

University of Alberta and Grande Prairie Regional College  
Collaborative BScN Program

Evidence Based Research (NS 3970)

Year III Course Outline

Fall, 1999

**Instructors:**

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**Course Hours:**

Research: Tuesdays 1130-1220 A308  
Statistics: Thursdays 1330-1420 A308

NS 3970 is integrated with NS 3900 learning packages; N 497 is integrated with N 490 learning packages.

**NURSING RESEARCH & STATISTICS I**

**Nursing 3970 \*2 (0-7-3 in 7 weeks)** The course is an introduction to the process of research through a comparative analysis of selected studies exemplifying different theoretical, methodological, and analytical approaches. Emphasis will be on the communicability of research, the needs of the research consumer, and development of skills of critical appraisal. Also included are introduction to descriptive and inferential statistics, and the application of statistical methods to nursing problems.

**Course Hours:** seminar: 14 hours    lab: 3 hours in 7 weeks (time for lab to be negotiated)

### **Course Description**

This course is designed to assist students to develop basic skills to become critical consumers of research by deriving meaning from research findings, understanding the reciprocity between research, theory, and practice, and incorporating knowledge (evidence) into nursing practice.

### **Required Texts:**

Lobiondo-Wood, G., & Haber, J. (1998). Nursing research. Methods, critical appraisal, and utilization (4<sup>th</sup> ed.). St. Louis: Mosby.

Norman, G., & Streiner, D. (1999). PD Q statistics (2<sup>nd</sup> ed.). Hamilton, ON: B. C. Decker.

### **Course Objectives:**

1. Describe the purpose and importance of research in nursing.
2. Identify (a) appropriate sources of information (anecdotal, theory, empirical)  
(b) appropriate/valid evidence
3. Identify a question from nursing practice that can be answered by research.
4. Identify ethical principles applied to research.
5. Differentiate between quantitative and qualitative research methods.
6. Understand the basic concepts of data analysis.
7. Develop a systematic approach for reading and critical appraisal of published research.
8. Describe how theory, practice, and research are related.
  - 8.1 Determine the applicability of research findings in practice.
  - 8.2 Disseminate information from research to clients, colleagues, and the public.
9. Discuss issues including barriers and facilitating factors influencing the advancement of nursing research

### **LEARNING ACTIVITIES:**

Students will participate in three primary activities to assist in meeting the objectives of the course:

1. Attendance at Fixed Resource Sessions

The purpose of the FRS would be to highlight primary concepts of the conceptual phase and to develop the ability to understand and critique research through discussion of critiques. In the FRS, essential concepts related to nursing research and statistics will be discussed. Additionally, students will have the opportunity to discuss group critiques of selected articles to assist in understanding of the concepts.

## 2. Small Group Work

The purpose of this activity is to provide students with an opportunity to critique selected aspects of a research study using the critiquing criteria. Students will be expected to read the article and answer the critiquing questions included in the course outline **prior to attending the FRS**. For example, prior to the FRS on the conceptual phase of the research, students would be required to critique the research problem/questions, literature review, theoretical framework and hypothesis of an assigned article.

Students may work in pairs or small groups to complete their critique related to the aspects of the study selected for discussion in the weekly FRS. Faculty assigned to teach the course act as resources to assist student groups with the process of critiquing between fixed resource sessions. During FRS, students will be asked to present their evaluation of the selected aspects of the research study and opportunities for consensus will be provided.

The selected article will be chosen at the beginning of the term and will be directly related to a scenario topic in N3900.

## 3. Workbook Activities

The purpose is to enhance student understanding of the essential concepts in nursing research and statistics. It is highly recommended that students complete the workbook activities for the selected aspect of the nursing research study prior to each FRS.

## **YEAR III: Suggested Fixed Resources Sessions for Nursing Research and Statistics**

### Overview of Nursing Research

- Expectations, Process and Assigned Activities
- Review role of nursing research /Methods of Inquiry
- Framework for Critiquing

#### Critique of Conceptual Phase

- Identification of Research problems/questions/purpose
- Literature Review
- Placement of Problems within a Conceptual Framework
- Formulation of Hypothesis

### Research Designs

- Characteristics of Designs and Component Parts
  - Qualitative - e.g. phenomenology, grounded theory, historical, ethnography
  - Quantitative - experimental, quasi-experimental, non-experimental (causality, association, descriptive, exploratory, internal/external validity)

## Descriptive Statistics

- eg. frequency distribution (general)
- measures of central tendency
- measures of variability
- measures of relationship

### **LAB (Year III, 3.0 hrs): to occur the week of October 25th**

The focus of this lab would be on enhanced understanding of the purpose, use and interpretation of descriptive statistics for nursing research.

#### 1. Frequency Distributions

This learning activity is designed to give students a better understanding of a frequency distribution.

- a. Develop a frequency distribution
- b. Identify the shape of a the developed frequency distribution

A set of descriptive data including participant number, age, height and weight will be provided by your instructor. Data should be drawn from at least 80 participants. Data may be real or fictitious. These data form the basis for developing a frequency distribution age, height and/or weight. Working in groups of four, students can plot the ages in the form of a histogram or polygon. Identify the age range, mean, median and mode. Once the graph is completed, describe its shape in terms of symmetry, modality and kurtosis. Evaluate the shape of the distribution. Share your graph, and description of the distribution with other class members.

#### 2. Measures of Central Tendency

Students will have an opportunity to determine the appropriate use of measures of central tendency to summarize data.

- a. Identify the levels of measurement of selected variables.
- b. Determine the appropriate descriptive statistic to summarize data of selected variables.

The instructor will provide a set of data collected from 20 participants in relation to at least four variables. For example, age, whether or not they have an annual health assessment, whether or not they take daily vitamins, their estimated pain tolerance (low, moderate or high) and opinions regarding their current health status (poor, fair, good or excellent). For each item, identify the variable, the level of measurement and an

appropriate measure of central tendency. Your instructor may provide you with an example for one item. After completing each item, examine the data grossly and identify possible findings.

3. Define measures of central tendency and calculate mean, median, and mode using hand or computer application. Once data has been summarized using a frequency distribution (#1), calculate the mean, median, and mode using hand calculations or computer. Using a computer application, calculate the standard deviation. Discuss what further information do these measures of central tendency provide over a frequency distribution?

[These activities have been adapted from Feldman & Levin (1998), Instructor's Resource Manual to accompany Nursing Research: Methods, Critical appraisal and utilization. Mosby.]

### **EVALUATION (YEAR III)**

1. Test (45%): **Friday, October 29, 1999.**

Part I: Statistics – **the student must pass this section with a minimum mark of 50%**

Part II: Nursing Research

2. Paper (55%): **Due: Monday, November 1, 1999**

**Critique of the Conceptual Phase, Research Design and Sample**

Using a published nursing research report selected by the instructor, the student will critique the conceptual phase, research design and sample of the reported research. In this critique, the student will use criteria and concepts from small group work, fixed resource sessions and readings to evaluate the research question/problem, purpose, literature review, conceptual framework, hypothesis, research design and sample of the research report. APA format and scholarly writing is expected.

Length of paper: 3-4 pages, double spaced.

[NOTE: It is recommended that an experimental or quasi-experimental study be chosen. Critique of qualitative research will occur in Year IV.]