



Music & Mental Health

Trying to predict music effects

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Oxytocin

1

Identifying the problem

Oxytocin

is a type of hormone in your body that promotes **positive feelings**.

Music also seems to have the ability to **increase** oxytocin levels, especially when people sing in a group, which adds the element of bonding.

Music & Mental Health:

Trying to discover trends -> predict music effects:

- 1) Connection mental health and **music use**
- 2) Connection mental health and **music preference**
- 3) Connection mental health and **music genres**
- 4) Connection mental health and greatest **music effects**
- 5) Connection mental health and **age**
- 6) Can I make **helpful recommendations** based on these findings?

2

Collecting relevant data

Dataset: Kaggle

Block 0: Background

Respondents answer generic questions focused on musical background and listening habits.

Block 1: Music genres

Respondents rank how often they listen to **16 music genres**, where they can select:

- Never
- Rarely
- Sometimes
- Very frequently

Block 2: Mental health

Respondents rank **Anxiety, Depression, Insomnia**, and **OCD** on a scale of 0 to 10, where:

- 0 – I do not experience this.
- 10 – I experience this regularly, constantly/or to an extreme.

Dataset: Kaggle

Mental health:

Anxiety

Depression

Insomnia

OCD

3

Data cleaning

Dataset: Kaggle

Music effects:



Improve



No effect



Worsen



Music effects

Music use

Music preference

Music genres

Age

Mental health

1. Timestamp
2. Age
3. Primary streaming service
4. Hours per day
5. While working
6. Instrumentalist
7. Composer
8. Favorite genres
9. Exploratory
10. Foreign languages
11. BPM
12. Frequency [Classical]
13. Frequency [Country]
14. Frequency [EDM]
15. Frequency [Folk]
16. Frequency [Gospel]
17. Frequency [Hip hop]
18. Frequency [Jazz]
19. Frequency [K pop]
20. Frequency [Latin]
21. Frequency [Lofi]
22. Frequency [Metal]
23. Frequency [Pop]
24. Frequency [R&B]
25. Frequency [Rap]
26. Frequency [Rock]
27. Frequency [Video game music]
28. Anxiety
29. Depression
30. Insomnia
31. OCD
32. Music effects
33. Permissions

Music effects

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Music genres

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Data Analysis

1) Connection mental health and **music use**:

- * **'Music effects'** and **'Hours per day'**

- * **'Music effects'** and **'While working'**

- * **'Music effects'** and **'Exploratory'**

2) Connection mental health and **music preference**:

3) Connection mental health and **music genres**:

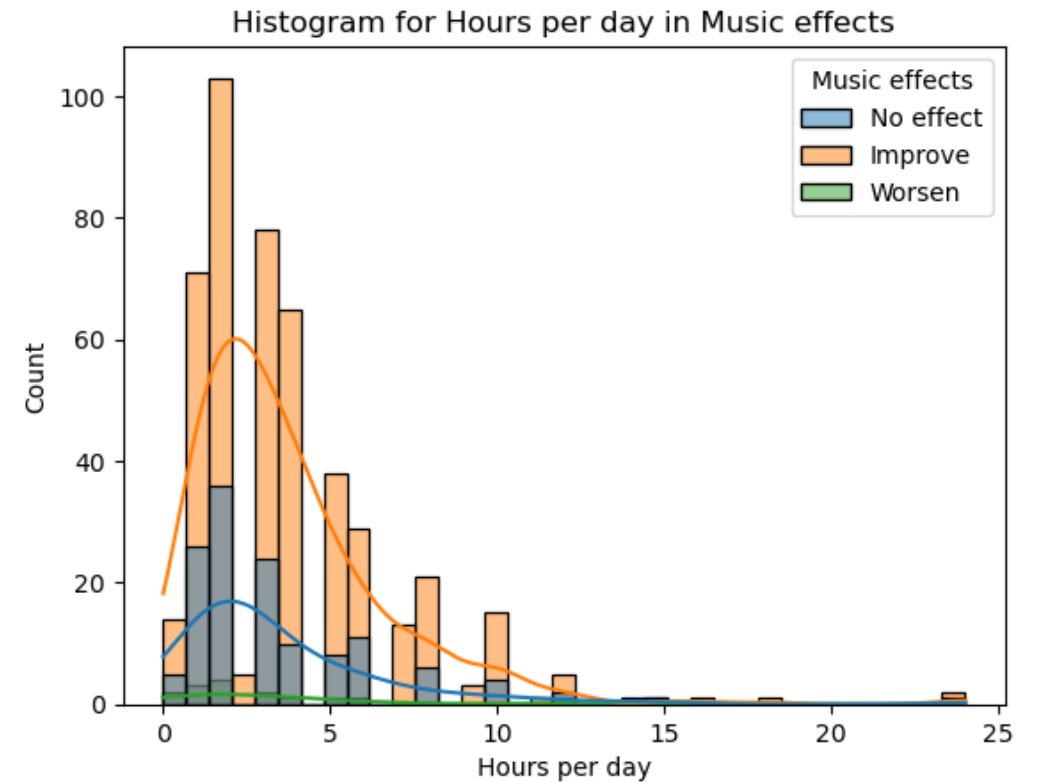
4) Connection mental health and **greatest music effects**:

- * **'Music effects'** and **'Depression'**

5) Connection mental health and **age**:

- * **'Age group'** and **'Music effects'**

6) Can I make helpful **recommendations** based on these findings?



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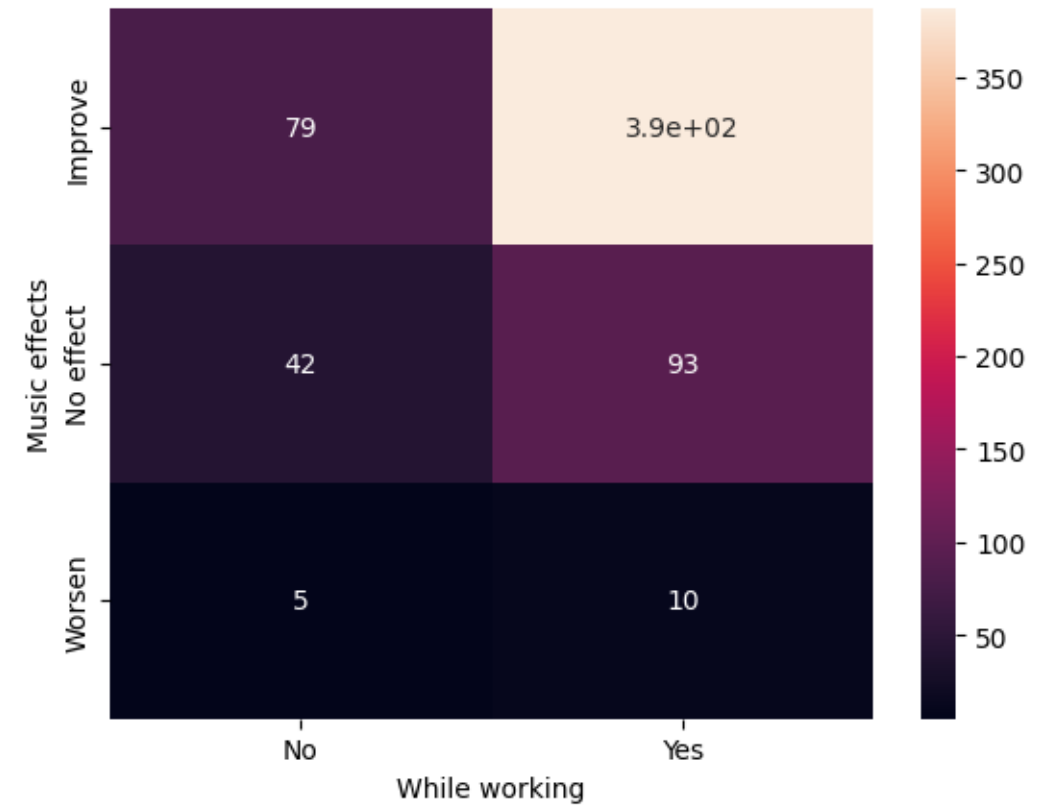
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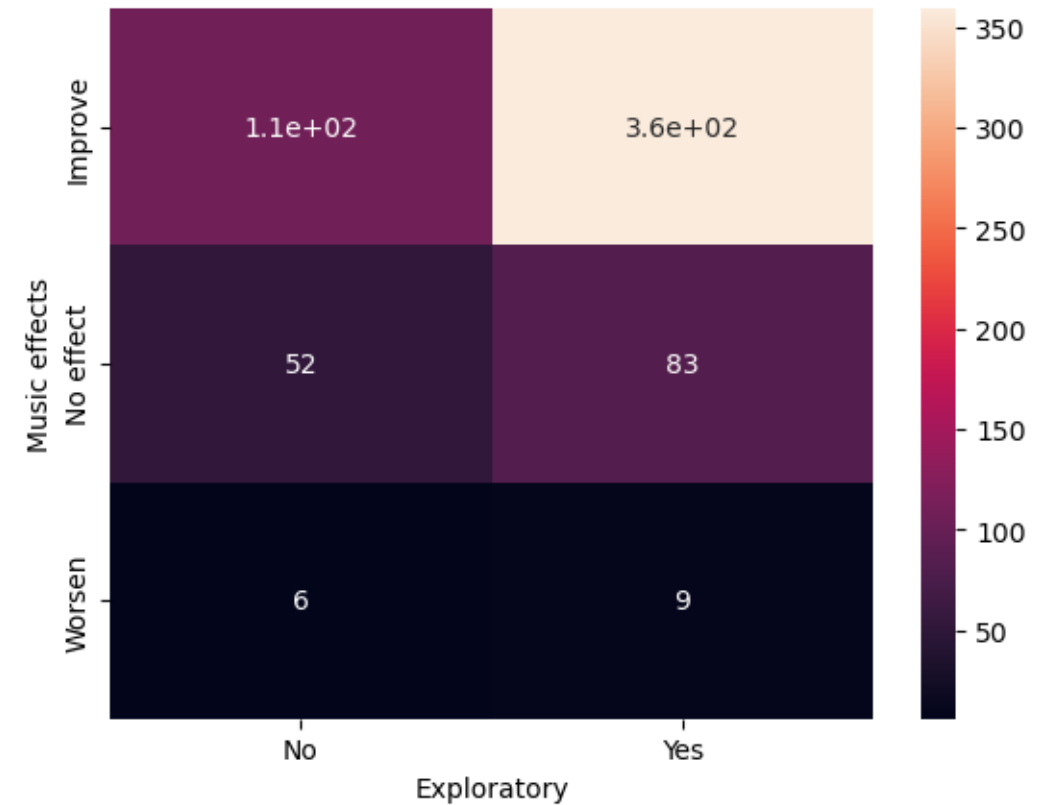
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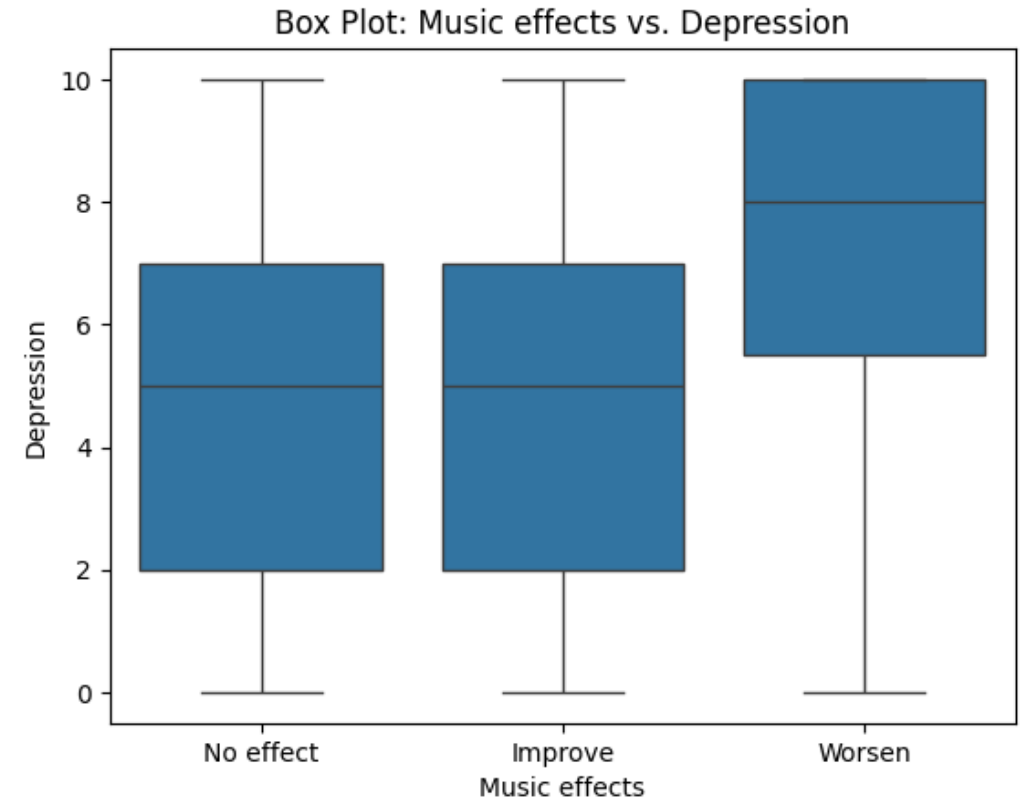
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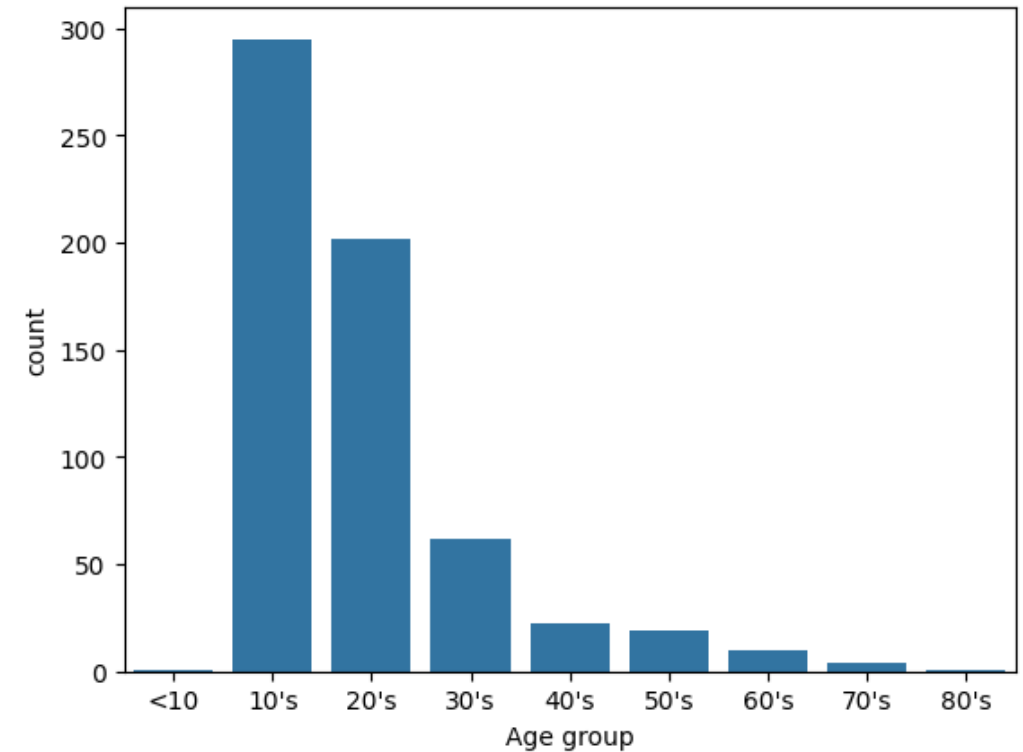
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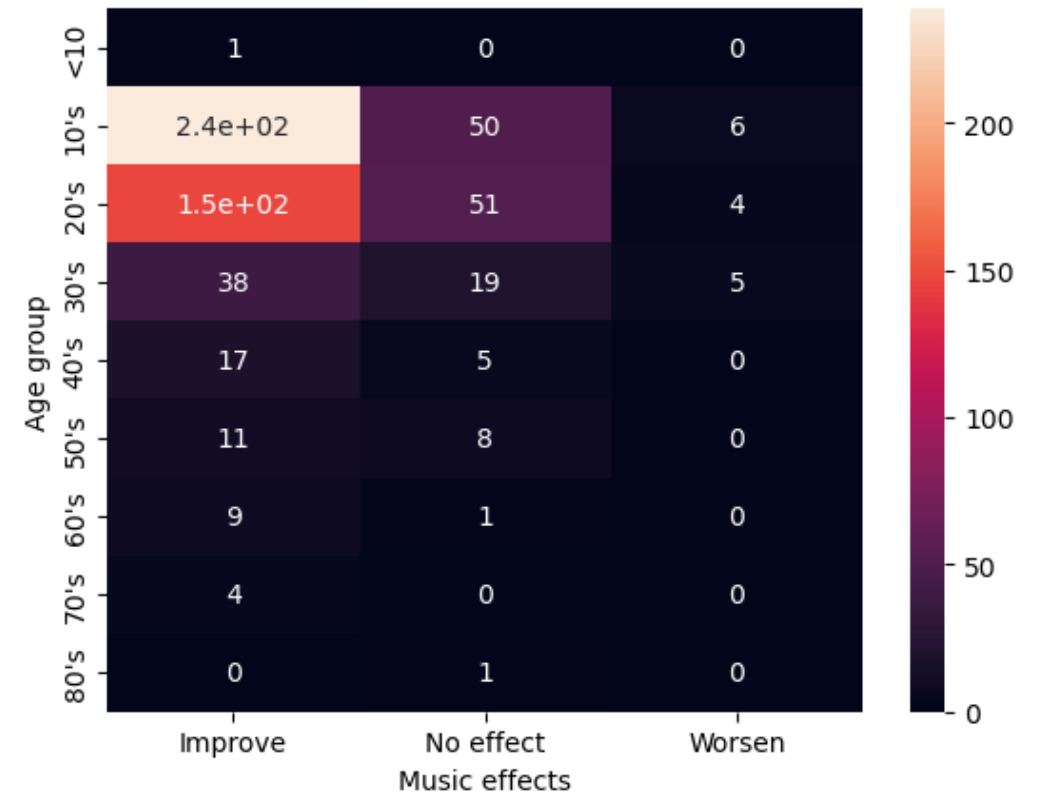
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Reporting results

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Models:

Logistic Regression

Decision Trees

Random Forest

Linear Regression

ANOVA

Chi2

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Linear Regression

ANOVA

Chi2

Accuracy for the TRAIN set: 0.77

Classification Report for the TRAIN set:

	precision	recall	f1-score	support
Improve	0.78	0.97	0.87	372
No effect	0.63	0.18	0.28	108
Worsen	0.00	0.00	0.00	12
accuracy			0.77	492
macro avg	0.47	0.38	0.38	492
weighted avg	0.73	0.77	0.72	492

Accuracy for the TEST set: 0.75

Classification Report for the TEST set:

	precision	recall	f1-score	support
Improve	0.78	0.94	0.85	94
No effect	0.45	0.19	0.26	27
Worsen	0.00	0.00	0.00	3
accuracy			0.75	124
macro avg	0.41	0.37	0.37	124
weighted avg	0.69	0.75	0.70	124

Decision Trees / Random Forest

6

Conclusion

There is a **connection** between **music** and **mental health**. We know from this data that listening to music **while working** and actively **exploring** new genres and artists has a positive effect on mental health especially for young people between 10 – 30.

6) Can I make helpful recommendations based on these findings?

- * Train the best model
- * Add to this research by doing a new survey and explore elements in music

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- * Train the best model

- * Add to this research by doing a new survey and explore elements in music

Thank you!

Embed track



Color:  

Size:

Normal (352px)



x

100%



Valuable

PREVIEW

Lauren Daigle



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...



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