Subject No. 4

INTRODUCTION TO NURSING RESEARCH AND STATISTICS

SECTION 'B' - INTRODUCTION TO STATISTICS

Total Hours: 30 Theory Hours: 30

AIM:

- The course is designed to assist the student to develop an understanding of basic concepts of research, use the findings of nursing research in nursing practice, apply the knowledge in conducting project(s) and solve the problems related to nursing using scientific methods.

OBJECTIVES:

At the end of course the students are able to:

- Define the terms and concepts of statistics.
- Identify need and scope of statistics in nursing research.
- Enumerate steps of data analysis and present data summary in tabular form.
- Use descriptive and co relational statistics in data analysis.

CONTENTS:

Unit I: Introduction to Statistics:

- Biostatistics and Vital Statistics.
- Definition, meaning and uses.
- Notations and terminologies.
- Purposes/objectives.

Unit II: Presentation of Data:

- Definition. Types/Classification.
- Presentation of data.

Unit III: Percentile and measure of central tendency:

- Percentage and range.
- Percentiles.
- Mean, Median, Mode.
- Interrelation of mean, mode and median.

Unit IV: Probability:

- Definition and basic concept.
- Laws of probability
- Theoretical Distribution: Normal Distribution, Multimodal and Binomial Distribution.
- Normal curve and properties.
- Mean Median and Mode in normal distribution, Multimodal distribution.

Unit V: Measure of Variability:

- Types of variability : Range, Average deviation, standard deviation, Standard error of mean
- Coefficient of deviation
- Definition and uses of ANOVA and ANCOVA.
- Uses of computers in research

Unit VI: Correlation:

- Computation of correlation coefficient
- Rank Correlation coefficient, Uses of correlation coefficient
- Inferential statistics.

Note: *Numerical exercise to be given where ever applicable and feasible*

INTRODUCTION TO NURSING RESEARCH AND STATISTICS
SECTION 'B': INTRODUCTION TO STATISTICS

Unit No. & Hrs.	*Objectives*	*Contents*		
		Must know	***Desirable to know***	***Nice to know***
I (3 Hrs.)	At the end of the unit the students are able to : **Knowledge:** Define Biostatistics and Vital statistics. Discuss the uses of statistics in nursing practice. **Skill:** Use the appropriate notations and terminologies in research. **Attitude:** Incorporate the knowledge of statistics in nursing practice.	• **Introduction:** Biostatistics and Vital Statistics. Definition, meaning and uses. Notations and terminologies. (2Hrs)	• Purposes/objectives. (1Hr)	

Course outcome	Clinician/ Nurse educator	Professional	Communicator	Leader and member of the health care team an system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1:Define and explain the Biostatistics and Vital Statistics	3	3	1	2	2	3	3
CO2:Define notations and terminologies of statics	3	3	2	2	3	3	3
C03: Enlist Biostatistics and Vital Statistics, enumerate purposes and objectives.	3	3	2	2	2	2	2

II (5 Hrs.)	At the end of the unit the students are able to : **Knowledge:** Discuss the classification of data. **Skill:** Classify and present the data correctly. **Attitude:** Use the knowledge of data classification in daily nursing practice.	• **Data and Information:** Definition. Types/Classification. (1Hr) Presentation of data. (4Hrs)	

Course outcome	Clinician/ Nurse educator	Professional	Communicator	Leader and member of the health care team an system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1: Define, explain, and classify presentation of data.	3	3	2	2	2	2	23

III (6 Hrs.)	At the end of the unit the students are able to : **Knowledge:** Explain the measure of central tendency. **Skill:** Calculate the mean, median and mode.	• **Percentile and measure of central tendency:** Percentage and range. Percentiles. Mean. Median. Mode. (5Hrs)	• Interrelation of mean, mode & median.(1Hr)

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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1: Explain, describe, and illustrate Percentage and range, Percentiles. Mean. Median. Mode	3	3	2	2	3	2	3
CO2:Explain, describe, illustrate Interrelation of mean, mode and median	3	3	2	2	2	1	2

IV (8 Hrs.)	At the end of the unit the students are able to : **Knowledge:** Understand the normal curve and its properties. **Skill:** Calculate the mean, median and mode.	• **Probability:** Definition and basic concept. Laws of probability**.** • Theoretical Distribution: Normal Distribution, Multimodal and Binomial Distribution. • Normal curve and properties. (7Hrs)	• Mean median and mode in normal distribution, Multimodal distribution. (1Hr)	

Course outcome	Clinician/ Nurse educator	Professional	Communicator	Leader and member of the health care team an system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1:Define and explain laws of probability	2	2	2	2	2	2	2
CO2: Define and explain Normal Distribution, Multimodal and Binomial Distribution.	2	2	2	2	2	2	2
CO3: Define, explain and describe Normal curve and properties.	2	2	2	1	1	2	2
CO4:Explain, describe, and illustrate Mean median and mode in normal distribution, Multimodal distribution	3	3	2	2	2	1	2

V (4 Hrs)	At the end of the unit the students are able to : **Knowledge:** Explain the measure of variability. **Skill:** Calculate the standard deviation.	• **Measure of Variability:** Types of variability: Range, Average deviation, standard deviation, Standard error of mean. Coefficient of deviation. • Uses of computers in research (3 hrs)	• Definition and uses of ANOVA and ANCOVA. (1 hr)

Course outcome	Clinician/ Nurse educator	Professional	Communicator	Leader and member of the health care team an system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1:Classify types of variability	2	2	2	2	2	2	2
CO2: Explain, describe Range,	3	3	2	2	3	2	3

Average deviation, standard deviation, Standard error of mean. Coefficient of deviation							
CO3: Define and enlist ANOVA and ANCOVA.	2	2	2	2	3	2	3
CO4:Explain the Uses of computers in research	2	2	2	2	3	2	3

VI (4 hrs)	At the end of the unit the students are able to : **Knowledge:** Explain the uses of and calculate the correlation coefficient.	• **Correlation:** Uses of correlation coefficient. (1 hr)	• Inferential statistics. Computation of correlation coefficient. (1Hr)	• Rank Correlation coefficient (2 hrs)

Course outcome	Clinician/ Nurse educator	Professional	Communicator	Leader and member of the health care team an system	Lifelong learner	Critical thinker	Researcher
	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1: Explain the Uses of correlation coefficient.	3	2	2	2	3	3	3
CO2: Describe the Inferential statistics. Computation of correlation coefficient	3	2	2	2	3	3	3
CO3:Explain, describe the Rank Correlation coefficient	3	2	2	2	3	3	3

TEACHING STRATEGY:

Total Teaching Hours: 75 Lecture: 30

TEACHING METHODS:

- Lecture. Group Discussion

ASSIGNMENTS:

Theory:

Sr. No.	Assignments	No./Quantity	Marks Per Assignment	Total Marks
1	Tutorials	Two	15	30
			Total Marks	**30**

- Internal Assessment Marks of Nursing Research and Statistics shall be amalgamated as one subject 'Nursing Research and Statistics'.

A. V. AIDS:

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

LIST OF RECOMMENDED BOOKS:

- Basavanthappa B.T, Nursing Research.
- Garrett H.E, Statistic in psychology &education
- Mahajan B.K. Methods in Biostatistcs.
- Rose Hott & Budin. Notter's Essentials 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, Appraisal &Utilization
- Clifford et al, Getting Research into practice.
- Macnee C.L Understanding Nursing Research: Reading &using Research in Practice.