Week 2 Discussion 1: Public Health Professionals and Statistics. Paper instructions: first discussion to repply: minumium 100 words Kerry MacKay - Monday, 9 January 2023, 3:15 PM Hello, classmates! In navigating the question of using statistics to evaluate public health programs, I thought deeply regarding how it is applied and what successes have come from public health interventions that ultimately have stemmed from data comparison with biostatistics. I consider the use of statistics extremely helpful to implement certain strategies and programs. It can be difficult, but shows great results in the end. I think it is extremely appropriate to compare and contrast many different things to discover gaps in populations. A good example of this might be looking at the average number of individuals in Boston who were diagnosed with lung cancer in 2022. From this, we can compare these numbers to other years or other cities and look at gaps in why they might be higher or lower in comparison. There are so many factors that play into examining public health data through the use of biostatistics along with generating effective research questions and leading into coming up with a proper study design. Using statistics can help us better understand and evaluate public health programs because we are taking specific data measured to evaluate smart goals and objectives. A specific book that I examined discussed the example of critiquing a program meeting its goals in conducting program evaluations through gathered data for the United States General accounting office in response to requests. These requests lead to creative evaluation questions to figure out specifically what people want to know and what they can do better (Newcomer et al., 2015). Exploratory data analysis allows us to get to know the data and see if programs are effective (Collins, 2010). Findings can further be used to examine goals, push forward and see the program’s effectiveness. Using statistics helps us to see numbers and why a program might be highly needed. It acts as proof in times stemming from a certain public health issue that a community might be struggling with. Statistics can help us determine patterns and draw conclusions from data because going by data can not lie. You can compare statistics across a wide population using various factors to visually see patterns in public health data, and find gaps. Gathering data to make informed decisions about public health programs helps us because it can gather qualitative and quantitative data to closely examine effectiveness. Various methods of collecting sample data to better understand a population's characteristics include developing a research question, surveying, cohort studies, community needs assessment or other various types of studies. In one of the learning materials for this week, the researcher examined a specific population’s alcohol intake on their heaviest night (Collins, 2010). Knowing these numbers within the community can influence if it is high, having a public health substance use program if studies show that it is needed. Feel free to critique any thoughts that I have shared through this post. References Collins, S. Jan 14, 2010. Exploratory data analysis demo for SPSS 15.avi. https://www.youtube.com/watch?v=SMJJbvRm0Uw Newcomer, K. E., Hatry, H. P., Wholey, J. S. (2015). Handbook of practical program evaluation. Jossey-Bass, a Wiley imprint. Wisdom, J. W., Creswell, J. W. (2013) Mixed methods: Integrating quantitative and qualitative data collection and analysis while studying patient-centered medical home models (PDF). Agency for Healthcare Research and Quality, U.S. Department of Health and Human Services second discussion to reply: 100 minumum words by Samantha Gordon - Monday, 9 January 2023, 4:08 PM Statistics and public health go hand in hand. Without the use of statistical data public health professionals run the risk of continuing treatment or prevention methods that are not slowing or stopping the spread of disease or maladaptive behaviors that are known to cause disease. Statistical data is also an important tool for public health officials to better articulate why an issue is a threat to the community in presenting factual data that emphasizes the issues at hand. According to Sieber, W. K., Stroup, D. F., and Williamson, G. D. (2010), there are several reasons public health officials or organizations like the CDC may find statistical data helpful, which may include predicting health trends, distribution of illnesses, and to create standard curves like those use in growth charts. In turn this data that is collected can be used to better evaluate certain public health programs that are aimed at reducing poor health outcomes and make decision about which programs are working and which are not. Statistics may be used to track Covid-19 infections, alcohol consumption within a sample population, or may be used to track Type 2 Diabetes rates in any given city. Public health officials will in turn use this data to determine the best course of action to reduce the number of illnesses within that predetermined population. Furthermore, statistical data can give health professionals information about patterns of disease and will help them draw conclusions about which behaviors pose a risk for the development of a disease. Based on information from Hayat, M. J., Powell, A., Johnson, T., and Cadwell, B. L. (2017), it would be impossible for public health officials to truly understand current research results from peer reviewed articles without properly understanding the statistical significance of the results from the research. Hayat, M. J., Powell, A., Johnson, T., and Cadwell, B. L. (2017), goes on to state that “Classical statistical frameworks, including hypothesis testing, confidence intervals, and statistical models, are essential and need to be taught in order for a student to read and comprehend what is being published “, simply meaning that without the ability to accurately decode information from data sets there is no way that public health officials can accurately predict or determine health outcomes. Sample data for public health research to better understand the characteristics within a population may be obtained by several different methods. According to Sieber, W. K., Stroup, D. F., and Williamson, G. D. (2010), these methods may include “vital statistics records, medical records, personal interviews, telephone and mail surveys, physical examinations, and laboratory testing”, each of which will help public health professionals understand if the data is showing any significant increases or decreases of a health condition. Without the ability to perform statistical analysis or interpret data there is little that public health officials can do to determine the best course of action for any disease that is becoming more prevalent within a population. References Hayat, M. J., Powell, A., Johnson, T., and Cadwell, B. L. (2017). Statistical methods used in the public health literature and implications for training of Public Health Professionals. PLOS ONE, 12(6). https://doi.org/10.1371/journal.pone.0179032 Sieber, W. K., Stroup, D. F., and Williamson, G. D. (2010). Statistics at CDC. Encyclopedia of Statistical Sciences. https://doi.org/10.1002/0471667196.ess6092.pub2