Music Listening Behavior and Mental Health

Project Objective:

The goal of this project was to examine the relationship between music listening behavior and markers of mental health using interactive visual analytics in Power BI. We sought to reveal patterns of how genre liking, frequency of listening, and streaming services are related to levels of anxiety, depression, insomnia, and OCD.

Dataset Used:

Name: mxmh_survey_results.csv

Total Rows: 736

Columns: 33

Key Column Categories:

Demographics: Age, Foreign languages, Instrumentalist, Composer

Music Habits: Primary streaming service, Hours per day, Fav genre, 15+ Frequency [Genre] columns

Mental Health Scores: Anxiety, Depression, Insomnia, OCD

Behavioral Tags: While working, Music effects, Exploratory

Missing Data:

- BPM had ~107 missing values
- Small nulls in Music effects, Instrumentalist, Age, etc.
- Data was cleaned using Power Query in Power BI

Page 1: Overview - Listening Behavior and Mental Health

Focus: General listening trends and overall mental health scores

Visuals Created:

- KPI Cards:
  - Avg Listening Time: 3.57 hrs/day
  - Avg Anxiety Score: 5.84
- Donut Chart: Most used streaming platforms (Spotify dominates with 62%)
- Bar Chart: Top Favorite Genres (Rock, Pop, Metal)
- Stacked Column Chart: Genre preferences split by ListeningCategory (Low/Med/High)

Insights:

- Rock and Pop dominate across all listeners
- High-frequency listeners prefer more emotionally charged genres like Metal
- Streaming platforms like Spotify and YouTube Music are preferred by emotionally active users

Page 2: Genre Frequency vs Mental Health

Focus: Explore how specific genres relate to mental health conditions

Visuals Created:

- Scatter Plot: Correlation between Anxiety and Depression
- Grouped Bar Charts: Frequency [Rock] and Frequency [Pop] by Anxiety Group
- Stacked Column Chart: Sum of Mental Health Scores by Genre
- Combined Bar+Line Chart: Count of "Music Effects" and Avg Listening Time by Age and Genre
- Genre Filter Panel: Interact with visuals by selecting specific genres

Insights:

- Teens and 20s report the highest music emotional effects
- High-frequency Rock and Pop listeners tend to show higher anxiety

- Classical and Gospel genres show lower emotional volatility

Page 3: User Deep Dive and Segment Profiles

Focus: Examine individual-level behavior and allow drillthrough for detailed exploration

Visuals Created:

- User Data Table: Age, Hours, Anxiety, Depression, Insomnia
- Bar Chart: Avg Listening Hours by Age Group (Teens listen the most)
- Grouped Bar Chart: Streaming platform and genre usage split by Anxiety Group
- Stacked Column Chart: Avg Mental Health Score (Anxiety, Depression, Insomnia) by Genre
- 100% Stacked Bar: Proportion of Low/High Anxiety across genre listeners

Insights:

- Teens listen to the most music and report strong emotional effects
- Even high-anxiety users prefer Spotify and other popular platforms
- Mental health score profiles differ clearly by genre

Final Key Insights:

- Music is a strong emotional regulator - users with higher mental health scores listen more often
- Genre matters - Rock, Pop, and Metal are most associated with high emotional impact
- Age is a big factor - Teens and 20s are the most emotionally influenced by music
- Listening platforms show patterns - High anxiety users still prefer mainstream services
- Data-driven storytelling allows meaningful mental health awareness using music data