**Capstone Project Write Up: Eagle Valley Behavioral Health**

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Abstract

In Module 5, we will submit a write-up document that will outline the Capstone Project components covered from Module 1 to Module 4 focused on the organization Eagle Valley Behavioral Health. The features will contain the title, abstract, information about the organization, explanation about the selected dataset, research hypothesis, the tool and techniques used to analyze the data, and organization’s privacy and security measures on the community engagement survey dataset.

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**Capstone Project Write Up: Eagle Valley Behavioral Health**

# Introduction

Eagle Valley Behavioral Health (EBVH) was established as a non-profit branch of Vail Health to address the deficiencies and challenges in mental health services and substance abuse in the Eagle River Valley. In recent years the Eagle River Valley community saw an increase in suicide rate from six to 16 percent in 2016 to 2017, visits to the local hospital emergency room for anxiety and depression cases increased 465 percent, and the instances of substance use increased by 332 percent.

EVBH conducted a community survey to gather information from community members to understand and address the current and future mental health of the Eagle County residents. The data-driven approach aims to inform decisions, guide efforts to improve health and wellness in the community and educate leaders about social issues to create a more equitable and accessible behavioral health services system (Hayden, 2020).

# About Eagle Valley Behavioral Health

Eagle Valley Behavioral Health (EVBH) is part of Vail Health and is a non-profit community health care system in Eagle and Summit Counties with over 900 employees. EVBH was established to lead the community collaboration with private and public partners to ensure that all Eagle River Valley members receive excellent behavioral health services.

EVBH leads community collaboration and coordination with over 25 local organizations, including local businesses, community groups, mental health providers, and government entities, to create a long term and sustainable behavioral health system that supports building a more resilient community and its overall well-being (Hayden, 2020).

# Explanation of the Chosen Dataset

Between January and March of 2020, Eagle Valley Behavioral Health conducted a community engagement and behavioral health survey to measure the community engagement and behavioral health needs in Eagle County. The targeted population surveyed provided data from different geographic locations in Eagle County. The survey consisted of 35 core questions and 15 specific questions conducted through random sampling by phone and through the internet. The survey’s total number was 1534, where the phone-based population survey represented 400 respondents and the internet-based community outreach survey resulted in 1134 respondents. The dataset provided information on demographics such as sex, age, race, ethnicity, and household income level.

The survey dataset exploration will explain the Eagle County residents’ experiences related to behavioral health issues that reflect mental health and substance abuse needs. The findings of this dataset and the information-sharing will support innovative ideas and strategies for grantees, community organizations, private and public partners on how to adapt their current community work to enhance the behavioral health programs and find solutions for the challenges in this area of the mountain resort and rural communities. The benefits of using Data Analytics could help predict mental health illnesses and provide powerful insights on creating preventive programs. The dataset’s research and evaluation can support services, policy, plans, and program changes (Hayden, 2020).

# Research Hypothesis

The survey dataset collected data for three different areas. First, the data provided information on **Community Life and Social Support,** which included information about community engagement, neighborhood safety, social connectedness, and loneliness in their area. Secondly, another area focused on **Mental Health**. The community was asked questions about their attitudes related to mental health, coping skills, personal mental health, and local resources for adults and children’s mental health. Finally, the last area of focus for the survey was related to **Substance Abuse** to determine the community’s perceptions of alcohol use.

The benefits of using Data Analytics could help predict mental health illnesses and provide powerful insights on creating preventive programs. Understanding the data can help us attend to the current mental health problems and what they look like in different populations of our community to understand better and effectively implement treatments for mental health problems (Hayden, 2020).

# Literature Review

The research project seeks to provide evidence-based data on significant survey responses or variables to hypothesize to understand the relationship between these variables’ significance. Our research framework will identify the research question, research literature, identify the fundamental theories, and summarize the findings. The theoretical framework will be based on answering the two precise questions to understand the research question and why our argument is valid, as defined from the literature review. The literature review’s value will provide argumentative information and critique that will outline the limitations of the current framework and potential research opportunities (Moe. 2017).

The purpose of using statistical methods in hypothesis testing is to answer questions of practical significance and make an educated statement on the research’s expectations (Moe, 2017). The Quantitative approach analysis used to analyze the survey dataset will allow us to draw general conclusions and opinion-based decisions and predict potential outcomes (Moe, 2017). For example, this community survey dataset is to understand if the problems are concentrated in the mental health systems, the mental health providers or lack of programs, or the stigmas that some populations need to overcome. We will present the framework for hypothesis testing, including Practical Theory, Statistical Hypothesis, Statistical Testing and Analysis, Statistical Conclusion, and Practical Conclusion (Chua, 2017), which will deliver the descriptive statistics for this research project.

After determining the practical theory and the statistical hypothesis, the following steps determine the statistical test and analysis. This step will define the alpha value as 5 percent and then run the necessary descriptive statistics to obtain the p-value. For the statistical conclusion of the statistical analysis, we will run the Analysis Variance (ANOVA), which will provide results for the p-value that will let us either reject (p-value≧ alpha) or fail to reject (p-value > alpha) the null hypothesis. The last step for the hypothesis testing protocol is the Practical Conclusion (Hypothesis Testing, n.d.). The theory is proven or disproved based on the analysis that determines whether the null hypothesis is rejected.

**List of Hypotheses**

We will start our analysis by testing the practical theory, which then will be translated into statistical terms. The practical theory that we want to try will support understanding how mental health services access for diverse people is unique to certain community areas.

For this analysis, we will test the statistical hypothesis by defining the null hypothesis defined as the population means accessing mental health services is equal in each location to measure the residents’ engagement concerning their **Community Life**.

H0: =

Additionally, we will analyze to understand if the community respondents are highly engaged in their communities (H0), to understand which residents depending on their sex, income level, and tenure of living in the community, are likely to have a higher measurement of engagement for the community life.

Subsequently, another question based on measuring the **Social Support** that will be analyzed through the hypothesis testing is whether residents depending on their sex, age, income level, and ethnicity, feel that they receive adequate social support.

H0: Residents have someone to turn to for social support or connection “All or Most of the Time.”

Furthermore, we will finally conduct an analysis related to the **Mental Health** question to understand the accessibility of mental health resources.

H0: Residents can have easy access to mental health services near the area where they reside.

# Security, Privacy and Ethical Challenges when Performing Data Analysis

Data sharing can often create privacy risks, but there are tools available to help protect privacy and make data sharing a more privacy-focused effort for an organization (Bhajaria, 2020). Organizations are responsible for ensuring that the surveys are compliant with data privacy laws and advise the survey takers on how the data they collect will be used to inform decision-making and guide efforts to improve community health and wellness.

There are some standard techniques to ensure the reduction of identifying the surveyed individual responses’ personal information without jeopardizing the survey research’s usefulness when presenting the research results through visual data analytics. The best choice for data analysts concerned with the data’s privacy is not to use any sensitive information before starting its analysis and instead of maintaining the individuals’ anonymity.

The classification of our data and creating a data inventory will confirm that we can apply the correct data tools and processes to protect it. When it comes time to share the data with the community partners and other stakeholders, we need to apply a combination of several available techniques mentioned before to ensure the protection of the user’s privacy. The relationship between data and our community is based on trust and understanding. Therefore, the organizations using this valuable asset should treat the data with respect and ensure that by sharing the data, they do not lose sight that there is the information of a real human being behind all the dataset. As the data becomes more anonymized, the sharing becomes safer, the number of privacy incidents should decrease in number and intensity (Bhajaria, 2020).

# Data Analysis Outcomes

To be completed in Module 6.

# Conclusion

To be completed in Module 6 and 8.

# Recommendations

To be completed in Module 6 and 8.

# References

Bhajaria, N. (2020, May 04). What is k-anonymity? - Privacy by Design: Data Sharing Video Tutorial: LinkedIn Learning, formerly Lynda.com. Retrieved January 17, 2021, from <https://www.linkedin.com/learning/privacy-by-design-data-sharing/what-is-k-anonymity?u=2245842>

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