Medical Data Analysis Report

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Analyzed File: sample_healthcare_data.csv

Executive Summary

The provided dataset consists of 20 records with 15 features, including both numeric and categorical values. The target prediction is gender, and the features used for analysis include various health-related measurements and lifestyle factors. The dataset contains missing values in 'Medical_Condition' and 'Medication', which may impact the accuracy of predictive models.

Dataset Overview

| Total Records	20
Total Features	15
Numeric Features	10
Categorical Features	5
Missing Values	18

Key Insights

• On average, the patients in the dataset are 51.75 years old and have a BMI of 25.80. The majority of the patients are female, with a mean age of 52.29 years compared to 49.43 years for males.

• Age and BMI show a positive correlation, indicating that older patients tend to have higher BMI.

• Exercise frequency is positively correlated with HDL cholesterol, suggesting that regular exercise can help improve cholesterol levels.

• Patients with high blood sugar fasting levels are more likely to have high cholesterol levels.

• Smoking status is a significant risk factor for various health conditions, including cardiovascular diseases and respiratory problems.

• Individuals with insufficient sleep duration (less than 6 hours) have a higher risk of developing chronic diseases such as obesity, diabetes, and heart disease.
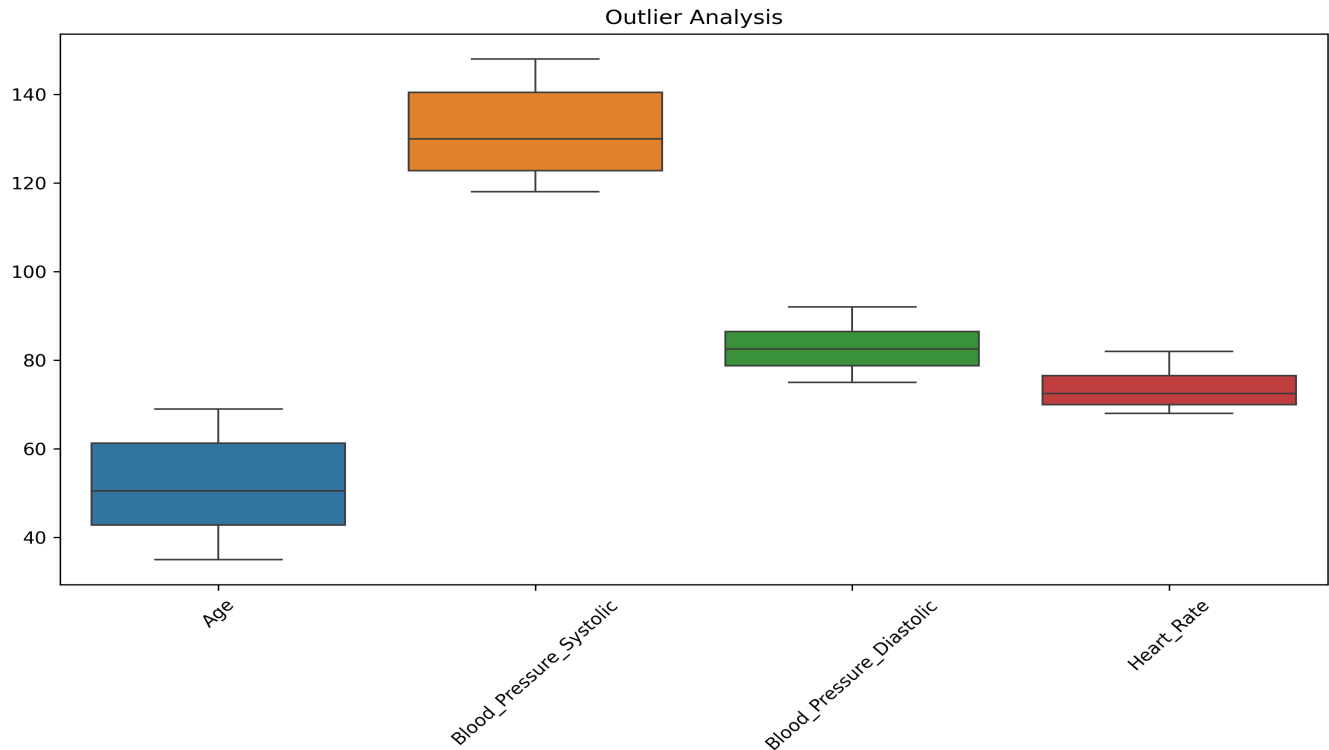
Data Visualizations

Feature Distributions

Correlation Analysis
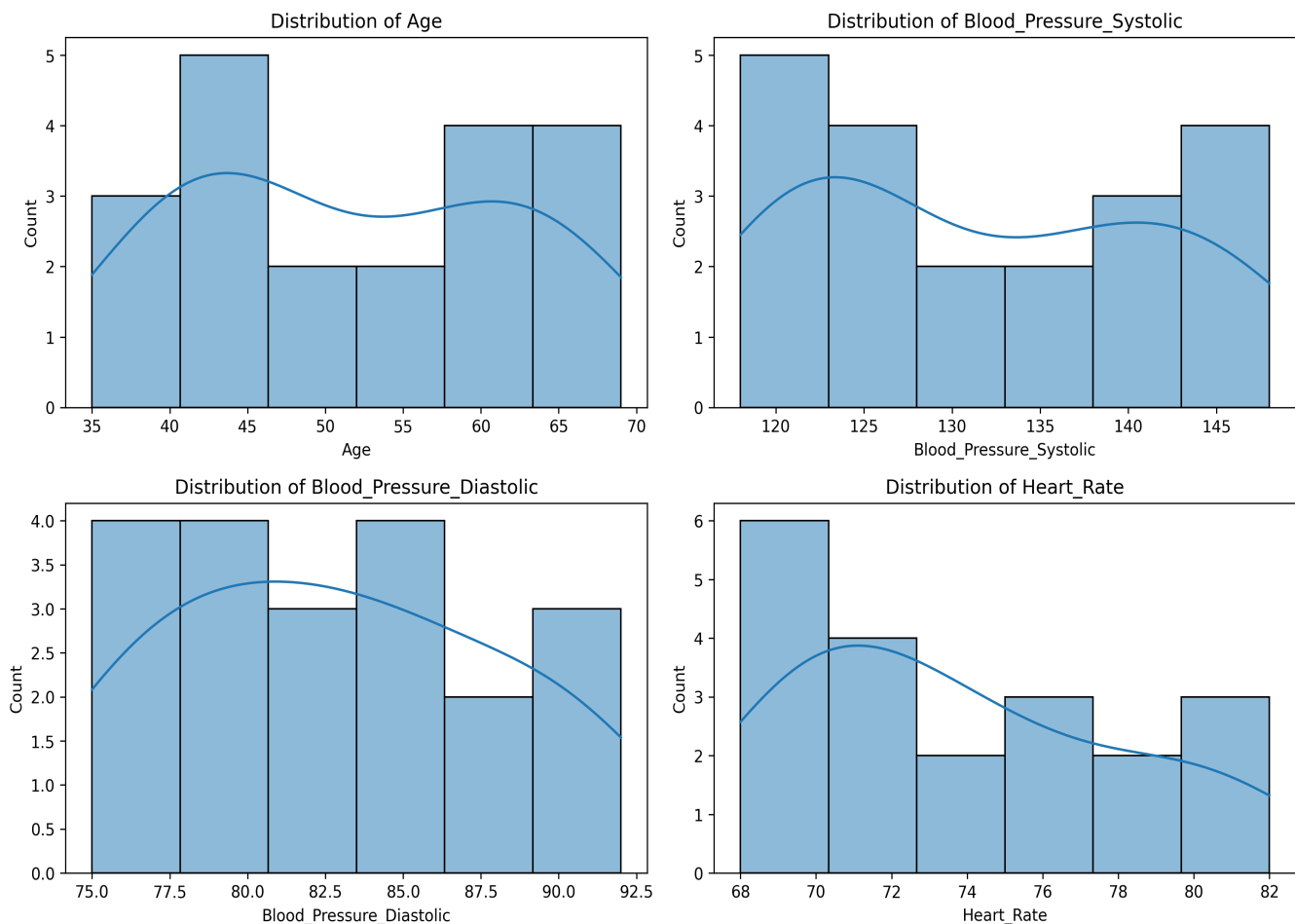
Feature Correlation Analysis
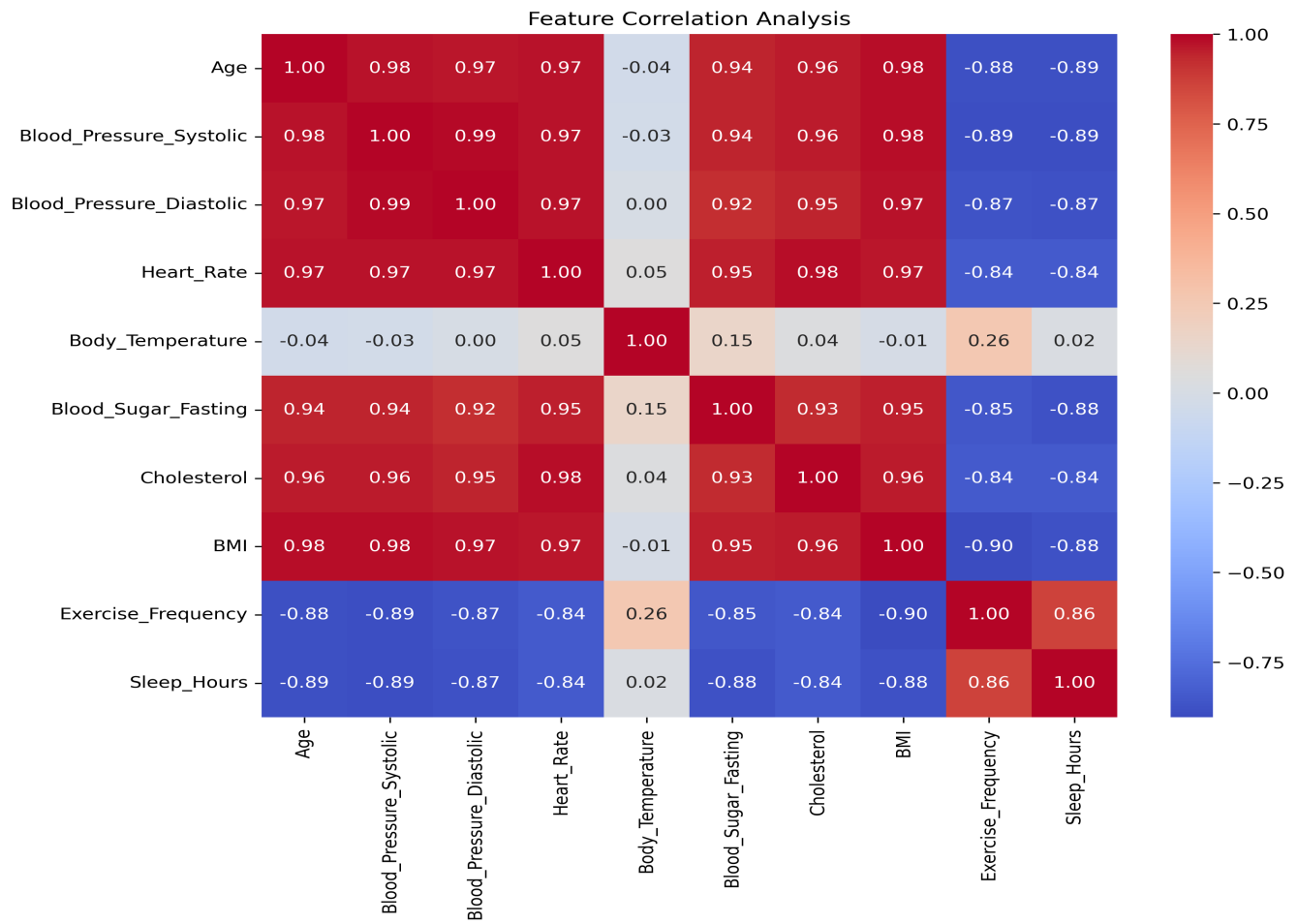
Outlier Analysis
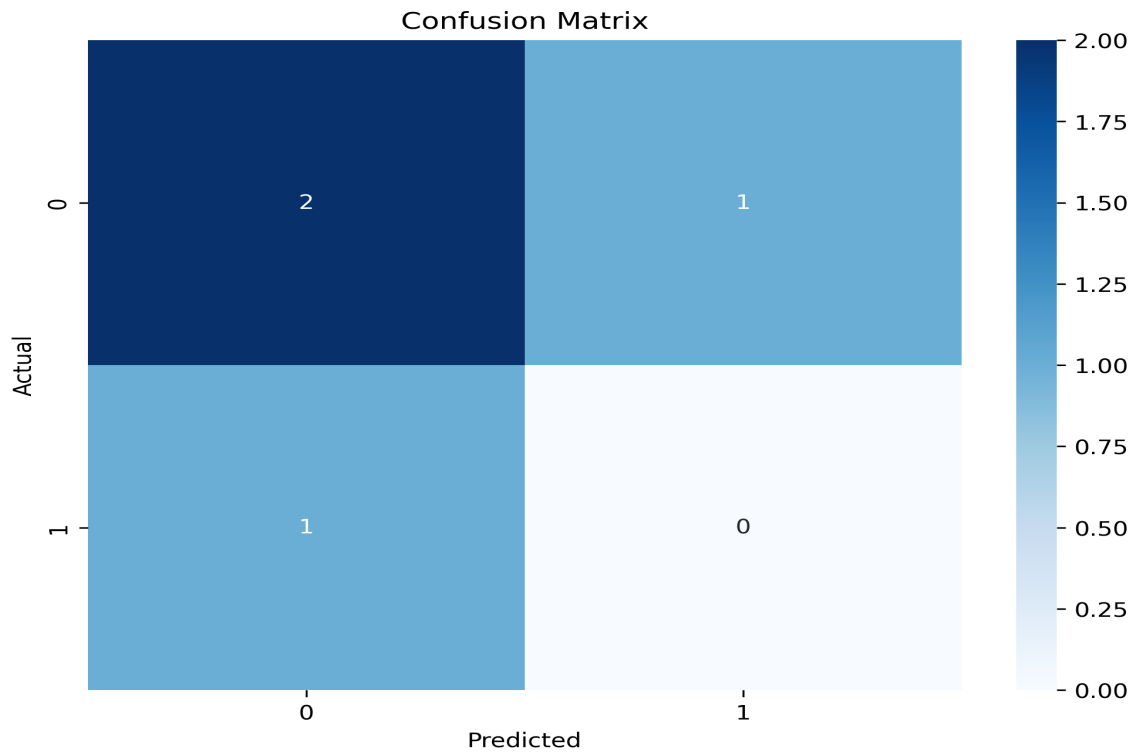
Outlier Analysis

Prediction Analysis

Model Accuracy: 50.00%

Classification Report

precision recall f1-score support 0 0.67 0.67 0.67 3 1 0.00 0.00 0.00 1 accuracy 0.50 4 macro avg 0.33 0.33 0.33 4 weighted avg 0.50 0.50 0.50 4

Confusion Matrix

Confusion Matrix

Recommendations

• Maintain a healthy weight through a balanced diet and regular exercise.

• Engage in regular physical activity to improve cardiovascular health and manage weight.

• Quit smoking to reduce the risk of various health complications.

• Get adequate sleep to promote overall well-being and prevent chronic diseases.

• Undergo regular medical check-ups to monitor health status and identify potential risk factors early on.