



FACULTY OF NURSING

Nursing 621

Health Research Methods: Quantitative Designs

Fall 2011

Dr. Cynthia Mannion, RN, PhD

Thursday, 1600 -1900 hrs.

Room: PF2253

University of Calgary, Faculty of Nursing

Nursing 621 Health Research Methods: Quantitative Designs

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Course Description

The purpose of this course is to prepare students to design quantitative research studies and engage in evidence-based practice. The knowledge and skills for these endeavors are summarized by the Centre for Evidence Based Medicine, and they include:

- Formulating an answerable question to a specific patient problem or situation.
- Systematically searching for research evidence to address the question.
- Appraising the validity, relevance and applicability of the research evidence.
- Integrating research evidence with other information that might influence the design of a research study or patient treatment
- Disseminating research results

Course Objectives

To engage in evidence based nursing and to design quantitative studies, students must develop a functional literacy in the following:

- 1) formulating research questions,
- 2) reviewing, critiquing, and summarizing scholarly literature
- 3) selecting research designs,
- 4) delineating populations and sampling participants,
- 5) formulate a plan for collecting data,
- 6) analyzing and interpreting data
- 7) using data management software,
- 8) treating participants ethically, and
- 9) disseminating results.

The objectives of the course are, for each of these topics, that students will be able to operate at the levels of remembering, understanding, applying, analyzing, evaluating, and creating.

With successful completion of the course, the student will be able to

1. Understand evidence based practice.
2. Critically analyze the research literature and identify gaps in the knowledge.
3. Acquire skills to access, read and evaluate research reports;
4. Identify commonly used quantitative research study designs and methods;
5. Acquire basic skills of statistical analysis and interpretation using a statistical software package (SPSS) for data analysis and presentation;

6. Develop a scholarly research proposal that is written in a systematic, clear, and concise format;
7. Consider the ethics of clinical nursing research;
8. Reflect on current issues in nursing and health care and understand the principles of evidence-based-practice.

Class Format

Students will participate in small group settings that provide a supportive environment for active and collaborative learning, faculty to student contact, and a high level of academic challenge.

The format for this course is interactive seminar. Students are expected to come prepared with questions based on the pre-class readings. *All students are expected to participate in class discussions.* Students are encouraged to reflect on the relevance of the topic under discussion as it relates to their area of practice/population of focus or to their research question.

Course Requirements

University of Calgary Email Address

The Faculty of Nursing requires all students to use a University of Calgary email address throughout their Nursing program. All university business will be directed to this address. Before you can start using your UofC email, you need to register for a free IT computing account.

To register for an account go to: <http://www.ucalgary.ca/it/>

Once your account has been activated, you will need to update your email address within your Student Centre.

Course Assignments	Weighting	Due date
1. Research Question	5%	Monday Sept 26
2. SPSS training	15%	Sept 15 and 22
3. Ethics certificate/ Potential issues in study	5%	Monday October 31
4. Literature Review Draft	20%	Monday November 14
5. Research Proposal Presentation	20%	Thursday Nov. 24, December 1 and 8
6. Research Proposal	35%	Monday December 12

Please note: Lecture schedule may change given select circumstances.

Assignment1. : Research Question 5% [Formulation of a research question due September 26, 2011](#)

The questions research question is the objective of the study. From a general concern it must be narrowed down to a concrete, researchable issue. The question must pass the “so what” test; contribute to the stat of knowledge. Use *FINER* to create your question- Feasible, Interesting, Novel, Ethical and Relevant.

Properties of a good research question

Interrogative

Focuses attention on the kinds of data that would have to be collected to provide an answer

Focuses attention on the kind of research design to be employed

Identifies the key variables in the study

Identifies the relationships between the variables in the study

Suggests quantification.

Marking Rubric

≤ B- (2.50 – 2.84)

B to B+ (2.85-3.49)

A- to A+ (3.85-4.0)

The research question has three or fewer of the properties of a good question.

The research question has four or five of the properties of a good question.

The research question has all of the properties of a good research question and is timely and relevant.

Assignment: SPSS Tutorial 15%

Due Date: Thursday September 29 and Thursday October 6, 2008

Description: Students will participate in a tutorial that will introduce them to a predominant software program for quantitative data analysis.

Assignment: Literature Review 20%

Points to Consider for the Literature Review:

- Identify the **research** that has been conducted concerning a clinical area of interest to you
- Describe the clinical problem which is the focus for your review and its relevance to nursing
- Describe the time span for this review and the databases that were searched
- State the key words used in your search
- Summarize and critically review the articles from published **research** (both nursing and non-nursing sources).
- In your review explain to the reader the:
 - Purpose, research method, sample size, where the research was done, how the data were collected
 - Variables that were studied, the analysis
 - Theoretical frameworks used (if appropriate)
 - Strengths and limitations of the study

- o Outcomes of the studies

Rubric for Evaluating the Literature Review

Elements	Does not meet requirements (≤ B-)	Meets requirements (B to B+)	Exceeds requirements (A- to A+)
Clinical area of interest	Clinical area of interest, significance to nursing and importance is difficult to identify.	Clearly describes clinical area of interest that is focus for paper and relevance to nursing. Significance is clear.	Clinical area of interest, relevance to nursing & significance are clearly identifiable, sophisticated & insightful. An A+ paper is highly original, opening new arenas of discussion.
Search Strategy	Difficult to decipher search strategy. Relies heavily on textbooks or website references.	Reports the search strategy used for detecting relevant trials, including time span and databases. Use of databases with best sources of trials.	Sufficient detail provided to replicate the search strategy. Undertakes a comprehensive and precise (e.g., limits searches, filters, etc.) search of health-related electronic databases.
Critical Review Analysis	Literature review is illogical. Approach to critiquing, interpreting, and analyzing relevant research literature is not synthesized (e.g., discusses each study separately). Poorly integrated quotes or overuse of quotes. Unclear how author is making sense of the literature.	Background assumptions and organizing framework are consistent with selected quantitative research method. Demonstrates ability to critique, compare and contrast current literature as a collective. Quotes are well-integrated and explored.	Clearly demonstrates ability to critique materials in a manner that illustrates fluid application of quantitative research method. Draws upon cutting-edge, peer-reviewed literature in specific topic areas, with excellent integration of quoted material. Explicitly links literature to personal experience and proposed research question. An A+ paper pushes the level of inquiry well-beyond readings and class discussion.
Argumentation	Simplistic view of topic. Little or no effort to grasp alternative views.	Counter-arguments are acknowledged, though perhaps not fully addressed.	Anticipates and defuses/responds to counter-arguments. Novel connections.
Conclusion	There is no clear conclusion or response to issue posed in the problem statement.	The clinical statement and its significance are restated, emphasizing the discovered importance, answers or possibilities explored within the review of the literature.	Clearly proposes answers to questions such as “so what?” or “what are the implications for nursing?”. Poses questions that push readers about new understandings of the topic.
Literary skill	Writing style is bland & factual, and disconnected. Numerous errors in sentence structure, grammar, punctuation & diction. Poor documentation of sources.	Sentence structure, grammar, punctuation & diction are strong with occasional minor errors.	Writes in a fluent manner. Sentence structure, grammar, punctuation & diction are excellent with negligible errors.
Style	Numerous errors in APA format and citations.	Follows APA 5 th ed format with few errors	Meticulous APA format consistently followed.

Assignment: Ethics	Monday October 31	5%
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You will be able to print the Certificate following completion of the online TCPS workshop.

Assignment: Research Proposal – Quantitative research	Monday, Dec 12	35%
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Given your critical review of the existing research that has been conducted in your area of advanced practice (assignment #1), identify the gaps in current knowledge and identify a clinical research problem that requires to be researched. Provide a clear and systematic proposal of the research that you wish to conduct that would address the clinical problem you have identified.

Format: Must be completed individually.

Number of Pages: Maximum of 15 pages excluding references, title page, table of contents (double spaced).

Style: APA format (5th or 6th edition).

Points to consider: NOTE – You must propose a quantitative research method

- From your review of the literature identify the gaps in current knowledge and formulate a research proposal.
- Does your review of the literature logically lead to your proposed research?
- Have you identified a gap in the knowledge base?
- Formulate research questions/hypotheses as appropriate
- What theoretical framework (if appropriate) would fit for the proposed research?
- Justify the quantitative design you wish to use
- What contribution is your proposed research making to *evidence based practice*?
- What is the *utility* of your proposed research?
- Clearly describe the proposed design, sampling, and data collection methods which will be used in your research.
- Address the ethical considerations that relate to the proposed research
- Write in a systematic, clear and logical way

Rubric for Evaluating Assignment The Research Proposal

Elements	Does not meet requirements (≤ B-)	Meets requirements (B to B+)	Exceeds requirements (A- to A+)
Abstract	The abstract is disjointed, detached, and wordy	A structured abstract is provided that is brief, captures the essence of the proposal; however, it is not compelling.	A brief synopsis of the proposed project is presented to help establish a frame of reference for the reader. A structured abstract is provided that is succinct, creates a positive impression and draws the reader to review the project.
Problem and Significance, Objectives, and Research Questions/Hypotheses	Clinical area of interest, clinical problem, significance to discipline and its importance is difficult to identify, stated in an unclear manner or is a restatement of an obvious issue. It is difficult to determine the researcher's goal, the relationships being explored, the nature of the population of interest, and the potential contribution the research will make. Oversimplification of a complex problem or the problem is not measurable.	Clearly describes the clinical area of interest, clinical problem (key research questions and variables to be examined) which is the focus for the paper, and its relevance to nursing. Significance of the topic is clear. Problem shows potential for adding information to present body of knowledge and/or theory.	Clinical area of interest, clinical problem, its relevance to the discipline are clearly identifiable, sophisticated and insightful, pushing beyond stereotyped questions. Scope and importance are identified early in proposal. Objectives, questions/hypotheses are precisely stated and identify the key variables, the relationship between them and the population under study. Problem as stated demonstrates potential for

			adding new information to present body of knowledge/theory. An A+ proposal is highly original, opening new areas of discussion related to selected topic.
Background (Critical Review of Literature)	Literature review is illogical. Approach to critiquing, interpreting, and analyzing relevant research literature is not synthesized (e.g., discusses each study separately). Poorly integrated quotes or overuse of quotes. Points or statements often lack supporting evidence. Unclear how author is making sense of the literature.	Background assumptions and organizing framework are consistent with selected quantitative research method. Demonstrates ability to critique, compare and contrast current literature as a collective. Effectively incorporates examples from a reasonable cross-section of current literature to support key points. Quotes are well-integrated and explored.	Clearly demonstrates ability to critique materials in a manner that illustrates fluid application of quantitative research method. Draws upon cutting-edge, peer-reviewed literature in specific topic areas, with excellent integration of quoted material. Explicitly links literature to personal experience and proposed research question. An A+ paper pushes the level of inquiry well-beyond readings and class discussion.
Methods	Methodological dimensions are not attended to or some are missing. Problem, objective and procedures do not relate to each other. Overall design ill-conceived or feasibility is questionable. Does not demonstrated application of selected methodological decisions. Inadequate information is provided or the information is too unclear to permit careful evaluation. Statistical tests for data analysis are unsuitable. Does not attend to detail.	The relationship between problem, objectives and procedures is clear, each one logically follows from the other; however, needs some minor clarification and/or additions. Methodological dimensions are attended to in a comprehensive manner; however, such decisions are not addressed in a systematic, logical and critical manner. Generally, adequate information is provided on sampling, controls, data collection, and analysis but requires additional information for evaluation. Statistical tests for data analysis are clearly defined and realistic. Fails to consistently attend to detail.	The relationship between the problem, objectives and procedures is clearly evident. Adequate information is provided on sampling, controls, data collection, and analysis. Statistical tests for data analysis are clearly articulated and realistic. Systematic, logical and attends to detail. Clearly demonstrates the fluid application of the selected methodological decision (e.g. design, ample, data collection and analysis) in quantitative research tradition.
Argumentation	Simplistic view of topic. Little or no effort to grasp alternative views.	Counter-arguments are acknowledged, though perhaps not fully addressed.	Anticipates and defuses/responds to counter-arguments that may arise in implementation of proposal.
Ethical Dimension	Little or no consideration is given to the rights of human participants, consent process, etc. Minimal appreciation for the impact on the scientific merit of the study and participants' well-being.	Ethical dimensions are acknowledged, though perhaps addressed or explored effectively.	Demonstrates conscious decision –making to adhere to or to violate ethical principles in the proposed conduct of the study. Provides sound rationale when ethical principles are violated. Demonstrates analytic depth in articulation of ethical decisions and the impact of these decisions on scientific merit and participants' well-being.
Literary skill	Writing style is bland & factual, and disconnected. Numerous errors in sentence structure, grammar, punctuation & diction. Poor documentation of sources.	Sentence structure, grammar, punctuation & diction are strong with occasional minor errors.	Writes in a fluent manner. Sentence structure, grammar, punctuation & diction are excellent with negligible errors.

Style	Numerous errors in APA formatting and citations.	Follows APA 5 th or 6 th ed format with few errors	Meticulous APA format consistently followed.
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Proposal Presentation

20%

This assignment involves an individual presentation of your research proposal. Slides should include a Title slide with study title, author and date. Research question and importance, background, methods include research design, data collection, sampling procedure, ethical implications, tools, expected findings limitations, and suggestions for further research.

Due date: Nov. 24, December 1 and 8, 2011. Sign-up sheets will be available in class for these dates. Sign-up sheets for peer critique will also be available.

Format: Individual presentation 15 minutes long and 5 minutes for questions. Time will be strictly adhered to so please practice your presentation to stay within allotted period.

Student Academic Conduct:

Students are expected to comply with the academic regulations specified in the University of Calgary Calendar. Intellectual honesty is expected at all times. A single offence of cheating, plagiarism, or other academic misconduct, on term work, text, or final examinations, etc., may lead to disciplinary probation or a student's suspension or expulsion from the Faculty by the Dean, if it is determined that the offence warrants such action (Academic Regulations, University of Calgary Calendar, 20010-2011). Confidentiality of patient/client information must be ensured. Discussion of clinical practice should be restricted to the students, their professors and their clinical preceptors.

For explanation of plagiarism and repercussions please see the following websites.

<http://www.ucalgary.ca/honesty/plagiarism>

<http://www.ucalgary.ca/pubs/calendar/current/k-2.html>

FACULTY OF NURSING GRADUATE PROGRAM

Revised Grading Scale

Legend: *Italics - Criteria extracted from Faculty of Education grading scale.*

If the grade on your assignment is:	The percentage will be taken from:	If the total for all assignments is:	Your final grade will be:	
A+	4.0	3.95 - 4.00	A+	Outstanding <i>Elegant exposition of publication quality work that would make a significant, scholarly contribution to the area of investigation.</i>
A	4.0	3.85 – 3.94	A	Excellent - Superior performance showing comprehensive understanding of the subject matter. <i>Exceptional performance that goes beyond the specified requirements of the assignment, and demonstrates a comprehensive understanding of the subject matter that includes the ability to critically assess and creatively apply knowledge to new situations.</i>
A-	3.7	3.50 – 3.84	A-	Very good performance

				<i>Clarity of thought and expression that reveals the rich meaning of the complex relationship between assumptions, ideas and actions. The work includes a critical examination of the topic. Relevant references have been correctly documented and effectively integrated into a well-developed line of thought.</i>
B+	3.3	3.15 – 3.49	B+	Good performance <i>Subject matter is generally understood at the literal level. Wide range of critical questioning and creative insights may be absent. Progress reveals a clear, logical, concise and coherent expression of ideas. Work displays conventional grammar, punctuation and spelling, with a minimum of errors.</i>
B	3.0	2.85 – 3.14	B	Satisfactory performance Note: The grade point value (3.0) associated with this grade is the minimum acceptable average that a graduate student must maintain throughout the program as computed at the end of each registration anniversary year of the program. <i>Subject matter is generally understood, but the work displays minor gaps in scholarship. Some gaps in knowledge and inconsistencies in the work may be evident. Lapses in clarity of expression and the development of a clear line of thought might be evident. Work may display occasional errors in conventional form and require heavy editing on the part of the instructor.</i>
B-	2.7	2.50 – 2.84	B-	Minimum pass for students in the Faculty of Graduate Studies <i>Work submitted at this level lacks understanding, absence of clarity of expression or insufficient command of conventional form such that the content cannot be effectively conveyed.</i>
C+	2.3	2.15 – 2.49	C+	All grades below B- are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies degree requirements. A student who receives a grade of F will normally be required to withdraw unless the program recommends otherwise.
C	2.0	1.85 – 2.14	C	
C-	1.7	1.50 – 1.84	C-	
D+	1.3	1.15 – 1.49	D+	
D	1.0	0.50 – 1.14	D	
F	0	0.00 – 0.49	F	

2009/02/23
2011-08-30

FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY

Information (such as a phone number, addresses, tracking sites of practica, etc.) that you may be asked to provide is collected under the authority of the Universities/Colleges act and Freedom of Information and Protection of Privacy Act Section 32 (c). It will be used to for practicum placement and for contact purposes. Your personal information is protected by Alberta's Freedom of Information and Protection and Privacy Act and can be reviewed on request. If you have any questions about the collection or use of this information, contact the Graduate Office, at 220-6241.

Modified/revised 2010/09/02