Description

Dataset Overview

Listeners and non-listeners

Music, Age and Mental Well-being Stat-Test

Code

Summary

# Music at Work and Study: A Hidden Mental Boost?

MUSIC THERAPY IS WIDELY RECOGNIZED FOR ITS ABILITY TO REDUCE STRESS AND ENHANCE MOOD. THIS STUDY EXAMINES WHETHER LISTENING TO MUSIC WHILE WORKING OR STUDYING POSITIVELY INFLUENCES MENTAL WELL-BEING.

Marina Lozanskaya February 2025

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### **Dataset Overview**



Total Respondents



Average Age of Respondents, years



Music Genres Surveyed

Data Source: Music & Mental Health Survey Results on Kaggle

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## Does Listening to Music at Work Improve Mental Health?

Music Listeners: Respondents with poor mental health.

Non-Listeners: Respondents with poor mental health.

Respondents who listen to music during work or study report better overall mental health than those who do not.

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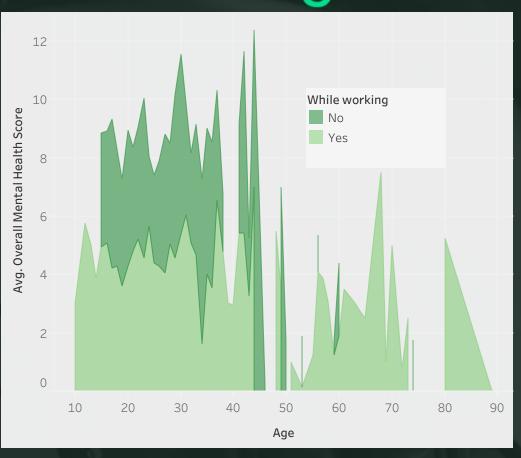
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## Music, Age, and Mental Well-being



- Younger individuals are more likely to listen to music while studying or working.
- Their mental health scores indicate lower levels of stress and sleep disorders.
- This trend supports the idea that music could improve focus and overall well-being.

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#### STATISTICAL TESTING

## NULL HYPOTHESIS $(H_0)$

There is no significant difference in overall mental health scores between those who listen to music while working/studying and those who do not.

## ALTERNATIVE HYPOTHESIS (H<sub>1</sub>)

There is a significant difference, meaning that listening to music impacts mental health while studying or working.

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# ARE THESE DIFFERENCES STATISTICALLY SIGNIFICANT?

To validate our findings, we ran a t-test to compare the overall mental health scores between those who listen to music while working/studying and those who do not.

Next to is the code used for the analysis.

```
# Creating a new column for Overall Mental Health Score
df_check['Overall Mental Health Score'] = df_check[['Anxiety',
'Depression', 'Insomnia', 'OCD']].mean(axis=1)
# Cleaning and filtering data for analysis
df_test = df_check[['Age', 'Overall Mental Health Score', 'While
working']].dropna()
# Splitting the data into two groups: Those who listen to music
while working and those who don't
group_yes = df_test[df_test['While working'] == 'Yes']['Overall
Mental Health Score']
group_no = df_test[df_test['While working'] == 'No']['Overall
Mental Health Score']
# Performing an independent T-test to compare means
t_stat, p_value = ttest_ind(group_yes, group_no, equal_var=False)
# Welch's T-test to account for unequal variances
# Display results
t_stat, p_value
```

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## Statistical Test Summary

#### T-TEST VALUE

1.99

**P-VALUE** 

0.048

- The p-value is less than 0.05, meaning the difference in mental health scores is statistically significant.
- Since p < 0.05, we reject the null hypothesis, meaning there is a real difference between the two groups.
- Individuals who listen to music while working/studying report better overall mental health scores (lower values indicate better well-being).

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#### **Thank You**

RESEARCH CITATIONS AVAILABLE:

DATA SOURCE: MUSIC & MENTAL HEALTH SURVEY RESULTS ON KAGGLE

GITHUB:
GITHUB.COM/MARINA-LOZ/MUSIC-ANDMENTAL-HEALTH/TREE/MAIN

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