**HH/HLST 4200:**  **Research Methods in Health Studies**

**Winter Term Assignment 3**

Assigned: Monday March 15, 2021; Due 5:59PM Friday April 13, 2021

Submit 1 file for Assignment 3: PDF

PDF document name: LASTNAME\_FIRSTNAME\_WTAssignment3

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Please note that if you do not name your pdf file according to the convention listed above, 5 marks will be deducted from your assignment.

Other reminders that you should take care to ensure while completing your assignment:

* Answers to questions must directly follow the question asked – do not change the order of the questions
* Questions 1-3 must be answered using SPSS
* Screenshots of SPSS must be of high resolution and be pasted upright (not sideways) so that they can be easily read and graded

1. Using the cosmetic surgery example in Lecture 9 and the data file (Excel file: 4200WTassignment3.xls - worksheet cos\_surg), run the same analysis as described in lecture with the following variables:

* outcome (Post\_QoL – measure of quality of life after cosmetic surgery)
* covariate (Surgery – dummy variable that specifies whether the person has undergone cosmetic surgery (1) or whether they are on the waiting list (0), which acts as our control group)
* covariate (Base\_QoL – measure of quality of life before the surgery)
* subject (Clinic - which of the 10 clinics the person attended to have their surgery)
* interaction (Sex × Surgery, where sex = 1 (male) and sex = 0 (female))

Report results (as described in last slide of Lecture 9 slide deck) and copy and paste the associated SPSS output table(s) from where the reported results were derived. Show your work for calculating χ2 change.

1. A researcher is comparing a new treatment for migraine headaches compared to the standard of care (Excel file: 4200WTassignment3.xls - worksheet survival). The researcher has randomly enrolled 10 participants to receive the new treatment (treatment = 1) and 10 participants (control group) to only take over-the-counter medication for pain relief (treatment = 0). The event of interest is time to next migraine experienced by participants after the start of the study. The investigator records how long in weeks before each participant has their next migraine or drops out of the study (time\_to\_event) and the status of the participant (1 = migraine; 0 = no migraine). The study lasted 26 weeks. Run a survival analysis. Copy and paste the relevant SPSS output tables and figure. Report the results. Additionally, answer the following questions:
   1. How many participants dropped out of the study in the intervention and control groups, respectively?
   2. How many participants were right-censored in the intervention and control groups, respectively?
2. A clinical trial is conducted to evaluate the efficacy of a new therapy for bone cancer (Excel file: 4200WTassignment3.xls - worksheet cox\_reg). The researcher has randomly assigned 20 bone cancer patients to receive the new treatment (treatment = 1) and 20 bone cancer patients (control group) to receive the standard of care (treatment = 0). The event of interest is time to death of participants after treatment. The investigator records the number of days of survival after treatment or number of days till participant drops out of the study (time\_to\_event) and the status of the participant (1 = death; 0 = no death). The study lasted one year. Other risk factors collected include age in years, sex (1 = female; 0 = male), and number of days between diagnosis of bone cancer and treatment. Run a Cox proportional hazards model (assign reference category = 0 for treatment and reference category = 1 for sex). Copy and paste the relevant SPSS output tables. Report the results.
3. Download and read the following paper:

Shaner A, Eckman TA, Roberts LJ, Wilkins JN, Tucker DE, Tsuang JW, Mintz J. Disability income, cocaine use, and repeated hospitalization among schizophrenic cocaine abusers--a government-sponsored revolving door? N Engl J Med. 1995 Sep 21;333(12):777-83. doi: 10.1056/NEJM199509213331207. PMID: 7643886.

Within the results section are the following two passages:

*“The tendency for drug use to increase early in the month did not appear to be an artifact of weekly cycles. This was determined by performing analyses of the percentage of negative urine specimens and mean cocaine concentrations with the addition of the day of the week as a covariate. These analyses yielded essentially the same results as those for the three-day intervals.”*

*“The cross-correlations between the cocaine concentration and hospital admission were -0.014 concurrently and 0.635 with a lag of one interval (t = 2.74, df = 8, p = 0.03). Thus, changes in the cocaine concentration were predictive of changes in the rate of hospitalization three to five days later.”*

Describe each of the passages in layman’s terms.

**School of Health Policy and Management**

**Assignment Attachment Form**

**Student Name:**

**Student Number:**

**Course Code:**

**Assignment Title:**

**Due Date:**

**Tutorial Leader (if applicable):**

**Please check each box after reading, to acknowledge agreement with each statement.**

☐ I have read and understand the Senate Policy on Academic Honesty found on website at the following [York Secretariat website on Academic Honesty](http://www.yorku.ca/secretariat/policies/document.php?document=69).

☐ I have read and understood the assignment submission described in the course outline (syllabus)

☐ I have read and understood the criteria used for assessment in this assignment

☐ I have read and understood and followed the referencing guidelines required for assignments submitted at York University

☐ This assignment is entirely my own work, except where I have given documented references to work of others

☐ This assignment or substantial parts of it has not previously been submitted for assessment in any formal course of study, unless acknowledged in the assignment and previously agreed to by my Tutorial Leader and Course Director

☐ I understand that this assignment may undergo electronic detection for plagiarism and a copy of the assignment may be retained on the database and used to make comparisons with other assignments in the future

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