Health Analytics Dashboard – Power BI & SQL

1. Project Overview

This project showcases an interactive **Health Analytics Dashboard** developed using **Power BI** with data cleaned and prepared using **SQL**.
The goal is to analyze **patient demographics**, **obsession and compulsion patterns**, **ethnicity trends**, and **yearly patient counts** using data from an OCD-related patient dataset.

The dashboard provides insights useful for healthcare analysts, clinicians, and administrators.

2. Dataset Information

Dataset Source:
OCD Patient Dataset – Demographics and Clinical Data
Link: https://www.kaggle.com/datasets/ohinhaque/ocd-patient-dataset-demographics-and-clinical-data/

Key Fields Included:

- Patient demographics (age, gender, ethnicity)
- Obsession type
- Compulsion type
- Obsession intensity score
- Admission year
- Patient count fields

3. Data Cleaning & SQL Work

Before visualization, the dataset was processed using **SQL**:

- Removed duplicates and handled missing data
- Standardized categorical fields (ethnicity, gender, obsession types)
- Created analytical summary tables
- Aggregated patient counts
- Generated obsession & compulsion score summaries
- Extracted year from date columns for time-series analysis

The cleaned output was imported into Power BI for modeling and dashboard creation.

4. Dashboard Summary

The **Health Analytics Dashboard** includes the following key visuals and insights:

A. KPI Cards

- **Total Patients:** 1500
- **Male Patients:** 753
- **Female Patients:** 747
- **Obsession Score by Ethnicity:** 802K
- **Obsession Score by Compulsion Type:** 10K

These KPIs provide a quick overview of patient distribution and OCD symptom intensity.

B. Patient Count by Ethnicity

A bar chart showing patient distribution across:

- Caucasian
- Hispanic
- Asian
- African

Helps identify demographic representation within the dataset.

C. Patient Count by Gender

A donut chart illustrating:

- Male: 753 (50.2%)
- Female: 747 (49.8%)

Gender distribution is nearly equal.

D. Obsession Type Analysis

Includes:

- Slicer for selecting obsession types (Contamination, Harm-related, Hoarding, Religious, Symmetry)
- A chart comparing **obsession score** and **patient count** per obsession type

Useful for analyzing which OCD categories are more intense or common.

E. Compulsion Type Analysis

Bar chart showing the number of patients exhibiting behaviors such as:

- Washing
- Counting
- Checking
- Praying
- Ordering

A slicer allows selecting specific compulsion categories.

F. Ethnicity Filter

A tile-based slicer for:

- African
- Caucasian
- Asian
- Hispanic

Enables filtering all visuals based on ethnicity.

G. Yearly Patient Trend

A line chart displaying **patient count from 2014 to 2023**.
This visualization helps identify:

- Yearly trends
- Behavioral changes
- Growth patterns in reported OCD cases

5. Tools & Technologies

Tool	Purpose
SQL	Data cleaning, transformation, aggregation
Power BI	Dashboard development, DAX measures, data modeling
Excel / CSV	Initial dataset handling
DAX	KPI and measure creation

6. Key Learnings

- Built an interactive and professional Power BI dashboard
- Applied SQL for real-world healthcare data cleaning
- Designed meaningful KPIs that support healthcare decision-making
- Improved storytelling using visual analytics

- Explored demographic and behavioral patterns in OCD patients

7. Possible Enhancements

- Add predictive insights (e.g., forecasting patient count)
- Compare multiple healthcare centers
- Integrate machine learning for risk scoring
- Expand dataset to include treatment outcomes