SAS Project Assignment

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Part 1: Insight Toys Product Line Performance

Table Graph: Product Performance

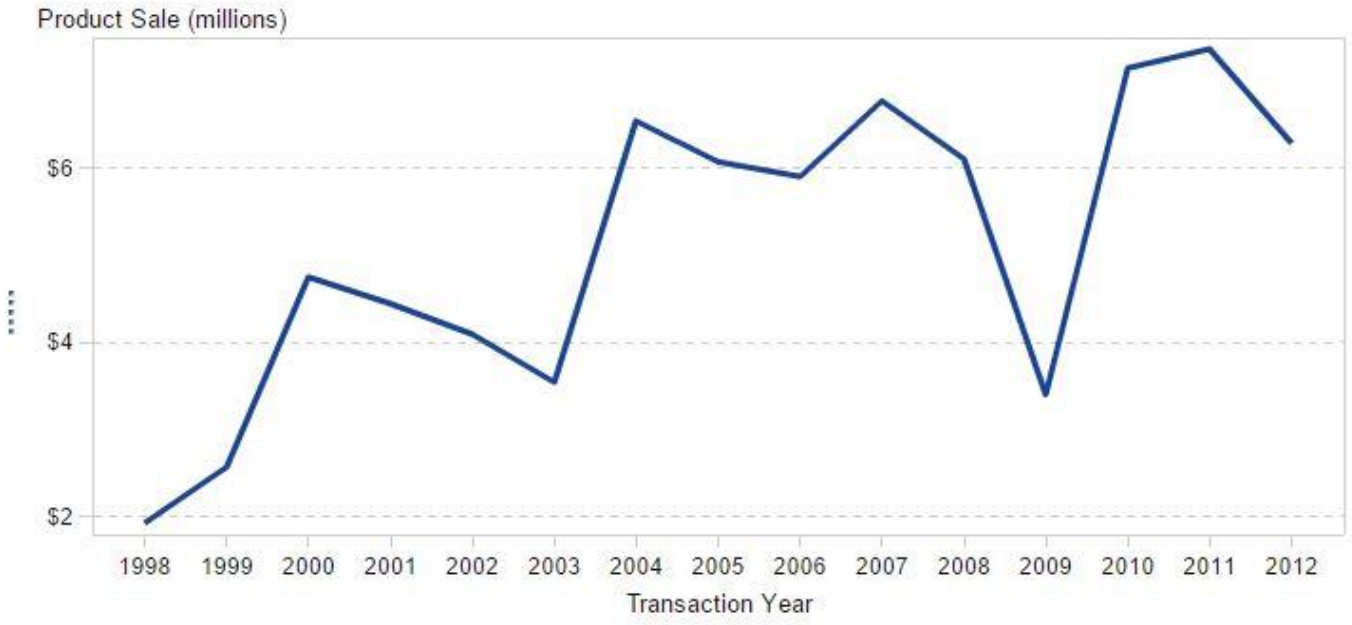
Product Brand	Product Line	Product Sale	Product Cost of Sale
Novelty	Promo	$5,449,656	$4,651,244
Novelty	Store	$5,810,340	$5,075,664
Novelty	Gift	$5,736,126	$5,089,268
Novelty	Bead	$5,540,159	$5,122,913
Novelty	Kiosk	$5,828,050	$5,390,011
Toy	Plush	$16,240,328	$10,345,736
Toy	Game	$16,045,236	$13,810,123
Toy	Figurine	$16,258,915	$15,059,581

Facility Conti...	Product Sale
North America	$53,887,434
Europe	$14,147,864
South America	$6,483,015
Africa	$962,386
Asia	$825,542
Oceania	$602,568

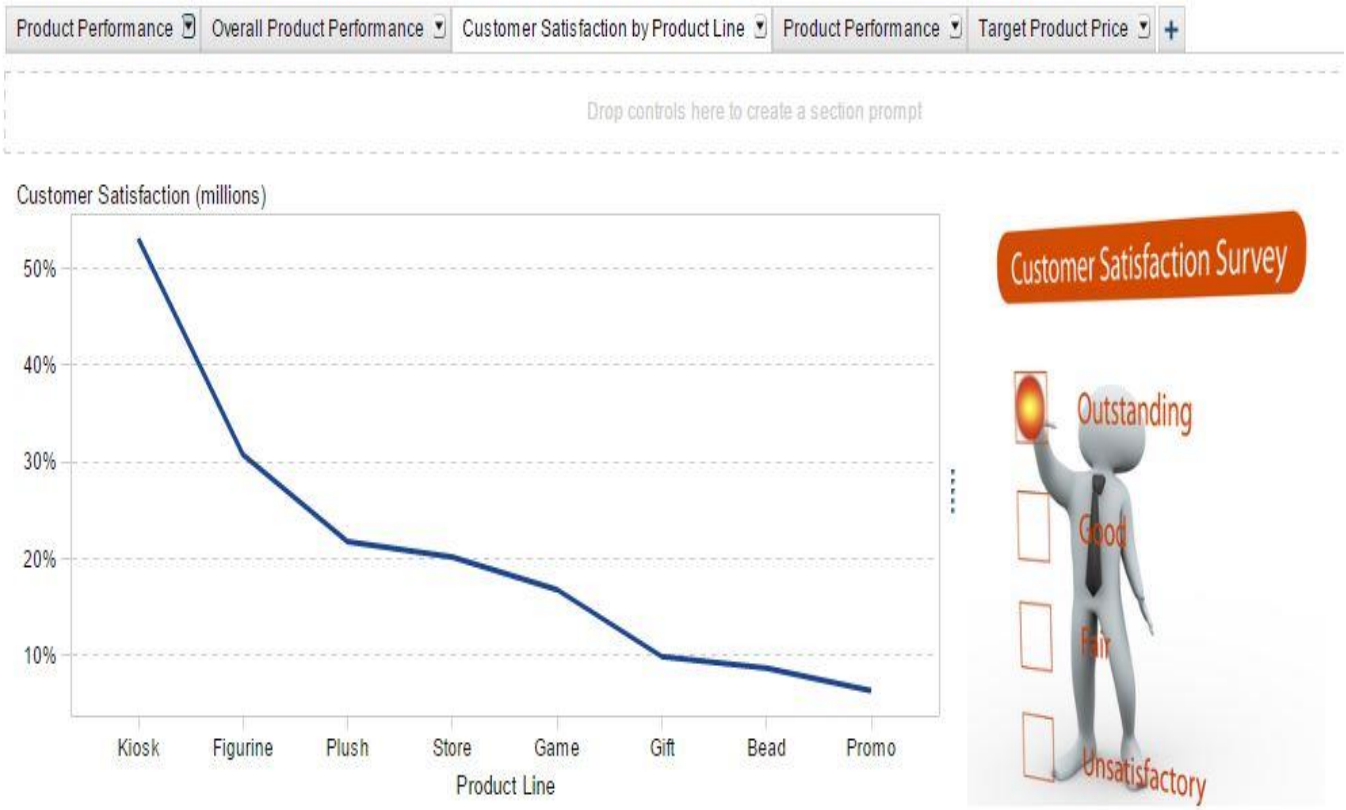
Overall Product Performance:

Product Sale by Product Line:

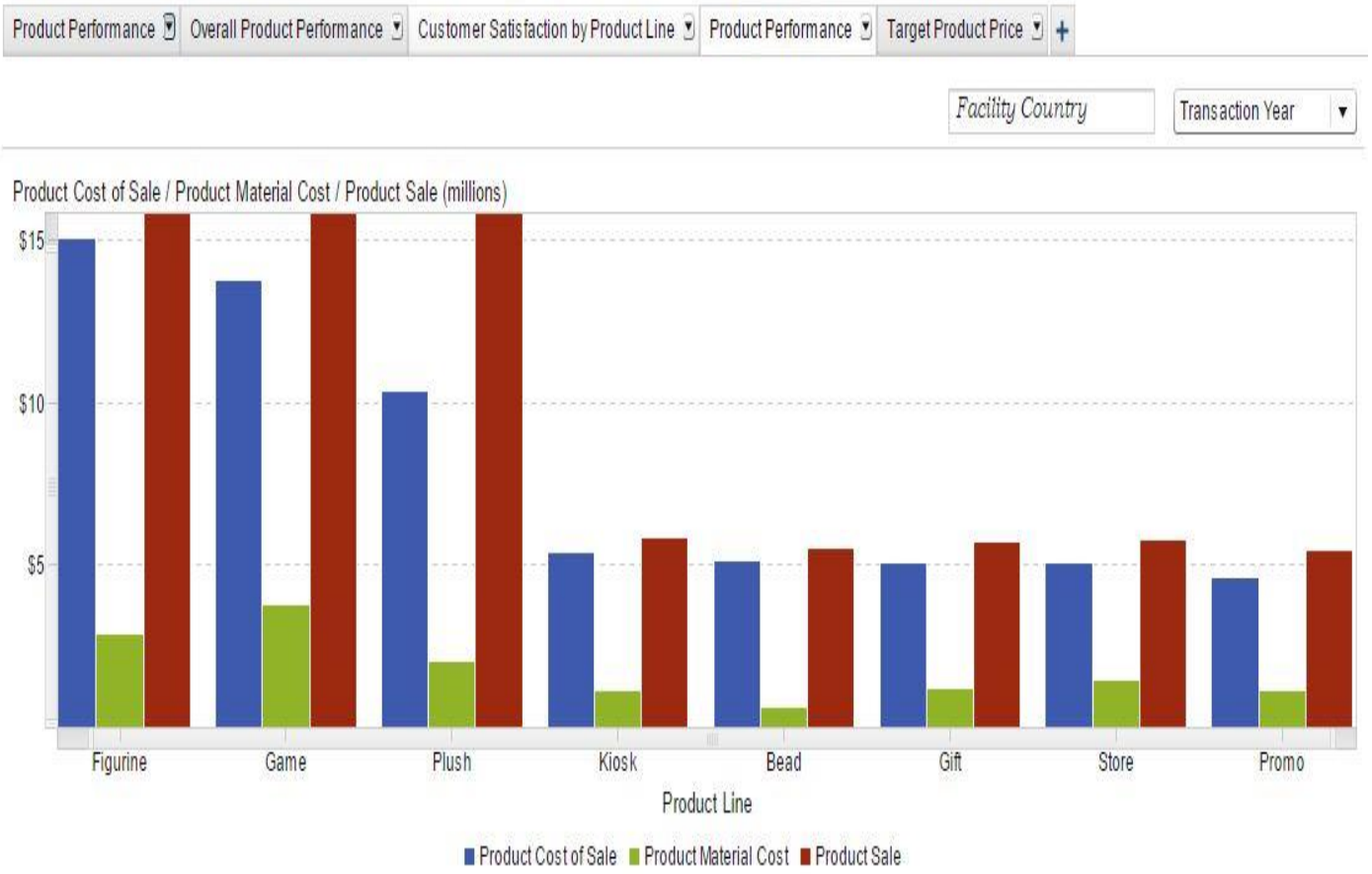
Product Sale by Transaction Year:



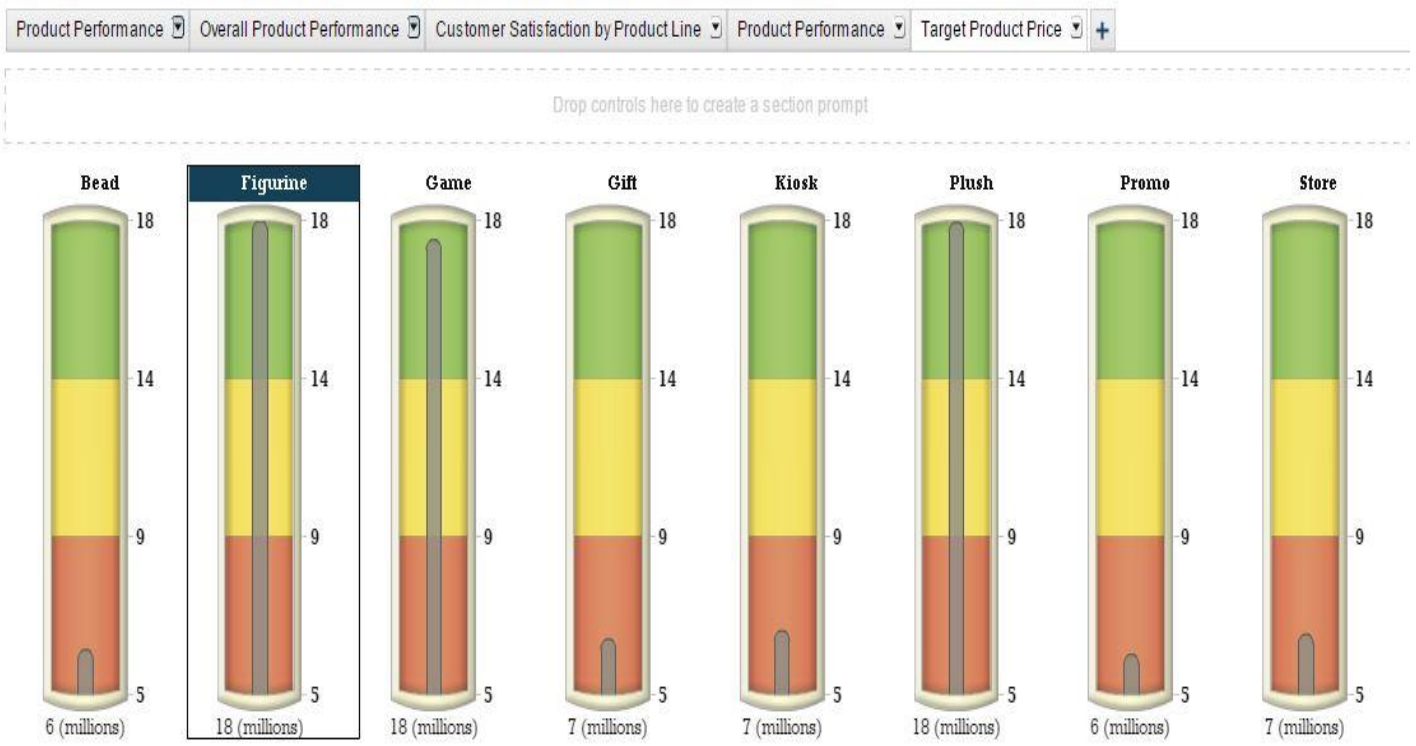
Customer Satisfaction for Product Line:



Overall Financial and Marketing performance of Product Lines:

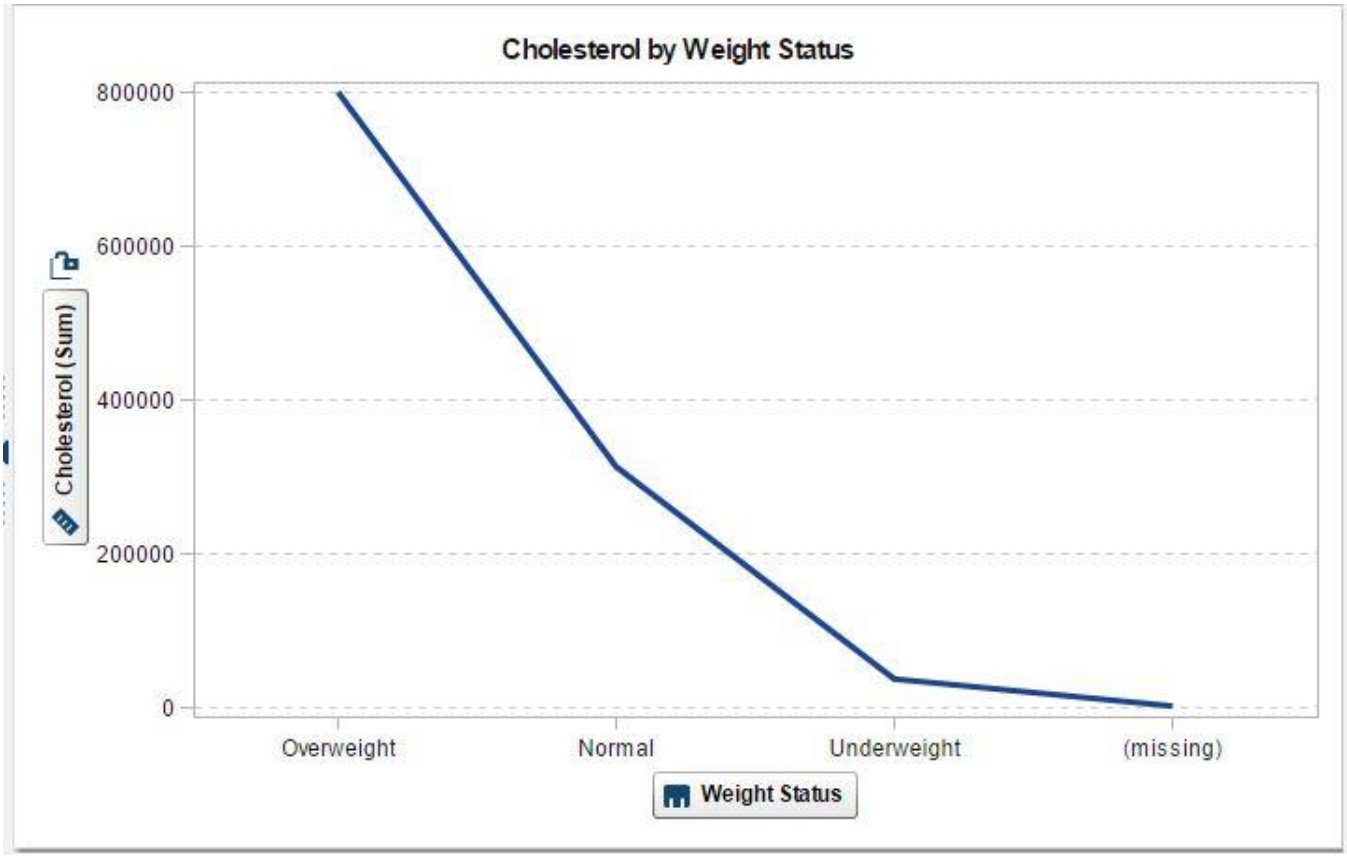


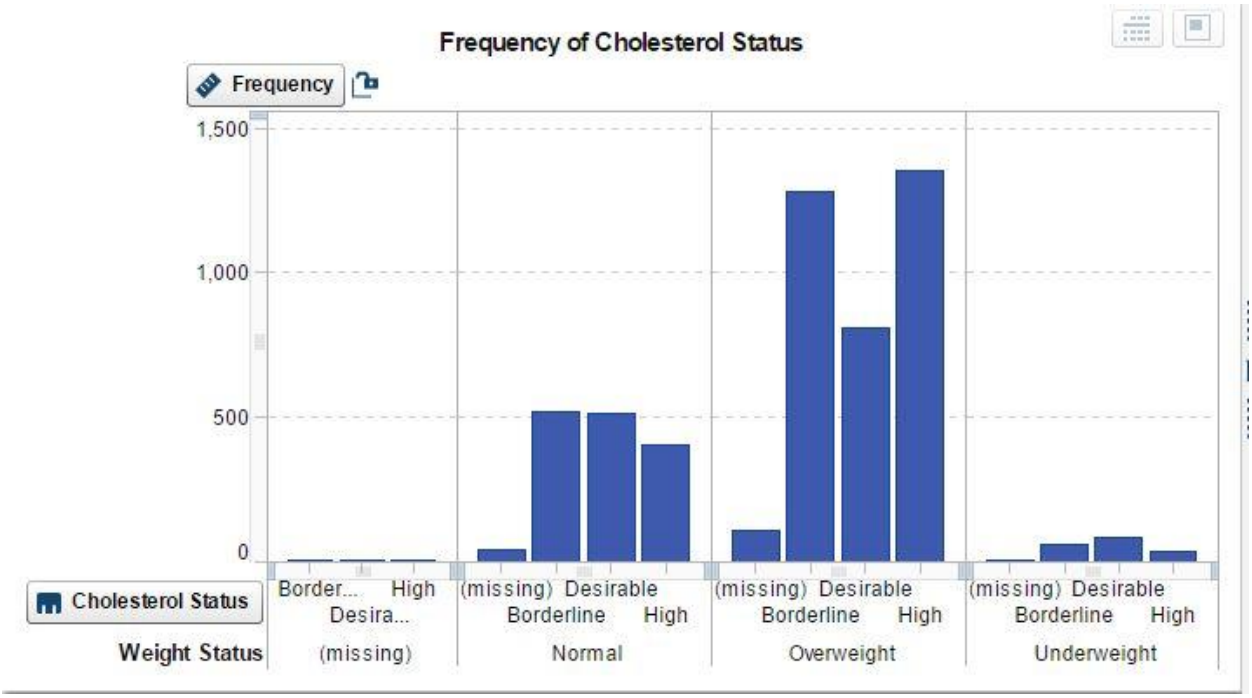
Gauge: Target Product Price for each Product Line



Part 2: Using Data Visualizations and Analysis to validate the health care data related hypothesis and determine the distinctive characteristics and underlying causes of Coronary heart disease (CHD)

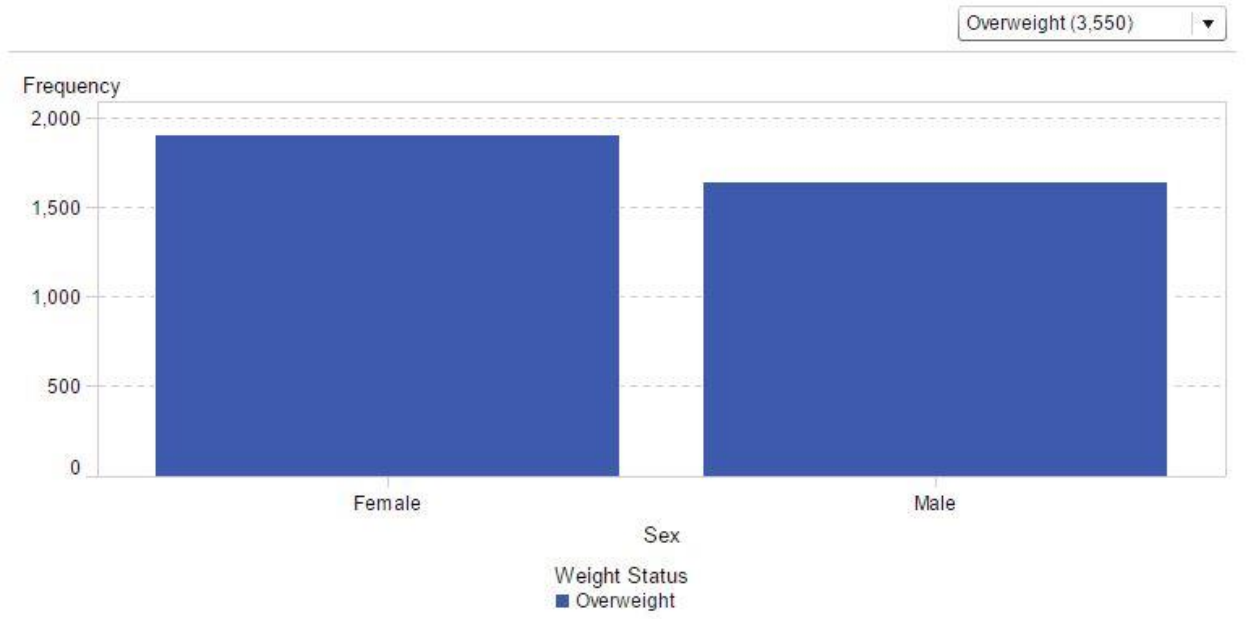
H1: The weight and cholesterol levels are highly correlated





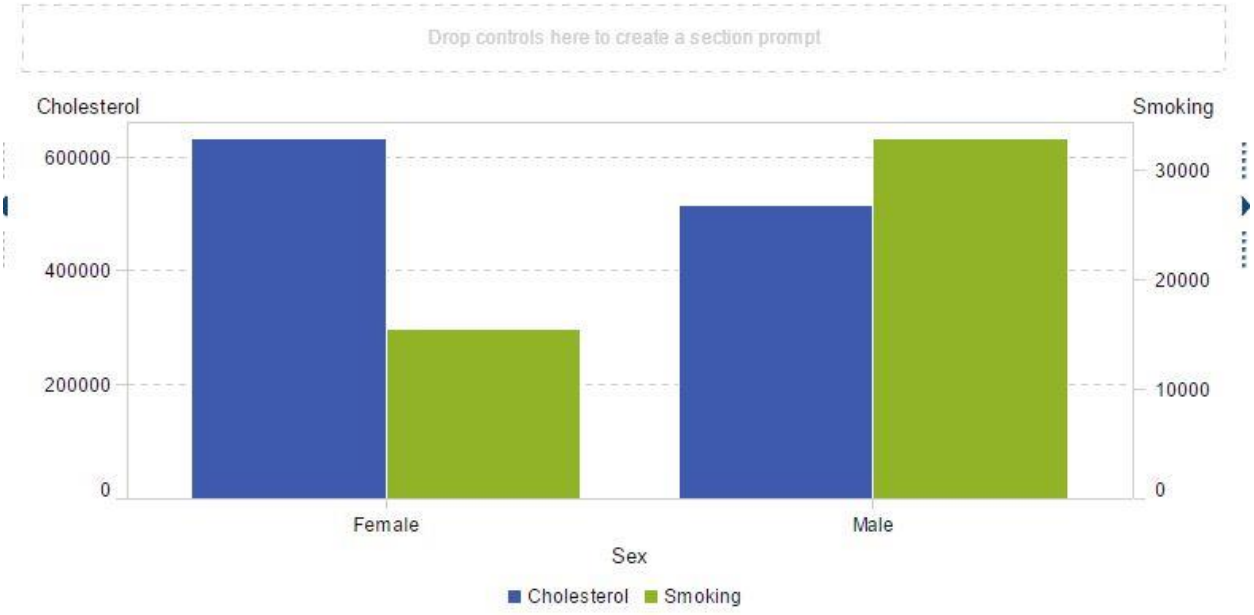
True, Weight and Cholesterol status are correlated. It's true that person who is obese is likely to get Cholesterol. The above Bar and Line graphs give a clear picture that Overweight people has high cholesterol level.

H2: Men are usually more obese than women



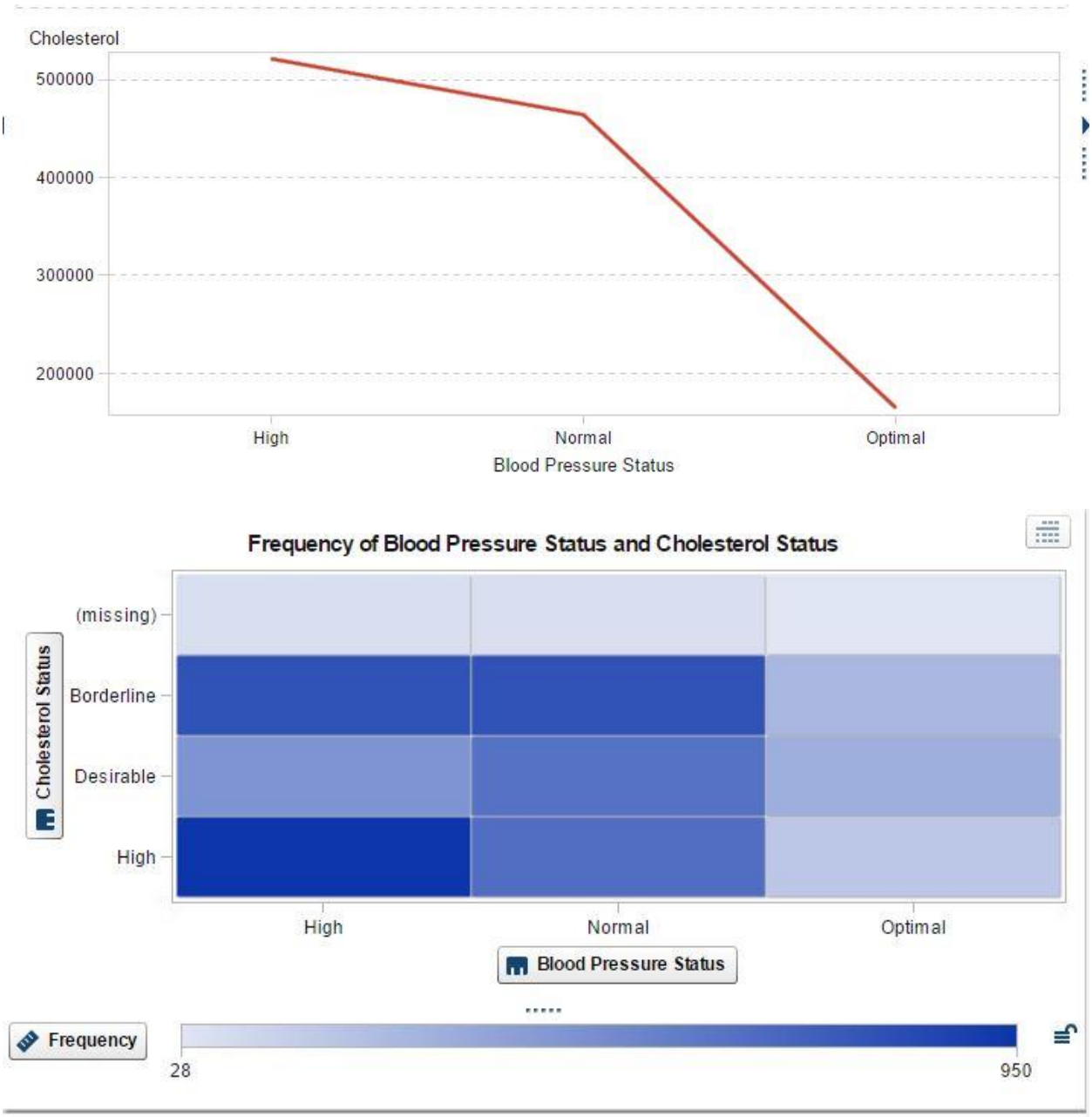
False, the number of female who are obese is comparatively high to the number of male. Although the difference is not great in proportion, we can't agree to the hypothesis that Men are usually more obese than women. The above Bar chart visualization gives us the clear picture.

H3: Women usually smoke less than men, but their cholesterol level is much higher



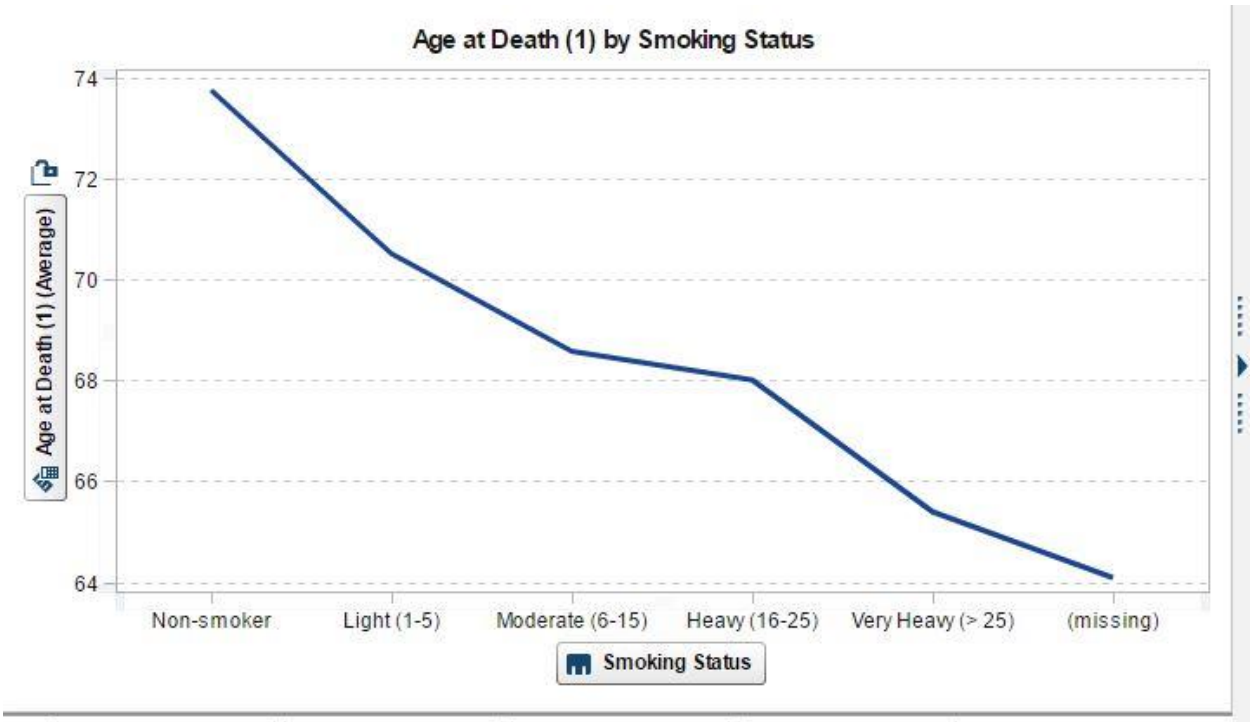
True, women smoke less than men, but their cholesterol level is higher. The above bar graph represents number of people with cholesterol and number of people who smoke with regards to the gender. The blue representation in the bar chart shows that number of female with cholesterol is high compared to male, even though number of female smokers is less.

H4: The blood pressure is higher for people with higher cholesterol levels



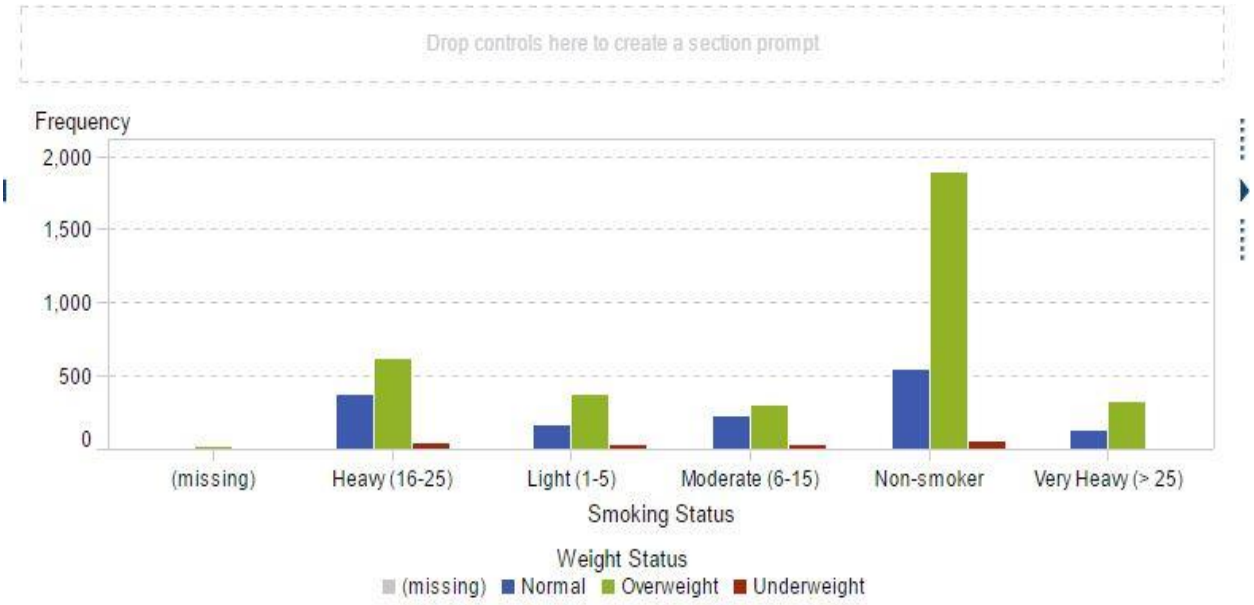
True, the blood pressure is higher for people with higher cholesterol level. The line graph compares Blood pressure status with number of people with cholesterol. The line is raising from optimal to high blood pressure level. The Heat Map represents that the threshold is high for higher Blood pressure status and Cholesterol Status. So, Both the charts, proves the hypothesis.

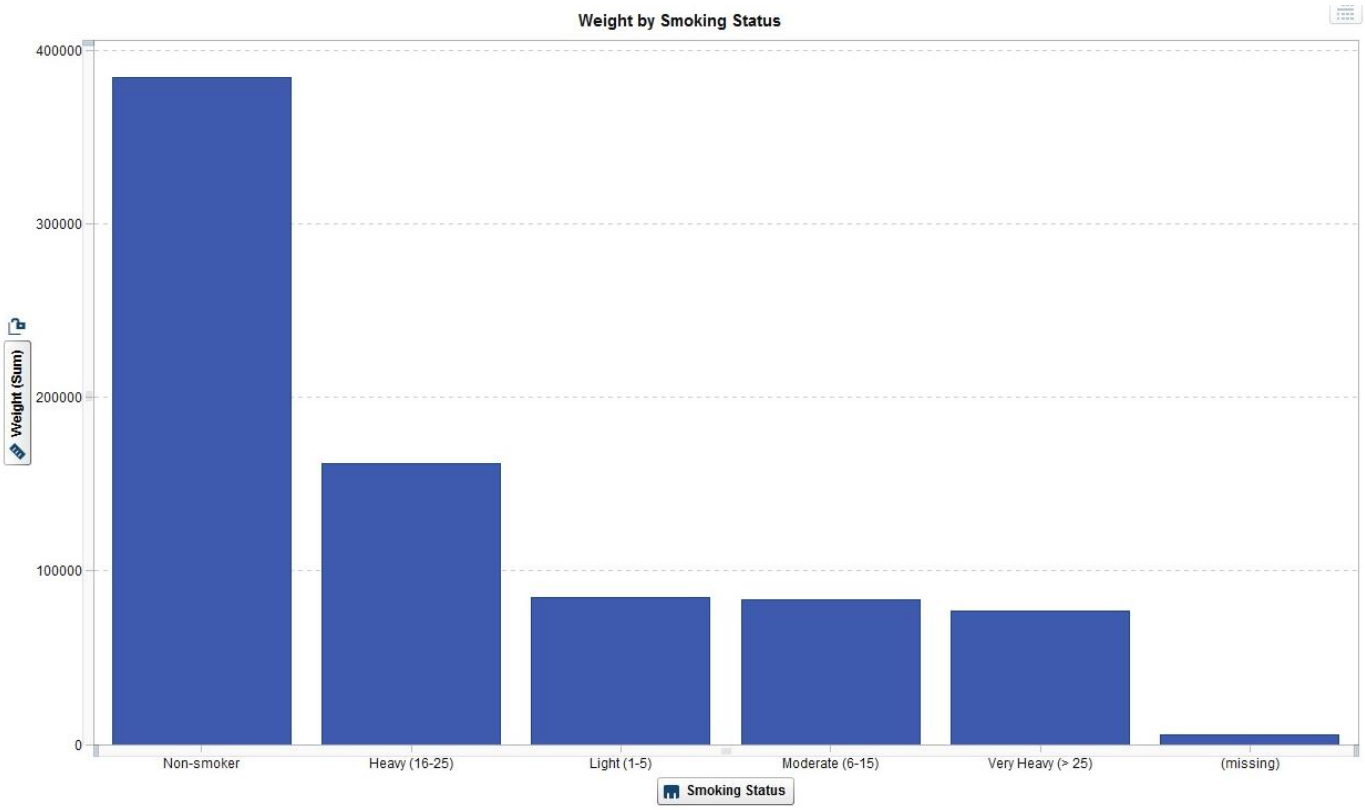
H5: Heavy smokers tend to die faster than moderate and non-smokers



True, that heavy smokers tend to die at young age or faster. The first graphs show that the threshold is high at nonsmoker's region, where the death at young age or faster rate happened due to other factors. The second line graph shows that average age of death compared smoking status, it's evident from the graph that Non-smokers tend to live long compared to Heavy and Very Heavy smokers.

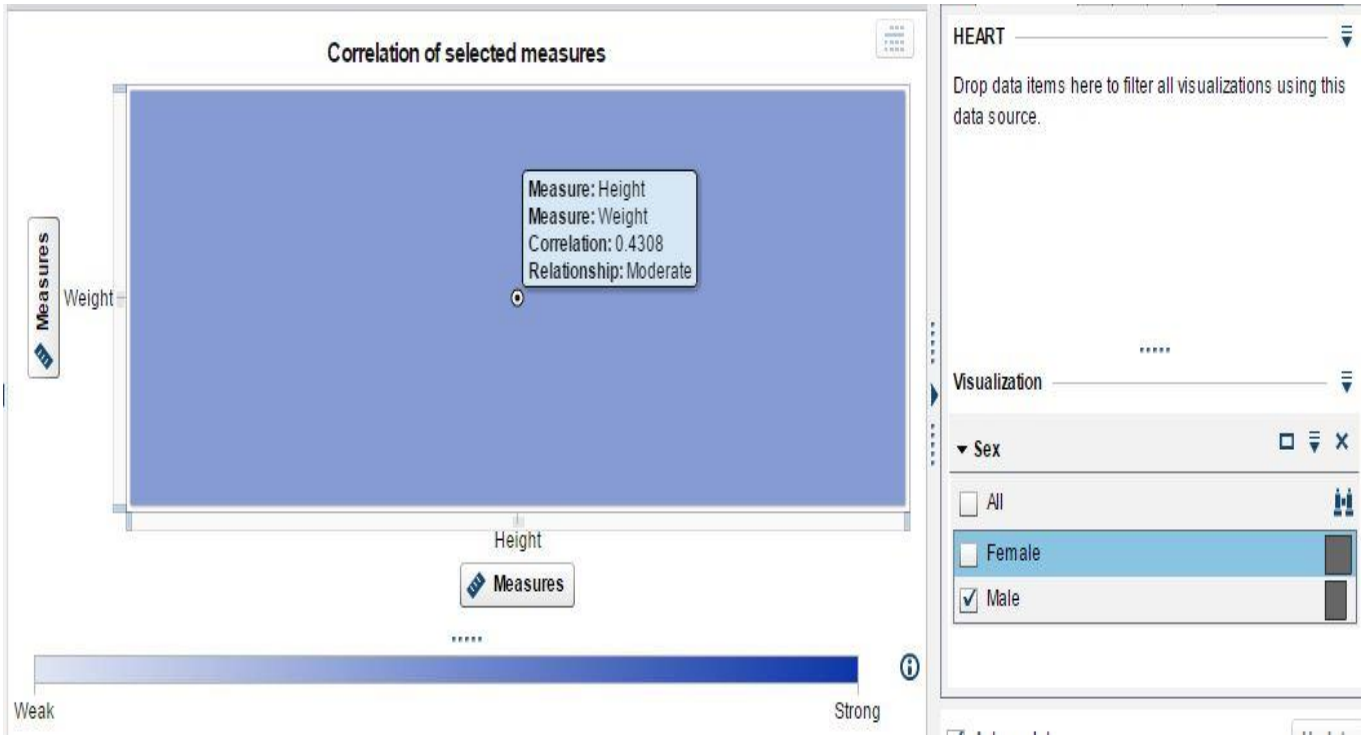
H6: Most non-smokers are overweight



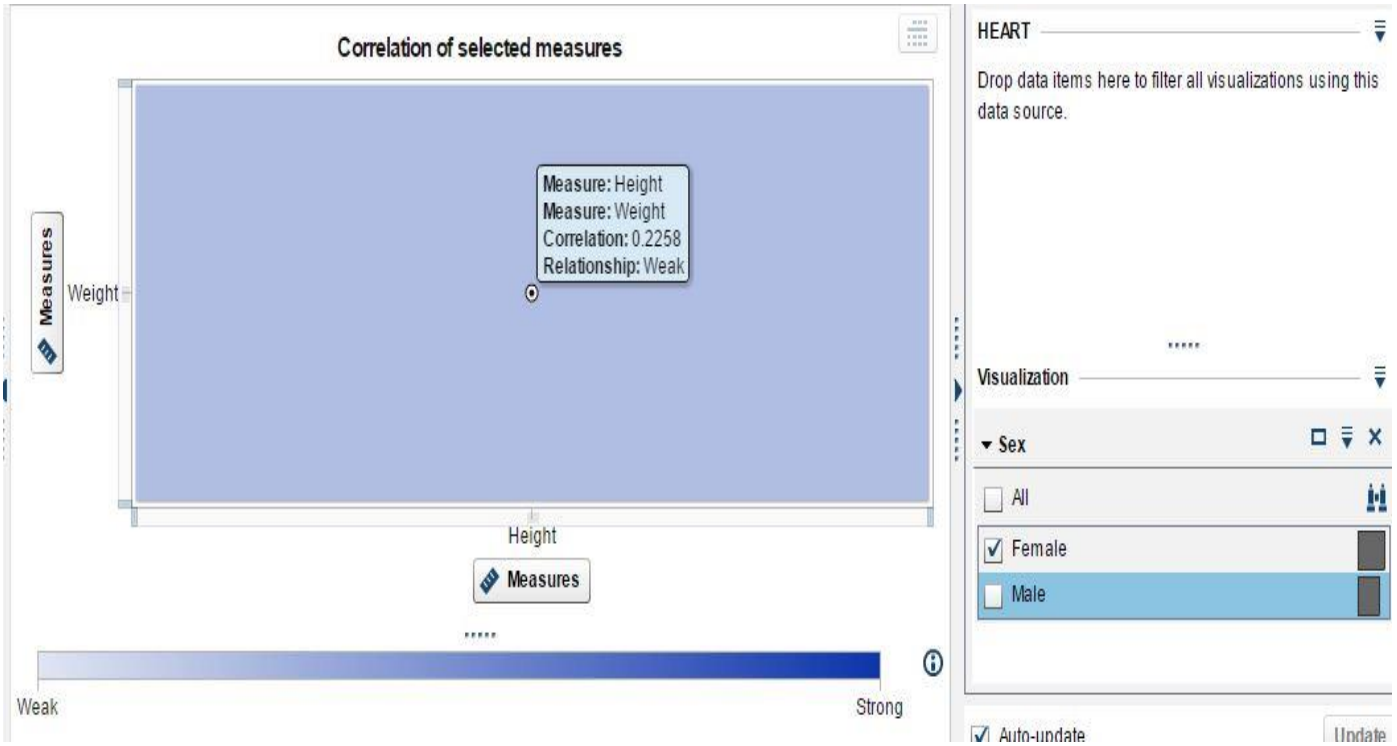


Based on the two visualization, it is true that most non-smokers are over-weight.

H7: Correlation between weight and height is higher in men than in women

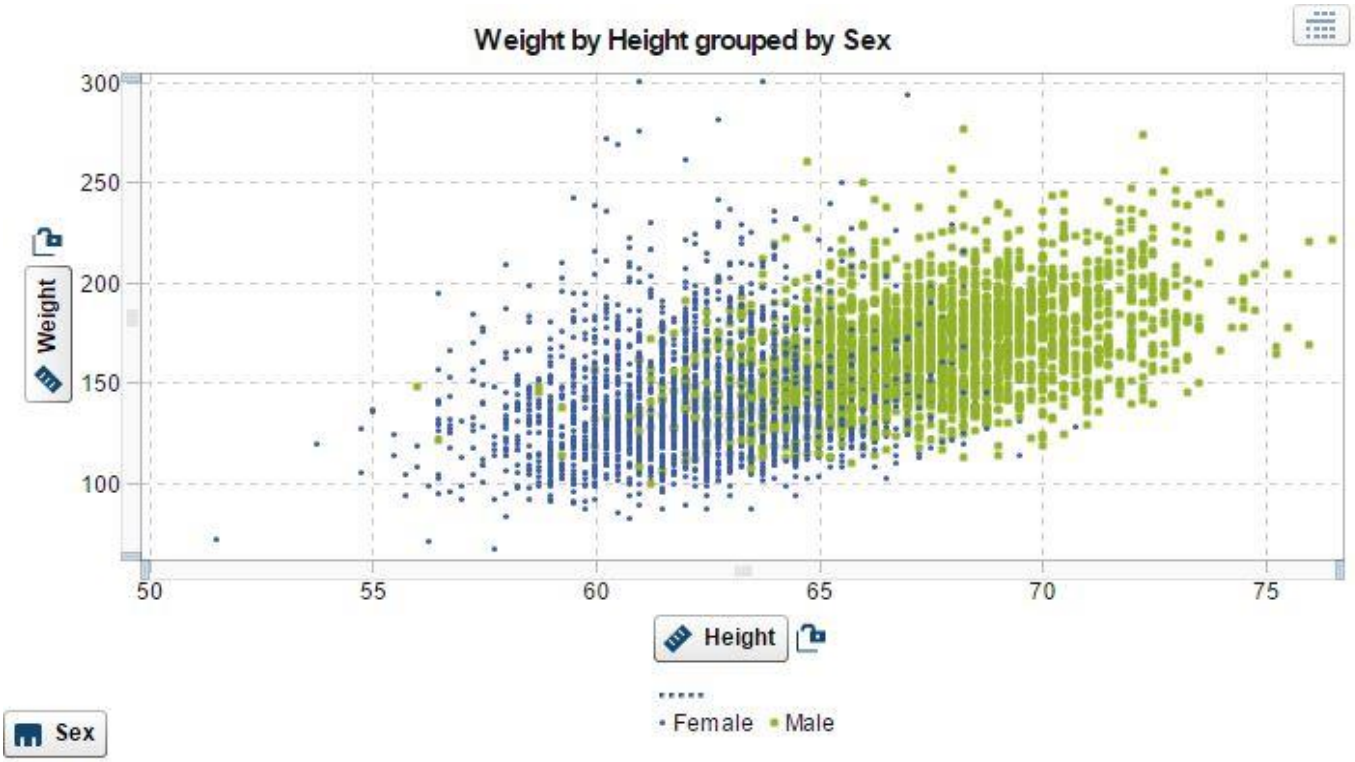


Male: The correlation is moderate



Female: The correlation is weak

Correlation represented in a Scatter-plot graph:



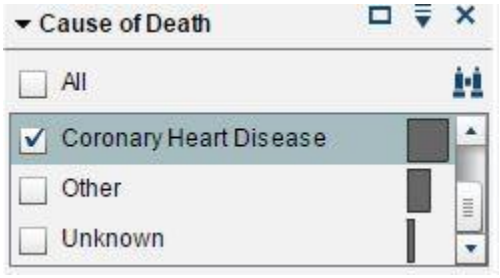
The correlation of height and weight is moderate for men and the correlation of height and weight is weak for women. It's evident that Correlation between weight and height is higher in men than in women. The two visualization and the data provided is supporting the hypothesis.

Coronary heart disease (CHD)

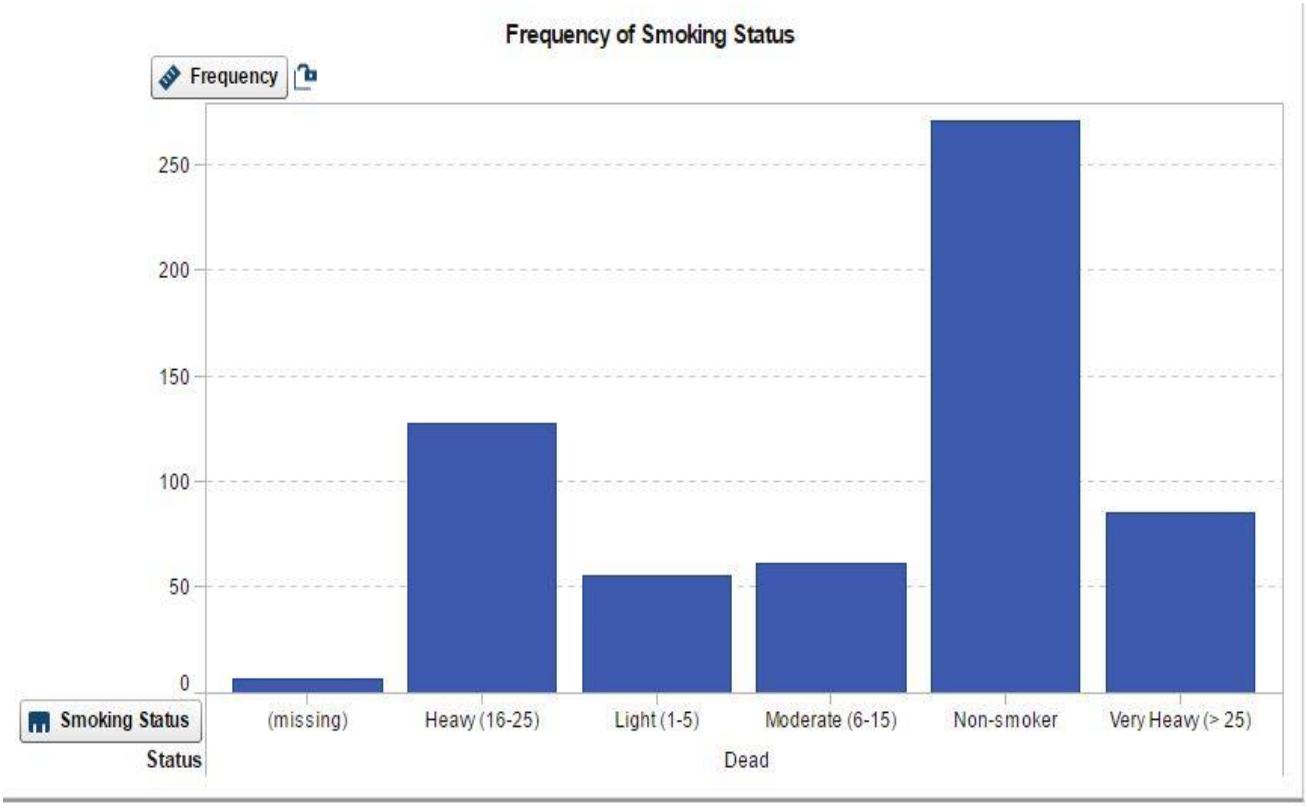
Coronary heart disease (CHD) is a disease in which a waxy substance called plaque builds up inside the coronary arteries. These arteries supply oxygen-rich blood to your heart muscle.

More Reference: https://medlineplus.gov/ency/article/007115.htm

Created a global filter for the Heath Data sets:

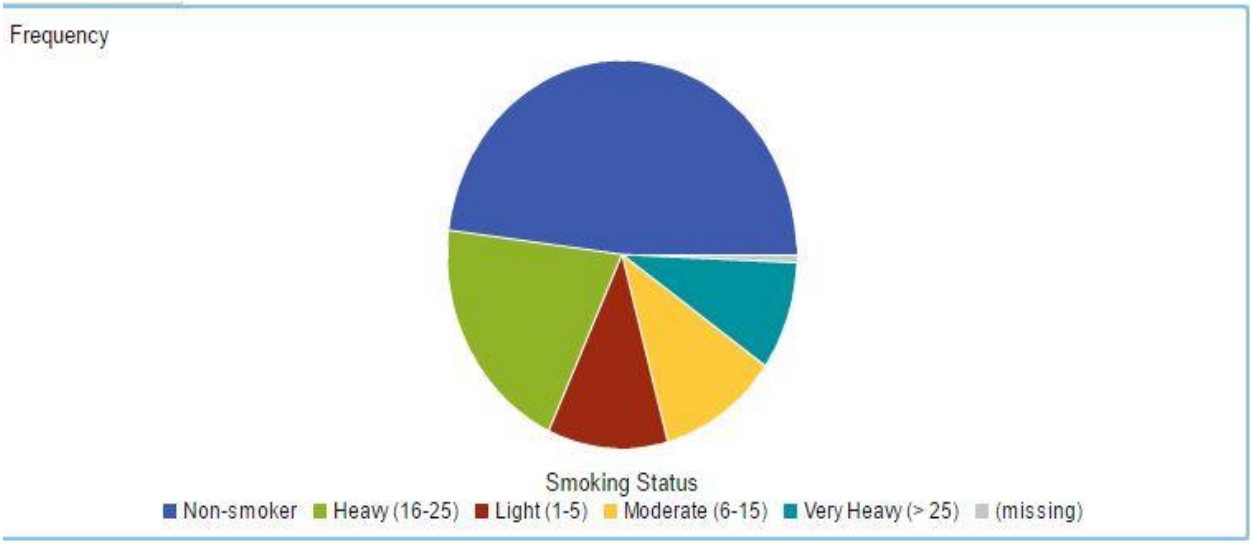


The following visualizations are filtered with the above cause of death: Coronary heart disease

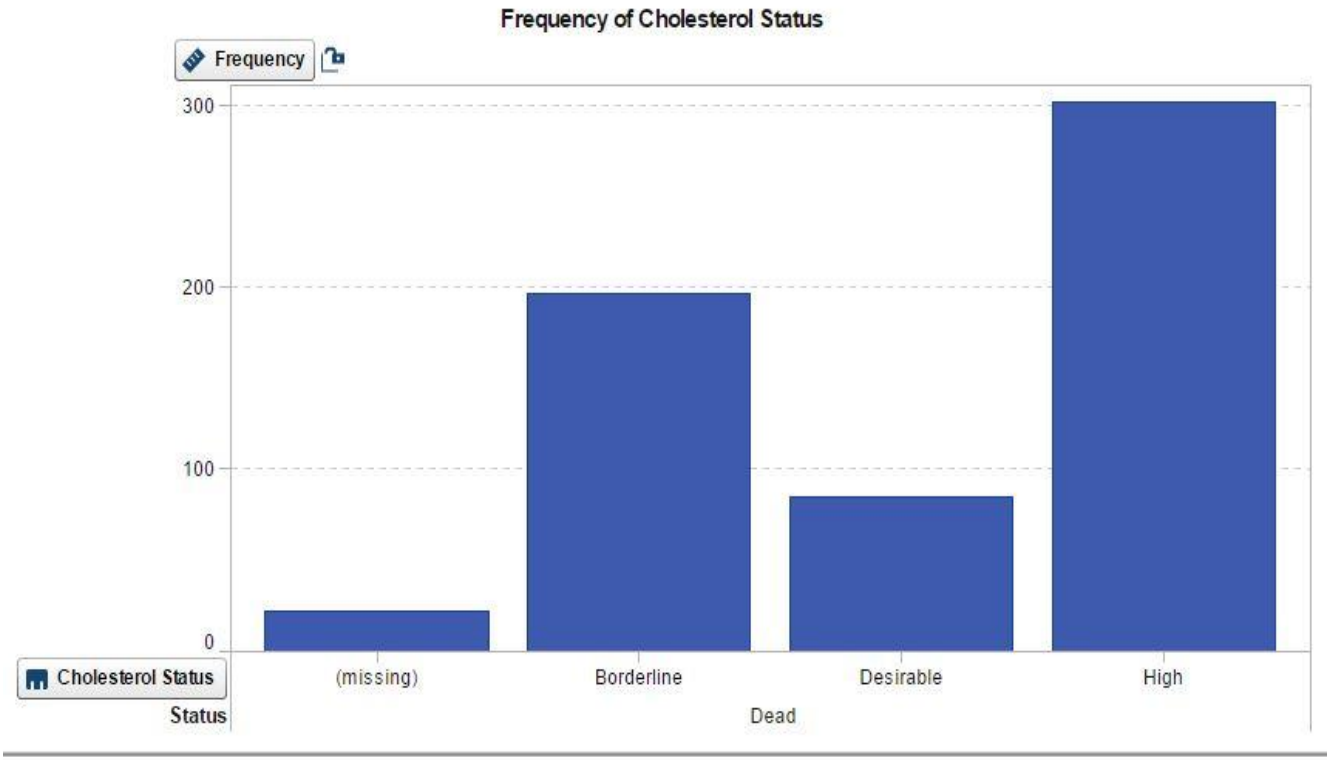


Inference from the above Bar graph: Number of people died due to CHD with regards to Smoking Status. It's seems that high number of non-smokers are dead

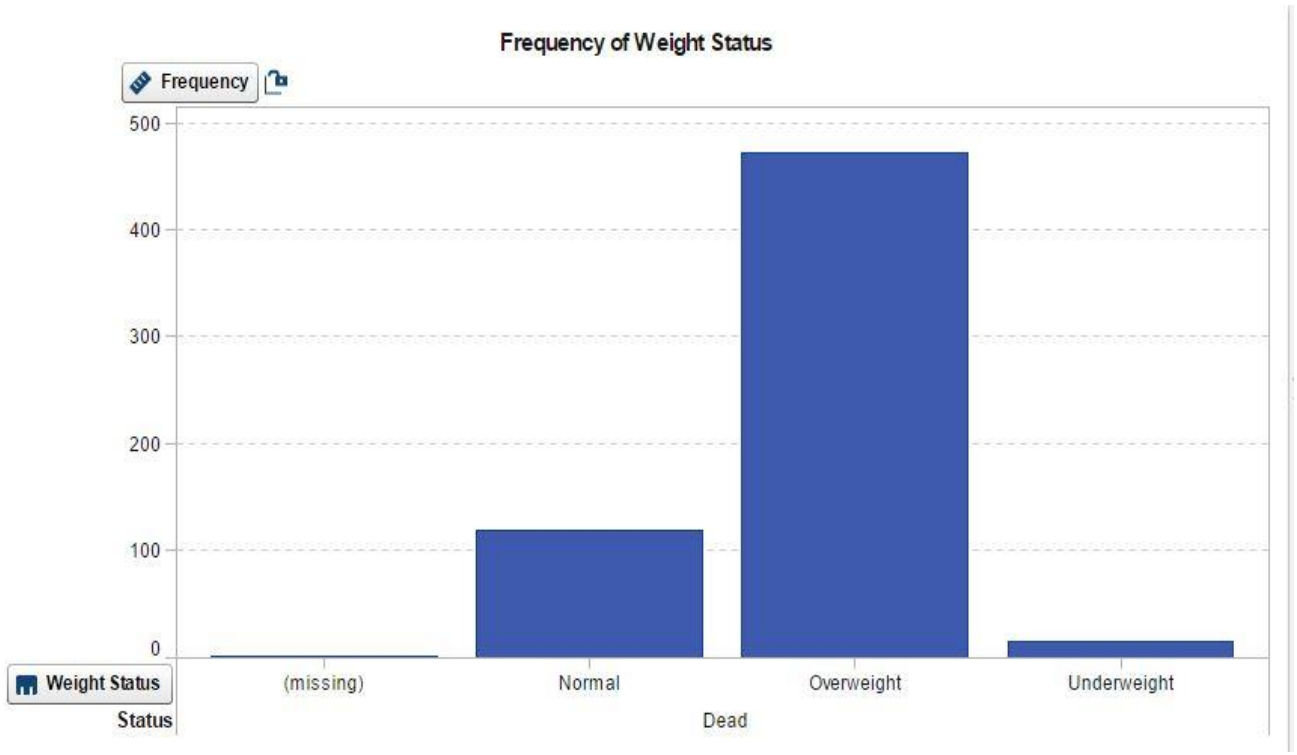
due to CHD.



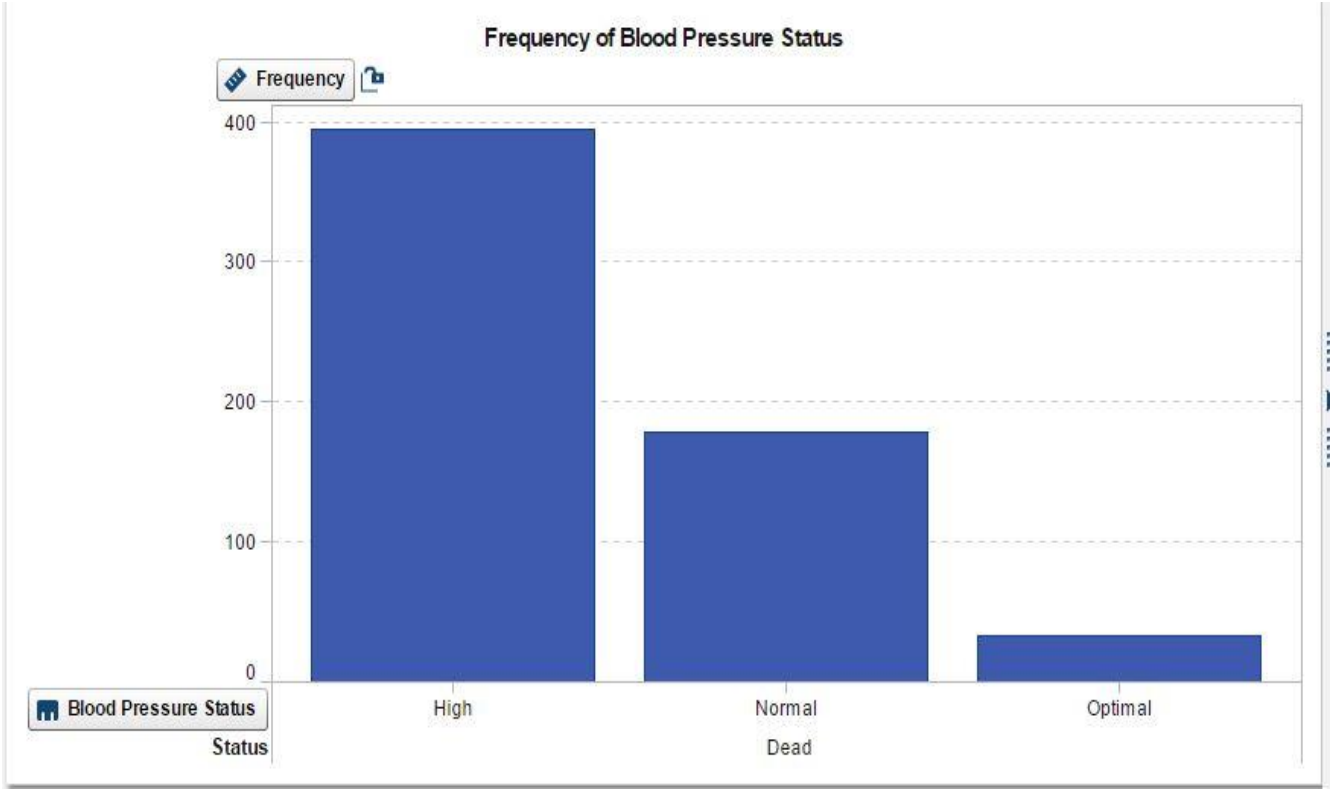
Inference from the above Pie Chart: However, we cannot conclude that smoking does not cause CHD. Since non-smokers in the society is high compared to smokers. Smoking could be one factor which could cause CHD.



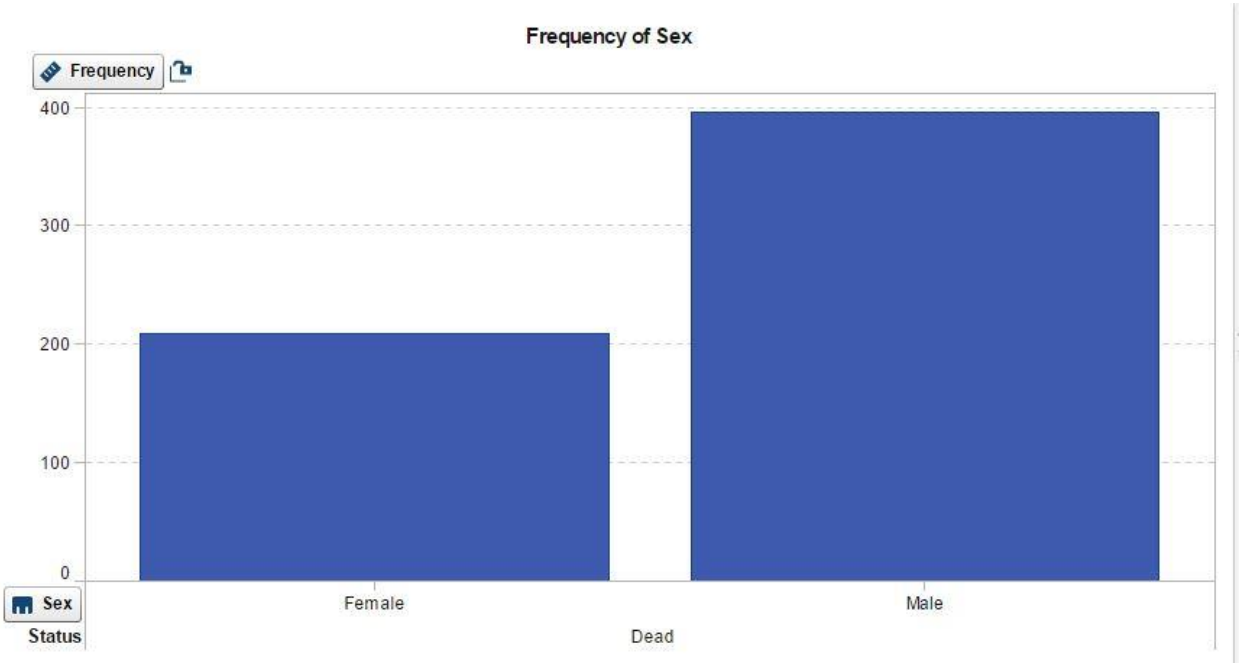
Inference from the above Bar graph: High cholesterol has correlation to death by CHD.



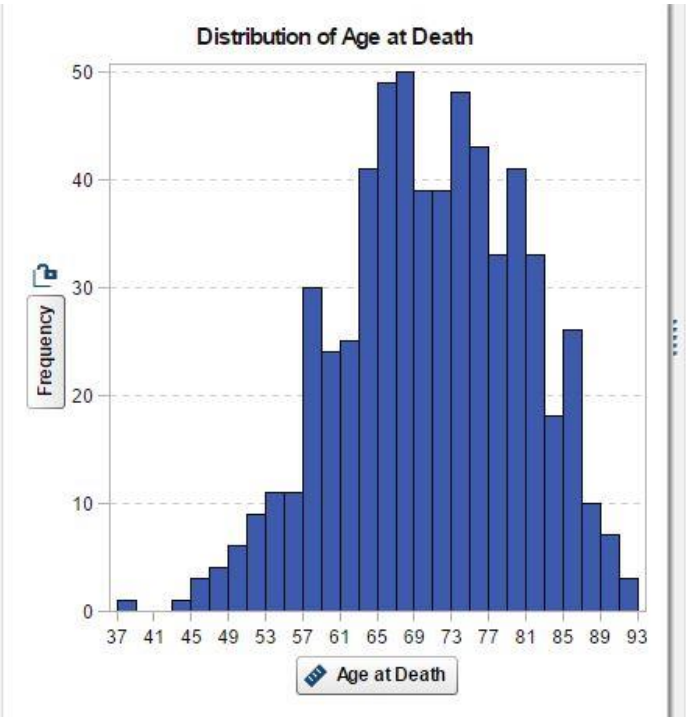
Inference from the above Bar graph: Obesity has high relationship to death by CHD.

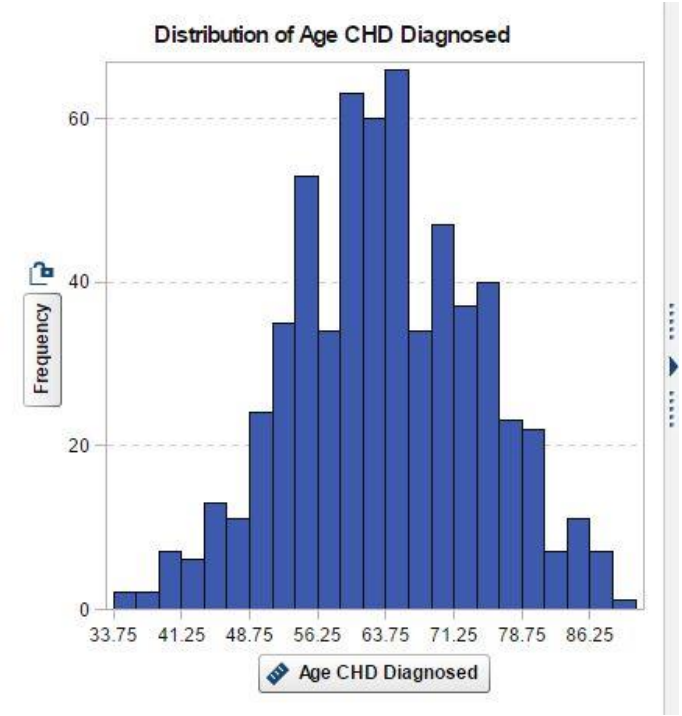


Inference from the above Bar graph: High blood pressure has high correlation to death by CHD.



Inference from the above Bar graph: Number of male died due to CHD is twice as number of female died due to CHD.





Inference from the above Bar graphs: More number of People who are Diagnosed with CHD and are dead due to the same diagnosed CHD, are of the age between 50 – 75. Age could be one of the factor which could adverse the effect of CHD.

From the above visualization and data values we could list out some of the risk factors associate for **Coronary heart disease** (**CHD**).

Risk factors for coronary artery disease include:

- Age, simply getting older increases your risk of damaged and narrowed arteries
- Sex. Men are generally at greater risk of coronary artery disease
- Smoking
- High blood pressure
- High blood cholesterol levels
- Obesity
