

STATISTICS

Placement: Semester -II

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.

Course Content

SR.N O	Unit	Total Hours	Course Content	Distrib ution HRS
1	I	7+4	Introduction : Concepts, types, significance, and scope of statistics meaning of data, parametric and non-parametric data	2
			Sample, parameter	1
			Type and levels of data and their measurement	1
			Organization and presentation of data – Tabulation of data:	1+2
			Frequency distribution, Graphical and tabular presentations	2+2
2	II	4+4	Measures of central tendency : Mean,	2+2
			Median, mode	2+2
3	III	4+5	Measures of variability: * Range, Percentiles,	2+2
			Average deviation, quartile deviation,	1+2
			Standard Deviation	1+1
4	IV	5+4	Normal Distribution : * Probability , Characteristics and application of normal probability curve; sampling error.	2
			Cumulative distribution,	1+1
			The cumulative frequency graph,	1+1
			Percentiles and percentile ranks	1+1
			The Cumulative percentage curve or Ogive	1
5	V	6+8	Measures of relationship : Correlation – need and meaning	1
			Rank order correlation	2+2
			Scatter diagram method	1+2
			Product moment correlation	1+1
			Simple linear regression analysis and prediction.	2+3
6	VI	4+2	Designs and meaning: Experimental designs	2+1
			Comparison in pairs, randomized block design, Latin squares	2+1

7	VII	8+10	Significance of statistic and significance of difference between two statistics (testing hypothesis) Non parametric test – Chi – square test,	2+2
			Sign median test,	1+2
			Mann-Whitney test.	1+2
			Parametric test – ‘t’ test, anova,	2+2
			manova, ancova, Pearson’s r	2+2
8	VIII	5+5	Use of statistical methods in psychology and education: Scaling – Z Score , Z Scaling	1+1
			Standard Score and T score	1+1
			Reliability of test Scores: test-retest method,	1+1
			parallel forms, spilt half method	2+2
9	IX	4+2	Application of statistics in health: ratios, Rates, Trends	1
			Vital health statistics – Birth and death rates.	1+1
			Measures related to fertility, morbidity and mortality	2+1
10	X	3+6	Use of computers for data analysis Use of statistical package.	1+3
			Computing vital health statistics	2+3

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

Internal Assessment : Theory

I. Test

	Marks
1)Unit test	25
1) Mid term	50

2) Pre final	75
	150

II. Assignments

i. Review of literature on topic of Interest (At least 20 books and 20 Journals) - 50 marks

ii. Critiquing - 50 marks

Total 100 marks

III. Presentation

Presentation of two related researches - 50 marks - **Total 100 marks**

IV. Project work

References – for Nursing Research and Statistics

1. Basavanthappa, B.T., Nursing Research, Jaypee Brothers, New Delhi, 2003.
2. Garrett, H.E. Statistic in Psychology & education. Vakils, Feffer and Samons, Bombay.
3. Mahajan, B.K. Methods in Biostatistics, Jyppe. 6th ed.1999.
4. Rose Hott & Budin. Notter's Essentials of Nursing Research 5th ed. spinger publisher, Newyork. 1999
5. Patricial Nunhall. Nursing Research 3rd ed. James & Bar. 2001. Canada
6. Caroly M.H. Research methods for clinical Therapists Applied project design and analysis second ed.1999. Churchill Livingstone.
7. P.K. Indrani, T.K. Research Methods for Nurses. Jyppe, 2005.
8. Clifford etal, Getting Research into Practice, Churchill Livingstone, New York, 2004.
9. Freshwater, D & Bishop, V, Nursing Research In Context, Palgrave Macmillan, New York, 2004.
10. Freshwater, D & Bishop, V, Nursing Research In Context, Palgrave Macmillan, New York, 2004.
11. Macnee, C L ,Understanding Nursing Research: Reading & Using Research in Practice, Lippincott Williams, Wilinks, London. 2004.
12. Polit, D.F.& Beck, C.T.,Nursing Research Principles & Methods, 7th Ed, Lippincott Williams Wilkins,New York,2004.
13. Burns & Grovo. Under standing Nursing Research. 4th ed. Elsevier. 2007
14. Polit, Beck & P. Hungler" Nursing Research methods, Appraisal & Utilization" 5th edition 2001,Lippincott.
15. Specials & Carpenter Qualitative Research in Nursing Advancing the H amanistic imperative 4th ed.Lippincott Williams. 2007

Journals:

- 1 Journal of nursing practice and research.
- 2 Indian journal of medical ethics