Homework assignment 11

Use black text (if possible) for everything you include in this document. Keep both your answers and the original questions. Save this document in PDF format and submit it on Canvas. Include your last name, the course number and the module number in the name of your file.

1. Show a documentation header. The documentation header is a description of who wrote the program, when it was written, what the purpose of the program is (briefly), and what restrictions (if any) that you may place on the program. For SPSS, you can just type the documentation as free format text. For other programs, you might use the comment feature (such as /\* and \*/ in SAS).

2. Review the paper

Susan B Stinton, Evangelos Pappas, Alberto Nettel-Aguirre, Niamh A Moloney, Kathryn Refshauge, Dale W Edgar. Who crashes their car following wrist fracture? Journal of Hand Therapy, 2023-10-17, S0894-1130(23)00129-1, doi: [10.1016/j.jht.2023.09.002](https://dx.doi.org/10.1016/j.jht.2023.09.002), pmid: [37858500](https://pubmed.ncbi.nlm.nih.gov/37858500/).

Table 2 lists crash results before and after a wrist injury with time windows of 3 months, 6 months, 1 year, and 2 years. Enter the 3 month data into SPSS and run a McNemar test to see if the percentage of crashes before injury is equal to the percentage of car crashes after injury. Present the two by two crosstabulation and the test statistic. Interpret your results.

3. Repeat this analysis with the two year data.

4.

Affiliations expand

PMID: 37858500 DOI: 10.1016/j.jht.2023.09.002

The following is the assignment from last year. I am keeping it around until I finalize this year’s assignment.

This Assignment assesses the ability to understand, run and interpret both tests presented this week – McNemar’s Test and Cochran’s Q.

Before attempting this assignment, listen to the videos. There is much important information presented and because there is little written about these tests in the public domain, I have tried to be very complete in base knowledge within the lectures.

RE SPSS: Directions are provided in the lectures. Please read carefully. Also – Please note that there may be some small differences in the processes and or output due to the SPSS version updates.

RE: This assignment: **Unfortunately, there has been strong evidence that some students have been plagiarizing work from previous years and or working as a group and submitting similar answers. Any evidence of not doing your own work on this assignment or any other assignment, project, exam, quiz or the like will result in a grade of 0 points. Additionally, as University policy dictates, I will report any cheating to the Dean of Graduate Studies.**

**Background Information:**

A Pre-test – Post-test design is an experiment design where subjects are studied before and after an experimental manipulation. This is also called a quasi-experimental design because the subjects are not randomly assigned into a group. All subjects receive the experimental “treatment” and are studied before and after that treatment.

Both the McNemar and the Cochran’s Q are tests that are used to assess categorical data from a quasi-experimental (pretest – posttest study design). Recall that Cochran’s Q is used to assess a dichotomous categorical variable under three or more conditions (levels). A McNemar test is used to assess a dichotomous categorical variable under two conditions.

**Scenario for both processes:**

Healthcare professionals with involvement in direct patient care, research, or other in-hospital work, are all required to complete a variety of training to address many different regulations established by government entities. The training is often in the form of a video that is viewed, followed by a test covering concepts or information presented. Before these training plans are released for use, they undergo validation by subjects without prior knowledge of the contained information.

The data presented for this HW assignment is data taken from a training program assessment. Subjects who provided data were selected based on their lack of knowledge of the information contained in the training video and tests. All subjects were given a pre-video assessment to determine their level of knowledge before video viewing. Following viewing the training video, those same subjects were immediately assessed for knowledge gain using a post-video test. Finally, the trainers want the information that was presented in the video, to be retained. With this, those same subjects took a test containing the information presented in the video, 9 months after the initial testing and viewing.

**The Question:**

Is the training effective? (Did the viewers learn and retain the intended information?)

**The Processes**:

Process 1: **Run Method 2** presented in the **Cochran’s Q** Panapto video using the data set provided for this HW assignment. Create a complete write-up of the research study. Format this write up using the EXACT categories in the Semester Project Rubric. The Semester Project Rubric is found in this Week’s Canvas Module.

Include only the output that is necessary for communicating the analysis. (Look at the Cochran’s Q lecture to determine what output should be included.)

Keep this assignment limited in length and to the point. Do not include unnecessary output and information. I will grade this based on items and information included as well as the above-defined category format.

Process 2: **Run Method 1** presented in the **McNemar** test video and using the same set of data used in Process 1. Run the three possible comparisons for this data using the McNemar test. (There will be three McNemar tests to run) Again, you will be running 3 tests on the same data. This means that you will need to make a correction in the alpha level before determining if each test is significant.

For each test, include the following in list format:

1. The adjusted critical alpha level used to determine significance.
2. Identify the specific levels of the independent variable compared.
3. The Null Hypothesis, written specific to the test levels in the McNemar test being run.
4. Copy and paste:
   1. The Hypothesis Test Summary table found in the output
   2. The Related-Samples McNemar Change Test Graph and Table
5. The frequencies in the discordant pairs
6. The Test statistic and associated p-value
7. The null hypothesis decision.

\*\* There is not a formal write up assigned for Process 2. Simply provide the information outlined immediately above (Points a – g) for each of the three tests run.