

NURSING RESEARCH AND STATISTICS

Placement: 1st Year

Hours of Instruction
Theory 150 Hours
Practical 100 Hours
Total : 250 Hours

Part-A : Nursing Research

Theory 100 Hours
Practical 50 Hours
Total : 150 Hours

Course Description:

The course is designed to assist the students to acquire an understanding of the research methodology and statistical methods as a basis for identifying research problem, planning and implementing a research plan. It will further enable the students to evaluate research studies and utilize research findings to improve quality of nursing practice, education and management.

General Objectives:

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

1. Define basic research terms and concepts.
2. Review literature utilizing various sources
3. Describe research methodology
4. Develop a research proposal.
5. Conduct a research study.
6. Communicate research findings
7. Utilize research findings
8. Critically evaluate nursing research studies.
9. Write scientific paper for publication.

Content Outline

Unit	Hours		Course Content
	Theory	Practical	
I	10		Introduction: <ul style="list-style-type: none"> □ Methods of acquiring knowledge – problem solving and scientific method. □ Research – Definition, characteristics, purposes, kinds of research □ Historical Evolution of research in nursing □ Basic research terms □ Scope of nursing research: areas, problems in nursing, health and social research □ Concept of evidence based practice □ Ethics in research □ Overview of Research process
II	5	5	Review of Literature <ul style="list-style-type: none"> □ Importance, purposes, sources, criteria for selection of resources and steps in reviewing literature.
III	12		Research Approaches and designs <ul style="list-style-type: none"> □ Type: Quantitative and Qualitative □ Historical, survey and experimental –Characteristics, types advantages and disadvantages □ Qualitative: Phenomenology, grounded theory, ethnography
IV	10	5	Research problem: <ul style="list-style-type: none"> □ Identification of research problem □ Formulation of problem statement and research objectives □ Definition of terms □ Assumptions and delimitations □ Identification of variables □ Hypothesis – definition, formulation and types.
V	5	5	Developing theoretical/conceptual framework. <ul style="list-style-type: none"> □ Theories: Nature, characteristics, Purpose and uses □ Using, testing and developing conceptual framework, models and theories.
VI	6		Sampling <ul style="list-style-type: none"> □ Population and sample □ Factors influencing sampling □ Sampling techniques □ Sample size □ Probability and sampling error □ Problems of sampling

Unit	Hours		Course Content
	Theory	Practical	
VII	20	10	Tools and methods of Data collection: <ul style="list-style-type: none"> □ Concepts of data collection □ Data sources, methods/techniques quantitative and qualitative. □ Tools for data collection – types, characteristics and their development □ Validity and reliability of tools □ Procedure for data collection
VIII	5		Implementing research plan <ul style="list-style-type: none"> □ Pilot Study, review research plan (design)., planning for data collection, administration of tool/interventions, collection of data
IX	10	10	Analysis and interpretation of data <ul style="list-style-type: none"> □ Plan for data analysis: quantitative and qualitative □ Preparing data for computer analysis and presentation. □ Statistical analysis □ Interpretation of data □ Conclusion and generalizations □ Summary and discussion
X	10		Reporting and utilizing research findings: <ul style="list-style-type: none"> □ Communication of research results; oral and written □ Writing research report purposes, methods and style- vancouver, American Psychological Association(APA), Campbell etc □ Writing scientific articles for publication: purposes & style
XI	3	8	Critical analysis of research reports and articles
XII	4	7	Developing and presenting a research proposal

Activities:

- Annotated Bibliography of research reports and articles.
- Review of literature of selected topic and reporting
- Formulation of problem statement, objective and hypothesis
- Developing theoretical/ conceptual framework.
- Preparation of a sample research tool
- Analysis and interpretation of given data
- Developing and presenting research proposal
- Journal club presentation
- Critical evaluation of selected research studies
- Writing a scientific paper.

Method of Teaching

- Lecture-cum-discussion
- Seminar/Presentations
- Project
- Class room exercises
- Journal club

Methods of Evaluation

- Quiz, Tests (Term)
- Assignments/Term paper
- Presentations
- Project work

Internal Assessment

Techniques	Weightage (15marks)
Term Test(2 tests)	40%
Assignment	20%
Presentation	20%
Project work	20%
Total	100%

Part –B : Statistics

Hours of Instruction
Theory 50 Hours
Practical 50 Hours
Total : 100 Hours

Course Description

At the end of the course, the students will be able to develop an understanding of the statistical methods and apply them in conducting research studies in nursing.

General Objectives

At the end of the course the students will be able to:

1. Explain the basic concepts related to statistics
2. Describe the scope of statistics in health and nursing
3. Organize, tabulate and present data meaningfully.
4. Use descriptive and inferential statistics to predict results.
5. Draw conclusions of the study and predict statistical significance of the results.
6. Describe vital health statistics and their use in health related research.
7. Use statistical packages for data analysis

Unit	Hours		Course Content
	Theory	Practical	
I	7	4	Introduction: <ul style="list-style-type: none">□ Concepts, types, significance and scope of statistics, meaning of data,□ sample, parameter□ type and levels of data and their measurement□ Organization and presentation of data – Tabulation of data;□ Frequency distribution□ Graphical and tabular presentations.
II	4	4	Measures of central tendency: <ul style="list-style-type: none">□ Mean, Median, Mode
III	4	5	Measures of variability; <ul style="list-style-type: none">□ Range, Percentiles, average deviation, quartile deviation, standard deviation
IV	3	2	Normal Distribution: <ul style="list-style-type: none">□ Probability, characteristics and application of normal probability curve; sampling error.

Unit	Hours		Course Content
	Theory	Practical	
V	6	8	Measures of relationship: <ul style="list-style-type: none"> □ Correlation – need and meaning □ Rank order correlation; □ Scatter diagram method □ Product moment correlation □ Simple linear regression analysis and prediction.
VI	5	2	Designs and meaning: <ul style="list-style-type: none"> □ Experimental designs □ Comparison in pairs, randomized block design, Latin squares.
VII	8	10	Significance of Statistic and Significance of difference between two Statistics (Testing hypothesis) <ul style="list-style-type: none"> □ Non parametric test – Chi-square test, Sign, median test, Mann Whitney test. □ Parametric test – ‘t’ test, ANOVA, MANOVA,ANCOVA
VIII	5	5	Use of statistical methods in psychology and education: <ul style="list-style-type: none"> □ Scaling – Z Score, Z Scaling □ Standard Score and T Score □ Reliability of test Scores: test-retest method, parallel forms, split half method.
IX	4	2	Application of statistics in health: <ul style="list-style-type: none"> □ Ratios, Rates, Trends □ Vital health statistics – Birth and death rates. □ Measures related to fertility, morbidity and mortality
X	4	8	Use of Computers for data analysis <ul style="list-style-type: none"> □ Use of statistical package.

Activities

- Exercises on organization and tabulation of data,
- Graphical and tabular presentation of data
- Calculation of descriptive and inferential statistics(chi square, t-test, correlation)
- Practice in using statistical package
- Computing vital health statistics

Methods of Teaching:

- Lecture-cum-discussion
- Demonstration – on data organization, tabulation, calculation of statistics, use of statistical package, Classroom exercises, organization and tabulation of data,

- Computing Descriptive and inferential statistics; vital and health statistics and use of computer for data entry and analysis using statistical package.

Methods of Evaluation

- Test, Classroom statistical exercises.

Internal Assessment

Techniques

Weightage 10 marks

Test – (2 tests)

100%