HEART DISEASE

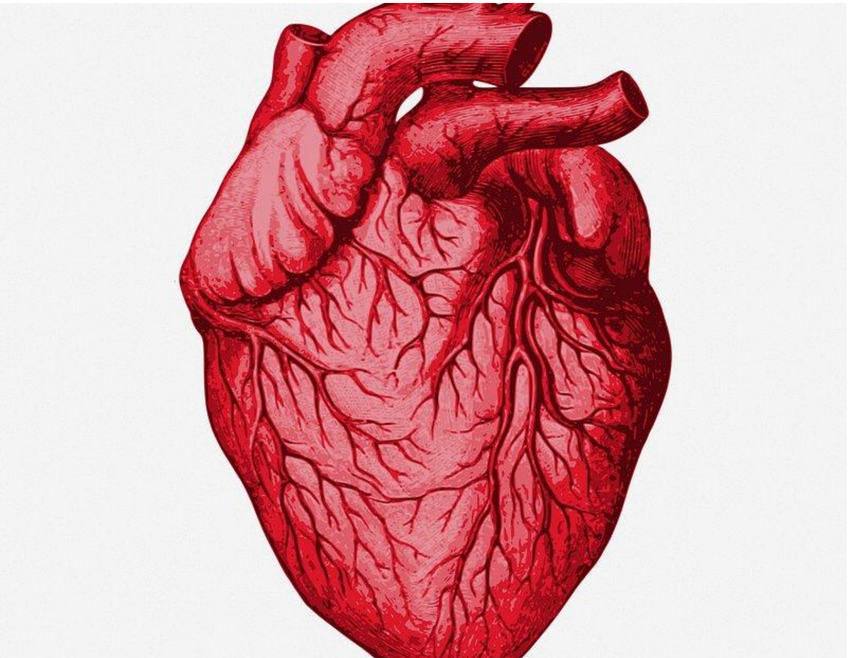
Key Indicators

Key Indicators of Heart Disease

Overview

About Dataset

Personal Key Indicators of Heart Disease covers indicators of heart disease as leading causes of death for people of most races in the United States (CDC, 2023). The most recent dataset (as of February 15, 2022) includes data from 2020. It also includes 1 of 3 variables related to heart disease, high blood pressure, high cholesterol, and smoking. Other variables also available, such as diabetic status, obesity (high BMI), not getting enough physical activity or drinking too much alcohol. The dataset contains 401,958 rows and 279 columns, collected through annual telephone surveys in the US. But, the dataset, now available on Kaggle and cleaned by Kamil Pytlak, has undergone some modifications from the original CDC dataset. It contains 319,795 records and 18 variables (further, will be 19 by adding BMIClass column), reducing the number of columns from the original dataset. This dataset can be used for exploratory data analysis and machine learning applications, particularly in predicting heart disease using classifier models.



Overview

A Glimpse of The Dataset

Overview of the Dataset

```
df.head()
```

	HeartDisease	BMI	Smoking	AlcoholDrinking	Stroke	PhysicalHealth	MentalHealth	DiffWalking	Sex	AgeCategory	Race	Diabetic	PhysicalActivity	GenHealth	SleepTime	Asthma	KidneyDisease	SkinCancer
0	No	16.60	Yes	No	No	3.0	30.0	No	Female	55-59	White	Yes	Yes	Very good	5.0	Yes	No	Yes
1	No	20.34	No	No	Yes	0.0	0.0	No	Female	80 or older	White	No	Yes	Very good	7.0	No	No	No
2	No	26.58	Yes	No	No	20.0	30.0	No	Male	65-69	White	Yes	Yes	Fair	8.0	Yes	No	No
3	No	24.21	No	No	No	0.0	0.0	No	Female	75-79	White	No	No	Good	6.0	No	No	Yes
4	No	23.71	No	No	No	28.0	0.0	Yes	Female	40-44	White	No	Yes	Very good	8.0	No	No	No

```
df.describe(include='object').T
```

	count	unique	top	freq
HeartDisease	319795	2	No	292422
Smoking	319795	2	No	187887
AlcoholDrinking	319795	2	No	298018
Stroke	319795	2	No	307726
DiffWalking	319795	2	No	275385
Sex	319795	2	Female	167805
AgeCategory	319795	13	65-69	34151
Race	319795	6	White	245212
Diabetic	319795	4	No	269653
PhysicalActivity	319795	2	Yes	247957
GenHealth	319795	5	Very good	113858
Asthma	319795	2	No	276923
KidneyDisease	319795	2	No	308016
SkinCancer	319795	2	No	289976
BMIClass	319795	5	Obesse I	112559

Using **df.head()** and **df.describe(include='object').T** syntaxes, we can see some example of the records in the dataset. This dataset has 19 columns and 319795 rows, with 9 boolean values, 6 strings, and 4 decimals, and we are so lucky because there are no null values here.

Key Indicators of Heart Disease

Objectives

Users

This analytical dashboard can be used by analyst to support government/public health officials' decision making

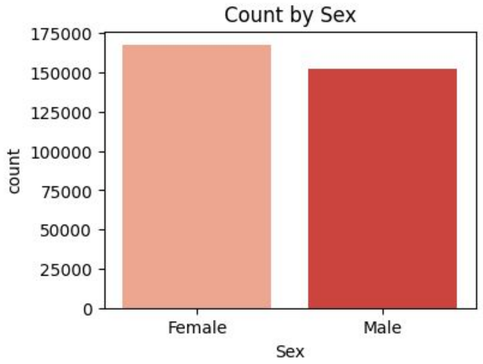
Purpose

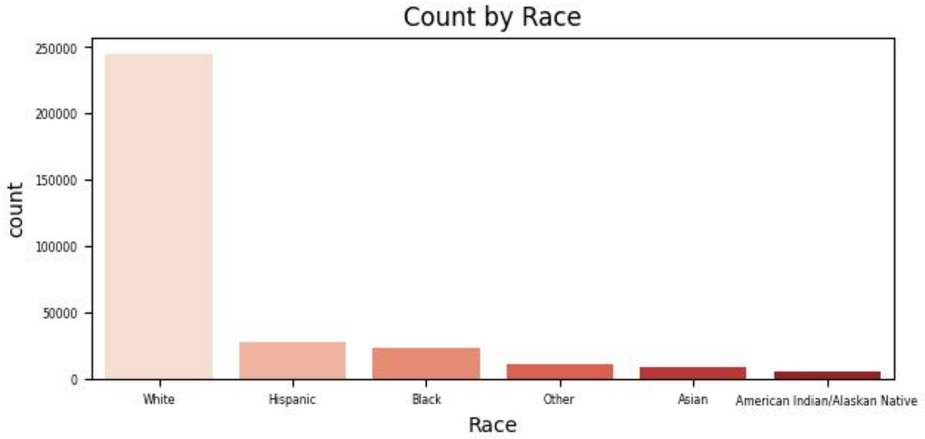
To provide a descriptive analysis about key indicators of heart disease to support government or public health officials' decision making

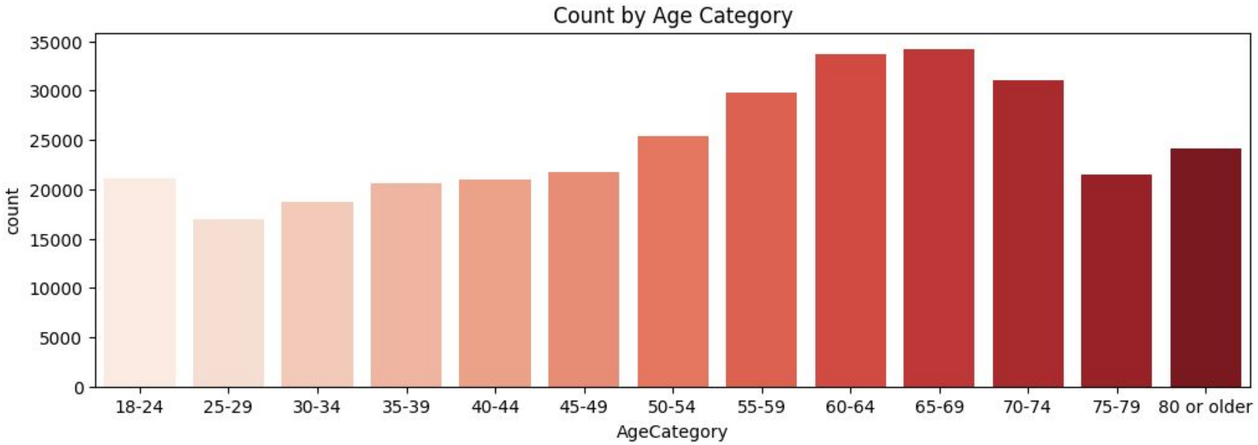
Decision Making

Setting of public health policy

Respondent Demographic





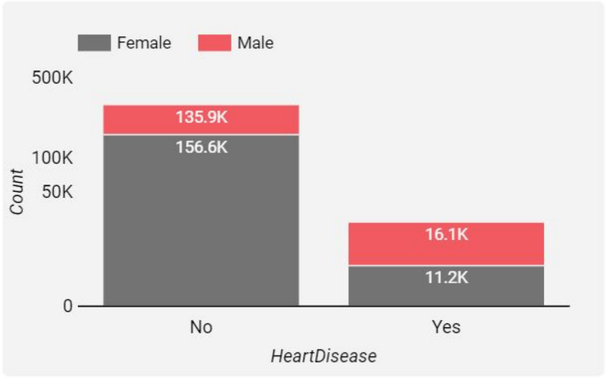


Insights

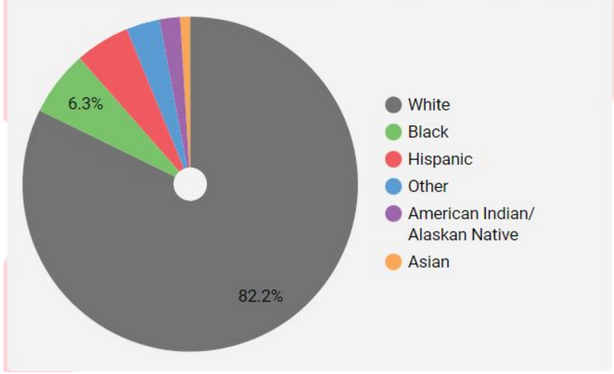
- Most people were Female, but the gaps looked not too far
- Respondents were dominated by White race
- Most people were aged 60-74 years old.

Respondent with Heart Disease Demographic

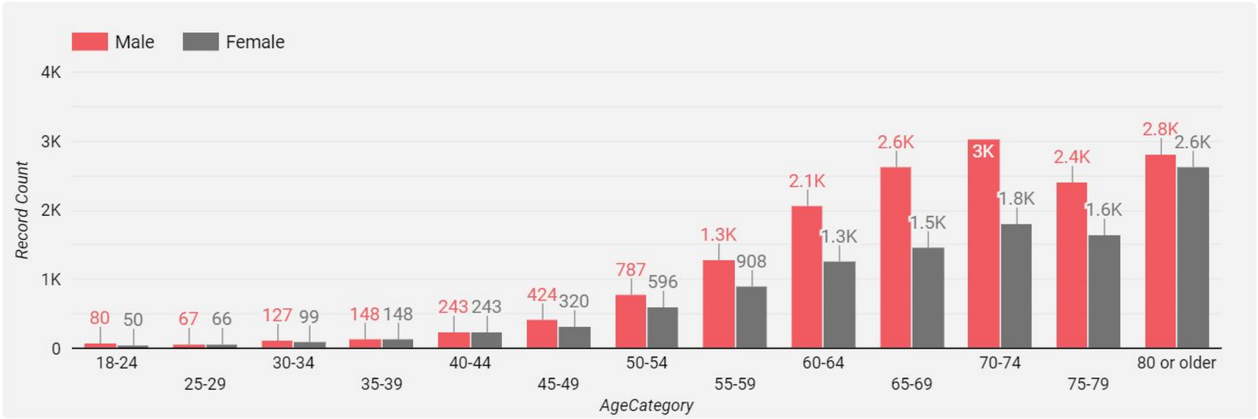
Distribution of Heart Disease Status by Sex



Having Heart Disease by Races



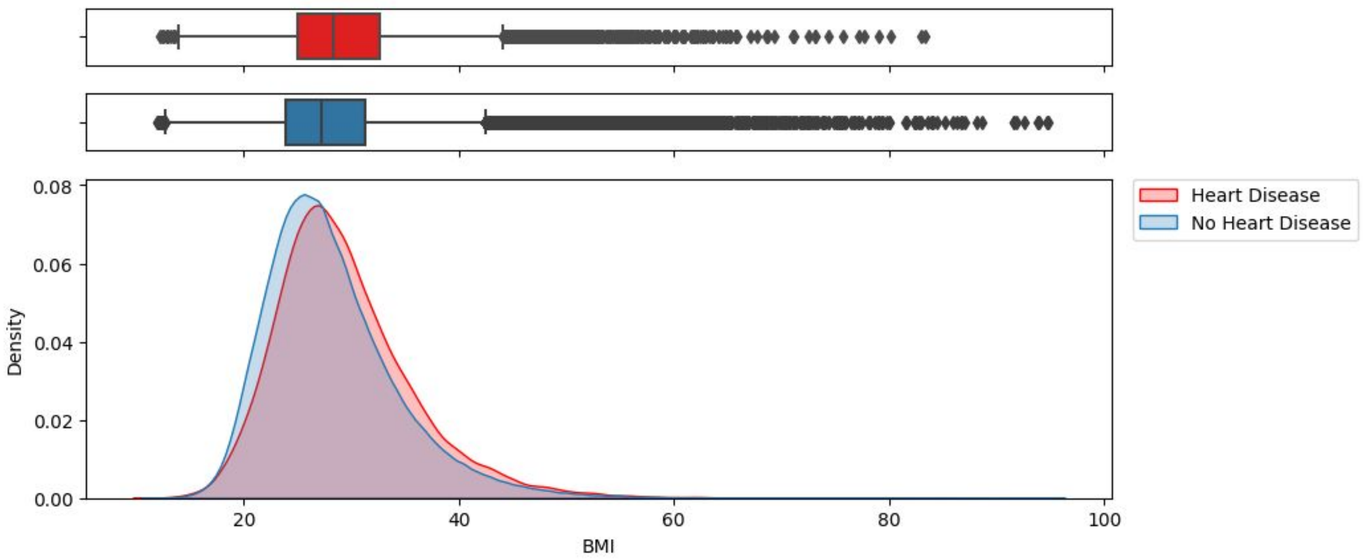
Having Heart Disease by Age Group

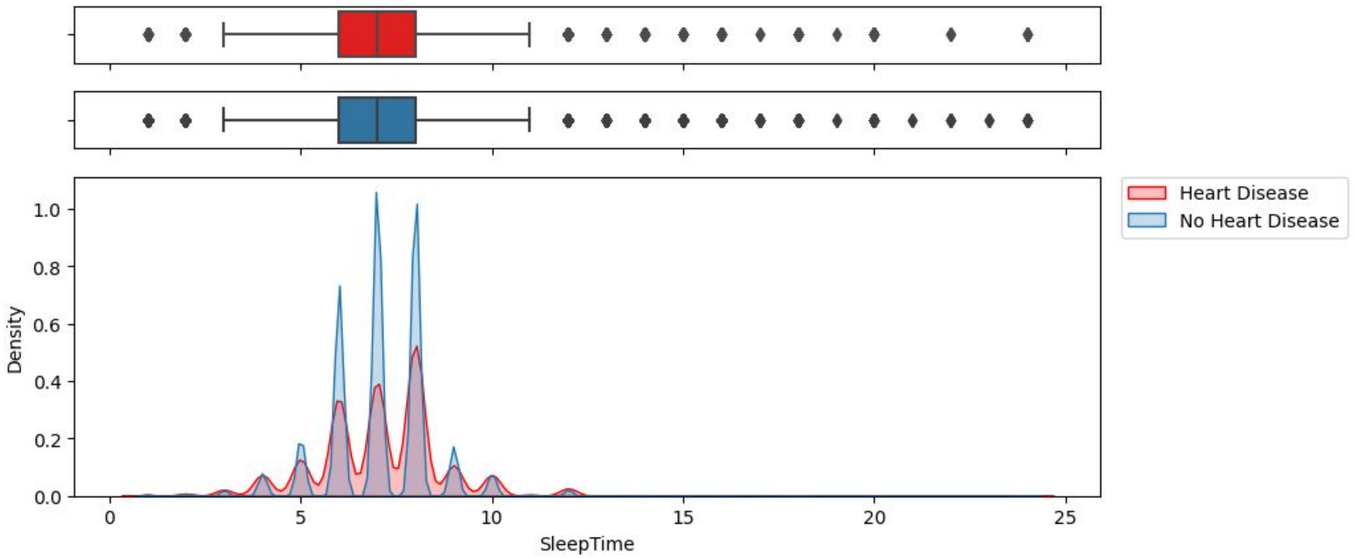


Insights

- Most patients were Males, from White race, and aged '65-74' and '80 or older' on Male and above 70 on Female.

Analysis on Quantitative Data

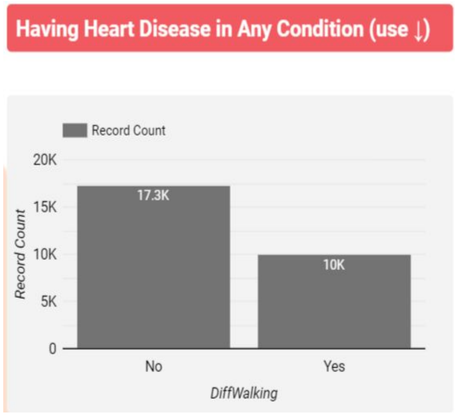


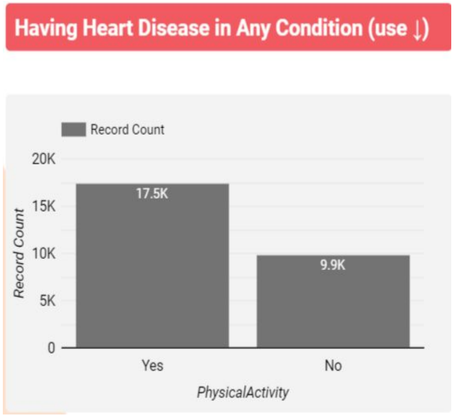


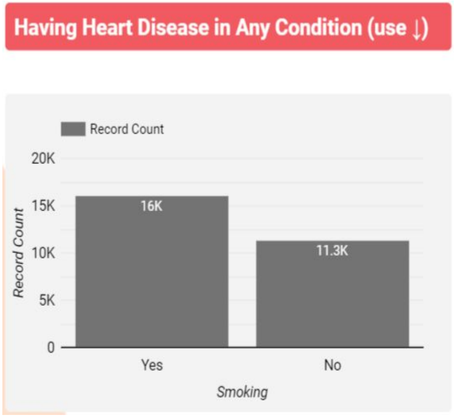
Insights

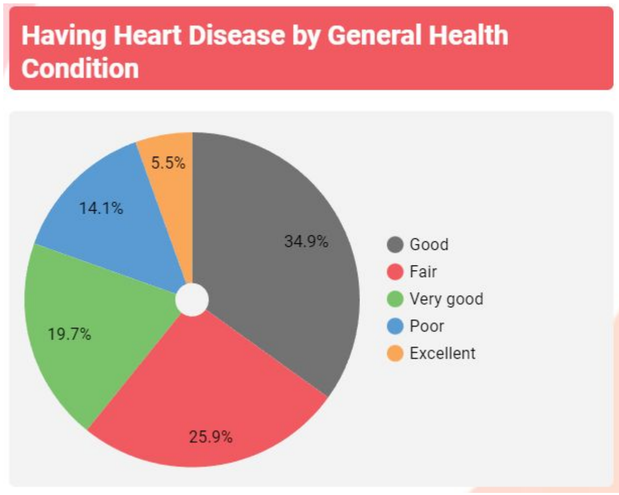
- Our focus is not to figuring out those outliers, but if we see the the distribution of heart disease status by BMI, we can conclude that **people with Heart Disease are found to have a higher BMI than those who didn't**
- On the distribution of heart disease status by sleep time, both groups has the same medians

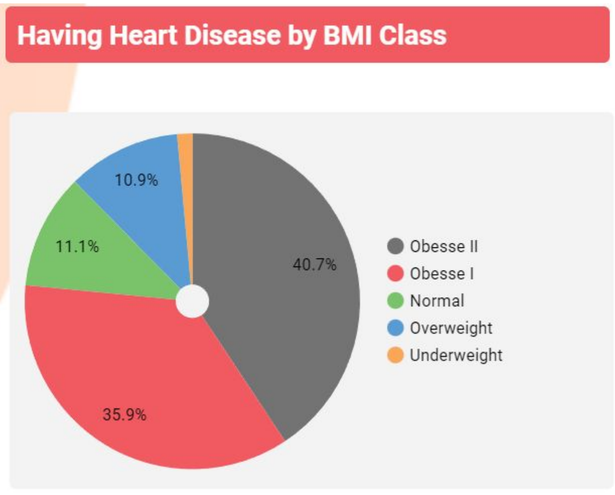
Analysis on Categorical Data











Insights

- Among those key indicators, 36% patients experiencing difficulties to walk/climbing stairs and had no physical activities, then 41% were smoking
- Most patients just feeling mediocre about his health condition and more than 75% were Obesse

Recommendation

Focus on Prevention and Early Detection

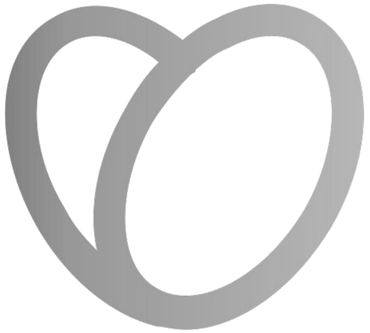
Implement comprehensive preventive measures to promote heart health in the elderly population. Encourage regular health check-ups and screenings to detect heart disease risk factors early on. Encouraging healthier lifestyle choices, such as a balanced diet, regular physical activity, and smoking cessation, can significantly reduce the risk of heart disease.

Support Healthy Aging

Invest in programs that support healthy aging and promote active lifestyles for seniors. These programs can include exercise classes, social activities, and mental health support, all of which contribute to overall well-being and heart health.

Foster Supportive Social Network

Gather people with same condition, will increase their awareness if they are not alone suffering. Social connections can have positive effects on mental health and may contribute to better heart health outcomes.



Thank you.