

Cancer profiles

Demographics and risk analysis



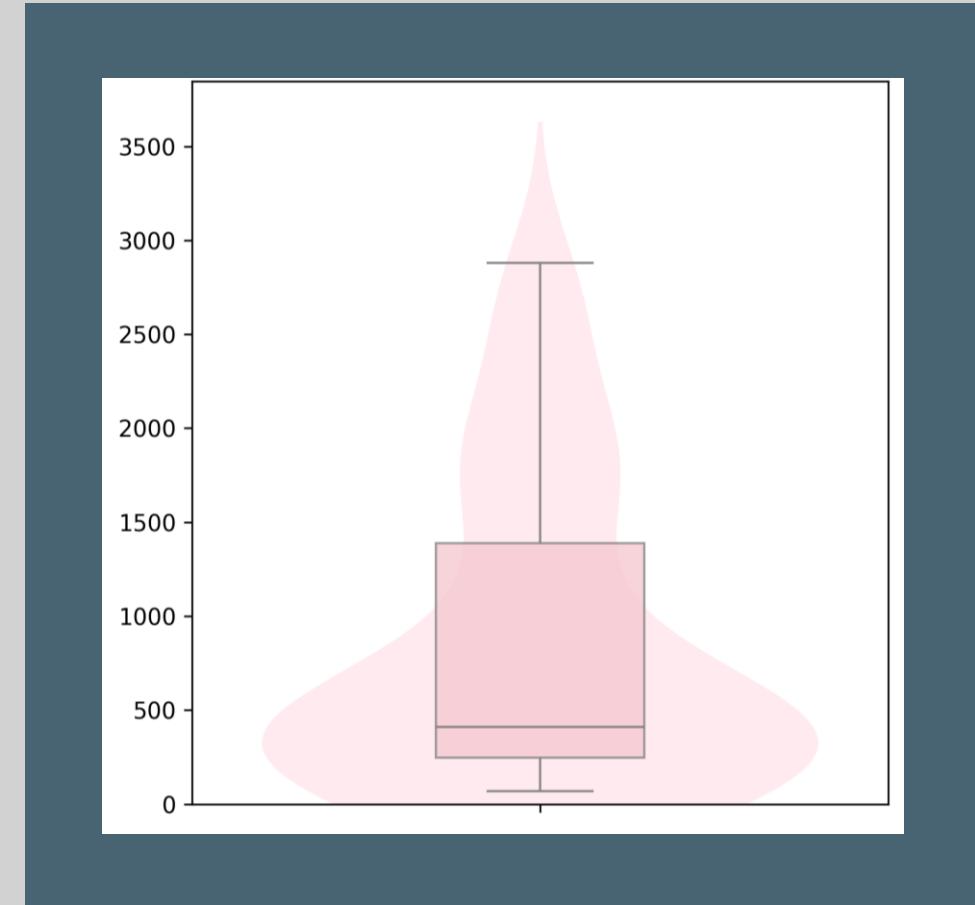
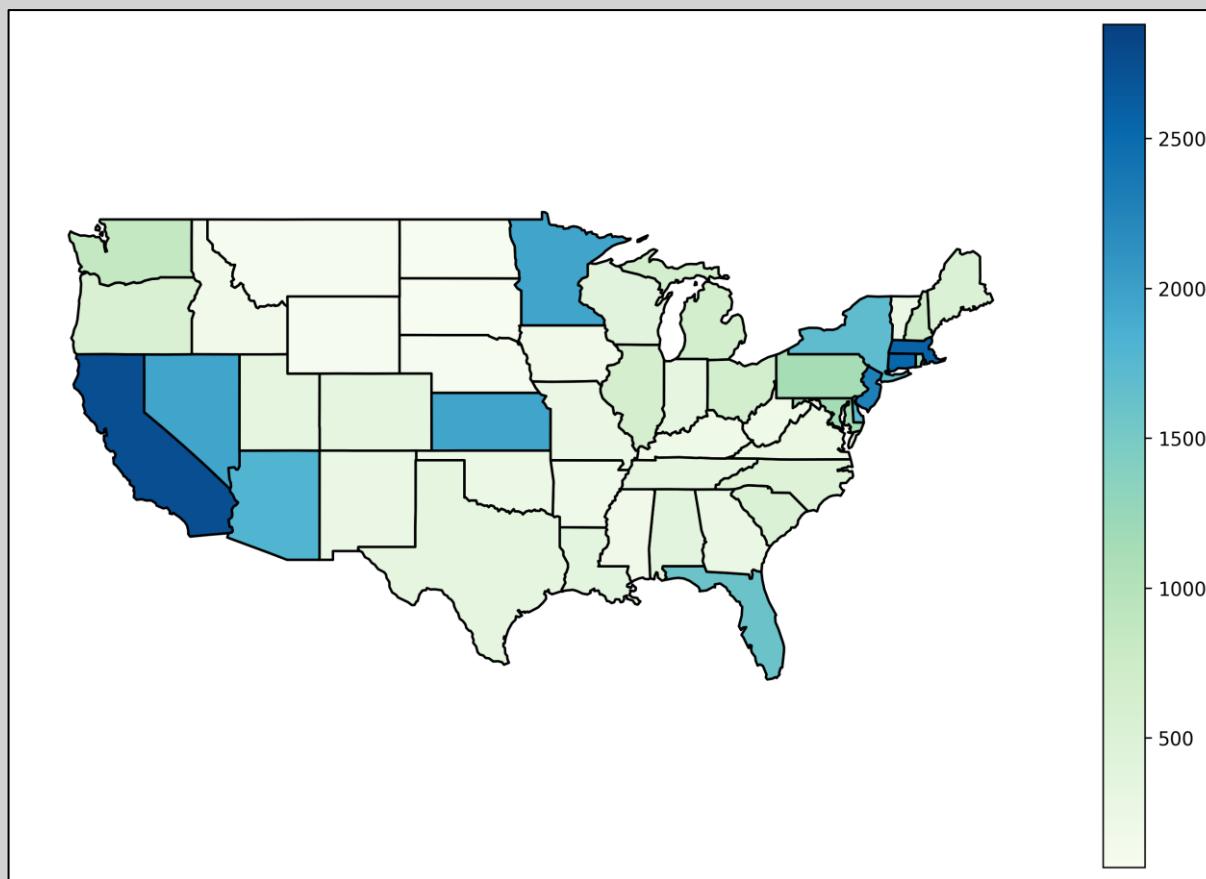
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Rigamonti Eleonora, 84615A
Vadacchino Giammarco, 84725A



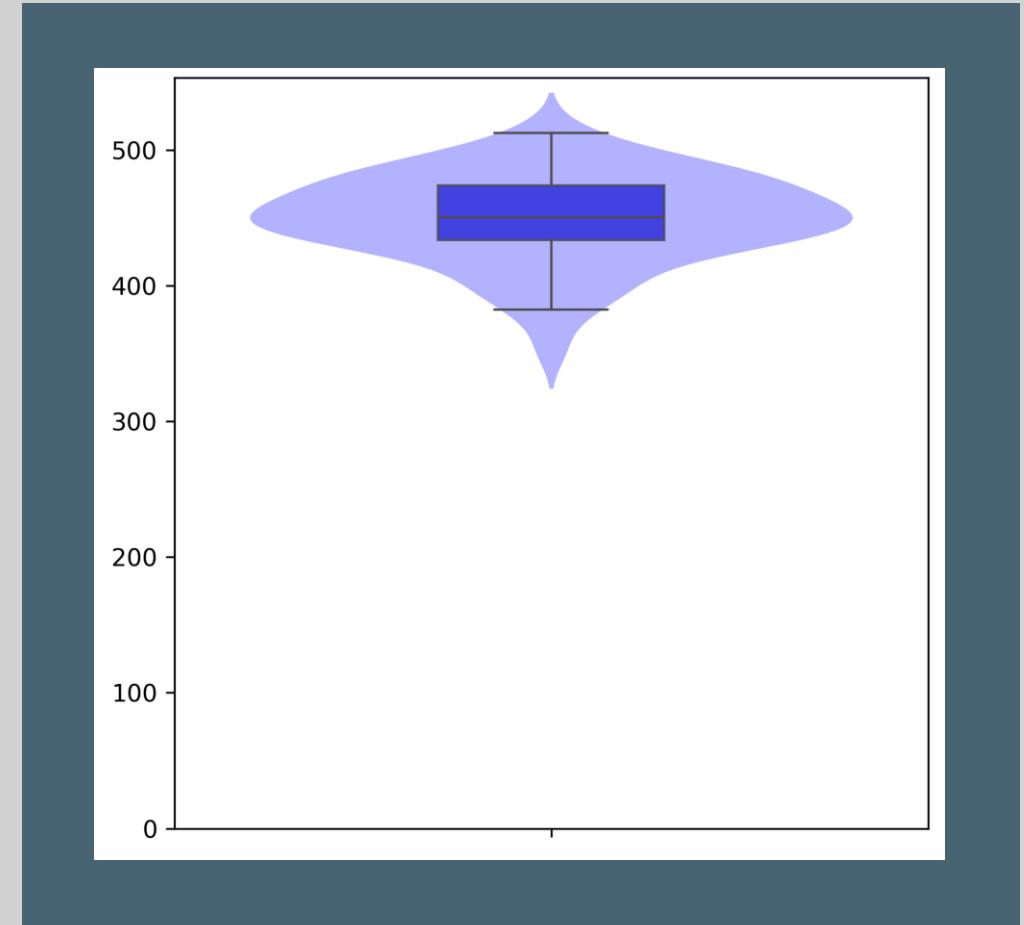
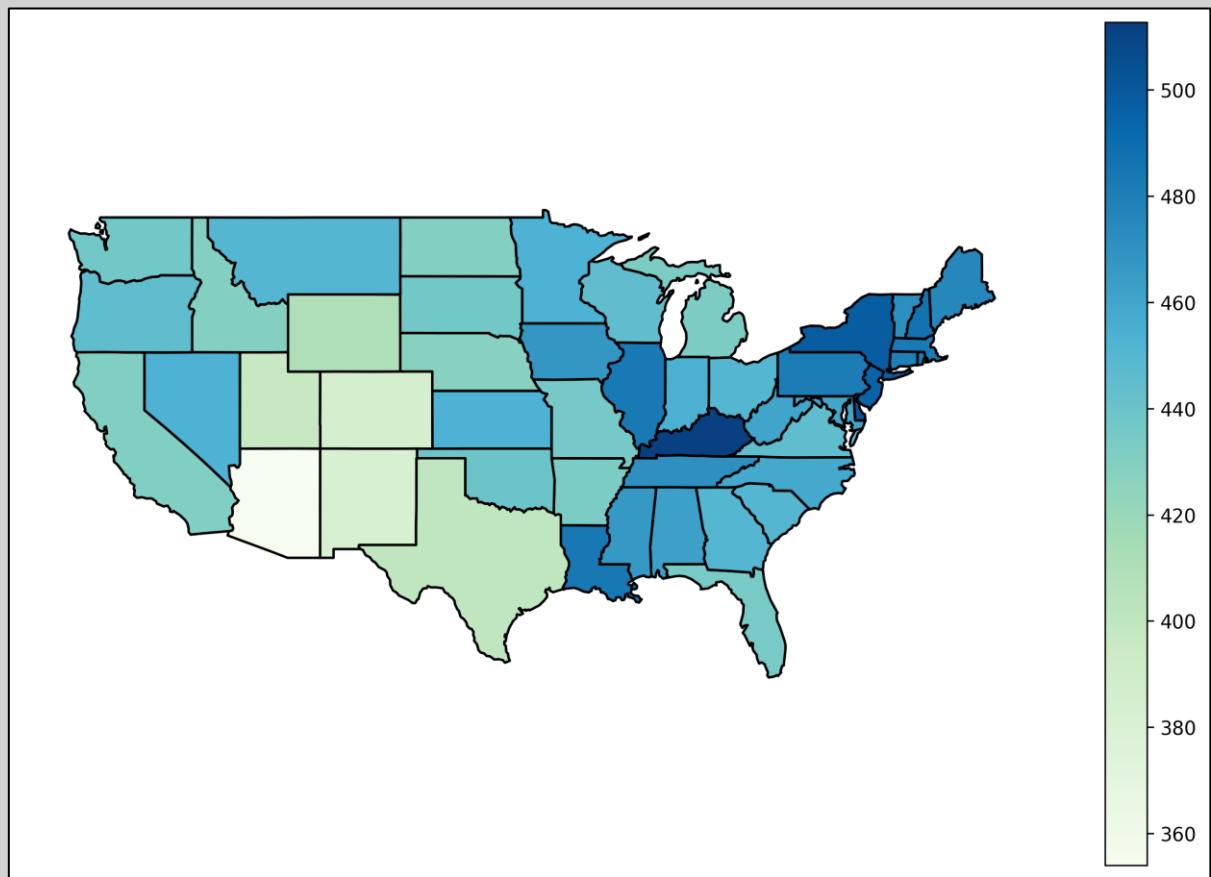
U.S.A.

Overview of Cancer in the United States

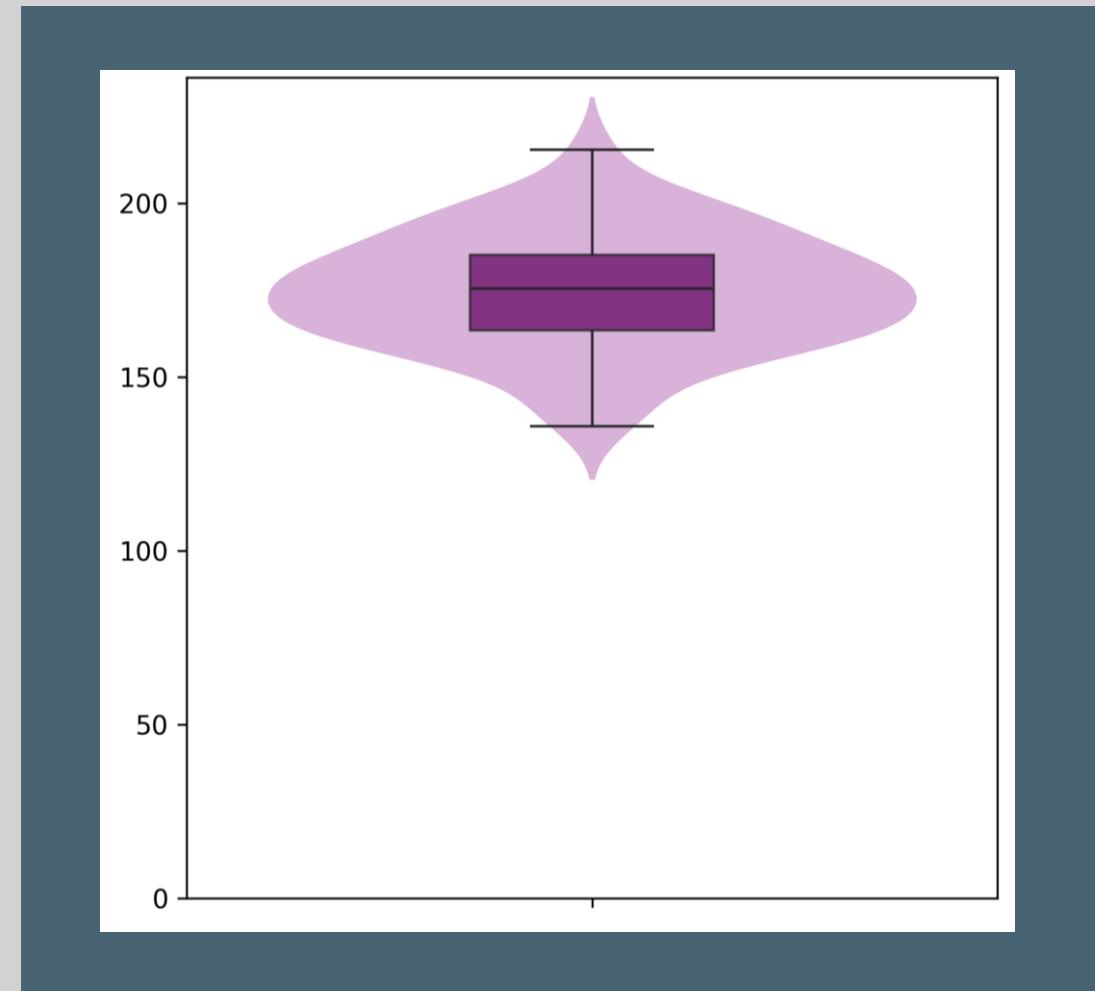
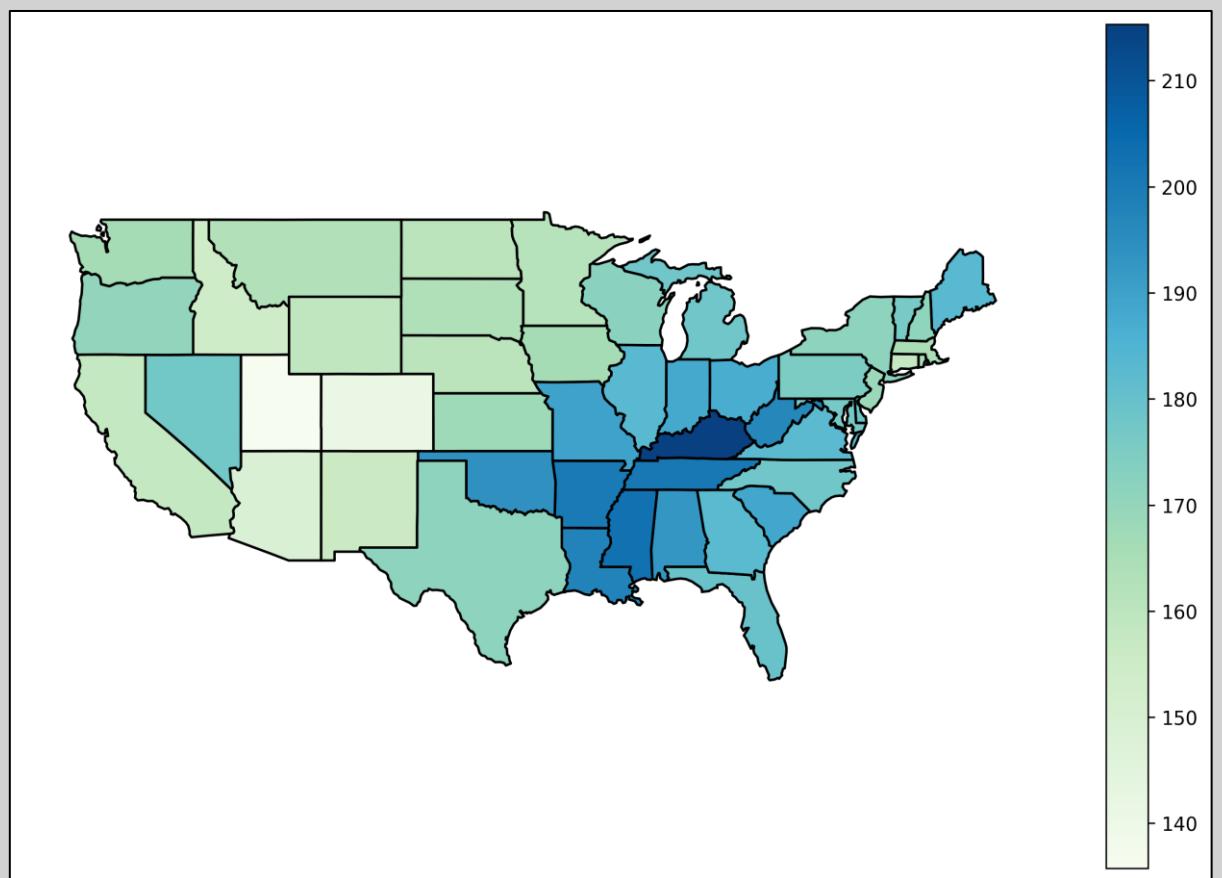
Average Annual Diagnosis in the United States



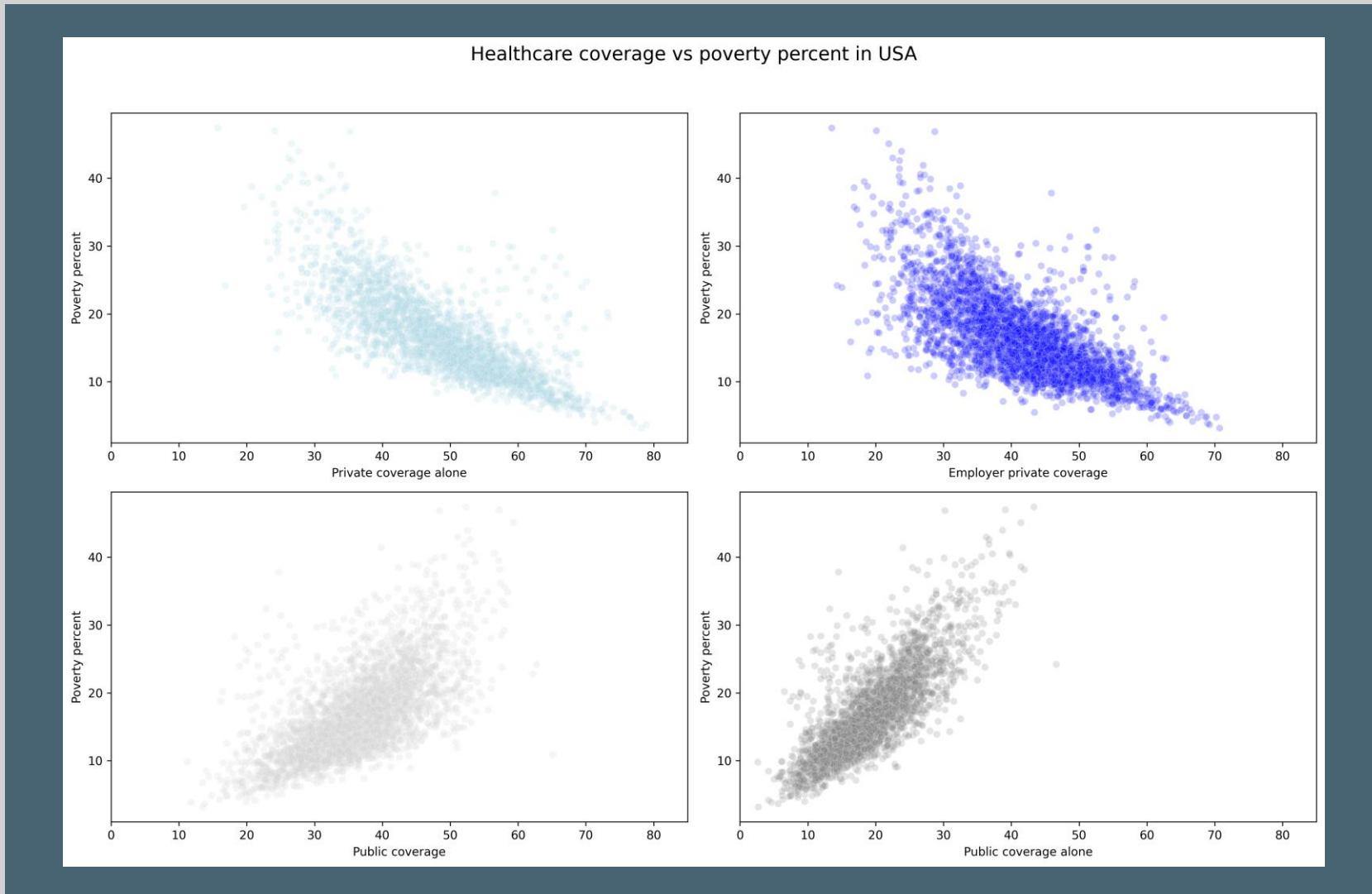
Cancer Incidence Rate in the United States



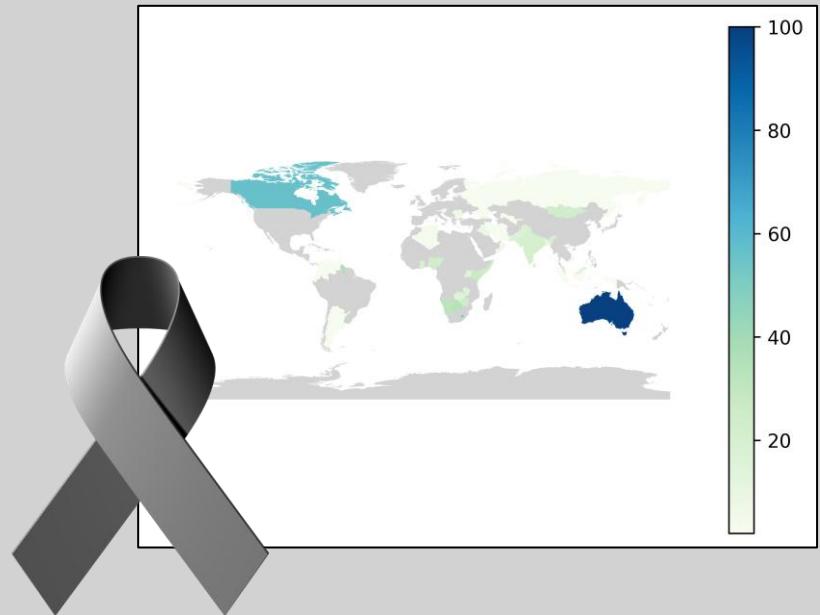
Cancer Mortality Rate in the United States



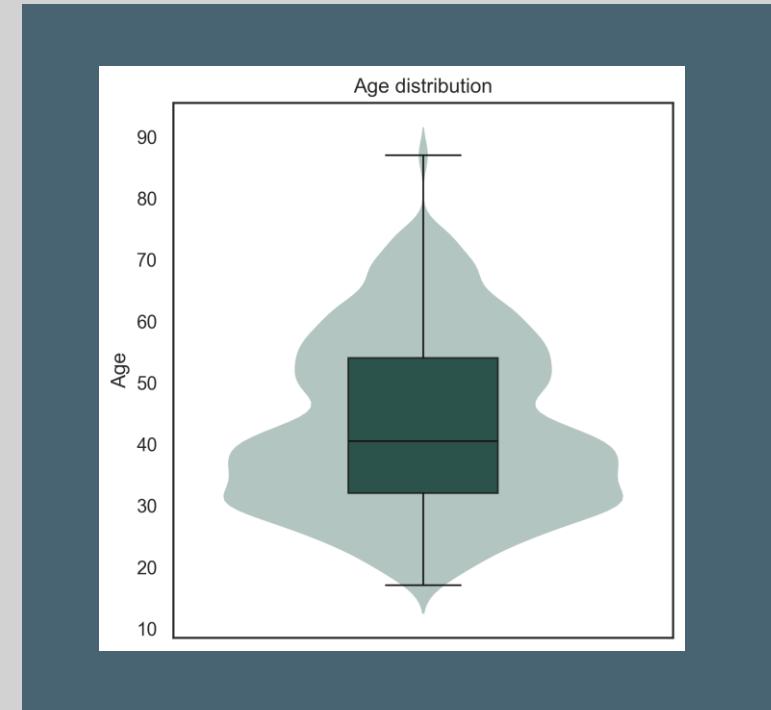
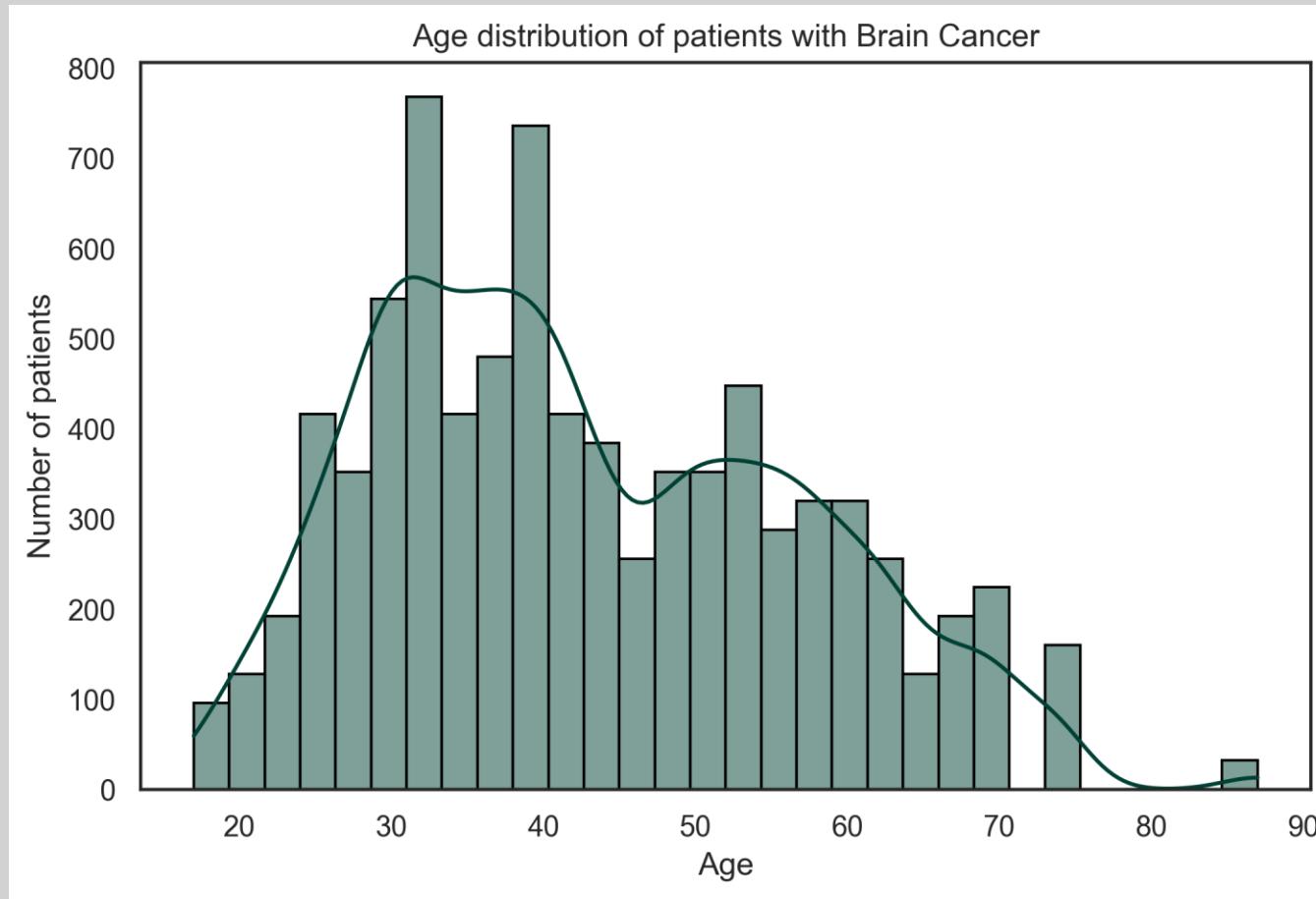
Relationship Between Healthcare Coverage and Poverty Rate



BRAIN CANCER

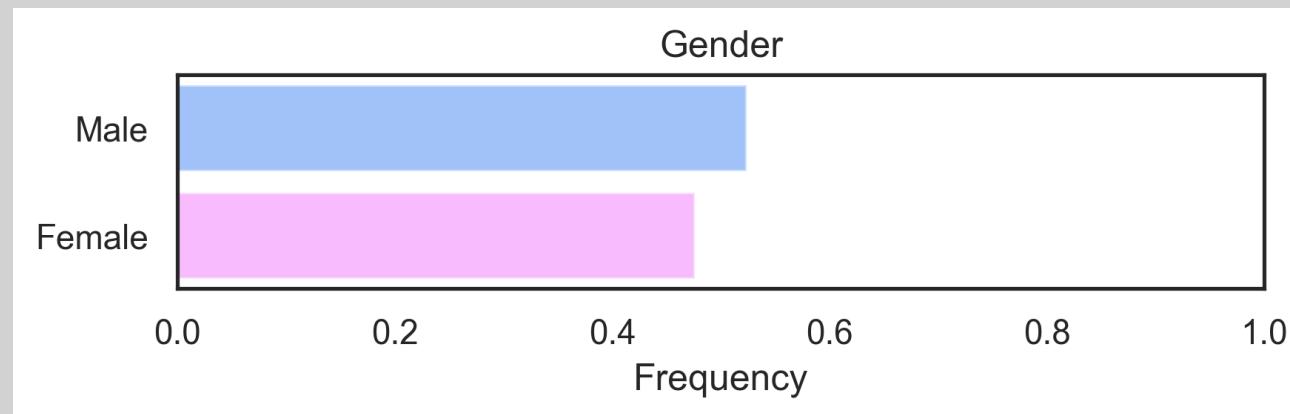


Age Distribution of Brain Cancer Patients

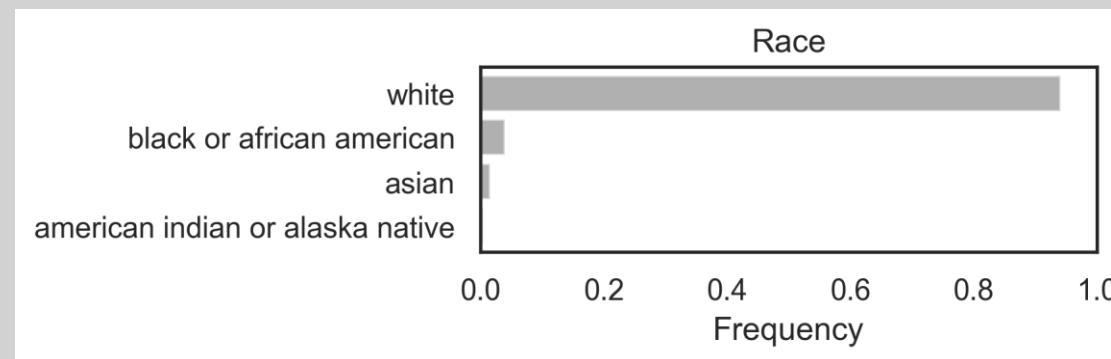
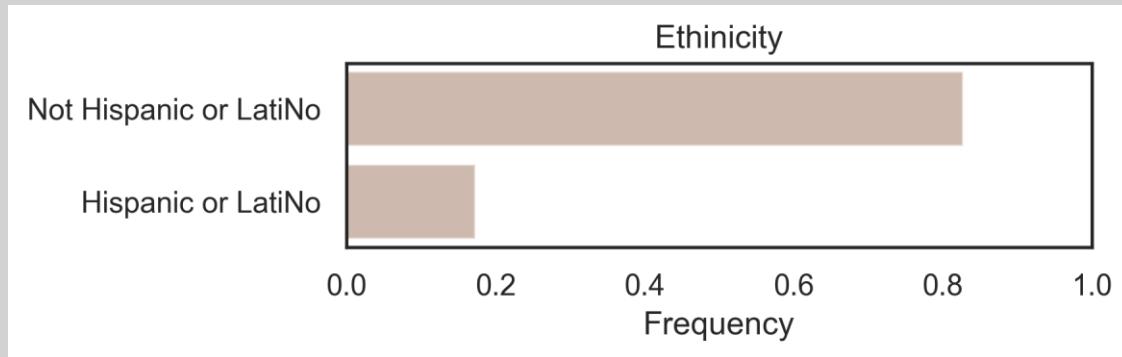


Gender Distribution of Brain Cancer Patients

This visualization compares the number of **male** and **female** patients diagnosed with **brain cancer**.

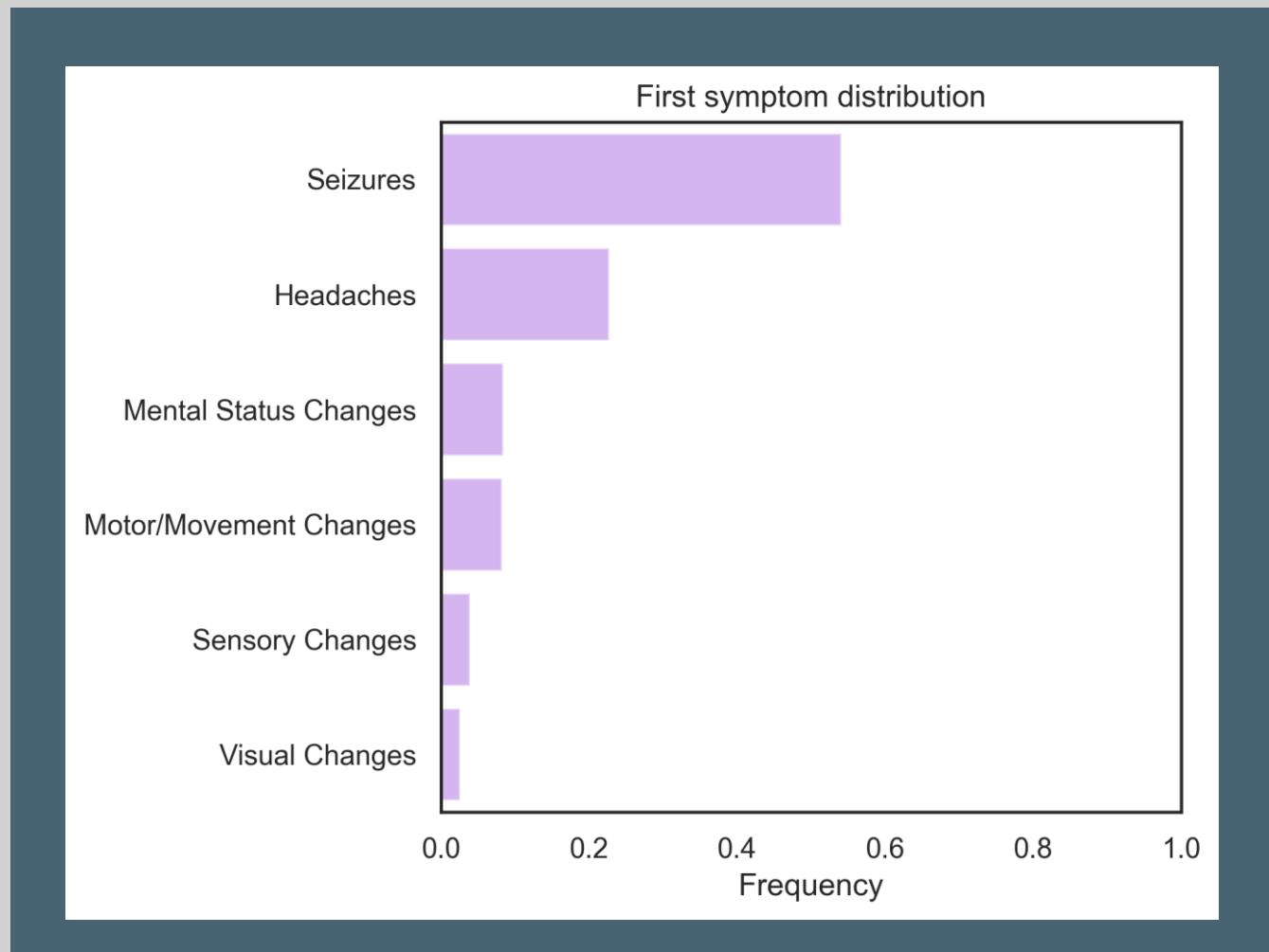


Provenance Distribution of Brain Cancer Cases



Distribution of Initial Symptoms in Brain Cancer Patients

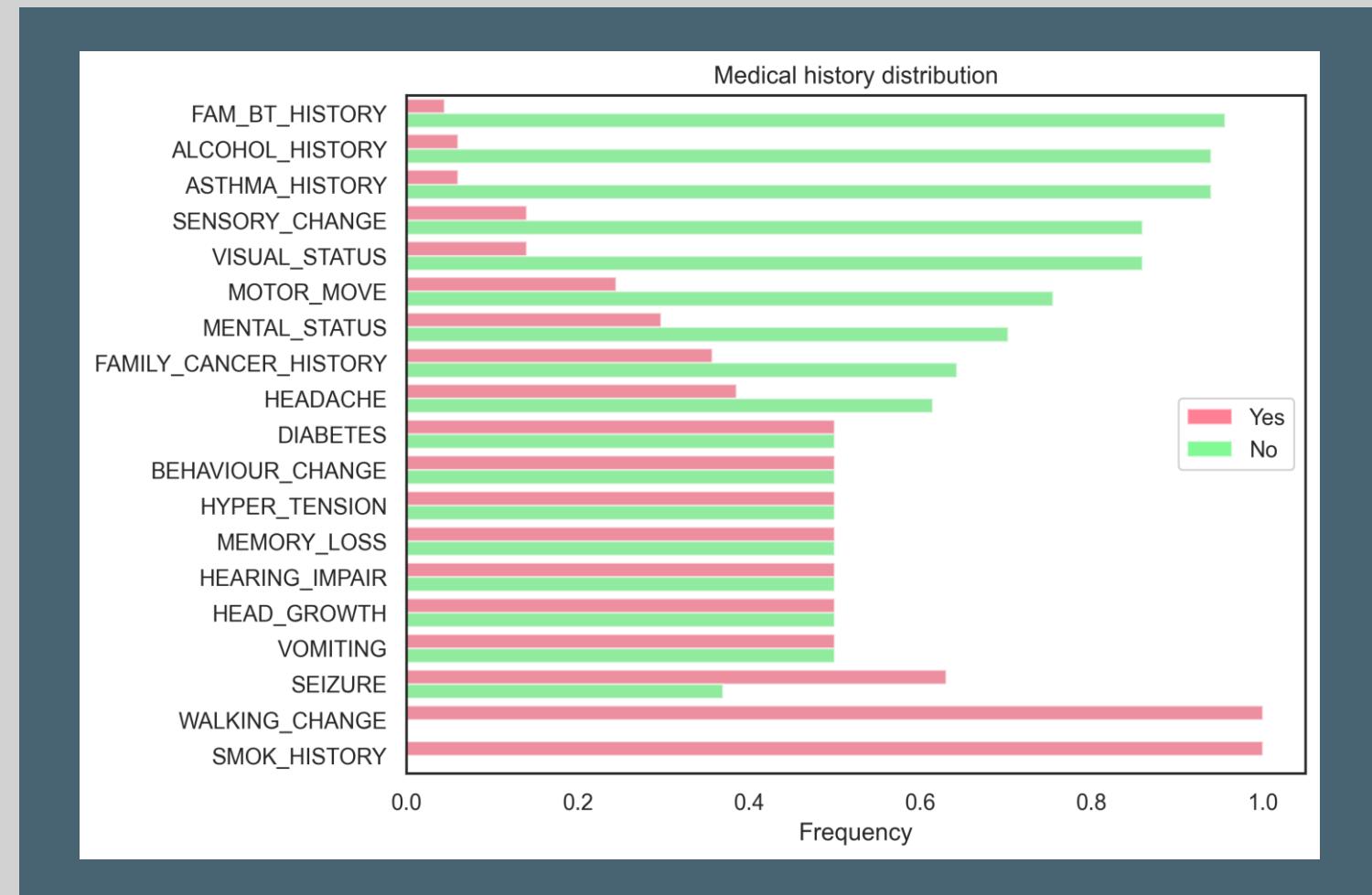
This analysis focuses on the distribution of the **initial clinical manifestations** reported by patients, highlighting the **most common early symptoms of brain cancer**.



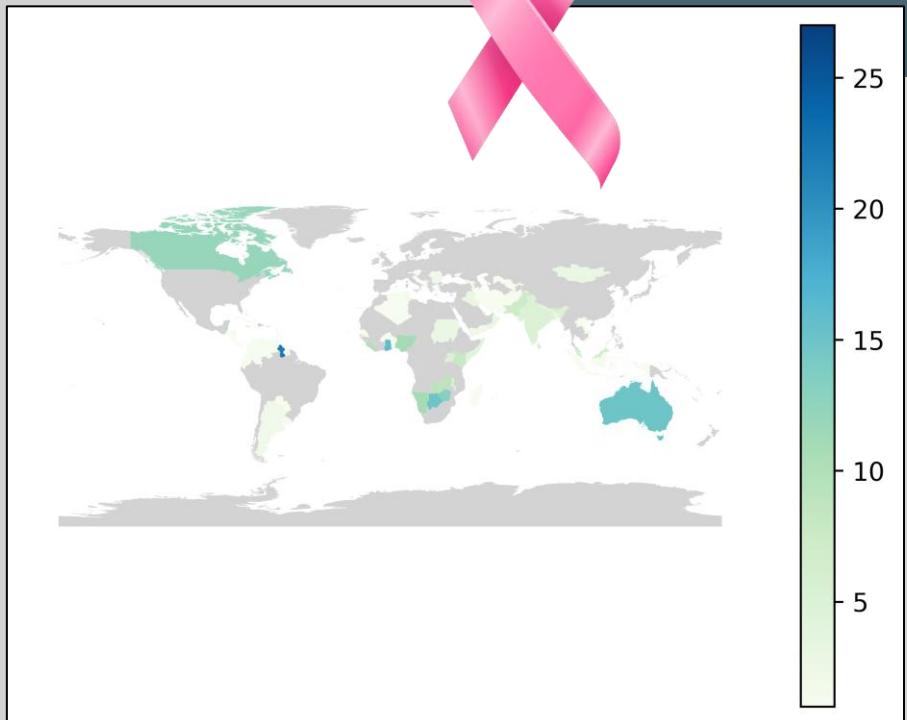
Distribution of Medical History and Risk Factors in Brain Cancer Patients

This section presents the **medical history** of patients, distinguishing between **pre-existing conditions, prior symptoms, and lifestyle-related risk factors** such as smoking and alcohol consumption.

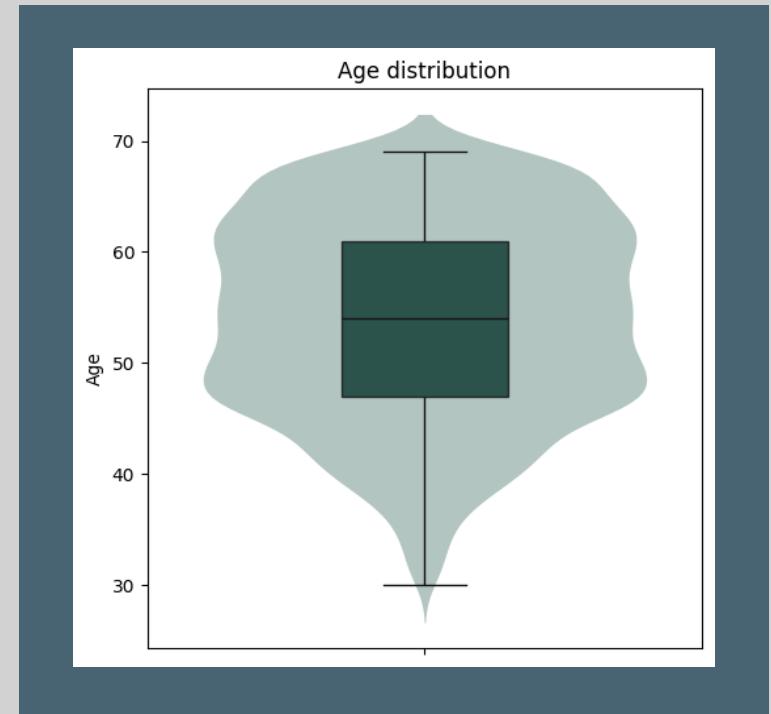
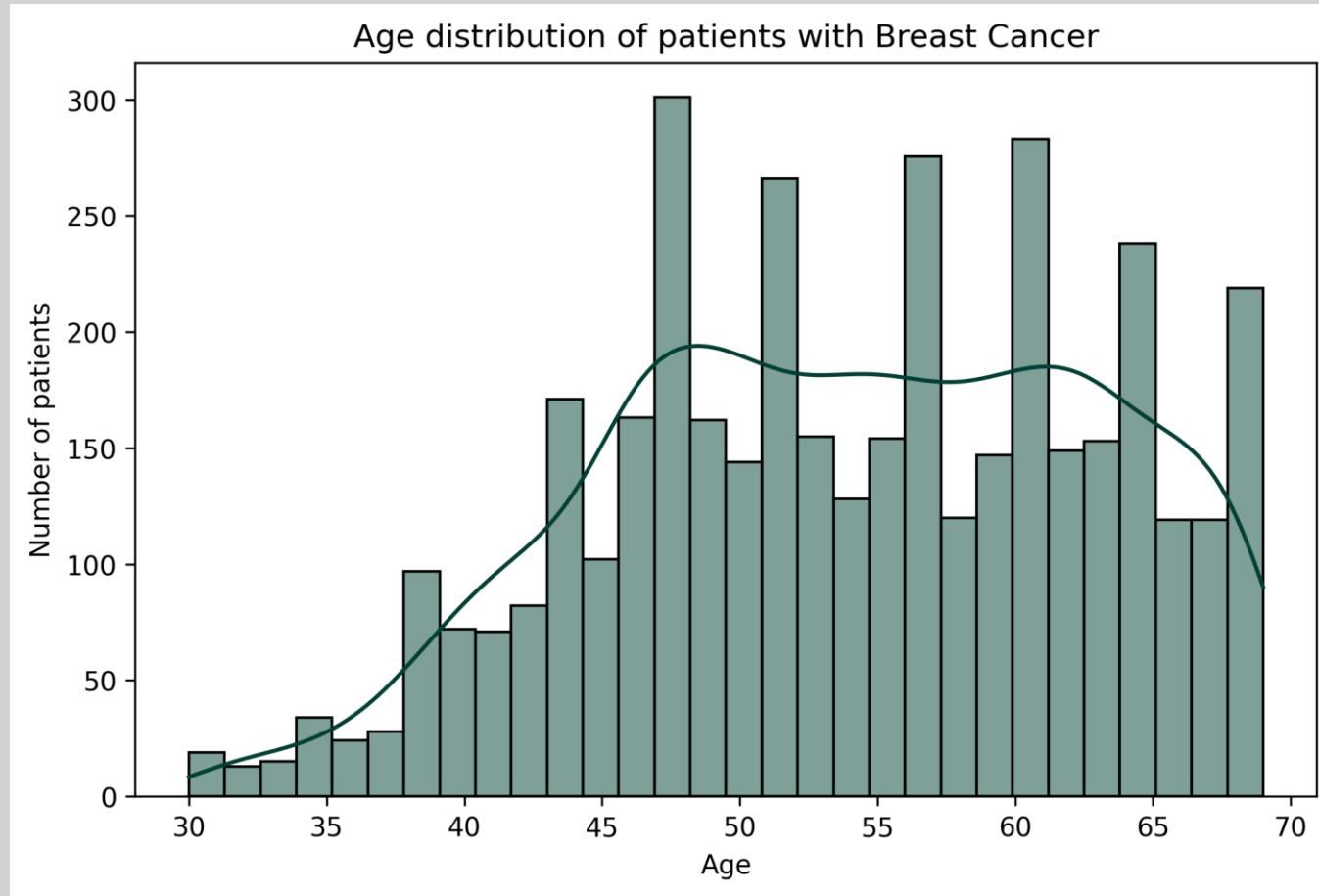
These elements may contribute to the development of **brain cancer**.



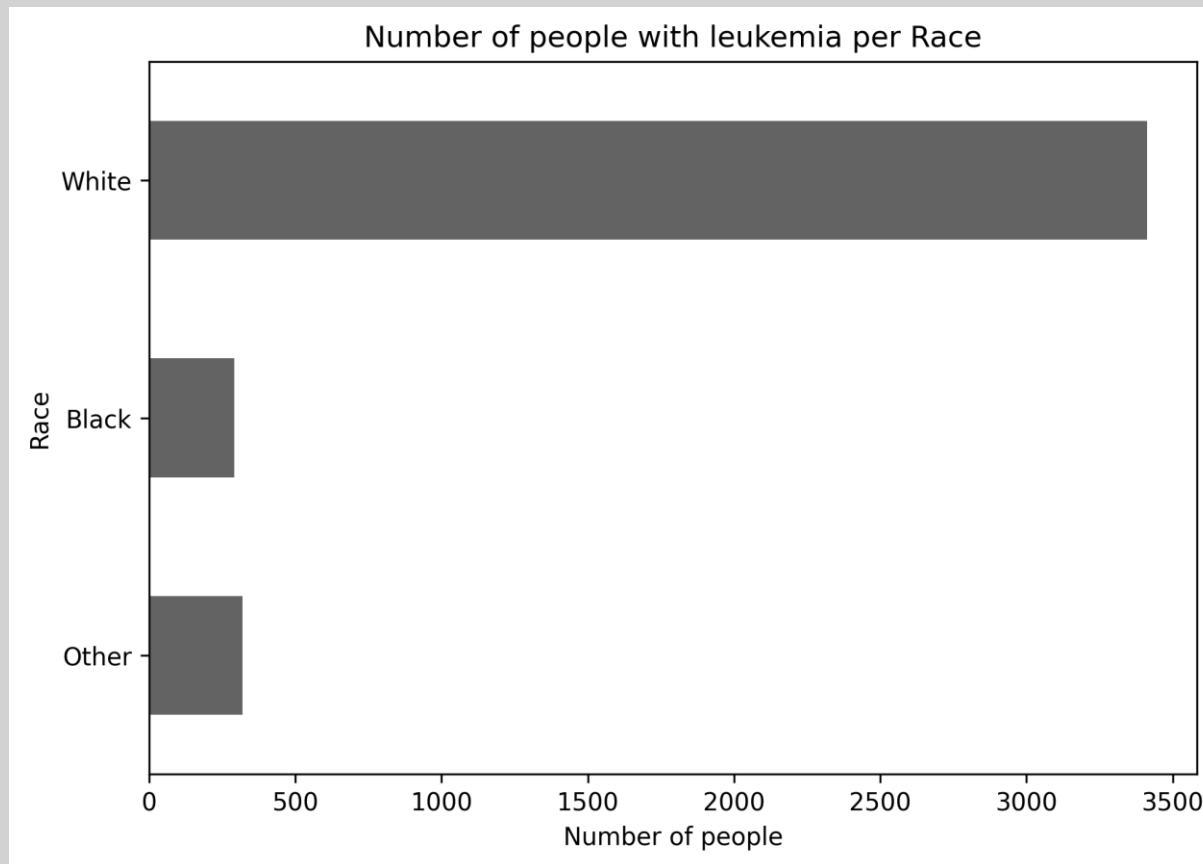
BREAST CANCER



Age Distribution of Breast Cancer Patients

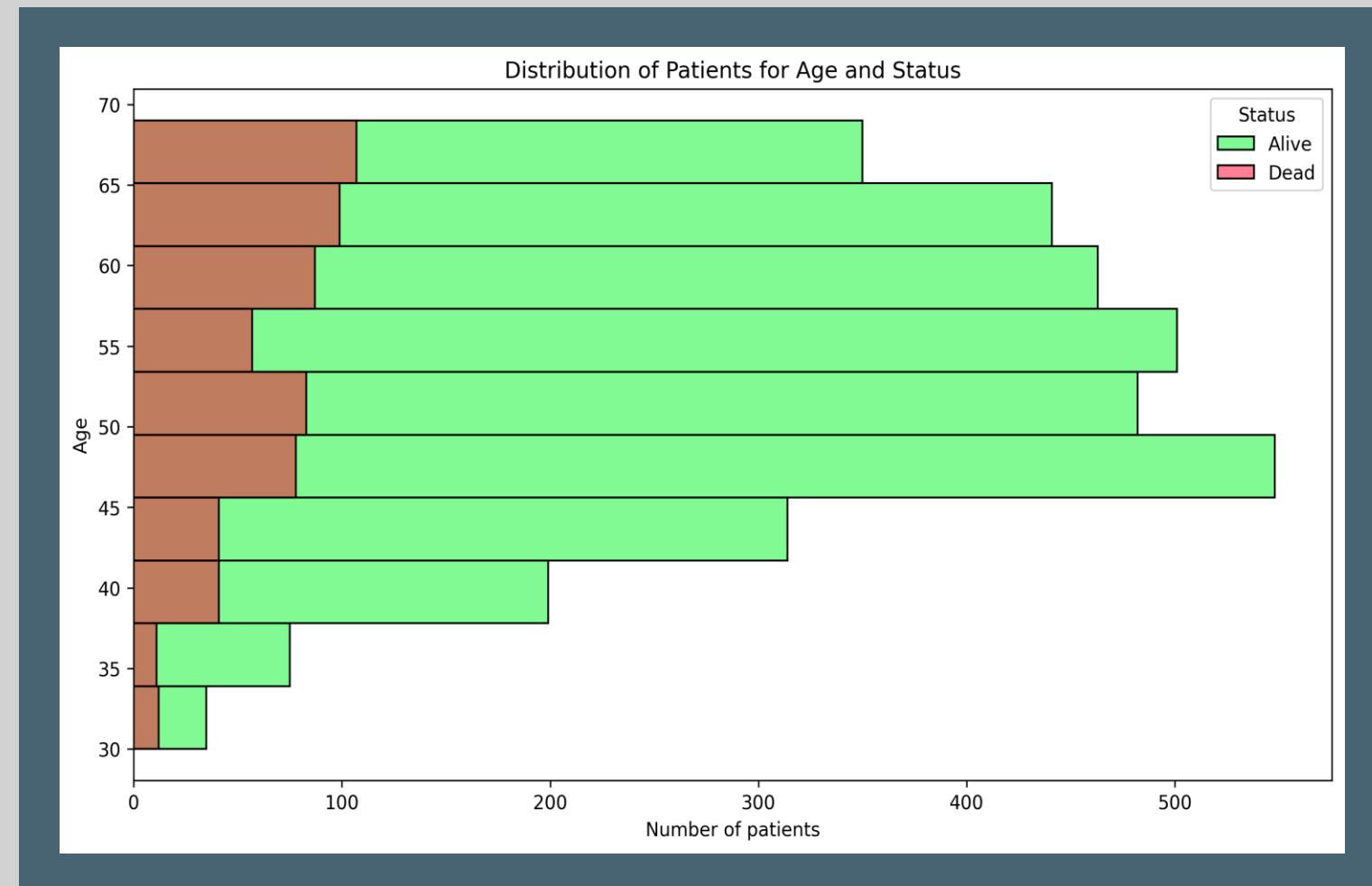


Provenance Distribution of Breast Cancer Cases



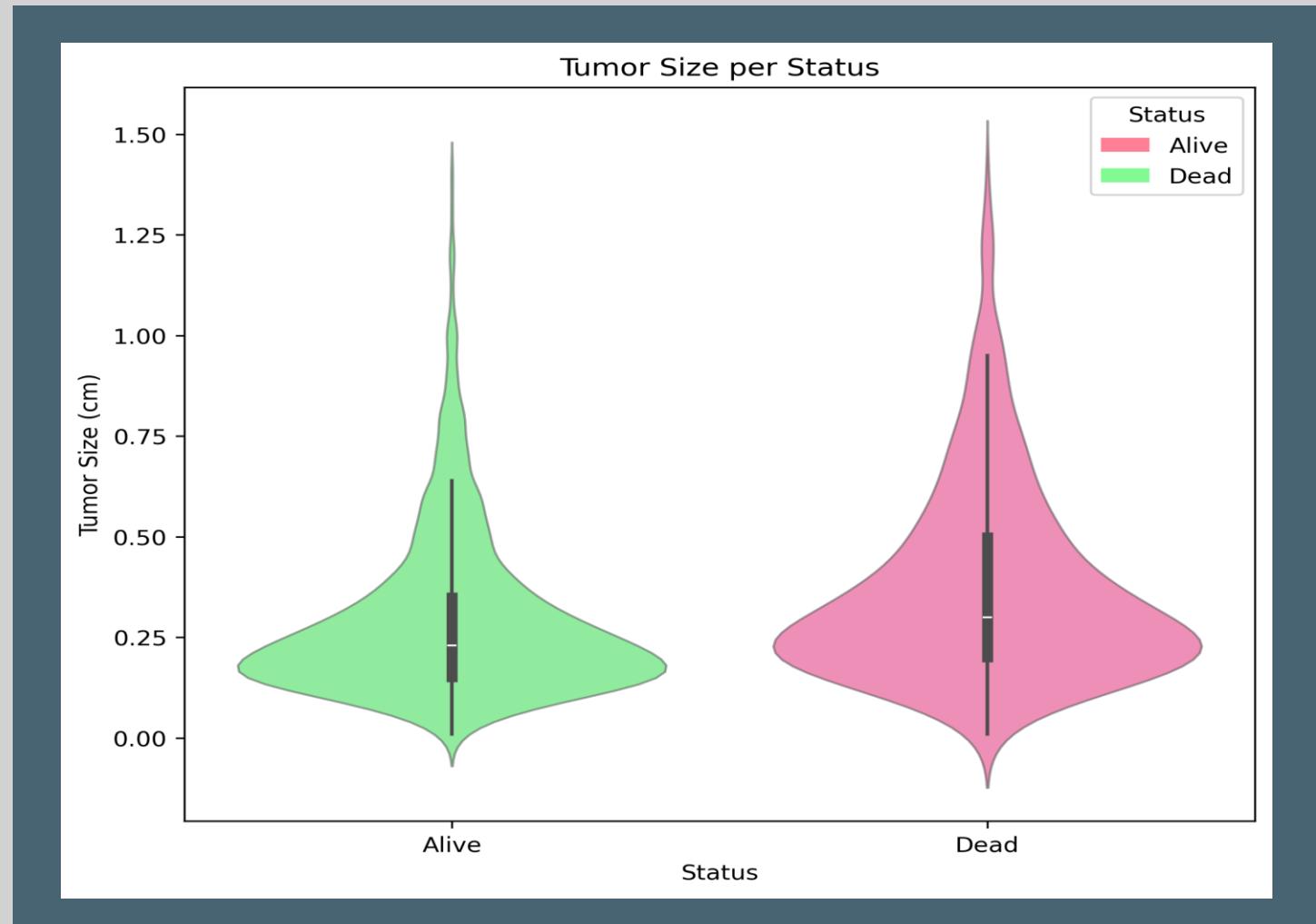
Distribution of Patients by Age and Survival Status

The analysis of the **age distribution** highlights how **breast cancer** incidence and **survival** may vary across different age groups, providing insights into **age-related risk patterns**.

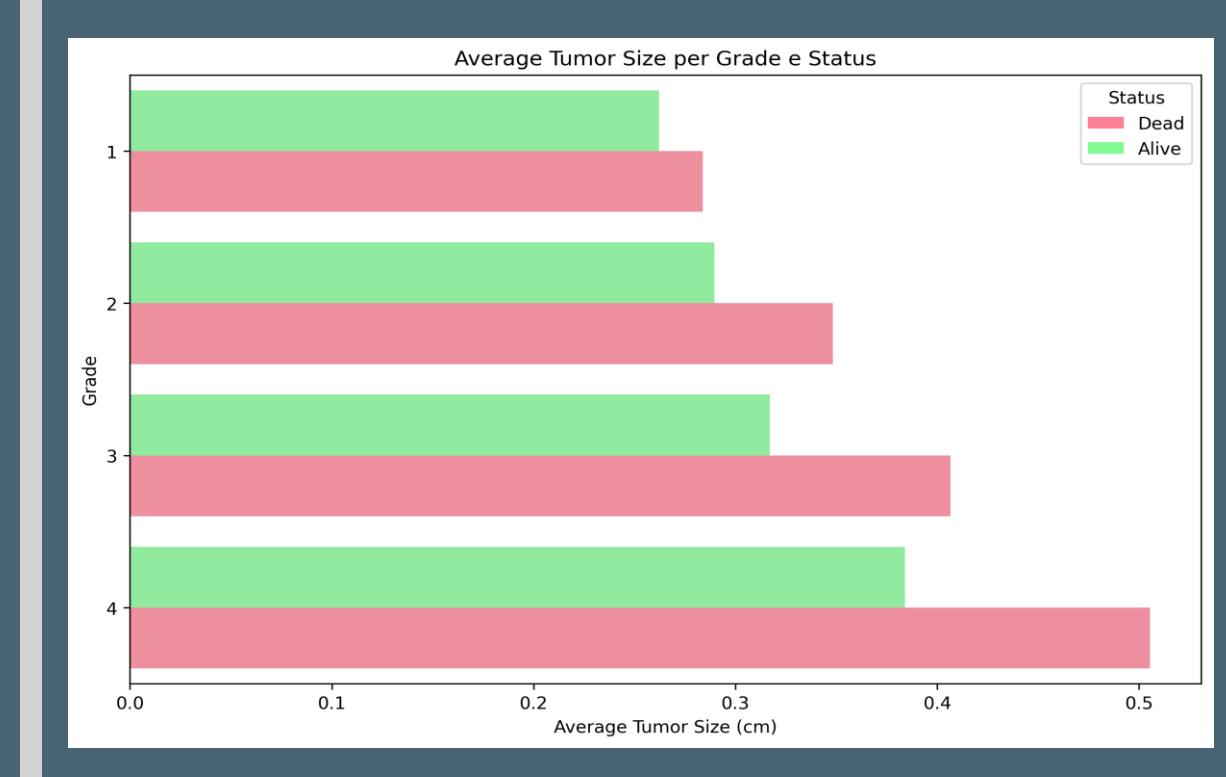
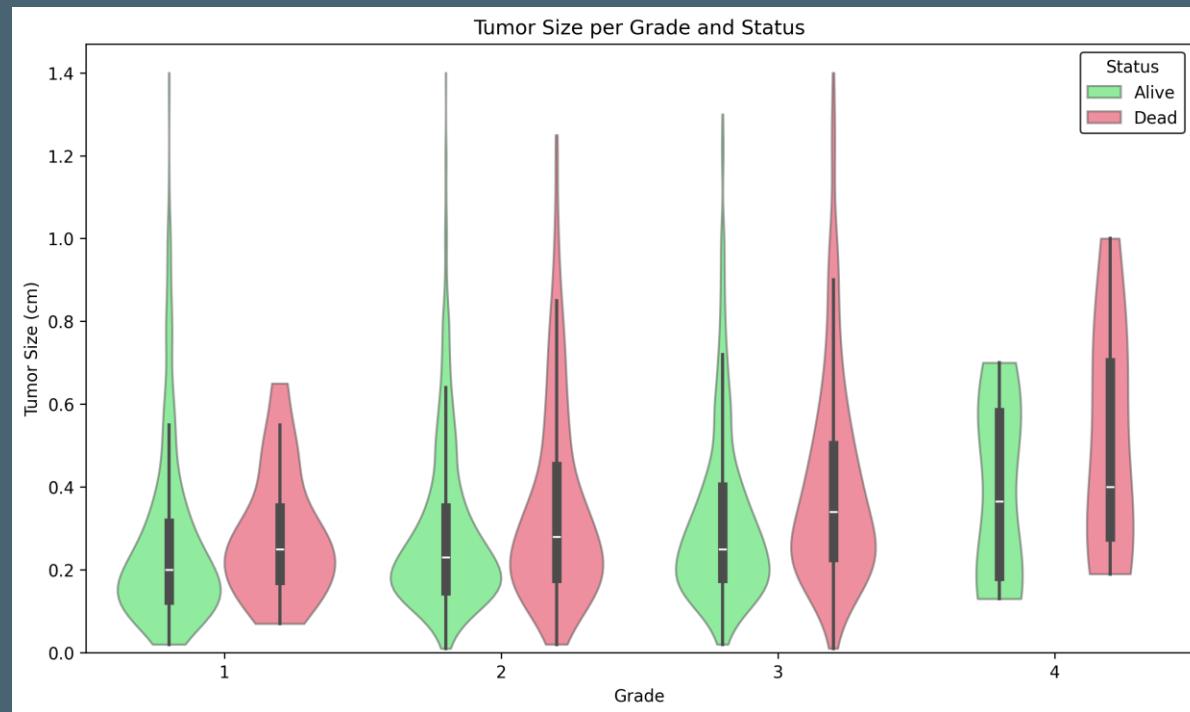


Tumor Size Distribution by Patient Survival Status

The violin plots illustrate the **distribution** of **tumor size** according to **patient status**, revealing differences in tumor characteristics between patients who survived and those who did not.

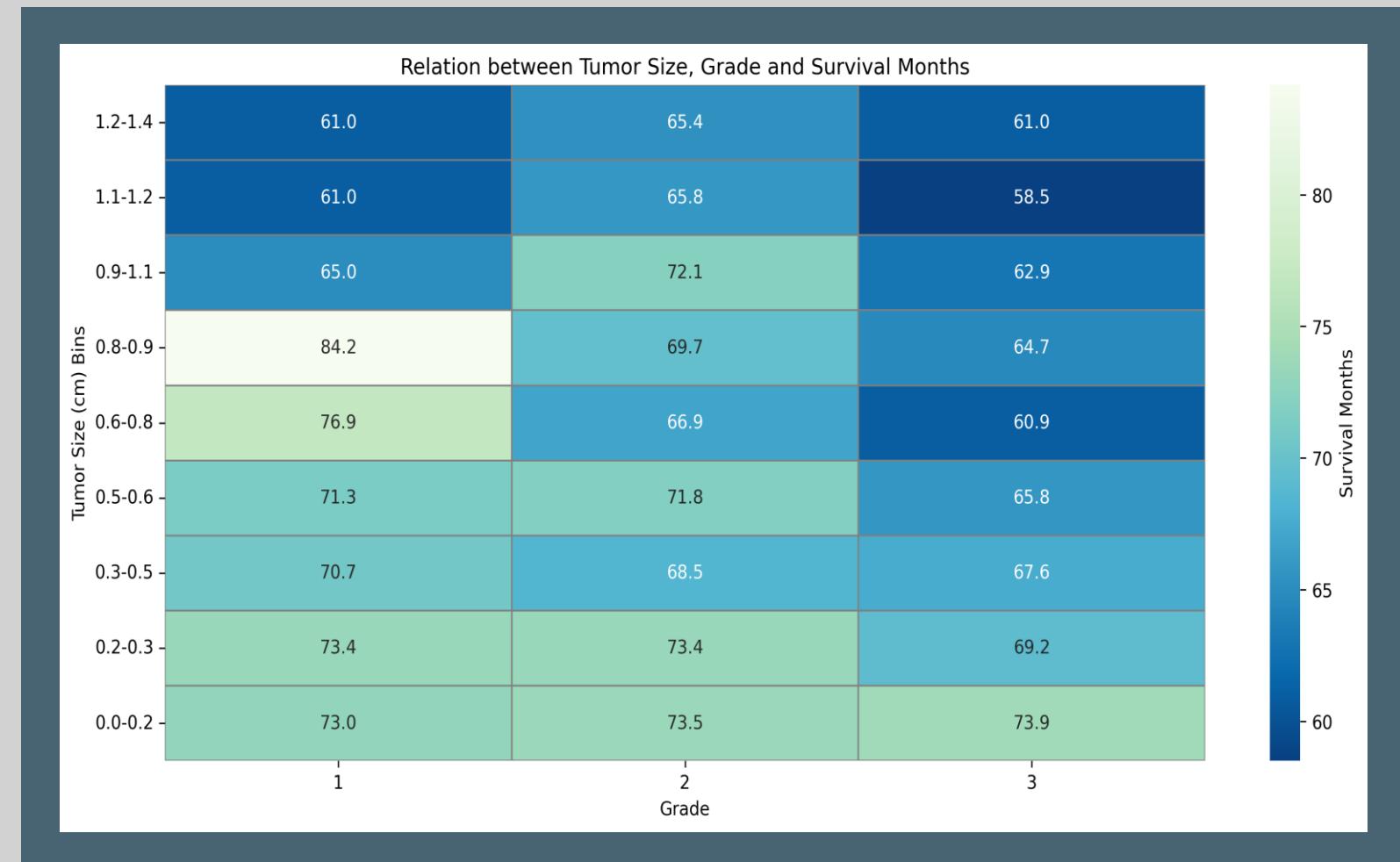


Tumor Size Distribution by Grade and Survival Status

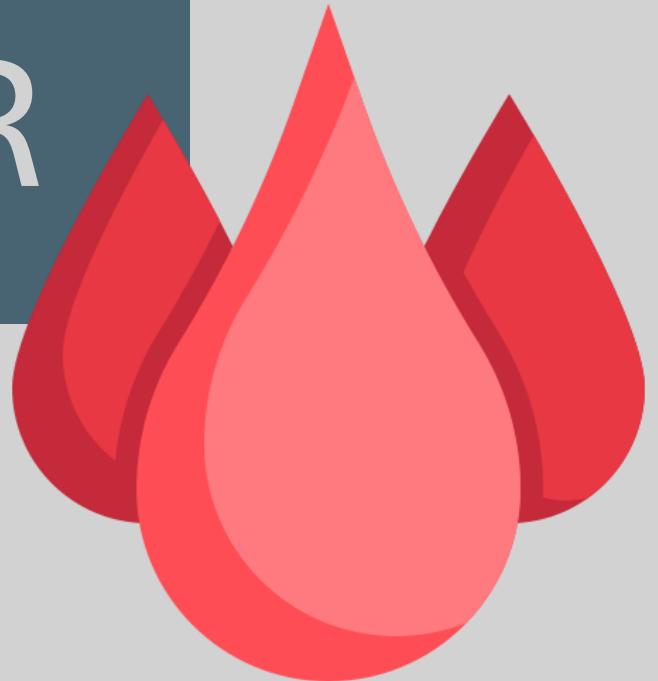
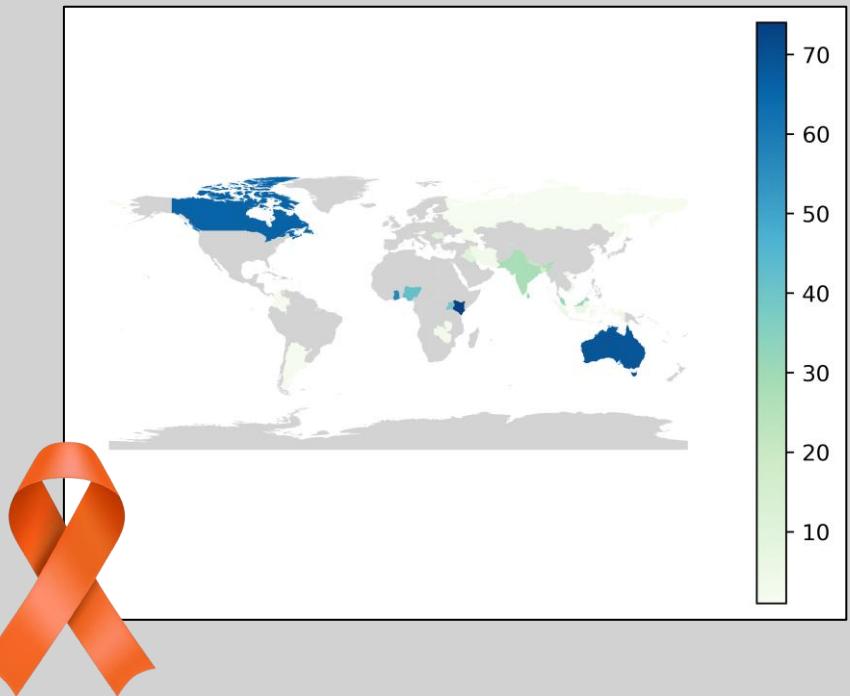


Correlation Between Tumor Size, Grade and Survival Time

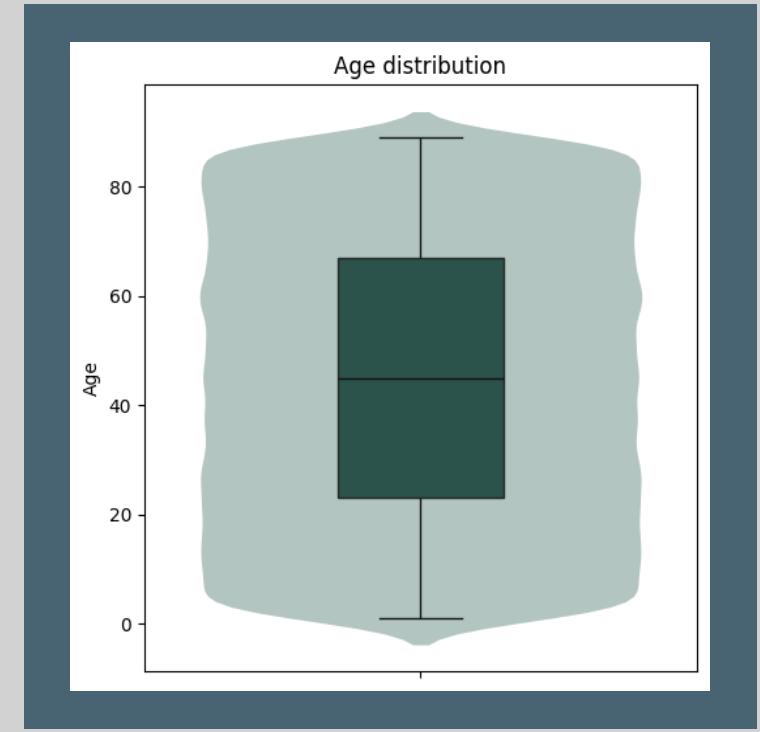
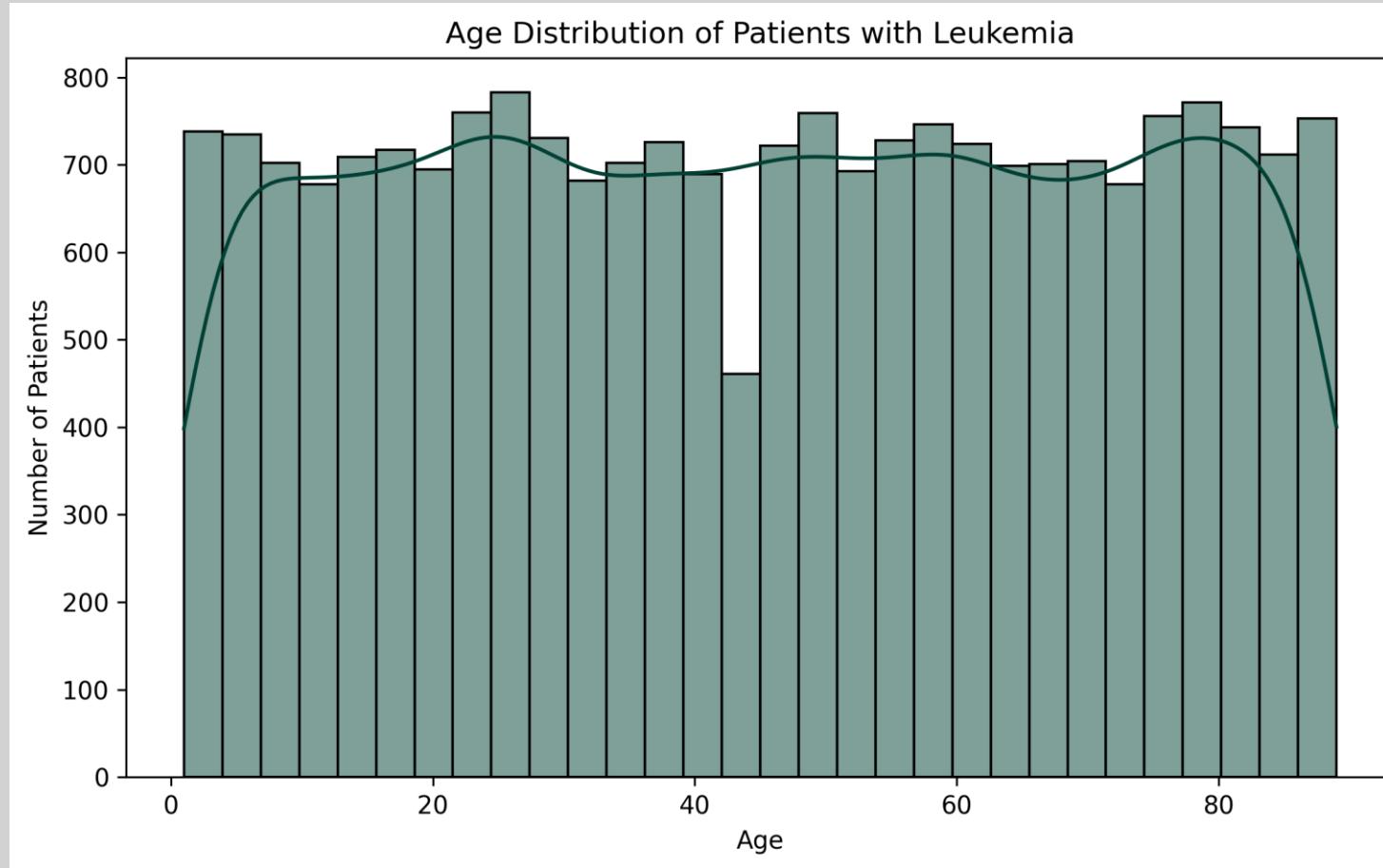
This **correlation matrix** illustrates the relationships between **tumor size**, **tumor grade**, and **survival time** in months, highlighting potential associations between **tumor characteristics** and **patient outcomes**.



LEUKEMIA CANCER

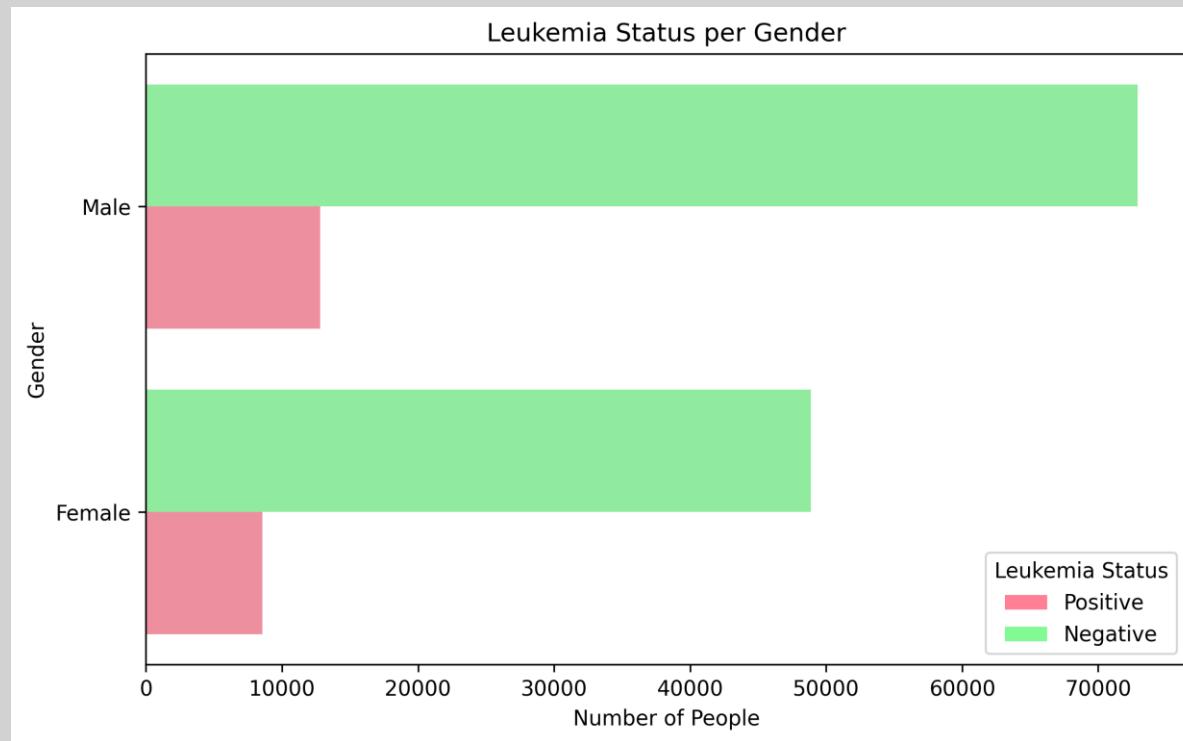


Age Distribution of Leukemia Patients

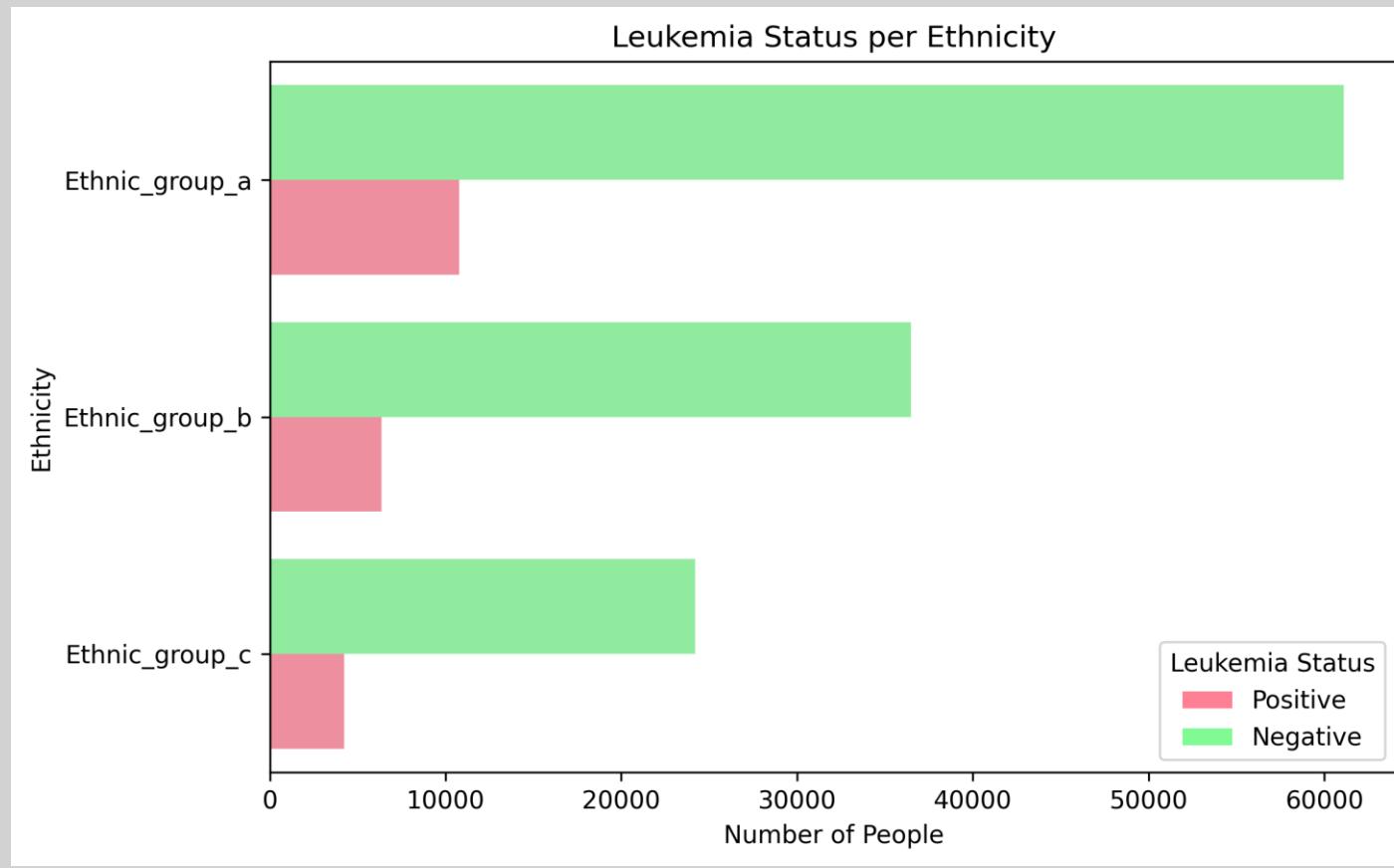


Gender Distribution of Leukemia Patients

This analysis examines the **gender-based distribution of leukemia**, comparing the prevalence of the disease between male and female patients in the dataset.

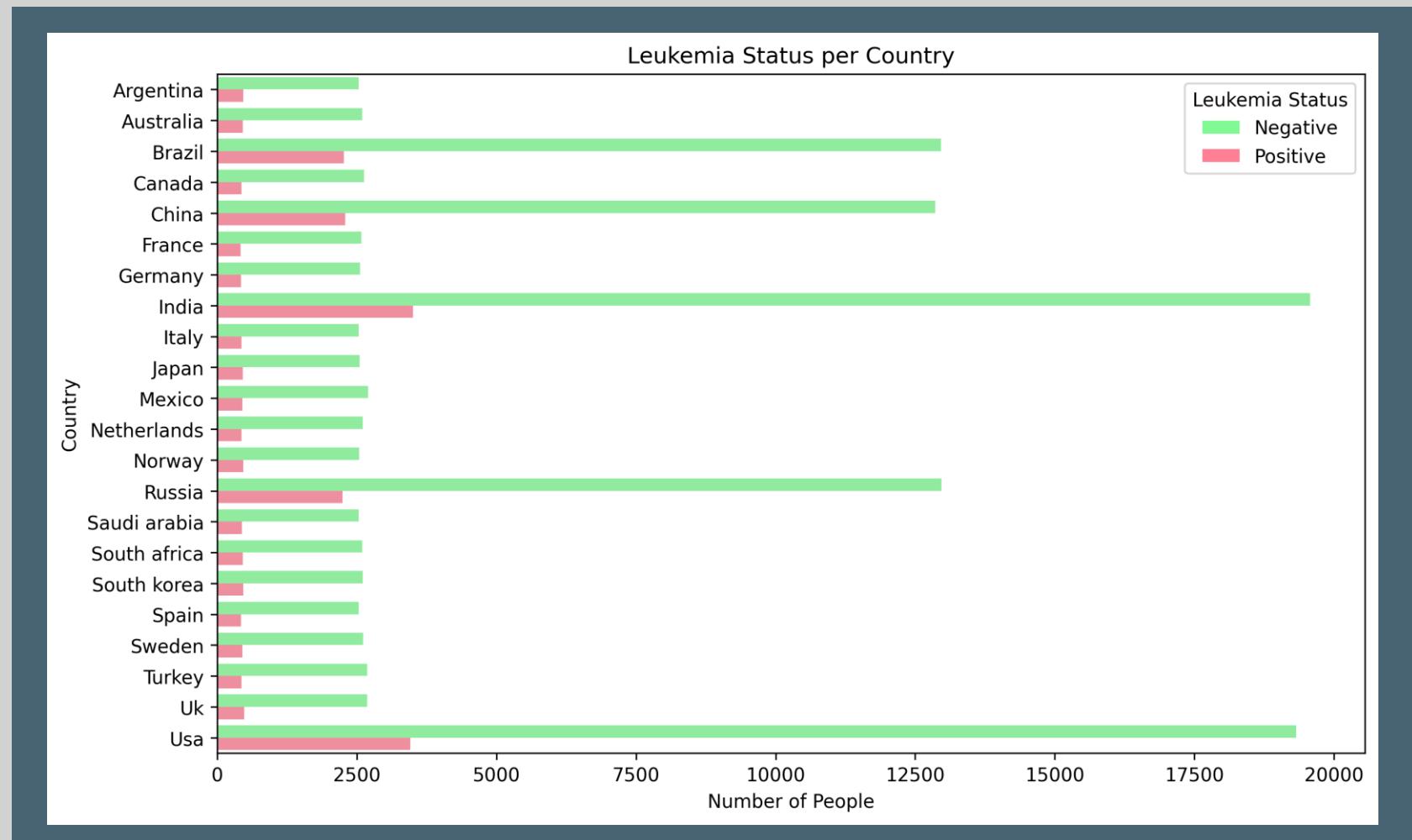


Provenance Distribution of Leukemia Cases



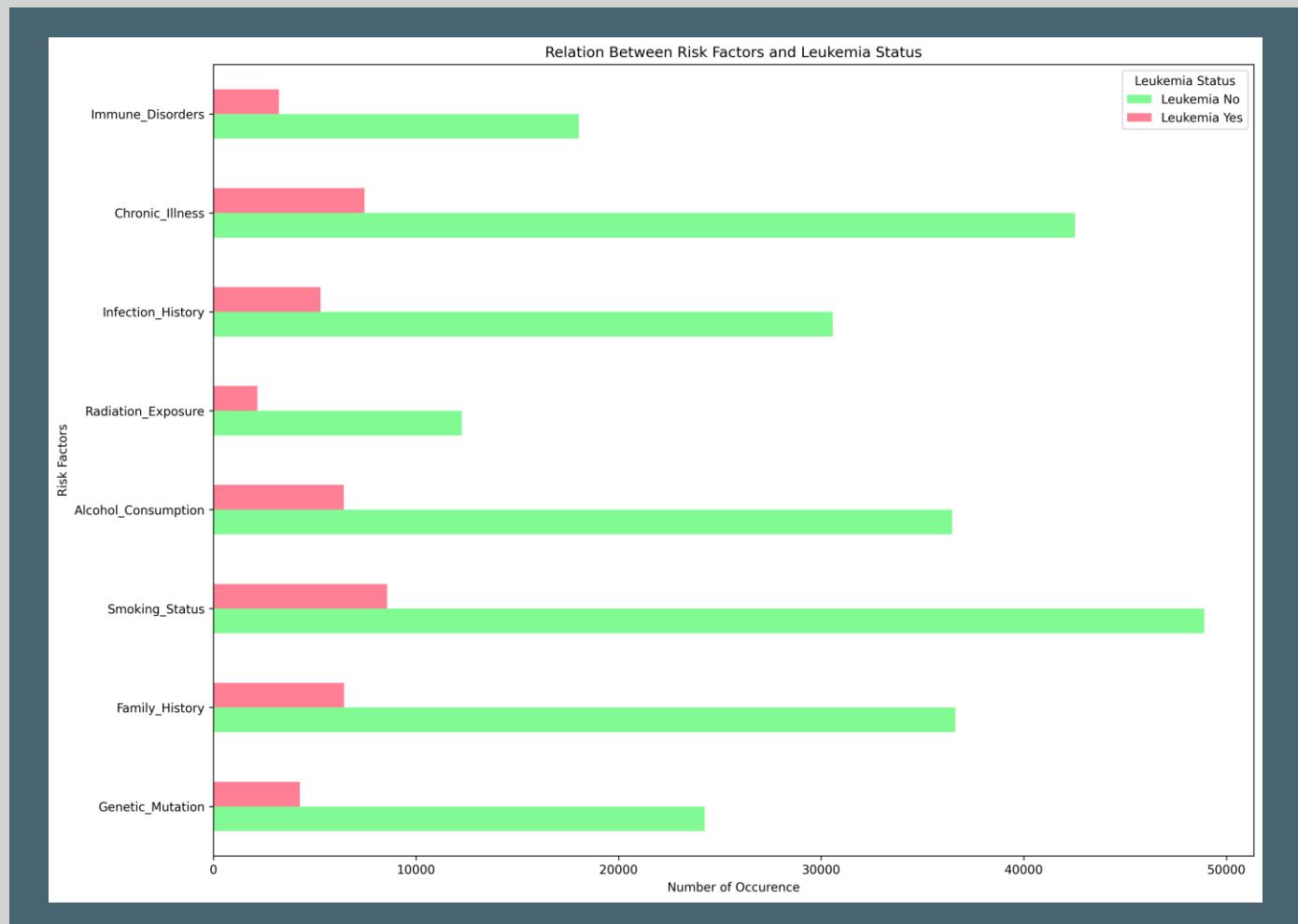
Distribution of Leukemia Cases by Country

The chart illustrates the **frequency** with which specific **risk factors** are associated with **leukemia**, compared to cases where the disease is not present, emphasizing their potential influence on its development.

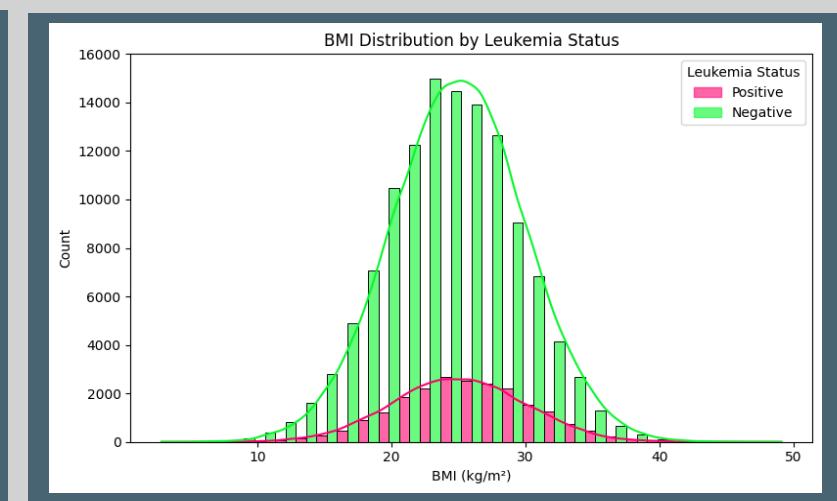
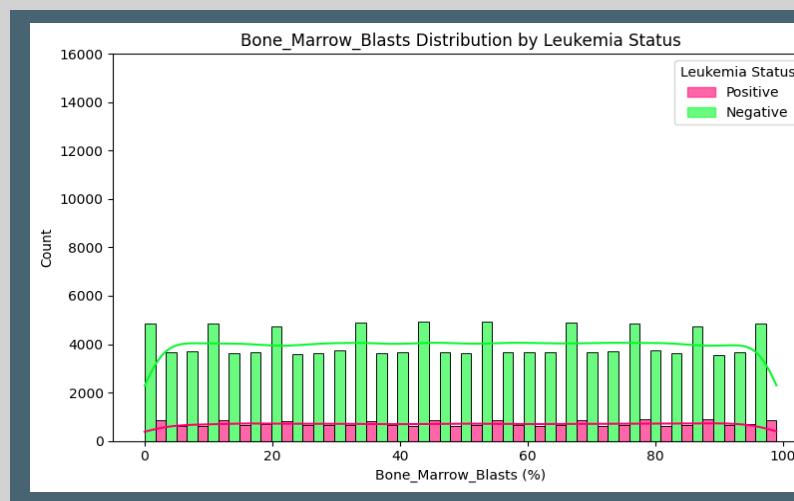
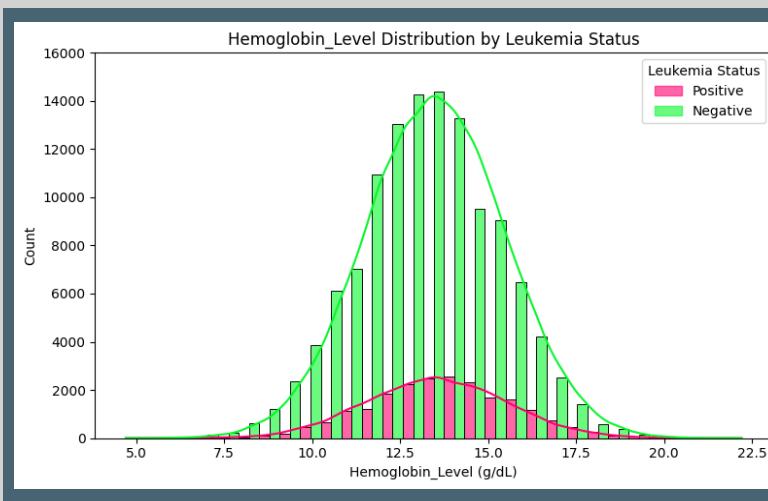
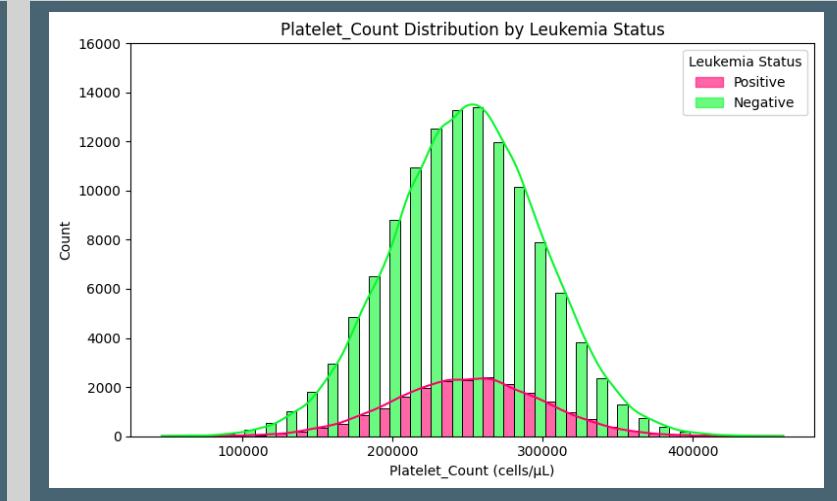
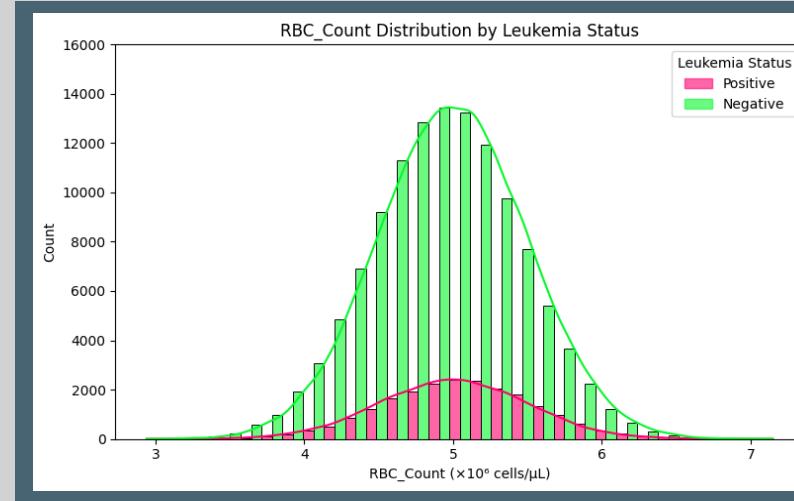
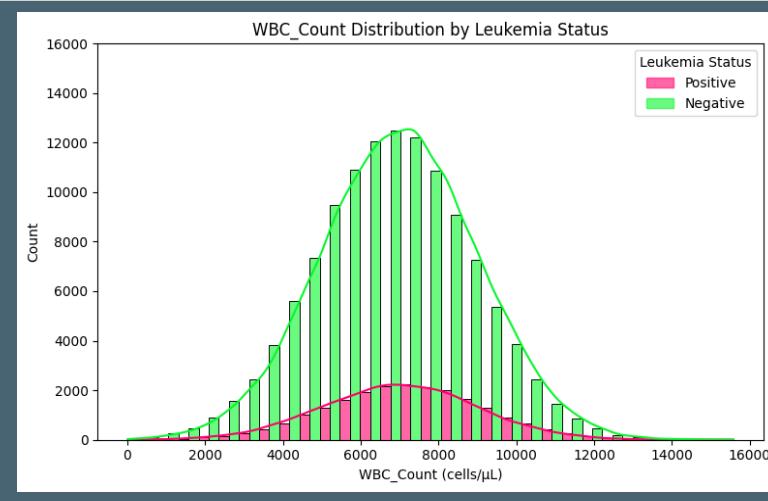


Relationship Between Risk Factors and Leukemia Occurrence

The chart illustrates the **frequency** with which different **risk factors** lead to **leukemia** compared to cases where they do not, emphasizing their potential influence.

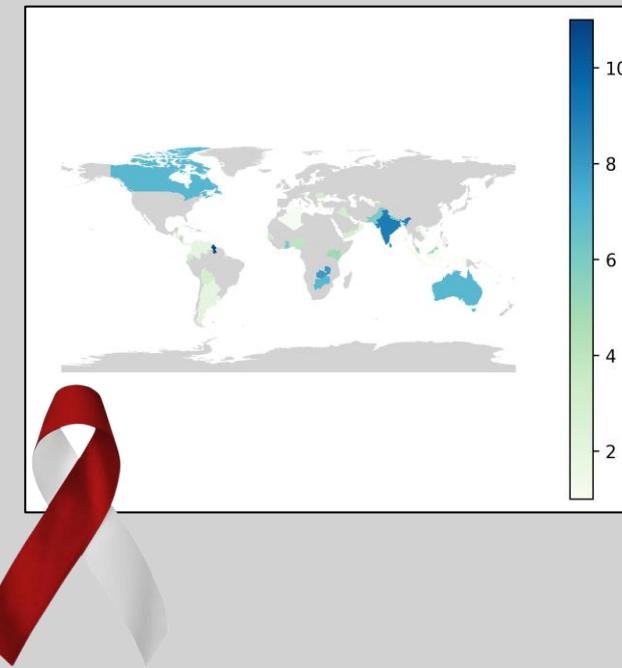


Distribution of Key Biomarkers in Leukemia Patients

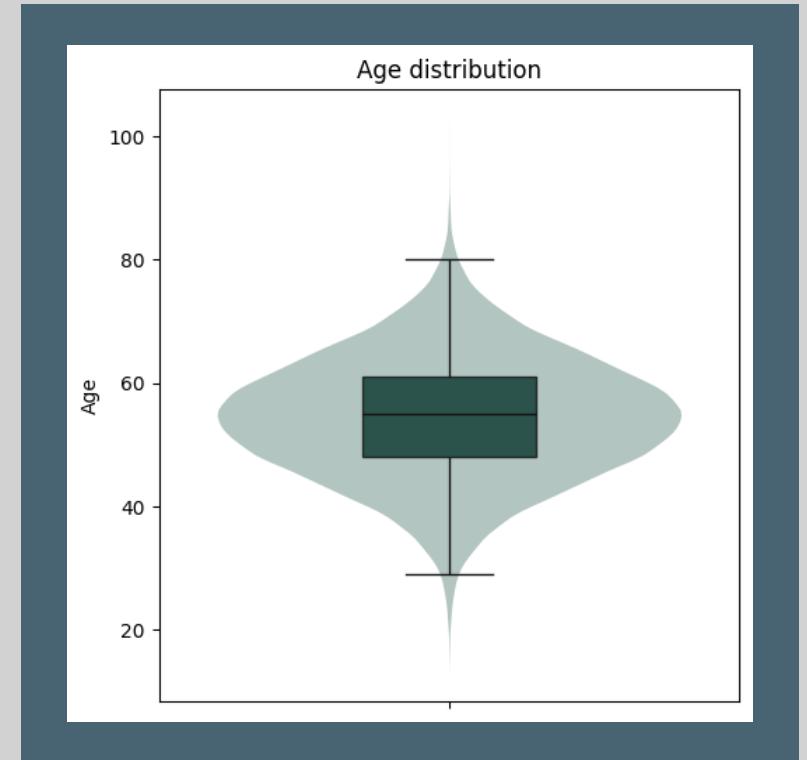
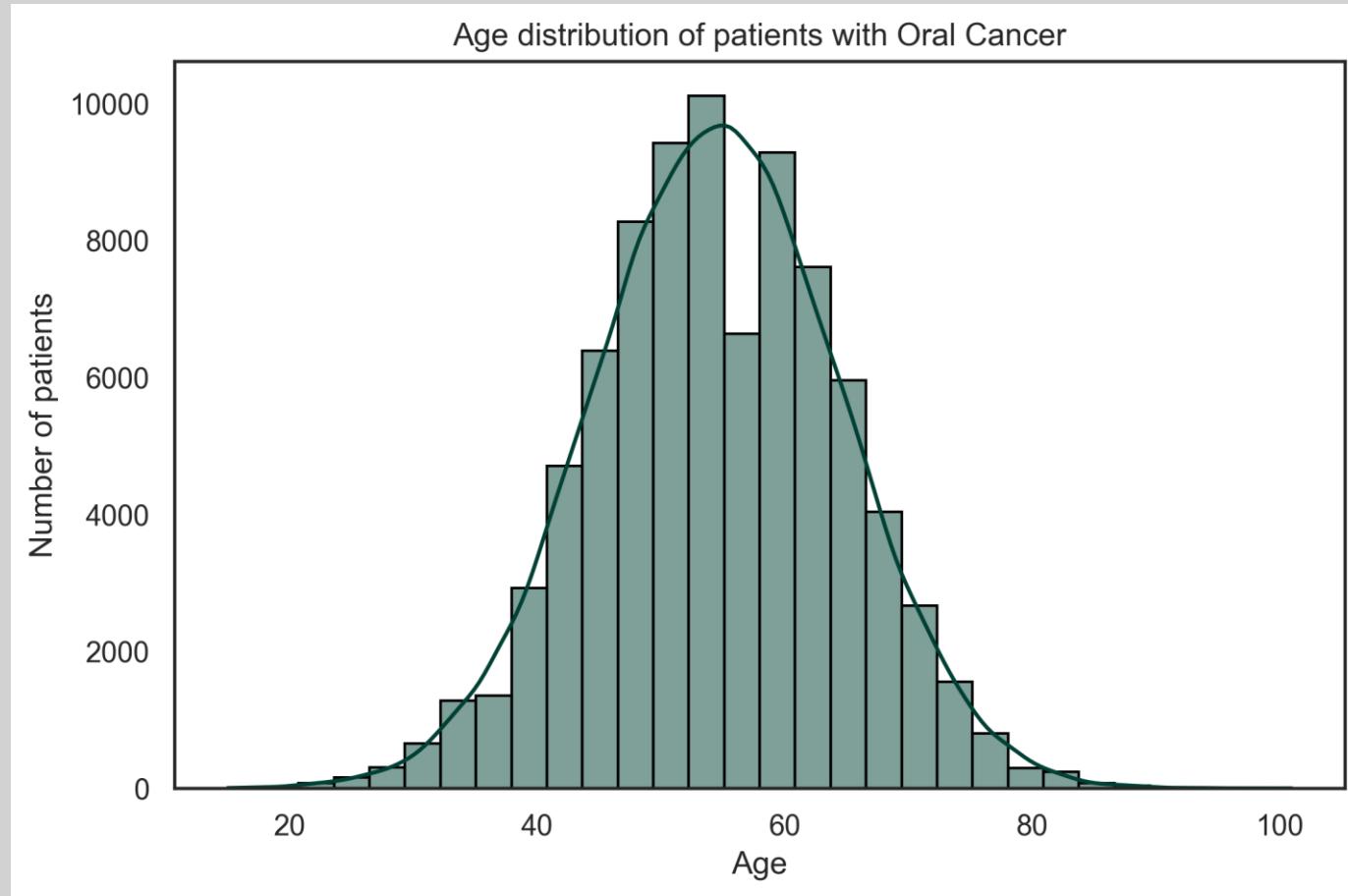




ORAL CANCER

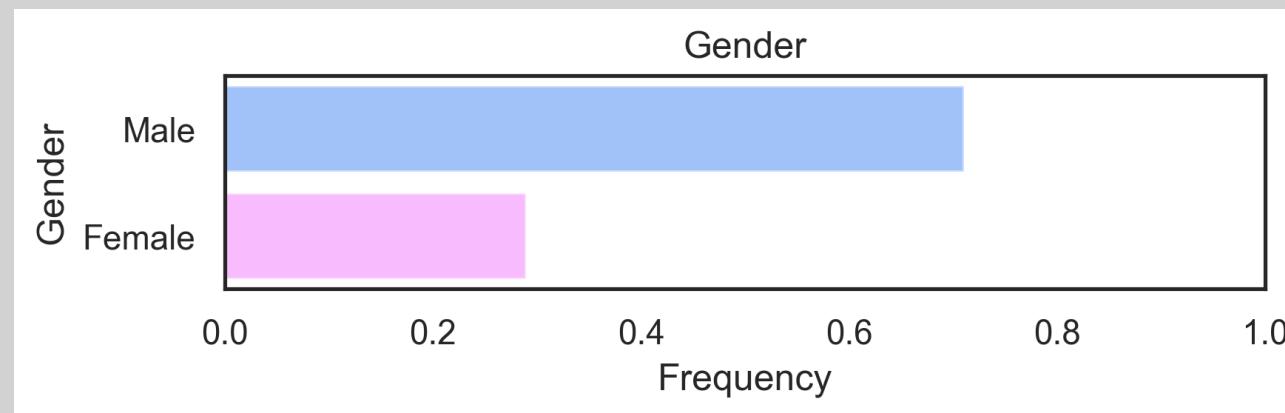


Age Distribution of Oral Cancer Patients

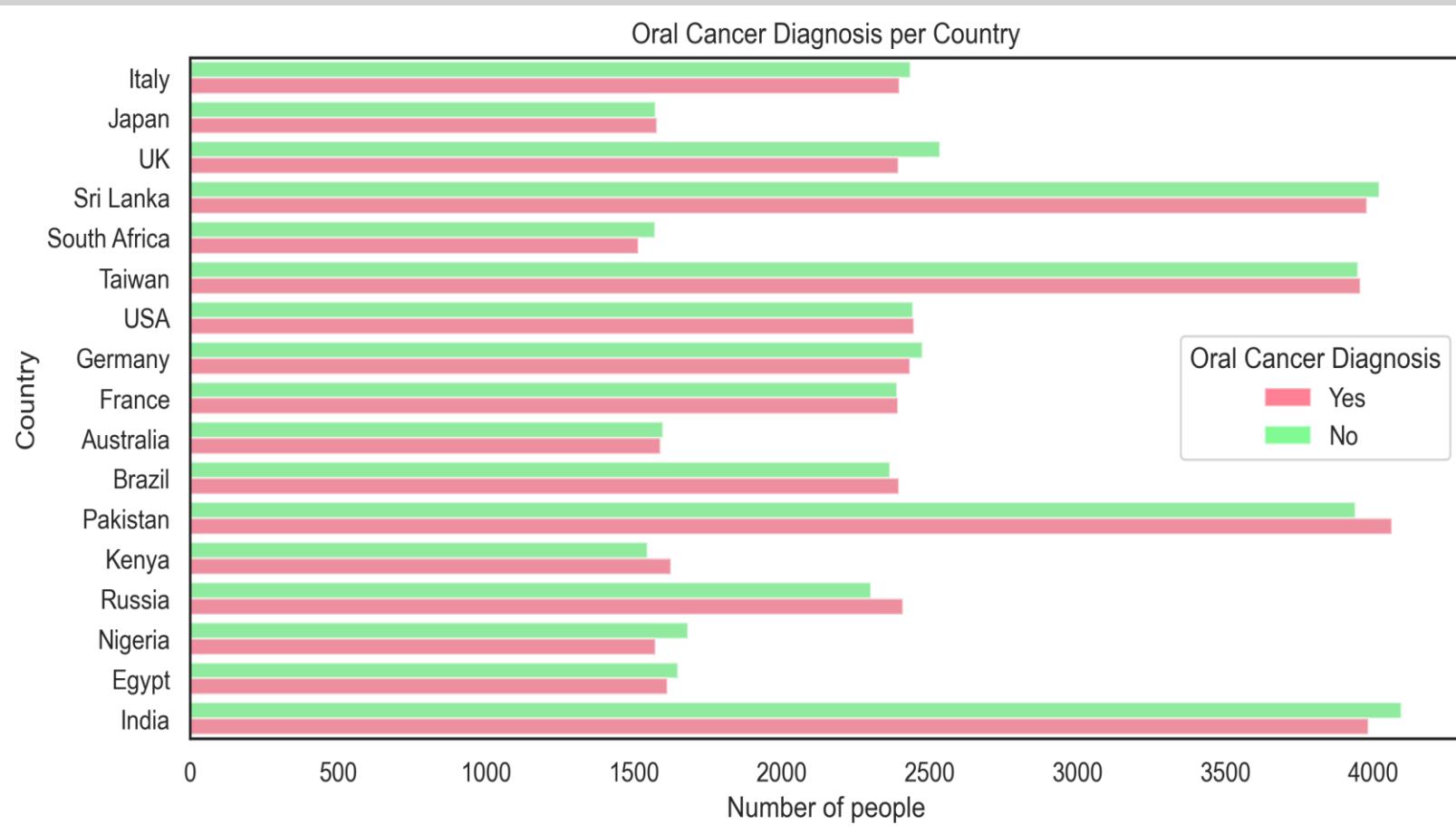


Gender Distribution of Oral Cancer Patients

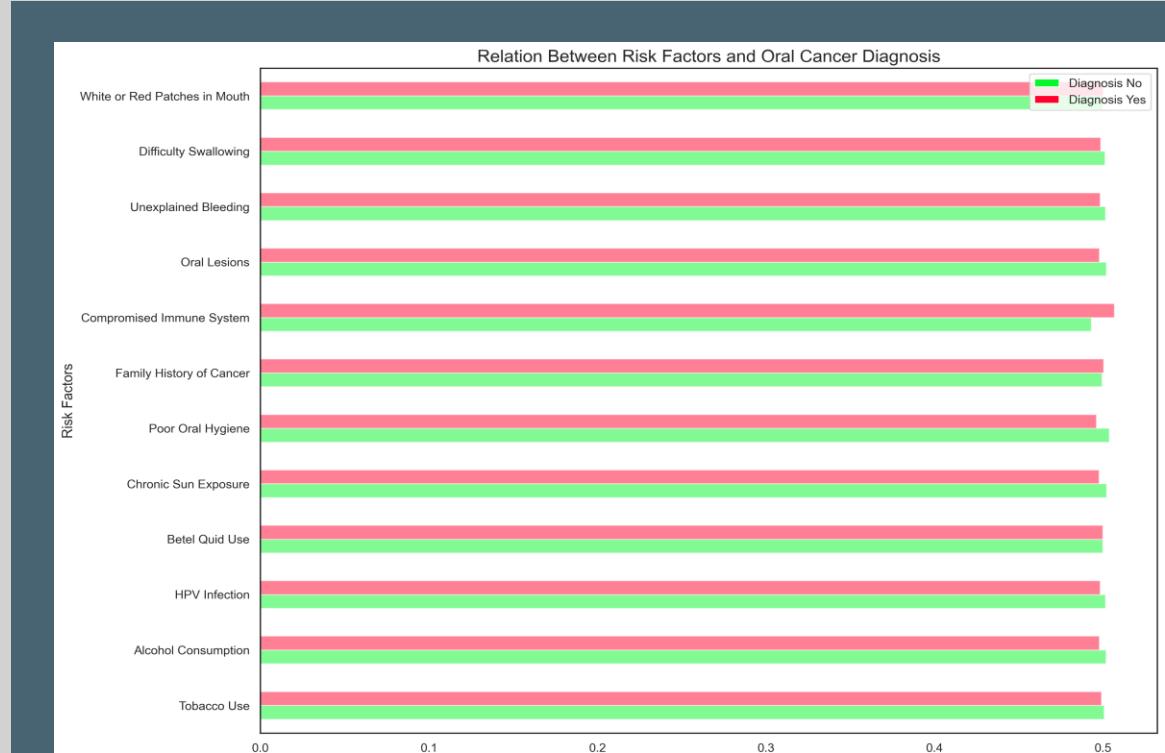
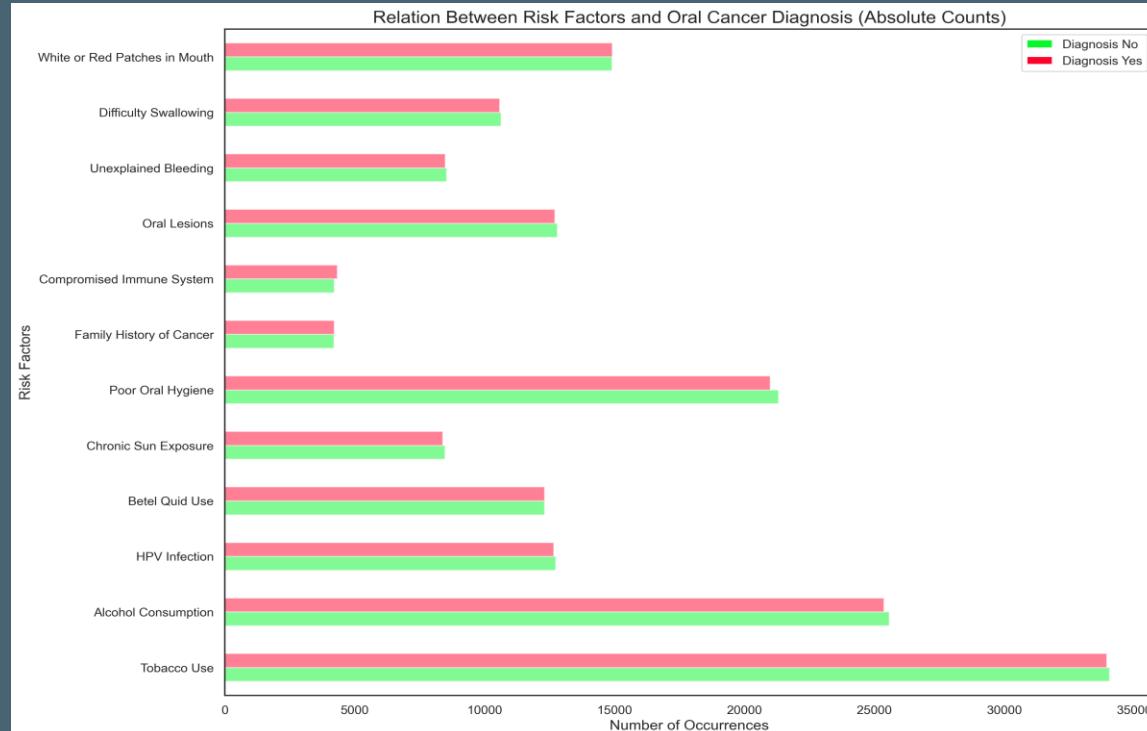
This analysis examines the **gender-based distribution of oral cancer**, comparing disease prevalence between male and female patients.



Provenance Distribution of Oral Cancer Cases



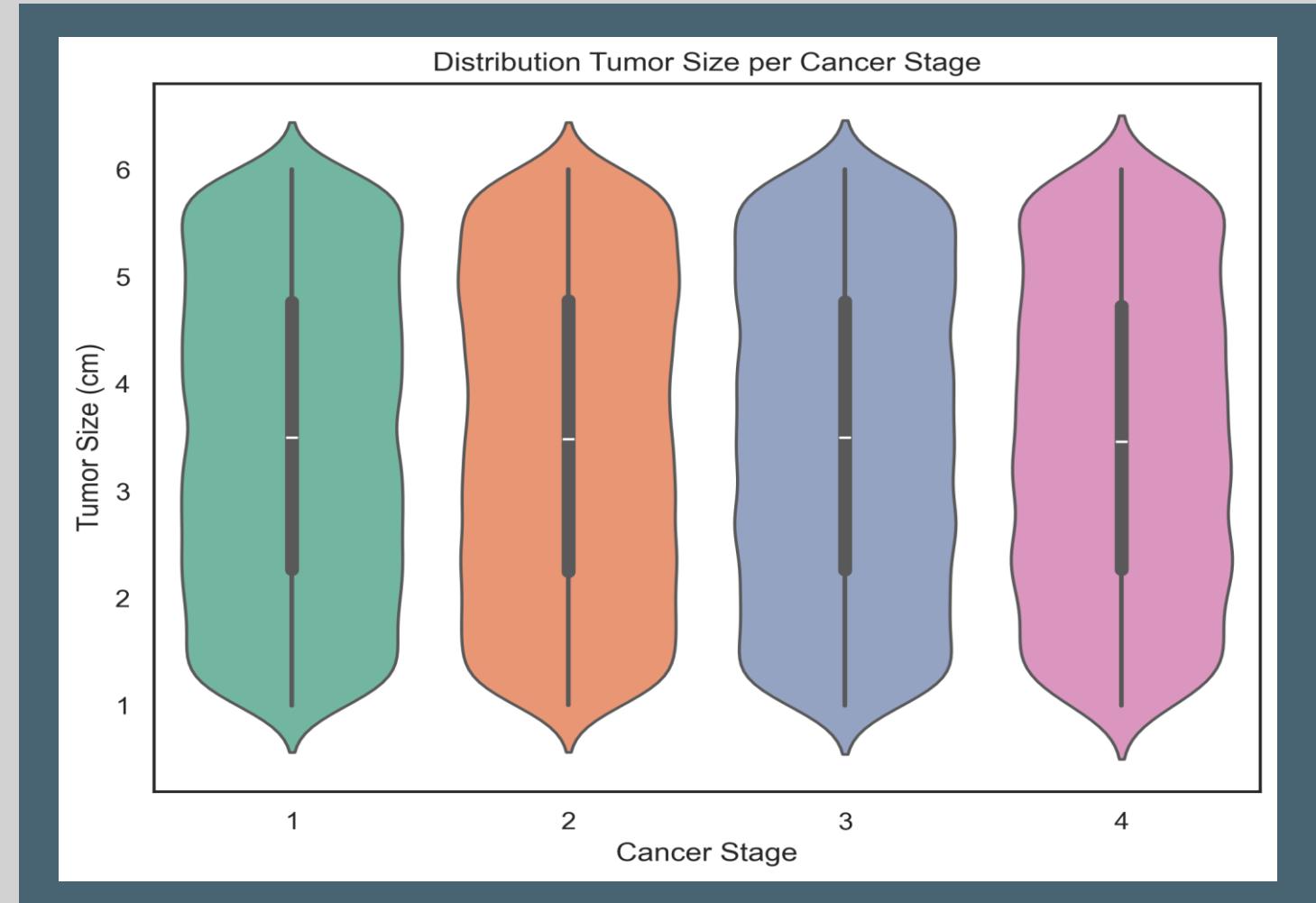
Relationship Between Risk Factors and Oral Cancer Occurrence



The chart illustrates the **frequency** with which different **risk factors** are associated with **oral cancer**, emphasizing their potential role in the development of the disease.

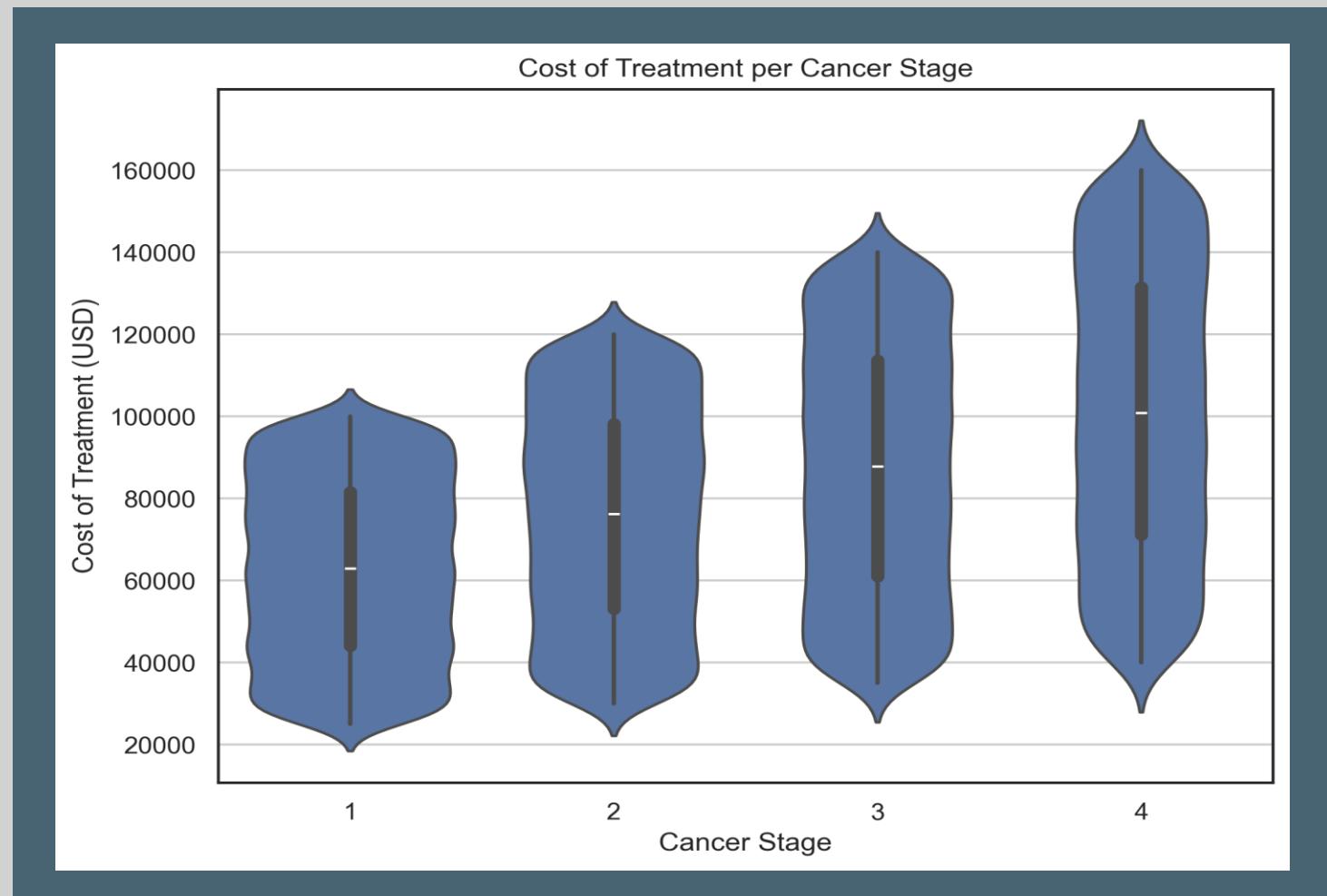
Tumor Size Distribution by Cancer Stage

The **violin plot** displays the **distribution of tumor sizes** across different **cancer stages**, showing how tumor dimensions vary as the disease progresses.



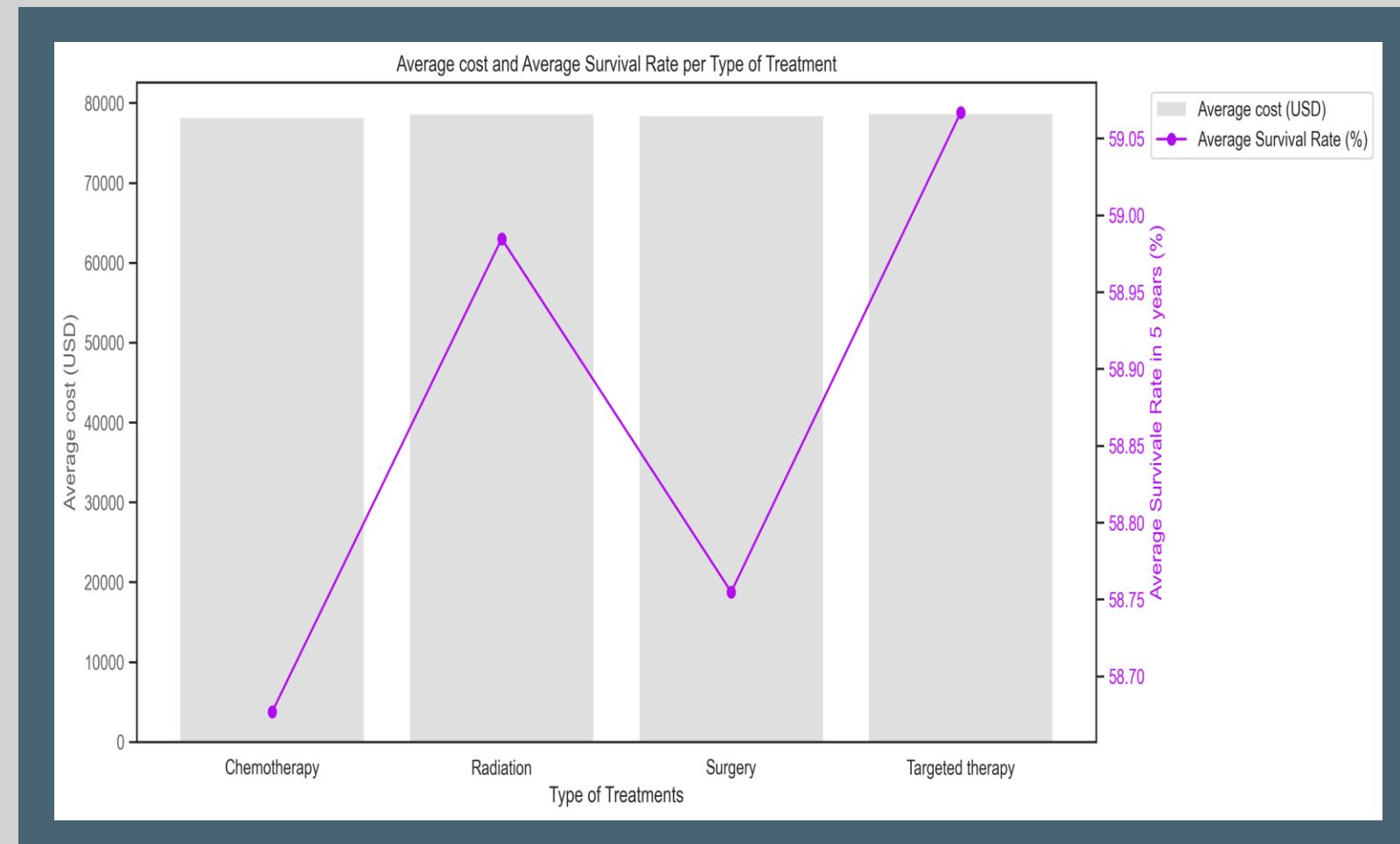
Distribution of Treatment Cost by Cancer Stage

The **violin plot** shows the **distribution of treatment costs** across different **cancer stages**, highlighting how healthcare expenses increase with disease severity.



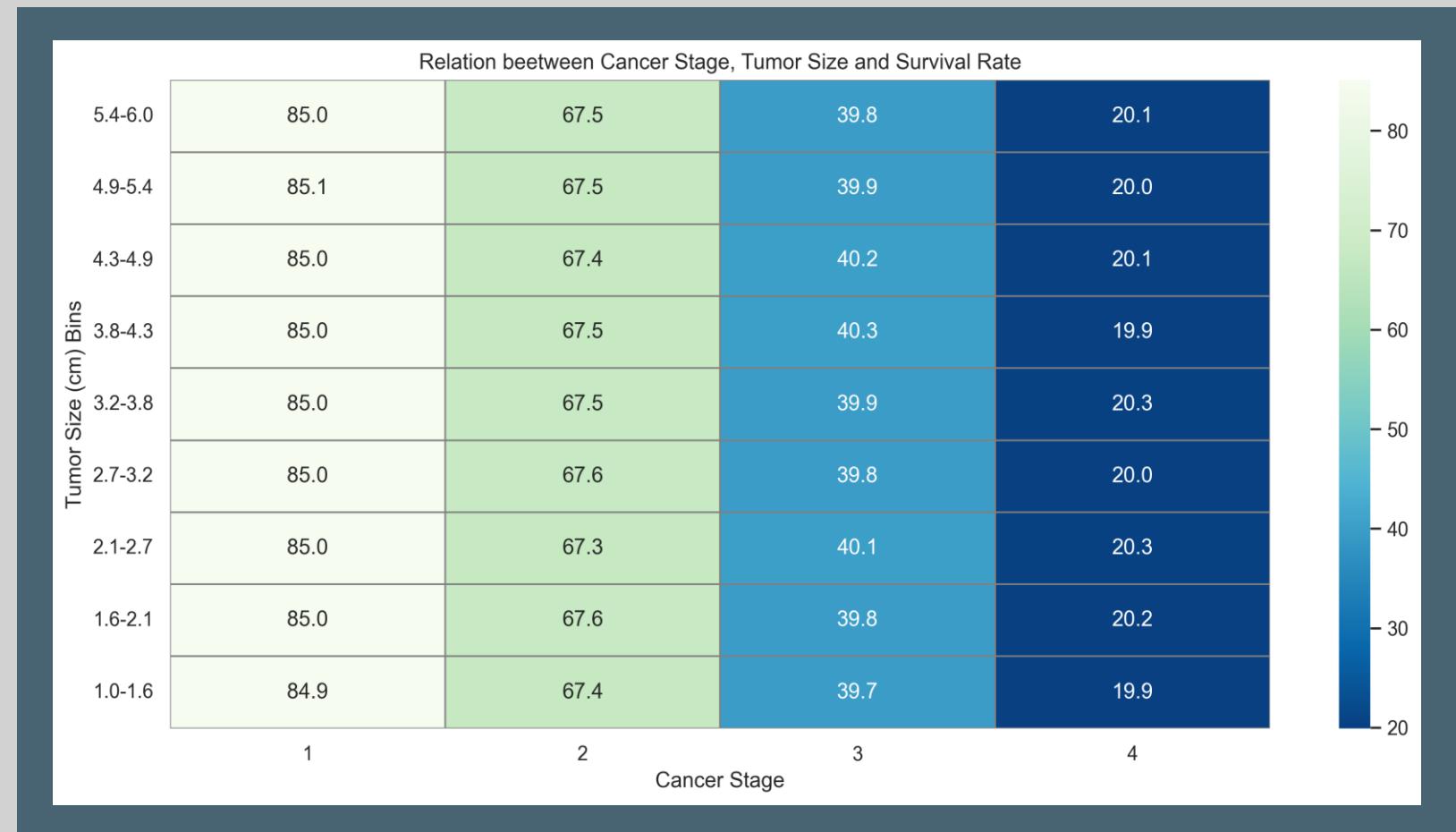
Average Treatment Cost vs Survival Rate by Treatment Type

The plot compares different **types of treatment** in terms of their **average cost** and **five-year survival rate**, highlighting the trade-offs between economic impact and patient outcomes.



Correlation Between Cancer Stage, Tumor Size and Survival Rate

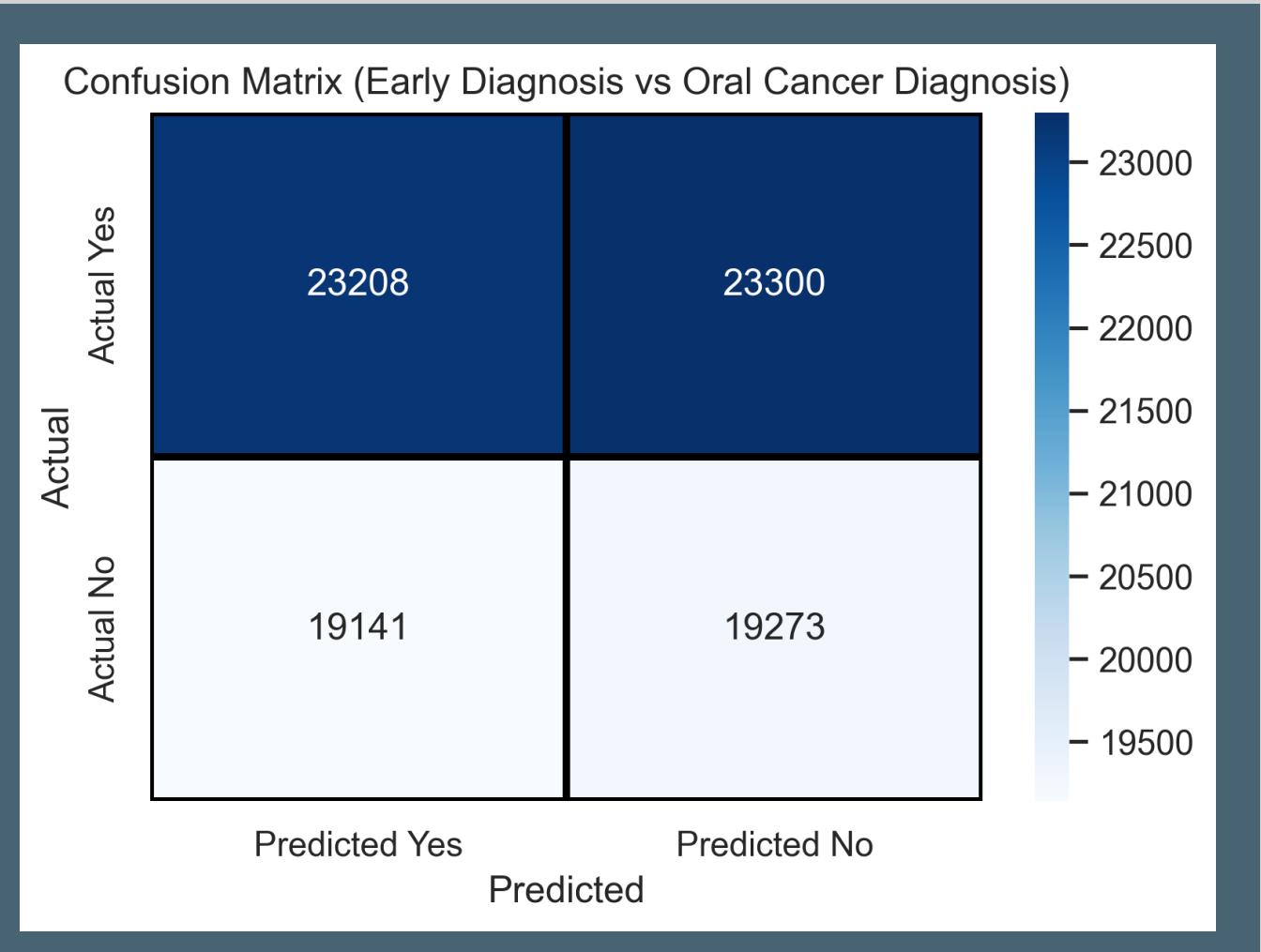
By showing the **strength** and direction of **correlations** among key **clinical variables**, this heatmap helps identify potential relationships between **tumor characteristics** and **long-term survival**.



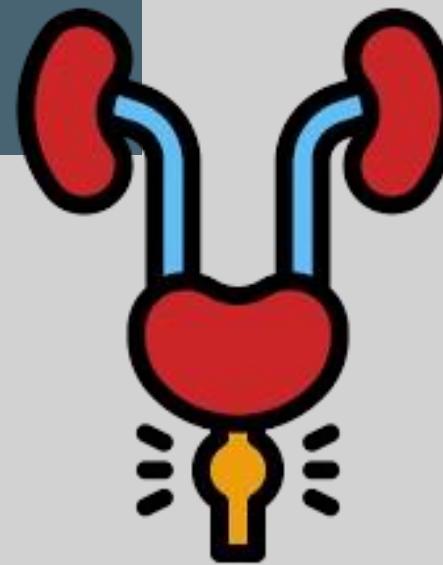
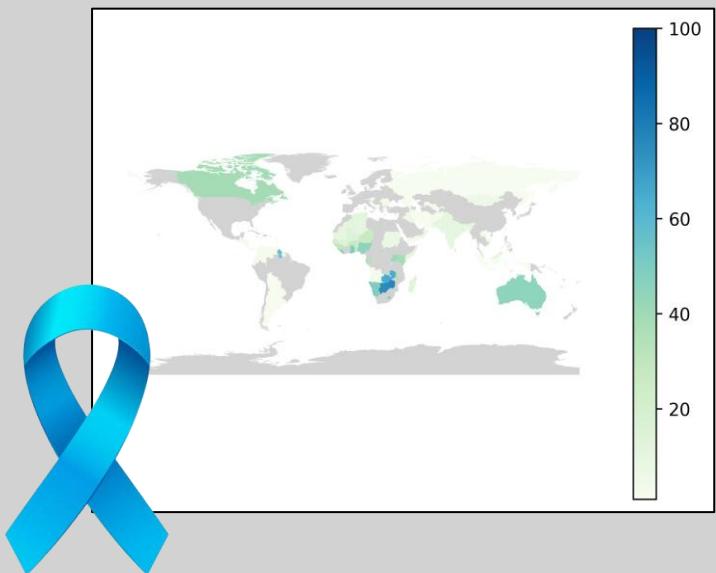
Early Diagnosis vs Confirmed Oral Cancer Diagnosis

The **confusion matrix** shows **true positive** and **true negative** cases, where the initial diagnosis matches the confirmed diagnosis, as well as false positives and false negatives, where discrepancies occur.

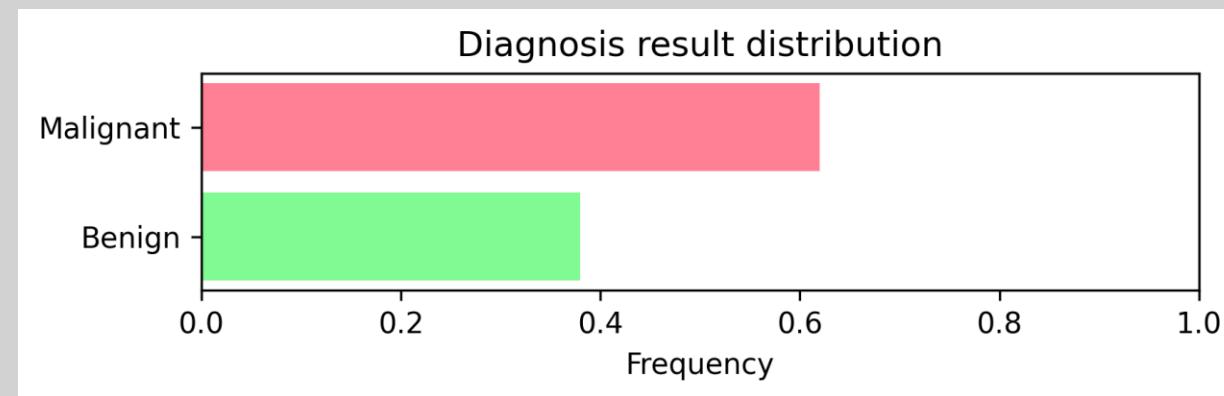
This highlights the challenges of **early detection**.



PROSTATE CANCER

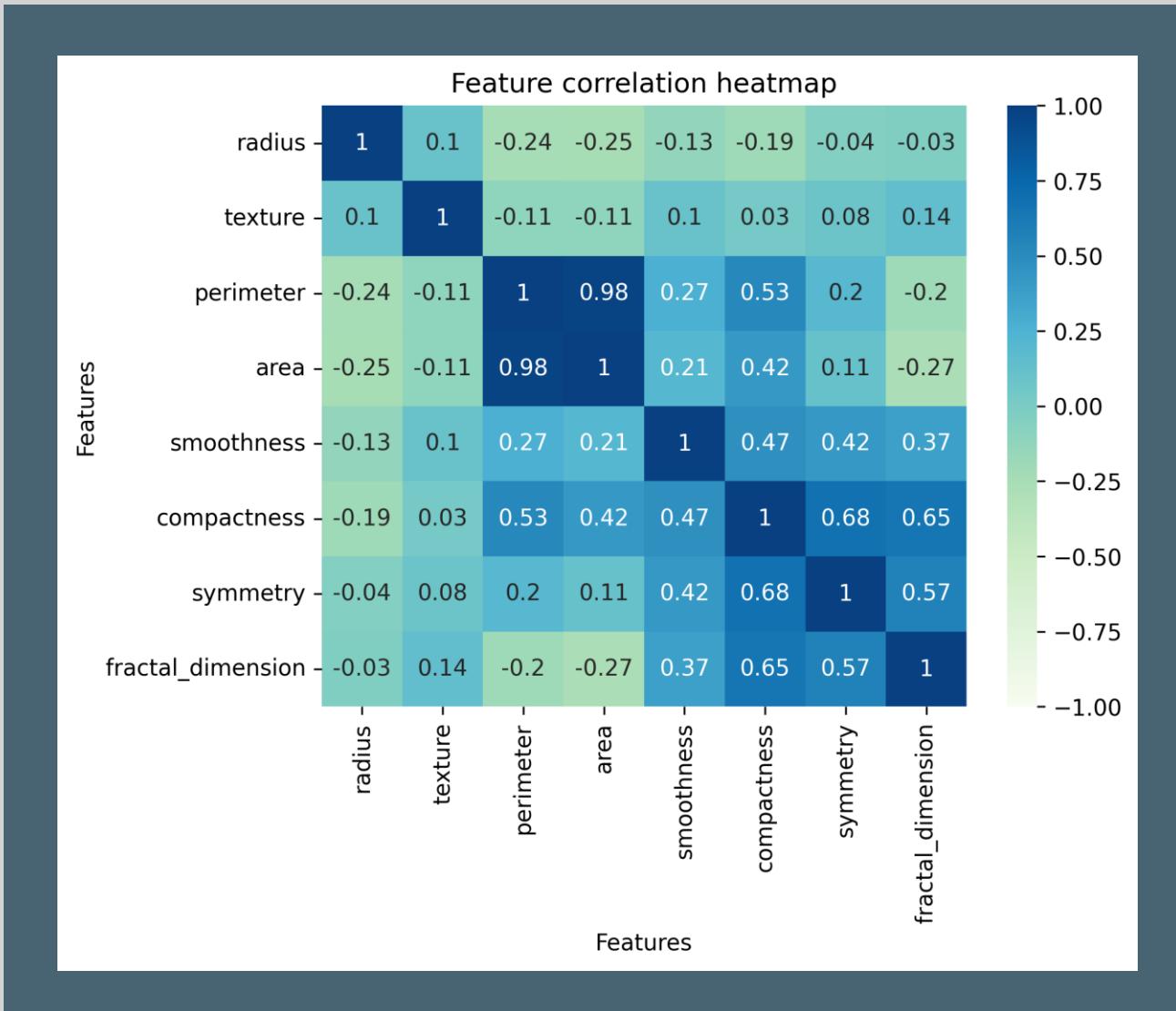


Prostate Tumor Diagnosis: Benign vs Malignant



This analysis examines the classification of **prostate tumors**, highlighting the clinical **differences** between **benign** and **malignant** forms.

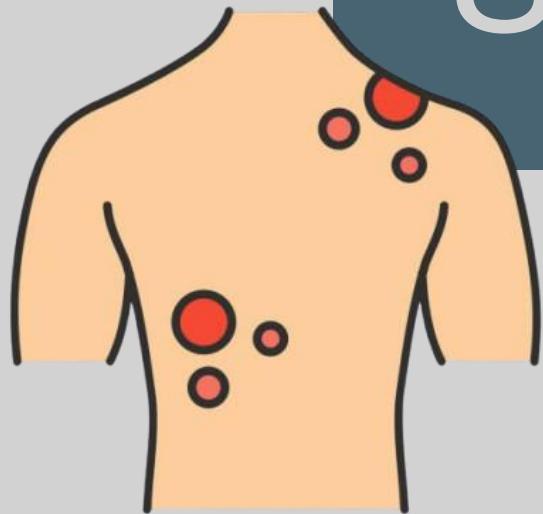
Correlation Matrix of Prostate Tumor Features



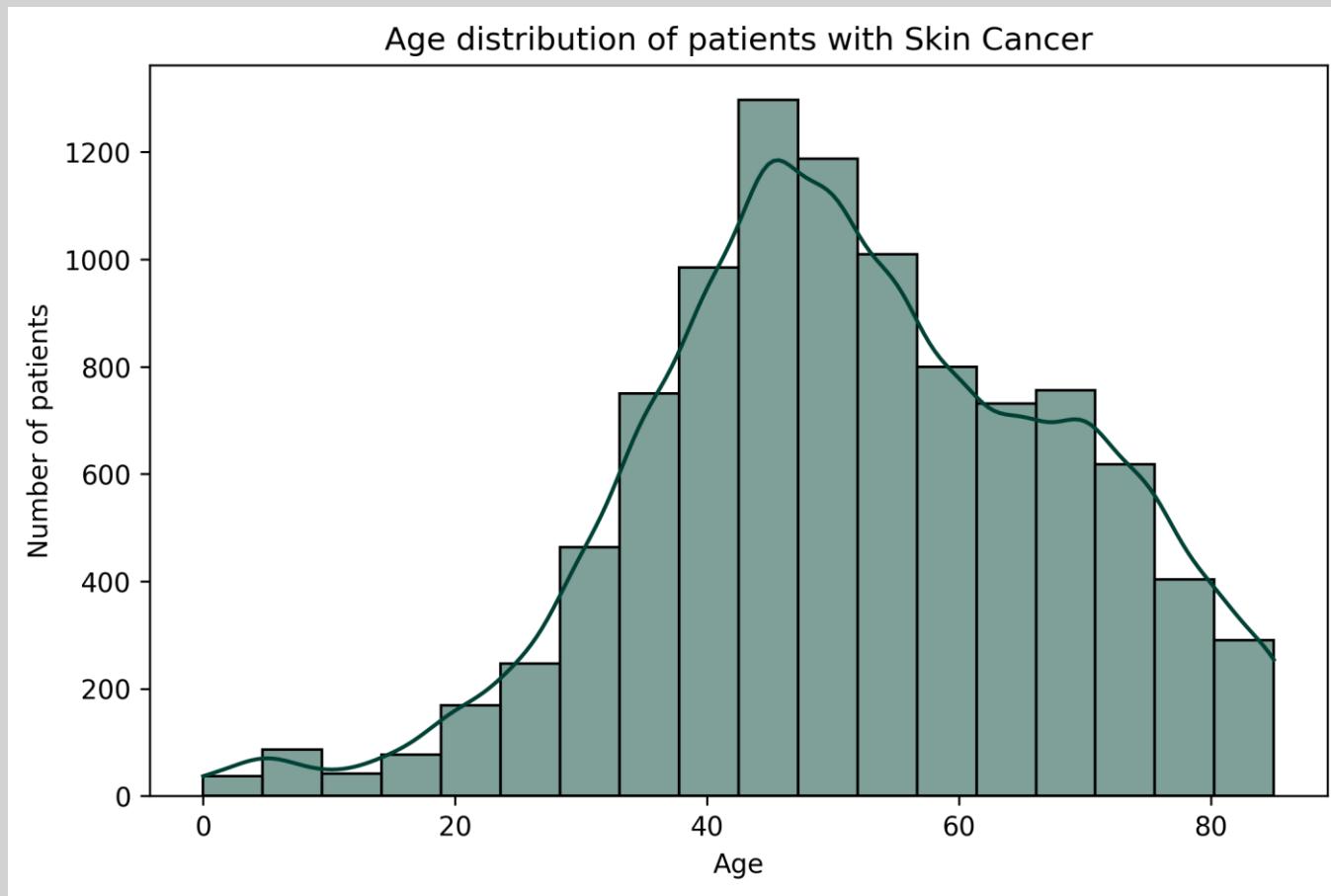
The **correlation matrix** illustrates the relationships between key **prostate tumor features**, such as **area**, **perimeter**, and other **morphological measurements**.

These correlations help identify **patterns associated with malignancy**.

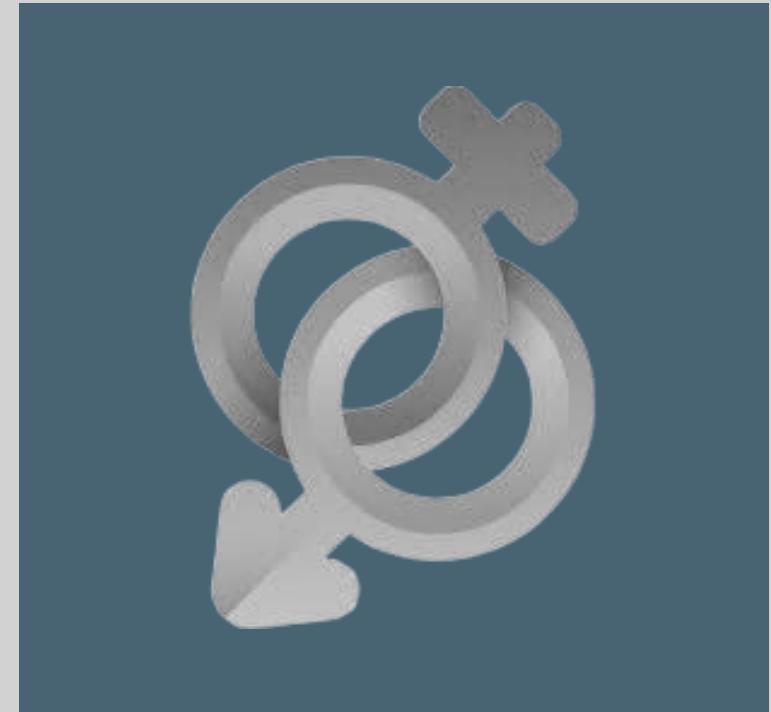
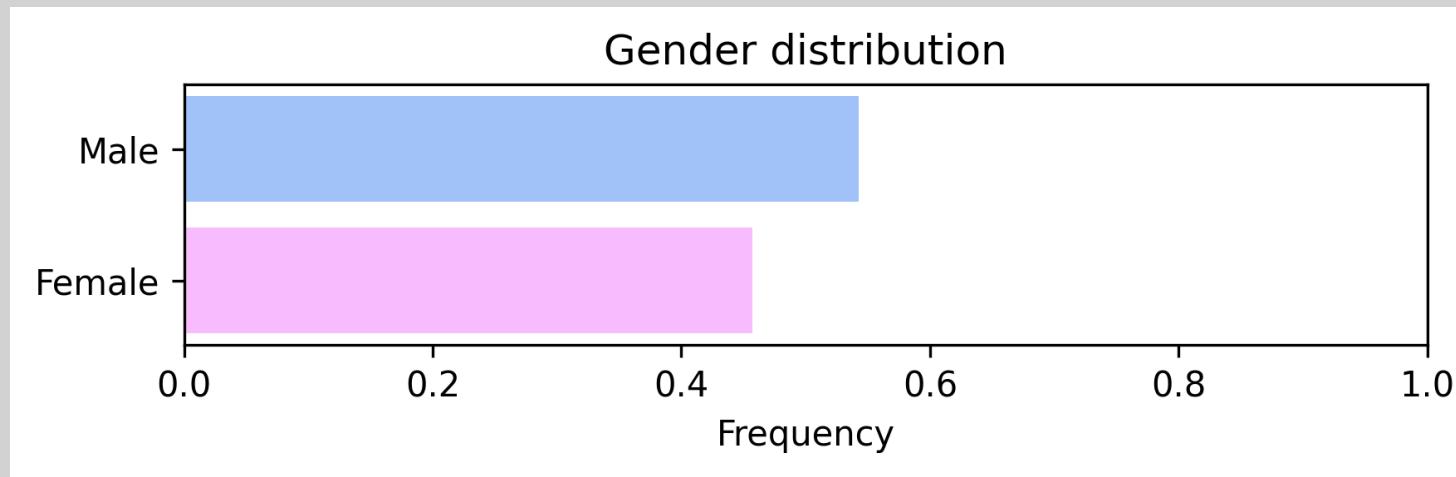
SKIN CANCER



Age Distribution of Skin Cancer Patients

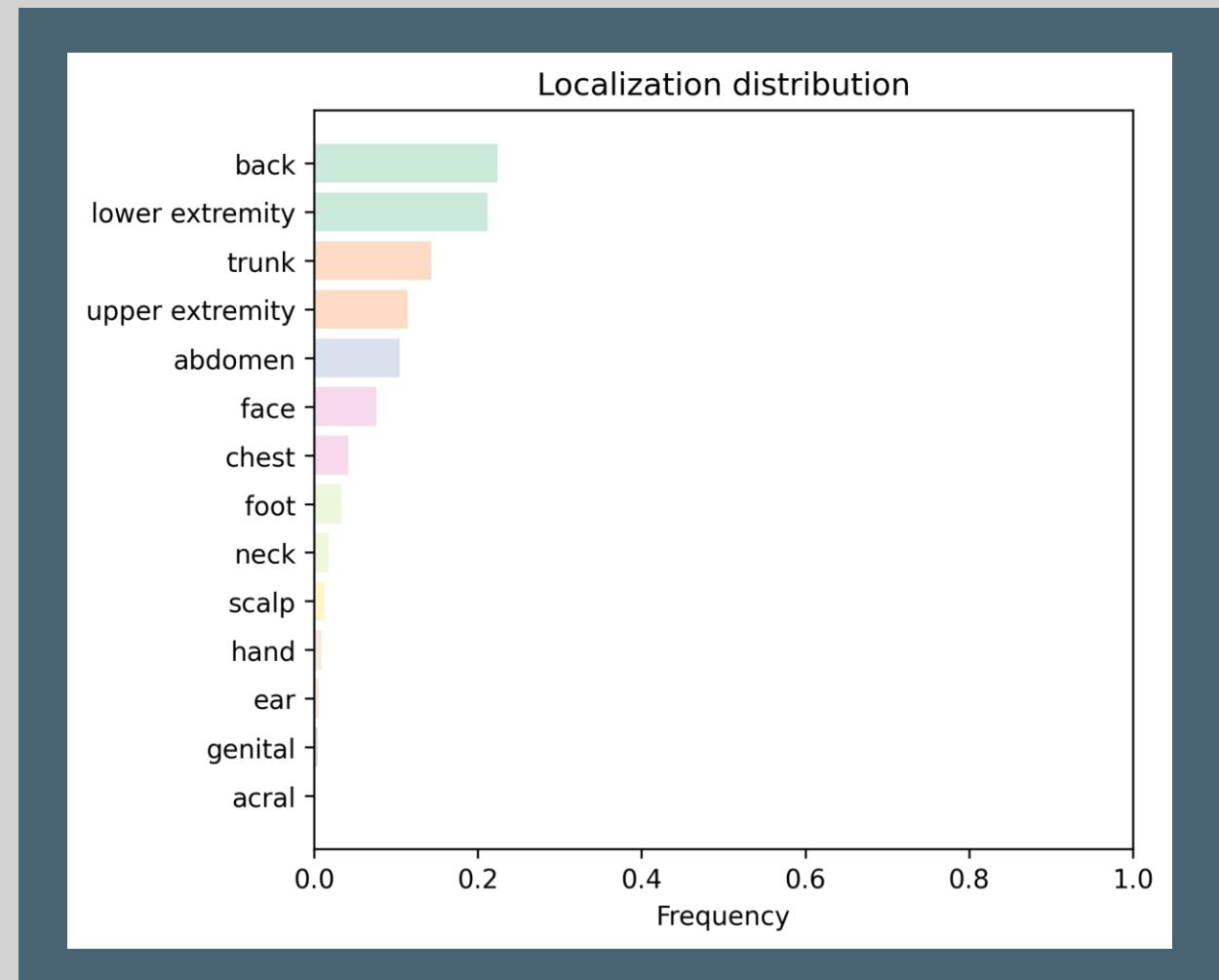


Gender Distribution of Skin Cancer Patients

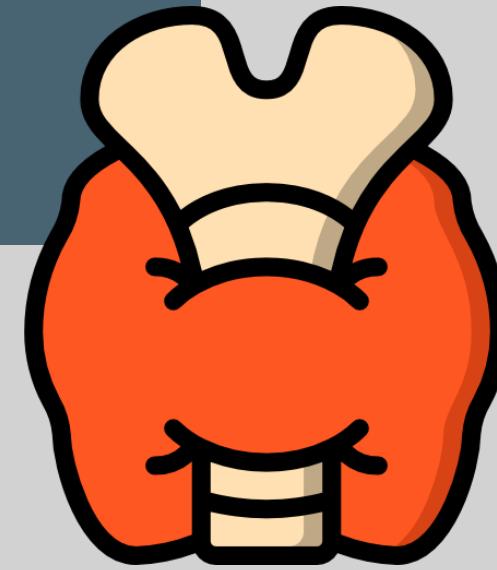
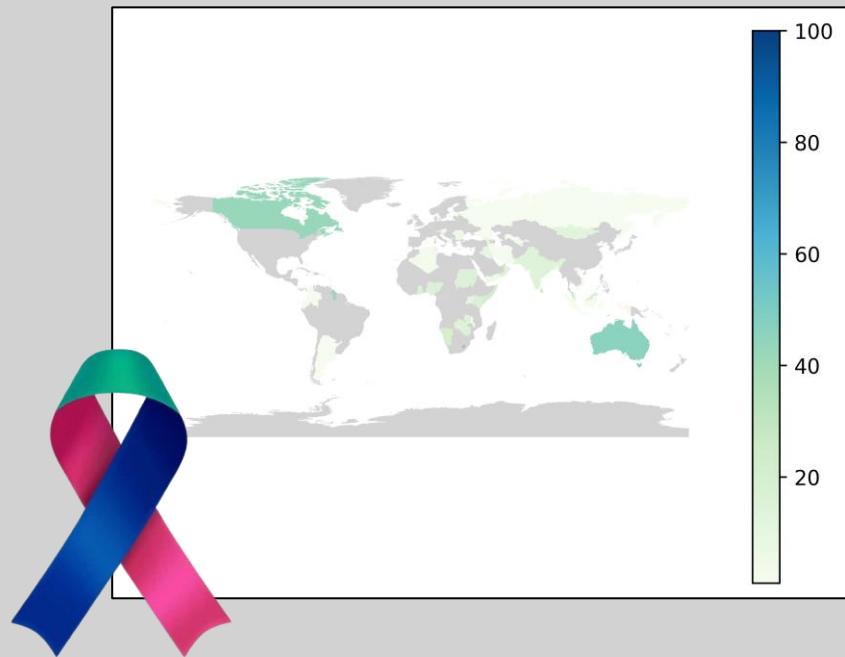


Distribution of Skin Cancer Cases by Body Location

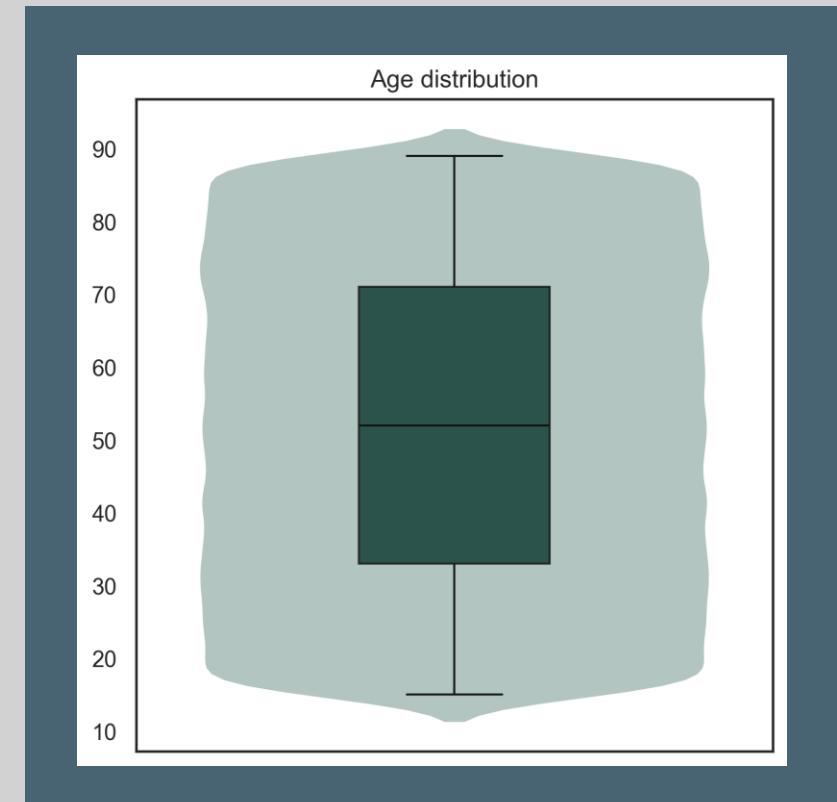
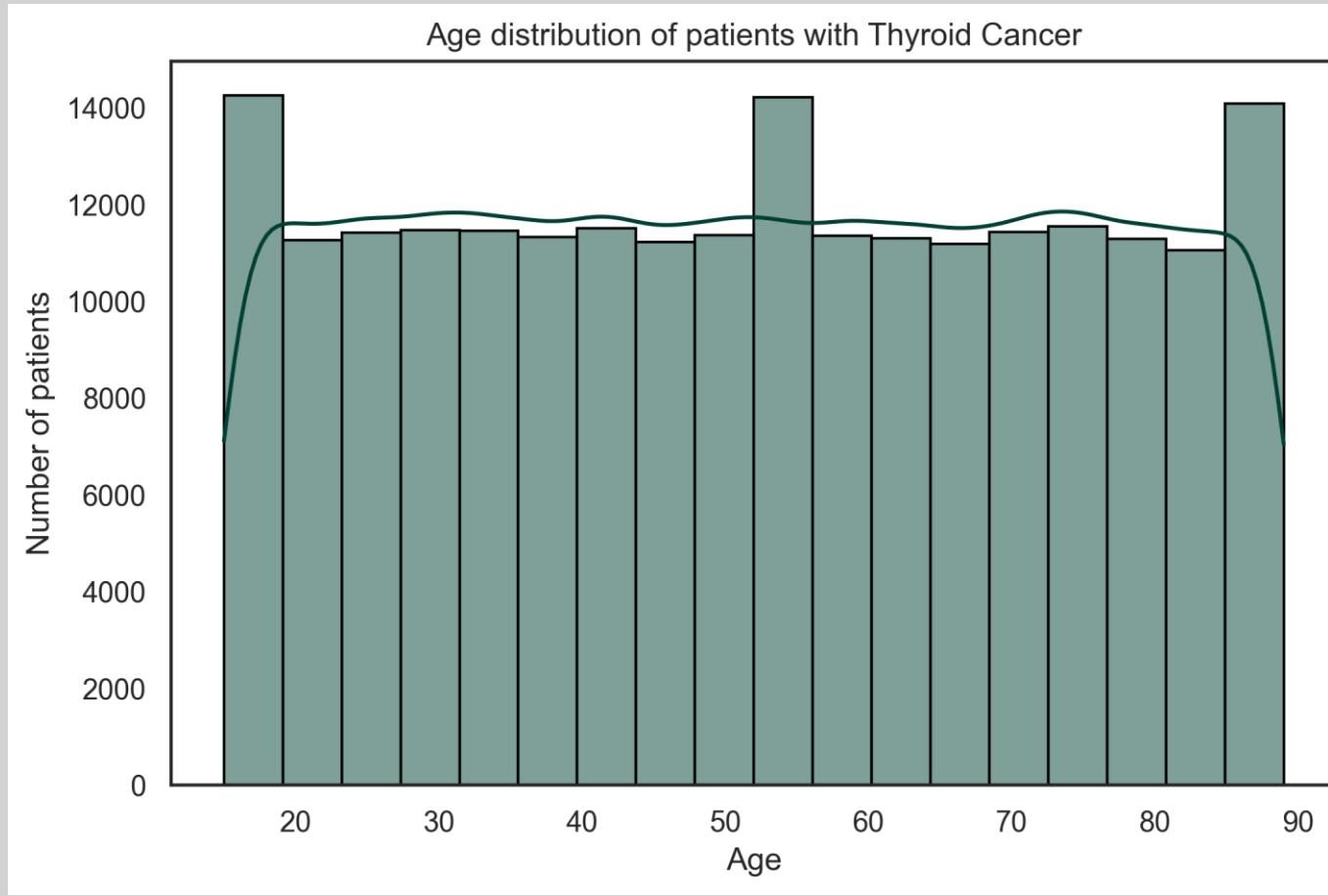
This analysis assesses the occurrence of **skin cancer** across various **anatomical sites**, identifying the most frequently affected **areas** of the body.



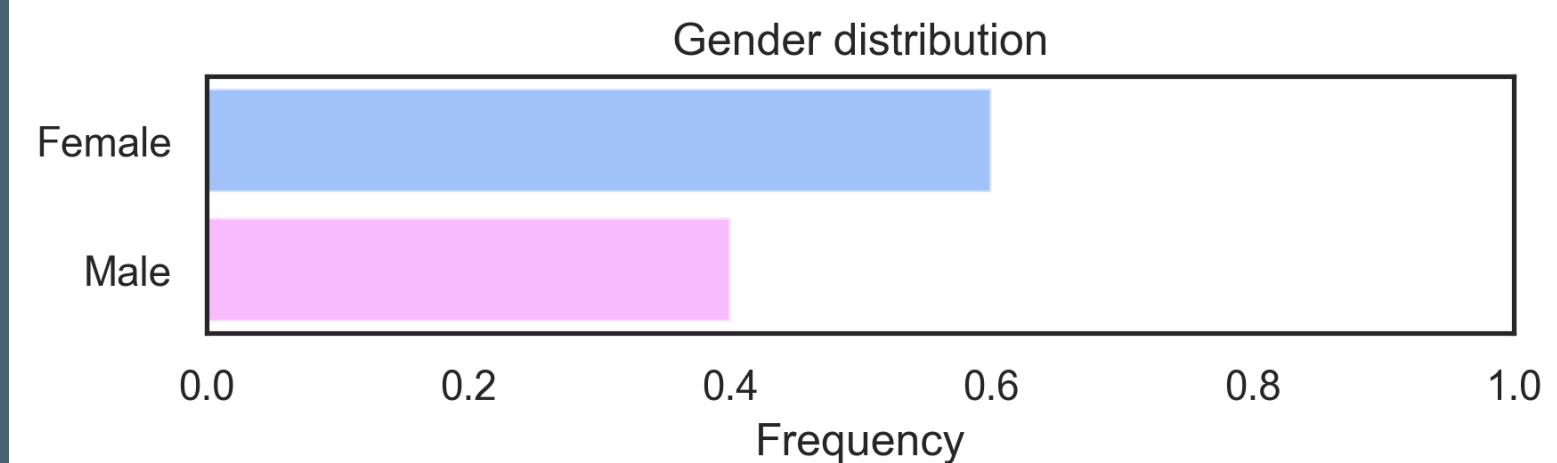
THYROID CANCER



Age Distribution of Thyroid Cancer Patients

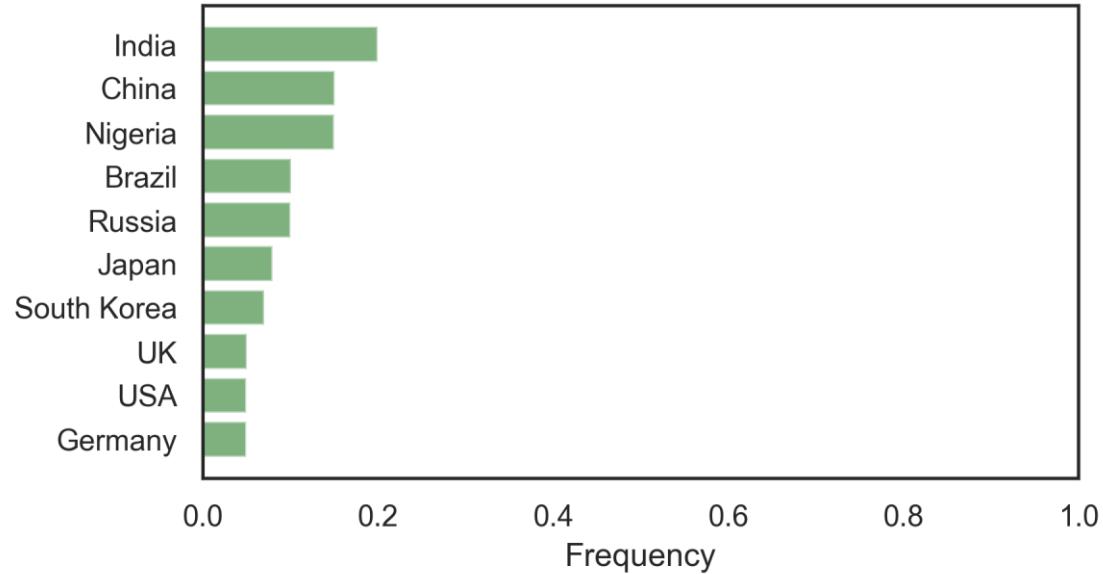


Gender Distribution of Thyroid Cancer Patients

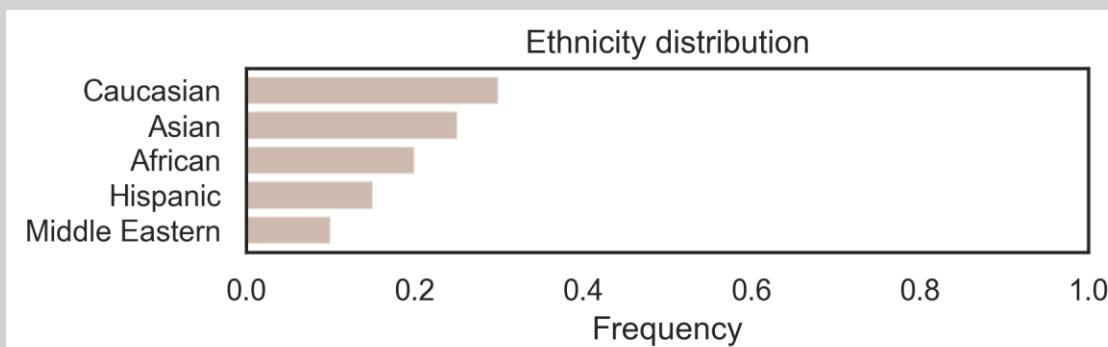


Provenance Distribution of Thyroid Cancer Cases

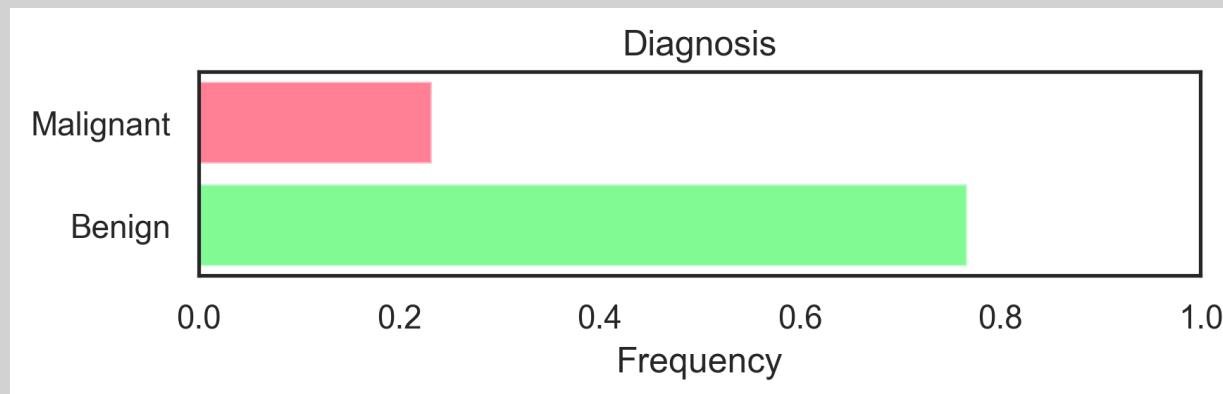
Country distribution



Ethnicity distribution

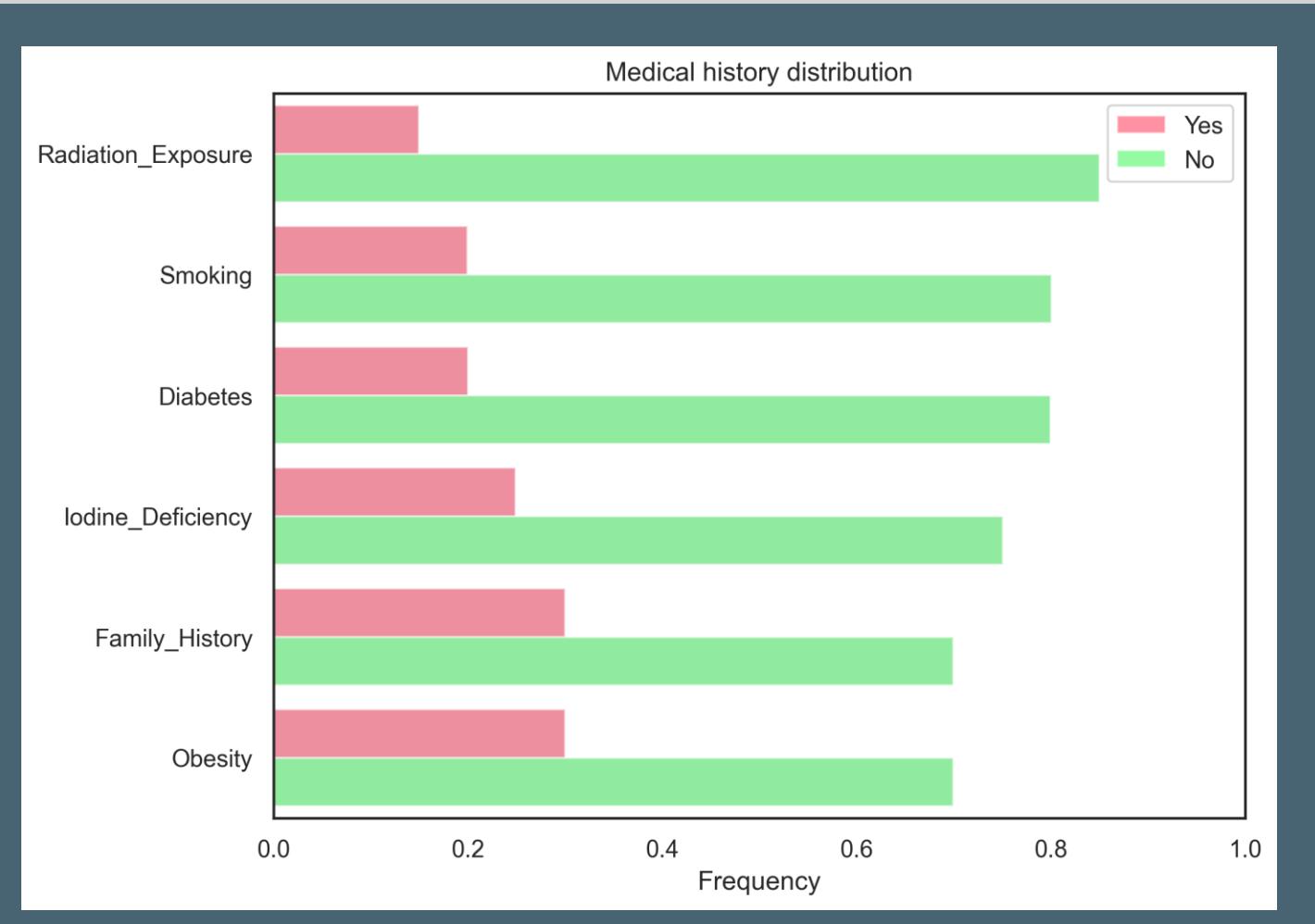


Thyroid Tumor Diagnosis Results



Distribution of Medical History and Risk Factors in Thyroid Cancer Patients

This section highlights the main **risk factors** and **medical history** associated with **thyroid cancer**, providing insights into possible contributors to disease development.



Conclusions

Overall, this **analysis** demonstrates how **scientific visualization** can reveal meaningful **patterns** in **cancer** data.

Demographic factors, geographic location, tumor characteristics and **lifestyle-related risks** show significant associations with both prevalence and survival outcomes.

These findings underline the importance of **early detection**, targeted **prevention** strategies and **personalized treatment** approaches.

Future work could include larger datasets and predictive models to further improve diagnostic and prognostic accuracy.