Healthcare Patient Analytics

Data-driven insights into Diabetes, Blood Pressure, BMI, and Age Groups for evidence-based healthcare decision making

Research Objectives

Health Risk Patterns

Analyze patient health data to identify key health risk patterns and comorbidity relationships

Population Comparison

Compare diabetic vs non-diabetic populations to understand disease distribution and characteristics

Risk Factor Distribution

Study the distribution of BMI and Blood Pressure categories across patient demographics

Interactive Dashboards

Build comprehensive Tableau dashboards for interactive clinical analysis and decision support

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Dataset Overview

Data Source

File: Healthcare Data.xlsx

Sample Size: 768 patients

Features: 9 clinical variables

Comprehensive patient health records spanning multiple demographic and clinical indicators

Key Variables

- Age demographics
- Gender distribution
- Body Mass Index (BMI)
- Glucose levels
- Blood Pressure readings
- Diabetes Outcome status

Key Performance Indicators

768

Total Patients

Complete dataset for comprehensive analysis

268

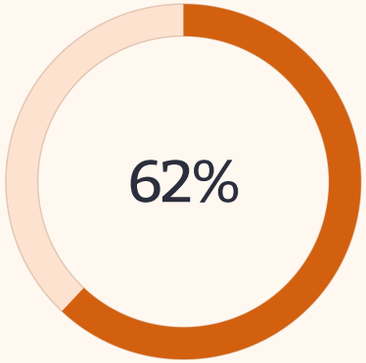
Diabetic Patients

34.9% of total population

500

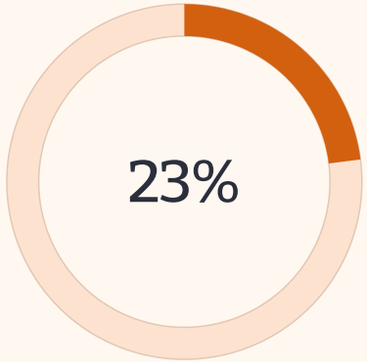
Non-Diabetic

65.1% of total population



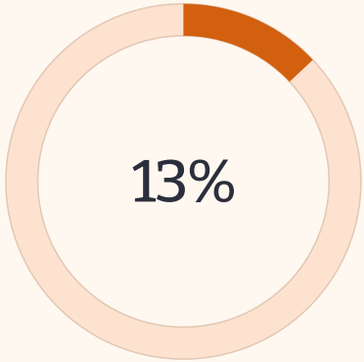
Obese Patients

Highest risk category requiring intervention



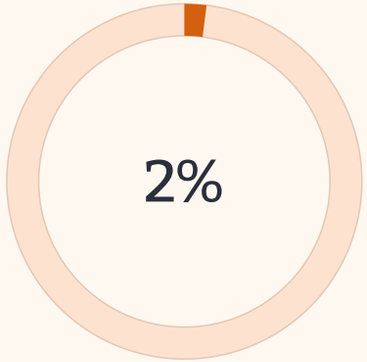
Overweight

Elevated risk for diabetes development



Healthy Weight

Optimal BMI range patients



Underweight

Small percentage requiring monitoring

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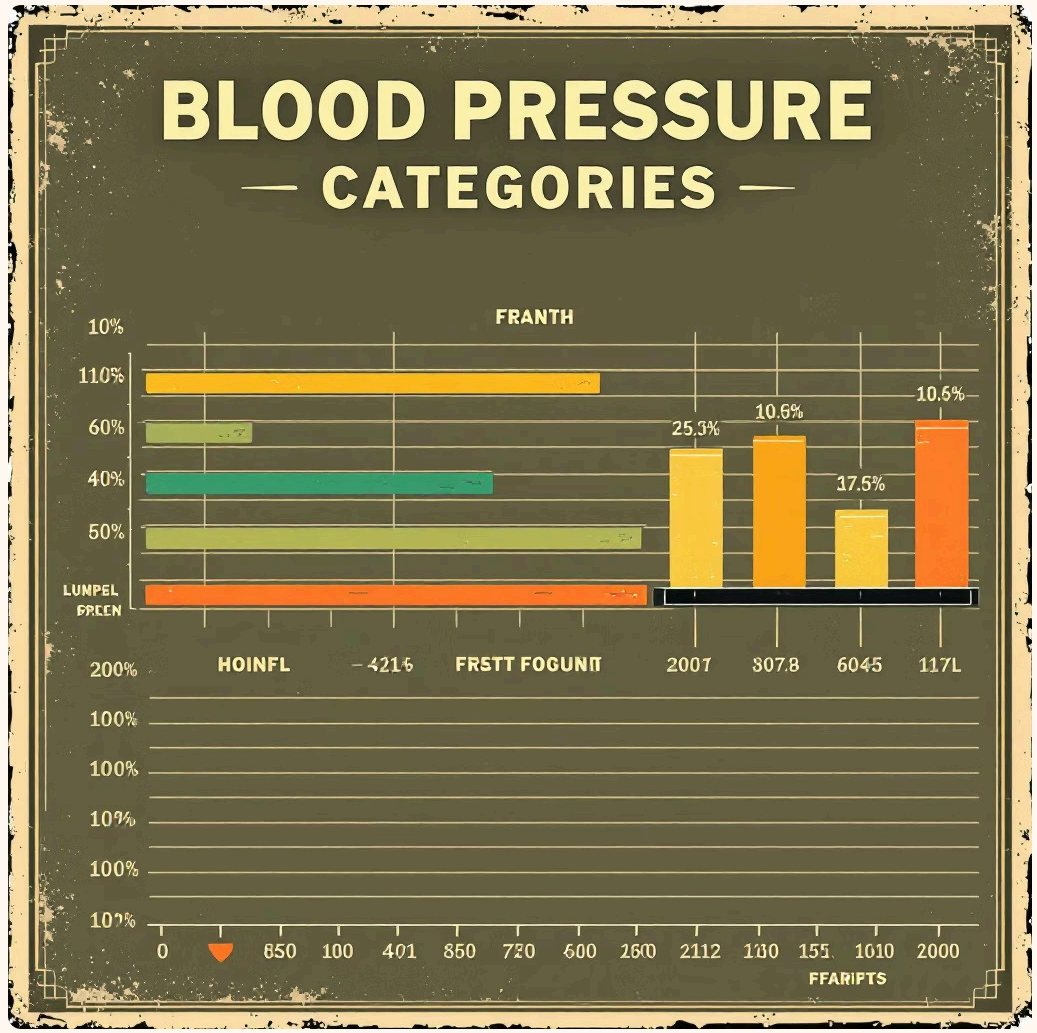
Primary Visualizations

Diabetic vs Non-Diabetic Distribution

Clear visualization of diabetes prevalence using bar chart methodology, highlighting the 34.9% diabetic rate within our patient cohort.

Blood Pressure Categories



Horizontal bar chart displaying patient distribution across blood pressure classifications: Normal, Elevated, High Stage 1, and High Stage 2.

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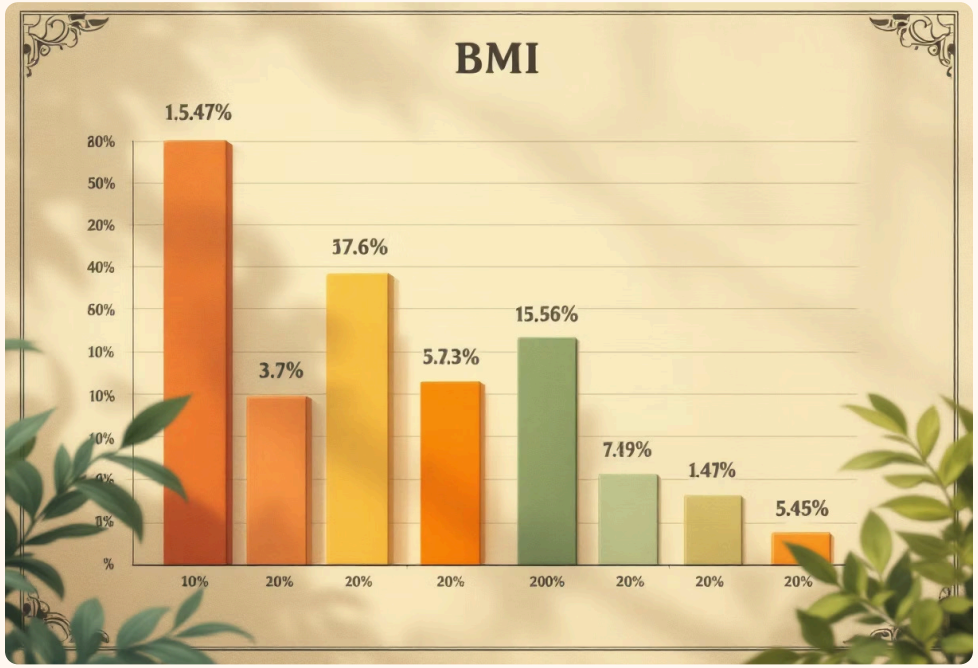
Advanced Data Visualizations

BMI Category Distribution

Comprehensive bar chart with percentage labels showing patient distribution across Underweight, Healthy, Overweight, and Obese categories



BMI Trends by Age Group

Age-stratified analysis displaying average BMI values across age cohorts (20–24, 25–29, continuing through 75+)

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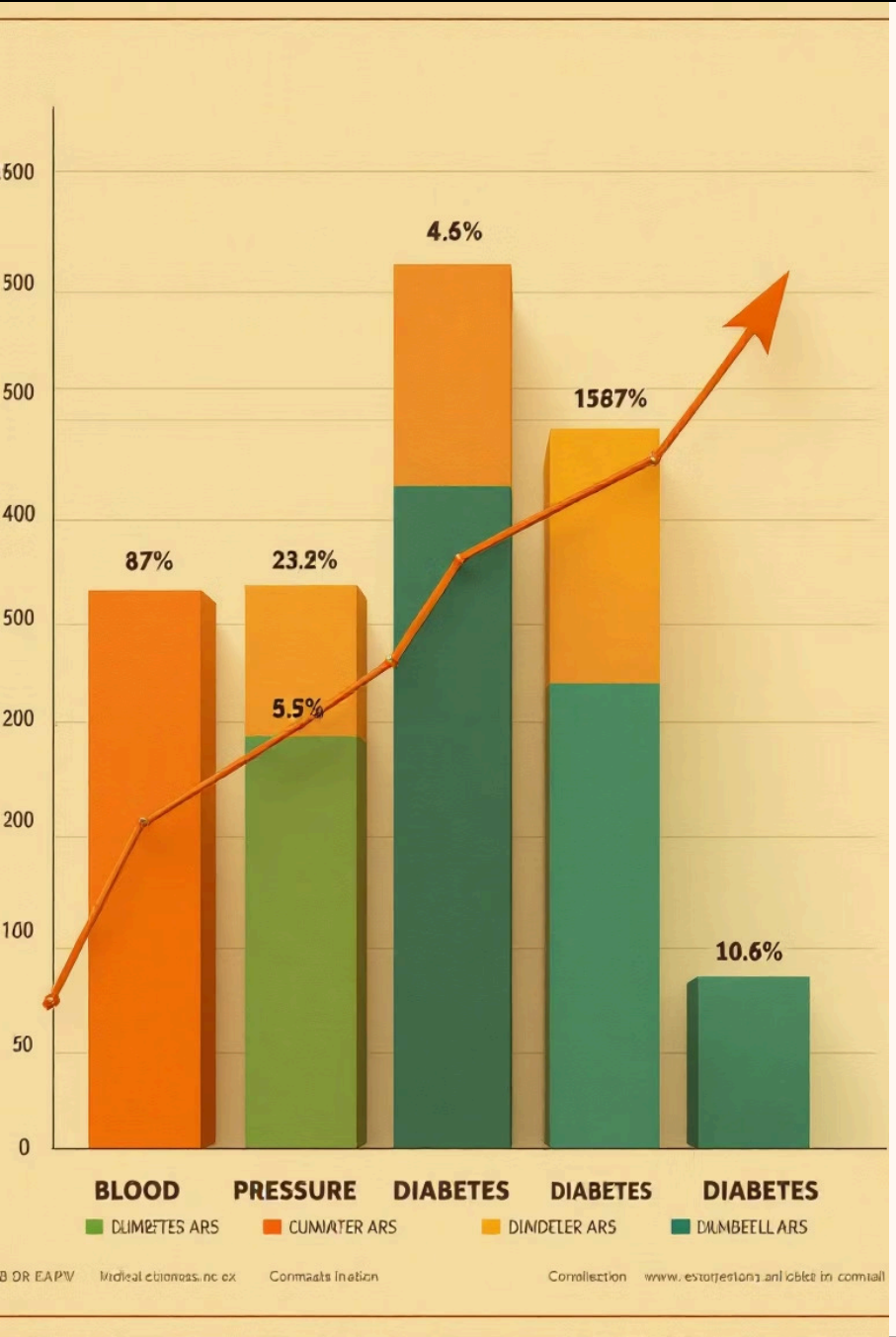

Cross-Variable Analysis

Blood Pressure × Diabetes Status

Advanced stacked bar chart visualization comparing diabetic versus non-diabetic patients within each blood pressure category. This analysis reveals critical overlaps between hypertension and diabetes, supporting integrated treatment approaches.

The visualization enables healthcare providers to identify high-risk patient segments requiring comprehensive cardiovascular and metabolic monitoring.

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Interactive Dashboard Suite

01

Diabetic vs Non-Diabetic Overview

Comprehensive population health dashboard with key metrics and trend analysis

02

BP & BMI Categories Dashboard

Interactive filtering by blood pressure and BMI classifications for targeted analysis

03

Age Group BMI Trends

Longitudinal analysis of BMI patterns across demographic age cohorts

04

BP × Diabetes Integration

Cross-tabulation dashboard revealing comorbidity patterns and risk stratification

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Critical Clinical Insights

Diabetes Prevalence & BMI Correlation

35% diabetes rate with strong obesity correlation indicates urgent need for weight management interventions in clinical practice

Age-Related BMI Escalation

Age groups 45+ demonstrate significantly higher average BMI values, suggesting targeted screening protocols for older adults

Hypertension-Diabetes Comorbidity

Significant overlap between high blood pressure and diabetic patients supports integrated cardiovascular-metabolic care models

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Strategic Recommendations

1

Preventive Care Targeting

Implement comprehensive screening and intervention programs specifically for overweight and obese patient populations to prevent diabetes progression

2

Enhanced Elderly Monitoring

Establish intensive monitoring protocols for patients 45+ focusing on diabetes risk assessment and blood pressure management

3

Clinical Decision Support

Deploy Tableau dashboards to enable clinicians and analysts to perform real-time risk factor analysis and patient stratification