

Analyzing Cognitive Decline in the US

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Ellen Grant
Sarah Racine

Agenda

- Introduction
- The Data
- Distribution by Age Group
- Distribution by Gender
- Distribution by Race/Ethnicity
- Cognitive Decline by State
- Ethical Considerations in Cognitive Decline Research
- Conclusion and Recommendations

Introduction

- **Overview:** Understanding how cognitive decline varies across demographics and regions is crucial for targeted interventions and policy-making.
- **Objective:** Present trends and insights from cognitive decline data and discuss ethical handling of sensitive information.



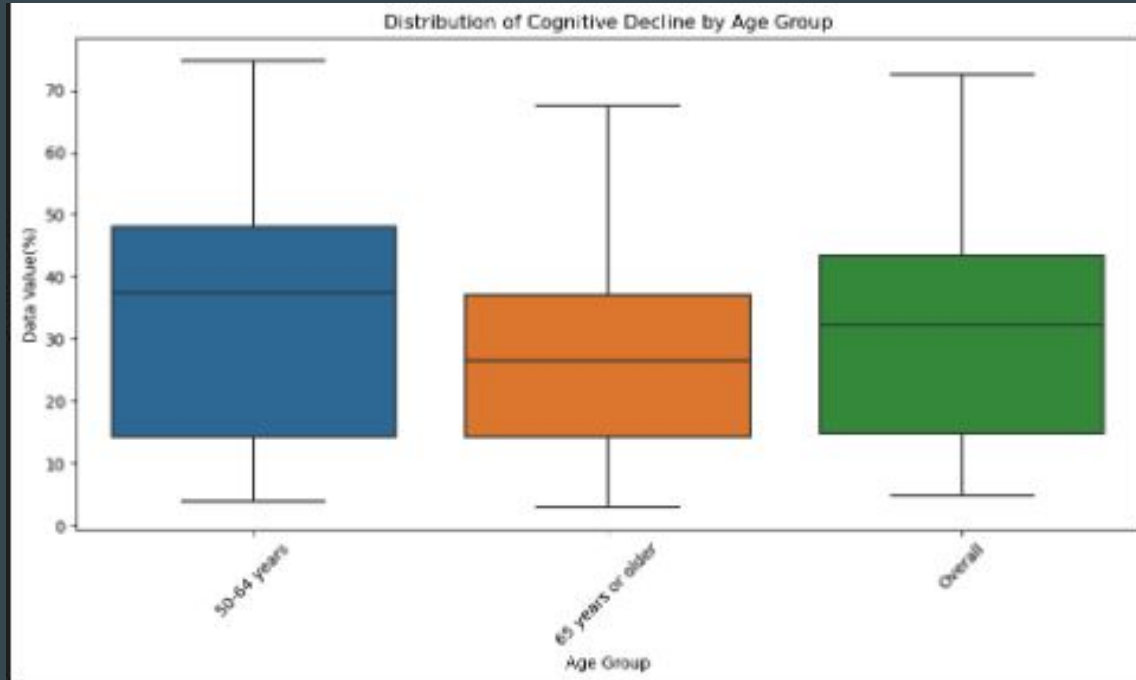
The Data

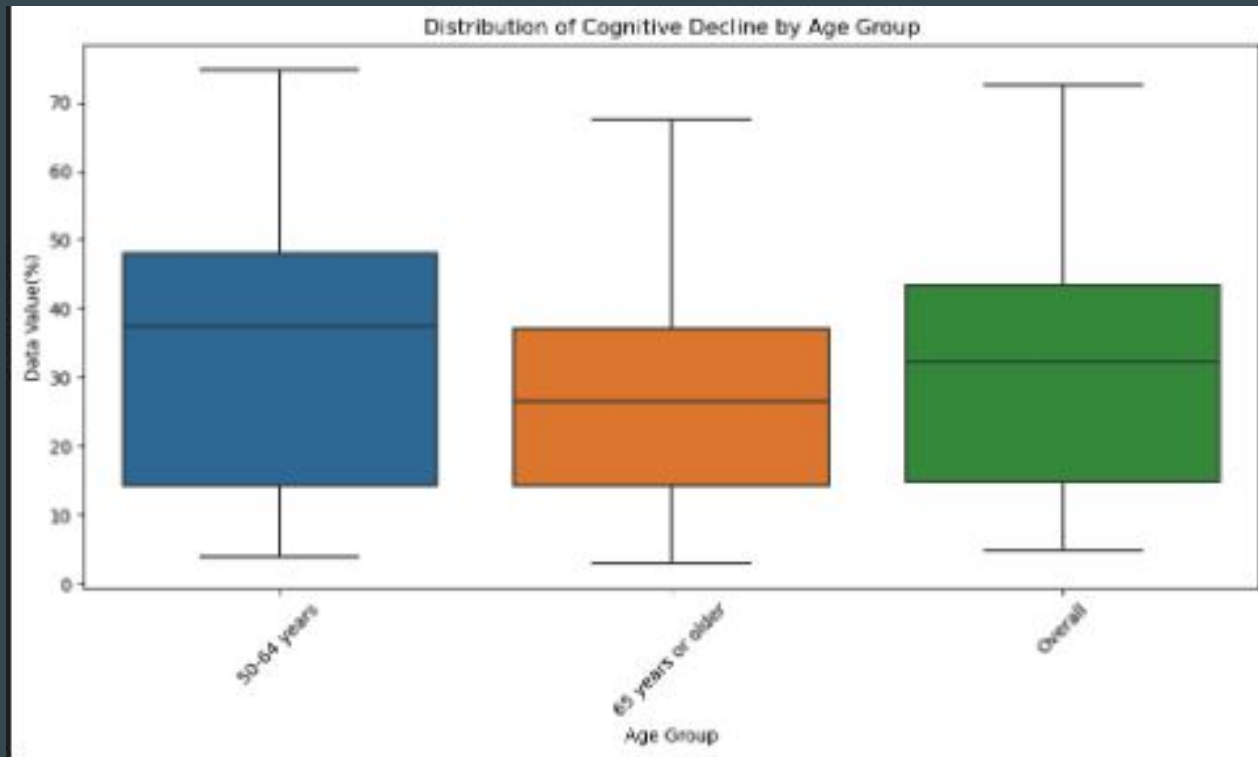
- U.S. Department of Health & Human Services
- Published by Centers for Disease Control and Prevention
- Data cleaned to look at cognitive decline in the US based on gender, age group, and race and ethnicity, and we look at where these groups are concentrated

	Year Start	Year End	State	Class	Topic	Data Value Unit	Data Value(%)	Age Group	Geolocation	Gender	Race and Ethnicity	Longitude	Latitude
183	2019	2022	NY	Cognitive Decline	Subjective cognitive decline or memory loss am...	%	13.8	50-64 years	-75.54397043 42.82700103	--	Hispanic	-75.543970	42.827001
185	2019	2022	WA	Cognitive Decline	Subjective cognitive decline or memory loss am...	%	9.5	65 years or older	-120.4700108 47.52227863	Female	--	-120.470011	47.522279
186	2019	2022	WA	Cognitive Decline	Subjective cognitive decline or memory loss am...	%	9.3	65 years or older	-120.4700108 47.52227863	Male	--	-120.470011	47.522279
192	2019	2022	WA	Cognitive Decline	Need assistance with day-to-day activities bec...	%	22.1	Overall	-120.4700108 47.52227863	Male	--	-120.470011	47.522279
195	2019	2022	GA	Cognitive Decline	Talked with health care professional about sub...	%	36.5	65 years or older	-83.62758035 32.83968109	--	Black, non-Hispanic	-83.627580	32.839681

Cognitive Decline by Age Group

Trend: Cognitive decline percentages vary significantly across age groups.



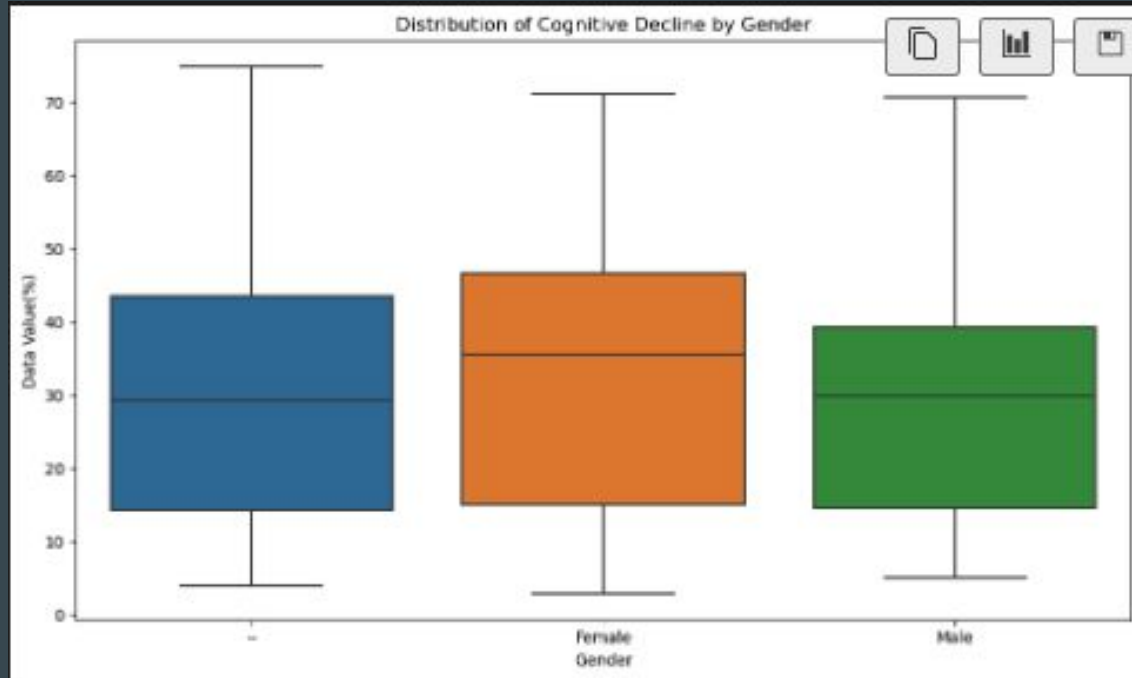


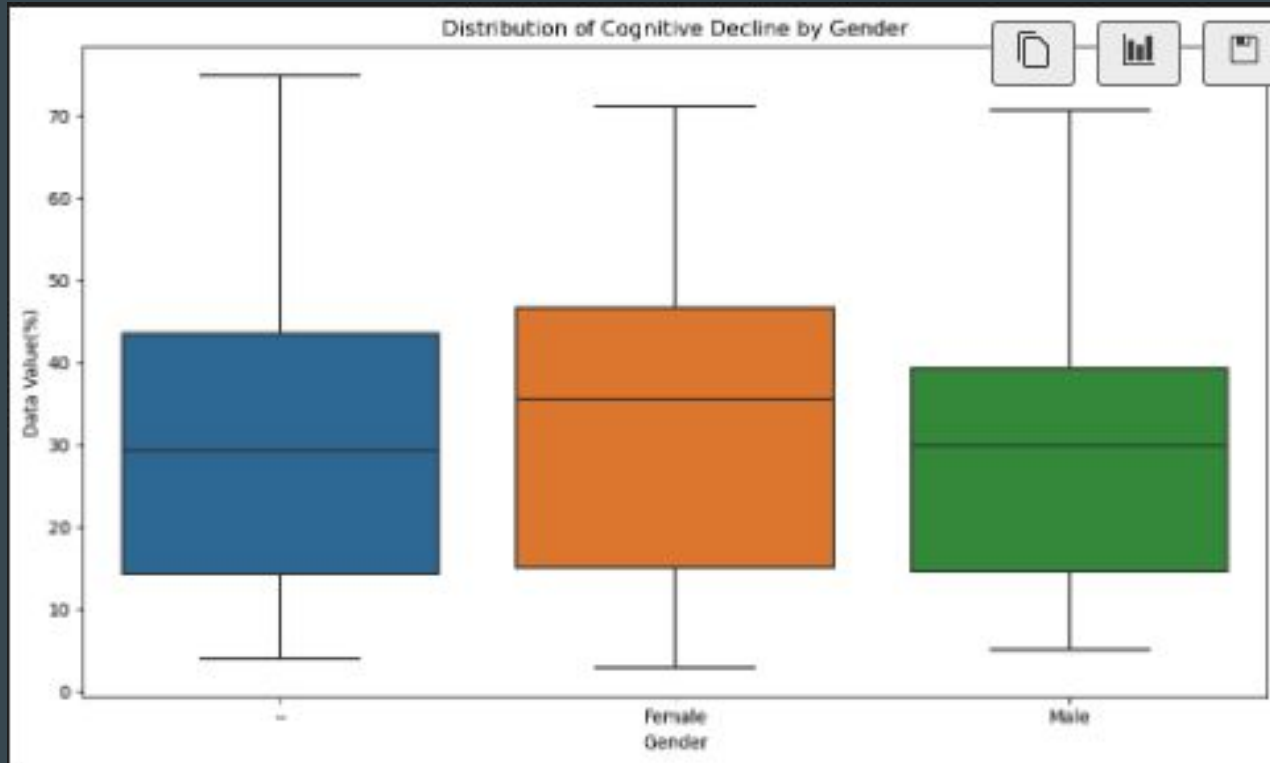
Key Points:

- Older age groups, especially those over 65, show significantly higher cognitive decline percentages.
- The “Overall” category shows variability, indicating population-wide trends.
- **Insight:** Age is a strong factor in cognitive decline.

Cognitive Decline by Gender

Trend: Both males and females show similar ranges of cognitive decline percentages, with no extreme outliers for either gender.



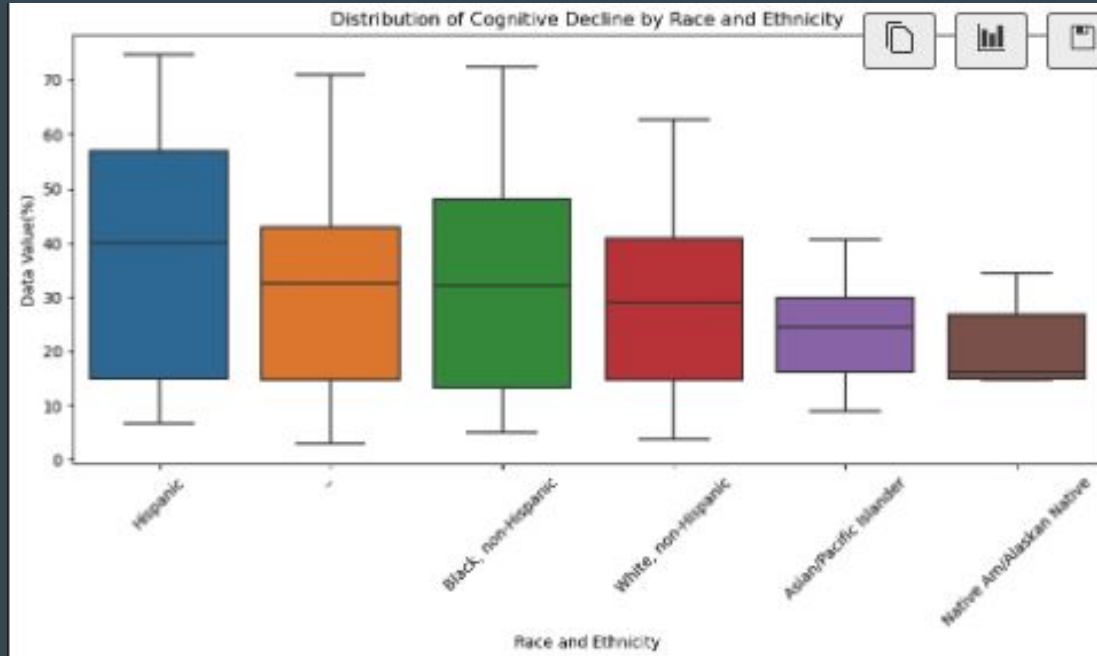


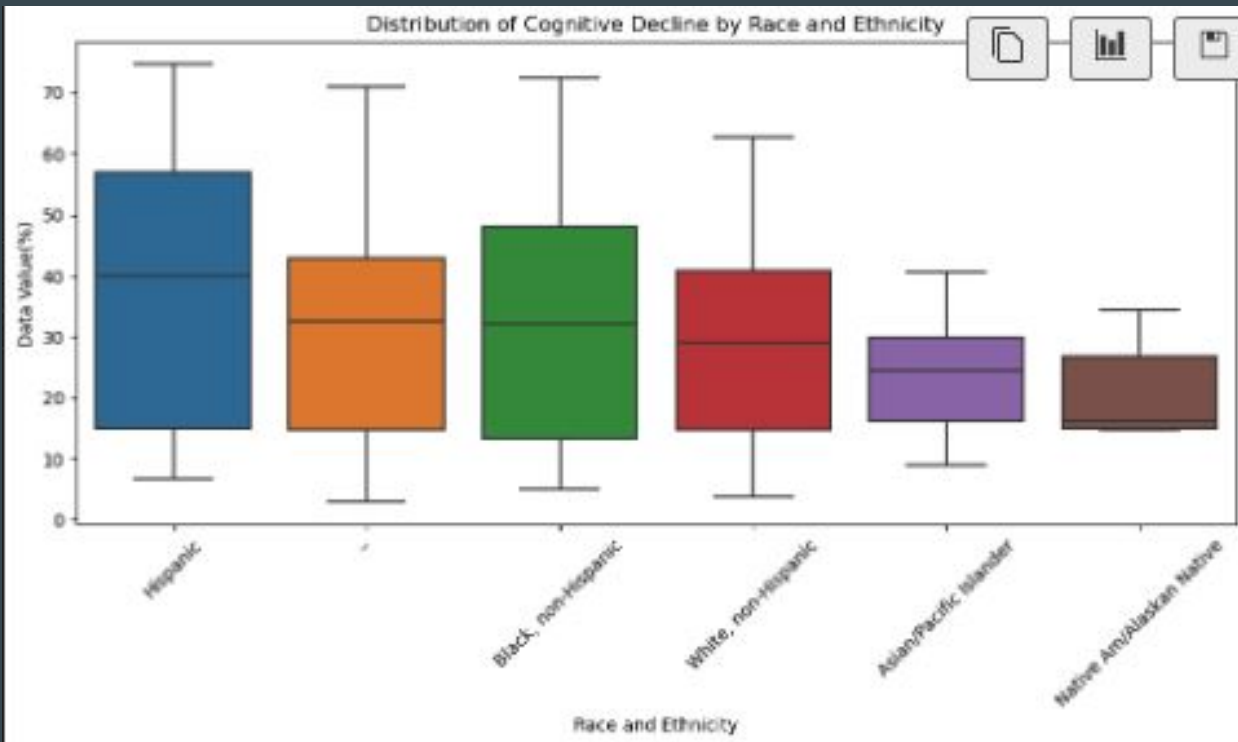
Key Points:

- Both genders display similar ranges in cognitive decline percentages.
- Missing data (--) in gender might impact the completeness of the findings.
- **Insight:** Gender does not appear to be a major determinant in cognitive decline variation.

Cognitive Decline by Race and Ethnicity

Trend: The dataset includes different racial and ethnic groups such as Hispanic, Black (non-Hispanic), and other ethnic categories.



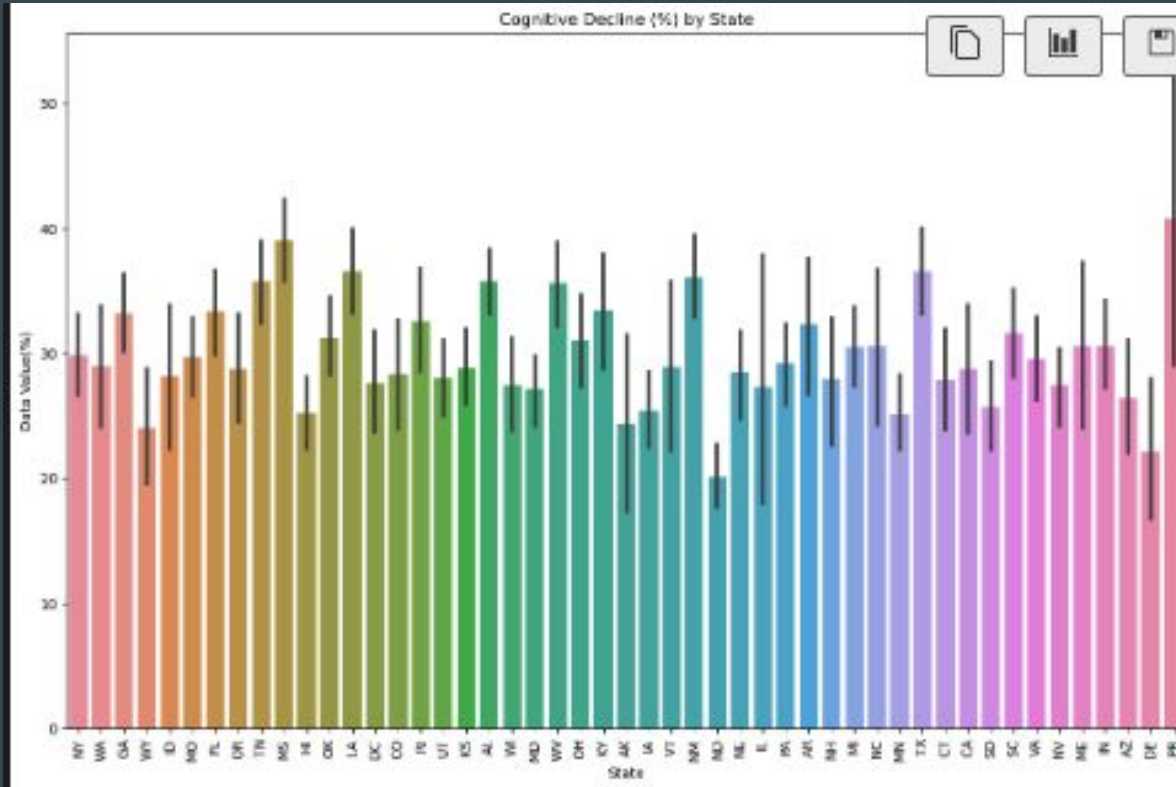


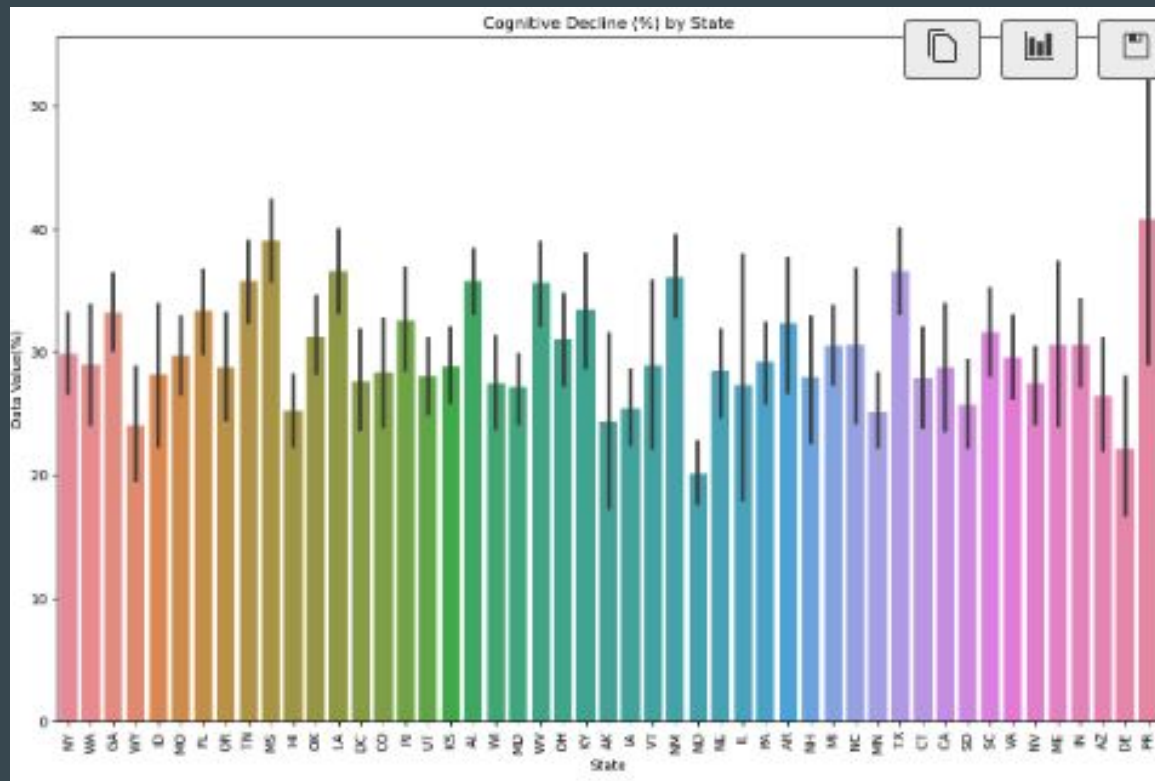
Key Points:

- Disparities exist between different racial and ethnic groups.
- Hispanic and Black (non-Hispanic) groups show varying cognitive decline rates.
- Missing data limits the ability to draw firm conclusions.
- **Insight:** Race and ethnicity may influence cognitive decline, but incomplete data poses challenges.

Cognitive Decline by State

Trend: Cognitive decline percentages show significant variation across different states.





Key Points:

- States such as Georgia and Washington report higher percentages, while New York shows lower rates.
- Potential regional differences in healthcare, demographics, and socioeconomic status may influence these results.
- **Insight:** Geographic variation in cognitive decline reflects broader regional health disparities.

Limitations

- Analysis could be further enhanced by addressing missing data (e.g., replacing -- values with actual data or excluding them)
- Exploring interactions between different demographic variables (e.g., age, gender, race) to understand their combined effects on cognitive decline

Conclusion of Analysis

Summary of Key Findings:

- **Age:** Strong correlation with cognitive decline, especially in older populations.
- **Gender:** No significant differences observed.
- **Race/Ethnicity:** Some variability, but data gaps exist.
- **State:** Geographic differences highlight possible regional factors.

Ethical Considerations in Cognitive Decline Research

Informed Consent & Privacy: Ensure data was collected ethically, respecting privacy and anonymity (e.g., HIPAA, GDPR).

Bias & Fair Representation: Address missing data and avoid skewed conclusions by being transparent about limitations and underrepresented groups.

Handling Missing Data: Report the extent of missing or incomplete data and explain how it's addressed (e.g., exclusion, imputation).

Transparency & Accountability: Clearly explain methodology and potential impacts of data gaps on findings.

Impact on Vulnerable Populations: Ensure study conclusions do not stigmatize any groups and aim to inform equitable healthcare policies.

Questions & Discussion

