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UNIVERSITY OF ALBERTA
COLLABORATIVE BACCALAUREATE
NURSING PROGRAM

Grande Prairie Regional College
Grant MacEwan College
Keyano College
Red Deer College
University of Alberta

NURSING 3970
Nursing Research and Statistics
Course Outline
Fall, 2002

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Approved ()

CALENDAR STATEMENT:

Nursing 3970: Nursing Research and Statistics *2(2-1.5-.5) 7 weeks, UT

Introduction to the process of research through critical appraisals of selected quantitative and qualitative studies. Emphasis will be on understanding the research process and in knowing how to critically read, analyze, and begin to apply the knowledge gained from research in practice. The focus of this course will be the planning phase of the research process and descriptive

COURSE HOURS:

There will be 14 hours of "structured" teaching/learning time (FRS's) and 3 hours of lab in 7 weeks. One hour FRS time per week will be devoted to examining research concepts and one hour to the examination of statistical concepts. An additional estimated time of 10 hours will be required for independent study and group work.

PRE/CO-REQUISITE: NS 3900. NS 3970 is integrated with the NS 3900 learning packages

COURSE DESCRIPTION:

Introduction to the process of research through critical appraisals of selected quantitative and qualitative studies. Emphasis will be on understanding the research process and in knowing how to critically read, analyze and begin to apply the knowledge gained from research in practice. The focus of this course will be the planning phase of the research process which includes: research problem and purpose, literature review, theoretical/conceptual frameworks, variables, research questions and hypotheses, ethics of research, research designs, and population and samples. Also included are descriptive statistics.

COURSE OBJECTIVES:

1. Describe the purpose and importance of research in nursing.
2. Describe how theory, practice, and research are related.
3. Identify a question from nursing practice that can be answered by research.
4. Describe nurses' roles in research.
5. Apply critiquing criteria for the critical analysis of the following sections of a research report: research problem and purpose, literature review, theoretical/conceptual framework, variables, research questions and hypotheses, research design, ethical components, population, sample, and sampling procedures.

6. Compare the major characteristics, strengths, and limitations of quantitative and qualitative research.
7. Explain the meaning of internal and external validity of research
8. Develop a systematic approach for reading and critical analysis of selected components of published research.
9. Describe the four levels of measurement.
10. State the purposes of descriptive statistics.
11. Critically analyze the descriptive statistics used in published reports.
12. Explore ethical considerations in the conduct of research.

IMPORTANT DATES:

- | | |
|--------------------|--|
| September 10, 2002 | Last day to change registration adding fall semester and full year courses in programs other than nursing. |
| September 13, 2002 | Last day to change registration by dropping fall semester and full year courses. Students dropping fall or full-year courses will be assessed full fees for courses not dropped by the date. |
| October 4, 2002 | Last day for withdrawing with permission, or changing registration status from credit to audit or visa-versa for courses that end October 25, 2002 (eg. Tutorial courses) Withdrawal from a course after this date will result in a failing grade. |

REQUIRED TEXTS:

LoBiondo-Wood, G. & Haber, J. (2002). Nursing research: Methods, critical appraisal, and utilization (5th edition). St. Louis, MO: Mosby.

Mayan, M.J. (2001). An introduction to qualitative methods: A training module for students and professionals. Edmonton, AB: International Institute for Qualitative Methodology.

Polit, D. F. (1996). Data analysis and statistics for nursing research. Stamford, CT: Appleton and Lange.

LEARNING ACTIVITIES:

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

1. **Attendance at Fixed Resource Sessions**

The purpose of the FRS's is to highlight primary concepts of the research process and to develop the students' ability to understand and critique research through discussion of critiques. In the FRS's, 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. **Independent Work**

The purpose of this activity is to provide students with an opportunity weekly to critique selected aspects of a research study using the critiquing criteria. Each week the instructor(s) will select a research report from the list of *Research & Statistics References* for Nursing 3900. It is anticipated that the research reports students are to critique will be relevant to the scenarios being covered in the learning packages. Students are expected to read each assigned research report and answer the critiquing questions included in the course outline **prior to attending the FRS**. For example, prior to the FRS on the planning phase of the research process, students will be expected to critique the research problem/questions, literature review, theoretical framework and hypothesis in the assigned article.

Students are encouraged to work in pairs or small groups to complete their critique (answer the critique questions) of the aspects of the assigned study for discussion in the weekly FRS. During FRS's, students will be asked to present their evaluation of the selected aspects of the research report. Opportunities for discussion, debate and consensus will be provided. Critical thinking should be emphasized throughout the process.

3. **Appraising Findings from Multiple Studies**

The importance of appraising findings from multiple studies related to a nursing practice issue for guiding practice will be the focus of this activity. In addition to the article selected in N3970 for critique, students are expected to read at least one of the recommended research articles identified in each N3900 learning package, and discuss the findings with other members of the N3900 tutorial group. (E. g. Students distribute the research articles among the group, with each student reporting on a different research article related to the scenario.)

Fixed Resource Sessions (2 hrs./week over 7 weeks for a total of 14.0 hrs). This list is just a general guideline for FRS and topics can be changed if requested.

| Week/Dates | Nursing Research | Statistics |
|--------------------|---|--|
| 1. Sept 9 - 13 | Overview of nursing research; review of Nurses' role in nursing research; methods of inquiry; frameworks for critique | Introduction to data analysis, variables, etc. |
| 2. Sept 16 - 20 | The research question, problem, and the literature review. | Univariate statistics: Tabulating and displaying data |
| 3. Sept 23 - 27 | Qualitative research designs: ethnography, grounded theory, phenomenology, action research | Univariate statistics: Central Tendency and variability |
| 4. Sept 30 - Oct 4 | Quantitative research designs: descriptive, correlational, quasi-experimental, experimental | Bivariate Description |
| 5. Oct 7 - 11 | Ensuring rigour in research designs | Statistical Inference |
| 6. Oct 14 - 18 | Population and sampling | Testing the difference between two means: the two sample <i>t</i> -Test. |
| 7. Oct 21 - 25 | Exam: Date and Time TBA | Exam: Date and Time TBA |

LAB (3.0 hrs)

The focus of this lab is on understanding the purpose, use, and interpretation of descriptive statistics (*frequency distributions, measures of central tendency and variability, standard scores*) for nursing research. *Also included are levels of measurement and reading descriptive tables and graphs.*

PART A: Frequency Distributions

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

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

Data will be generated from the survey handed out in class.

PART B: Measures of Central Tendency and Variability

Students will have an opportunity to determine the appropriate use of measures of central tendency and variability 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 LAB TIME WILL BE NEGOTIATED ACCORDING TO FIT AROUND ALREADY SCHEDULED CLASSES.

EVALUATION :

1. **Final Exam:** **Value:** 40% of final grade **Date:** TBA
 - Part I: Statistics (20%)
 - Part II: Nursing Research (20%)

2. **Critique of Research Article:** **Value:** Total of two parts: 50% of final grade..
 - Part I: First Draft of the critique will be **due October 8, 2003** at the beginning of class and will contribute to 20% of the final grade.
 - Part II: The Final version of the paper. **Due: October 28, 2003 1600h** and will contribute to 30% of the final grade.

3. **Weekly assignments:** **Value:** 10% of the final grade.
 - Weekly assignments are given in the **statistics** portion of the course. They will be marked and returned promptly.

Note: – the student must pass the statistics section of the course with a minimum mark of 50% or a grade of “3” will be given regardless of other assignment marks.

Refer to your student handbook for the GPRC grading policy for the final percentage ranges in the nine point grading scale.

Critique of a Research Article:

Part I:

Using a published nursing research report of a qualitative study, selected by the student, the student will examine the report and evaluate the introduction to the study, the significance of the study, the research question and the literature review and the methodology selected. Your texts contain guidelines for critiquing studies and provide examples. Mayan (2001) is most valuable for examination of qualitative studies. Concepts and criteria from small group work, Fixed Resource Sessions, and readings will also be utilized.

APA format and scholarly writing are required. See marking guidelines at the end of the course outline.

Length of Part I: 600-750 words.

Part II:

Using a published nursing research report of a quantitative study, selected by the student, the student will examine the report and evaluate the research question, theoretical/conceptual framework, hypothesis, sampling method(s), and strategies for ensuring rigor. Your texts contain guidelines for critiquing studies and provide examples. LoBiondo & Wood (2002) is most valuable for examination of qualitative studies. Concepts and criteria from small group work, Fixed Resource Sessions, and readings will be utilized.

APA format and scholarly writing are required. See marking guidelines at the end of the course outline.

Length of Part II: 600-750 words.

Note: Research reports are to be selected from refereed nursing research sources.

ASSIGNMENT POLICY:

All assignments are to be passed in at the time and place they are due. Extensions on assignments may be granted and must be negotiated with the instructor prior to the due date and with a date specified for late submissions.

A penalty of 5% for each working day that an assignment is submitted after the due date will be deducted from the final mark. For example, a paper scored at 75% would receive an adjusted grade of 70% if handed in one day late. Late assignments are due by 1600h and must be verified (stamped with date and time) by nursing office personnel.