.
- 7) To present nursing research proposal as group activity.
- 8) Learns to use computers.

.III Guide line / check list to prepare / Nursing research proposal & project

- 1) Selection of research problem : Select your interest area of research, based on felt need, issues, social concern in nursing field.
  - a) State the problem, brief concise, clear.
  - b) State the purpose of selected study & topic
  - c) State objective of study/proposal/project.
  - d) State the hypothesis if necessary (optional).
  - e) Prepare conceptual framework based on operational definition (optional).
  - f) Write scope and delimitation of Research Proposal.

2) Organizing for Review of Literature

- a) It adas in to needs to conduct Research project.
- b) To study related and relevant literature which helps to decide conceptual framework and research design to be selected for your study.
- c) To add specific books, bulletins, periodicals, reports, published and unpublished dissertations, encyclopedia, text books.
- d) Organize literature as per operational definition.
- e) To prepare summary table for review of literature. (Optional)

- 3) Research Methodology: To determine logical structure & methodology for research project
  - a) Decide and state approach of study i.e. experimental or non-experimental.
  - b) To define/find out variables to observe effects on decided items & procedure (optional)
  - c) To prepare simple tool or questionnaire or observational check list to collect data.
  - d) To determined sample and sampling method.
    - i) mode of selection
    - ii) Criterias
    - iii) Size of sample
    - iv) Plan when, where and how data will be collected
  - e) To test validity of constructed tool (To check content in tool in relation to stated objectives) with experts / teachers opinion.
  - t) To check reliability by implementing tool before pilot study (10% of sample size)
  - g) To conduct pilot study by using constructed tool for 10% selected sample *size*.
- 4) Data Collection: To implement prepared tool
  - a) To implement constructed tool
  - b) Decide location
  - c) Time
  - d) Write additional information in separate exercise book to support inferences and interpretation.
- 5) Data analysis and processing presentation
  - a) Use appropriate method of statistical analysis i.e. frequency and percentage.
  - b) Use clear frequency tables, appropriate tables, graphs and figures.
  - c) Interpretation of data:
    - i) In relation to objectives
    - ii) Hypothesis (Optional)
    - iii) Variable of study or project (Optional)
    - iv) Writing concise report
- 6) Writing Research report
  - a) Aims:
    - i) To organize materials to write project report
    - ii) To make comprehensive full factual information
    - iii) To use appropriate language and style of writing
    - iv) To make authoritative documentation by checking footnotes, references & bibliography
    - v) To use computers.
  - b) Points to remember
    - a) Develop thinking to write research report.
    - b) Divide narration of nursing research report.
    - c) Use present tense and active voice
    - d) Minimize use of technical language
    - f) Use simple, straightforward, clear, concise language
    - g) Use visual aids in form of table, graphs, figures
    - h) Treat data confidentially
    - i) Review, rewrite if necessary

## EVALUATION CRITERIA FOR PROJECT REPORT

Maximum Marks: 100

Sr. No.	Criteria	Rating					Remarks
		1	2	3	4	5	
I	Statement of the problem						
	1. Significance of the problem selected						
	2. Framing of title and objectives						
II	Literature Review						
	3. Inclusion of related studies on the topic, and its relevance						
	4. Operational definition						
III	Research Design						
	5. Use of appropriate research design						
	6. Usefulness of the research design to draw the inferences among stud variables / conclusion						
IV	Sampling design						
	7. Identification and description of the target population						
	8. Specification of the inclusion and exclusion criteria						
	9. Adequate sample size justifying he study design to draw conclusions.						
V	Data Collection Procedure						
	10. Preparation of appropriate tool						
	11. Pilot study including validity and reliability of tool						
	12. Use of appropriate procedure / method for data collection						
VI	Analysis of Data & Interpretation						
	13. Clear and logical organization of the findings						
	14. Clear presentation of the tables (Title, table & Column heading)						
	15. Selection of appropriate statistical tests						

Sr. No.	Criteria	Rating					Remarks
		1	2	3	4	5	
VII	Ethical Aspects						
	16. Use of appropriate consent process						
	17. Use appropriate steps to maintain ethical aspects and principles (physical harm etc.)						
VIII	Interpretation of the findings						
	18. Consistent and appropriate discussion of the Results						
IX	Conclusion						
	19. Summary and recommendations for to Nursing Practice / Education / Administration						
X	Presentation / Report writing						
	20. Organization of the project work including Language and style of presentation						
	Maximum marks						100
	Marks obtained						
	Marks sent to University						/ 50

Remarks by the Supervisor / Guide

**Date:**

**Signature**

**Signature of the students Date**