Music & Mental Health

An analysis of music preferences & their potential correlations to mental health conditions

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The Big Picture:

What can we learn about the effects of certain listening habits on mental health?

Can we make any recommendations on listening habits that might improve mental health?

Who wants to know?

➔ We all listen to music

   ◆ The average person listens to 20.7 hours of music every week

   ◆ https://www.ifpi.org/ifpis-global-study-finds-were-listening-to-more-music-in-more-ways-than-ever/

➔ Music therapy is a rising field

➔ Businesses, workplaces, & schools all play music for their patrons, employees, or students

Methodology

The Data

→ Music & Mental Health Survey

◆ Conducted by Catherine Rasgaitis of the University of Washington

→ Participants completed a Google Form spread via social media

→ .csv results file retrieved from Kaggle

→ https://www.kaggle.com/datasets/catherinerasgaitis/mxmh-survey-results/data

→ Elements of the survey include:

◆ Participant background

◆ General listening habits

◆ Genre preferences

◆ Self-reported mental health

The Data

→ We'll look more closely at:

- ◆ Age
- ◆ Favorite genre
- ◆ Average BPM of favorite genre

- ◆ If the participant listens to music while working or studying
- ◆ Self-reported scores for Anxiety, Depression, Insomnia, & OCD (0-10)
- ◆ The impact of music on the participant's mental health

Data Processing Tools & Other Resources

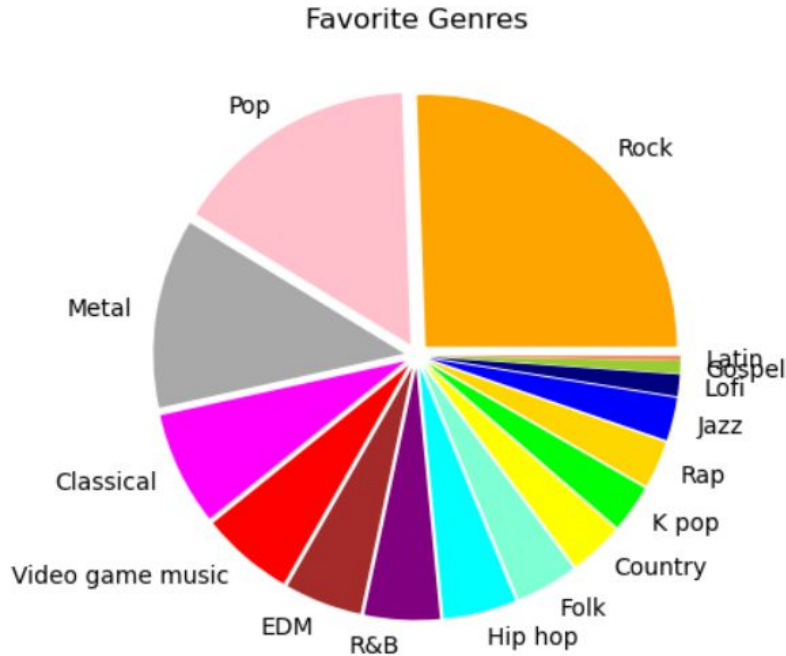➔ Jupyter Notebooks

   ◆ pandas, matplotlib

➔ Musical U

   ◆ https://www.musical-u.com/learn/rhythm-tips-for-identifying-music-genres-by-ear/
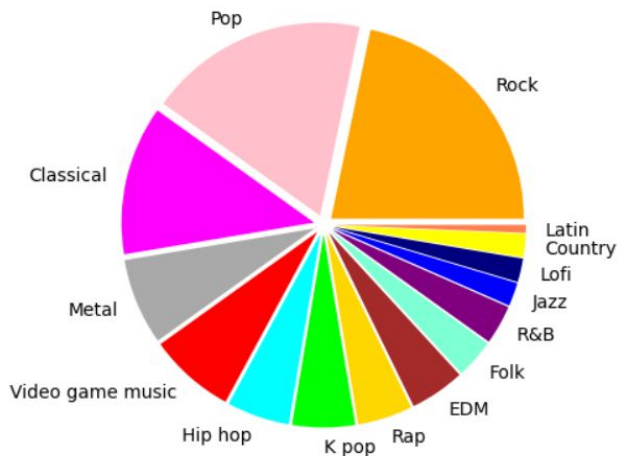
Results & Conclusions
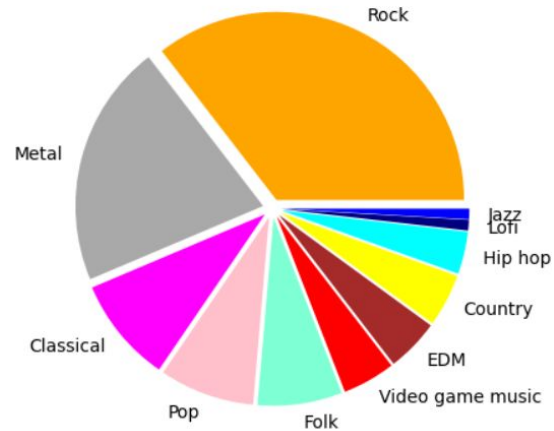
What genres are most popular?

Favorite Genres

➜ Rock is certainly the most popular, followed by pop and metal

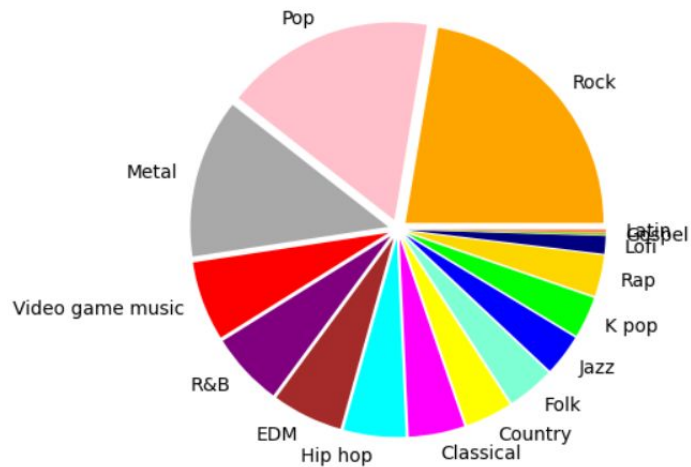➜ Further question: Do different age groups prefer different genres?
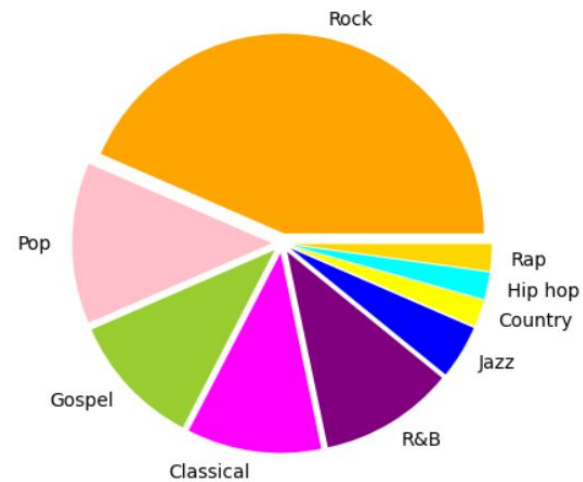
Favorite Genres (Ages <18)

Favorite Genres (Ages 30-49)

Favorite Genres (Ages 18-29)

Favorite Genres (Ages 50+)

Does your favorite genre affect the severity of your mental health?

Anxiety

K-pop and Folk Listeners Report the Most Severe Anxiety

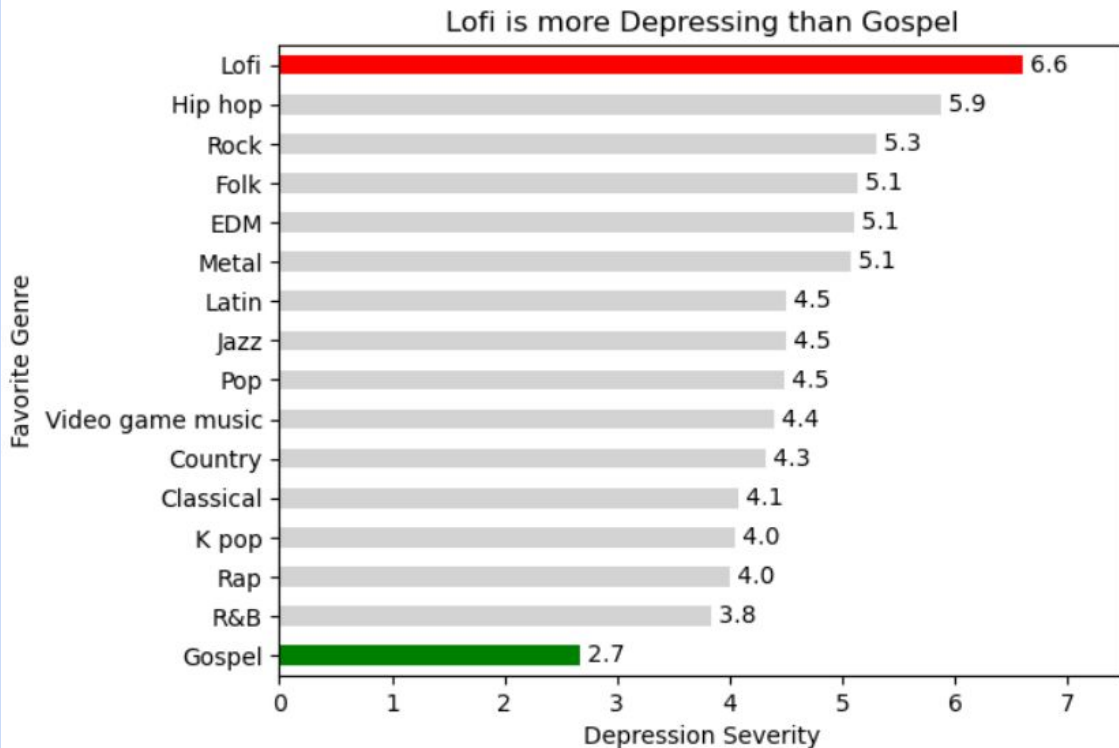| Favorite Genre	Anxiety Severity
Folk	6.7
K pop	6.4
Rock	6.1
Hip hop	6.1
Lofi	6.1
Pop	6.1
Video game music	5.9
Jazz	5.9
Metal	5.8
Country	5.4
EDM	5.4
R&B	5.2
Rap	5.1
Latin	5.0
Classical	4.9
Gospel	4.8
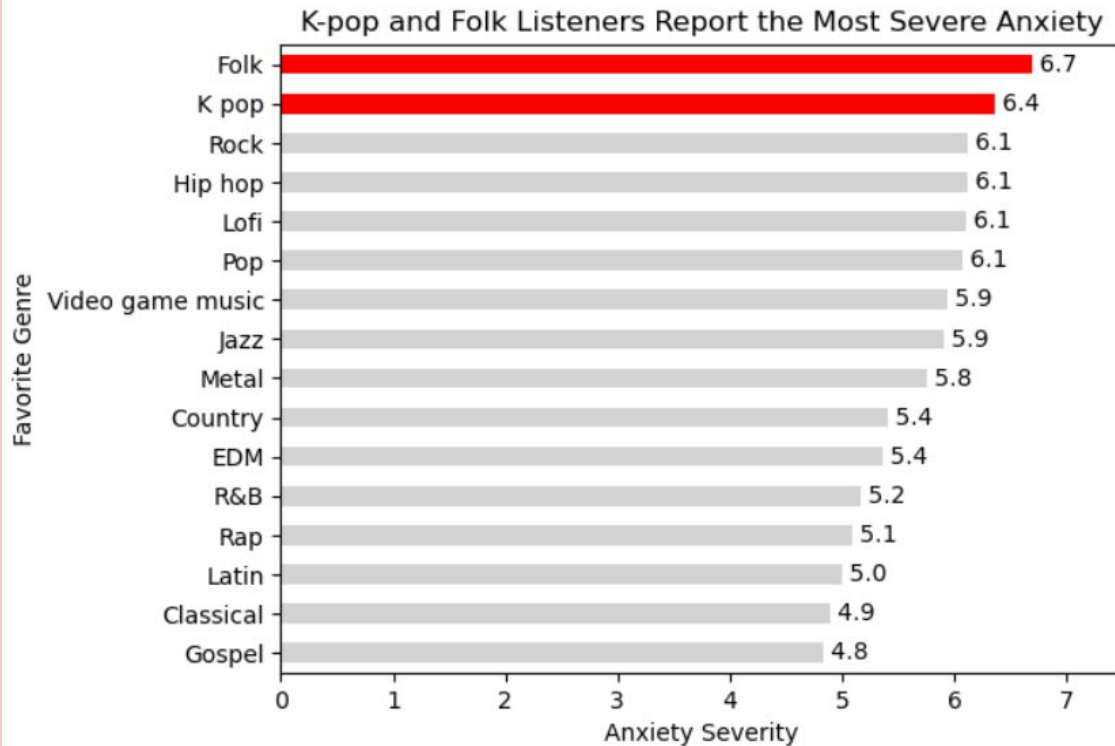
Does your favorite genre affect the severity of your mental health?

Depression

Does your favorite genre affect the severity of your mental health?

Insomnia

Lofi and Gospel Listeners Struggle to Sleep

Favorite Genre	Insomnia Severity
Lofi	5.6
Gospel	5.3
Metal	4.6
Latin	4.5
EDM	3.9
Video game music	3.9
Rock	3.9
Jazz	3.9
Classical	3.8
Folk	3.7
Hip hop	3.5
Pop	3.4
K pop	3.3
R&B	2.9
Country	2.7
Rap	2.3

Does your favorite genre affect the severity of your mental health?

OCD

Gospel Lovers Don't Experience Much OCD

Favorite Genre	OCD Severity
Lofi	3.4
Rap	3.2
EDM	2.9
Pop	2.9
Jazz	2.8
Country	2.8
R&B	2.7
Rock	2.7
Hip hop	2.6
Latin	2.5
K pop	2.5
Metal	2.4
Classical	2.4
Video game music	2.3
Folk	2.3
Gospel	0.3

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R&B	5.2
Rap	5.1
Latin	5.0
Classical	4.9
Gospel	4.8

Lofi is more Depressing than Gospel

Favorite Genre	Depression Severity
Lofi	6.6
Hip hop	5.9
Rock	5.3
Folk	5.1
EDM	5.1
Metal	5.1
Latin	4.5
Jazz	4.5
Pop	4.5
Video game music	4.4
Country	4.3
Classical	4.1
K pop	4.0
Rap	4.0
R&B	3.8
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K pop	3.3
R&B	2.9
Country	2.7
Rap	2.3

Gospel Lovers Don't Experience Much OCD

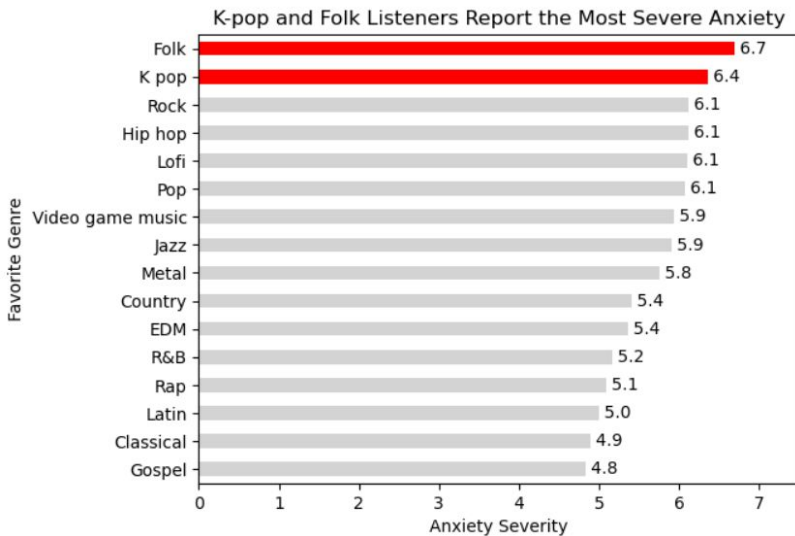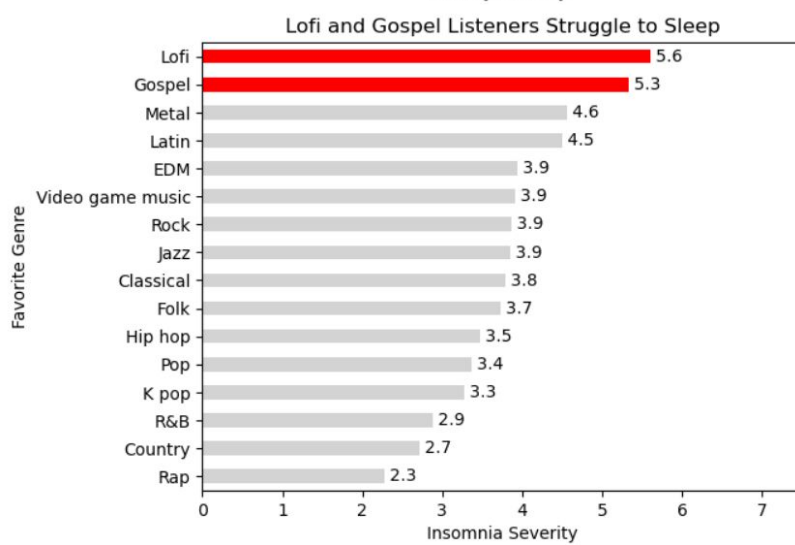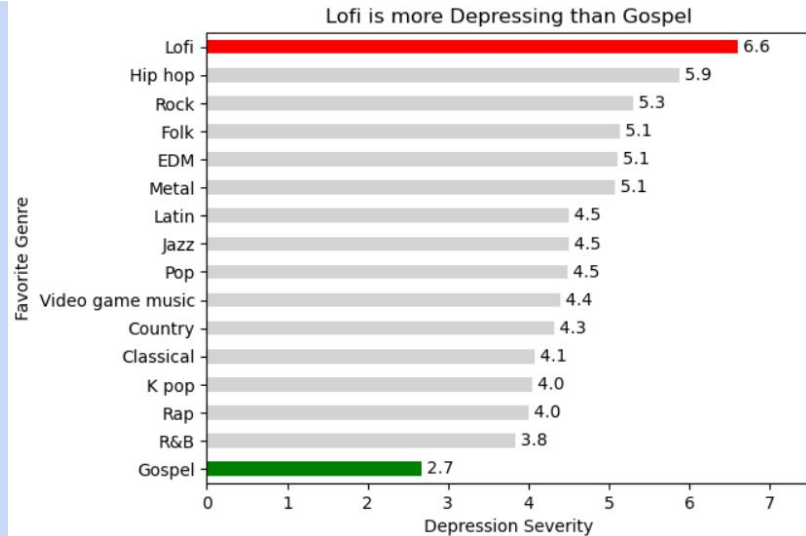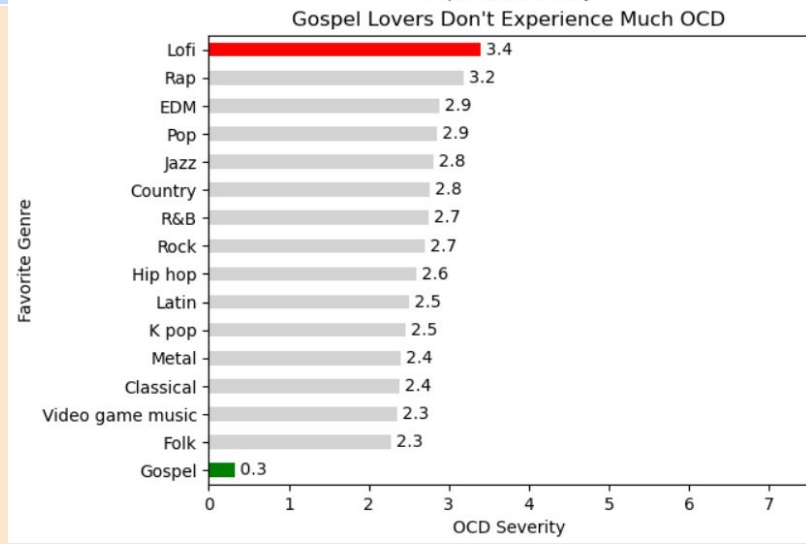| Favorite Genre	OCD Severity
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Classical	2.4
Video game music	2.3
Folk	2.3
Gospel	0.3

Anxiety

Depression

Insomnia

OCD

Does your favorite genre affect the severity of your mental health?

➔ If your favorite genre is Lofi, it seems likely you'll struggle with worse mental health

➔ Further question: Why?

➔ We can see if Lofi listeners listen while studying or working

# Do participants listen to certain genres more often while studying or working?
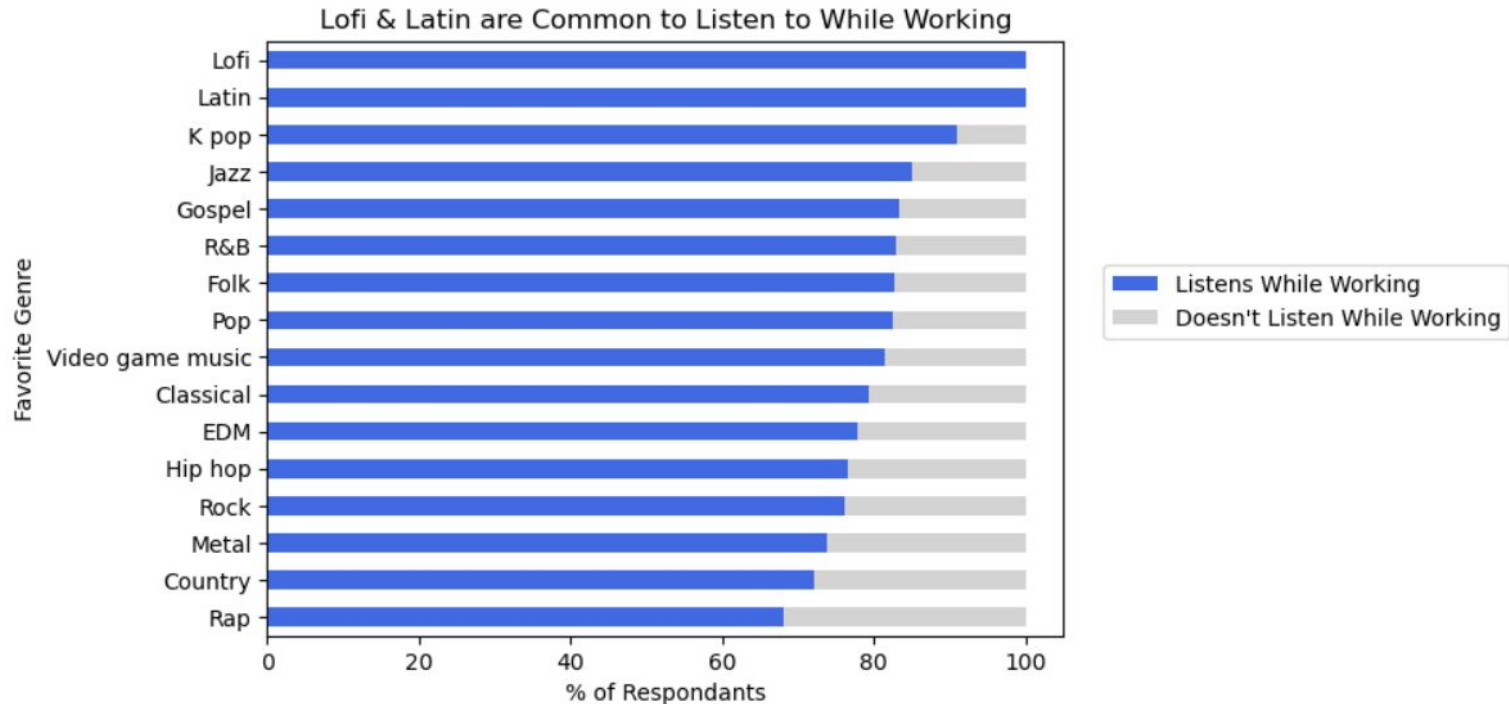
Do participants listen to certain genres more often while studying or working?

➔   100% of Lofi listeners work/study to music

➔   The majority prefers music while working, regardless of the genre they listen to

➔   Further question: Does that imply that listening to music while working improves mental health?

Do participants feel that listening to music while working/studying improves their mental health?
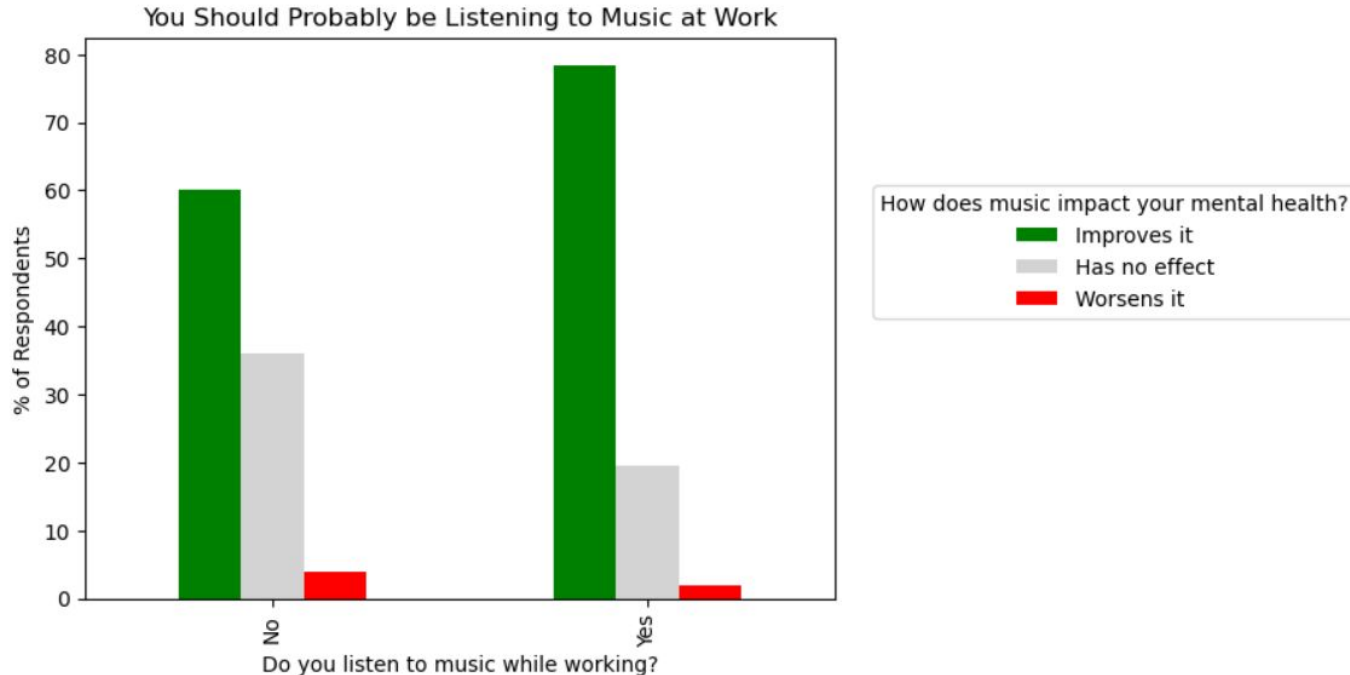
Putting it All Together

➔ Most people like the same music regardless of age

➔ Lofi listeners reported the highest severity of depression, insomnia, and OCD

  ◆ Often played while working/studying

  ◆ May be a solution to falling asleep easier

➔ Gospel fans reported the lowest severity of everything except insomnia

  ◆ These people may be spiritual and find the music very uplifting

  ◆ Again, may be helpful in falling asleep

➔ 75% of those who listen to music while working say it improves their mental health

Possible Recommendations

➔ Listening to music while working or studying is likely to be beneficial for your mental health

➔ Listening to a lot of Lofi music may be an indication that person is under a lot of stress or a heavy workload

➔ If you are spiritual (or unopposed to it), listening to gospel music may be a good idea to lift your mood and help improve mental health
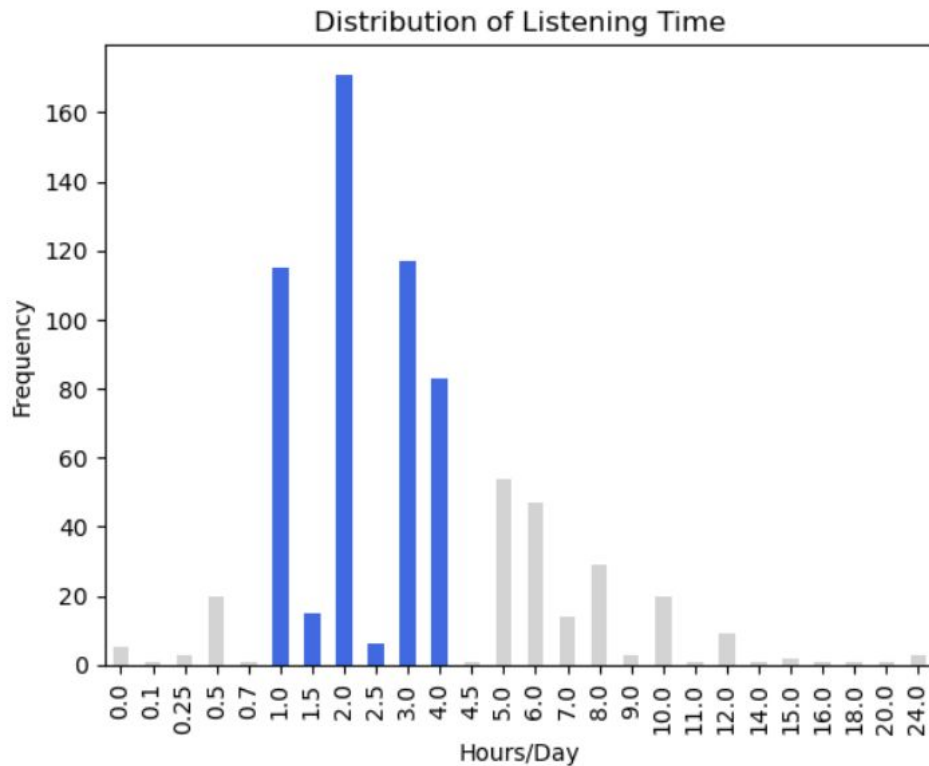
Future Research Questions

➔ Can certain genres of music help you fall asleep faster?

➔ Does the type of music being played at school or work affect productivity?

➔ Why did participants pick their favorite genre? (Was it for general enjoyment, focus, personal experience, etc.)
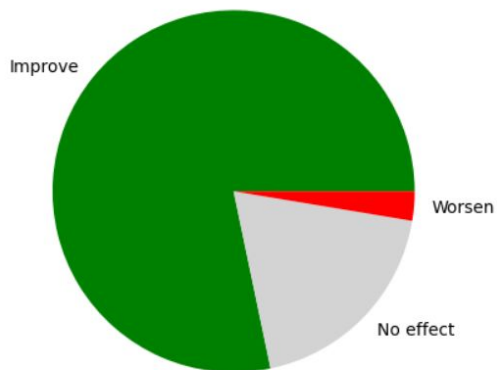
Questions?

Appendix A: Hours Listened per Day

Distribution of Listening Time

Appendix B: Correlation between Hours Listened & Reported Mental Health

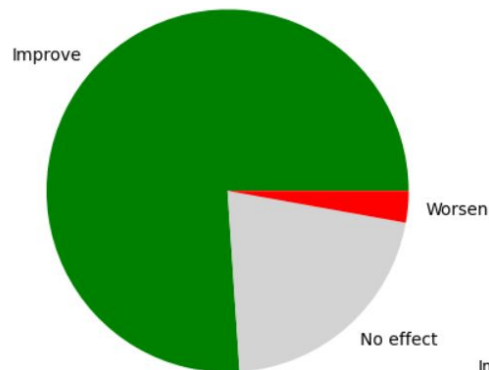|	hours	anxiety	depression	insomnia	ocd
hours	1.000000	0.044094	0.099236	0.133743	0.111783
anxiety	0.044094	1.000000	0.521337	0.285143	0.344908
depression	0.099236	0.521337	1.000000	0.376635	0.188965
insomnia	0.133743	0.285143	0.376635	1.000000	0.225550
ocd	0.111783	0.344908	0.188965	0.225550	1.000000

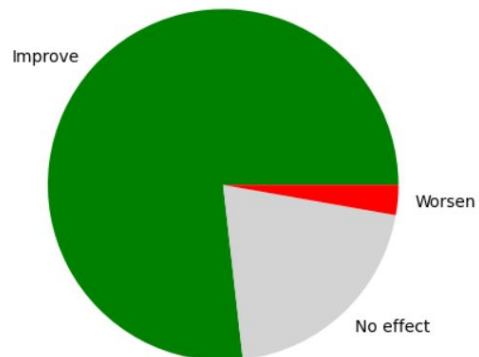# Appendix C: Does music improve your condition?

Music's Impact on Anxiety

Improve
Worsen
No effect

Music's Impact on Depression

Improve
Worsen
No effect

Music's Impact on Insomnia

Improve
Worsen
No effect

Music's Impact on OCD

Improve
Worsen
No effect
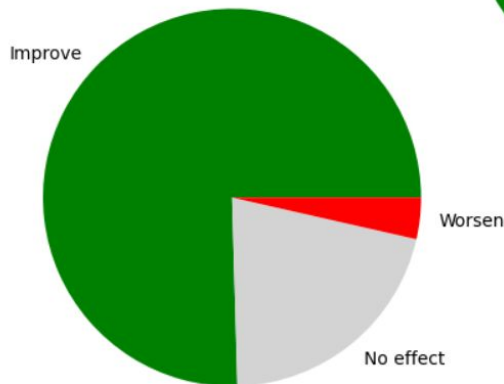
Appendix D: Higher BPM's don't correlate to higher Anxiety

Higher BPM May Not Cause Anxiety
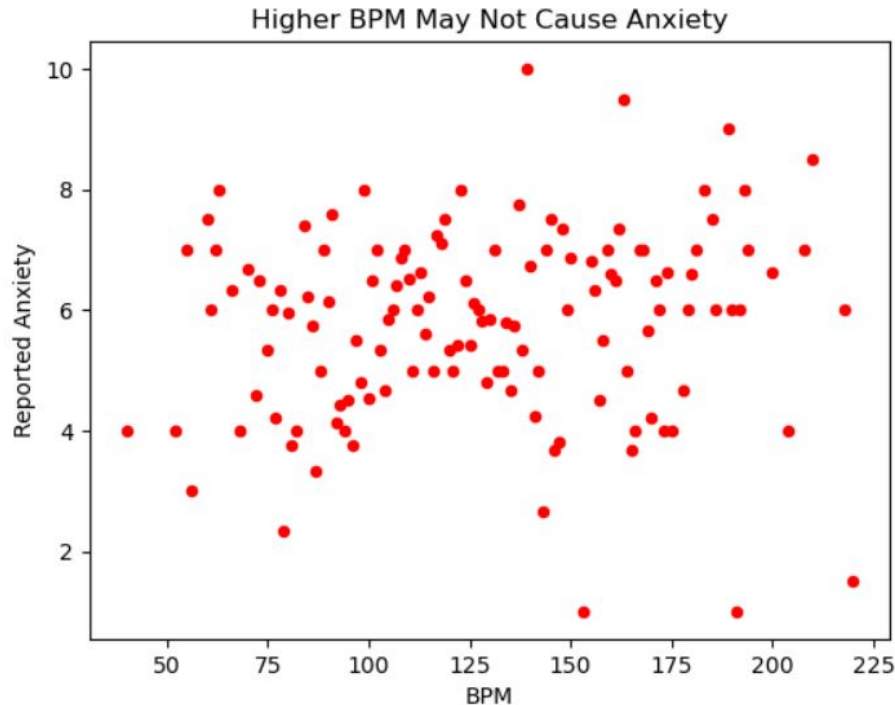
	bpm	anxiety
bpm	1.000000	-0.005794
anxiety	-0.005794	1.000000