

How Are You, America?

Perspective on Mental Health and Substance Use

DATA SCI 209: Section 4 (Summer 2025)

Deliverable: Mid-term presentation

Team

Name:

TrendTellers

Team Members: Bianka Paul, Christie Liu, Hiro Naito, Margaret Lubega, Ziyin Sun



Quick Recap

About the Website

- Mental health trend in US
- Storytelling

Intended Audience

- Mental healthcare program makers, non-profits, experts
- General readers

Data

- From NSDUH (National Survey on Drug Use and Health)
-

Usability Study

Tasks - 1 task per chart set

1. Check if there actually is an upward trend of people with serious mental health issues in the US by looking at the percentage difference between 2019, 2021, and 2023.
2. Find which demographics have the most people with serious mental health issues using age, group and race as the demographics
3. Using the second task outcome to filter data, further analyze what education level and work status has the most people with serious mental health issues
4. Using second and third task outcomes to filter data, compare the alcohol consumption and mental health relationship
5. Using second and third task outcomes to filter data, find which substance or substances is the most associated with serious mental health issues.

Usability study done for charts, **NOT** storyline

Common Changes Across Charts

User insights

*It takes too much effort to understand what colors mean of each chart
Labels are different among charts, making it confusing
and more..*

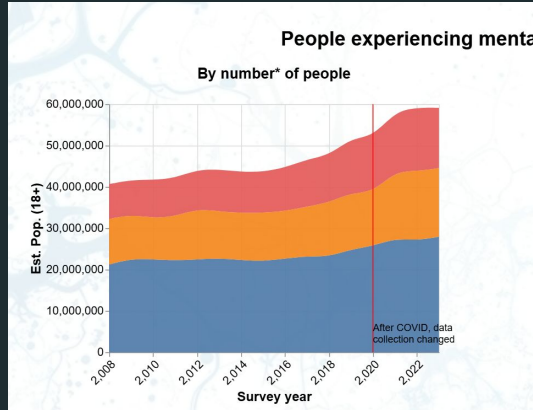


Consistency across charts

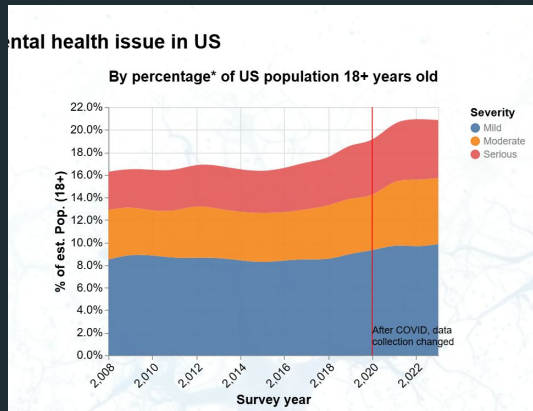
Colors
Labels
Variables

Storyline refresh

Chapter 1 - Before



Showing increased trend of people with mental health issues in the U.S.



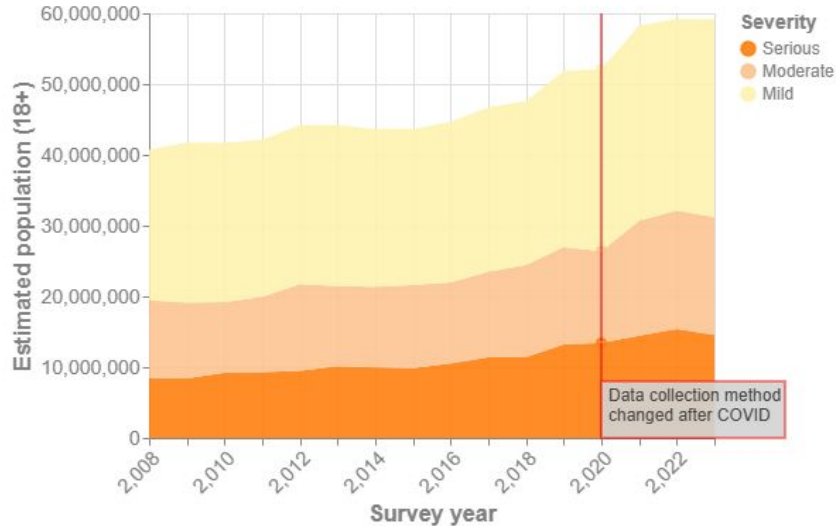
Feedback from User Study

- Dots on the chart when hovered over is not aligned with the area chart
- Right now COVID label hard to tel because of dark background
- Missing year labels make it hard to compare specific years.

Chapter 1 - After

People experiencing mental health issue in the US

Population is estimated based on survey responses and demographics.



Changes Made

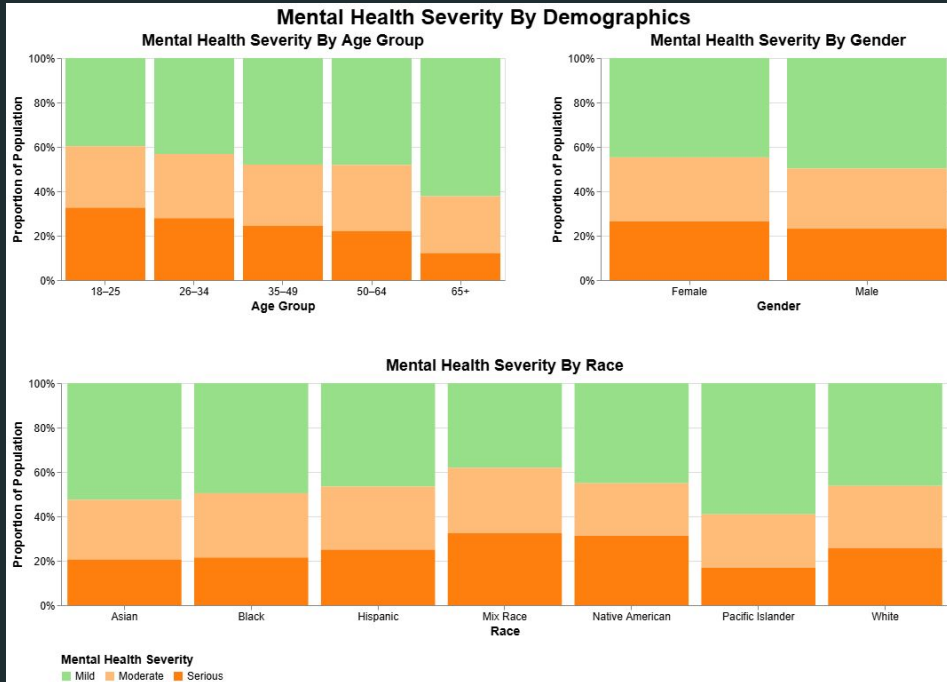
- Color change for consistency
- COVID sign in grey background
- Added tick marks for each year
- Mouse hover fixed

Design Choices

- Area stacked chart
- Two charts -> one chart

Chapter 2.1 - Before

This chart highlights how mental health severity varies across three key demographics: Age Group, Gender, and Race.



Feedback from User Study:

- Hard to interpret due to the lack of context for population size
- Smaller racial groups were visually equal to larger ones, which was misleading
- Legend position was inconsistent and hard to locate

Chapter 2.1 - After

This chart shows mental health severity by Age Group, Sex at Birth, and Race with both population counts and percentages.



Changes Made:

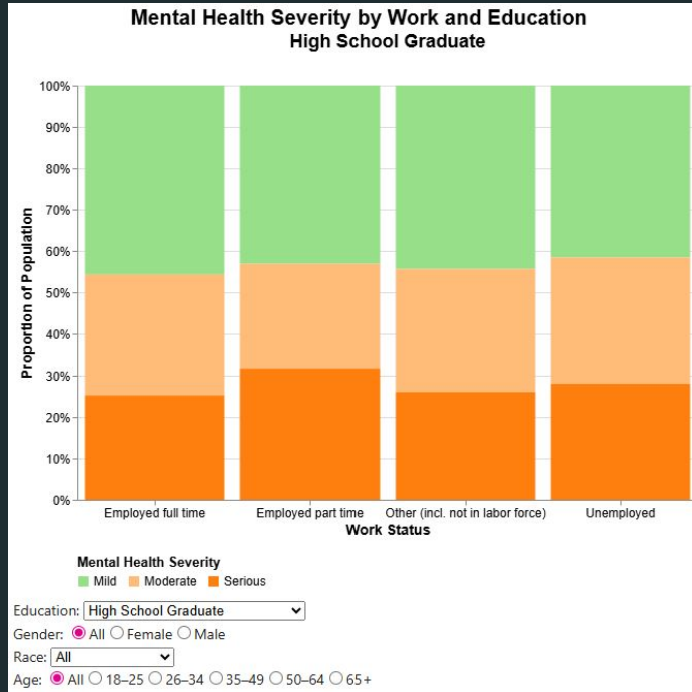
- Standardized variable names and color scheme
- Moved legend to top for visibility
- Introduced population totals alongside percent views to show context and scale

Design Choices:

- Split chart layout (counts and percentages)
- Consistent formatting across charts (axes, font, labels)

Chapter 2.2 - Before

This chart showed mental health severity across different work statuses for one selected education level at a time, using filters for gender, race, and age.

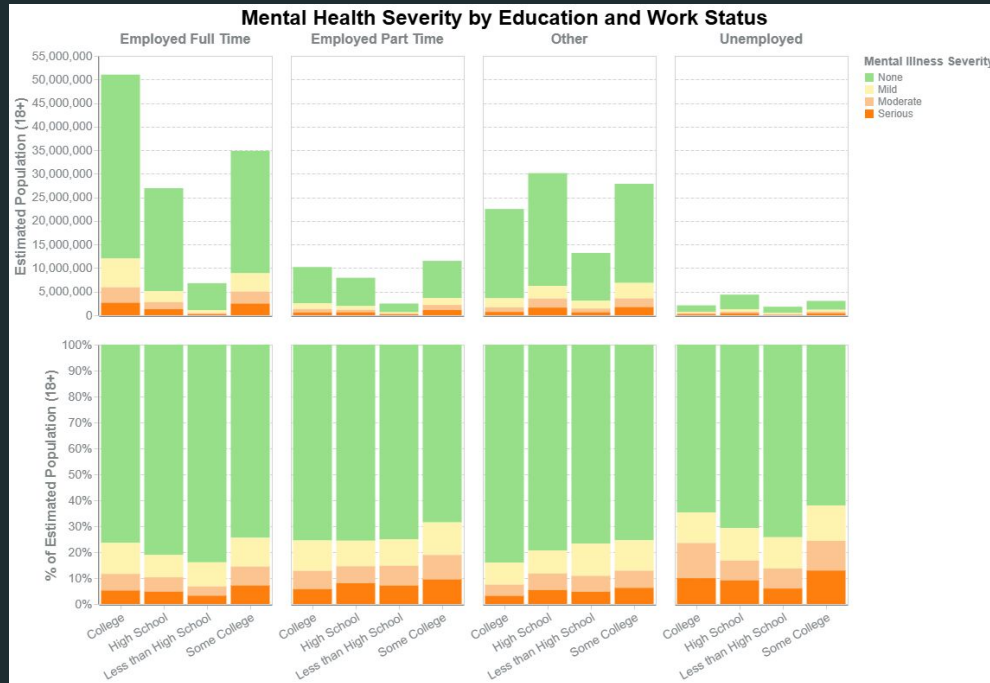


Feedback from User Study:

- Filters were hard to find and rarely used by participants
- Too many filter options made interaction overwhelming
- Could only view one education level at a time, limiting comparisons
- Tooltip errors showed misleading values (e.g., -250%, -2550%)
- Overall layout was not intuitive for multi-group comparisons

Chapter 2.2 - After

This chart shows mental health severity across all education levels and work statuses at once, using a faceted layout.



Changes Made:

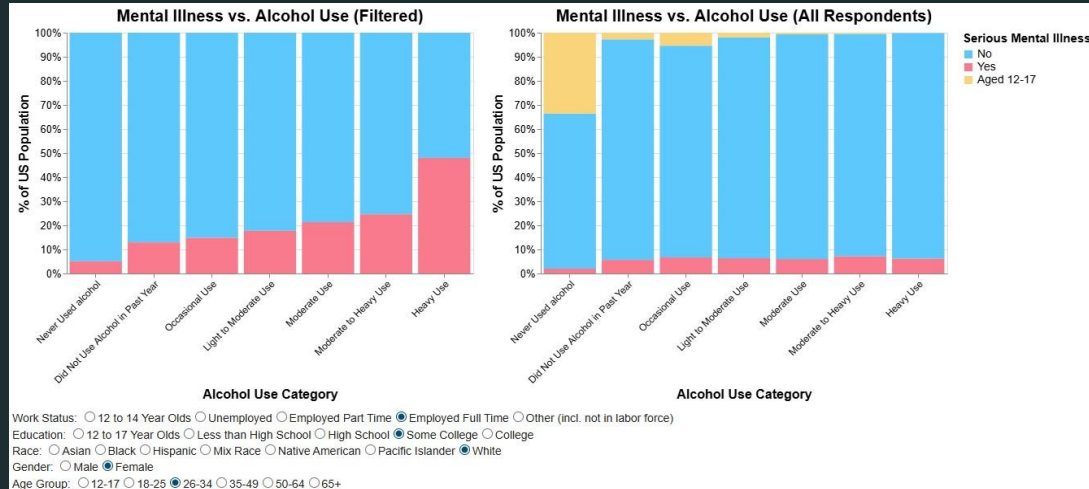
- Removed dropdown filters
- Introduced a faceted layout to allow simultaneous comparison by Education and Work Status
- Fixed tooltip calculation errors

Design Choices:

- Faceting by work status with grouped bars by education simplifies comparisons
- Split chart layout (counts and percentages)
- Consistent formatting across charts (axes, font, labels)

Chapter 3 - Before

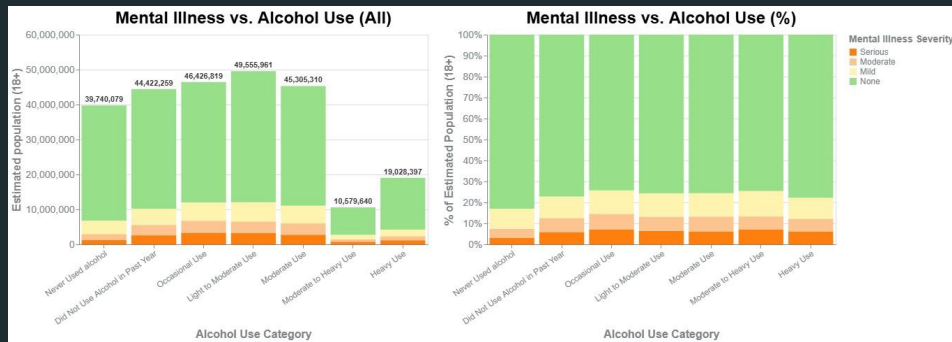
This combination charts explore how alcohol use and mental illness vary across demographic groups. Use the radio buttons to filter by work status, education, race, sex, and age group.



Feedback from User Study

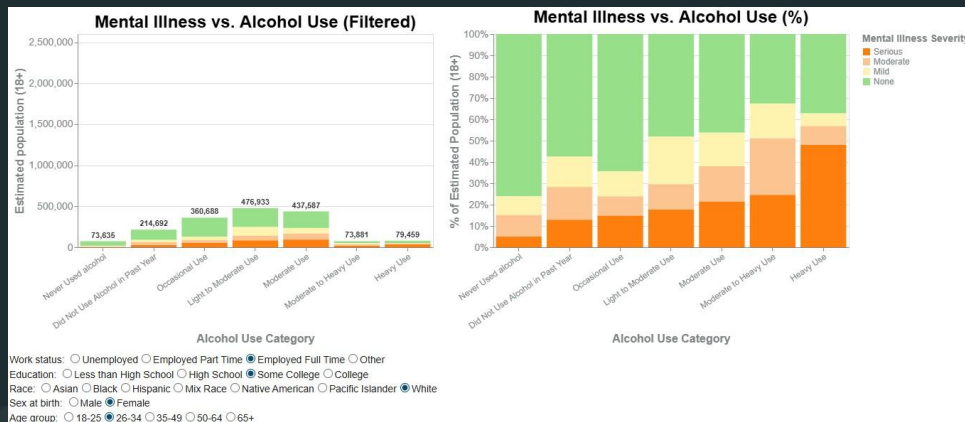
- Remove Under-18 Age Groups
- Clarify Purpose of left and right Charts
- Add Absolute Population Comparison

Chapter 3 - After



Static Charts

- Static charts show alcohol consumption trends across all respondents (no filters).
- Both absolute population counts and percentage values are displayed side by side.
- Adults who have never consumed alcohol show the lowest rates of mental illness.
- Alcohol consumers exhibit higher proportions of mild, moderate, and serious mental health conditions.

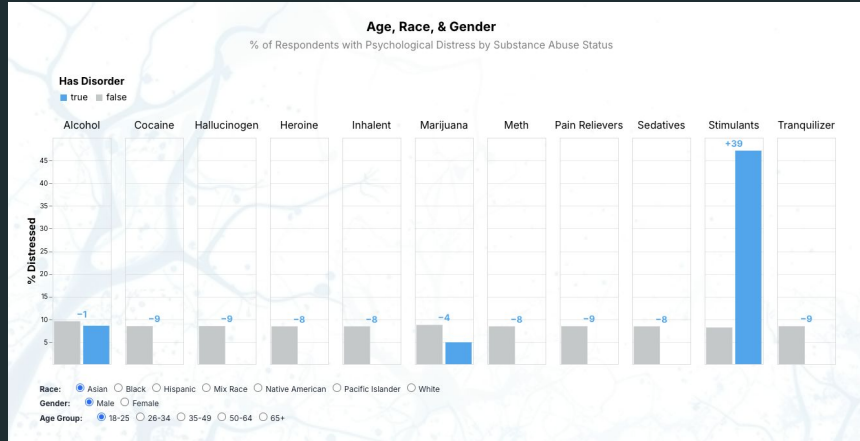


Interactive Filtered Charts

- Interactive charts let users explore how alcohol use and mental illness vary across demographic groups.
- Filters are available for work status, education level, race, gender, and age group.
- Charts display absolute counts and percentages, updating dynamically based on selected filters.
- Help identify: Groups more vulnerable to alcohol use. Groups more persistent in alcohol use.
- Example vulnerable group: Full-time employed white females aged 26–34 with some college education.

Chapter 4

"Find correlations between mental health and substance use disorders"

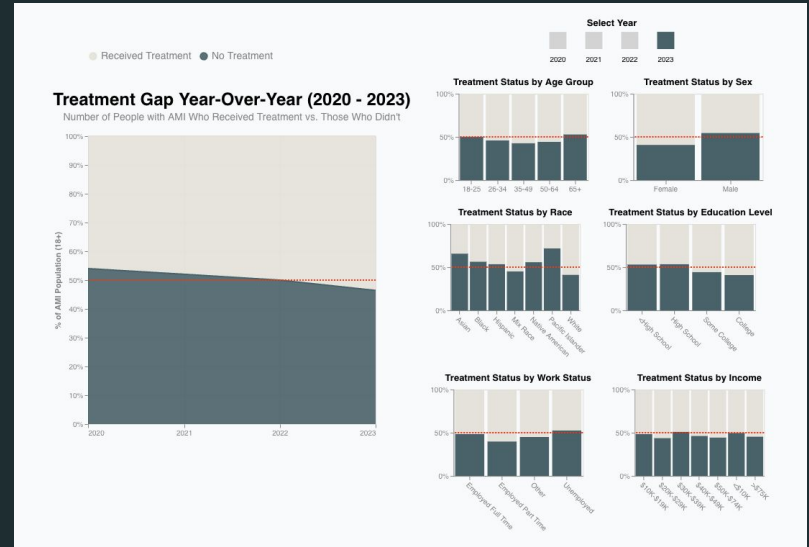


Feedback

- Hard to interpret colors and numbers
- Hard to interpret what axis mean
- Issue with zoom
- Too much going on

Revision

- From substance use to treatment to focus on the issue and resolution rather than introduce new tangents
- Reduced filters from 6 to 1
- Simpler bar and area charts
- 50% reference line as visual aid to ease cognitive load



"Do we have a gap in treatment for specific groups?"



Live Demo!

[Link here](#)



Thank You!

biankapaul@ischool.berkeley.edu

crissjyl@ischool.berkeley.edu

hiro.naito@ischool.berkeley.edu

margaret_lubega@ischool.berkeley.edu

ziyinsun@ischool.berkeley.edu

CREDITS: This presentation template was created by [Slidesgo](#), and includes icons, infographics & images by [Freepik](#)

