# Midterm Result

Yiying Wu (yw3996)

## Input dataset

## Exploratory analysis and data visualization

In this section, use appropriate visualization techniques to explore the dataset and identify any patterns or relationships in the data.

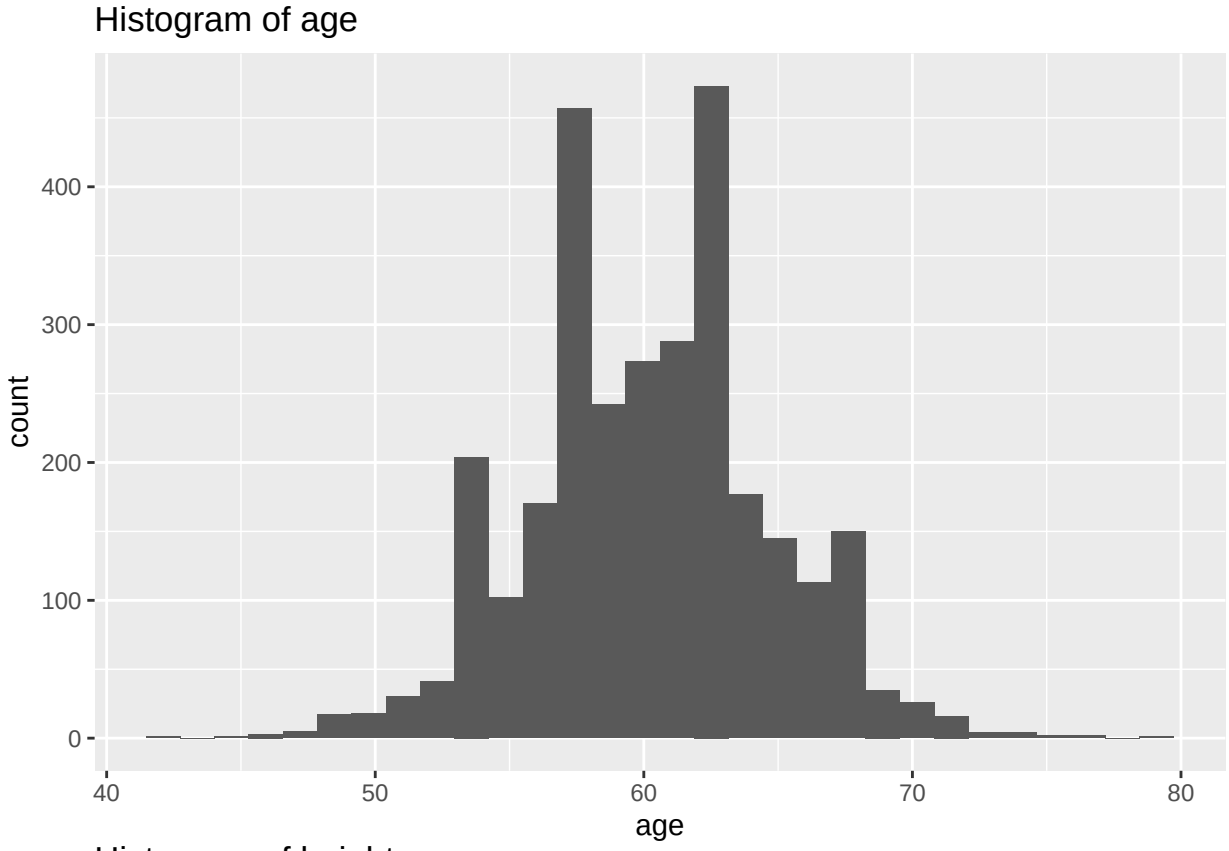
**Summary statistics**

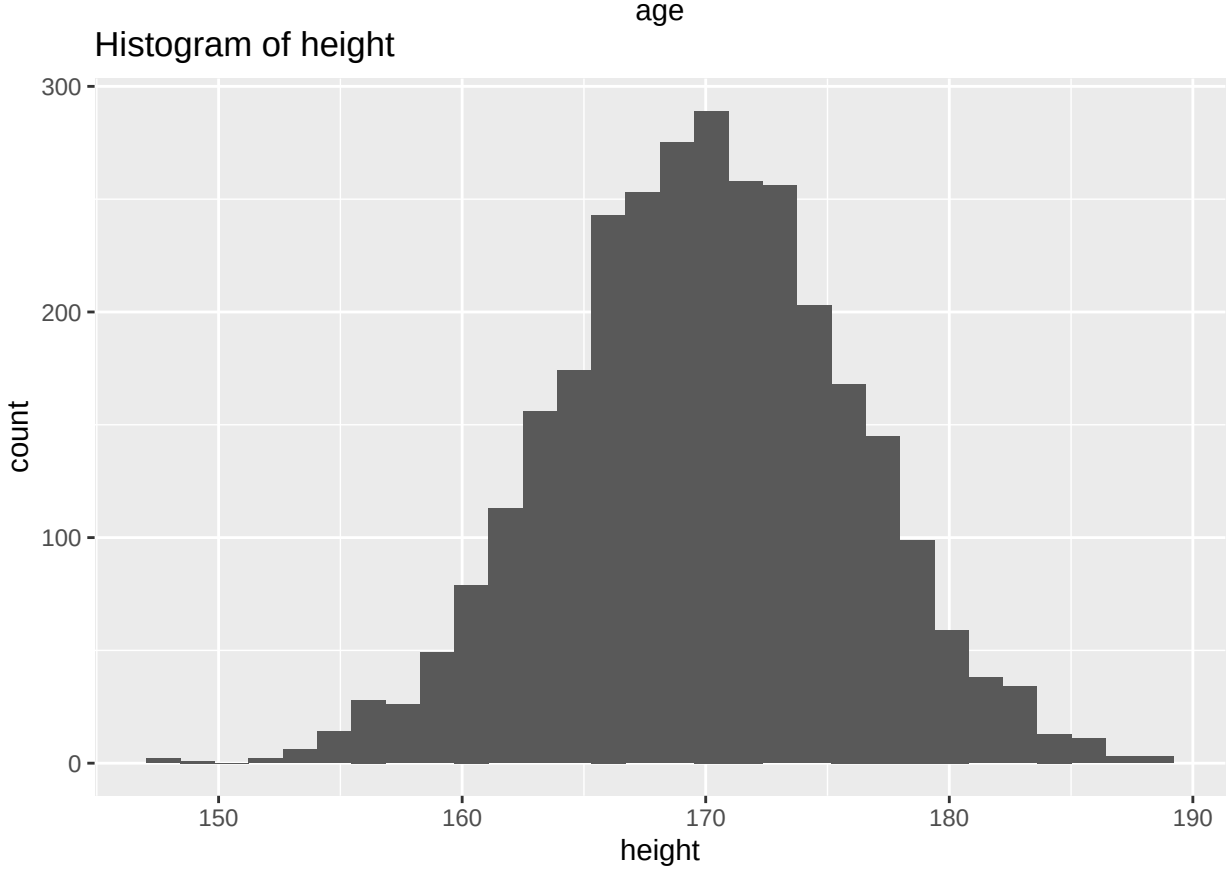
Table 1: Summary of Dataset

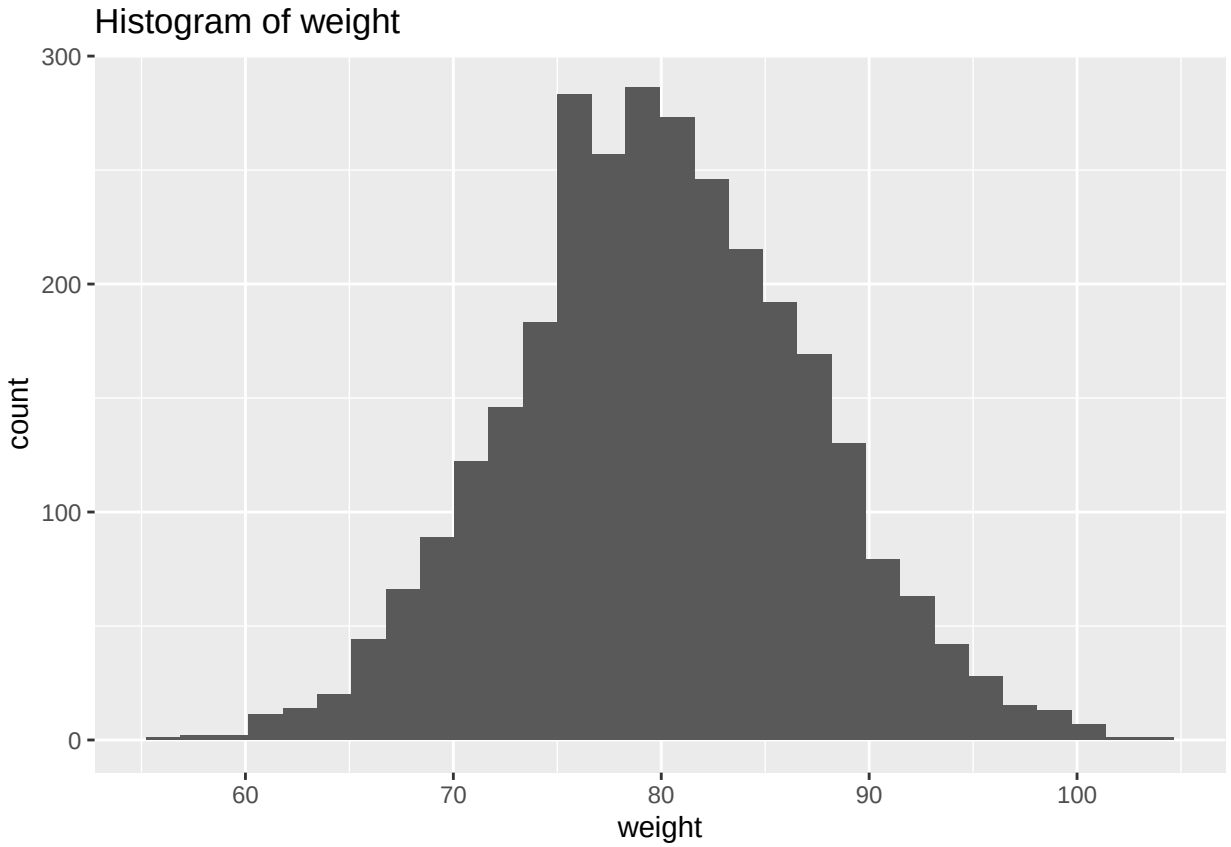
| **Characteristic** | **N = 3,000**[1] |
|---|---|
| **age** | 60.0 (57.0, 63.0) |
| **gender** | |
| male | 1,544 (51%) |
| female | 1,456 (49%) |
| **race** | |
| White | 1,967 (66%) |
| Asian | 158 (5.3%) |
| Black | 604 (20%) |
| Hispanic | 271 (9.0%) |
| **smoking** | |
| Never smoked | 1,822 (61%) |
| Former smoker | 859 (29%) |
| Current smoker | 319 (11%) |
| **height** | 169.9 (166.0, 173.9) |
| **weight** | 80 (75, 85) |
| **bmi** | 27.65 (25.80, 29.50) |
| **hypertension** | 1,492 (50%) |
| **diabetes** | 463 (15%) |
| **SBP** | 130 (125, 136) |
| **LDL** | 110 (97, 124) |
| **vaccine** | |
| Not vaccinated | 1,212 (40%) |
| Vaccinated | 1,788 (60%) |
| **severity** | |
| Not severe | 2,679 (89%) |
| Severe | 321 (11%) |
| **study** | |
| A | 2,000 (67%) |
| B | 1,000 (33%) |
| **recovery_time** | 39 (31, 49) |

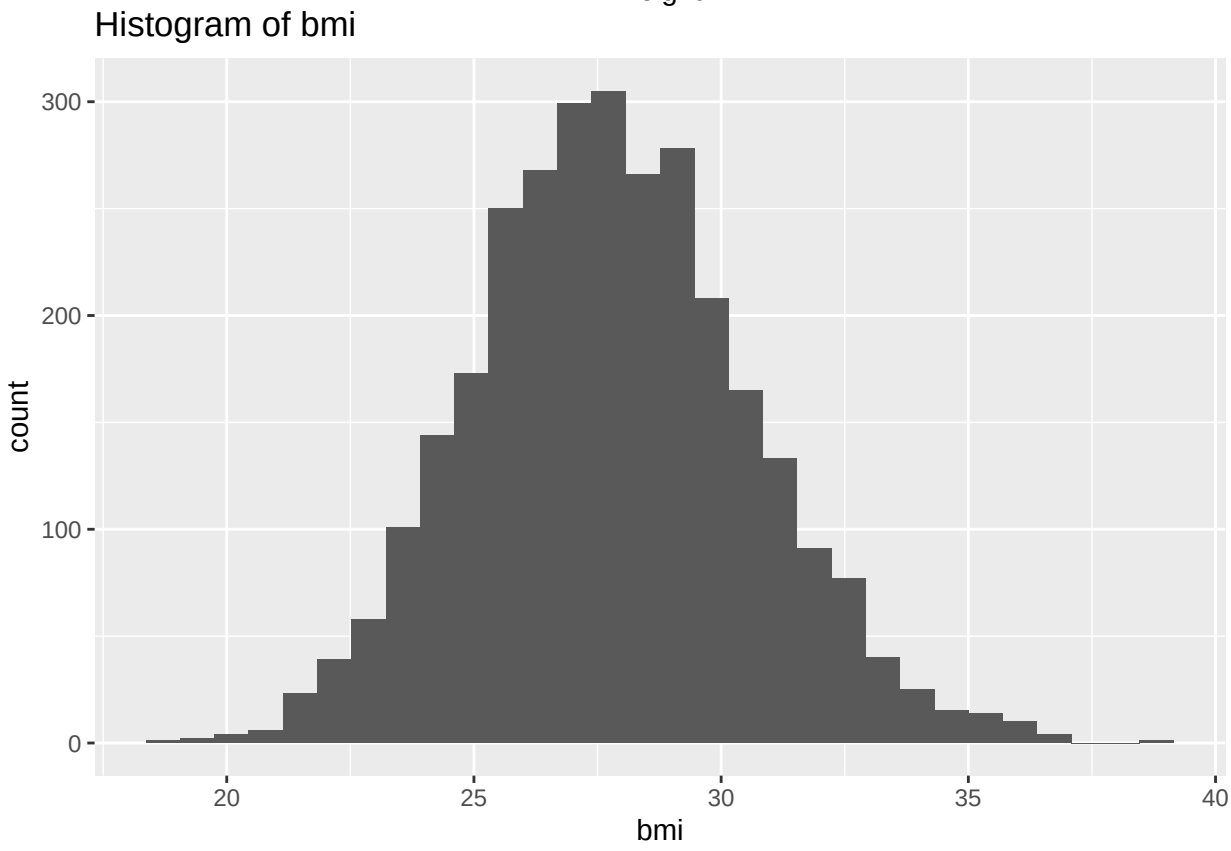
[1] Median (IQR); n (%)

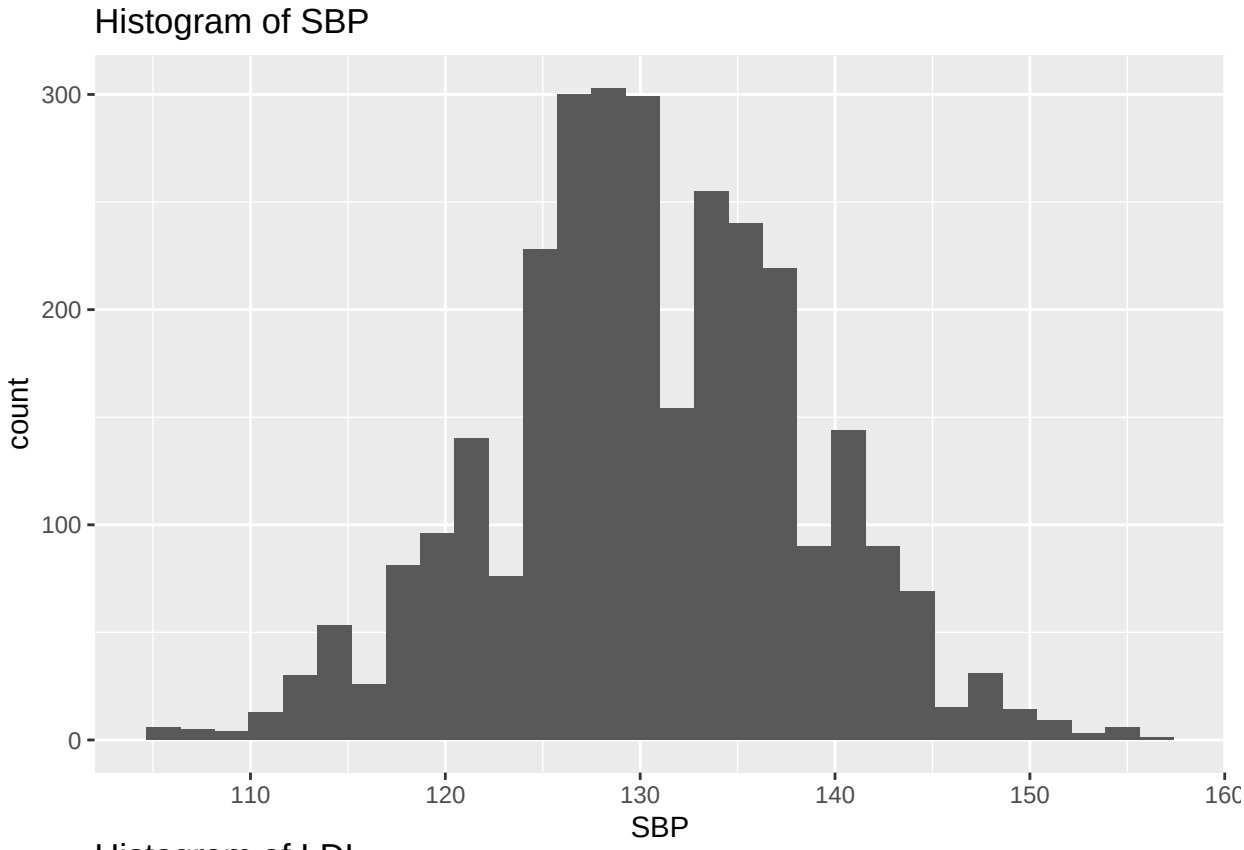
**Visualizations for the numerical variables**

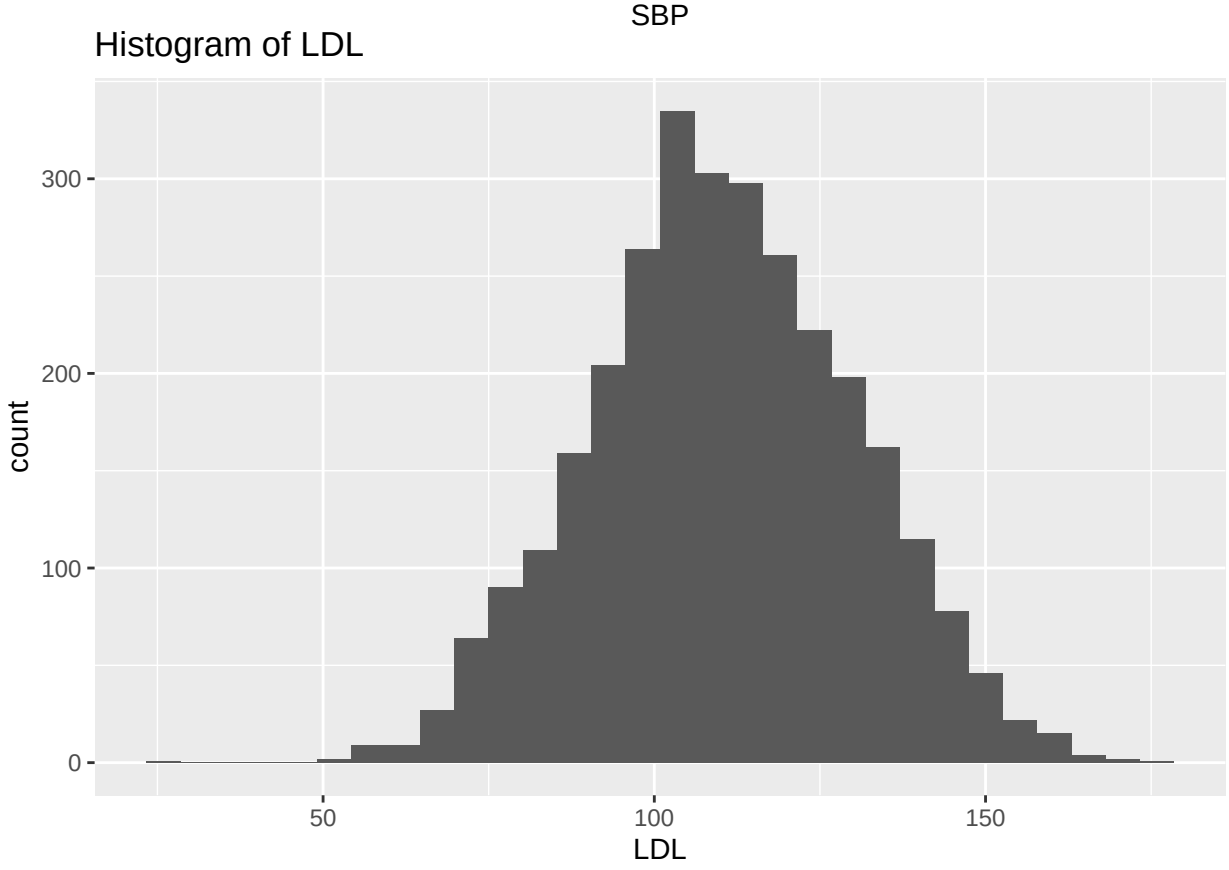


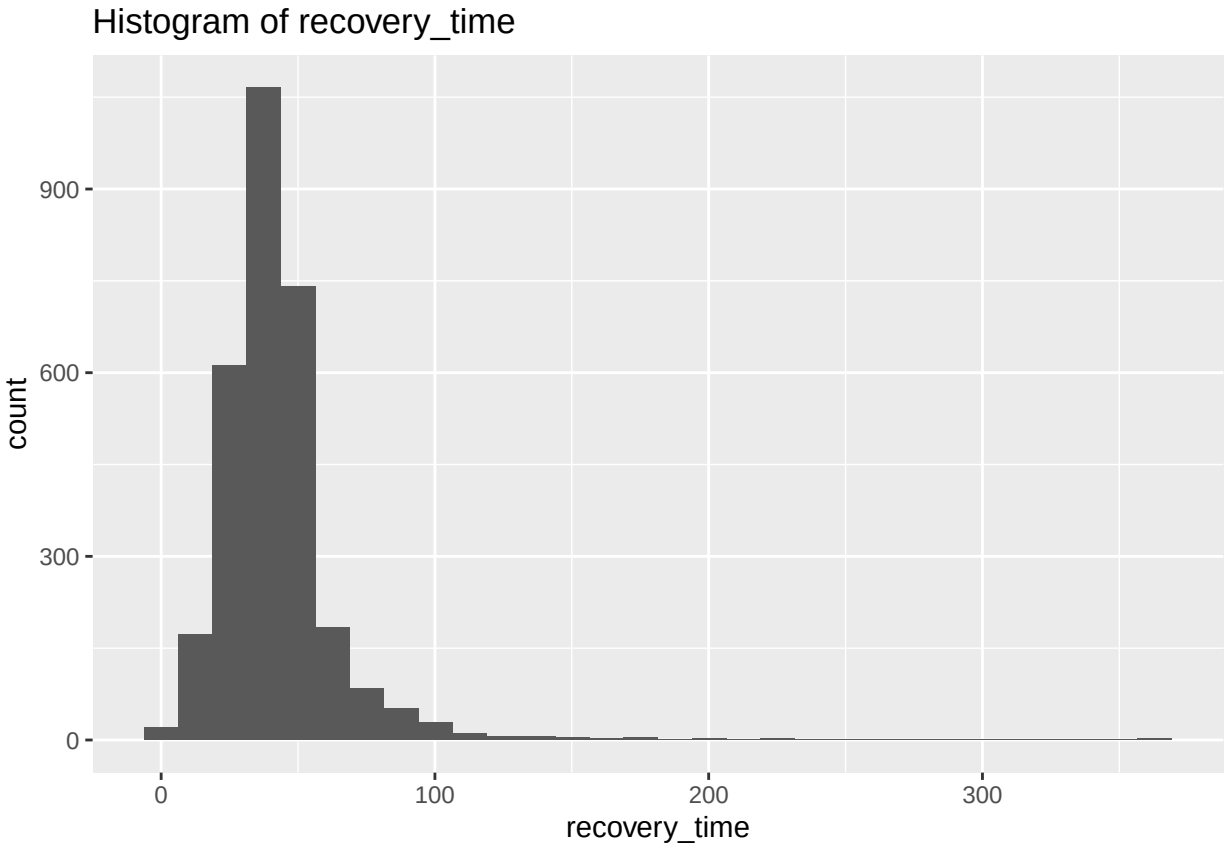




Histogram of weight
count
weight
300
200
100
0
60
70
80
90
100

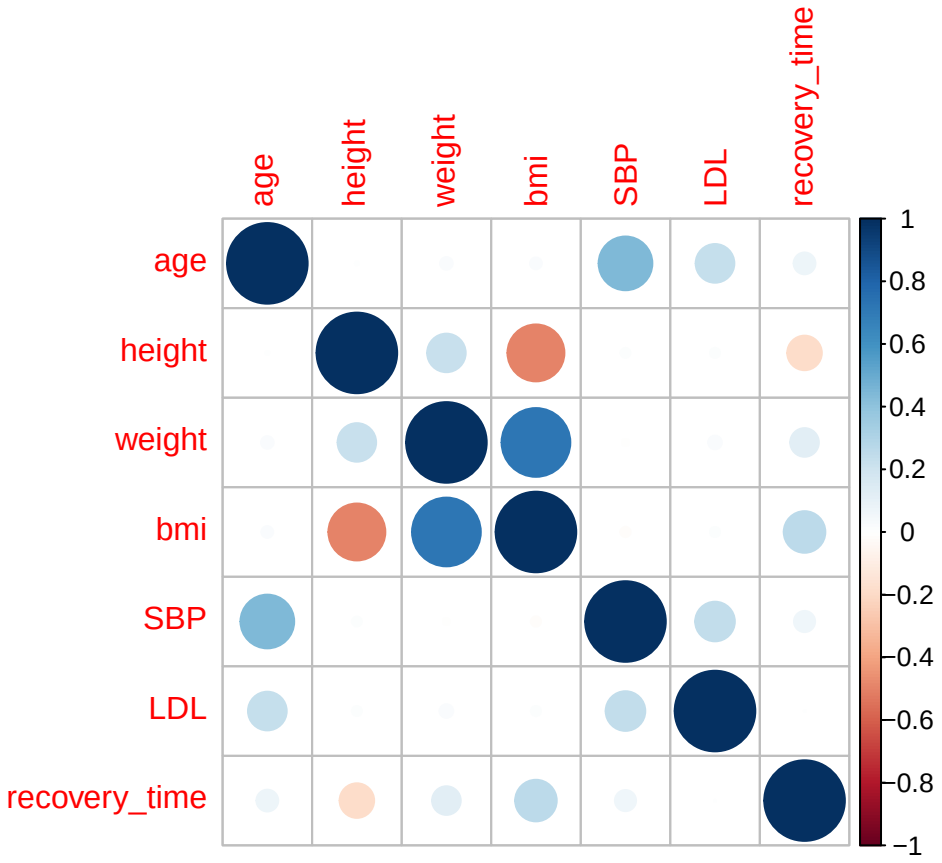

Histogram of bmi
count
bmi
300
200
100
0
20
25
30
35
40


Histogram of SBP
count
300
200
100
0
110
120
130
140
150
160
SBP


Histogram of LDL
count
300
200
100
0
50
100
150
LDL




**correlation plot**




## Model training

In this section, describe the models you used to predict the time to recovery from COVID-19. Briefly state the assumptions made by using the models. Provide a detailed description of the model training procedure and how you obtained the final model.