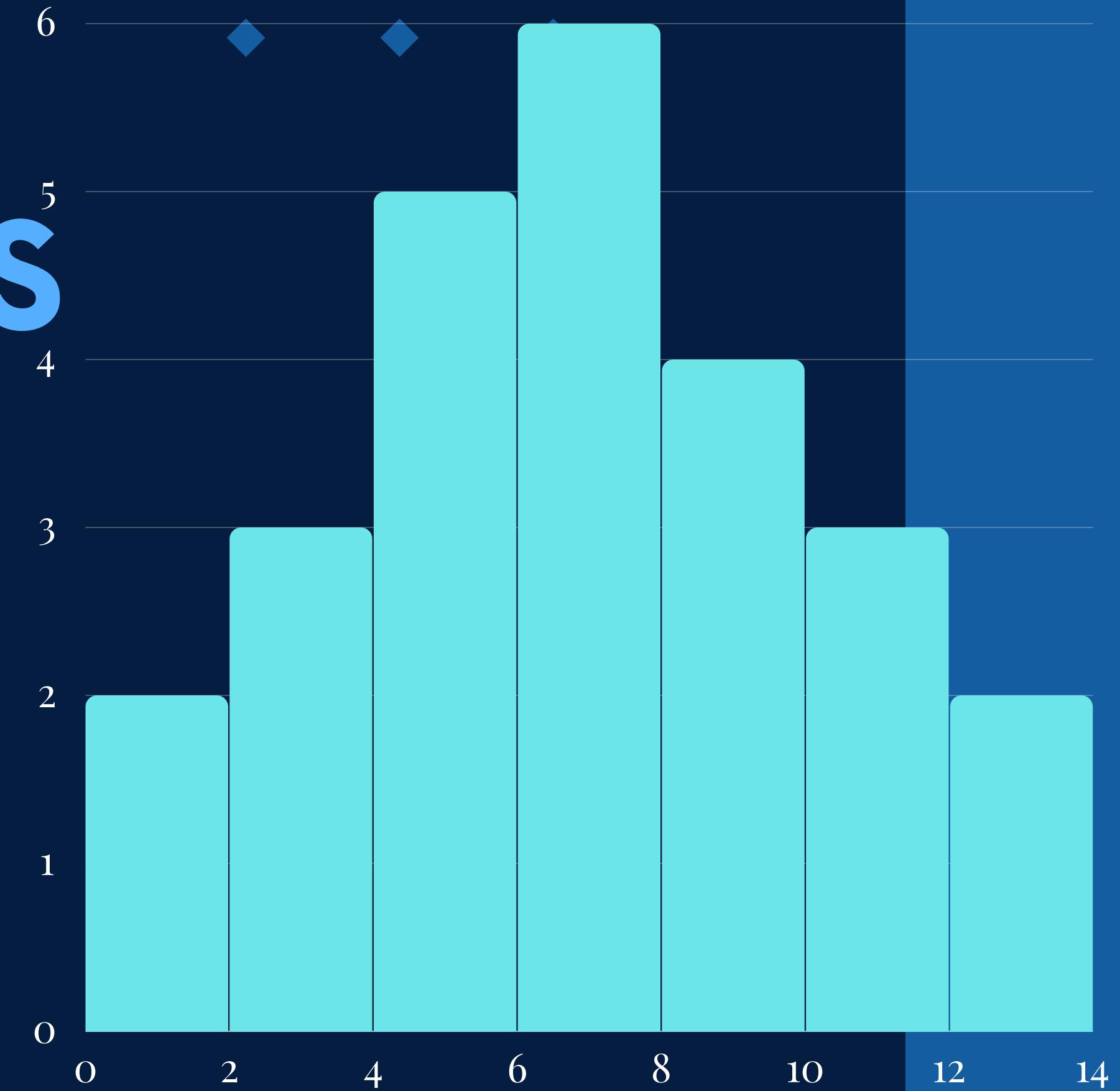


PROJECT 1: GLOBAL TRENDS IN MENTAL HEALTH

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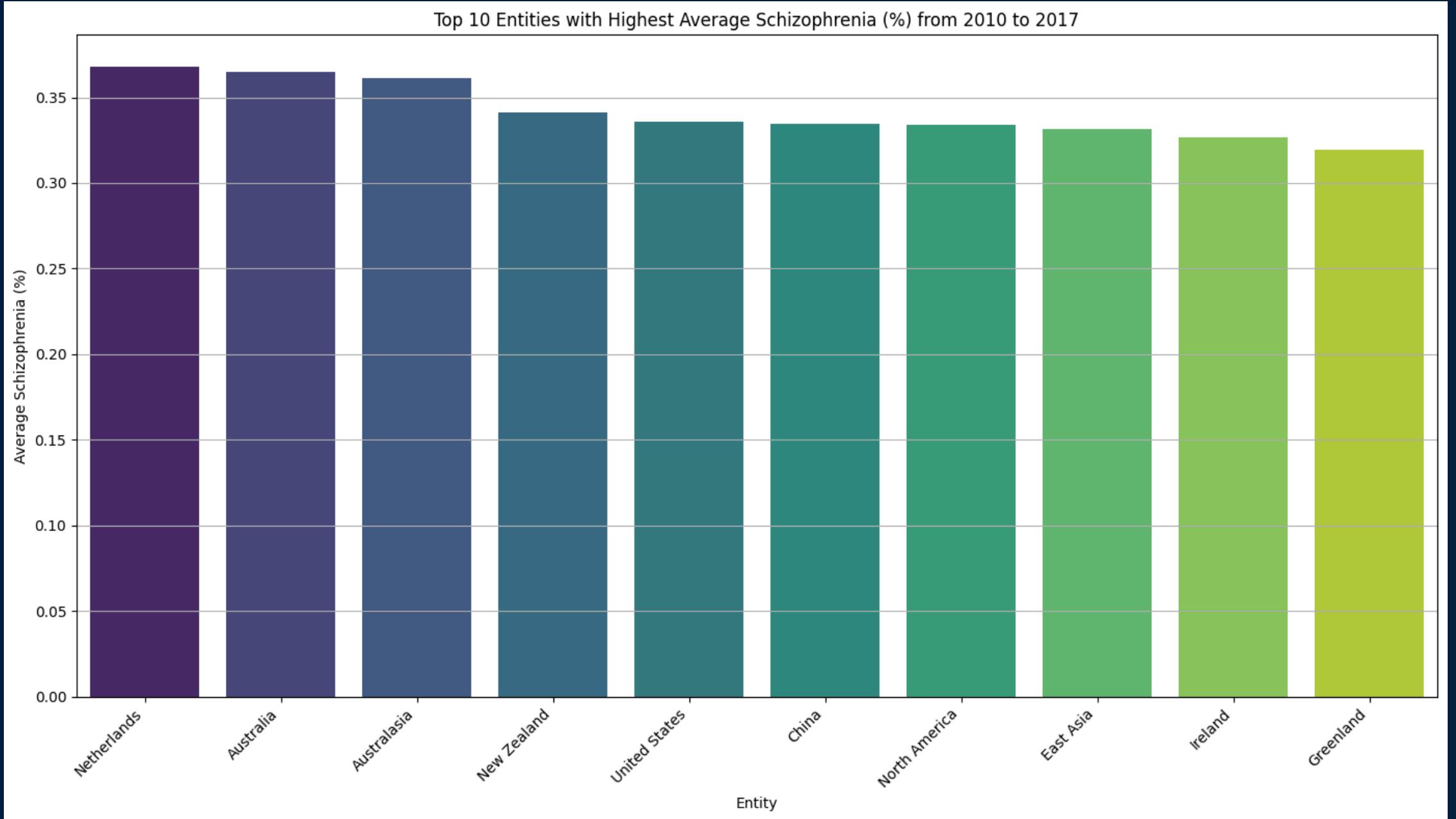
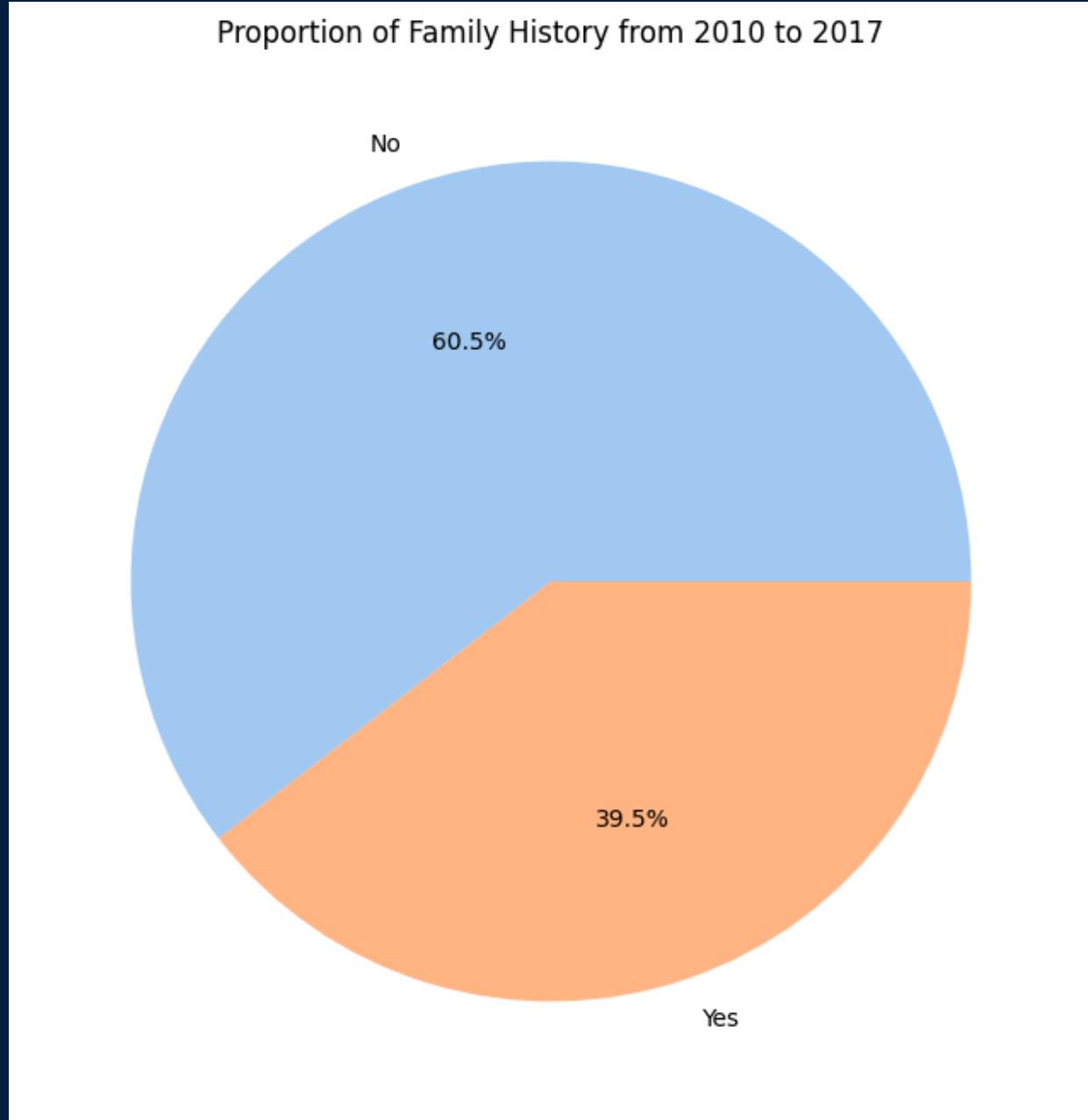


What Are We Analyzing?

HOW DO DEMOGRAPHIC FACTORS (SUCH AS GEOGRAPHIC REGION, FAMILY HISTORY, AND EMPLOYMENT STATUS) AND TEMPORAL TRENDS (FROM 2010 TO 2017) INFLUENCE THE PREVALENCE AND PATTERNS OF MENTAL HEALTH CONDITIONS, INCLUDING SCHIZOPHRENIA, MOOD DISORDERS, AND DRUG USE DISORDERS?



VISUALIZATIONS



ANALYSIS

- Family history
 - consistent trend with approximately 60.5% of the population reporting no family history of the condition throughout the observed period. Conversely, 39.5% of individuals indicated a presence of family history, suggesting a substantial proportion of the population with familial links to the condition under investigation.
- Avg. % of Schizophrenia
 - Ireland exhibits the highest rate at approximately 0.35%, followed by the Netherlands and Australia, with rates around 0.30% and 0.25%
 - North America and East Asia both fall within the 0.10% range.

What do these findings tell us?



ANALYSIS

Question: How do demographic factors (such as geographic region, family history, and employment status) and temporal trends (from 2010 to 2017) influence the prevalence and patterns of mental health conditions, including schizophrenia, mood disorders, and drug use disorders?

What about employment status, mood disorders, and drug use disorders?



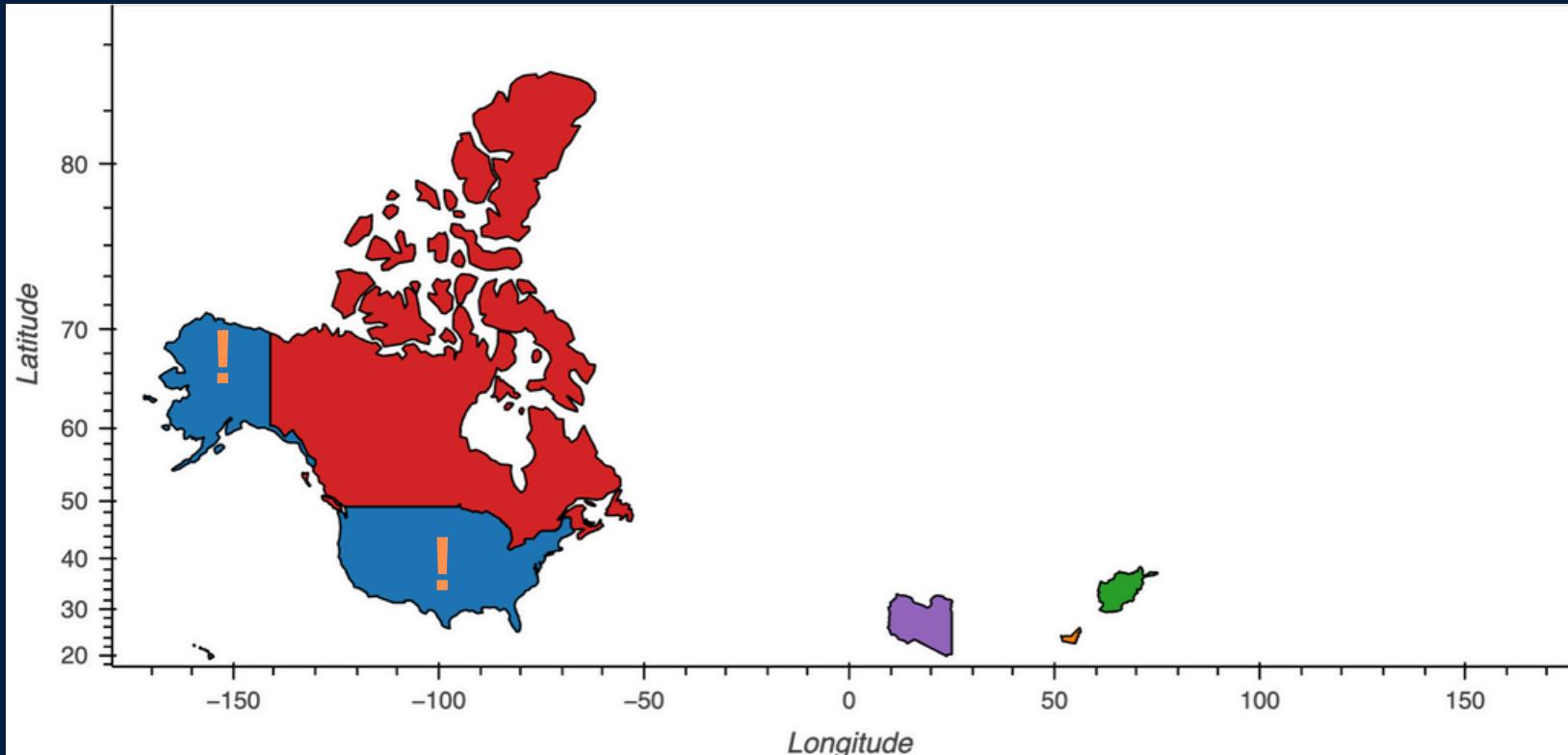
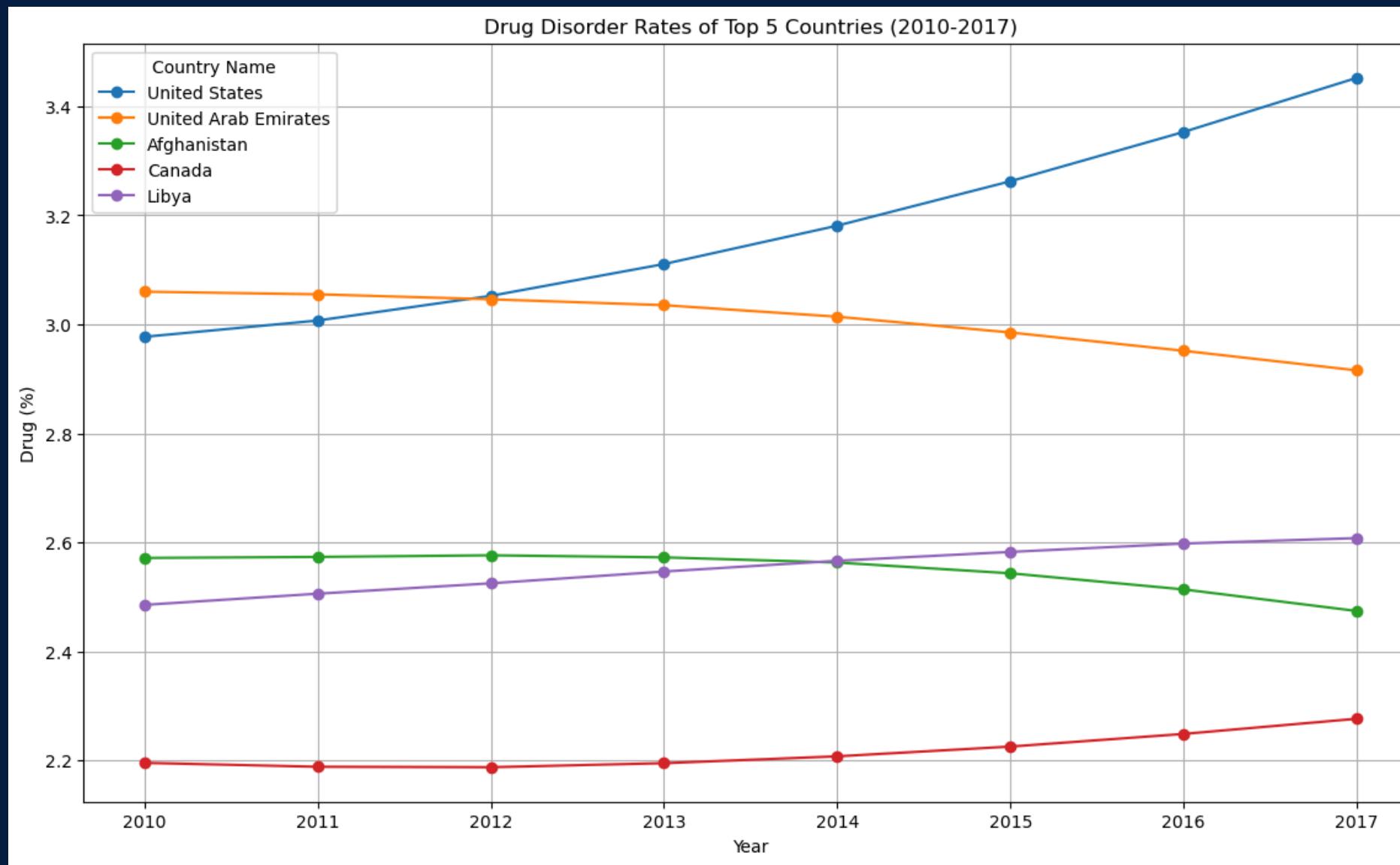
Drug Use Disorders:

- Addressing drug use disorders is essential for improving individual health outcomes and enhancing the overall well-being of society. Effective prevention, treatment, and policy initiatives are crucial in mitigating these impacts.
- Growing concern globally, with significant increases in specific regions of the world.

Analysis:

- Time Series Analysis:
 - Examination of drug use disorder rates from 2010 to 2017
 - Focus on the top five countries out of 166 analyzed.
- Bar Chart Analysis
 - Present drug disorder rates based on the provision of government benefits
 - Merging the additional data reduced the number of countries analyzed to 122
 - Assumption: Public health policy remained stable during 2010-2017





Top Five Countries by Drug Use Disorder Rates Time Series Analysis

- Key Findings from 166 countries:
 - United States: 2.98% (2010) to 3.45% (2017)
 - Variance = + 0.47%
 - United Arab Emirates = 3.06% (2010) to 2.92% (2017)
 - Variance = - 0.14%
 - Libya = 2.49% (2010) to 2.61% (2017)
 - Variance = + 0.12%
 - Afghanistan = 2.57% (2010) to 2.47% (2017)
 - Variance = - 0.10%
 - Canada = 2.2% (2010) to 2.28% (2017)
 - Variance = + 0.08%

The **increase in the United States' drug use disorder rates is alarming and significant!**

Trump Declares Opioid Crisis a 'Health Emergency' but Requests No Funds

Despite Trump's Pleas, China's Online Opioid Bazaar Is Booming

China Deflects Blame for Opioid Crisis as Trump Visit Nears

NYT API:
query = "drug policy"
begin_date = "20100101"
end_date = "20171231"

Drug Use Disorder Rates by Government Support Type

- Key Findings from 122 Countries:
 - Monetary Support:
 - Yes: 1.03%
 - No: 0.78%
 - Non-Monetary Support:
 - Yes: 0.99%
 - No: 0.81%

Findings:

- The highest drug use rates corresponds to the provision of government monetary support to people with drug use disorders.
- The lowest drug use disorder rate corresponds to the absence of monetary support, suggesting a potential link between reduced direct benefits and lower disorder rates.
- Interestingly, the rates are also high for non-monetary support, indicating that other forms of support are almost equally impactful.

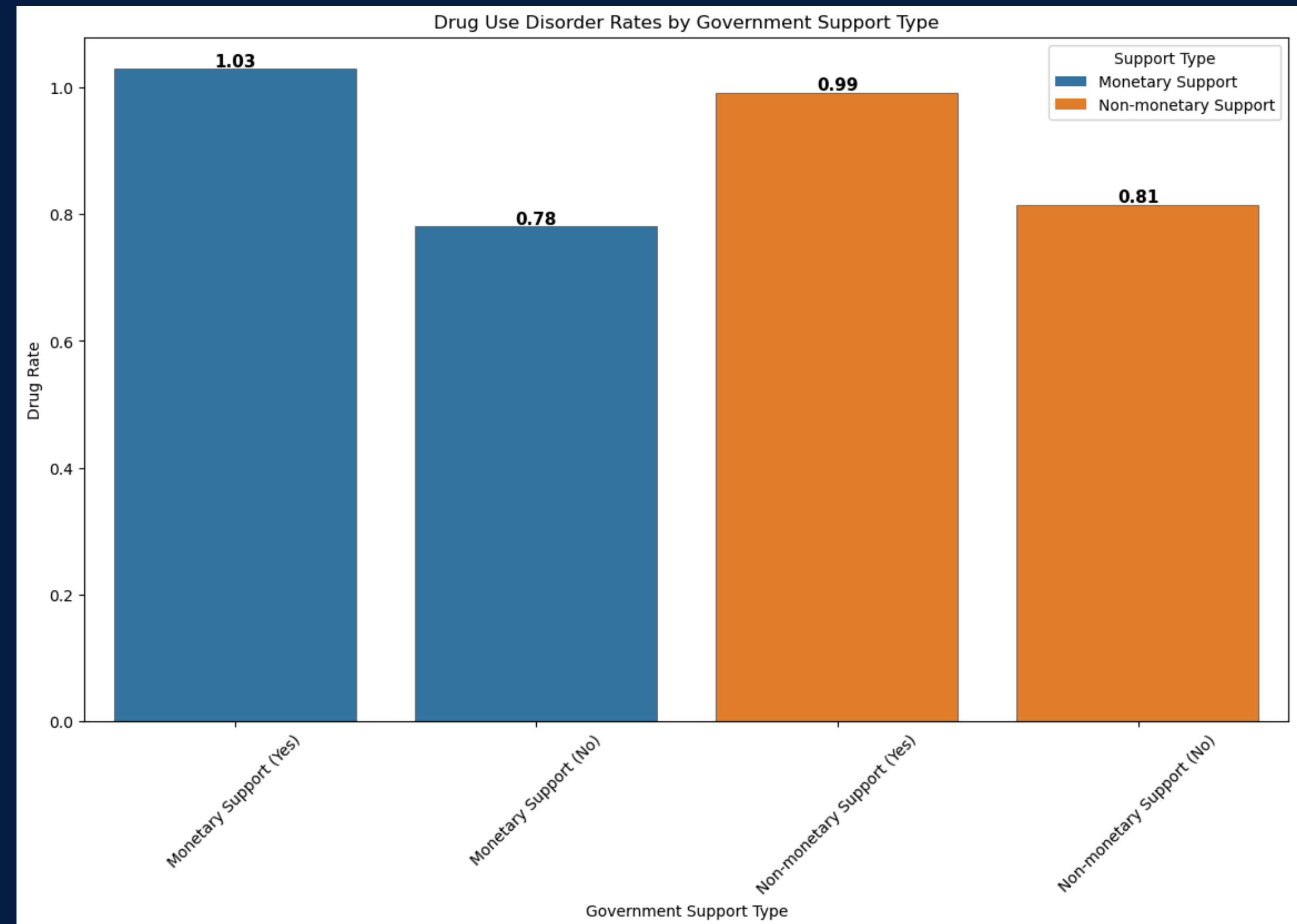
US Context:

Monetary Support (Significance increase driven by federal initiatives)

- Increased disability payments
- Medicaid expansion via increased ACA enrolment
- Increased federal funding for treatment services.
- Increased accessibility to ACA subsidies.
- Individual state initiatives

Non-Monetary Support

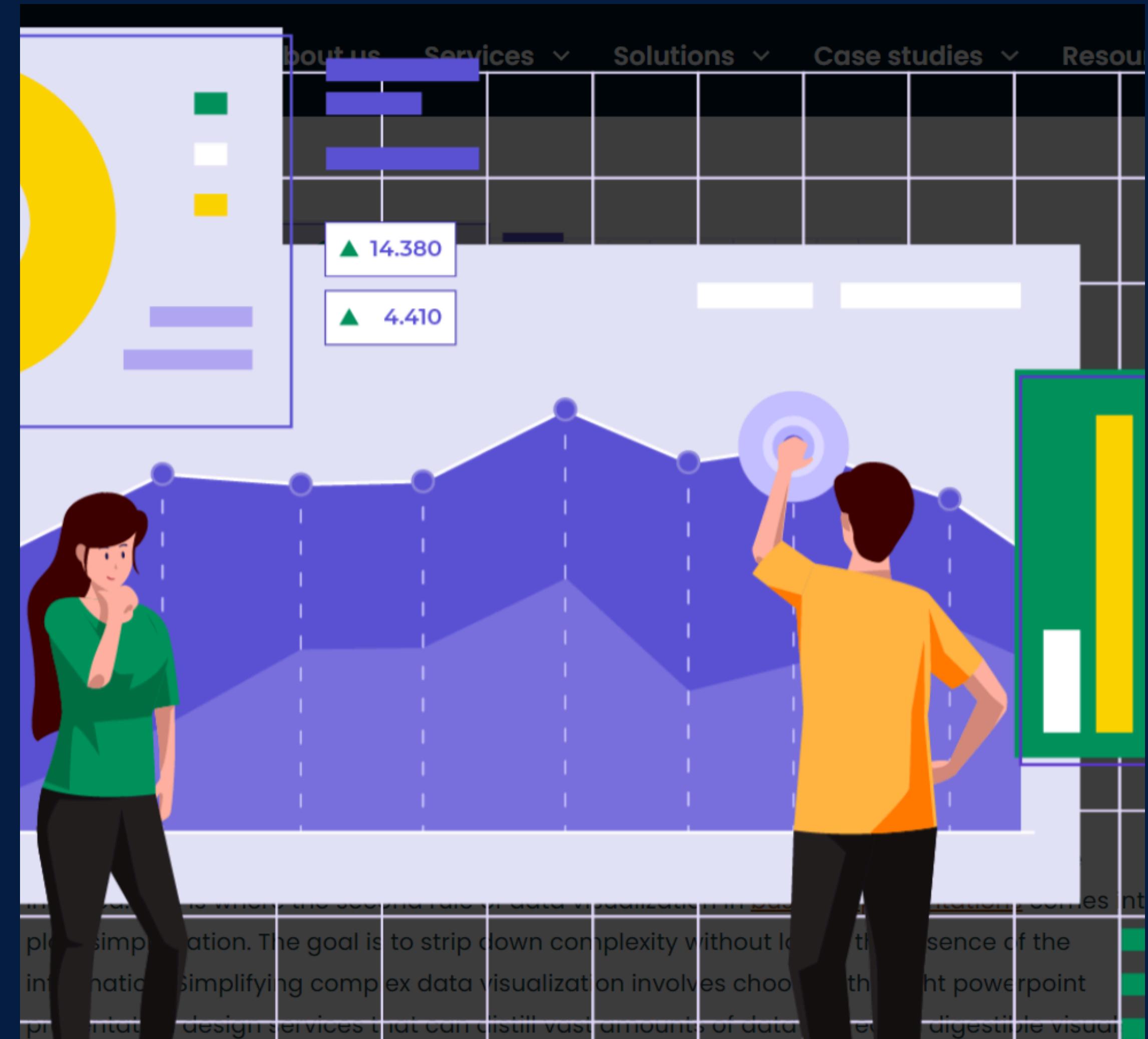
- Expanded access to treatment housing, and employment services



Limitations of the Analysis

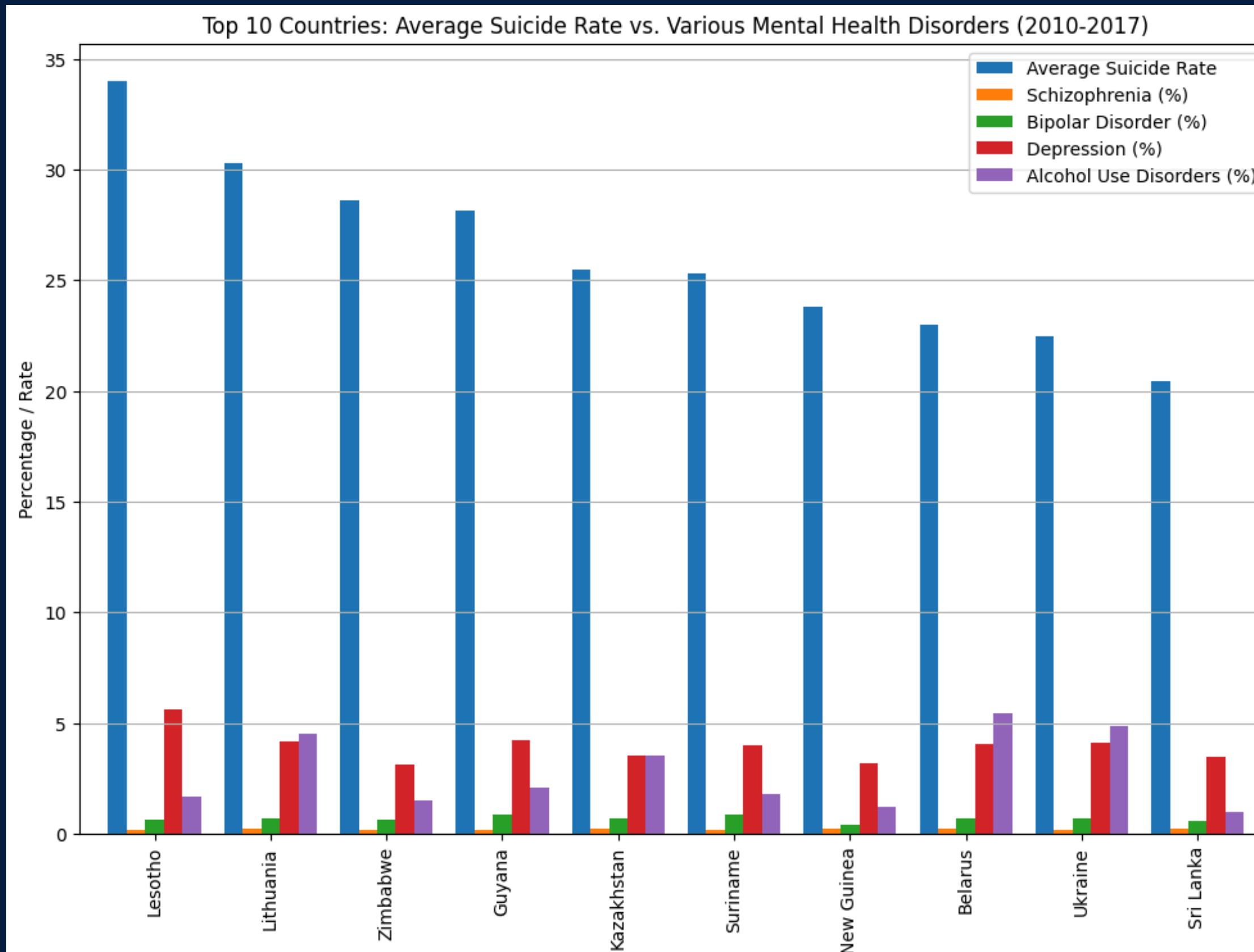
- Assumption of Policy Stability
 - Assumed stability of government benefits policies for drug users throughout the analysis period.
 - More comprehensive data could enhance the depth of the analysis.
- General Categorization of Government Support
 - Broad categorization of government support types.
 - Opportunity to explore sub-categories for deeper insights.

SUICIDE RATES CORRELATION WITH MENTAL HEALTH DISORDERS FROM 2010- 2017 IN DIFFERENT COUNTRIES



SUICIDE RATES CORRELATION WITH MENTAL HEALTH DISORDERS

"TOP 10 COUNTRIES: AVERAGE SUICIDE RATE VS. VARIOUS MENTAL HEALTH DISORDERS (2010- 2017)"

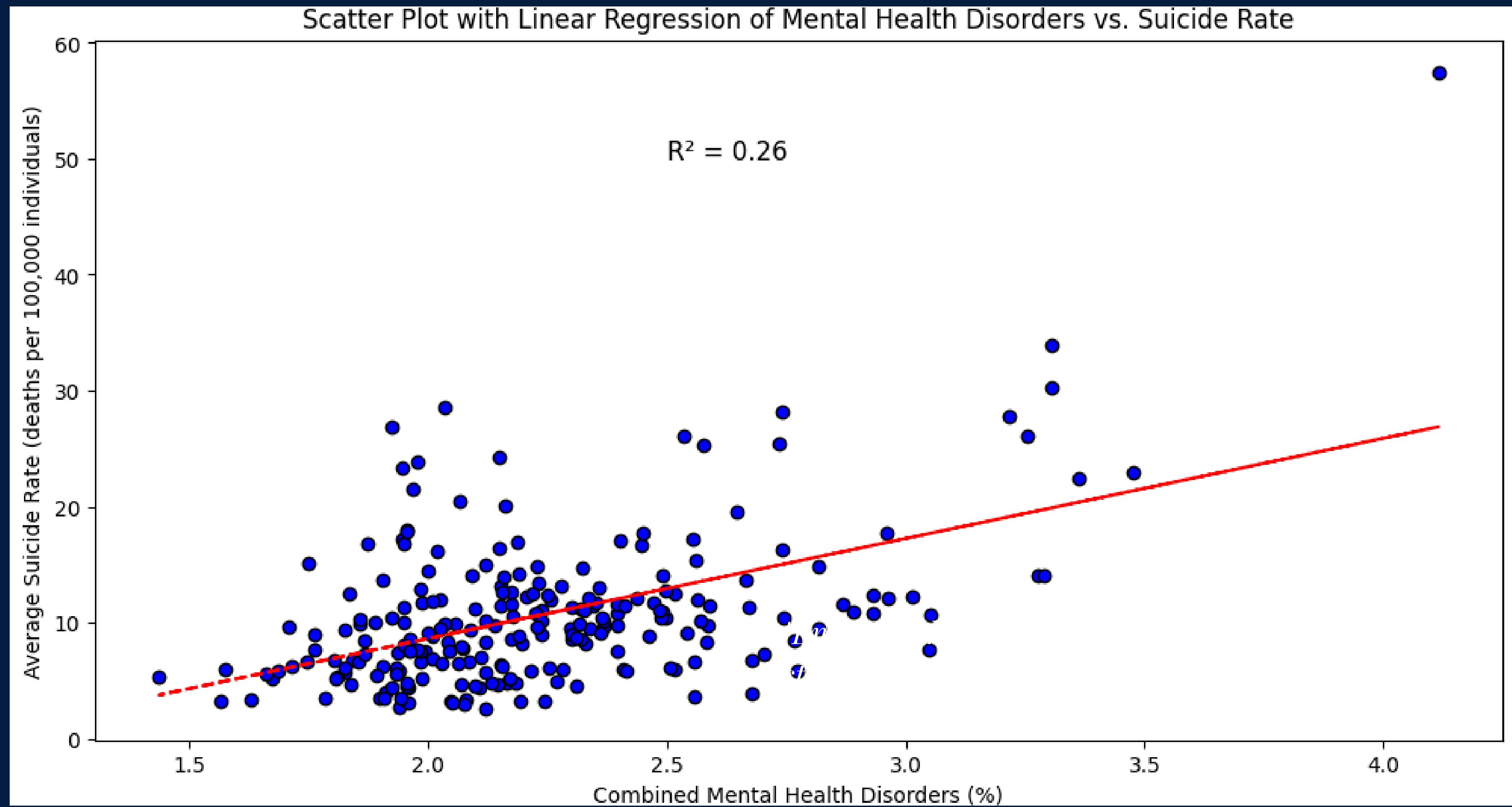


From this bar graph we can state that depression and alcohol use disorders appear to be the most common mental health disorders among the countries with the highest suicide rates. While depression and alcohol use disorders are prevalent, it's essential to note that this does not necessarily imply a direct relationship with the high suicide rates.

The scatter plot shows the relationship between combined mental health disorders (%) on the x-axis and the average suicide rate (deaths per 100,000 individuals) on the y-axis.

The data points are spread, with a slightly positive trend, as indicated by the upward-sloping linear regression line.

The R^2 value which is the coefficient of determination is 0.265, indicating that approximately 26.5% of the variance in suicide rates can be explained by the variance in combined mental health disorder percentages.



ANALYSIS

Mental Health Disorder Comparison shows that Depression and Alcohol Use Disorders appear to be the most prevalent mental health conditions across these countries, though their rates are much lower than the corresponding suicide rates.

Bipolar Disorder and Schizophrenia have relatively lower prevalence rates across all countries.

The R^2 value is 0.265, indicating that approximately 26.5% of the variance in suicide rates can be explained by the variance in combined mental health disorder percentages.

This represents a weak correlation, suggesting that while mental health disorders contribute to suicide rates, other factors also play significant roles.

Lesotho and Zimbabwe are both in Africa, indicating that certain regions in Africa are facing significant challenges related to mental health and suicide. The high rates could be influenced by factors such as poverty, lack of access to mental health care, political instability.

Lithuania, Belarus, and Ukraine are European countries with high suicide rates. Eastern Europe, in particular, has historically had higher suicide rates, potentially due to economic hardship, high alcohol consumption.

Guyana and Suriname are in South America and are among the countries with the highest suicide rates probably due to socio-economic challenges.

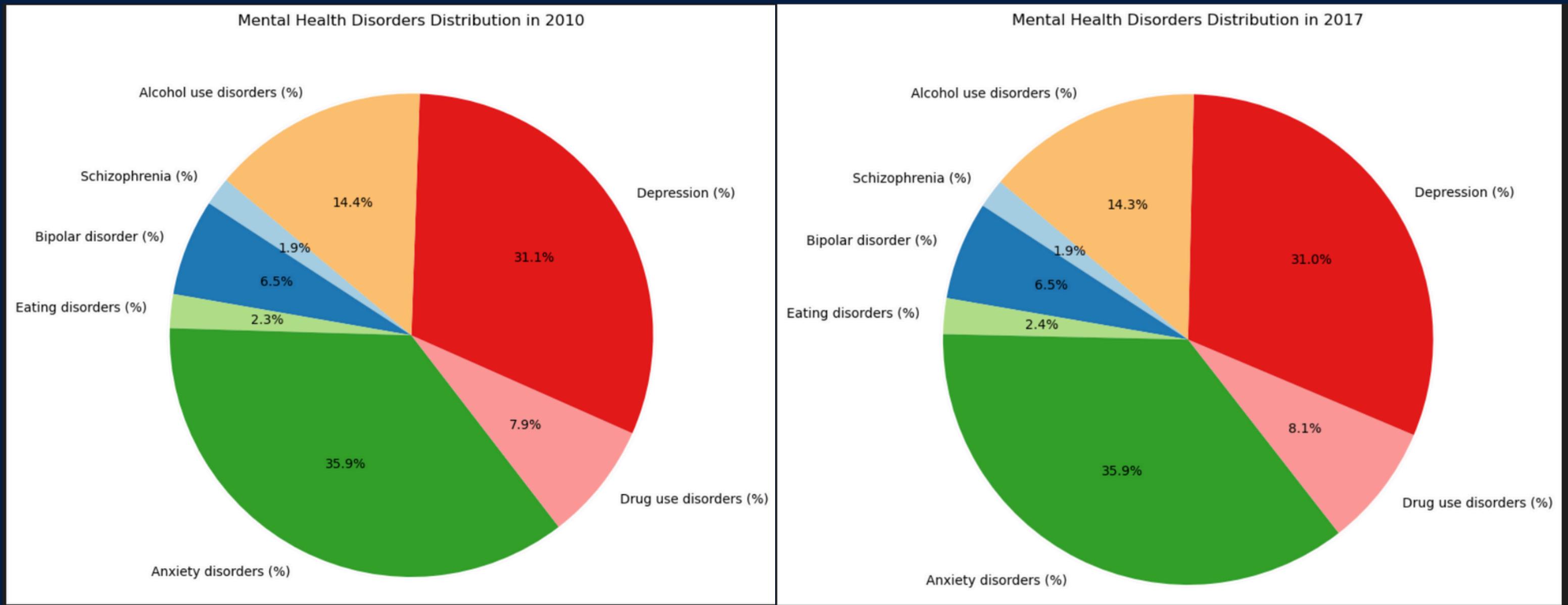
Kazakhstan and Sri Lanka are in Asia. Kazakhstan is located in Central Asia where it could possibly be affected by similar issues like economic hardship, high alcohol consumption just like Eastern Europe. Sri Lanka has been dealing with the aftermath of civil conflict which could cause mental health crises and high suicide rates.

Papua New Guinea is the only ocean country in the top 10 countries facing significant mental health challenges which could be due to limited access to care.

*How Has Mental
Health Issues
Changed Over Time
?*

*Time vs Different
Disorders by %
Rate*





ANALYSIS :

ANALYSIS OF MENTAL HELTH TRENDS OVER TIME

DATA RANGE :THE DATA COVERS FROM 2010 TO 2017

DISORDERS RANKED BY AVERAGE PREVALENCE:

ANXIETY DISORDERS (%): 4.00%

DEPRESSION (%): 3.46%

ALCOHOL USE DISORDERS (%): 1.60%

DRUG USE DISORDERS (%): 0.89%

BIPOLAR DISORDER (%): 0.72%

EATING DISORDERS (%): 0.26%

SCHIZOPHRENIA (%): 0.21%

RELATIVE CHANGE IN DISORDERS FROM 2010 TO 2017:

SCHIZOPHRENIA (%): 0.66%

BIPOLAR DISORDER (%): 0.25%

EATING DISORDERS (%): 4.08%

ANXIETY DISORDERS (%): -0.04%

DRUG USE DISORDERS (%): 2.24%

DEPRESSION (%): -0.30%

ALCOHOL USE DISORDERS (%): -1.26%

CONCLUSION:

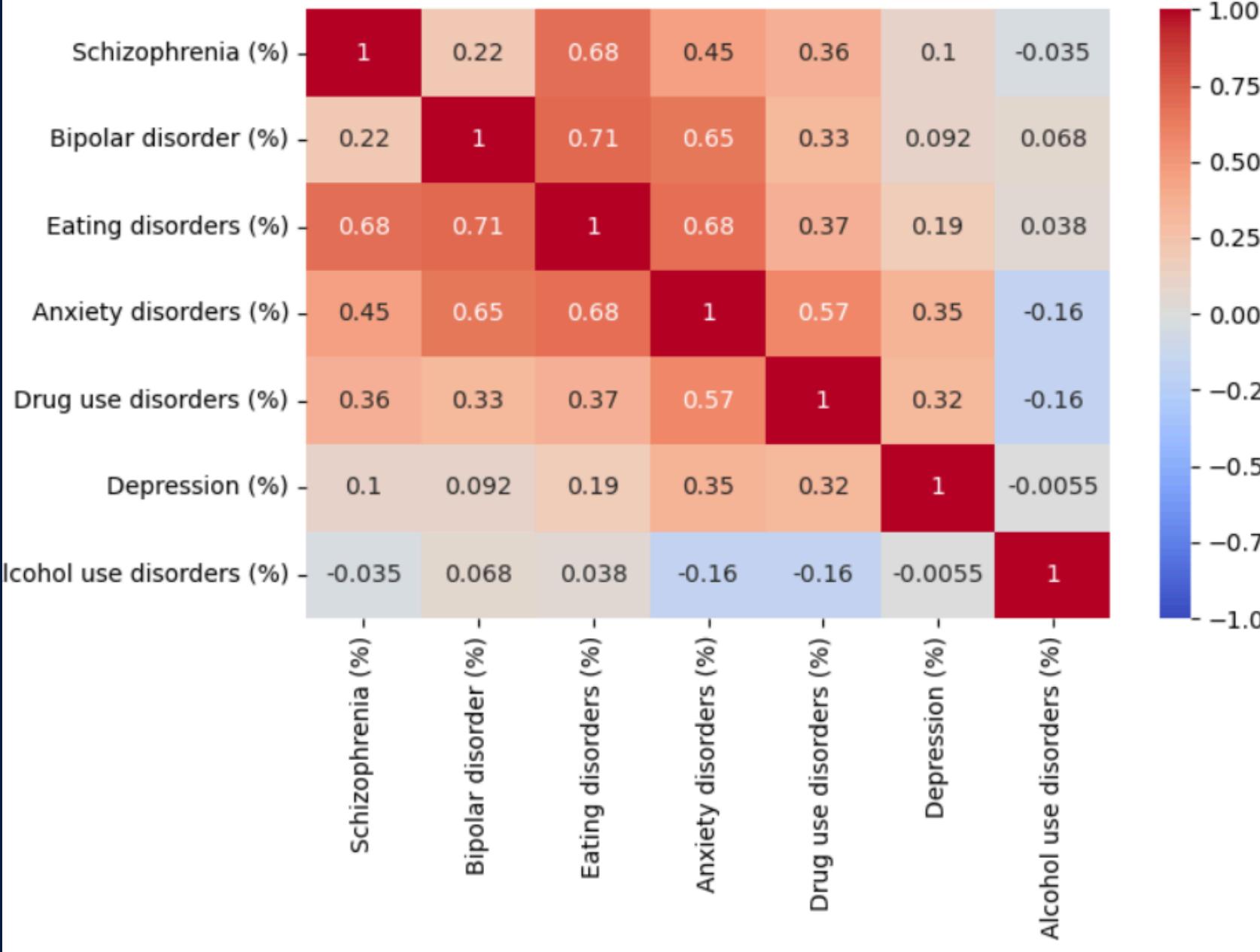
THE DISTRIBUTION OF MENTAL HEALTH DISORDERS IN 2010,2017 REVEALS THAT ANXIETY AND DEPRESSION WERE THE MOST PREVALENT, TOGETHER MAKING UP OVER TWO-THIRDS OF ALL CASES.

SUBSTANCE USE DISORDERS, INCLUDING ALCOHOL AND DRUG USE, WERE ALSO SIGNIFICANT CONTRIBUTORS TO THE GLOBAL MENTAL HEALTH BURDEN.

THESE FINDINGS UNDERSCORE THE NEED FOR COMPREHENSIVE MENTAL HEALTH STRATEGIES THAT ADDRESS THE WIDE RANGE OF DISORDERS, FROM THE MORE COMMON ANXIETY AND DEPRESSION TO LESS PREVALENT BUT SEVERE CONDITIONS LIKE SCHIZOPHRENIA AND EATING DISORDERS.



Correlation Matrix of Mental Health Disorders



THE COLOR INTENSITY IN THE MATRIX REPRESENTS THE STRENGTH OF THE CORRELATION, WITH RED INDICATING POSITIVE CORRELATION AND BLUE INDICATING NEGATIVE CORRELATION. THE SCALE ON THE RIGHT SIDE OF THE IMAGE SHOWS THE RANGE FROM -1.0 TO 1.0.

THIS IMAGE IS A CORRELATION MATRIX FOR VARIOUS MENTAL HEALTH DISORDERS, SHOWING HOW DIFFERENT DISORDERS ARE CORRELATED WITH EACH OTHER BASED ON PERCENTAGE DATA.

HERE'S A SUMMARY OF THE CORRELATIONS:

- SCHIZOPHRENIA HAS A HIGH POSITIVE CORRELATION WITH EATING DISORDERS (0.68) AND MODERATE CORRELATION WITH ANXIETY DISORDERS (0.45).
- BIPOLAR DISORDER IS HIGHLY CORRELATED WITH EATING DISORDERS (0.71) AND ANXIETY DISORDERS (0.65).
- EATING DISORDERS HAVE STRONG POSITIVE CORRELATIONS WITH BIPOLAR DISORDER (0.71), SCHIZOPHRENIA (0.68), AND ANXIETY DISORDERS (0.68).
- ANXIETY DISORDERS SHOW MODERATE CORRELATIONS WITH SCHIZOPHRENIA (0.45), BIPOLAR DISORDER (0.65), EATING DISORDERS (0.68), AND DRUG USE DISORDERS (0.57).
- DRUG USE DISORDERS HAVE MODERATE CORRELATIONS WITH ANXIETY DISORDERS (0.57), EATING DISORDERS (0.37), AND SCHIZOPHRENIA (0.36).
- DEPRESSION HAS WEAK CORRELATIONS WITH OTHER DISORDERS.
- ALCOHOL USE DISORDERS SHOW NEAR-ZERO OR NEGATIVE CORRELATIONS WITH OTHER DISORDERS

THANKS!
ANY
QUESTIONS?