

Mental Disorders Across the World

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Repo Link:

<https://github.com/fika005/data-viz-final-project/blob/main/README.md>

- **Background and Motivation:**

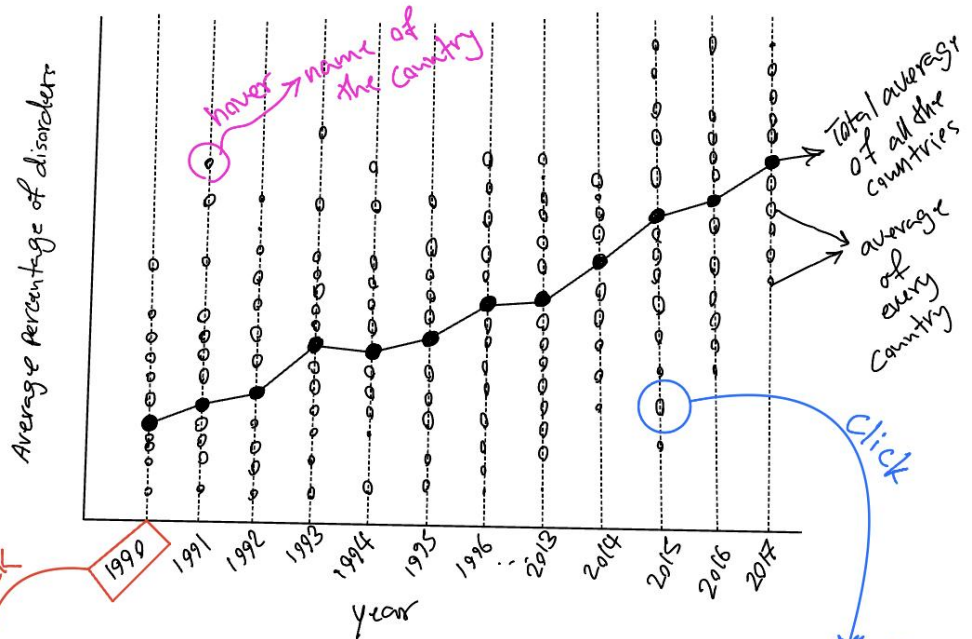
Each year millions of people all over the world battle with some sort of mental health issues. However, people still have to face the stigma around mental health problems and often suffer in silence without seeking treatment for their condition. That is why mental health awareness is a must to improve understanding of different conditions and disorders and provide better access to healthcare and accommodations for those who need it. The goal of this project is to throw some light on major mental disorders across the world.

- **Project Objectives:**

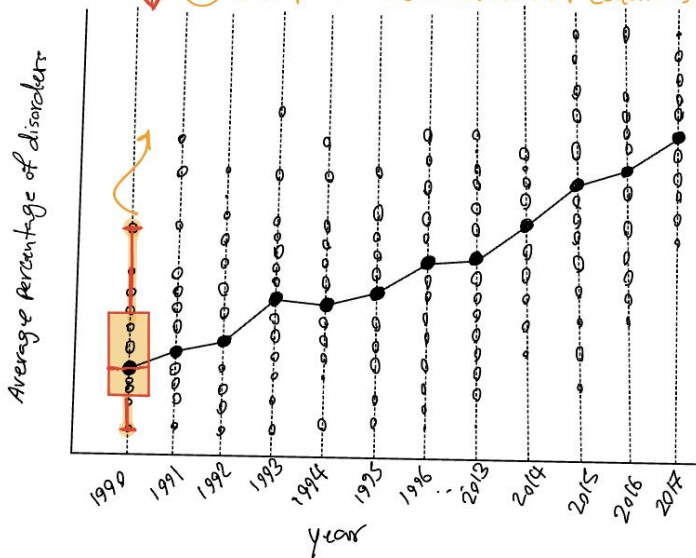
The primary goal of this project is to show the distribution of different mental disorders in the world from the year 1990 to 2017. Visualizing the data will help us understand the distribution of different disorders and find out if the percentage of those disorders have changed over time in different countries. The main objectives can be summarized as follows:

- **PO1:** Correlation between the different mental disorders.
- **PO2:** The global trend of mental disorder from 1990 to 2017.
- **PO3:** providing a visual summary of the countries' mental disorder in each year to identify mean, the distribution of the dataset, and signs of skewness.
- **PO4:** Comparing the percentage of different disorders in each country in different years.

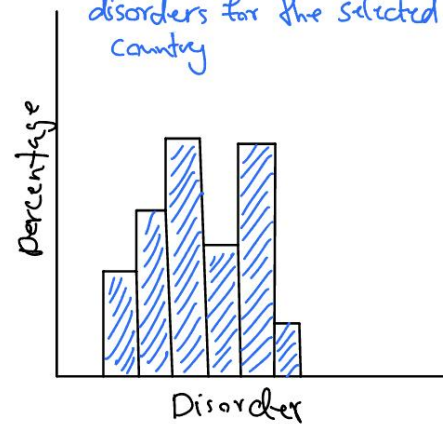
② Trend Analysis of average percentage of mental disorders in different years.



③ Box plot of distribution of countries



④ Bar chart of different disorders for the selected country



- **Must-Have Features:**

1. **Meet PO1- Graph 1:** Correlogram of different mental disorders. It supports a hover effect on each cell of the graph to show the correlation coefficient.
2. **Meet PO2- Graph 2:** A line graph of the average percentage of mental disorders in different years. The graph also shows the distribution of countries in every year. Each country and year can be clicked on to show further analysis. Also by hovering on each country, the name of the country is shown.
3. **Meet PO3- Graph 3:** By clicking on the year in graph 2, a box plot is rendered to show the distribution of countries around min, average, and max values of the disorders.
4. **Meet PO4- Graph 4:** By clicking on each country in graph 2, a barchart of different disorders in the corresponding year is rendered.

- **Optional Features:** In graph 4, if you click on each bar, you can see a line graph of that disorder through different years. Another feature can be a geo-visualization of the world map for separate mental disorders.

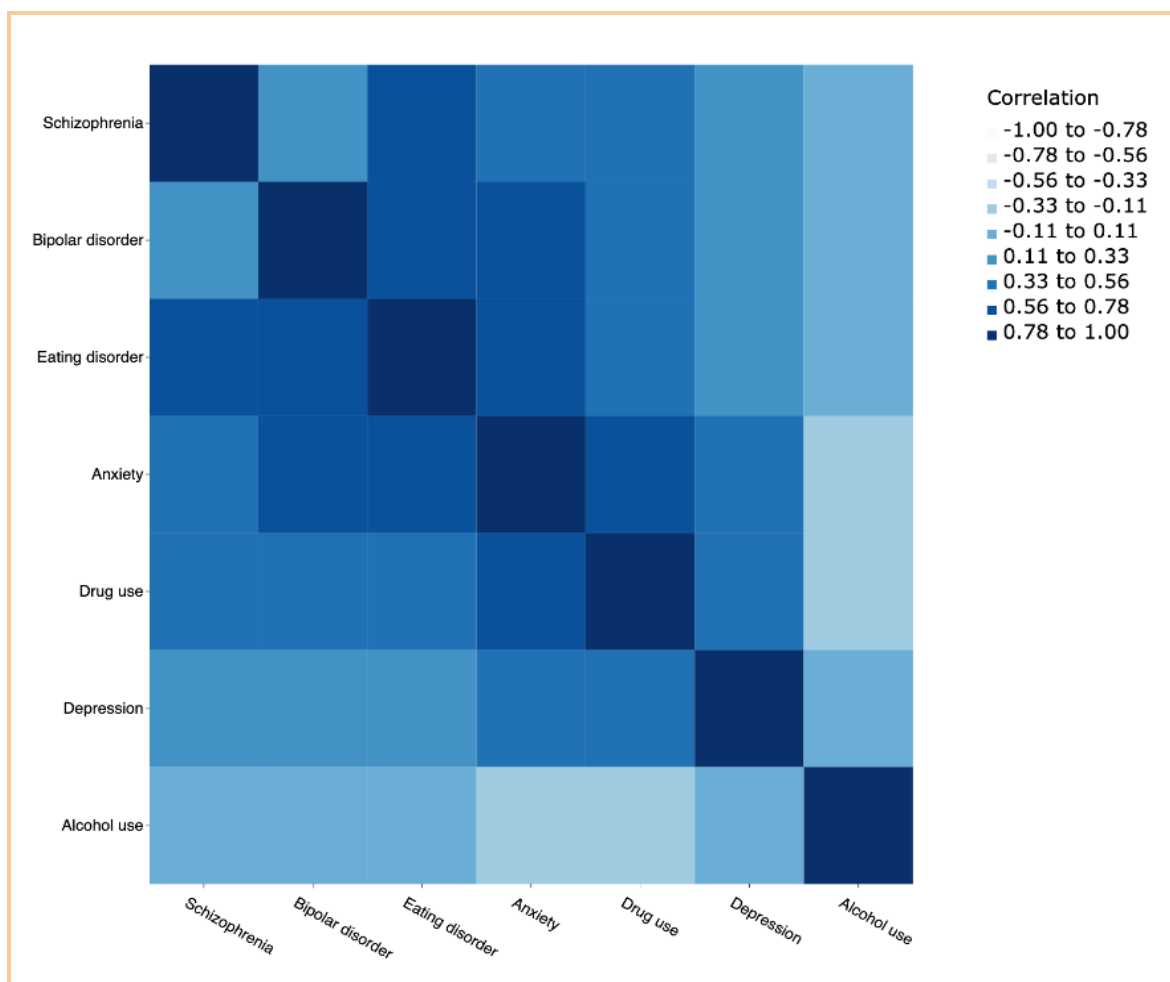
- **Project Schedule:**

Oct 10	Proposal feedback
Oct 13	Start data preprocessing
Oct 17	Finish data preprocessing
Oct 19	Revised proposal, related work and website
Oct 26	Static draft of correlogram and line graph
Oct 31	Static draft of box plot and barchart
Nov 2	Alpha release
Nov 8	Make connections between the graphs

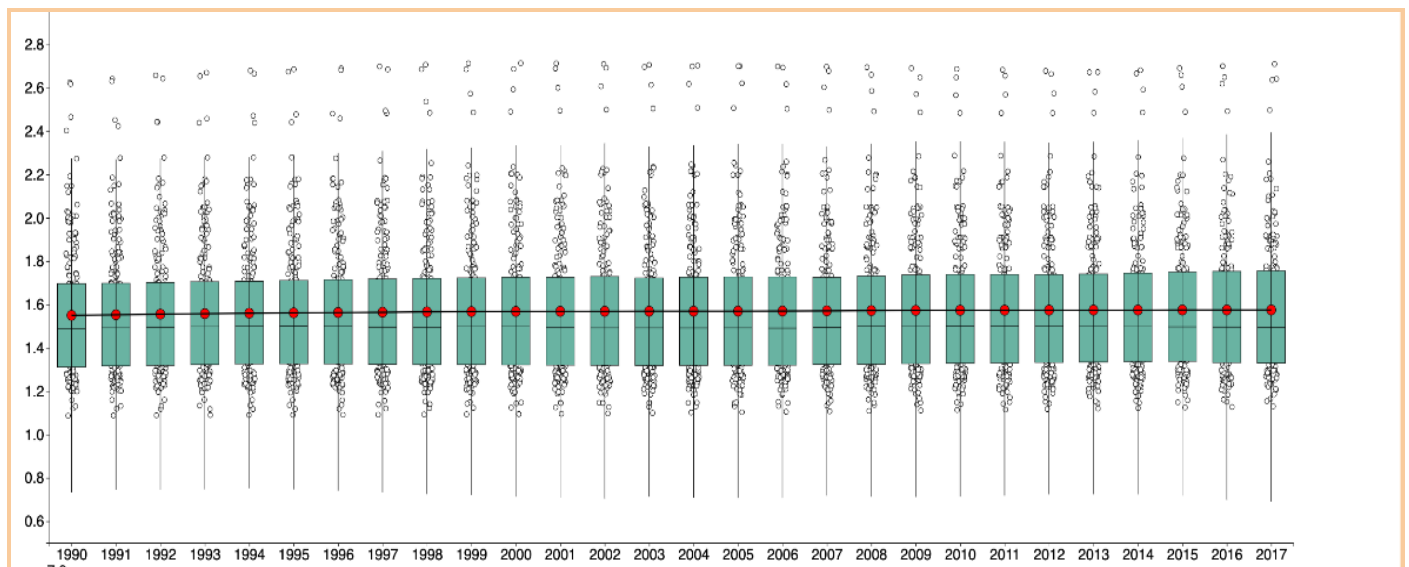
Nov 11	Finalize the interactions
Nov 14	Beta release
Nov 16	Beta release feedback
Nov 23	Add the final changes
Nov 28	Cleanup and refactor the code
Dec 3	Prepare the presentation
Dec 5	Final project presentation
Dec 12	Project report draft
Dec 15	Project report, slides, demo video, code, data, user manual

- **Related Works:**

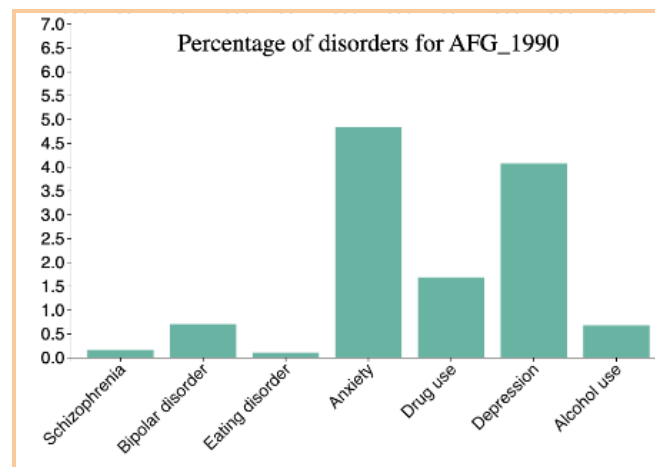
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- Rohit Raj, How to make interactive line chart in D3.js, <https://medium.com/analytics-vidhya/how-to-make-interactive-line-chart-in-d3-js-4c5f2e6c0508>



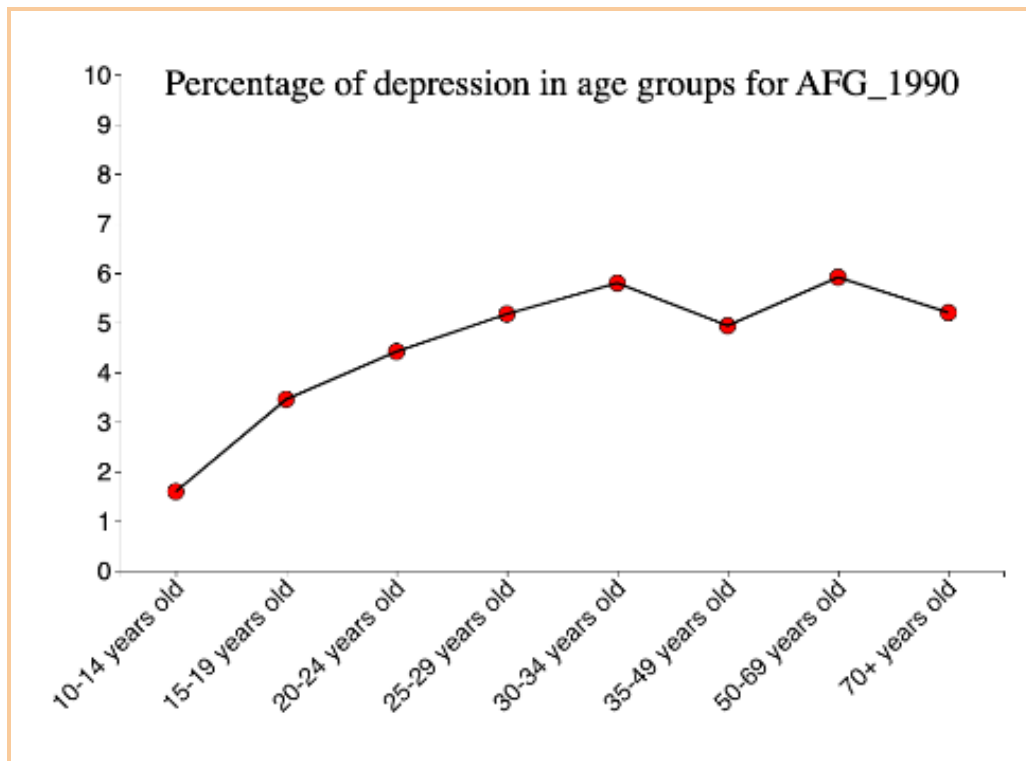
Meet PO2 and PO3- Graph 2: I have decided to combine the initial designs of two graphs into one interactive graph. In the new design, the average of mental disorders in each country for each year is calculated and is shown as dots on the graph. In addition, the total average of disorders in all the countries is calculated for each year and shown as a line chart. Finally, a box plot is used to show the distribution of the data for each year. In my final design, The box plots are going to appear when clicked on the year (on the x-axis) to reduce the visual clutter.



Meet PO4- Graph 3: Bar chart of different disorders for each year. In the final design, the barcharts are going to be rendered interactively when the user clicks on a dot in graph 2. For instance, when the user clicks on a dot that is Afghanistan in 1991, a bar chart of percentages of all the disorders in Afghanistan in 1991 is rendered.



Added Chart- Graph 4: I have added one extra chart to my design to show the percentage of depression among different age groups for each country in each year. This chart, like graph 3, is going to be rendered interactively when the user clicks on a dot in graph 2.



Upcoming Milestones:

Next step in this project is going to be adding tooltips to the correlogram, implementing the interactions in graph 2, and connecting graph 2 to graph 3 and 4. Also, the graphs are going to be modified slightly to appear more aesthetically pleasing.

Roadblocks:

So far, there haven't been any major roadblocks but there have been some features that took more time to design and implement such as graph 2. For instance, at first, I wanted

to show all the dots on one line but because of the overlap among the dots, I decided to add some variance in the direction of the x-axis.

Another thing which was not a roadblock but more of a disappointment was that in graph 2, I was hoping to see a more interesting trend in percentage of disorders over the years or a clear variation. However, even though there is an increase in the average percentage of mental disorders over the years, the increase is very subtle and not very noticeable. Maybe if the data included the pandemic years, we could have seen some interesting spikes!