Project Documentation

Heart and Health Analysis Report

1. Project Overview

This project analyzes a healthcare dataset of 6,000 patient records to identify key health risk factors related to heart disease, hypertension, BMI, cholesterol, smoking patterns, blood pressure, and age. The analysis was performed using Power BI across two dashboard pages.

2. Tools Used

- Microsoft Excel (for Initial Cleaning)

- Power BI (Data Modeling ,DAX &Visualization)

3. Dataset

- Source:mailto:https://www.kaggle.com/datasets/arjunnsharma/patient-dataset-for-clustering-raw-data?

- Data contains: The dataset contains key patient health indicators including age, gender, BMI, blood pressure, hypertension status, smoking status, cholesterol level, and heart disease condition.

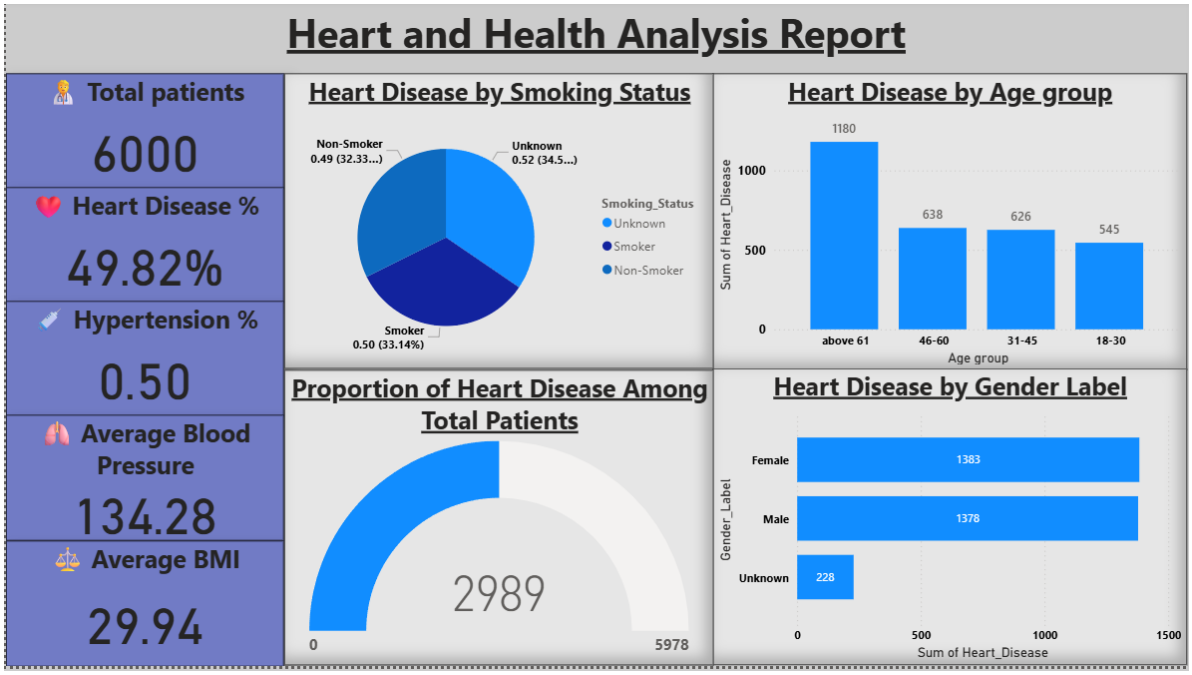
4. Steps Followed

- Performed data cleaning and handled missing values.
- Standardized the Gender Label by replacing coded values (1 = Male, 0 = Female, blank = Unknown) with text categories.
- Created a new calculated column 'Cholesterol Group' by grouping cholesterol values into Heart Healthy, At Risk, and Dangerous.
- Created age groups and normalized categorical fields.
- Built data model and DAX measures in Power BI.
- Designed two interactive dashboard pages for analysis.

5. **Dashboard Summary**

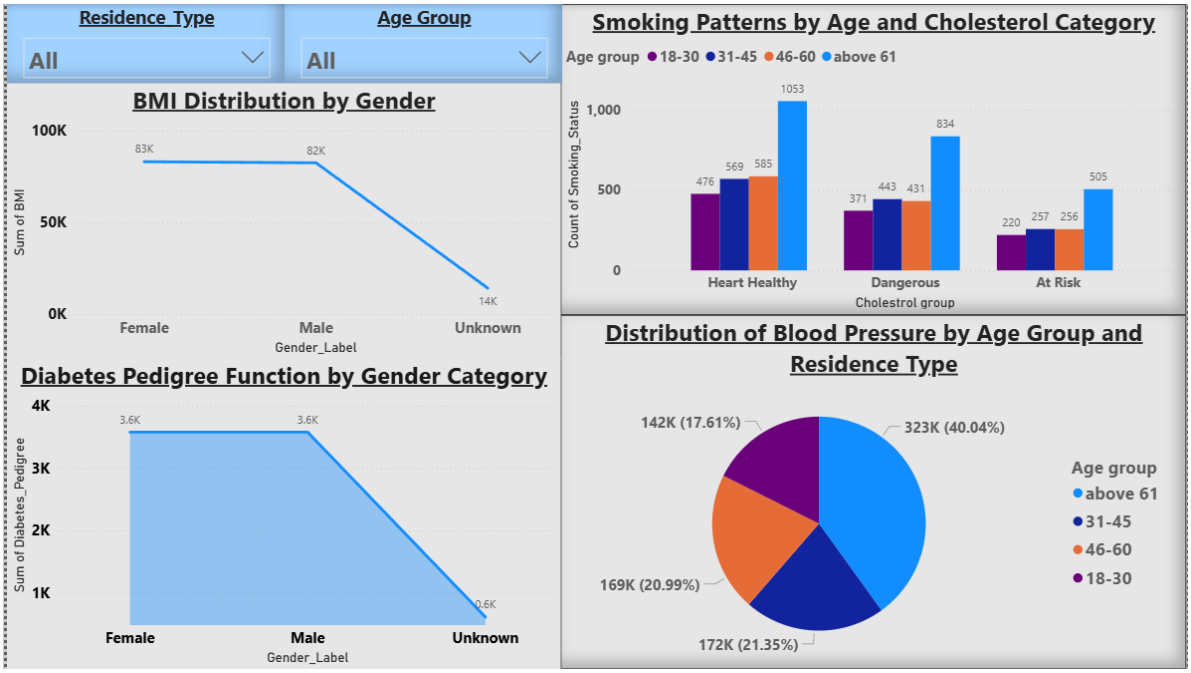
Page 1: Heart Health Overview

This page highlights overall heart disease prevalence, hypertension rate, average blood pressure, BMI, and breakdowns across smoking status, age groups, and gender.



Page 2: Risk Factors & Detailed Health Indicators

The second page provides deeper insights into BMI distribution, diabetes pedigree function, smoking patterns based on cholesterol category and age, and blood pressure distribution by age group and residence type.



6. **Key Insights**

- Approximately 50% of the population shows signs of heart disease.

- Hypertension and elevated BMI levels are common among patients.

- Risk of heart disease increases significantly with age, especially 61+.

- Smoking combined with dangerous cholesterol levels increases risk.

- Blood pressure is highest in older age groups, requiring priority attention.

- Gender distribution became clearer after converting coded gender labels.

7. **Files Included**

- patient_dataset– Power BI dashboard

8. **How to Use**

Open patient_dataset in Power Bi Desktop to explore the visuals and to shows cleaned data.