Sprint 1 Practicum Proposal

Adarsh Koka
akoka7@gatech.edu

1 AREA OF FOCUS

1.1 Topics

The unit that I selected for this proposal is General Health Informatics. The primary topic that I selected is General Health and the primary area of focus is obesity and obesity related deaths and diseases.

2 BACKGROUND AND SIGNIFICANCE

2.1 Obesity Background

Obesity is a health condition which can cause many other illnesses for those who are obese. These diseases include heart disease, stroke, high blood pressure, diabetes, cancers, gallbladder disease, osteoarthritis, and others. For a person to be obese it means that they have a BMI (body mass index) of 30 or above. This can be caused by genetics or behavioral cases such as overeating. In terms of healthcare costs, obesity related illnesses accounted for 21% of the annual medical spending in the United States.

3 PROBLEM

3.1 Obesity Rate

Obesity has been known to cause many of these diseases and yet the prevalence of obesity in the United States has increased from 30.5% of the population in 1999-2000 to roughly 42% of the population in 2018 (Ratini, 2020). Access to medical information has increased within that time but the obesity rate has still increased. This means that a lot of the current information available about obesity related illnesses has not deterred enough people to change habits and seek treatment. Demonstrating the high costs of obesity can also serve to convince people to change habits and seek treatment. It is known that obesity can cause these illnesses but the frequency of the illnesses occurring might not be known to all people.

4 PROPOSED SOLUTION

4.1 Obesity Illness Data Selector

The proposed solution to this problem would be to provide a solution for allowing people to view the frequency of deaths that were obesity related for each type of illness. The data in this solution will need to be easy to interpret for those that are accessing information quickly and want to understand the fatal problems of being obese for each disease specifically. For example, the user should be able to use this solution to understand that 40% of people diagnosed with cancers in the Untied States were obese.

This solution will be presented in the form of a web application. The default view of the application will present the percent of deaths related to obesity and provide a visualization. The main features of this application will be the selectors where the user can choose specific diseases and see the percent of patients that were obese and had that disease along with a related visualization. Broader diseases will be at the top such as cancer and once it is selected different forms of cancer such as kidney cancer, breast cancer, etc. can be selected in sub-selectors. Other ideas in this solution will be to have multiple illnesses to be selected at a time so that multiple frequencies can be viewed on the same visualization and so that data can be compared between different illnesses. Radio buttons could also be included so that the user can switch between viewing the deaths or diagnosed data for the illnesses. Through the gathering of data, the application should also be ablet to present the costs of having obesity in some way. By viewing this application, the user should come away with understanding of the diseases that are mostly caused by obesity. They should also come away with an understanding of the proportion of normal people to obese people when it comes to being diagnosed or dying of a disease.

5 COMPLEXITY AND EFFORT

5.1 Healthcare Policy, Privacy, and Security

This web application should promote the idea of obesity prevention policy by making obesity related illnesses information more available to the public. In terms of privacy and security this application should not reveal sensitive

information about patients and will only present data for general groups and populations.

5.2 Complexity of Creating the Application

This web application will gather data should gather patient data from health APIs and FHIR resources. This is an individual project with no other team members, and I will serve as the main developer and designer of the application. The plan is to create a Java web application that can accumulate the patient data. The web application, selectors, and visualizations for each selector will be displayed using React. Gathering patient data by illness would not be complex but the complexity arises in connecting each patient to obesity. If the data itself does not indicate obesity, then the BMI can be used if present in the data or calculated if not. The front-end programming will also cause some difficulty because selectors will have to be selected and work with each other in the application and would require more front-end experience.s

6 REFERENCES

1. Adult obesity causes & consequences. (2020, September 17). Retrieved March 07, 2021, from https://www.cdc.gov/obesity/adult/causes.html
2. The health effects of overweight and obesity. (2020, September 17). Retrieved March 07, 2021, from https://www.cdc.gov/healthyweight/effects/index.html
3. Ratini, M. (2020, September 15). 10 health conditions & diseases linked to obesity. Retrieved March 07, 2021, from https://www.webmd.com/diet/obesity/obesity-health-risks#1