

NURSING 204: Nursing and Societal Forces –Dr. Barbara Blake-Campbell

Course Information

Description: This course will explore health care issues and concerns through the application of knowledge from nursing, social and political sciences. The legal, political, and ethical parameters of nursing will be examined within the framework of the well/illness continuum. Strategies for the resolution of societal issues and concerns, which impact nursing and the health care delivery system, will be analyzed.

Thursdays: 5:10- 8:00PM – Synchronous Zoom

3 hours: 3 Credit hours

Instructor Information:

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Office Hours: 2:00-3:00PM Thursdays/Fridays

This fall semester the class will participate in a Data Analysis Research Experience (DARE), which is a CUNY-Wide Grant Initiative. This will give students a greater understanding and appreciation of the Research process that informs Evidence-Based Practice approach to safe and effective patient care. Other benefits of this exercise are that students will enhance their library data base and scholarly writing skills. You are advised to set up your personal memos to keep track of the **Due Dates** for All sections of the assignment to avoid any point reductions. **All submissions must be typed.**

Your assignment will be based on the statistical data extracted from the transcript titled, *“Florence Nightingale and her Crimean war statistics: Lessons for hospital safety, public administration, and Nursing.”*

This Data Analysis Research Assignment will be 25 % of class grade and will replace the Research Paper in this course).

Please see below:

The instructor in this class is participating in a CUNY-wide initiative, supported by the National Science Foundation, to infuse data analysis across the curriculum. As part of this initiative, faculty in courses across CUNY are administering assessments in their classes. These assessments are designed to measure students' attitudes and skills relating to data analysis and quantitative reasoning. There will be an assessment administered very early in the semester and one at the end of the semester. These assessments count for 4% of your class grade (each assessment is 2%), but you are NOT graded on your performance. That said, we do ask that you try your best since student performance on these assessments speaks to the skills and talents of CUNY students. Before you take the assessment, you have the option of indicating whether you want your assessment data to be used for research purposes. If you opt to allow the data to be used for research purposes, you will be compensated \$5

for each assessment you complete. Additional information about the assessments will be provided in Blackboard.

Components of this DARE Experience

Student Learning Outcomes.

Students will be able to:

- (1) Describe the process of data collection and compile data in a spreadsheet for analysis
- (2) Apply quantitative data analysis techniques to real world problems
 - a. Construct a bivariate/pivot table(s) using spreadsheets using raw frequencies;
 - b. Transform a table with frequencies into one using percentages, understanding whether to use row vs. column percentages; and
 - c. Prepare a graph(s) to visually represent the bivariate table(s), ensuring that the bars/lines/etc. represent the groups being compared.¹
- (3) Present data using data visualizing techniques
- (4) Accurately communicate findings
 - a. Explain the meaning of the percentages (i.e., “per 100”) using the data obtained
 - b. Apply percentages to make comparisons among groups

Your Assignment is based on the Google Spreadsheet below:

FLORENCE NIGHTINGALE’S DATA

Monthly mortality rates:

<https://docs.google.com/spreadsheets/d/1dYo9sTdAtAueJbR4ch33PYcHhQBM5WEKyU26INDB720/edit?usp=sharing>

If the link above doesn’t work, please copy and paste it into your browser.

Detailed Instructions:

Each student will:

- Make a copy of the spreadsheet above onto your own Google drive. In order to do this, you will need to create a Google account if you don’t have one already. Once you do that, you should logon to your account and access the data at the link above. Once you do that, you can make a copy of the data to save onto your own Google drive. (You cannot work with the data until you make a copy of it.)
- Pick a mortality category as the focus of their assignment. (Select from either zymotic diseases or wounds or injuries). Share whether your chosen disease category has increased, decreased, fluctuated, or remained the same as a proportion of **all deaths** over time period that is the focus of your analysis. (You will be picking four data points from Florence Nightingale’s data set.)
NB. (Choose the disease category that interests you the most)

- Make a table showing the distribution of causes of death at 4 different points in time using the raw number of deaths. You may pick whatever 4 time periods you would like to study. (However, the time periods should be at even intervals, such as every 4 months or every 5 months). Please also do not choose the same periods that are in the demonstration video indicated below. (Those dates are August 1854, February 1855, August 1855 and February 1856.)

NB. You may select your starting and ending points as long as you adhere to the guidelines listed above. Please do not use **4 years in a row**. (i.e., consecutive rows). Make sure that the table has: (1) a title that accurately reflects the content of the table; (2) rows and columns representing month + year and causes of death; (3) source of the data (Florence Nightingale's mortality data from the Crimean War).

- Convert the table using the raw numbers into percentages. That said, for each of the four points in time (month/year), you should indicate the percent of deaths that were due to (a) zymotic diseases, (b) wounds and injuries, and (c) all other causes. These are the data that you should use for your final table. That are also the data that you should interpret and use to build your graphs. In order to do this, you should copy and paste the table you just created with the raw numbers. Then you need to transform each number for each category of death into a percentage. (There is an example of such a table later in this assignment.) You also need to calculate the total number of deaths in each time period. Then you can calculate the percentage of deaths due to each specific cause. For example, if there were 100 deaths in a specific time period (month/year) and 10 deaths were due to wounds and injuries, we would say that 10% of deaths were the result of wounds and injuries (10 divided by 100 and multiplied by 100 = 10%). We can interpret that to mean that for every 100 deaths, 10 were due to wounds and injuries. You should look at the percentage for the specific causes of death you selected and ascertain what happened during the four points in time that you selected. (Please note that the video listed below guides you through doing this.)
- Next, prepare a graph (or graphs) that visually represent their data. Your graph should visually represent the data that you collected. Since you are making comparisons on the causes of death at 4 points in time, it is appropriate to make either a stacked bar chart and/or a line chart. You could also make 4 pie charts, but that is less conventionally done since pie charts are typically not used for comparisons and here you want to be making comparisons over time. Please note there are sample graphs at the end of this assignment.
- Write about your findings, and describe what the data show, and explain any trends you have identified. (You should copy your table and graph(s) into your document) As you write about your findings, be sure to demonstrate knowledge of how to effectively interpret the numbers. For example, you should interpret the percentages as "per 100."

- Compare and contrast how the Covid-19 epidemic is being managed, and what lessons have been learnt from Florence Nightingale's Environmental Theory shared in her classic text titled, ***Notes on Nursing: What it is, and what it is not.*** The written portion of this assignment should be written in APA 7th ed, and no less than one and a half to two pages, (1 ½-2 pages).

Faculty Support & Learning Tools to facilitate the assignment will be provided consistently in class and handouts distributed as needed throughout the semester as indicated on Course Calendar. There is also a video here to guide you through the data analysis component of this assignment.

Analyzing Florence Nightingale's Data on the Crimean War

<https://drive.google.com/file/d/1bzYYHB2-AUoJ2VHZpBJt5mHizpcX1ot/view?usp=sharing>

This video is approximately 25 minutes. It provides guidance on how to prepare a table (and convert the data from raw numbers to percentages in the table), make graphs (including a line chart and a bar chart), and interpret the results

- 0 to 1:15: How to make a copy of the dataset onto your own Google drive
- 1:16 to 3:35: Making sense of Florence Nightingale's data
- 3:36 to 9:00: Making a table with raw mortality counts
- 9:01 to 17:55: Making a table with percentages with the mortality data
- 17:56 to 12:14: Making a line chart with the data
- 12:15 to 22:50: Making a stacked bar chart with the data
- 22:51 to end: Telling a story and interpreting the data

The final page of this assignment has information on additional videos that may also help you in thinking about how to prepare tables and graphs and interpret quantitative data.

This assignment will replace the usual NU 204 Research Paper assignment in your Course manual which represents 25% of your Course grade.

Task	Due Date	Grade Percentage
Complete Pre-Assessment	September 2, 2021	2% of Final Grade
Select the mortality category of choice, and reason for selecting that category	September 11 th	1%
Share whether the chosen disease category has increased, decreased, fluctuated or remained stable as a proportion of all deaths over time	September 24th	3%

Make a table showing the distribution of causes of death at 4 different points in time, using percentages in the table. [NB. Follow instructions]	October 7th	5%
Complete Peer Feedback Using Rubric	October 21st	2%
Prepare a graph (or graphs) that visually represent their data	October 29th	2%
Complete Revisions	November 11th	3%
Data Analysis and Final Report of findings/Covid contrast	November 24th	5%
Complete Post- Assessment	December 2nd	2%

Total **=25%**

Objectives for this DARE assignment are classified to capture the three Learning Domains:

- (1) **Cognitive** - Attain knowledge and insight about the quantitative research process related to data collection mortality and morbidity rates and being able to articulate meaningful QR gains.
- (2) **Psychomotor:** Demonstrate competencies/skills in managing and data using Excel and/or Google Sheets to present results in a variety of ways.
- (3) **Affective:** Change in attitudes towards numeracy (i.e., achieve a comfort level in defending the value of use of numbers).

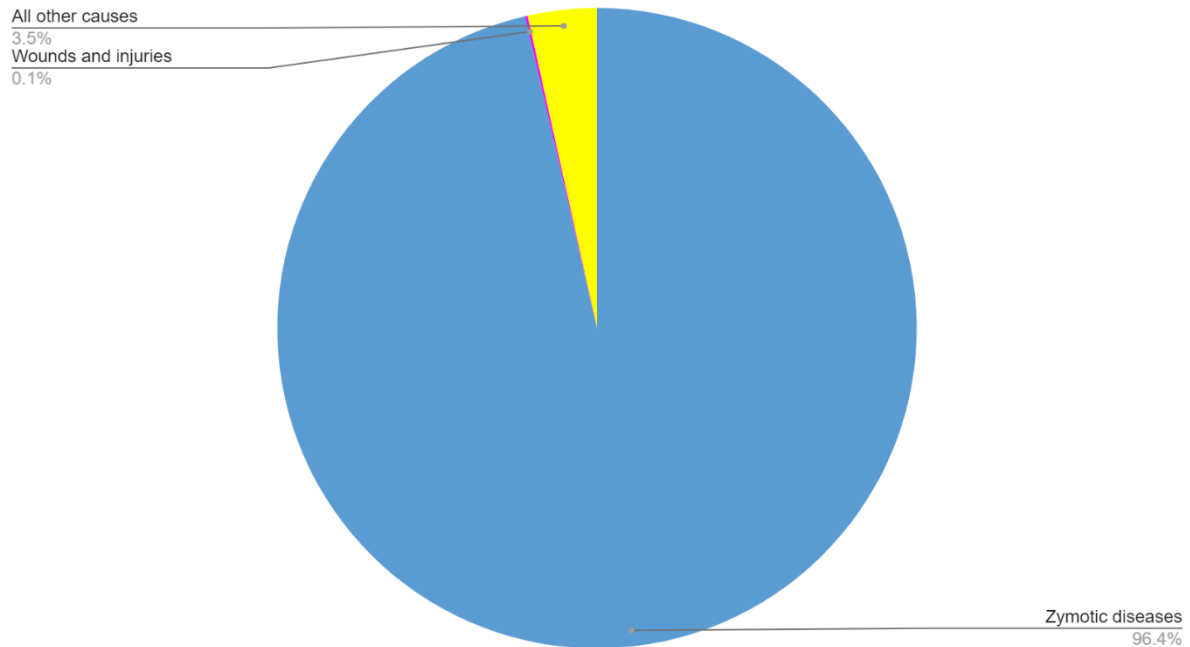
Example of table of data with percentages:

Distribution of Causes of Death among Soldiers During the Crimean War from August 1854 to February 1856			
	Deaths		
Month and Year	% Zymotic Diseases	% Wounds and Injuries	% All other causes
August 1854	96.4	0.1	3.5
February 1855	84.0	1.7	14.3
August 1855	71.9	24.4	3.7
February 1856	55.8	0.0	44.2
Source: Florence Nightingale's data from the Crimean War			

Interpretation of percentages: My focus is on wounds and injuries. This table reveals that in August 1854, 96.4% of soldiers died from zymotic diseases, .1 from wounds and injuries, and 3.5 from all other causes. This .1 indicates that for every 100 deaths, there were .1 (1/10th of one percent!) due to wounds and injuries. This can also be interpreted to mean that approximately 1 out of every 1000 deaths were due to wounds and injuries during August 1854. By August 1855, the percentage of deaths due to wounds and injuries had risen to approximately 24 percent. That means that 24 out over every 100 deaths, or nearly 1 in 4, were due to wounds and injuries on average. Meanwhile, as the war was ending very few deaths were due to wounds and injuries and in February 1856, there were no deaths due to wounds and injuries.

Example of pie chart
(used to illustrate a distribution that adds up to 100%).

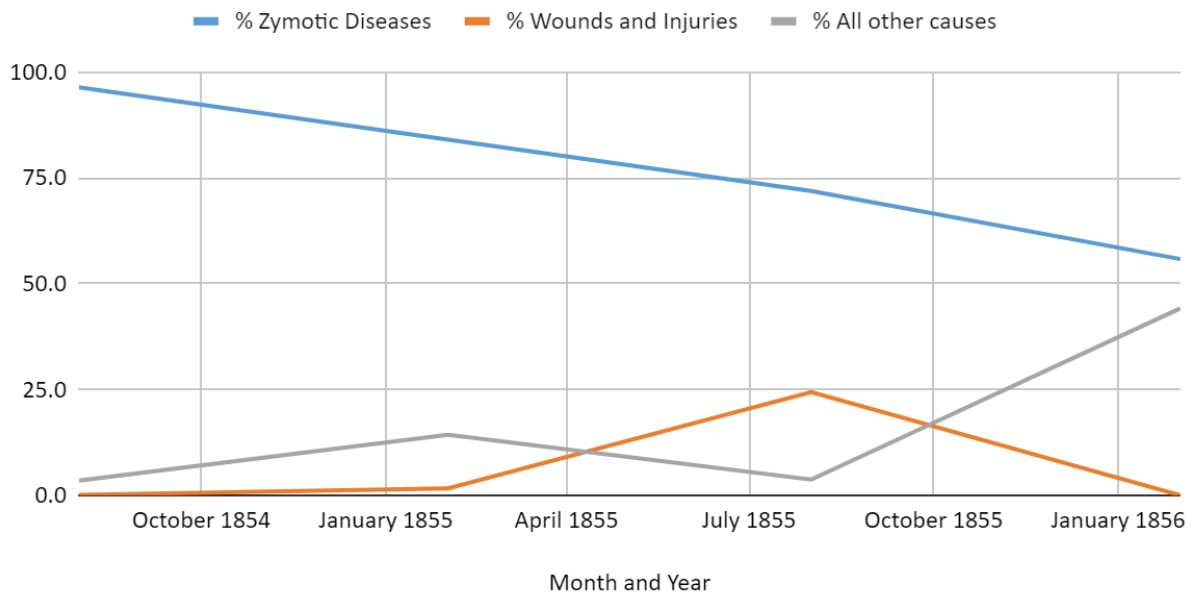
Distribution of Causes of Death among Soldiers During the Crimean War, August 1854



Source: Florence Nightingale data during the Crimean War.

Example of Line Chart
Used to display trends over a period of time.

Distribution of Causes of Death among Soldiers During the Crimean War from August 1854 to February 1856

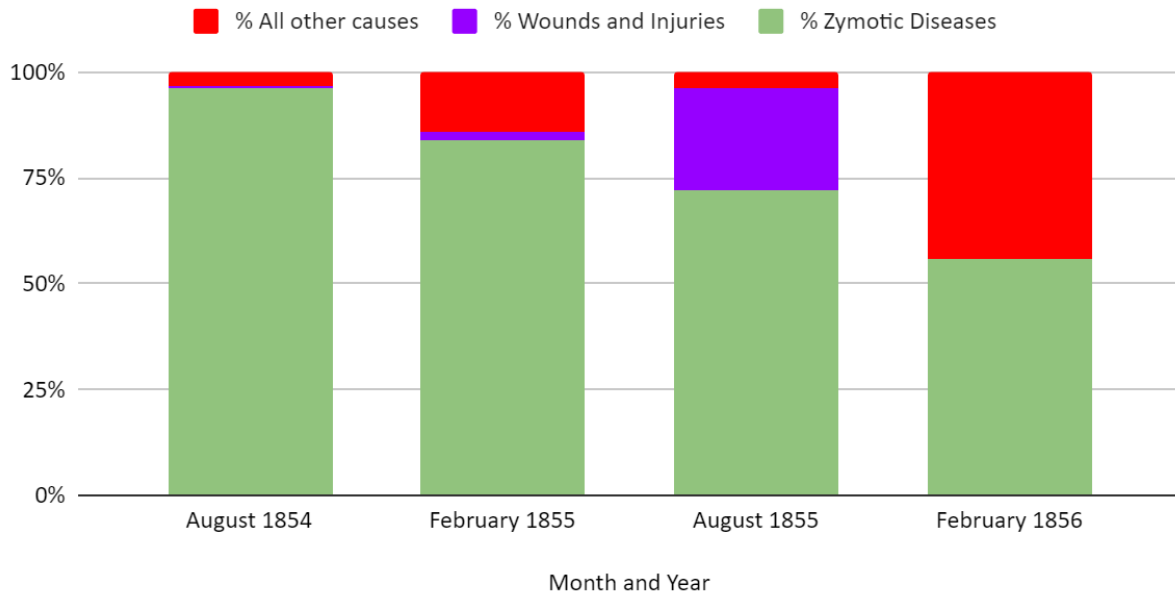


Source: Florence Nightingale data during the Crimean War.

Example of Bar Charts

Used to compare categories of data that can change over time.

Distribution of Causes of Death among Soldiers During the Crimean War from August 1854 to February 1856



Source: Florence Nightingale data from the Crimean War.

Additional Resources

(1) Making Bivariate Tables Using Spreadsheets

<https://drive.google.com/file/d/1yKJuRfcAX64USHwy8U4PmFyWKIXjGzZl/view?usp=sharing>

This video is approximately 15 minutes and it provides an overview of how to make a table using Google sheets. It reviews several basic skills in navigating Google sheets and is a good introductory video for making tables in Google sheets.

- 0 to 1:15: Selecting the data for analysis in Google Sheets
- 1:16 to 3:10: Making a bivariate table in Google Sheets
- 3:11 to 4:00: Interpreting the frequencies in a bivariate table
- 4:01 to 5:10: Converting the frequencies to percentages
- 5:11 to end: Working with Google sheets to make the table more readable

(2) Making and Interpreting Bivariate Tables Using Google Sheets

<https://drive.google.com/file/d/1Cmdc2LL1V0okccwysbDv8tsG9pXVev3f/view?usp=sharing>

This video is approximately 14 minutes long. It goes over how to make a pivot table in Google sheets (using an example with survey data) and explains how to interpret the raw frequencies from that table. It also reviews how to convert the data into percentages and how that can be used to make meaningful comparison.

- 0 to 3:24: Making a bivariate table in Google sheets using raw frequencies
- 3:25 to 4:47: Explaining how to make sense of the frequencies in the bivariate table
- 4:48 to 5:33: Converting the frequencies to percentages (column percentages)
- 5:34 to 8:00: Explaining how percentages are calculated, with examples from frequencies
- 8:01 to 9:15: Explaining how to interpret percentages in a bivariate table
- 9:16 to 10:24: Interpreting the percentages in terms of the columns and making comparisons among groups
- 10:25 to end: Explaining how the results change by switching to row percentages and how to interpret tables with percentages

(3) Interpreting Bivariate Tables (Row vs. Column Percentages)

https://drive.google.com/file/d/1p65X1efG6JQT73SvzyNR_j1hjLU1pLAI/view?usp=sharing

This video is approximately 11 minutes long and it focuses on how to interpret bivariate tables with a special emphasis on the importance of the distinction between row vs. column percentages.

- 0 to 7:52: Interpreting the percentages in a table to make comparisons (correctly selecting the right percentages; interpreting the table based on column percentages)
- 7:53 to 10:40: Interpreting the table based on row percentages
- 10:41 to end: The importance of the distinction between row vs. column percentages

(4) Calculating and Interpreting Ratios

<https://drive.google.com/file/d/1hCN9MrOqRm6x3NeMgHI4NfQLsWaUZONX/view?usp=sharing>

This video is approximately 6 minutes and is an introduction to ratios, including how to reduce them and express them per 1 individual of either the larger or smaller group.

- 0 to 1:00: A summary of ratios
- 1:01 to 2:29: How to reduce a ratio, including how to reduce a ratio to express the larger group relative to one individual in the smaller group
- 2:30 to 4:41: Using a hypothetical sample of a bird population to illustrate ratios and another demonstration of how to reduce ratios to express the number of individuals in the larger group relative to one individual in the smaller group
- 4:24 to end: Using a hypothetical sample of a bird population, an illustration of how you can reduce ratios to express the number in the smaller group relative to one individual in the larger group

(5) Preparing and Interpreting Graphs Using Google Sheets

<https://drive.google.com/file/d/1ymKacAluCpi6smJ9Cks1QZOZxGAk7OJ7/view?usp=sharing>

This video is approximately 8 minutes and is an introduction to preparing and interpreting graphs (bar charts, line graphs, and pie charts) using Google sheets.

- 0 to 1:23: Overview of bar charts, line graphs, and pie charts

- 1:24 to end: Demonstration of using data from the US Census on poverty to prepare graphs (a pie chart, a bar chart, a line graph with raw numbers, a line graph with percentages)

(6) Preparing and Interpreting Stacked Bar Charts Using Google Sheets

https://drive.google.com/file/d/1E74xmDgKZlf52Cpdn_JAPSMz0rihl8QU/view?usp=sharing

This video is approximately 10 minutes and it provides an overview of preparing, interpreting, and editing stacked bar charts using Google sheets.

- 0 to 2:30: Demonstration of how to make a stacked bar chart in Google sheets
- 2:31 to 5:25: How to format charts properly
- 5:26 to 6:15: interpreting a stacked bar chart
- 6:16 to 6:45: Rationale for making a stacked bar chart
- 6:46 to 7:25: The order of the categories in the stacked bar chart
- 7:25 to 8:00: The importance of having the bars representing comparison categories in bar charts
- 8:00 to end: Tips for editing a stacked bar chart (or any chart in Google sheets)

(7) Calculating and Interpreting Measures of Central Tendency Using Google sheets.

https://drive.google.com/file/d/1QpslOtnCGH14YxsxP6-DDBVIY2_qd7V7/view?usp=sharing

This video is approximately 5 minutes and it provides an overview of how to calculate and interpret measures of central tendency (mean, median, and mode) using Google sheets.

- 0 to .40: Overview of mean, median, and mode
- 41 to 4:00: Demonstration of how to calculate mean, median, and mode using a quantitative variable
- 4:01 to end: Interpreting measures of central tendency