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Subject No.3
NURSING RESEARCH AND STATISTICS

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Total: 250 hours   Theory : 150 Hours   Practical: 100 Hours

Nursing Research

Total: 150 hours   Theory : 100 Hours   Practical: 50 Hours

AIM:-

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.

OBJECTIVES:-

At the end of the course, the students are able to:-

- Define basic research terms and concepts.
- Review literature utilizing various sources.
- Describe research methodology
- Develop research proposal.
- Conduct a research study.
- Analyze and interpret the research data.
- Communicate research findings.
- Utilize research findings.
- Critically evaluate nursing research studies.
- Write scientific paper for publication.

COURSE CONTENT:

Unit I -Introduction:

- Methods of acquiring knowledge – problem solving and scientific method. (1 hour)

- 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.

- Inductive and deductive reasoning.

- Role of research in nursing.

- Evidence Based Nursing Practice in research.

Unit II -Review of Literature:
- Importance, Purposes, sources,
- Criteria for selection of resources.
- Steps in reviewing literature.
- Sources of literature review.

Unit III -Research Approaches and designs:

- Type: Quantitative and Qualitative.

- Historical, survey and experimental

- Characteristics, type's advantages and disadvantages.

- Qualitative: Phenomenology grounded Theory, ethnography.

- Systematic review nursing of research

- Characteristics of good design.

- Research designs, its importance.

- Threats to internal and external validity.

- Quantitative versus Qualitative research designs.

Unit IV -Research problem:

- Identification of research problem

- Formulation of problem statement and research objectives

- Definition of terms.

- Assumptions and delimitations and Limitation

- Identification of variables

- Hypothesis – definition, formulation and   types.

- Sources of research problem

- Factors Affecting the Identification of Research Problems.

Unit V -Developing theoretical / conceptual framework:
- Theories: Nature, Characteristics, Purpose and Uses

- Using, testing and developing Conceptual framework, models and   theories.

Unit VI -Sampling:
- Population and sample

- Factors influencing sampling.

- Sampling techniques

- Sample size
- Probability and sampling Error

- Problems of sampling

Unit VII -Tools and methods of Data collection:
- 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.

Unit VIII -Implementing research plan:

- Pilot study
- Review research plan design
- Planning for data collection
- Administration of tool/ Interventions .
- Collection of data.

Unit IX -Analysis and interpretation of data:

- Plan for data analysis: quantitative and Qualitative.
- Descriptive and Inferential Analysis.
- Preparing data for computer analysis and presentation.
- Statistical analysis.
- Interpretation of data.
- Conclusion and generalizations.
- Summary and discussion.

Unit X -Reporting and utilizing research findings:

- Communication of research results; oral and written.

- Writing research report purposes, methods and style-Vancouver, American Psychological Association (APA), Campbell etc

- Writing scientific article for publication: purposes & style

Unit XI -Writing scientific article for publication: purposes & style:

- Critical analysis of research reports and articles.

- Presenting and communicating critique.

- Research Critique

Unit XII -Developing and presenting a research proposal.

NURSING RESEARCH AND STATISTICS
Section 'A' (Paper I for 75+25 Scheme) - NURSING RESEARCH

Unit No. & total hours	Objectives	Contents with distributed hours
I (10 hours)	At the end of unit students are able to **Knowledge:** Understand the problem solving and scientific methods, inductive and deductive reasoning, research terminologies, evidence based practice and ethics in research. **Skill:** Apply evidence based practice in nursing research. **Attitude:** Incorporate with nursing research.	**Introduction:** - Methods of acquiring knowledge – problem solving and scientific method. (1 hour) - Research – definition, Characteristics purposes, kinds of research .(1 hour) - Historical Evolution of research in Nursing.(1 hour) - Basic research terms. - Scope of nursing research : Areas, problems in nursing, health and social research.(1 hour) - Concept of evidence based practice.(**1**hour) - Ethics in research .(1 hour) - Overview of Research process. (1 hour) - Inductive and deductive reasoning.(1 hour) - Role of research in nursing.(1 hour) - Evidence Based Nursing Practice in research. ((1 hour))

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1- Define research and explain its characteristics, purposes and	3	3	3	3	3	3	3

kinds of research						
CO-2-Interpret the methods of acquiring knowledge	3	3	3	3	3	3	3
CO-3-Enumerate Historical Evolution of research in Nursing and basic research terms	3	3	2	3	2	2	3
CO-4-Describe scope of nursing research	3	3	2	3	2	2	3
CO-5-Enumerate concept of evidence based practice	3	3	3	3	3	3	3
CO-6-Interpret ethics in nursing	3	3	2	3	2	2	3
CO-7- Explain the overview of research process	3	3	3	3	3	3	3

CO-8- Differentiate between inductive and deductive reasoning	3	3	3	3	3	3	3
CO-9- Describe Evidence Based Nursing Practice in research	3	3	2	3	2	2	3

II (05 hours)	At the end of unit students are able to **Knowledge:** Describe the importance, purpose, scope, and sources of ROL. **Skill:** Apply steps in reviewing literature. **Attitude:** Recognize criteria for selection of resources.	**Review of Literature**: • Importance, Purposes (1 hour) • Scope, sources (1 hour) • Criteria for selection of resources. (1 hour) • Steps in reviewing literature. (1 hour) • Sources of literature review. (1 hour)

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1- Describe importance and purposes	3	3	3	3	3	3	3

of review of literature							
CO-2- Explain the scope and sources of review of literature	3	3	3	3	3	3	3
CO-3- Enumerate the criteria for selection of resources	3	3	3	3	3	3	3
CO-4- Interpret the steps in reviewing literature	3	3	3	3	3	3	3

III (12 hours)	At the end of unit students are able to **Knowledge:** Define and describe qualitative and quantitative research. **Skill:** Select appropriate design for research work and critically evaluate research designs. **Attitude:** Identify characteristics of qualitative & quantitative research design.	**Research Approaches and Design:** • Type: Quantitative and Qualitative.(1 hour) • Historical, survey and experimental (2 hours) • Characteristics, type's advantages and disadvantages. (2 hours) • Qualitative: Phenomenology grounded Theory, ethnography. • Systematic review nursing of research(2 hours) • Characteristics of good design. (1 hour) • Research designs, its importance.(2 hours) • Threats to internal and external validity. (1 hour) • Quantitative versus Qualitative research designs. (1hour)

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1-Describe types of quantitative and qualitative research design	3	3	1	2	2	2	3
CO-2-Explain Historical, survey and experimental research design and its characteristics, advantages and disadvantages	3	3	1	2	2	2	3
CO-3- Explain Phenomenology grounded Theory, ethnography research design	3	3	1	2	2	2	3
CO-4- Enumerate the characteristics of good research design	3	3	1	2	2	2	3
CO-5- Describe different	3	3	1	2	2	2	3

designs and its importance							
CO-6- Explain threat to internal and external validity	3	3	1	2	2	2	3
CO-7- Differentiate between Quantitative and Qualitative research design	3	3	1	2	2	2	3

IV (10 hours)	At the end of unit students are able to **Knowledge:** Identify and describe research problem, sources of research problem & define various terms **Skill:** Formulate research hypothesis. **Attitude:** Recognize assumptions delimitations and limitations.	**Research Problem**: • Identification of research problem (2 hours) • Formulation of problem statement and research objectives • Hypothesis – definition, formulation and types. (2 hours) • Definition of terms.(1 hour) • Assumptions and delimitations and Limitation (3 hours) • Identification of variables (1 hour) • Sources of research problem. • Factors Affecting the Identification of Research Problems. (1 hour)

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7

CO-1- Describe identification of research problems	3	3	1	2	2	2	3
CO-2- Interpret the formulation of problem statement and research objectives	3	3	1	2	2	2	3
CO-3- Define and explain about formulation and types of hypothesis	3	3	1	2	2	2	3
CO-4-Explain about variables	3	3	1	2	2	2	3
CO-5-Identify sources of research problems	3	3	1	2	2	2	3
CO-6- Describe the factors affecting the identification of research problems	3	3	1	2	2	2	3
V	At the end of unit students are able to	**Developing Theoretical/Conceptual framework:**					

(05 hours)	**Knowledge:** Understand and describe the nature, characteristics, purposes and uses of various nursing theories. **Skill:** Develop conceptual framework for their research work. **Attitude:** Identify and test various theories.	• Theories: Nature, Characteristics, Purpose and Uses (2 hours) • Using, testing and developing Conceptual framework, models and theories.(3 hours)

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1-Describe the nature, characteristics, purpose and uses of theories	3	3	1	2	2	2	3
CO-2-Explain the usage, testing and development of conceptual framework, models and theories	3	3	1	2	2	2	3
CO-3-Describe about various	3	3	1	2	2	2	3

theories and models								

VI (06 hours)	At the end of unit students are able to **Knowledge:** Understand, Describe and define population, sample, sampling technique and sample size and factors influencing sampling, probability and sampling error. **Skill:** Select and use appropriate sampling technique. **Attitude:** Identify& select appropriate population, sample, sampling technique and sample size.	**Sampling:** • Population and sample (1 hour) • Factors influencing sampling. (1 hour) • Sampling techniques (2 hour) • Sample size (1 hour) • Probability and sampling Error • Problems of sampling (1 hour)

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1-Define population and sample	3	3	1	2	2	2	3
CO-2-Interpret the factors influencing sampling	3	3	1	2	2	2	3
CO-3-Explain about types of	3	3	1	2	2	2	3

Course outcome							
sampling techniques							
CO-4- Describe about sample size	3	3	1	2	2	2	3
CO-5 Explain about probability and sampling error	3	3	1	2	2	2	3
CO-6- Explain about problems of sampling	3	3	1	2	2	2	3

VII (20 hours)	At the end of unit students are able to **Knowledge:** Describe tools and methods of data collection. **Skill:** Calculate reliability of tools. **Attitude:** Formulate tools for data collection.	**Tools and Method of Data Collection**: - Concepts of data collection.(2hours) - Data sources, methods/techniques -Quantitative and qualitative. (5 hours) - Tools for data collection – types, characteristics and their development(5 hours) - Validity and reliability of tools - Procedure for data collection. (8 hours)

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1- Interpret the concept of data collection	3	3	1	2	2	2	3

CO-2-Explain data sources, methods/techniques for Quantitative and qualitative research	3	3	1	2	2	2	3
CO-3- Explain about tools for data collection and its types, characteristics and their development	3	3	1	2	2	2	3
CO-4-Describe Validity and reliability of tools	3	3	1	2	2	2	3
CO-5-Illustrate the procedure of data collection	3	3	1	2	2	2	3

VIII (05 hours)	At the end of unit students are able to **Knowledge:** Define and describe pilot study. **Skill:** Conduct pilot study. **Attitude:** Formulate plan for data collection.	**Implementing Research Plan:** • Pilot study (1 hour) • Review research plan design (1 hour) • Planning for data collection (1 hour) • Administration of tool/ Interventions .(1 hour) • Collection of data. (1 hour)

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7

CO-1- Explain about pilot study	3	3	1	2	2	2	3
CO2- Review research plan design	3	3	1	2	2	2	3
CO-3- Interpret planning for data collection	3	3	1	2	2	2	3
CO-4- Describe administration of tool/ Interventions	3	3	1	2	2	2	3
CO-5- Illustrate collection of data	3	3	1	2	2	2	3

IX (10 hours)	At the end of unit students are able to **Knowledge:** Know and describe various methods for data analysis. **Skill:** Analyze data by using appropriate analysis method. **Attitude:** Formulate plan for data analysis.	**Analysis and Interpretation of Data:** • Plan for data analysis: quantitative and Qualitative. (2 hours) • Preparing data for computer analysis and presentation (1hour) • Statistical analysis. • Interpretation of data.(2 hours) • Conclusion and generalizations • Summary and discussion. (3 hours) • Descriptive and Inferential Analysis. (2 hours)

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care	Lifelong learner	Critical thinker	Researcher

				team and system			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1-Describe plan for data analysis for quantitative and Qualitative.	3	3	1	2	2	2	3
CO-2-Prepare data for computer analysis and presentation	3	3	1	2	2	2	3
CO-3- Explain Statistical analysis.	3	3	1	2	2	2	3
CO-4- Describe Interpretation of data.	3	3	1	2	2	2	3
CO-5- Interpret conclusion and generalizations of research result	3	3	1	2	2	2	3
CO-6- Describe how to write	3	3	1	2	2	2	3

summary and discussion.							
CO-7- Explain Descriptive and Inferential Analysis.	3	3	1	2	2	2	3

X (10 hours)	At the end of unit students are able to **Knowledge:** Understand and describe various methods and styles of writing research report. **Skill:** Communicate research results effectively and Compare research reports.	**Reporting and Utilizing Research Findings:** • Communication of research results; oral and written. (2 hours) • Writing research report purposes, methods and style-Vancouver, American Psychological Association (APA), Campbell etc(4 hours) • Writing scientific article for publication: purposes & style (4 hours)

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1-Explain communication of research results in oral and written.	3	3	3	3	3	3	3
CO-2- Illustrate how to write research report and its purposes, methods and	3	3	3	3	3	3	3

different style of writing bibliography							
CO-3- Describe how to write scientific article for publication, its purposes & style	3	3	3	2	3	3	3

XI (03 hours)	At the end of unit students are able to **Knowledge:** Understand and describe criteria's for critical analysis. **Skill:** Analyze and communicate research articles critically. **Attitude:** Initiate critical analysis.	• Critical analysis of research reports and articles. (1 hour) • Presenting and communicating critique. (1 hour) • Research Critique (1 hour)

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1- Describe critical analysis of research reports and articles.	3	3	3	3	3	3	3
CO-2- Illustrate presenting and	3	3	3	3	3	3	3

communicating critique.							
CO-3-Explain about Research Critique	3	3	3	3	3	3	3

XII (04 hours)	At the end of unit students are able to **Knowledge:** Understand and describe criteria's for presenting research proposal. **Skill:** Present research proposal. **Attitude:** Prepare research proposal.	• Developing and preparing research proposal. (4 hours)					

Course outcome	Program outcome						
	Clinician/Nurse educator	Professional	Communicator	Leader and member of the health care team and system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO-1-Interpret developing and preparing of research proposal	3	3	3	3	3	3	3

DISTRIBUTION OF PRACTICAL HOURS:

Unit No.	Activity to performed by the students	Allotted Hours
II	Review of literature.	05
IV	Research Problem	05
V	Developing Theoretical/Conceptual Framework	05
VII	Tools and methods of data collection	10
IX	Analysis and interpretation of data	10
XI	Critical analysis of research reports and articles	08
XII	Developing and presenting a research proposal	07
	Total Hours	50

TEACHING STRATEGY:

Lecture -100   Practical Hours – 50

TEACHING METHODS:

Lecture cum discussion, seminar/presentations, project, class room exercises and journal club

A.V. AIDS:

Over head Projector, L.C.D, Computer assisted learning, Flip charts, Posters,   Black Board.

ASSIGNMENTS:

Sr. No.	Assignment	No./ Quantity	Marks per Assignment	Total Marks
1	Short Project	One	1X100	100
2	Journal Presentation (Research Articles)	One	1X25	25
3	Research Critique	One	1X50	25
4	Preparation & Presentation of Research Proposal	One	1X25	25
5	Writing a scientific paper.	One	1X 25	25
			Total Marks	200

LIST OF RECOMMENDED BOOKS:

- Basavanthappa B.T, Nursing Research
- Garrett H.E, Statistic in psychology &education
- Mahajan B.K. Mothods in Biostatistcs.
- Rose Hott &Budin.Notter'sEssentials of Nursing Research 5th edition.
- Practical Nunshall, Nursing Research 3rd edition.
- P.K.Indirani, Research methods for Nurses.
- Polit, DF, &Beck C.T, Nursing Research principles &methods 7th edition.
- Polit, Beck & P Hungler, Nursing Research methods, Apprisal&Utilization
- Clifford etal, Getting Research into practice.
- Macnee C.L Understanding Nursing Research: Reading &using Research in Practice.
- Text Book of Nursing Research , Suresh Sharma