APPLICATION OF EPIDEMIOLOGICAL METHODS

TIME AND PLACE:  Term 1, Tuesdays, 9 am - noon

LOCATION:  Room B108
            School of Population and Public Health
            2206 East Mall

INSTRUCTOR:  Mieke Koehoorn
              Room 293, 2206 East Mall
              School of Population and Public Health
              University of British Columbia
              604-822-5756
              mieke.koehoorn@ubc.ca

OFFICE HOURS:  By Appointment

TEACHING ASSISTANT:  Jennifer Guthrie
                      jguthrie@ubc@yahoo.com

PRE-REQUISITES:  SPPH400  Statistics for Health Research, and
                 SPPH500  Analytical Methods in Epidemiological
                          Research, and
                 SPPH502  Epidemiological Methods I, and one of
                          SPPH503  Epidemiological Methods II, or
                          SPPH506  Quantitative Research Methods, or
                          SPPH519  Qualitative Methods for Health Research
                          Design, or
                 SPPH530  Epidemiology of Occupational and
                          Environmental Health
COURSE OVERVIEW:

The purpose of this course is to apply core epidemiological concepts in the field of population and public health; and to develop practical skills in research design, data management, data analysis/ building an epidemiologic model, interpretation of analytic output and biases such as confounding, and presentation and write-up of research findings suitable for a public health conference and academic journal.

COURSE ACTIVITIES:

To access Statistics Canada health survey data files via the UBC Research Data Centre and associated resources and documentation;
To develop a research protocol that includes formulating an epidemiological/population health research question (i.e. the relationship between a risk factor and a health outcome) using Statistics Canada health data, including the identification of the dependent and independent variables, as well as confounders; the identification of a study sample and the development of an analysis plan;
To carry out the research protocol using the Statistics Canada survey data, including the application of skills in the areas of statistical software, data management, descriptive analysis, building an epidemiologic model, and interpretation of analytic output (coefficients, odds or risk ratios, 95% confidence intervals, confounding, model errors and model fit);
To present preliminary descriptive and bi-variable results as part of an in-class ‘lightning talk’ presentation suitable for a public health, academic conference;
To write a journal paper suitable for publication in a health-related journal based on findings from your analysis, including writing an Abstract, Introduction, Methods, Results, Discussion and Reference section; as well as practical experience adhering to journal and authorship guidelines, and presenting findings in tables and figures;
To participate in class discussion and problem solving around the development of research protocols and the application of epidemiological methods throughout the term.

IMPORTANT NOTES with regards to late assignments and plagiarism

Each written assignment is to be uploaded via CONNECT on time and on the designated due date. Typically, no late assignments will be accepted. Extensions of the due date for the written assignments will be considered pending extenuating circumstances with the approval of the instructor. The instructor will require documentation of extenuating circumstances (medical certificates, etc.). Assignments submitted later than the due date will be penalized 10% of the possible grade for each day past due (i.e. one minute past the due date/time is considered a day late).

Students are expected to know what constitutes plagiarism, that plagiarism is a form of academic misconduct, and that such misconduct is subject to penalty. Please review the Student Discipline section of the UBC Calendar, available on-line at http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,959
STUDENT EVALUATION:

Paper Proposal for your public health journal article  P/F
Draft Introduction section of journal article  10%
Draft Methods section of journal article  15%
Draft Results section of journal article  20%
Lightning Talk presentation of study with descriptive/bi-variable findings  5%
Final article suitable for submission to a public health academic health journal  50%
Sex and gender bases analyses (SGBA) – on-line training module certificate  P/F

GRADING (from the UBC Department of Educational Studies, Graduate Course Grading Policy, D. Pratt):

A Level (80% to 100%)
A+ is from 90% to 100%: It is reserved for exceptional work that greatly exceeds course expectations. In addition, achievement must satisfy all the conditions below.
A is from 85% to 89%: A mark of this order suggests a very high level of performance on all criteria used for evaluation. Contributions deserving an A are distinguished in virtually every aspect. They show that the individual (or group) significantly shows initiative, creativity, insight, and probing analysis where appropriate. Further, the achievement must show careful attention to course requirements as established by the instructor.
A- is from 80% to 84%: It is awarded for generally high quality of performance, no problems of any significance, and fulfillment of all course requirements.

B Level (68% to 79%)
This category of achievement is typified by adequate but unexceptional performance when the criteria of assessment are considered. It is distinguished from A level work by problems such as: One of more significant errors in understanding, superficial representation or analysis of key concepts, absence of any special initiatives, or lack of coherent organization or explanation of ideas. The level of B work is judged in accordance with the severity of the difficulties demonstrated. B+ is from 76% to 79%, B is from 72% to 75%, and B- is from 68% to 71%

C Level (55% to 67%)
Although a C+, C, or C- grade may be given in a graduate course, the Faculty of Graduate Studies considers 68% as a minimum passing grade for doctoral graduate students.

SOME SUGGESTED RESOURCES/TEXTS:


3
**COURSE SUMMARY**
Course lectures will be supplemented with on-site tutorials/problem solving sessions (Tues 12-1 pm)

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
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| Sept 5 | • Introduction to course – activities, assignments, expectations, evaluation  
• Introduction to StatsCan health survey data via Research Data Centre and Google Drive  
• Introduction to statistical learning environment (via SAS)  
• Question and Answer session |
| Sept 12 | • Working with health data (documentation, sampling, coding, data checking)  
• Creating analytic datasets (sub-setting to analytic sample/variables, new variables)  
• Discussion on developing research questions using StatsCan data |
| Sept 19 | • Class discussion of research proposals, including peer review and problem solving  
• Working with health data and creating analytic datasets, *continued*  
• Key elements of a scientific paper – Introduction section  
• Directed Acyclic Graphs (DAGs) for confounders |
| Sept 26 | • Using survey sampling weights  
• Working with health data continued, descriptive and bivariate analyses  
• DAGs *continued* (over-adjustment bias)  
• In-class problem solving session/Q&A on Research Proposals. |
| Oct 3 | • Peer review of draft Introduction section  
• Key elements of a scientific paper - format requirements, choosing a journal, authorship  
• Key elements of a scientific paper - Methods section  
• Descriptive statistics continued and Introduction to bivariable analyses  
• In-class problem solving session |
| Oct 10 | • Bivariable analyses *continued* and introduction to multivariable analyses  
• Survey sampling weights *continued*  
• Writing tips and techniques; writing a better paragraph, common grammatical errors;  
• In-class problem solving session |
| Oct 17 | • Bivariable analyses and multivariable analyses *continued*, including effect modification  
• Peer review of Methods section  
• Tips and techniques for presentation of research findings – tables, figures, slides  
• Key elements of a scientific paper - Results section  
• In-class problem solving session |
| Oct 24 | • Communications Lecture – Guest Speaker, Krystle van Hoof, Assistant Director, CIHR Institute for Gender and Health |
| Oct 31 | • Student in-class ‘lightning talk’–presentation of key descriptive/bivariable findings *only* |
| Nov 7 | • Multivariable analyses continued, including discussion of confounding effects  
• Discussion of p values versus confidence intervals, interpretation of ORs  
• In-class problem solving session |
| Nov 14 | • Peer review of Results section  
• Key elements of a scientific paper - Discussion section  
• Journal article reviews and responding to reviewers’ comments |
| Nov 21 | • Multivariable modeling *continued*, including stepwise options, survival analyses, multi-level models  
• In-class problem solving session |
| Nov 28 | • Problem solving session and Q&A on topics/issues suggested by students  
• Pursing publication and authorship discussion  
• Statistics Canada Research Data Centres - process/bootstraping  
• Course evaluation – UBC Course Evaluation Form plus in-class recommendations |
COURSE ASSIGNMENTS AND DUE DATE – All assignments to be submitted electronically via CONNECT by the due dates/times.

<table>
<thead>
<tr>
<th>Dates</th>
<th>Activity</th>
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<tbody>
<tr>
<td><strong>ASSIGNMENT#1a and #1b</strong></td>
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<tr>
<td>1a. Monday, Sept 18th (6 pm)</td>
<td>Draft one-page research proposal for peer review (see attached template) – Assignment#1a</td>
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<tr>
<td>1b. Tuesday Sept 19th (9 pm)</td>
<td>Revised one-page research proposal for instructor evaluation (P/F) – Assignment #1b</td>
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<tr>
<td><strong>ASSIGNMENT#2a and #2b</strong></td>
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<tr>
<td>2a. Monday, Oct 2nd (6 pm)</td>
<td>Introduction assignment for peer review – Assignment#2a</td>
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<tr>
<td>2b. Tuesday Oct 3rd (9 pm)</td>
<td>Revised Introduction assignment for instructor evaluation (10%) – Assignment #2b</td>
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<tr>
<td><strong>ASSIGNMENT#3a and #3b</strong></td>
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<tr>
<td>3a. Monday Oct 16th (6 pm)</td>
<td>Methods assignment for peer review-Assignment#3a</td>
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<tr>
<td>3b. Tuesday, Oct 17th (9 pm)</td>
<td>Revised Methods assignment for instructor evaluation (15%) – Assignment#3b</td>
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<tr>
<td><strong>ASSIGNMENT#4a and #4b</strong></td>
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<tr>
<td>4a. Monday, Oct 30th (6 pm)</td>
<td>Copy of slides (pdf) for in-class study ‘Lightning’ presentation – Assignment #4a</td>
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<tr>
<td>4b. Tuesday, Oct 31st (9 am-noon)</td>
<td>In-class ‘Lightning-talk presentations (5%) – Assignment#4b</td>
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<td><strong>ASSIGNMENT#5a and #5b</strong></td>
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<tr>
<td>5a. Monday Nov 13th (6 pm)</td>
<td>Results assignment for peer review – Assignment #5a</td>
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<tr>
<td>5b. Tuesday Nov 14th (9 pm)</td>
<td>Revised Results assignment for instructor evaluation (20%) – Assignment #5b</td>
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<td><strong>ASSIGNMENT#6</strong></td>
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<tr>
<td>6. Tuesday, Dec 5th (6 pm)</td>
<td>Final journal article (Abstract, Introduction, Methods, Results plus Discussion, including References and Figures, Tables) (50%)</td>
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<td><strong>ASSIGNMENT#7</strong></td>
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<tr>
<td>7. SGBA Certificate – to be completed by end of course</td>
<td>On-line training module and certificate – integrating sex and gender in health research (successful completion of one of three CIHR modules) (P/F)</td>
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</tbody>
</table>
DESCRIPTION OF ASSIGNMENTS
Your paper will evolve over the course of the term using the following assignments as inputs, and you are expected to revise/update sections of your paper to incorporate instructor/peer feedback as well as new learning over the term into the final version (i.e. an organized whole that is more than the sum of its parts).

Completion of **Research Proposal (P/F; Assignments 1a and 1b)** as per the Proposal Template below for a public/population health study and journal article; reflecting careful consideration of an appropriate research question, study sample, key study variables (one explanatory and one outcome variable), potential confounders and analytic approach. This is a Pass/Fail assignment - you must submit a proposal to proceed with course. Students with a Failing grade will be asked to submit a revised proposal incorporating instructor feedback.

Completion of an **Introduction assignment for your public/population health journal article (Assignments 2a and 2b (10%))**. The Introduction must include three paragraphs documenting 1) an introduction to the issue with statistics describing the ‘problem’ of relevance to public/population health research, 2) a summary of previous key studies/findings (i.e. the background) that informs your research question/hypothesis, and 3) a summary of key issue(s)/gap(s)/problem(s) leading to the rationale for your study and research question. This assignment must not exceed 500 words, excluding reference list.

Completion of a **Methods assignment for your public/population health journal article (Assignment 3a and 3b (15%))**. The Methods must include four paragraphs that describe 1) the study design, 2) the study sample with inclusion/exclusion criteria where relevant and a flowchart (Figure 1) demonstrating how you went from the survey sample to your analytic sample with numbers, 3) definitions for the outcome and explanatory variable, plus potential confounders, and 4) the analysis plan. This assignment must not exceed 750 words, excluding Figure 1 and reference list.

Completion of a **Results assignment for your public health journal article (Assignment 4a and 4b (20%))**. Results must include three paragraphs that provide 1) descriptive characteristics of the study sample, 2) descriptive statistics (i.e. mean, median, range, %) for the outcome and explanatory variables, and 3) the bivariable (unadjusted) and multivariable (adjusted) relationships between the outcome and explanatory variable, and the bivariable and multi-variable relationships between the outcome and the potential confounders. The results section must include a Table 1 with the descriptive (n plus distribution statistics) for the study sample. Table 1 may also include the bivariable and multivariable statistical model results, although one additional Table 2 is permissible as needed for the presentation of findings. This assignment must not exceed 750 words, excluding the table(s) and reference list.

Students are responsible for delivering an academic-style, **‘Lightning Talk’ presentation** on their study, suitable for a public/population health conference (Assignment 5 (5%)). See the following link for a description of a ‘Lightning Talk’: https://en.wikipedia.org/wiki/Lightning_talk. Lightning Talks will be approximately 5 minutes per student (length will be confirmed based on final class enrolment) and limited to five slides per presentation. A copy of the slides is due via UBC Connect on Monday October 30th by 6 pm (pdf version to avoid formatting issues) and cannot be modified after submission. The presentation must provide the audience with an overview of the study (rationale, research question, key methodological components), findings to-date (key descriptive findings on the sample and key bi-variable findings on the relationship between the main explanatory and outcome variables), plus a discussion of key study limitations/biases.
**FINAL Class Paper - Academic Journal Article (ASSIGNMENT 6 (50%))**

The final class paper is a scientific article suitable for publication in a health-related journal. Your paper will evolve over the course of the term using the section assignments as inputs, and you are expected to revise/update sections of your paper to incorporate instructor/peer feedback, as well as new learning over the term, into the final version (i.e. an organized whole that is more than the sum of its parts). The paper has 7 sections (adhering to journal guidelines and instruction to authors): 1) Title Page (title of article and full author name), 2) Abstract, 3) Introduction, 4) Methods (with Study Sample Flowchart/Figure 1), 5) Results (with Table 1, plus Table 2 and/or Figure 2 only if needed), 6) Discussion and 7) References (Vancouver Style).

The **Abstract** must be structured and include: Introduction, Methods, Results and Discussion.

The **Introduction** section must include **three paragraphs**: 1) a description of the health ‘problem’ illustrating the importance of the population/public health issue, 2) a summary of previous key studies/findings (i.e. the background) that informed the rationale for your study, and 3) a summary of key issue(s)/gap(s)/problem(s) leading to your stated research question.

The **Methods** section must include **four paragraphs** that describe: 1) the study design; 2) the study sample with inclusion and exclusion criteria and a flowchart/figure 1 (from survey sample to your analytic sample), 3) definitions for the outcome and explanatory variable, plus potential confounders (and interaction terms, effect modifiers if appropriate), and 4) the analysis plan.

The **Results** section must include **four paragraphs** that provide: 1) descriptive statistics of the study sample, 2) descriptive statistics (e.g. %, mean, median, range) for the outcome and explanatory variables, 3) the bivariable (unadjusted) and multivariable (adjusted) relationship between the outcome and explanatory variable, and between the outcome and the confounders, and 4) one additional paragraph with findings as they relate to a) issues of confounding, or b) interaction effects or c) sensitivity analyses (e.g. varying definition of explanatory variable). The results section must include a Table 1 with the descriptive (n plus distribution statistics) for the study sample. Table 1 may also include the bivariable and multivariable statistical model results, although one additional Table 2 is permissible as needed for the presentation of findings. One figure may be used in the Results section, if needed, to present findings for item #4 above. A maximum of 4 tables/figures can be used in the entire paper (study sample flowchart/figure 1 in Methods, Table 1 in Results, plus one additional table in the Results section and one additional figure for item #4 above, if needed).

The **Discussion** section must include **four sections**: 1) a summary of key finding(s) relative to the research question; 2) a discussion of similarities and differences between the current findings and previous research and explanations why did you observed what you observed; 3) a discussion of the strengths and limitations of the study, including the potential influence of key biases on the results/findings; and 4) conclusions on how the current findings influence our knowledge, practices, or understanding of the health problem, plus recommendations for future studies.

The **maximum word count** for the **final paper** (Introduction, Methods, Results, Discussion sections, excluding Title Page, Abstract, References and Tables/Figures/Graphs) is **3000 words**. Usually the Discussion section is the longest (approximately 1,000 words) and the Introduction the shortest (approximately 500 words). Approximately one-half of the paper is for the Methods and Results Sections (750 words each). The **maximum word limit** for the **Abstract is 250 words**. There are no word limits for the Title Page, References or Tables/Figures.
ASSIGNMENT 1A and 1B - Research Proposal – SPPH504 (P/F)

Research Question (relationship and direction of relationship between one key explanatory factor and one health outcome of relevance to population/public health):

Data Source/Survey and Data Years:

Description/Definition of Study Sample with exclusion criteria (if any): and estimated n (based on survey documentation):

Description/Definition of Study Outcome (dependent variable). Include the variable name(s) and estimated number of respondents from the survey documentation:

Description/Definition of Explanatory Variable (independent variable). Include the variable name(s) and estimated number of respondents from the survey documentation:

List Potential Confounders. Include the variable name(s) from the survey documentation:

Proposed Analytic Model:
### SPPH504 Academic Journal Article– Marking Rubric for Class Assignments 2B, 3B, 5B

<table>
<thead>
<tr>
<th>ASSIGNMENT 2B - INTRODUCTION – 10% of Final Grade</th>
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<tbody>
<tr>
<td><strong>Expression</strong></td>
<td><strong>Components</strong></td>
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</tbody>
</table>
| • Good paragraph construction  
• Sections well integrated  
• No errors in expression (e.g. slang, spelling, grammar)  
• Demonstrates clear organization and logical development of ideas  
• Language is clear and concise | • Addresses all components and requirements of section (problem statement, literature context, research gap or study need, research question)  
• Purposeful selection of key readings | • Cogent rationale and research question  
• Proper interpretation of previous research  
• Correct identification of research gaps/needs | • Reader has a clear understanding of why the study is warranted, how it builds upon previous key studies and what specific epidemiological/population health research question is addressed by the study. | Outstanding (9-10) |
| • Mostly correct, clear and concise, some errors in items listed above | • Addresses most components/requirements, but some missing elements | • Interprets most components correctly, but some errors in interpretation or some omissions | • Addresses most of the elements as described above but missing some elements for the reader  
• Some errors in interpretation of literature, rationale for the study and research question | Competent (7 - 8) |
| • Challenging to read re expression, flow, paragraph construction, conciseness, organization  
• Errors of expression (e.g., slang, misspelling, grammatical errors) | • Mostly does not address the section components/requirements; incorrectly addresses most elements | • Major errors in interpretation of literature  
• Rational for study and the research question are not cogent | • Mostly does not address the objectives for this section (i.e. not clear why the study is warranted, does not appear to add to the existing literature)  
• Reader does not conclude the same need/rationale for the study  
• A different research question is warranted | Incomplete or incorrect (<=6) |

<p>| No response | No response | No response | No response | No response | No response (0) |</p>
<table>
<thead>
<tr>
<th>Expression</th>
<th>Components</th>
<th>Interpretation</th>
<th>Overall Assessment</th>
<th>Marking</th>
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</thead>
</table>
| • Good paragraph construction  
• Sections well integrated  
• No errors in expression (e.g. slang, spelling, grammar)  
• Demonstrates clear organization and logical development of ideas  
• Language is clear and concise | • Addresses all components and requirements of section (study sample, outcome, explanatory variable, confounders, analytic plan) | • Cogent selection and definition of a study sample, study variables, confounders and analytic plan | • At the end of the Methods section, readers should have sufficient information that they could repeat the study. | Outstanding (13-15) |
| • Mostly correct, clear and concise, some errors in items listed above | • Addresses most components/requirements, but some missing elements | • Addresses most elements, but some elements of interpretation are missing or not clear to the reader | • Could replicate some but not all elements of the methods | Competent (10-12) |
| • Challenging to read re expression, flow, paragraph construction, conciseness, organization  
• Errors of expression (e.g., slang, misspelling, grammatical errors) | • Mostly does not address the section components/requirements; incorrectly addresses most elements | • Selection of study sample, study variables, or analytic plan not cogent or in error | • Could not replicate most elements of the study design | Incomplete or incorrect (<=9) |
<p>| • No response | • No response | • No response | • No response | No response (0) |</p>
<table>
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<tr>
<th>Expression</th>
<th>Components</th>
<th>Interpretation</th>
<th>Overall Assessment</th>
<th>Marking</th>
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</thead>
</table>
| - Good paragraph construction  
- Sections well integrated  
- No errors in expression (e.g. slang, spelling, grammar)  
- Demonstrates clear organization and logical development of ideas  
- Language is clear and concise | - Addresses all components and requirements of section (description of sample, bivariable and multivariable results, main findings for research question adjusted for confounders, sensitivity analysis of assumption, power calculation, tables/figures/ graphs) | - Correctly interprets descriptive, bivariable and multivariable results  
- Correctly interprets additional components such as confounders correlations, missing data, ‘sensitivity’ analyses  
- Model building decisions are cogent  
- Tables, graphs and/or figures are ‘stand alone’ and can be interpreted by the reader without the text. | - Reader understands who was included in the study sample, how the key outcome and explanatory variables were distributed in the study sample, the bivariate relationship between variables, and the final adjusted relationship in the multivariable model.  
- Reader would generally arrive at same results as the author | Outstanding  
(17-20) |
| - Mostly correct, clear and concise, some errors in items listed above | - Addresses most components/requirements, but some missing elements | - Correctly interprets most elements but some errors in interpretation  
- Need to refer to the text to interpret some elements of the tables/figures  
- Some errors in model decision making | - Addresses most components listed above but some gaps in understanding  
- Could replicate some but not all elements of the results | Competent  
(14-16) |
| - Challenging to read re expression, flow, paragraph construction, conciseness, organization  
- Errors of expression (e.g., slang, misspelling, grammatical errors) | - Mostly does not address the section components/requirements; incorrectly addresses most elements | - Major errors in interpretation across multiple components  
- Need to refer to text to interpret for most elements of tables/figures  
- Model decision making is fatally flawed | - Mostly does not address the objectives of this section  
- Could not replicate results | Incomplete or incorrect  
(<=13) |
| - No response | - No response | - No response | - No response | No response (0) |
ASSIGNMENT 4a and 4b - Evaluation

Assignment 4a – a copy of your ‘Lightning Talk’ slides (pdf version) must be uploaded to the Course website by 6 pm Monday October 30th (P/F)

Assignment 4b - ‘Lightning Talk’ Presentation – 5%

Evaluation Criteria:

- Participation in ‘Lightning Talk’ presentation session = 3%
- Presentation and slides that adhere to class instructions (5 slides maximum, coverage of key concepts, presentation within time limit) = 4%
- Presentation and slides that exceed expectations (demonstrates thoughtful preparation, with very effective communication of content via both slides and verbal presentation) = 5%
ASSIGNMENT 6 - ADDITIONAL COMPONENTS FOR FINAL PAPER

ASSIGNMENT 6 – ABSTRACT
must not exceed 250 words, must be structured with an Introduction, Methods, Results, and Discussion

<table>
<thead>
<tr>
<th>Expression</th>
<th>Components</th>
<th>Interpretation</th>
<th>Overall Assessment</th>
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<tbody>
<tr>
<td>• No errors in expression (e.g. slang, spelling, grammar)</td>
<td>• Addresses all components and requirements of section (Introduction or Background, Methods, Results, Discussion)</td>
<td>• Correctly conveys/highlights key elements of the rationale, methods, results and discussion from your study</td>
<td>• Abstract succinctly communicates the research; is a stand-alone entity from the full paper</td>
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<tr>
<td>• Demonstrates clear organization and logical development of ideas</td>
<td>• Includes title and key words of your research used in the paper</td>
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<tr>
<td>• Language is clear and concise</td>
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<tr>
<td>• Within journal word limit</td>
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<td>• Mostly correct, clear and concise, some errors in items listed above</td>
<td>• Addresses most components/requirements, but some missing elements</td>
<td>• Conveys most components/requirements, but some missing elements</td>
<td>• Mostly a stand-alone entity</td>
</tr>
<tr>
<td>• Challenging to read re expression, flow, paragraph construction, conciseness, organization</td>
<td>• Mostly does not address the section components/requirements; incorrectly addresses most elements</td>
<td>• Fails to include important information for the reader</td>
<td>• Abstract is not a stand-alone entity</td>
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<tr>
<td>• Errors of expression (e.g., slang, misspelling, grammatical errors)</td>
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<tr>
<td>• Exceeds word limit</td>
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<td>• No response</td>
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## ASSIGNMENT 6 - DISCUSSION

<table>
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<tr>
<th>Expression</th>
<th>Components</th>
<th>Interpretation</th>
<th>Overall Assessment</th>
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<tbody>
<tr>
<td>• Good paragraph construction</td>
<td>• Addresses all components and requirements of section (summary of findings, findings in the context of existing literature, explanation of findings, limitations and understanding of limitations, explanation of findings)</td>
<td>• Cogent summary of key findings from the analysis</td>
<td>• Reader understands if the results provide an answer to the research question; if the results agree with what others have shown and if not, how this study differ from others; what factors or sources of error influenced the results or what insights other researchers could learn from your work to improve future studies; and how the results of the study influence our knowledge, practice or understanding of the problem</td>
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<tr>
<td>• Sections well integrated</td>
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<td>• Cogent interpretation of results relative to other studies</td>
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<tr>
<td>• No errors in expression (e.g. slang, spelling, grammar)</td>
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<td>• Cogent interpretation of recommendations for future research, practice</td>
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<td>• Demonstrates clear organization and logical development of ideas</td>
<td></td>
<td>• Demonstrates insight, depth/breadth to discussion of findings and epidemiological research issues</td>
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<tr>
<td>• Language is clear and concise</td>
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<tr>
<td>• Mostly correct, clear and concise, some errors in items listed above</td>
<td>• Addresses most components/requirements, but some missing elements</td>
<td>• Correctly interprets most elements but some errors in interpretation and explanation</td>
<td>• Addresses most components listed above but some gaps</td>
</tr>
<tr>
<td>• Challenging to read re expression, flow, paragraph construction, conciseness, organization</td>
<td>• Mostly does not address the section components/requirements; incorrectly addresses most elements</td>
<td>• Major errors in interpretation and explanation</td>
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<tr>
<td>• Errors of expression (e.g., slang, misspelling, grammatical errors)</td>
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<td>• Lacking insight in epidemiological research methods; lack of depth or breadth to discussion and explanation</td>
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<td>• No response</td>
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<td>• Mostly does not address the objectives of this section</td>
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14
<table>
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<tr>
<th>Expression</th>
<th>Components</th>
<th>Interpretation</th>
<th>Overall Assessment</th>
<th>Marking</th>
</tr>
</thead>
</table>
| - No spelling errors  
- All references are included in the reference list | - Can find all references  
- Follows a consistent referencing format acceptable by a health journal (MUST BE Vancouver Style)  
- References correctly cited in the text | - Correctly interprets evidence from other studies  
- Correctly attributes evidence to original source  
- Provides different perspectives where needed | - Conveys to reader a purposeful selection of readings, but depth and breadth of evidence  
- Reader able to find and check citations as easily as possible | Excellent (no deductions) |
| - Some errors or omissions | - Addresses most components/requirements, but some errors | - Addresses most components/requirements, but some errors | - Addresses most components/requirements, but some errors | Incomplete 5% deduction |
| - Consistent spelling errors and reference omissions | - Inconsistent referencing style, incorrect referencing style  
- Cannot find references | - Incorrectly or inappropriately attributes evidence | - Major errors in referencing style, evidence attribution  
- Reference list is not a resource for the reader | Incomplete and incorrect 10% deduction |
ASSIGNMENT 6 –FINAL SPPH504 PAPER (50%)

Evaluation Criteria

Adjudication of final scientific paper suitable for submission to health-related journal, including Title Page, Abstract, Introduction, Methods (with Flowchart/Figure 1), Results (with Table 1, plus Table 2 and/or Figure 2 only if needed), Discussion, and References.

A Level (80% to 100%)
A+ is from 90% to 100%: It is reserved for exceptional work that greatly exceeds course expectations. In addition, achievement must satisfy all the conditions outlined the assignments and demonstrate exceptional work incorporating class/instructor feedback on work throughout the term.

A is from 85% to 89%: A mark of this order suggests a very high level of performance on all criteria used for evaluation. Contributions deserving an A are distinguished in virtually every aspect. They show that the individual significantly shows initiative, creativity, insight, and probing analysis where appropriate. Further, the achievement must show careful attention to course requirements as established by the instructor and careful consideration of the inclusion of class/instructor feedback on work throughout the term.

A- is from 80% to 84%: It is awarded for generally high quality of performance, no problems of any significance, and fulfillment of all course requirements. In addition, achievement must satisfy all the conditions outlined the assignments and incorporate class feedback from assignments.

B Level (68% to 79%)
This category of achievement is typified by adequate but unexceptional performance when the criteria of assessment are considered. It is distinguished from A level work by problems such as: One of more significant errors in understanding, superficial representation or analysis of key concepts, absence of any special initiatives, lack of coherent organization or explanation of ideas, and/or failure to include incorporate class/instructor feedback on work throughout the term. The level of B work is judged in accordance with the severity of the difficulties demonstrated. B+ is from 76% to 79%, B is from 72% to 75%, and B- is from 68% to 71%.

C Level (55% to 67%)
Although a C+, C, or C- grade may be given in a graduate course, the Faculty of Graduate Studies considers 68% as a minimum passing grade for doctoral graduate students.
ASSIGNMENT 7 – SEX AND GENDER BASED ANALYSIS TRAINING CERTIFICATE (P/F)

Students are required to complete one of three on-line training modules provided by the Canadian Institutes for Health Research’s Institute for Gender and Health:
http://www.cihr-irsc.gc.ca/e/49347.html#wb-cont

Students can choose which training module to complete based on their research interests or needs: 1) Sex and Gender in Biomedical Research, 2) Sex and Gender in Primary Data Collection with Humans or 3) Sex and Gender in the Analysis of Data from Human Participants.

Students can complete the training module at any time during the SPPH504 course (September to December 2017), but must submit a copy of their certificate of completion via the Assignment folder for the course on the UBC Connect website in order to receive their final course grade and to successfully meet all of the requirements for SPPH504.