**Health Analysis Report**

**Introduction**

The 2023 Health Analysis Report is a comprehensive exploration of patient health data, combining the power of MySQL for efficient data management and querying with the interactive visualization capabilities of Power BI. This report provides valuable insights into patient demographics, behavioural patterns, and health trends over time, helping healthcare professionals make informed decisions.

By analysing data from over a decade, this report visualizes key metrics like patient count trends, gender distribution, and ethnicity breakdowns. It also explores the relationship between compulsive behaviours and obsession scores, shedding light on how these factors vary across different demographic groups. MySQL was used to extract and prepare the raw data, while Power BI's visualization tools helped in transforming it into actionable insights. This report serves as an essential tool for identifying key trends and improving patient care strategies.

**Learning Objectives:**

* ***Understand Data Integration and Analysis***: Learn how to integrate health-related data using MySQL for structured querying and Power BI for advanced visualizations.
* ***Visualizing Health Data***: Understand how to create interactive dashboards with Power BI to visualize patient demographics, behavioural trends, and their relationship with obsessions and compulsions.
* ***Perform Data-Driven Analysis***: Use MySQL to retrieve and filter specific datasets from health databases, and Power BI to analyse and present trends, correlations, and distributions in an intuitive format.
* ***Analyse Demographic Patterns:*** Examine how gender, ethnicity, and compulsion types vary among patients and understand the potential health implications of these findings.
* ***Combine SQL with BI Tools***: Learn how to use MySQL to process raw data efficiently, and how to import it into Power BI for rich, dynamic visualizations that drive insights.

**Suggestion**

* **Leverage Data-Driven Insights for Personalized Care:**

Use the data from MySQL and Power BI analysis to identify patterns in patient behaviour and demographics, and tailor treatments accordingly. For example, if certain compulsions or obsessions are more prevalent in specific groups, targeted interventions can be developed.

* **Implement Predictive Analytics for Proactive Interventions:**

Utilize historical data to develop predictive models that can anticipate future health issues or trends. For example, using Power BI’s forecasting features, healthcare providers can predict potential spikes in patient visits and allocate resources accordingly.

**Visualization Health Analysis**

1. **Patient Trends by Month**: The line chart reveals fluctuating patient counts between 2014 and 2023, with noticeable **peaks** around 2016 and 2020, possibly indicating external or seasonal factors.
2. **Gender Distribution**: The male and female patient counts are nearly equal, with a slight **female majority** (50.2%).
3. **Ethnic Distribution**: **Caucasians** represent the largest patient group, followed by Hispanic, Asian, and African populations, with relatively similar counts across all ethnicities.
4. **Compulsion Types**: Behaviours such as washing, counting, checking, praying, and ordering are **equally** prevalent, with around 200 patients in each category.
5. **Obsessions and Severity**: Harm-related obsessions are the most frequent and severe, with a **decreasing trend** in both count and severity for types like contamination, religious, symmetry, and hoarding.

A screenshot of a computer

Description automatically generated

Figure1: Health Analysis Report

**MySQL core**

**# -- 1. Count & Pct of F vs M that have OCD & -- Average Obsession Score by Gender**

with data as (

SELECT

Gender,

count(`Patient ID`) as patient\_count,

round(avg(`Y-BOCS Score (Obsessions)`),2) as avg\_obs\_score

FROM health\_data.ocd\_patient\_dataset

Group By 1

Order by 2

)

select

sum(case when Gender = 'Female' then patient\_count else 0 end) as count\_female,

sum(case when Gender = 'Male' then patient\_count else 0 end) as count\_male,

round(sum(case when Gender = 'Female' then patient\_count else 0 end)/

(sum(case when Gender = 'Female' then patient\_count else 0 end)+sum(case when Gender = 'Male' then patient\_count else 0 end)) \*100,2)

as pct\_female,

round(sum(case when Gender = 'Male' then patient\_count else 0 end)/

(sum(case when Gender = 'Female' then patient\_count else 0 end)+sum(case when Gender = 'Male' then patient\_count else 0 end)) \*100,2)

as pct\_male

from data

;

**# -- 2. Count of Patients by Ethnicity and their respective Average Obsession Score**

select

Ethnicity,

count(`Patient ID`) as patient\_count,

avg(`Y-BOCS Score (Obsessions)`) as obs\_score

From health\_data.ocd\_patient\_dataset

Group by 1

Order by 2;

**# -- 3. Number of people diagnosed with OCD MoM**

# -- alter table health\_data.ocd\_patient\_dataset

# -- modify `OCD Diagnosis Date` date;

select

date\_format(`OCD Diagnosis Date`, '%Y-%m-01 00:00:00') as month,

-- `OCD Diagnosis Date`

count(`Patient ID`) patient\_count

from health\_data.ocd\_patient\_dataset

group by 1

Order by 1

;

**# -- 4. What is the most common Obsession Type (Count) & it's respective Average Obsession Score**

Select

`Obsession Type`,

count(`Patient ID`) as patient\_count,

round(avg(`Y-BOCS Score (Obsessions)`),2) as obs\_score

from health\_data.ocd\_patient\_dataset

group by 1

Order by 2

;

**# -- 5. What is the most common Compulsion type (Count) & it's respective Average Obsession Score**

Select

`Compulsion Type`,

count(`Patient ID`) as patient\_count,

round(avg(`Y-BOCS Score (Obsessions)`),2) as obs\_score

from health\_data.ocd\_patient\_dataset

group by 1

Order by 2

;