RESEARCH AND STATISTICS

SECTION A - RESEARCH

CONTENT OUTLINE

Unit I Introduction: - Need for research in nursing, - Problem solving and scientific method - Terminology used in research - Scope of nursing research: Areas, types, problems, - Elements and ethics in research

Unit II Research Approaches: - Types: Qualitative and Quantitative - Historical, Descriptive, Experimental

Unit III Research Designs: - Research process – steps, concepts and constructs - Research problems and statements, - Review of literature, - Definition of terms, - Assumptions, Limitations, - Hypothesis and variables

Unit IV Sampling: - Population and sample - Sample size - Sampling technique - Problems of sampling

Unit V Theoretical Context: - Purpose and use of theories - Nature and characteristics - Using, testing, and developing conceptual framework, models, & theories

Unit VI Tools and methods of data collection: - Methods of data collection: quantitative and qualitative - Tools for data collection and their development - Validity and reliability of tools - Feasibility of study - Conduct of research Unit

VII Analysis and interpretation of data: - Qualitative and quantitative analysis - Interpretation of data - Conclusion and generalizations - Summary and discussion

Unit VIII Reporting and utilizing results: - Communication of research results - Writing research report, methods and style - Writing style for scientific articles for publication

Unit IX Analysis and critiquing of research reports and articles

Unit X Developing research proposal

B. STATISTICS

COURSE CONTENT

Unit I Basic concepts related to statistics: - Significance & Scope of statistics - Levels of measurement

Unit II Organization and presentation of data: - Graphic & tabular presentations

Unit III Measures of central tendency: - Mean, mode, median, - Quartile deviation - Percentile, range

Unit IV Measures of variability: - Need and meaning - Range, Mean deviation, - Standard deviation, Normal distribution, Skewness, Kurtosis

Unit V Measures of relationship: - Correlation: Need and meaning - Scatter diagram method - Karl Pearson's coefficient of correlation - Rank order correlation, - Simple linear regression analysis

Unit VI Theoretical frequency distributions: - Need & meaning - Probability, - Binomial distribution, Poisson distribution, - Normal distribution

Unit VII Testing Hypotheses: - Non parametric tests - Chi-square, Median test, Mann Whitney U test - Parametric tests – t test, ANOVA, - Test of independence, goodness of fit

Unit VIII Use of computers in data analysis - Use of statistical packages

Unit IX Use of statistical methods: - Scaling - Z score and Z scaling, - Standard score and T scores, - Reliability of test scores: test-retest method, parallel forms, split half method

Unit X Designs and meaning: - Experimental designs - Comparison in pairs, randomized block designs, Latin squares

Unit XI Introduction to multivariate statistical technique: - Multiple regression, discriminant canonical correlation, - Principle component and factor analysis

Unit XII Application of statistics in health: - Vital and health statistics - Registration of Birth and Death, - Measures related to fertility, morbidity, mortality.

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