LUNG CANCER MORTALITY ANALYSIS

PROJECT PRESENTATION

AGENDA

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PROJECT RECAP

The project **“Lung cancer Mortality Analysis”** aims to create an interactive Power BI dashboard to visualize Lung Cancer Mortality, focusing on key variables such as age, gender, country, diagnosis details, risk factors, treatment information, and survival outcomes

STAKEHOLDERS:

- Medical researchers,
- Epidemiologists, and
- Healthcare providers

aiming to improve cancer treatment and patient care.

PROBLEM

NUMBER OF RECORDS IS 10.5 L
deals with massive amounts of unstructured data.

- Analyze the distribution of lung cancer mortality across different age groups and genders.
- How do family history and smoking habits are associated with lung cancer mortality?
- Investigate the correlation between the other diseases associated to the occurrence of heart disease.
- Visualize the different cancer stages at diagnosis with the survival?
- Analyze the different types of treatments administered to patients.
- Visualize the patients from different countries and their survival.

DATASOURCE

- This dataset is a comprehensive collection of patient information, specifically focused on individuals diagnosed with cancer.
- It is designed to facilitate the analysis of various factors that may influence cancer prognosis and treatment outcomes.
- The dataset includes a range of demographic, medical, and treatment-related variables, capturing essential details about each patient's condition and history.

The Dataset is taken from kaggle.com

- Dataset Name: Lung cancer mortality dataset V2
- Author: MasterDatasa

PROCESS

DATA UNDERSTANDING

DATA CLEANING

DATA MODELLING

DATA ANALYSIS

UNCOVER INSIGHTS

INSIGHTS

Distribution of lung cancer mortality across different age groups and genders.

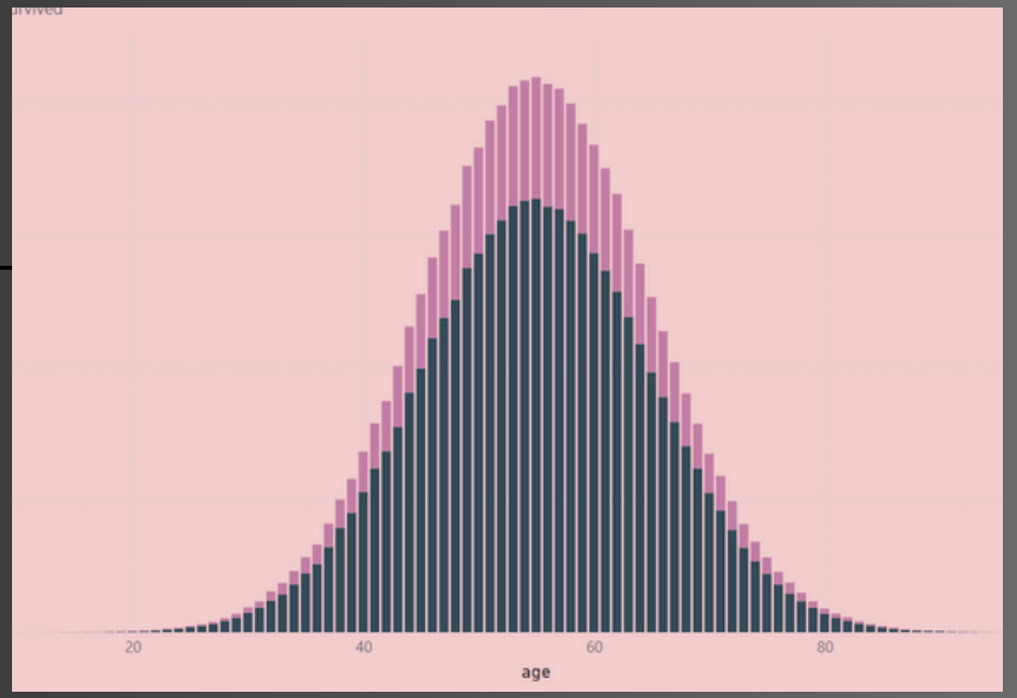
AGE GROUP:

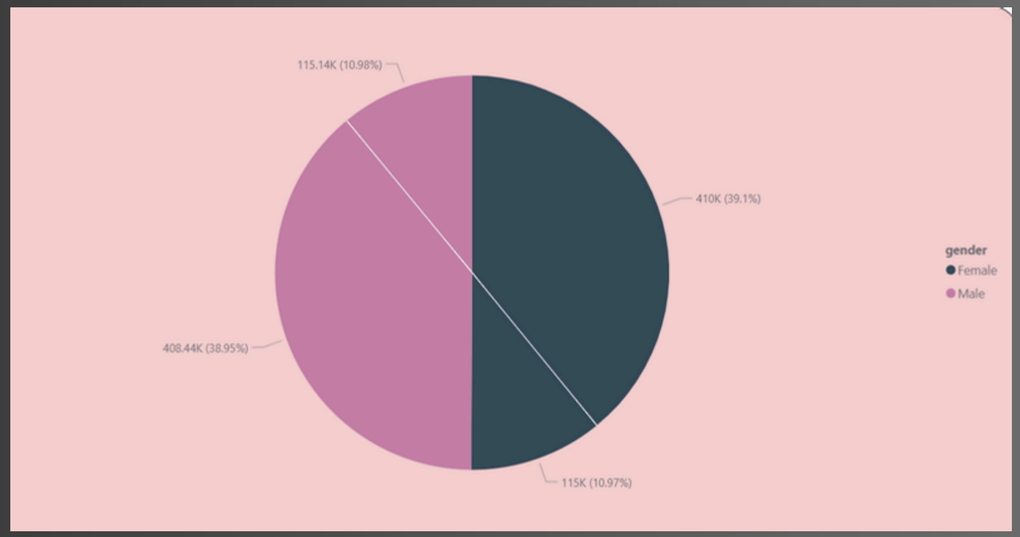
Most affected- 55
Dead:9170
Survived:32778

GENDER:

Most affected- FEMALE
Dead: 410002(39.1%)
Survived: 114995(10.97%)

Most patients are between the ages of 40 and 70, with a higher count of deceased in this age range.
Younger and older age groups show different survival trends.





INSIGHTS

Family history and smoking habits are association with lung cancer mortality

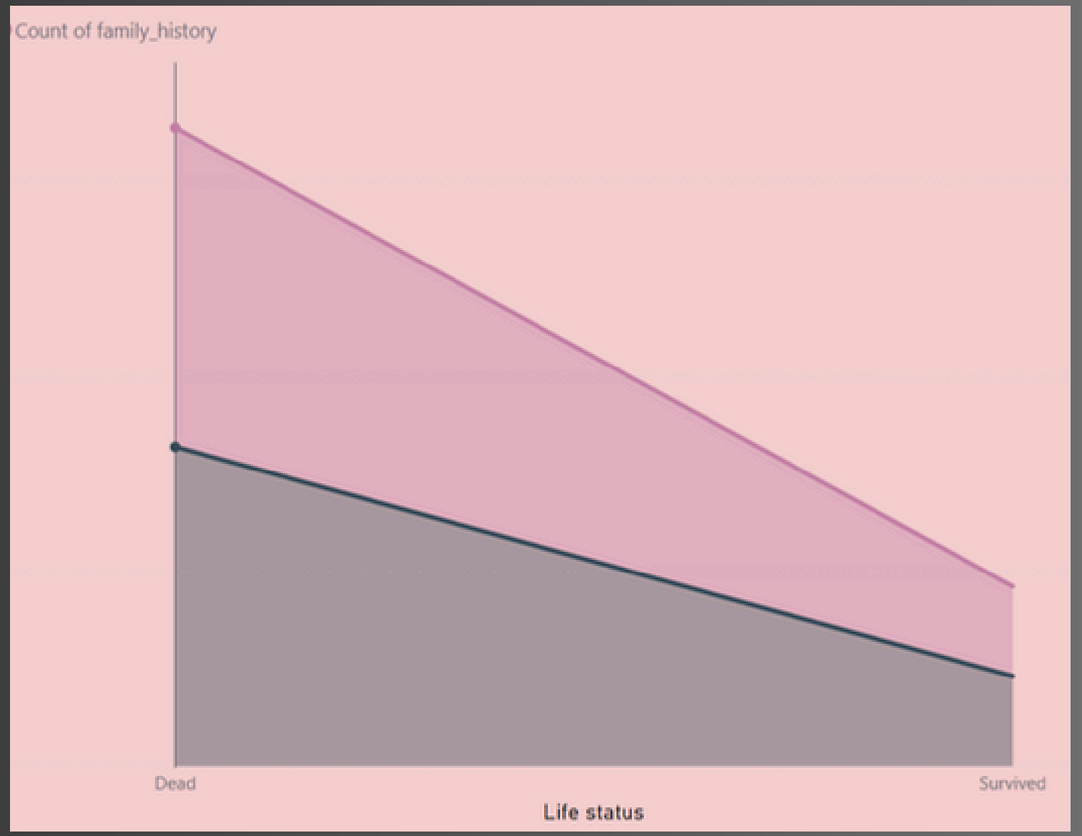
FAMILY HISTORY:

Dead: 818443
Survived: 230132

SMOKING HABIT:

Dead: 818443
Survived: 230132

Patients with a family history and smoking status show a higher count among the deceased, indicating these factors as potential risk contributors.



INSIGHTS

correlation between the other diseases associated to the occurrence of heart disease.

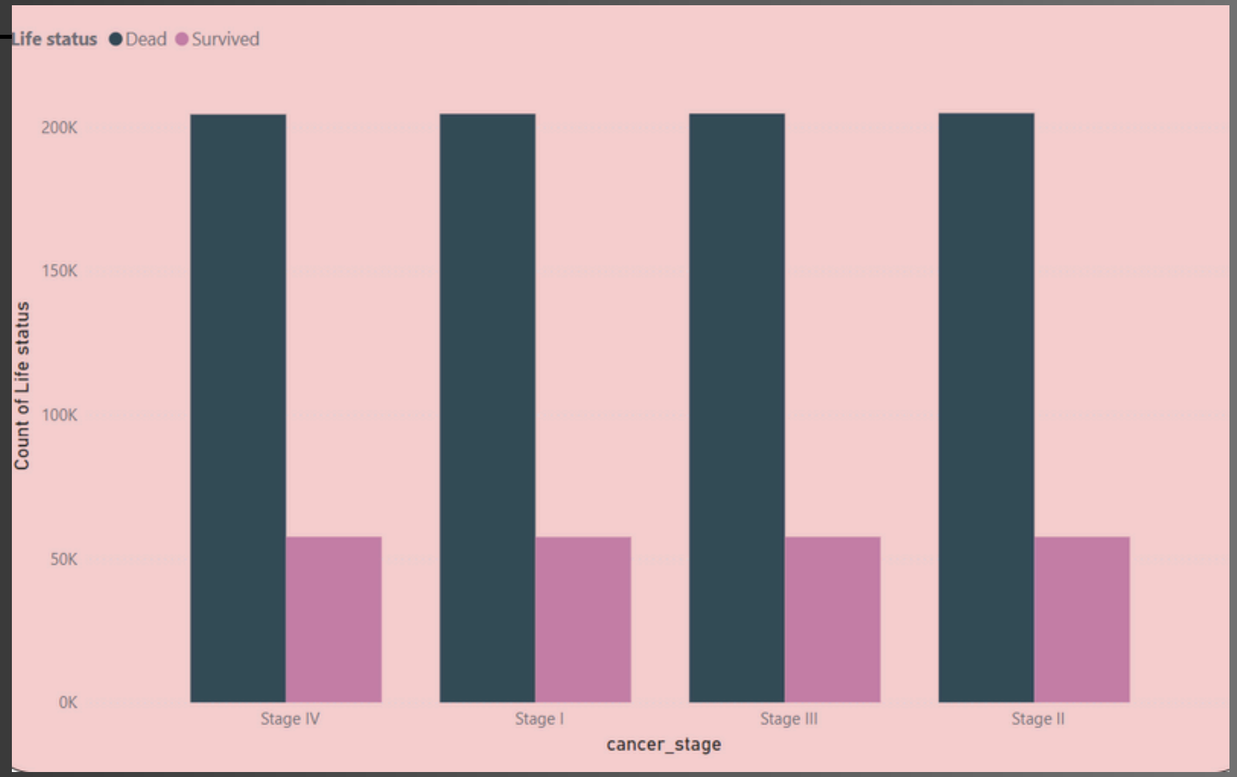
The presence of other diseases can impact the survival rate of lung cancer patients.
Co-morbid conditions might exacerbate the severity of lung cancer or complicate treatment options, leading to higher mortality.

INSIGHTS

different cancer stages at diagnosis with the survival

STAGE 2
STAGE 1
STAGE 3
STAGE 4

Survival rates improve as the cancer stage decreases:
Stage IV has the lowest survival rate.
Stage II has the highest survival rate among the stages shown.



INSIGHTS

Different types of treatments administered to patient

Effective treatment order:

- **Surgery**
- **Chemotheraphy**
- **Raditaion**
- **Combined**

Chemotherapy and radiation show a higher mortality rate compared to surgery and combined treatments.

Combined treatments (likely multiple types of therapies used together) appear to have a higher survival rate compared to single treatments.

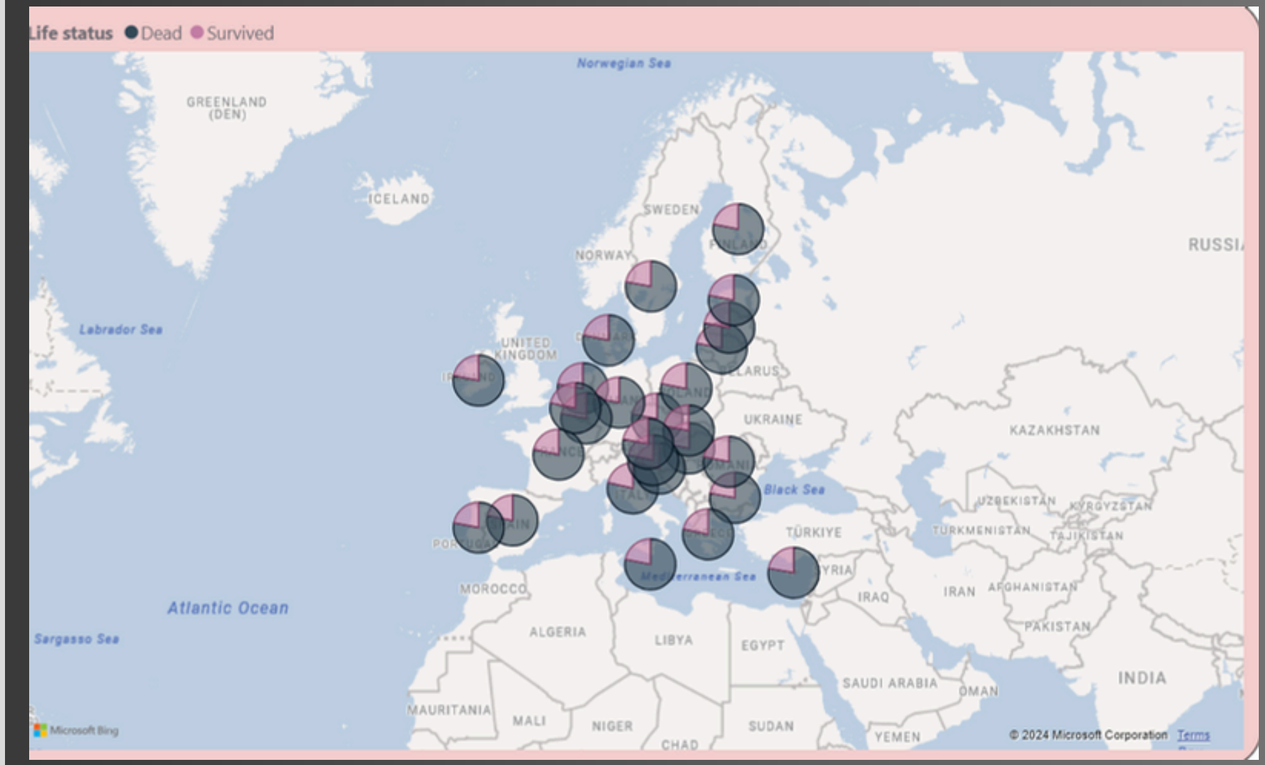
INSIGHTS

Visualize the patients from different countries and their survival.

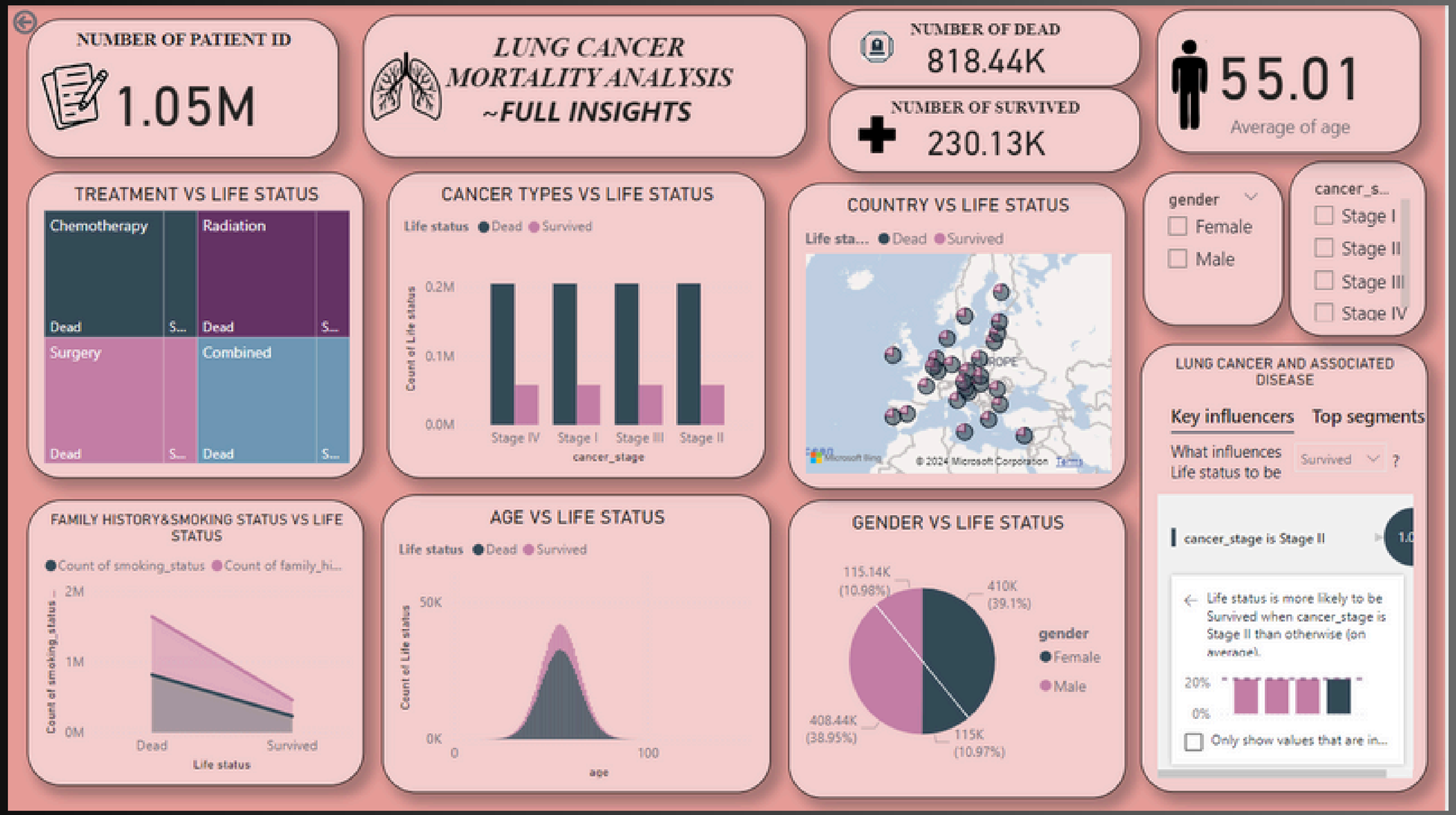
TOP 5 COUNTRIES AFFECTED:

1.Czech Republic
2.Poland
3.Denmark
4.Hungary
5.Cyprus

The map indicates various countries with data points showing distribution and status (dead or survived). Europe has significant representation, suggesting a potentially higher dataset concentration or better reporting.



DASHBOARD


NUMBER OF PATIENT ID
1.05M
LUNG CANCER MORTALITY ANALYSIS ~FULL INSIGHTS
NUMBER OF DEAD
818.44K
NUMBER OF SURVIVED
230.13K
55.01
Average of age
TREATMENT VS LIFE STATUS
Chemotherapy
Radiation
Surgery
Combined
Dead
CANCER TYPES VS LIFE STATUS
Life status Dead Survived
Count of Life status
0.2M
0.1M
0.0M
Stage IV
Stage I
Stage III
Stage II
cancer_stage
COUNTRY VS LIFE STATUS
Life sta... Dead Survived
EUROPE
© 2024 Microsoft Corporation
gender
Female
Male
cancer_s...
Stage I
Stage II
Stage III
Stage IV
LUNG CANCER AND ASSOCIATED DISEASE
Key influencers
Top segments
What influences Life status to be
Survived
cancer_stage is Stage II
Life status is more likely to be Survived when cancer_stage is Stage II than otherwise (on average).
20%
0%
Only show values that are in...
FAMILY HISTORY&SMOKING STATUS VS LIFE STATUS
Count of smoking_status
Count of family_hi...
Count of smoking_status
2M
1M
0M
Dead
Survived
Life status
AGE VS LIFE STATUS
Life status Dead Survived
Count of Life status
50K
0K
0
100
age
GENDER VS LIFE STATUS
115.14K (10.98%)
410K (39.1%)
408.44K (38.95%)
115K (10.97%)
gender
Female
Male

CONCLUSION

- Through these visualizations, we can have uncovered patterns and correlations that highlight the

importance of early detection, targeted interventions, and equitable access to quality care in
reducing lung cancer mortality rates.

- By identifying high-risk groups and evaluating treatment

effectiveness, we pave the way for informed decision-making in clinical practice and public
health policy