



Heart Disease

Diagnostic Analysis

By Suman Das

Introduction

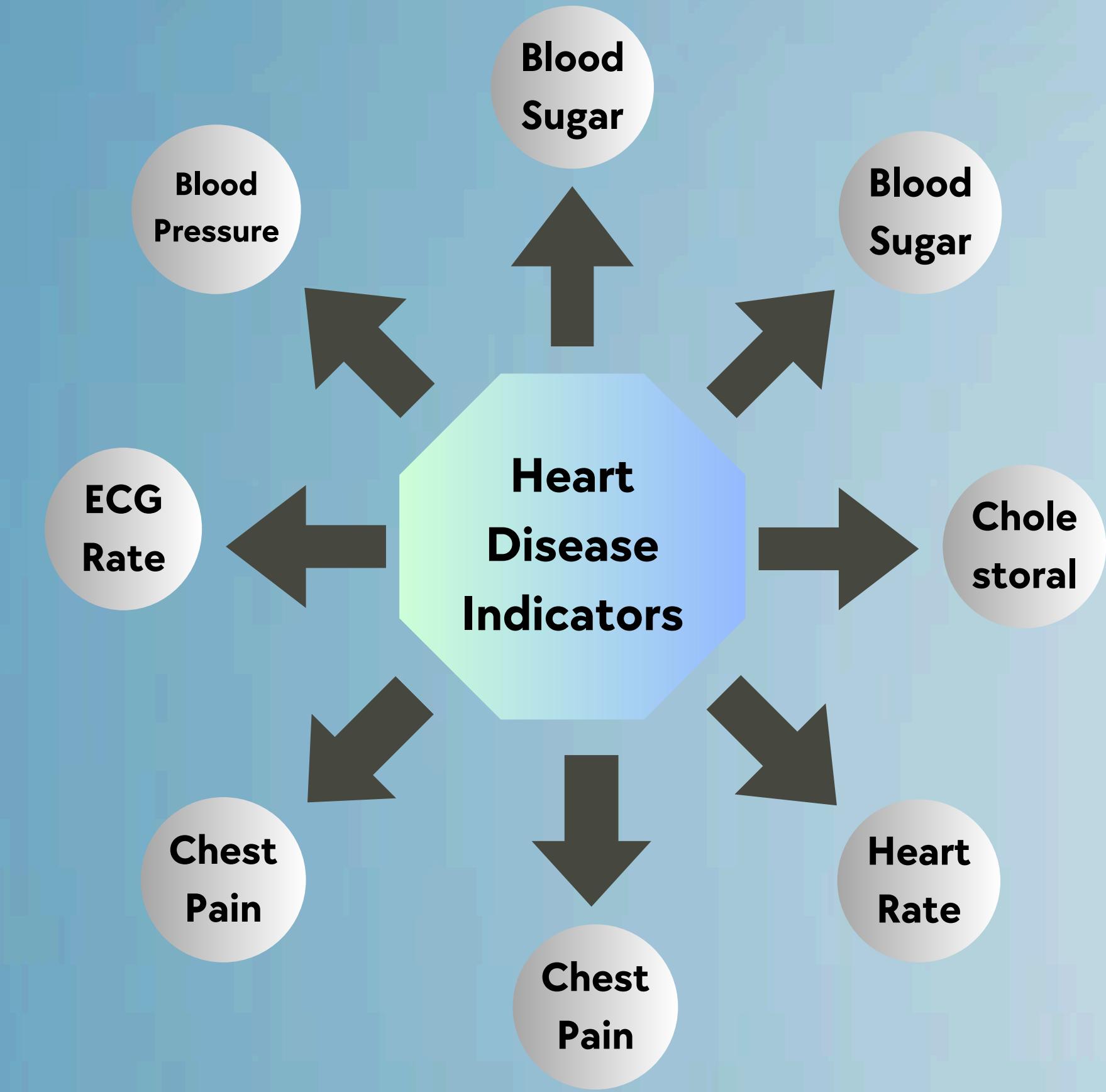
This Heart Disease Diagnostic Analysis provides a brief overview of the project, focusing on the objective of enhancing heart disease diagnosis through data analysis using Python. It also delves into the key questions posed for exploration, setting the stage for the subsequent analysis.



Heart Disease Diagnosis

Heart disease describes a range of conditions that affect the heart. Heart disease encompasses a range of conditions affecting the heart, including Blood vessel disease, Coronary artery disease, Irregular heartbeats, Heart failure.

Heart disease diagnosis refers to the process of identifying the presence and type of heart disease. It is laboratory tests to diagnose heart disease. The main lab tests used to evaluate heart disease are run on blood samples drawn from a vein in arm. The blood samples may also be used to evaluate other bodily systems that can affect cardiovascular (heart and blood vessel) health.



Information about Dataset

- # age: age of individual
- # sex: sex of individual, 1 for male and 0 for female
- # cp: chest pain type (Typical Angina, Atypical Angina, Non-Anginal Pain, Asymptomatic)
- # trestbps: resting blood pressure
- # chol: serum cholestorol (in mg/dl)
- # fbs: fasting blood sugar (> 120 mg/dl), 0 for False, 1 for True
- # restecg: resting electrocardiographic results, 0= normal,1= non-specific disturbances,2= significant
- # thalach: maximum heart rate achieved
- # exang: exercise induced angina (0 for no, 1 for yes)
- # oldpeak: ST depression induced by exercise relative to rest
- # slope: the slope of the peak exercise ST segment
- # ca: number of major vessels (0-4) colored by flourosopy
- # thal: 0 = normal; 1 = fixed defect; 2 = reversable defect
- # target: 0 = less chance for heart disease, 1 = more chance for heart disease

Data Preparation



Data Visualization



Data Conclusion



Timeline

The necessary libraries such as Pandas, NumPy, Matplotlib, and Seaborn will be imported.

Import Library

Load Dataset

The dataset will be loaded for further analysis.

Basic Exploration

Data Cleaning

Process of checking null values, finding missing values in any column and how to treat this missing values will be highlighted.

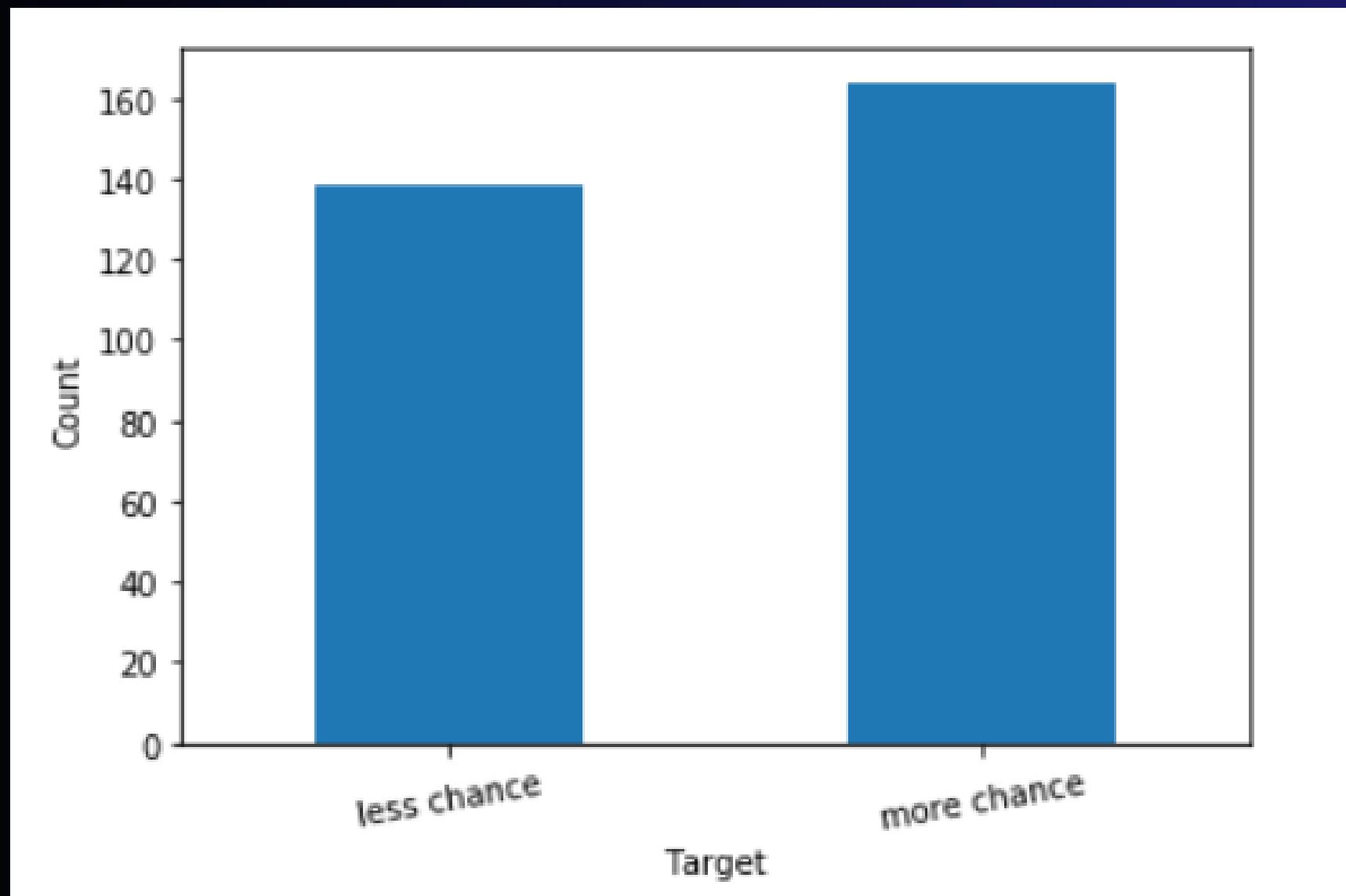
Exploratory Analysis

An in-depth exploration of the dataset will be conducted, including overall statistics and anova test, chisq test to identify variable relationships. A graph will visually represent the findings.

Valuable Insights

This section will focus on visually representing key insights derived from the dataset.

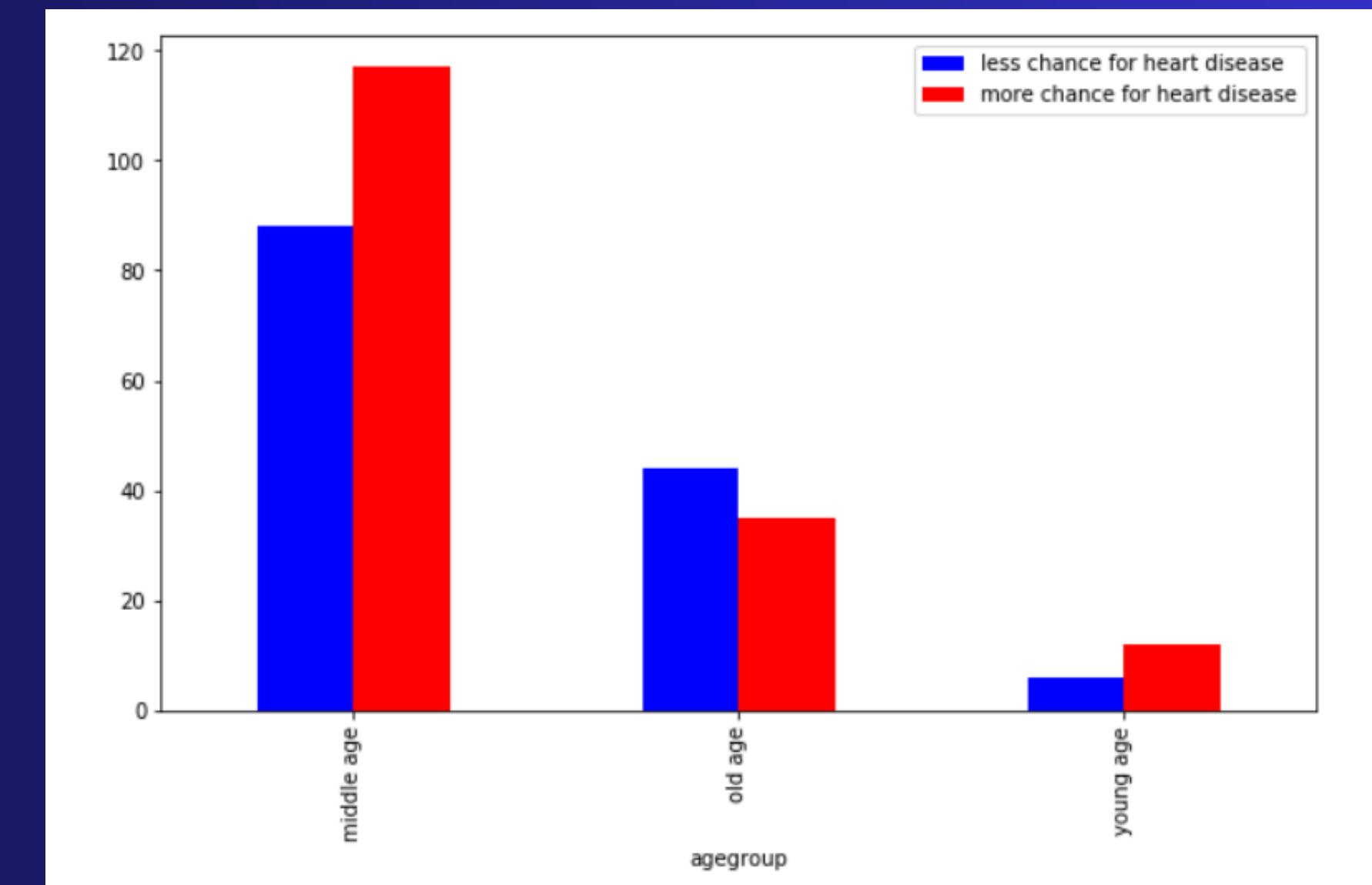
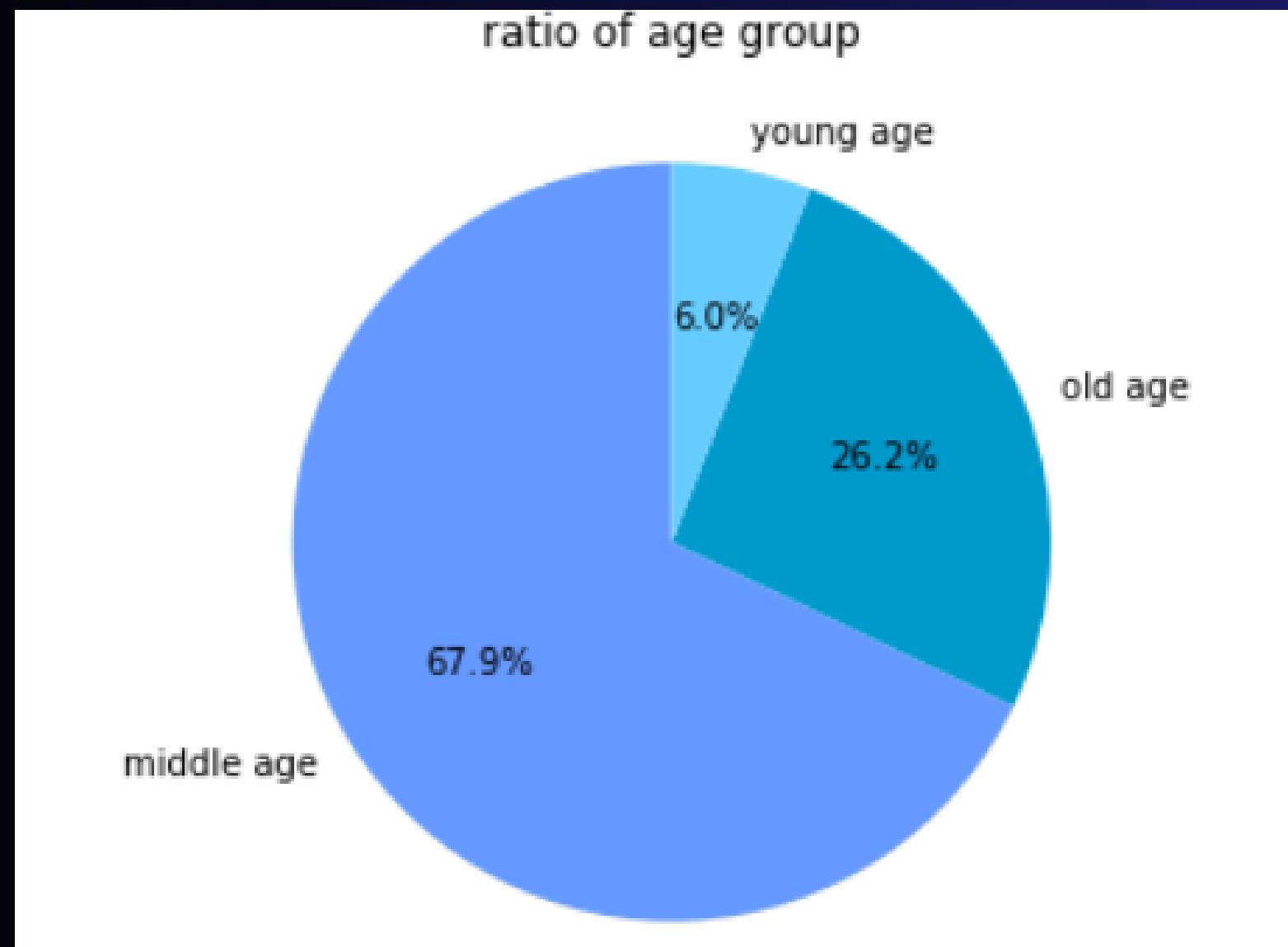
Distribution of Target Variable



Less Chance to Heart Disease and
More Chance of Heart Disease ,
both bars have enough data to
explain further.

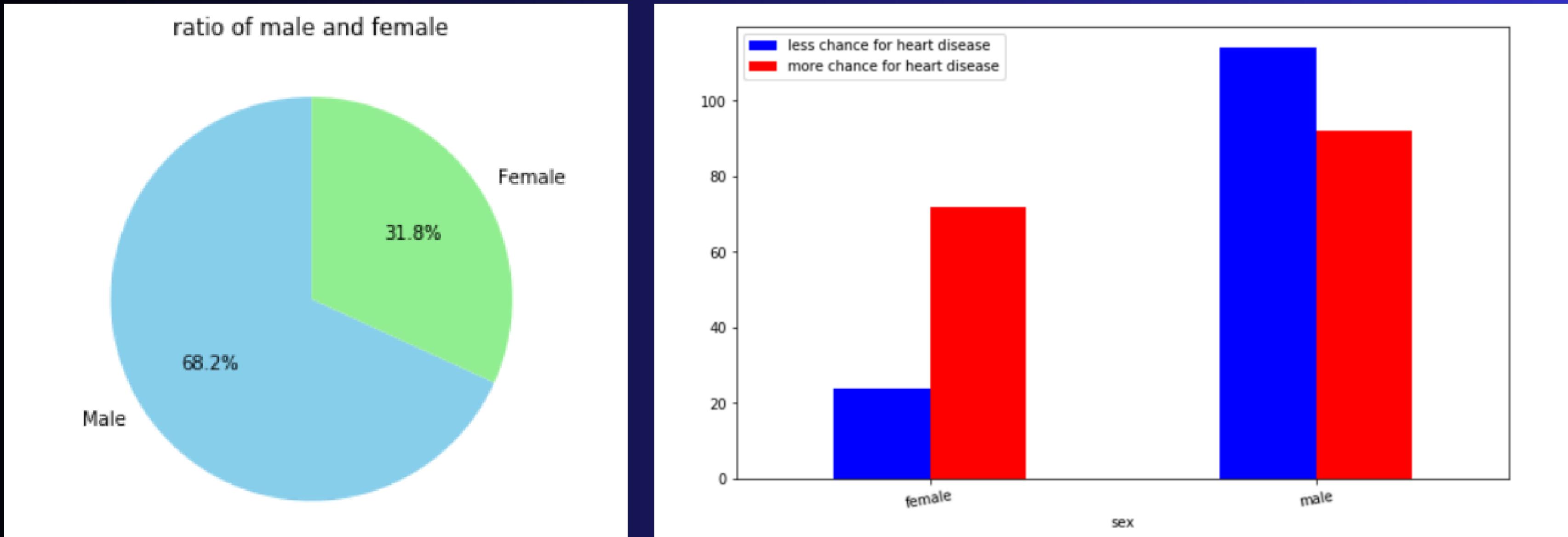
Less Chance: 134
More Chance: 168

Distribution of Different Age Group



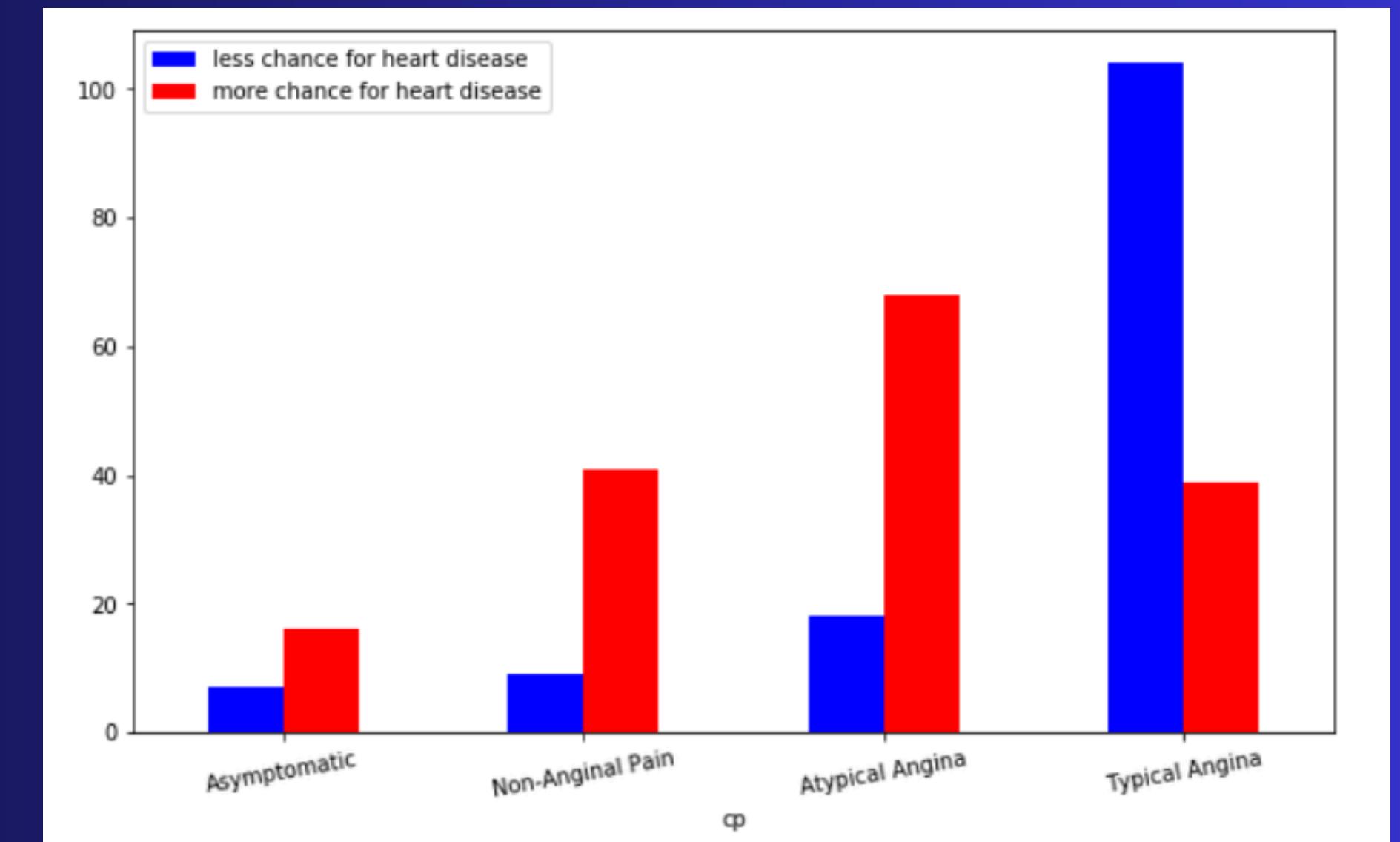
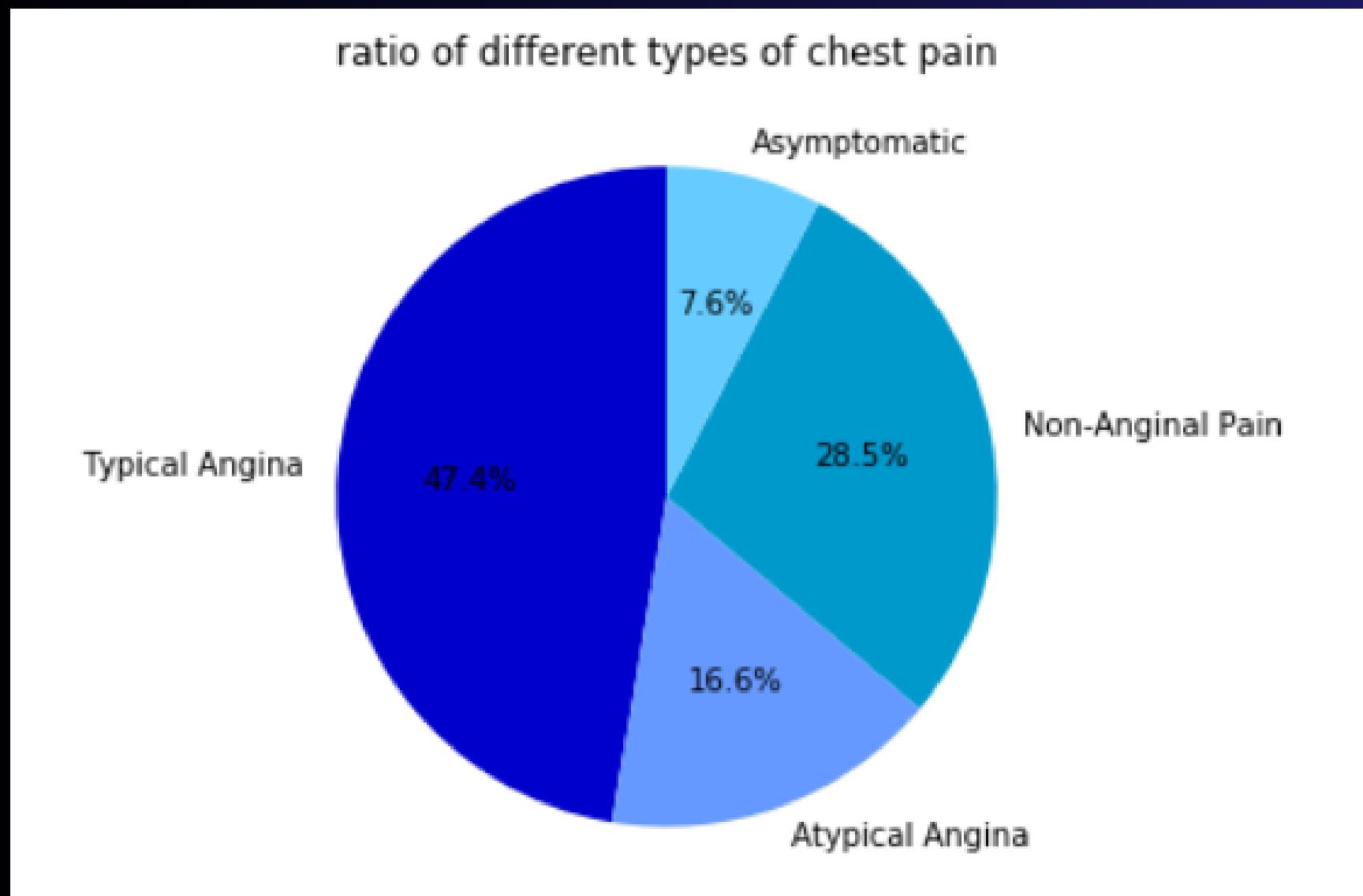
Middle Aged People (age 40-60) have a greater chance of occurring heart disease.

Distribution of Different Gender



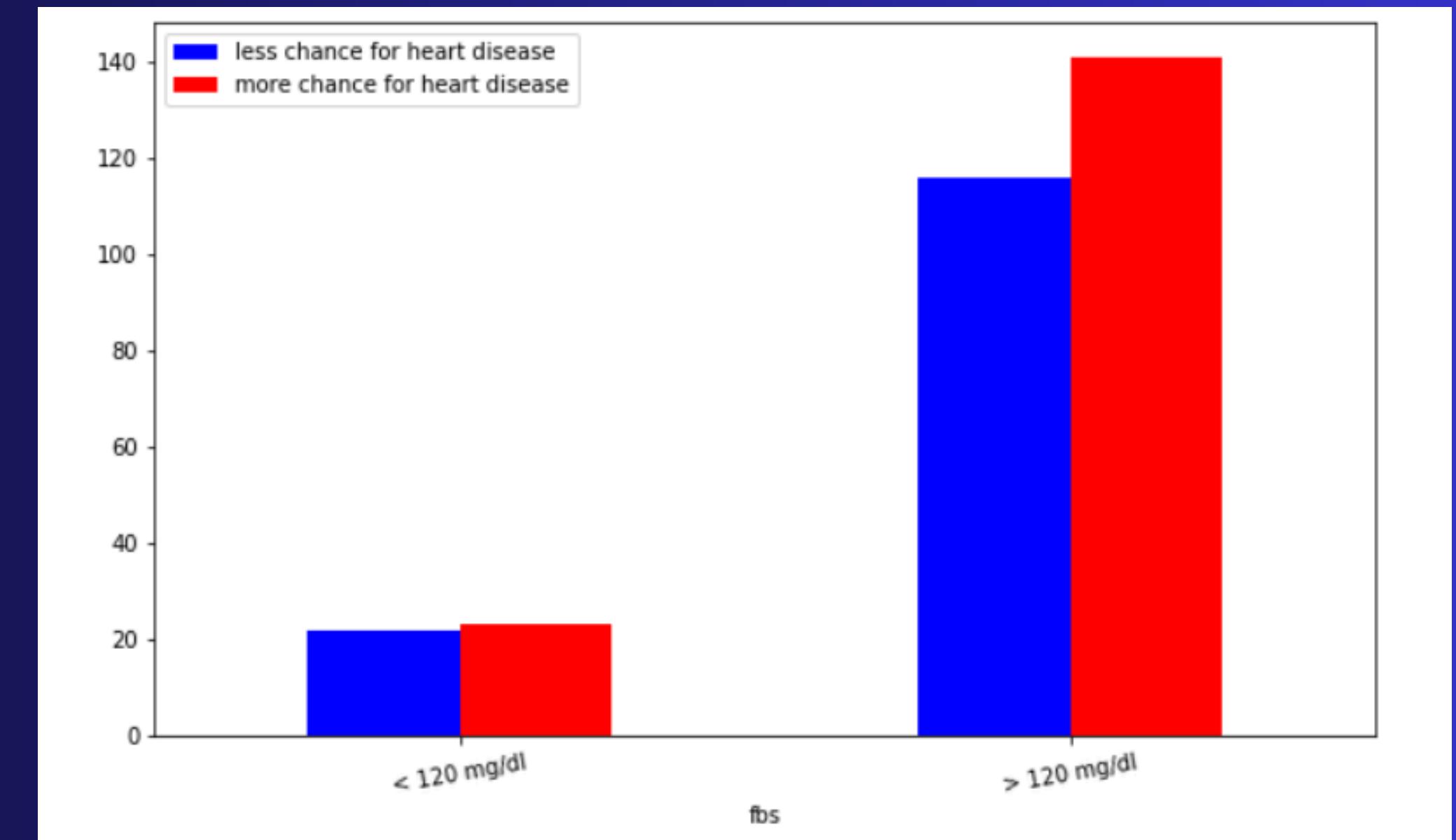
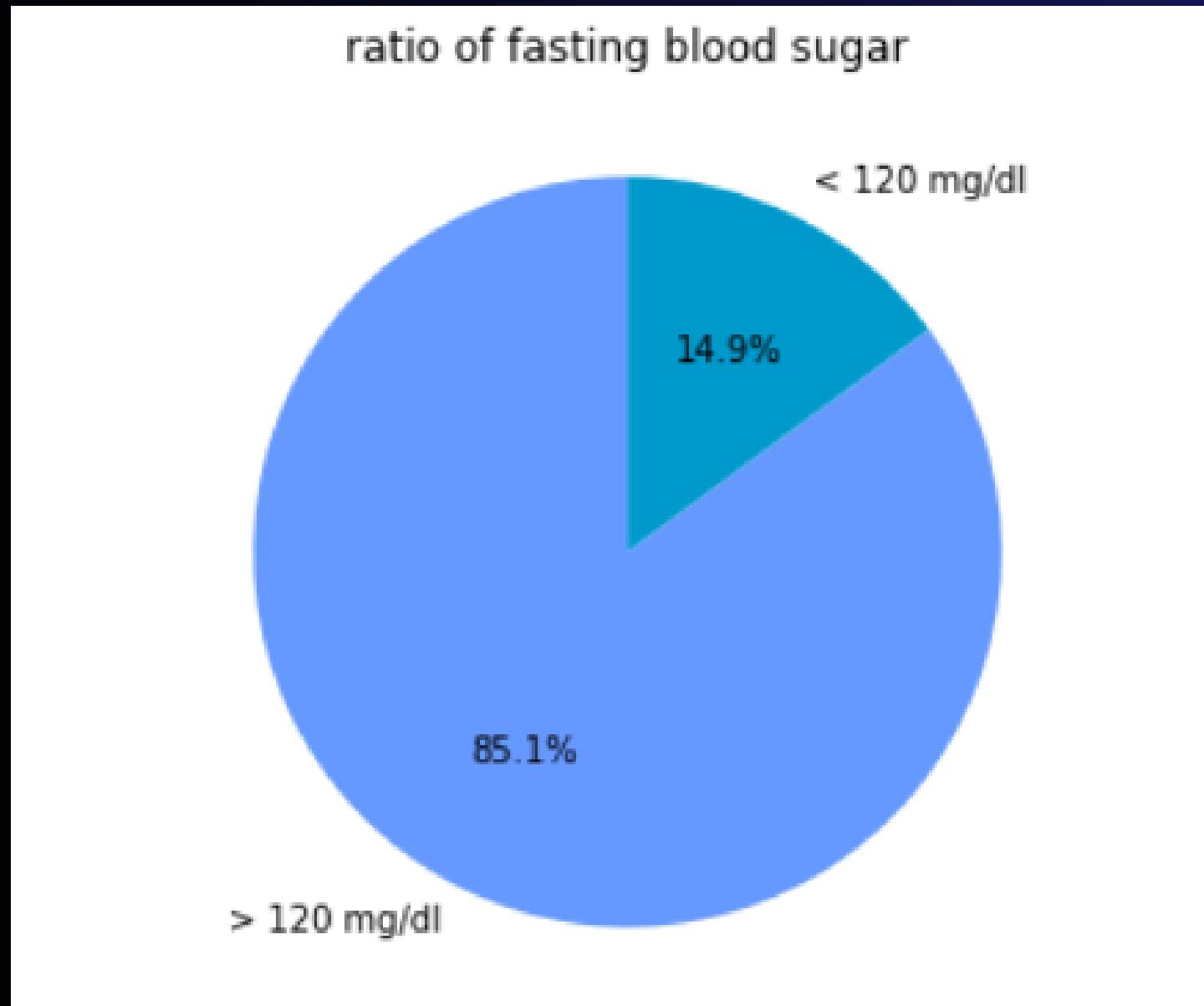
The no of females who are heart disease prone is very high than females who are not heart disease prone. Male who have less heart disease is higher in number than the male who are more heart disease prone.

Distribution of Different Types of Chest Pain



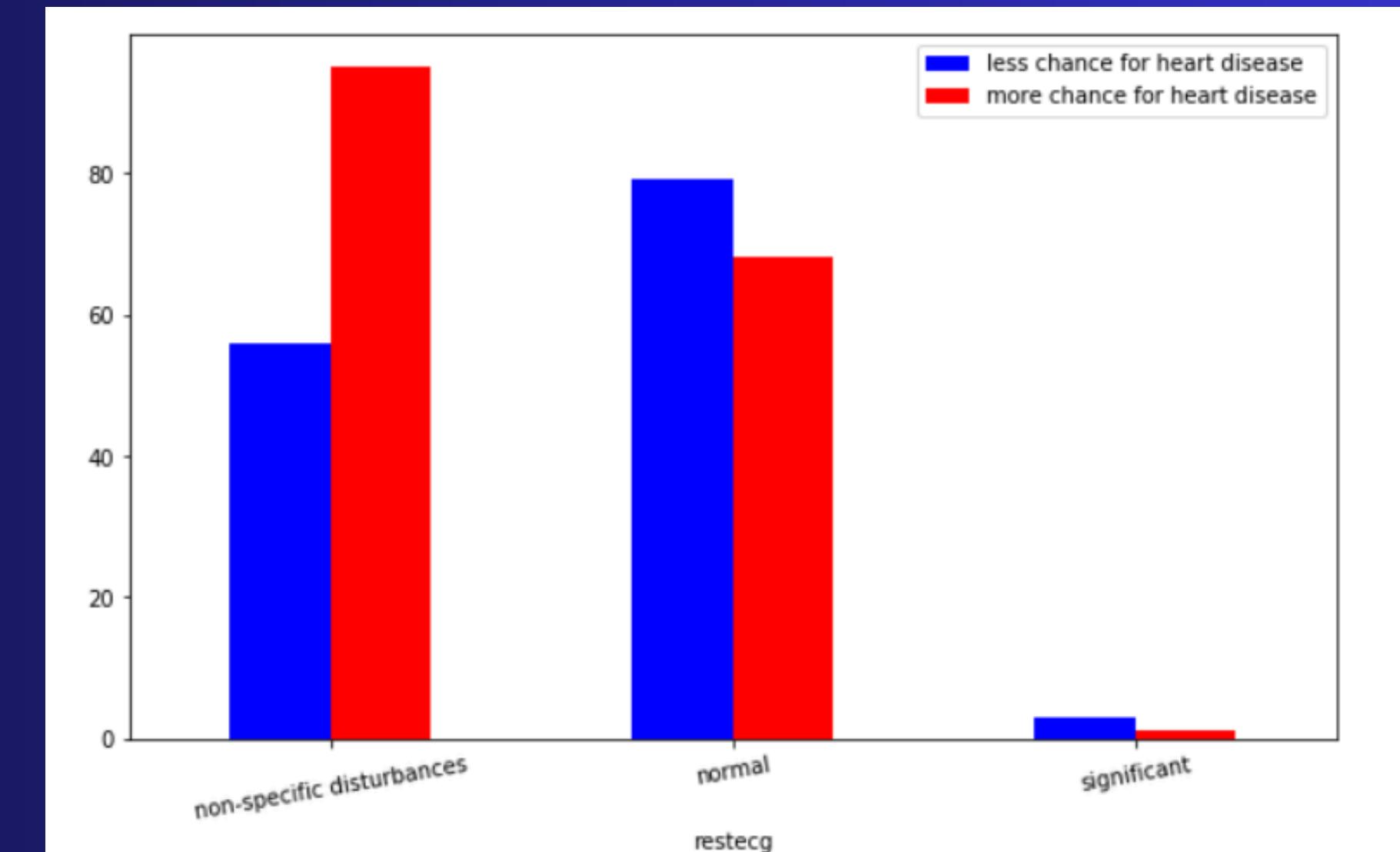
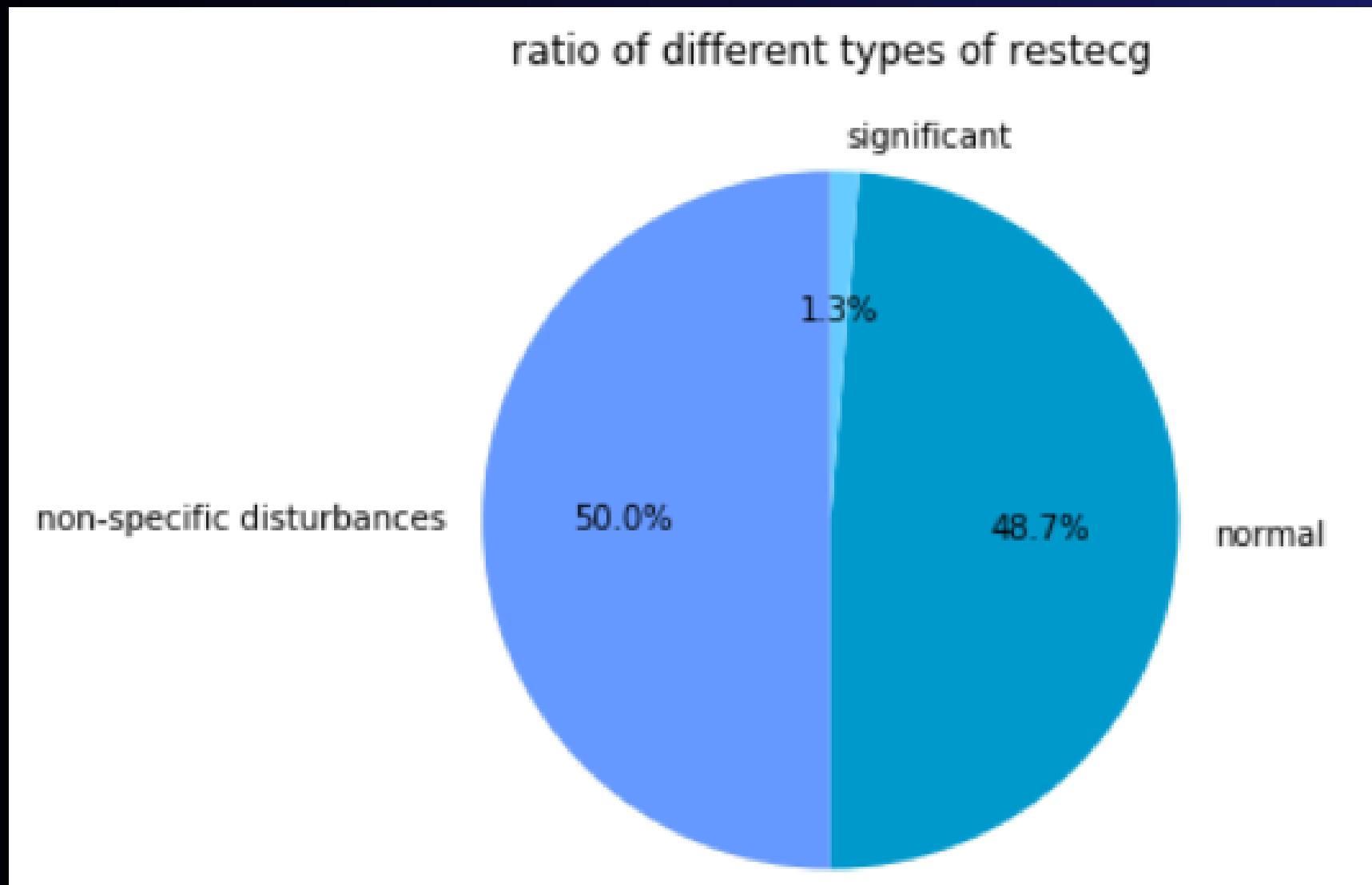
Typical Angina type chest pain is very common, whereas those who have Atypical Angina have more chance to become a heart disease patient.

Distribution of Fasting Blood Sugar



High fasting blood sugar levels can increase the risk of heart disease.

Distribution of Resting ECG



It is found that even if ECG has no specific disturbances, chance of getting heart disease higher.

Valuable Insights

1. Middle Aged People (age 40-60) have a greater chance of occurring heart disease and Old Aged People (age above 60) have a less chance of occurring heart disease.
2. Male surpass Female in number of total heart attack, but Female have more chance of heart attack.
3. Typical Angina type chest pain is very common, whereas those who have Atypical Angina have more chance to become a heart disease patient.
4. High fasting blood sugar levels can increase the risk of heart disease.
5. It is found that even if ECG has no specific disturbances, chance of getting heart disease higher.
6. If there is no vessel in human body, then chance of heart disease is much much higher.
7. Resting blood pressure in most of the cases, is in the range of 120-140.
8. In most case, heart rate can be as high as 160 times per minutes.
9. If Exercise-induced-Angina is not present, still it exists heart disease, especially in early stage of life.

THANK YOU !!

Waiting for your
valuable suggestions

