Music and Mental Health

Does tunage ease the pain?

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Data Sourcing

[Music & Mental Health Survey Results via Kaggle]
Purpose of the DataSet: Attempt to identify correlations between music habits and mental well-being. Submissions were collected via a Google Form shared to various social media sites.

Author: Catherine Rasgaitis - Computer Science at University of Washington
Temporal Coverage Start Date: 07/27/2022
Temporal Coverage End Date: 11/08/2022
Geospatial Coverage: Worldwide

Data Cleaning

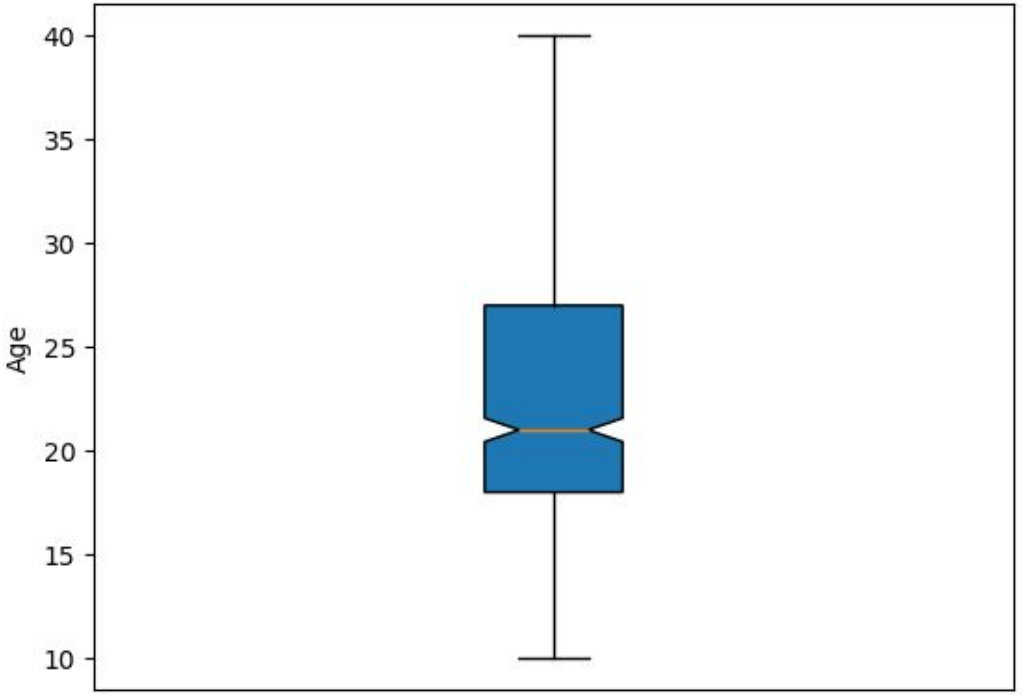
- Dropped unnecessary columns such as “Timestamp” and “Permissions”
- Dropped rows that were missing entries either “Age” or “Music effects”
- Removed “BPM” data that was clearly inaccurate and settled on scientifically noted range of (<40 BPM or >300 BPM)
- Renamed around half the columns to be less redundant and easier to work with

Data Insights

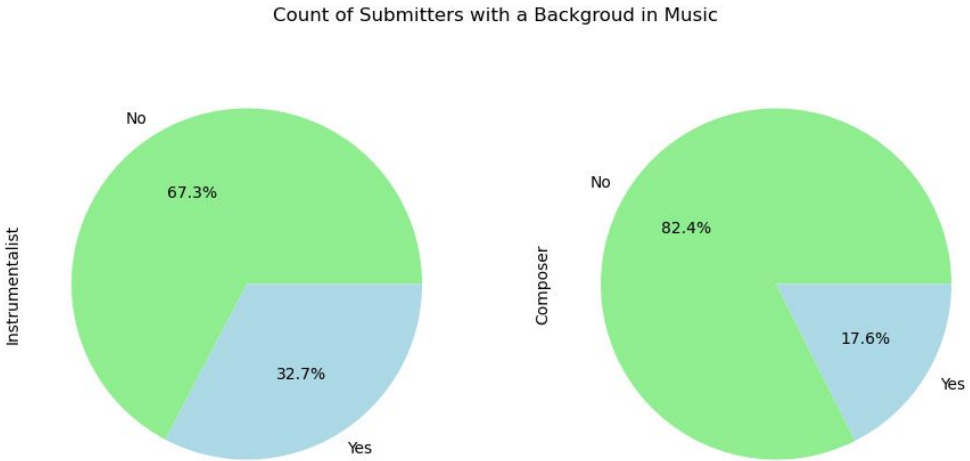
- The most popular streaming service was Spotify (64.3%)
- Pandora is most commonly used by those 35 years of age and older
- Rock is the most popular music genre
- While popular genres did change by age group Rock, Pop, and Metal were consistently in the top 3
- A majority of forms were submitted by participants in their late teens to early twenties
- Having a background in music had little to no impact on the average severity of experienced mental health disorders

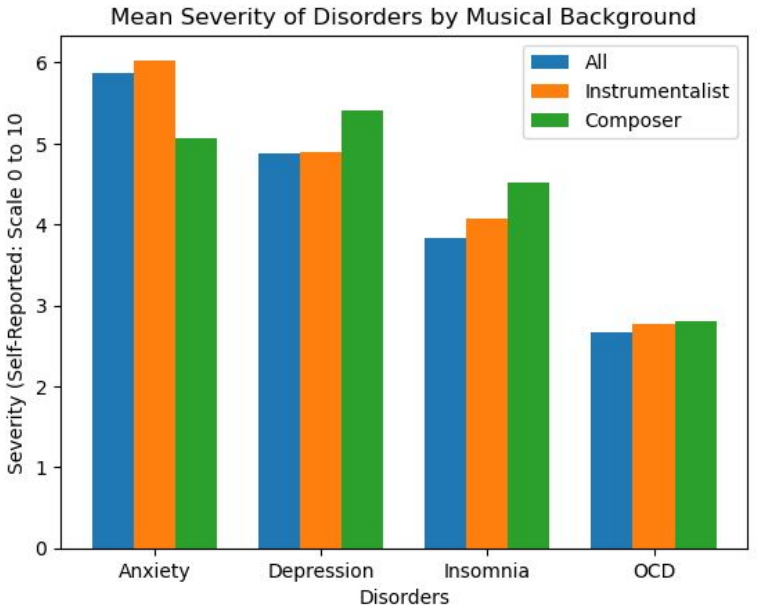
Submissions by Age

- First Quartile (Q1): 18
- Median (Q2): 21
- Third Quartile (Q3): 27

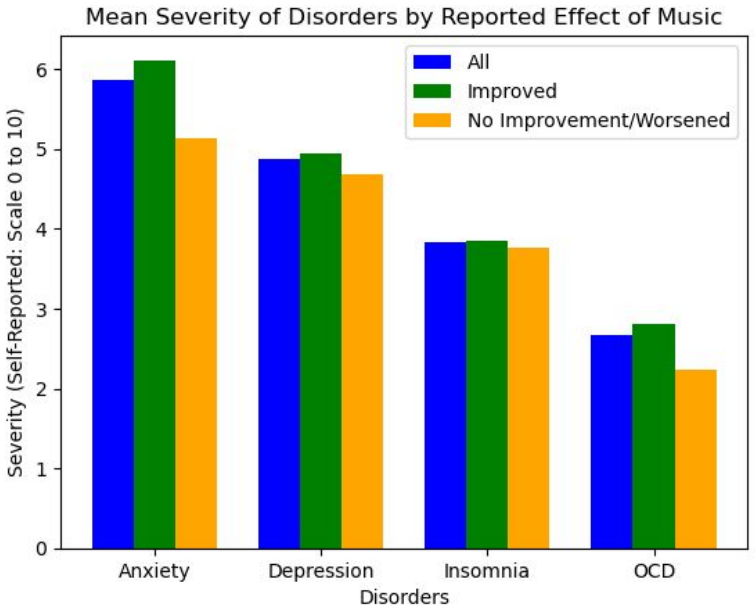


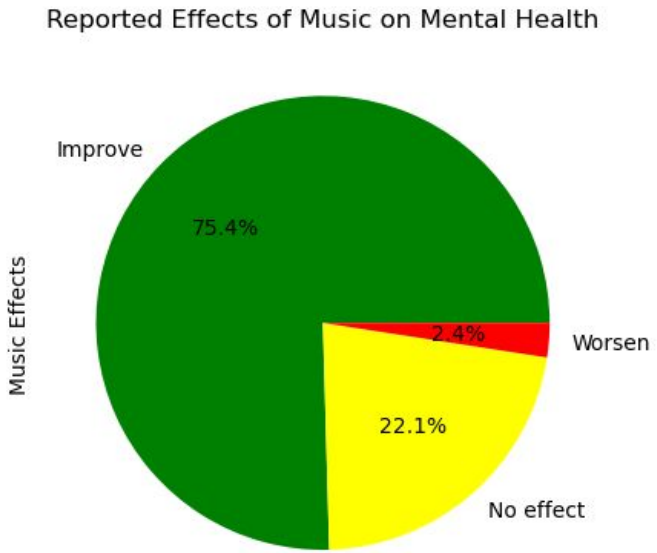
Musical Background



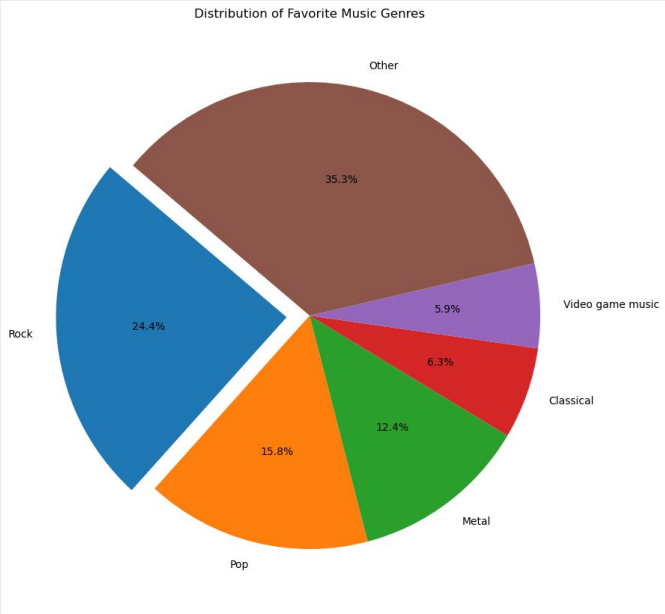


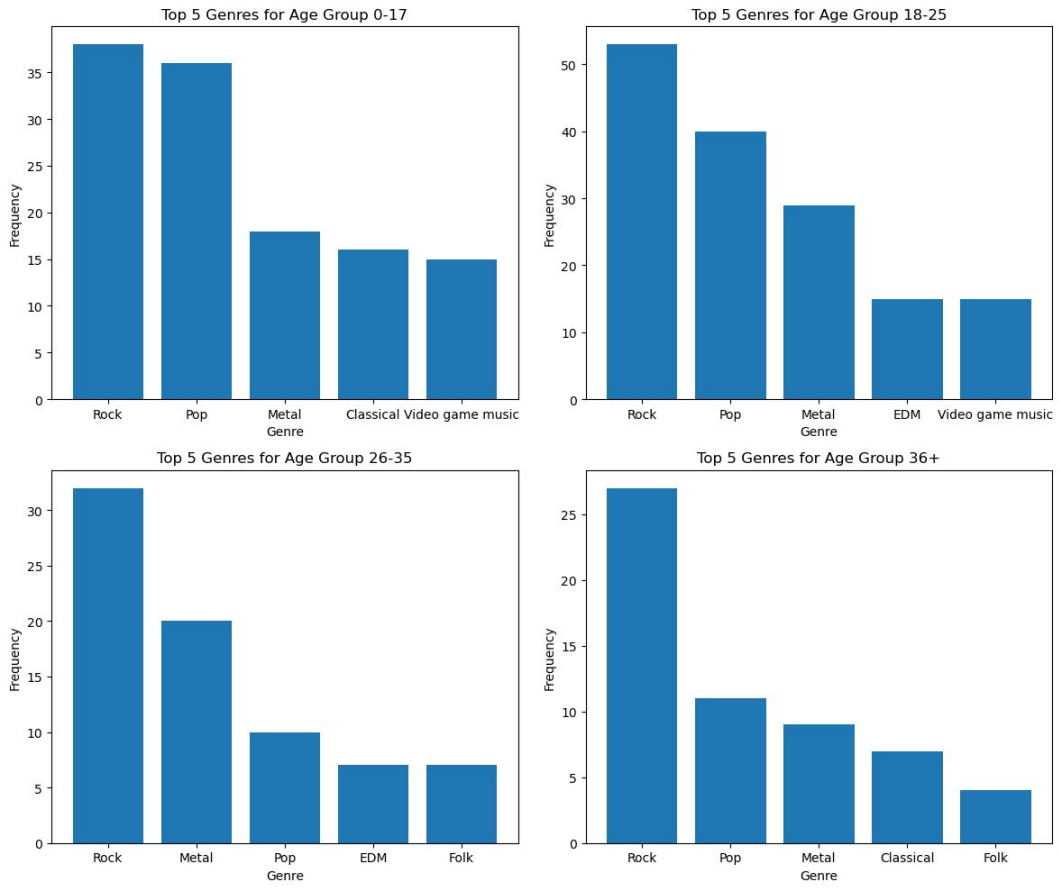
Self-Reported Effect of Music on Mental Health



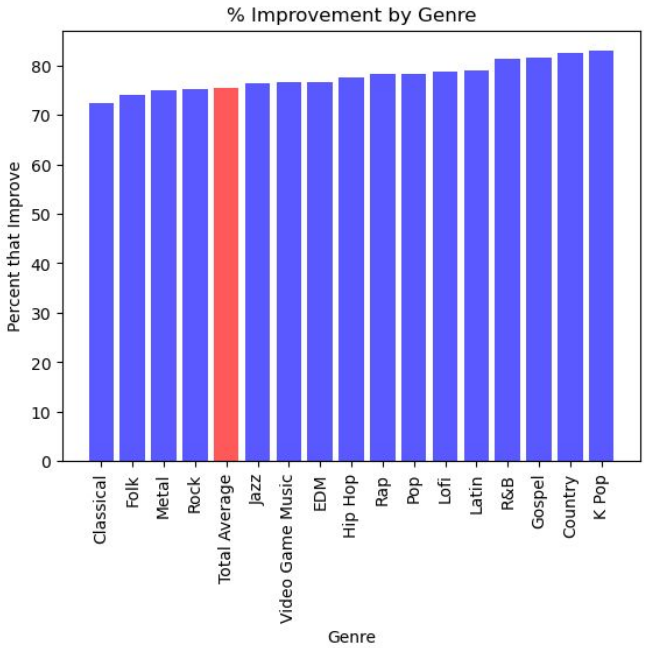


Genre Choices





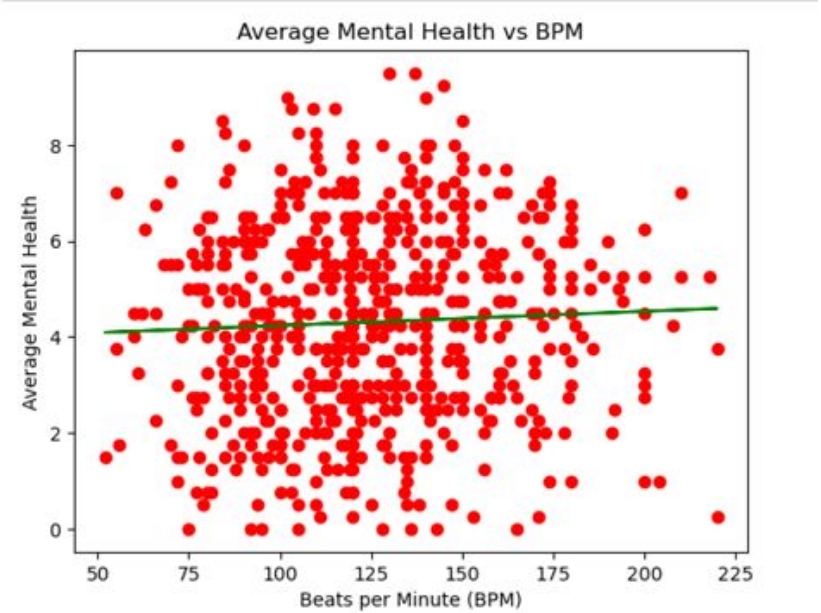
Improvement by Genre



- Genres left of the average had more submissions, bringing the global average down.

Mental Health vs BPM

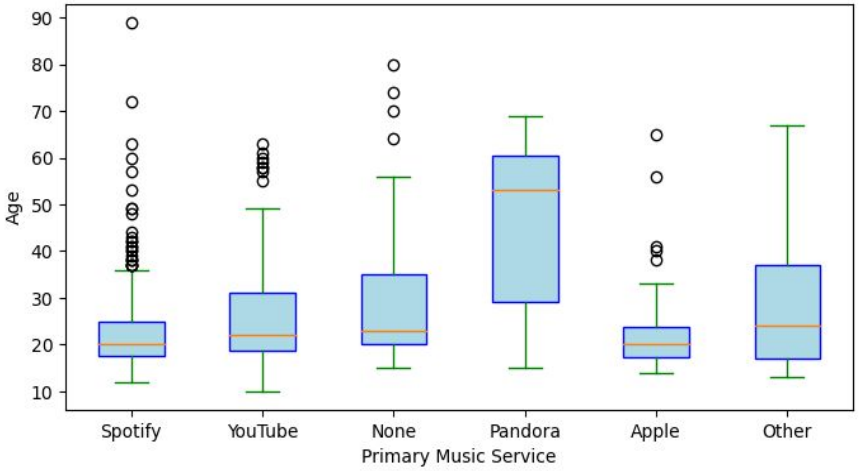
- BPM was an optional category for the survey as well as hard to judge.
- Average mental health was a category created by us.
- P = 0.25 — no correlation.

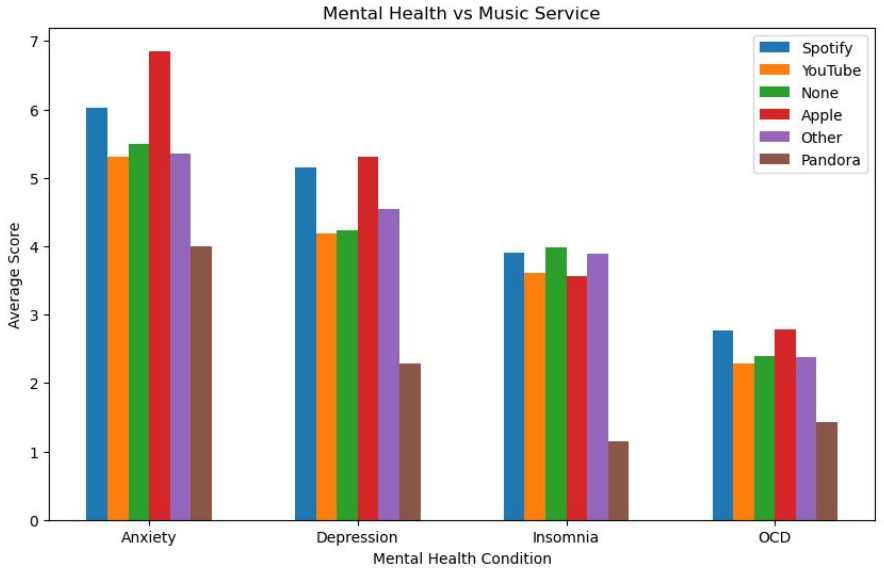


Music Service

Primary Streaming Service

- Spotify 64.3%
- YouTube Music 12.4%
- None 9.0%
- Apple Music 7.8%
- Other 6.4%
- Pandora 1.1%





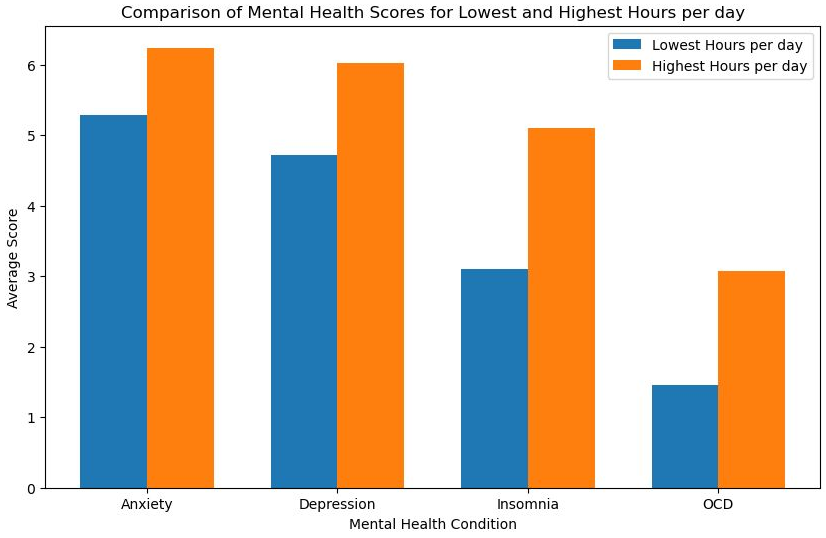
Hypothesis

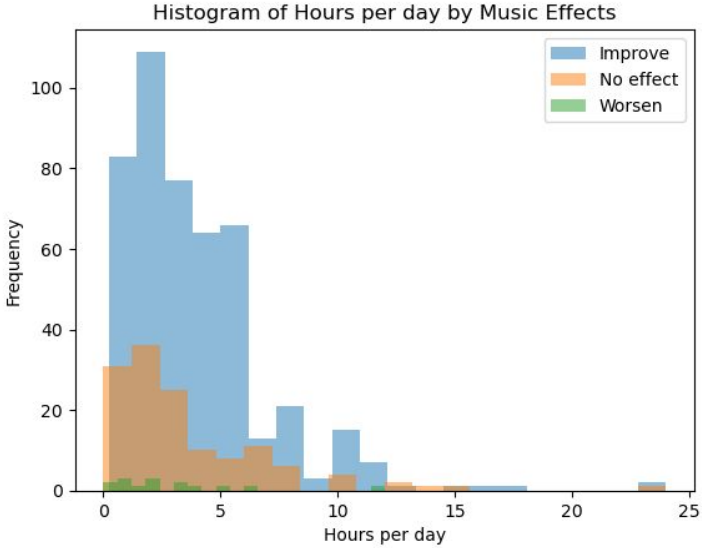
Null Hypothesis (H0): There is no association between hours per day spent listening to music and mental health outcomes (Anxiety, Depression, Insomnia, OCD).

Alternative Hypothesis (H1): There is a significant association between hours per day spent listening to music and mental health outcomes (Anxiety, Depression, Insomnia, OCD).

Hours spent on Music

	Age Group	Hours per day	Anxiety	Depression	Insomnia	OCD
0	0-17	4.014563	6.046117	4.533981	3.987864	3.043689
1	18-25	3.748696	6.165217	5.243478	3.504348	2.639130
2	26-35	3.519417	5.893204	5.582524	4.097087	2.650485
3	36+	3.203947	4.486842	3.776316	3.986842	1.684211





Hypothesis Outcome

#Test: Conduct a controlled experiment where participants with some variation of mental health conditions are 'randomly' selected, and measure mental health outcomes (e.g., anxiety levels, depression scores) vs the amount of time spent listening to music (hrs) per day.

#Interpretation of results and limitations:

-The data set and analysis can not establish causation since there is inherent biases in the data source: see >> built in inherent biases in 'observational' data as opposed to a more dynamic dataset.

-The respondents provided their weight of mental Health ailments on a non scientific scale- study was not conducted to see if music helped overall well being after being introduced.

-The results show some remnants of a correlation between time spent listening to music and overall mental health, majority of the music per hours were spent by the younger age groups and Rock was the overall favorite genre of choice by all and across the age groups.