**Analyzing Health Data**

Graphical user interface, chart

Description automatically generated with medium confidence

**Figure 1:** The Average Weight for Each Age Group

The chart and graph 4.1 show the average weight in lbs for each age group. When analyzing the weight averages there is somewhat of a noticeable difference. Those who are a part of the 65 years age group tend to have more weight on average than the other weight groups. Those who are in the 45 years age group have less weight on average than the other weight groups. When analyzing each age group with other columns of information the results tend to be completely even or skewed toward the “20 years” age group. Using the age groups could possibly be too granular to use. Each age group is also sectioned by every 5 years except for the 20-year group which could be the reason for the skewed data. For this reason, the information may not be completely accurate.

Chart, pie chart

Description automatically generated

**Figure 2:** The percentage of People in Each Stage of Life

The four stages of life were created to group together the different age groups so that the data was less granular. For this database, about 30.32% of people are in early adulthood, 19.82% in early middle age, 39.74% in late middle age, and 10.12% in late adulthood. A majority of the people seem to be around late middle age and early adulthood.

Chart, pie chart

Description automatically generated

**Figure 3:** The Percentage of People in Each Weight Status

The weight status categories in figure 3 are based on the CDC guide to calculating BMI. By these standards, we can see that 49.67% of the people in the database are considered obese. Far more people in the data are considered obese than each of the other categories.

Chart, bar chart

Description automatically generated

**Figure 4.1:** Graph of Each Stage of Life’s Total Weight Status

Table

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**Figure 4.2:** Chart of Each Stage of Life’s Total Weight Status

Graph figure 4.1 and Chart figure 4.2 looks at each stage of life for each weight status. I believe this chart is in line with figure 2, most people are within the obesity weight status, a very small portion are underweight, and there is close to an even number of healthy weights and overweight. We can see some obvious differences in this chart, if we look at specifically the obesity weight status, there are more people who are in late middle age in this category than in the other stages of life. This however may be too specific and may not have any significance.

Chart, pie chart

Description automatically generated

**Figure 5:** The Percentage of Treadmill Test Results

The chart and graph (figure 5) for the percentage of people and their treadmill test results. The validity of the treadmill test results may be questionable due to how the HRTreadmillTest column was grouped. By observing the pie chart, we can see a relatively even percentage of people who are at risk or healthy from the results of their treadmill test.

Graphical user interface, table

Description automatically generated with medium confidenceChart, line chart

Description automatically generated

**Figure 6:** The Total BMI for Each Stage of Life’s Weight Status

The chart and graph for figure 6 are a bit more granular so their validity is questionable. Similar to figure 4.1, each stage of life is broken into individual weight statuses to observe their individual BMI. Although the information is broken up we can still see noticeable differences in the chart. An example is that for each stage of life, those considered obese tend to have a higher BMI.

My concerns while working on this project were that I did not have enough information to create accurate case statements. This may have caused some information to be skewed and inaccurate. I also feel as though some calculations/new metrics could have been helpful in showing better representations of information that may be taught later on in the course.

**Appendix**

**SQL Code:**

USE [Featherman\_Analytics];

SELECT [ID], [age], [sex], [SysBP], [DiaBP], [HRTreadmillTest], [weightLbs], [heightInches], [BMI]

, CASE

WHEN [age] BETWEEN 20 and 29 THEN 200 \* .85

WHEN [age] BETWEEN 30 and 34 THEN 190 \* .85

WHEN [age] BETWEEN 35 and 39 THEN 185 \* .85

WHEN [age] BETWEEN 40 and 44 THEN 180 \* .85

WHEN [age] BETWEEN 45 and 49 THEN 175 \* .85

WHEN [age] BETWEEN 50 and 54 THEN 170 \* .85

WHEN [age] BETWEEN 55 and 59 THEN 165 \* .85

WHEN [age] BETWEEN 60 and 64 THEN 160 \* .85

WHEN [age] BETWEEN 65 and 69 THEN 155 \* .85

WHEN [age] BETWEEN 70 and 79 THEN 150 \* .85

END AS [AvgMaxHeartRate]

, CASE

WHEN [age] BETWEEN 20 and 29 THEN '20 years'

WHEN [age] BETWEEN 30 and 34 THEN '30 years'

WHEN [age] BETWEEN 35 and 39 THEN '35 years'

WHEN [age] BETWEEN 40 and 44 THEN '40 years'

WHEN [age] BETWEEN 45 and 49 THEN '45 years'

WHEN [age] BETWEEN 50 and 54 THEN '50 years'

WHEN [age] BETWEEN 55 and 59 THEN '55 years'

WHEN [age] BETWEEN 60 and 64 THEN '60 years'

WHEN [age] BETWEEN 65 and 69 THEN '65 years'

WHEN [age] BETWEEN 70 and 79 THEN '70 years'

END AS [Age Group]

, CASE

WHEN [BMI] <= 18.5 THEN 'Underweight'

WHEN [BMI] BETWEEN 18.6 and 24.9 THEN 'Healthy Weight'

WHEN [BMI] BETWEEN 25.0 and 29.9 THEN 'Overweight'

WHEN [BMI] >= 30.0 THEN 'Obesity'

END AS [Weight Status]

, CASE

WHEN [HRTreadmillTest] <= 100 THEN 'extremely healthy'

WHEN [HRTreadmillTest] BETWEEN 101 and 149 THEN 'healthy'

WHEN [HRTreadmillTest] >= 150 THEN 'at risk'

END AS [Treadmill Test Results]

, CASE

WHEN [age] BETWEEN 20 and 34 THEN 'Early Adulthood'

WHEN [age] BETWEEN 35 and 44 THEN 'Early Middle Age'

WHEN [age] BETWEEN 45 and 64 THEN 'Late Middle Age'

WHEN [age] BETWEEN 65 and 70 THEN 'Late Adulthood'

END AS [Stage of Life]

FROM [featherman].[Health\_heart\_experimental]