**Disparities in Mental Stress**

Exploring Health Equity and Social Determinants

Name

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## **Introduction**

Depression is a prevalent mental health disorder with far-reaching consequences for individuals and communities. In recent years, depression rates have gained increasing attention from policymakers, health professionals, and researchers due to their upward trend, especially during and after major global events such as the COVID-19 pandemic. This report explores key patterns and relationships in depression prevalence across the United States using publicly available data. The study emphasizes how demographic, socio-economic, geographic, and health factors relate to mental health outcomes. Through visual analysis and empirical reasoning, this report offers a clear, data-driven perspective on mental health trends, aiming to guide policy responses and healthcare strategies.

The data analyzed span several dimensions, including state-wise depression rates, year-over-year trends, demographic disparities (race, gender, age), and correlations between depression and chronic health conditions, disability, income, and sleep. These insights serve as a lens through which the evolving mental health landscape in the U.S. can be understood and addressed.

## **Research Questions**

1. **How do depression rates vary across different states in the U.S.?**
2. **What trends have emerged in depression prevalence over recent years?**
3. **How does gender influence the likelihood of experiencing depression?**
4. **What is the impact of socio-economic status, particularly poverty, on depression rates?**
5. **How does depression correlate with chronic diseases such as diabetes and hypertension?**
6. **What is the relationship between income levels and mental stress?**
7. **Is there a significant connection between physical disability and depression?**
8. **How does insufficient sleep relate to depression prevalence across states?**

## **Methodology**

* **Data Sources**

The analysis draws from a combination of state-level and demographic datasets that include depression prevalence and its potential correlations with variables such as chronic illness, disability, obesity, sleep habits, income, and poverty. The primary sources include:

* **CDC Behavioral Risk Factor Surveillance System (BRFSS)**: This includes health-related data such as depression rates, hypertension, diabetes, obesity, and sleep behavior.
* **U.S. Census Bureau**: Provides data on poverty rates and income levels across states.
* **SAMHSA's NSDUH Survey**: Offers national and state-level mental health trends.
* **Federal Reserve Economic Data (FRED)**: Supplies income-related statistics. Each dataset is aligned by U.S. state or region, offering a comprehensive view of depression across both spatial and socio-economic lines.

**Data Cleaning and Processing**

After initial data gathering, a thorough cleaning process was applied. Dates were converted into appropriate formats for time-series analysis, and geographical variables (latitude and longitude) were cleaned and validated for heatmap visualization. Irrelevant or non-numeric data removed. The data was then structured into pivot tables to support comparative and longitudinal analyses. Variables were normalized for uniformity in scatter plots. Data merging was conducted on shared identifiers such as state names to ensure analytical consistency.

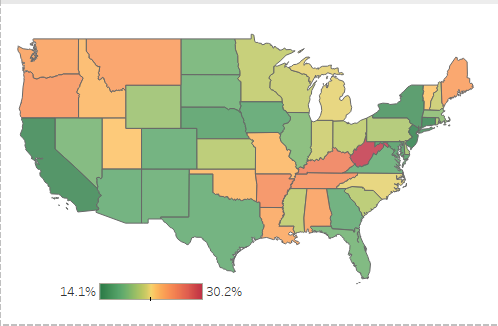
## **Visual Analysis of Insights**

The story of depression in the United States unfolds through a visual journey across maps, charts, and graphs—each revealing a different dimension of this complex condition. Let us walk through each insight, painting a picture of mental health across the country, from geography to demographics, lifestyle, and underlying chronic health issues.

**1. State-Level Depression Prevalence**

The story of depression in the United States unfolds through a visual journey across maps and graphs—each revealing a different dimension of this complex condition. Let us walk through each insight, painting a picture of mental health across the country, from geography to demographics, lifestyle, and underlying chronic health issues.

The following visualization shows a color-coded map of the United States, where warmer hues signal deeper struggles. This heatmap communicates the widespread yet uneven distribution of depression in 2022. The Southeast emerges as a red-hot zone: Tennessee (30.2%), West Virginia (28%), and Maine (28.4%) stand out with the highest rates. In contrast, states like Hawaii (13%) and New Jersey (14.8%) show cooler shades, indicating lower prevalence.



This map invites viewers to question why certain states suffer more—if there are shared socio-economic challenges, healthcare gaps, or cultural differences.

**2. Depression Trend Over Time**

The following visualization shows a four-year journey in depression trends. The plot line dips slightly in 2020—a surprising trough amidst the pandemic—possibly due to underreporting or shifting priorities. But by 2022, the line surges to 21.78%, up from 20.05% in 2019.

A graph with numbers and a line

AI-generated content may be incorrect.

This rise in post-pandemic may reflect long-term psychological impacts and delayed reporting, signaling the need for sustainable mental health support systems.

**3. Depression Prevalence by Race/Ethnicity**

The following visualization shows disparity by race and ethnicity. American Indians lead with a 26.5% depression rate, followed by White (22.4%), Hispanic (18.7%), Black (16.9%), and Asian individuals (9.8%).

A graph of depression

AI-generated content may be incorrect.

**4. Depression by Gender**

The following visualization shows that women report an average depression rate of 25.9%, compared to men’s 14.7%.

A graph of a red and green bar

AI-generated content may be incorrect.

This reinforces how gender-specific stressors and responsibilities may drive mental health differences.

**5. Depression by Age Group**

The following visualization shows a generational trend. Young adults (18–44) face the highest depression burden (22.9%), followed by middle-aged (45–64) at 20%, and seniors (65+) at just 14.7%.

A graph of a graph with numbers and a number

AI-generated content may be incorrect.

This suggests life-stage stressors and digital age pressures disproportionately impact on the younger population.

**6. Depression & Hypertension**

The following visualization shows that as hypertension rates rise, and so do depression levels. Mississippi, Louisiana, and Alabama show both high blood pressure and mental strain.

A graph with colored dots

AI-generated content may be incorrect.

This correlation supports integrating physical and mental health interventions.

**7. Depression & Disability**

The following visualization shows that higher disability rates often align with higher depression, especially in Tennessee and Kentucky.

A graph with colored dots

AI-generated content may be incorrect.

This reinforces how physical limitations, coupled with economic and social isolation, fuel mental distress.

**8. Depression & Diabetes**

The following visualization shows a modest correlation. States with elevated diabetes levels, like Louisiana and Arkansas, also report higher depression.

A graph with colored dots

AI-generated content may be incorrect.

It invites further research into bi-directional links between mental and physical health.

**9. Depression & Obesity**

The following visualization shows that obesity and depression often occur together. Tennessee, Oklahoma, and Louisiana again show up as trouble spots.

A graph with colored dots and a line

AI-generated content may be incorrect.

The overlap points to lifestyle and socioeconomic conditions driving both challenges.

**10. Depression & Short Sleep**

The following visualization shows that as short sleep rates climb—above 40% in many states so does depression. West Virginia (42.6% short sleep, 28% depression) exemplifies this connection.

A graph with colored dots

AI-generated content may be incorrect.

This shows how nightly rest can influence mental health outcomes.

**11. Depression vs. Income Per Capita**

The following visualization shows an inverse trend: as income per capita increases, depression tends to drop. States with lower income—Arkansas, West Virginia—see higher depression, while wealthier ones—Hawaii, Maryland—fare better.

A graph with colored dots

AI-generated content may be incorrect.

This suggests financial security as a buffer against mental distress.

**12. Depression vs. Poverty Rate**

The following visualization shows that depression increases nearly linearly with rising poverty rates—Louisiana and Mississippi once again top the scale.

A graph with colored dots and a line

AI-generated content may be incorrect.

This final insight emphasizes that mental health is not just a medical issue, but a deeply rooted socioeconomic challenge.

## **Key Findings**

* Depression rates are highest in the Southeast and parts of the Northeast.
* Post-pandemic years saw a resurgence in depression prevalence.
* Females, young adults, and American Indians are disproportionately affected.
* There are strong correlations between depression and poverty, disability, and obesity.
* Insufficient sleep significantly aligns with higher depression.
* States with higher income levels tend to have lower depression prevalence.

## **Conclusion**

Depression in the United States reflects not just individual struggles but also systemic and social dynamics. From geographic clustering to demographic vulnerabilities and lifestyle-related correlations, the data reveals the multifaceted nature of mental health challenges. Particularly alarming is the upward trend in depression rates in the aftermath of the pandemic, alongside worsening socio-economic disparities. Public health efforts must pivot to a multi-pronged strategy—focusing on accessibility, equity, education, and early intervention. Without significant investment in mental health infrastructure and outreach, these trends will likely worsen, compounding the social and economic costs of untreated mental illness.

## **Additional Research Questions**

1. How do regional cultural differences affect mental health stigma and treatment-seeking behavior?
2. What role do digital media and social networking play in youth depression trends?
3. Can community-based interventions significantly reduce depression in high-risk states?
4. How does employment type and job security relate to depression?
5. What are the longitudinal impacts of childhood trauma on adult depression across states?

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