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# Associations between Music Listening Habits and Mental Health: A Cross-Sectional Analysis

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## Abstract

Music plays a significant role in human emotions and psychological well-being. This study examines the associations between music listening habits and mental health conditions, including anxiety, depression, insomnia, and obsessive-compulsive disorder (OCD), using a survey-based, cross-sectional design. Through exploratory data analysis, we identify patterns in music consumption and their potential links to self-reported mental health status. The dataset includes responses from a diverse group of individuals, capturing their primary streaming services, daily listening duration, favourite music genres, and psychological well-being measures. Our findings indicate that individuals with extreme mental health scores (both high and low) exhibit distinct listening behaviours. Respondents with higher anxiety, depression, insomnia, and OCD scores tend to engage in prolonged music listening, potentially as a coping mechanism. Conversely, individuals with lower mental health scores show different music consumption trends, suggesting varied emotional responses to auditory stimuli. Specific genre preferences, such as rock, jazz, and video game music, were observed to correlate differently with mental health conditions. While these results highlight meaningful correlations, causal relationships cannot be inferred due to the study's cross-sectional nature. Additionally, potential confounders, such as socioeconomic status, medication use, and comorbid conditions, may influence both music habits and mental health. Future research should employ experimental designs to explore the therapeutic applications of music and clarify whether music consumption actively influences psychological well-being or merely reflects existing mental health states. This study contributes to the growing field of music psychology and underscores the importance of considering individualized music preferences in mental health strategies.

## Subject Areas

Mental Health, Psychology

## Keywords

Music Listening, Mental Health, Anxiety, Depression, Insomnia, Genre Preference

## 1. Introduction

Music is an integral part of human culture, influencing emotions, cognitive functions, and overall psychological well-being [1]-[6]. Across different cultures and societies, individuals engage with music for various reasons, including entertainment, relaxation, emotional regulation, and even as a coping mechanism for stress and anxiety [7]-[10]. Research has increasingly highlighted the profound impact of music on mental health, with studies suggesting that different genres, listening habits, and emotional connections to music can significantly influence psychological states. However, the relationship between music listening habits and specific mental health conditions, such as anxiety, depression, insomnia, and obsessive-compulsive disorder (OCD), remains an area requiring further investigation [11]-[13]. Mental health disorders are prevalent worldwide, affecting millions of individuals and influencing their daily lives in various ways [14] [15]. Anxiety and depression are among the most common conditions, with symptoms that include persistent worry, low mood, and fatigue [16]-[18]. Insomnia, often linked to these conditions, can exacerbate stress and lead to further emotional distress [19]-[21]. OCD, characterized by intrusive thoughts and compulsive behaviours, also affects emotional well-being [22]-[25]. Given the pervasive nature of these mental health challenges, understanding how external influences such as music impact psychological states can provide valuable insights into potential therapeutic approaches. This study seeks to explore the relationship between music listening habits and mental health conditions by analyzing a comprehensive dataset containing self-reported music consumption behaviours and mental health status. Through statistical analysis and exploratory data visualization, we aim to identify patterns in listening hours, genre preferences, and their potential associations with anxiety, depression, insomnia, and OCD. The findings of this research can contribute to a deeper understanding of how individuals use music as a form of emotional support and whether specific listening behaviours correlate with mental health improvements or challenges. By doing so, this study not only expands on existing literature but also offers practical implications for using music as a potential intervention tool in mental health care.

## 2. Literature Review

The relationship between music and mental health has been extensively studied, demonstrating that music can serve as both a therapeutic intervention and an emo-

tional regulator [26]-[28]. The influence of music on psychological well-being varies based on factors such as listening habits, preferred genres, and individual emotional states [29] [30]. This review explores key areas where music and mental health intersect, highlighting its effects on anxiety, depression, insomnia, and obsessive-compulsive disorder (OCD)

## 2.1. Music as an Emotional Regulator

Music is widely used for emotional regulation, with individuals selecting specific genres or tempos to match or alter their moods [31]. Studies indicate that high-energy genres like rock or electronic music can serve as an outlet for emotional release while calming genres such as classical or ambient music may promote relaxation and stress reduction [32]. Personalized playlists have been found to enhance emotional processing, helping individuals cope with distressing emotions and improve their mental resilience [33] [34].

## 2.2. Music and Mental Health Conditions

### 2.2.1. Anxiety and Depression

Anxiety and depression are among the most common mental health disorders, and music has been explored as a coping mechanism for both conditions [35]-[37]. Certain genres, such as soft instrumental music, have been associated with lower stress hormone levels, leading to relaxation [38] [39]. However, the impact of music is highly individual, as some people with depression gravitate toward melancholic music, which may reinforce negative thought patterns. On the other hand, engaging in uplifting or rhythmic music has been linked to reductions in depressive symptoms and increased motivation.

### 2.2.2. Insomnia and Sleep Patterns

Music has been increasingly recognized as a potential tool for improving sleep quality [40] [41]. Listening to slow-tempo music before bedtime has been found to reduce arousal levels, slow heart rate, and enhance sleep onset [42] [43]. However, its effectiveness depends on the type of music, duration of listening, and individual preferences. While many individuals benefit from using music as a sleep aid, others may experience increased stimulation depending on the auditory complexity of the music they choose [44] [45].

### 2.2.3. Obsessive Compulsive Disorder (OCD)

OCD is characterized by intrusive thoughts and repetitive behaviours, and music consumption patterns may reflect these tendencies [46] [47]. Some individuals with OCD find structured and repetitive compositions comforting, as they provide a sense of predictability and order. However, compulsive music listening, such as repeatedly playing the same song or sequence, could reflect obsessive thought patterns rather than an entirely beneficial coping mechanism.

### 2.2.4. Gaps in Current Research

Despite growing interest in the intersection of music and mental health, several

gaps remain in the research [48] [49]. Much of the existing literature focuses on the use of music therapy in clinical settings rather than everyday music listening habits. Additionally, few studies systematically examine self-reported mental health status alongside music consumption patterns. The current study seeks to address these gaps by analyzing real-world data from individuals with varying mental health conditions to identify trends and correlations. By further exploring these relationships, this study aims to provide a deeper understanding of how individuals use music for emotional support and whether specific listening habits are linked to better or worse mental health outcomes. This knowledge can contribute to future interventions that incorporate music-based strategies for mental health improvement.

## 3. Methods

This study employs a cross-sectional, data-driven approach to examine the associations between music listening habits and mental health conditions, including anxiety, depression, insomnia, and obsessive-compulsive disorder (OCD). The research is based on self-reported survey data, capturing participants' demographic details, music consumption behaviours, preferred genres, streaming platforms, and psychological well-being indicators. A structured questionnaire was used to collect both quantitative and qualitative responses, ensuring a comprehensive analysis of individual listening patterns. To identify meaningful trends and correlations, exploratory data analysis (EDA) was conducted using Notebook, incorporating statistical methods and data visualization techniques. While the study establishes correlations, it does not infer causation, highlighting the need for further experimental research on the potential impact of music on mental health.

### 3.1. Data Collection and Prepositioning

The dataset used in this study consists of self-reported responses from individuals of various age groups, documenting their daily music listening habits and experiences with mental health conditions. Since self-reported data may contain inconsistencies, rigorous preprocessing steps were applied to enhance the accuracy and reliability of the analysis.

Data Cleaning and Standardization: The raw dataset was first examined for inconsistencies, missing values, and non-numeric entries. To ensure statistical accuracy:

- Categorical variables (e.g., genre preferences, streaming service choices) were encoded appropriately.
- Numerical values (e.g., listening hours, mental health scores) were standardized to facilitate meaningful comparisons.
- Mental health scores (anxiety, depression, insomnia, and OCD) were converted to numerical scales, ensuring consistency across respondents.

A key preprocessing step involved filtering out incomplete or ambiguous re-

sponses, particularly those affecting essential variables such as music listening duration and self-reported mental health rankings. Additionally, columns containing non-numeric values unrelated to the study's core focus, such as timestamps and open-text responses, were excluded from the correlation analysis.

Addressing Potential Confounders: While this study examines associations between music consumption and mental health, it is important to acknowledge that external factors may influence both variables, potentially introducing bias into the findings. These confounding factors include:

- Socioeconomic status: Individuals with greater financial resources may have broader access to premium streaming platforms, live music events, and mental health support, which could affect both their listening habits and psychological well-being.
- Medication use: Participants using antidepressants, anxiolytics, or sleep aids may experience altered mental health scores, which could influence the strength of the observed correlations.
- Comorbid conditions: The presence of additional psychiatric disorders (e.g., bipolar disorder, PTSD, ADHD) may shape both music preferences and mental health status, complicating the interpretation of results.

Although these confounders are acknowledged, they were not directly controlled for in the analysis. This represents a study limitation, as it is possible that the relationships observed between music listening habits and mental health conditions are partially influenced by these external variables. Future research should incorporate statistical controls, regression models, or experimental designs to better isolate the true effects of music consumption on psychological well-being. After data cleaning and accounting for these considerations, the refined dataset was used for statistical and graphical analysis to identify trends in music consumption and its relationship with mental health scores.

### 3.2. Exploratory Data Analysis (EDA)

The exploratory data analysis was conducted to detect underlying patterns in music listening behaviours and their potential links to mental health. Summary statistics were computed to compare average listening hours across different mental health categories. Visualizations, including bar plots and correlation heatmaps, were generated to assess the strength and direction of relationships between listening habits and self-reported mental health scores.

To further explore extreme cases, participants were segmented based on their mental health scores. Respondents with high scores (greater than 8) on anxiety, depression, insomnia, or OCD scales were compared against those with low scores (less than 3) to analyse differences in music consumption patterns. This segmentation allowed for an in-depth understanding of whether individuals with severe mental health conditions engage with music differently from those with minimal symptoms.

### 3.3. Statistical Analysis and Interpretation

For quantitative analysis, mean values and standard deviations were computed to compare listening hours across different mental health groups. Correlation matrices were used to examine potential statistical associations between music consumption and mental health scores. A masking technique was applied to the correlation heatmaps to focus on meaningful relationships while minimizing redundant data visualization [50] [51]. Furthermore, the dataset was analysed for genre-specific preferences among respondents with different mental health conditions. By examining frequency distributions and preference trends, the study explored whether certain genres were more commonly associated with individuals experiencing higher or lower levels of anxiety, depression, insomnia, or OCD.

### 3.4. Limitations and Considerations

While this study provides valuable insights into the role of music in mental health, several limitations must be acknowledged. The dataset is based on self-reported responses, which may introduce bias due to subjective assessments of mental health conditions. Additionally, correlation does not imply causation; while trends in music listening habits were observed, further experimental research is required to establish causal links between music consumption and mental well-being. The study also does not account for external factors such as therapy, medication, or lifestyle changes that may influence mental health outcomes.

Overall, this study combines survey-based data analysis with statistical and graphical techniques to explore how music-listening behaviours relate to mental health. The findings contribute to a growing body of research on the psychological effects of music and offer potential directions for future studies on music-based therapeutic interventions.

## 4. Result and Analysis

This section presents the findings of the study, analysing the relationship between music listening habits and mental health conditions such as anxiety, depression, insomnia, and OCD. Through data visualization, key insights have been extracted regarding respondent demographics, streaming service preferences, listening duration, and their association with mental health. The analysis is divided into the following subsections:

### 4.1. Age Distribution and Respondents

The dataset includes participants of a wide range of ages, with a predominant concentration of younger individuals, particularly those in their late teens and early twenties. The histogram below in **Figure 1**, illustrates this distribution, showing a peak in responses around the age of 20. A lower frequency of respondents is observed among older age groups, which may influence the generalizability of findings to broader populations.

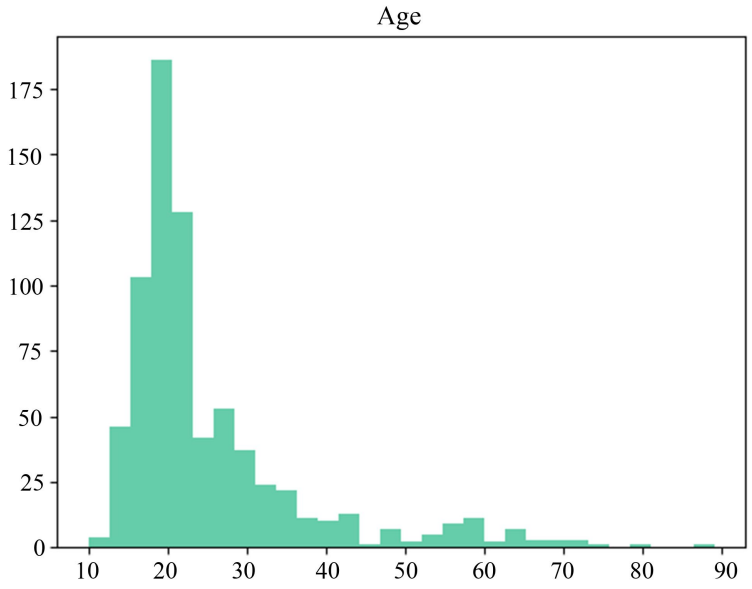


**Figure 1.** Age distribution of respondents.

### 4.2. Streaming Service Preferences

An analysis of streaming services in **Figure 2** visuals the choices reveals that Spotify is the most widely used platform among respondents, followed by YouTube Music, Apple Music, and other streaming services. A small portion of respondents reported not using any streaming service. This trend aligns with the general popularity of streaming platforms, particularly among younger audiences who prefer on-demand music consumption.

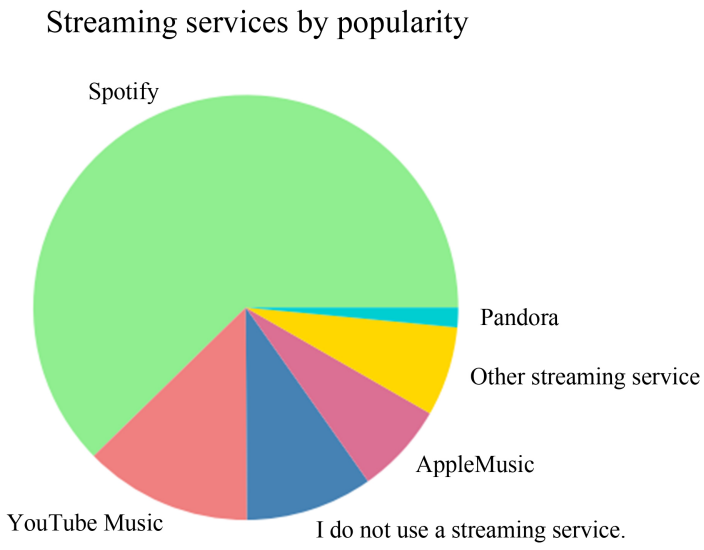


**Figure 2.** Streaming service by popularity.

### 4.3. Age Variation by Streaming Service

A deeper exploration of age distribution across different streaming platforms indicates notable trends. Younger users predominantly use Spotify and YouTube

Music, whereas Pandora has a significantly older user base. Individuals who do not use any streaming services also exhibit a higher age range. Figure 3, suggests generational differences in music consumption preferences, with younger audiences favouring more digitally integrated music platforms.

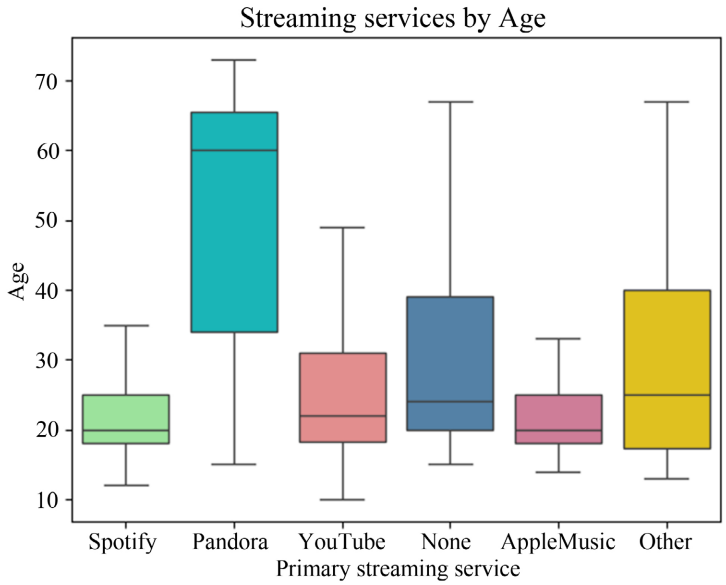


Figure 3. Age distribution by streaming service.

### 4.4. Hours Spent Listening to Music Per Day

The histogram below in Figure 4, presents the distribution of daily listening hours among respondents. Most individuals reported listening to music between 1 to 5 hours per day, with a declining frequency as listening hours increased. A small subset of respondents reported extreme listening durations, suggesting a possible link between prolonged music exposure and mental health conditions.

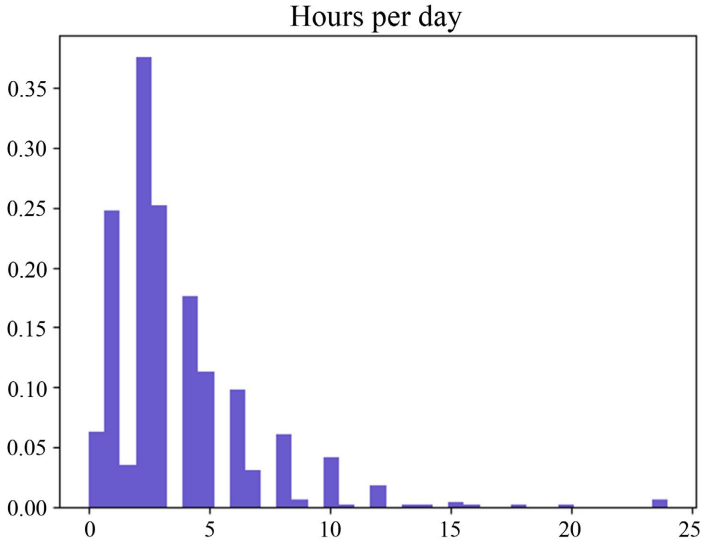


Figure 4. Hours per day spent listening to music.

### 4.5. Musical Background of Respondents

The survey data also captures whether respondents have a musical background, such as playing an instrument or composing music. The pie charts in Figure 5, indicate that most individuals do not have formal musical training, though a notable proportion do engage in instrumental or compositional activities. This distinction is crucial for understanding the psychological impact of active versus passive music engagement on mental health.

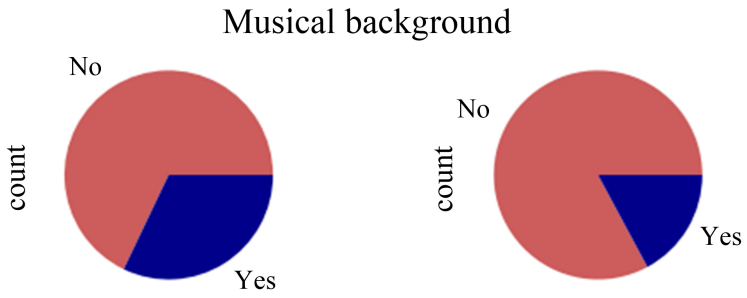


Figure 5. Musical background of respondents.

### 4.6. Mental Health Rankings and Music Engagements

One of the central objectives of this study was to explore how mental health conditions correlate with musical involvement. The bar chart below in Figure 6, illustrates the distribution of anxiety, depression, insomnia, and OCD rankings across different categories of musicians. Instrumentalists and composers generally reported slightly higher rankings of anxiety and insomnia compared to non-musicians. This finding suggests a potential connection between deep musical engagement and emotional sensitivity, warranting further research into causality and coping mechanisms.

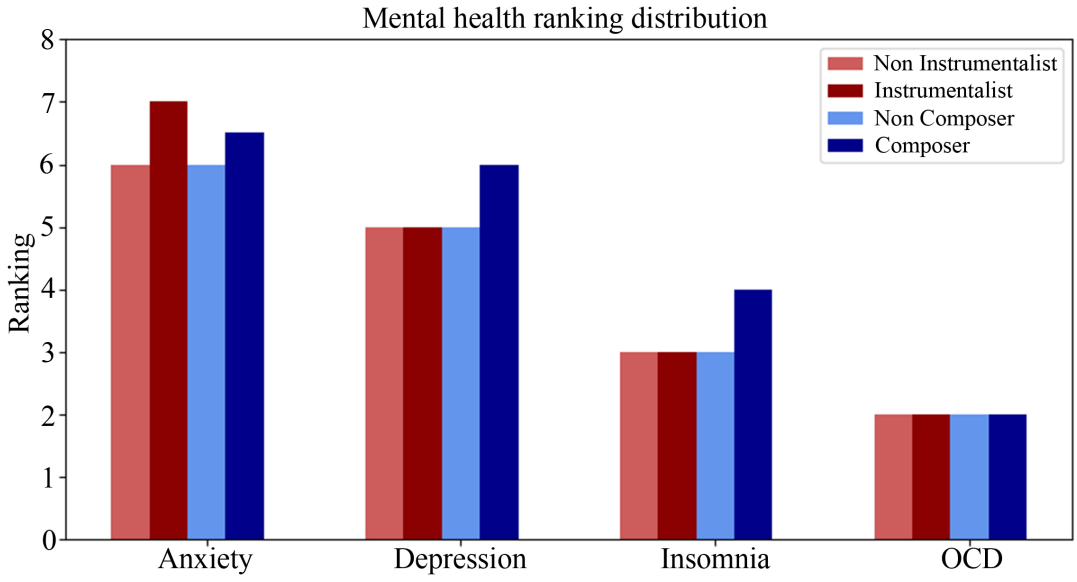


Figure 6. Mental health rankings distribution.

### 4.7. Correlation Heatmap of Key Variables

A correlation heatmap in Figure 7 was generated to examine statistical relationships between key variables, such as age, hours of music listening, and mental health indicators. The heatmap shows a weak negative correlation between age and hours spent listening to music, indicating that younger individuals tend to listen to more music. Additionally, a moderate positive correlation is observed between being a composer and instrumentalist, which is expected. However, the relationship between mental health factors and music-related behaviours remains complex, warranting deeper investigation.

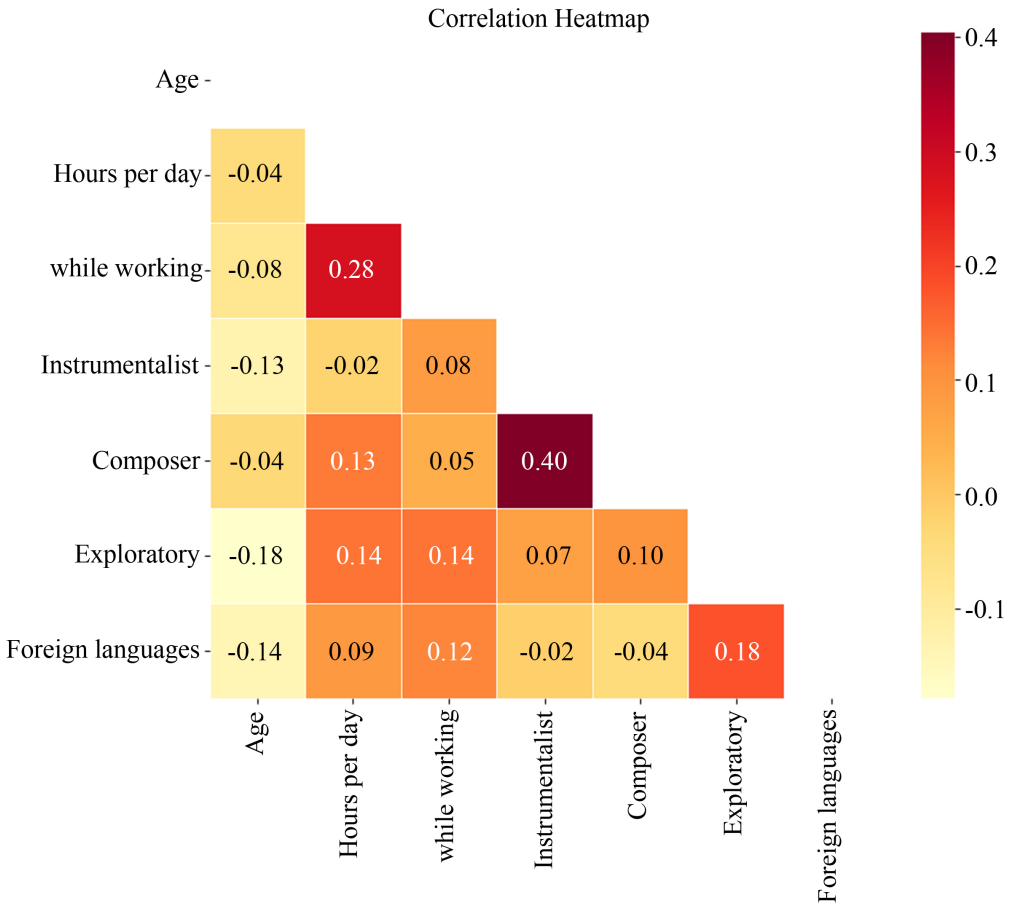


Figure 7. Correlation heatmap of key variables.

### 4.8. Mental Health Ranking Distribution

The distribution of mental health rankings among respondents was analysed, highlighting trends in anxiety, depression, insomnia, and OCD scores. The bar chart in Figure 8, demonstrates that most respondents fall within the mid-range of these rankings, with fewer individuals at the extreme ends. Notably, high rankings for mental health conditions appear more frequent for anxiety and depression than for OCD, reflecting broader trends in psychological research on music and emotional well-being.

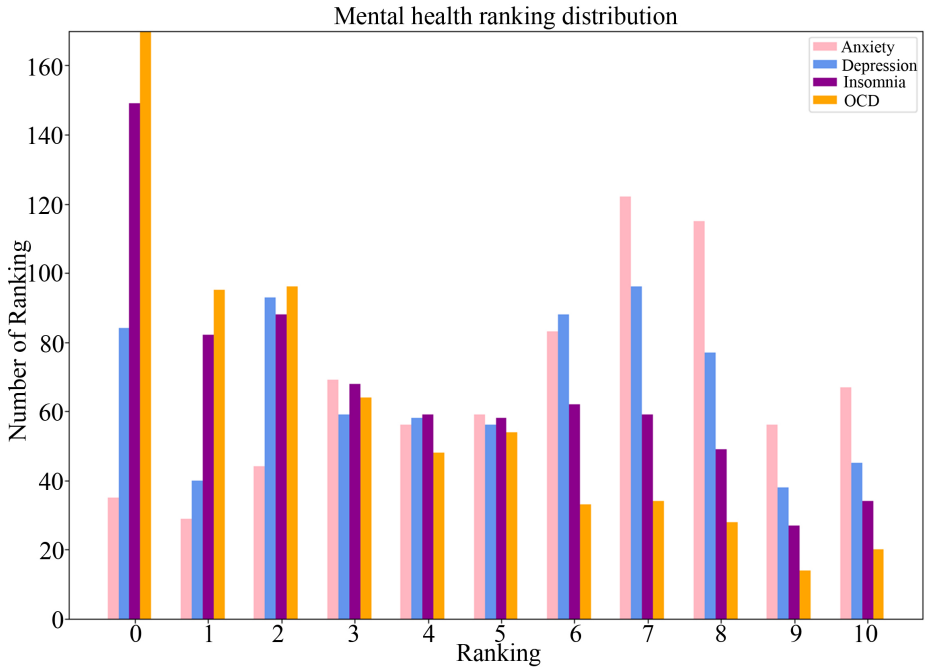


**Figure 8.** Mental health ranking distribution.

### 4.9. Hours Listened for Individuals with Extreme Mental Health Rankings

Individuals who reported extreme mental health rankings (scores above 8) were analyzed separately to examine whether their music listening behaviours differed from the general population in Figure 9. The findings suggest that those experiencing severe anxiety, depression, or insomnia tend to listen to more music on average compared to those with lower mental health scores. The bar chart below shows this relationship, indicating that insomnia is associated with the highest listening hours.

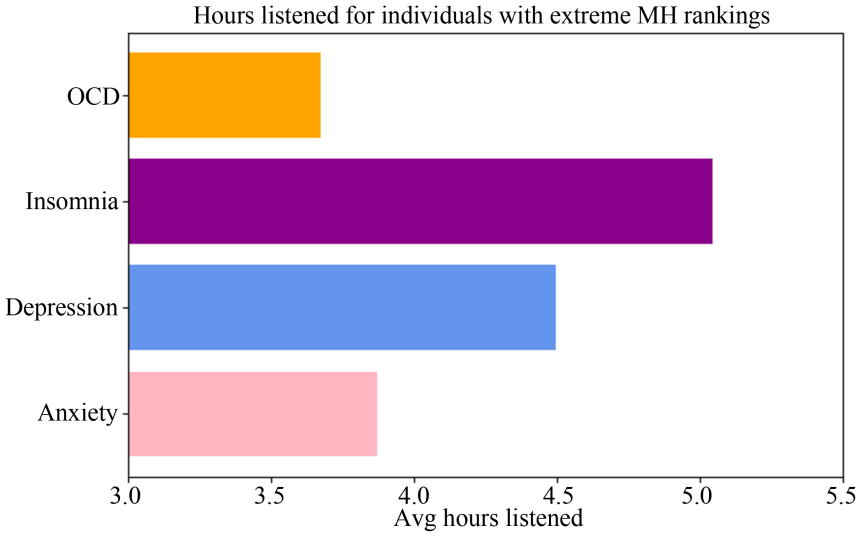


**Figure 9.** Hours listened with individuals with extreme mental health rankings.

### 4.10. Hours Listened for Individuals with Low Mental Health Rankings

Conversely, individuals with low mental health rankings (scores below 3) were analysed to compare their music listening patterns which is seen in Figure 10. Interestingly, those with low mental health condition scores tend to listen to less music than those with extreme mental health scores. This may indicate that music serves as a coping mechanism for individuals with higher mental health struggles.

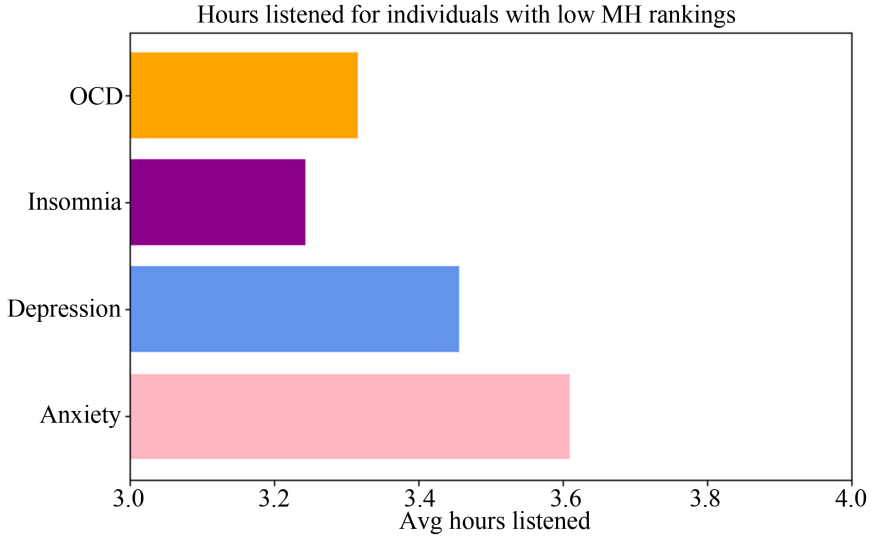


Figure 10. Hours listened for individuals with low mental health rankings.

### 4.11. Correlation among Mental Health Factors

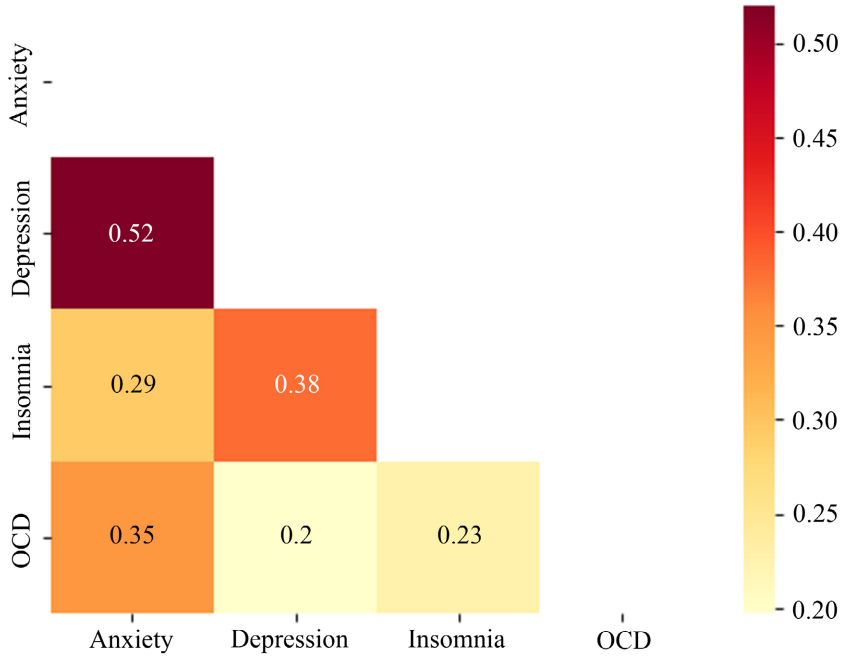


Figure 11. Correlation among mental health factors.

A secondary correlation heatmap in Figure 11, analyzed relationships between different mental health conditions, revealing a strong correlation between anxiety and depression and moderate associations between insomnia, anxiety, and depression, highlighting their interconnected nature. However, these relationships may be influenced by external factors such as socioeconomic status, which affects access to mental health resources, and medication use, which may alter self-reported mental health symptoms. Additionally, comorbid conditions like PTSD, ADHD, or bipolar disorder could independently contribute to both music listening habits and mental health symptoms, potentially skewing the observed correlations. Since these confounders were not controlled for in the analysis, the findings should be interpreted with caution as they establish correlations, not causation. Future research should incorporate statistical adjustments or experimental designs to better understand the true relationships between musical habits and mental health.

### 4.12. Perceived Effects of Music on Mental Health

The survey, in Figure 12, captured participants' perceptions of how music affects their mental health. Most respondents reported that music improves their mental well-being, while a smaller proportion indicated no effect. Only a very small number of participants believed that music worsened their mental health. This finding supports the notion that music is generally viewed as a beneficial tool for emotional regulation.

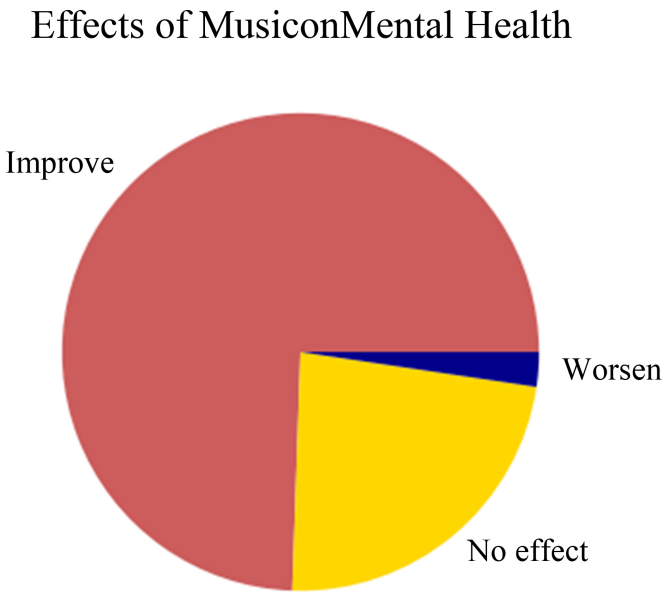


Figure 12. Perceived effects of music on mental health.

### 4.13. Top Genre Breakdown

The pie chart in Figure 13 presents the distribution of the most preferred music genres among respondents. Rock stands out as the most popular genre, followed

by pop, metal, and classical music. Other genres, including jazz, R&B, hip-hop, country, and video game music, also hold significant representation. This data indicates that respondents engage with a diverse range of musical styles, which may reflect differing emotional and psychological needs.

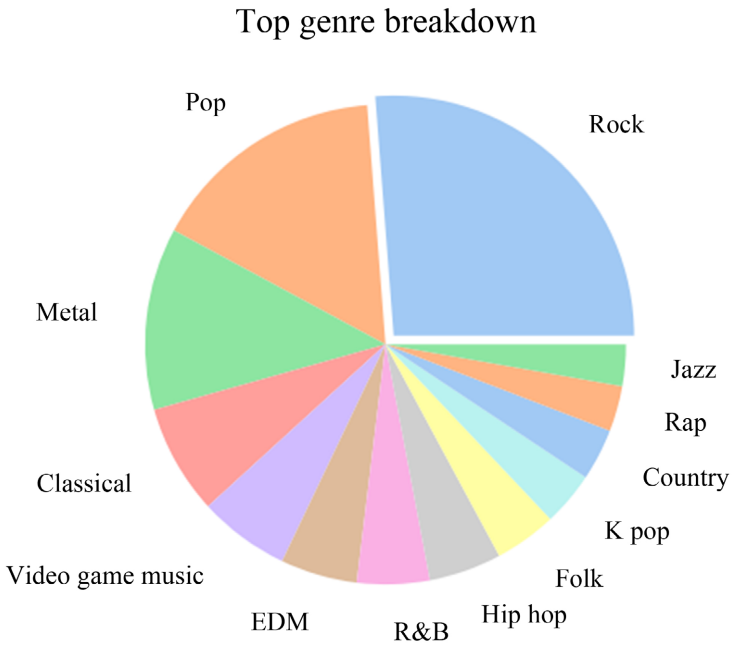


Figure 13. Top genre breakdown.

## 4.14. Age Distribution by Genre

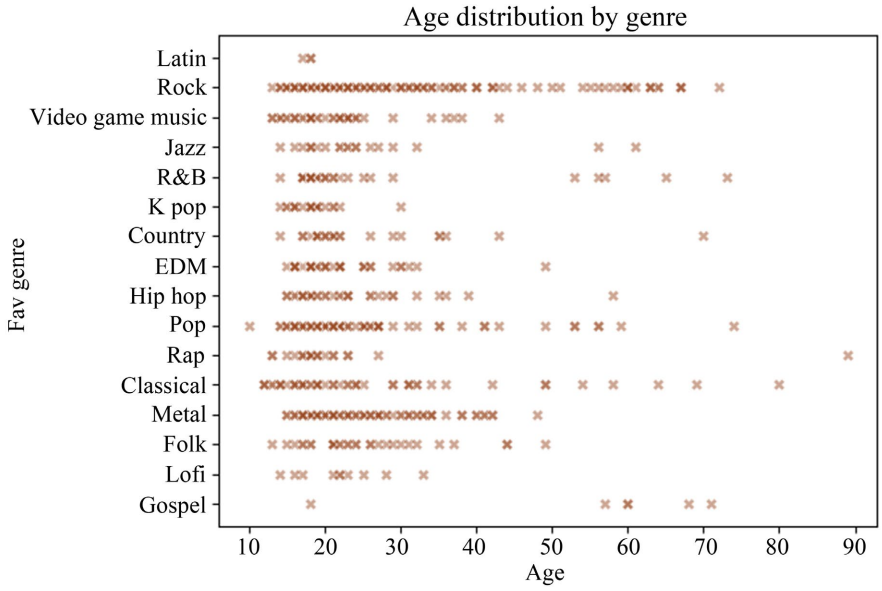


Figure 14. Age distribution by genre.

The scatter plot below in Figure 14, maps the distribution of age groups across different preferred genres. The data suggests that younger individuals gravitate to-

wards high-energy genres such as pop, rock, hip-hop, and EDM. Meanwhile, older respondents demonstrate a stronger preference for classical, jazz, folk, and gospel music. This highlights generational differences in musical engagement, which may be shaped by cultural influences and life experiences.

### 4.15. Perceived Effect of Music by Favorite Genre

This analysis examines in Figure 15, how individuals perceive the effects of their favourite genres on their mental health. Across all genres, most respondents report that their preferred music improves their well-being. A smaller percentage indicate no noticeable effect, and a very small minority believe their chosen genre worsens their mental health. This finding reinforces the idea that music serves as a coping mechanism and a therapeutic tool for most listeners.

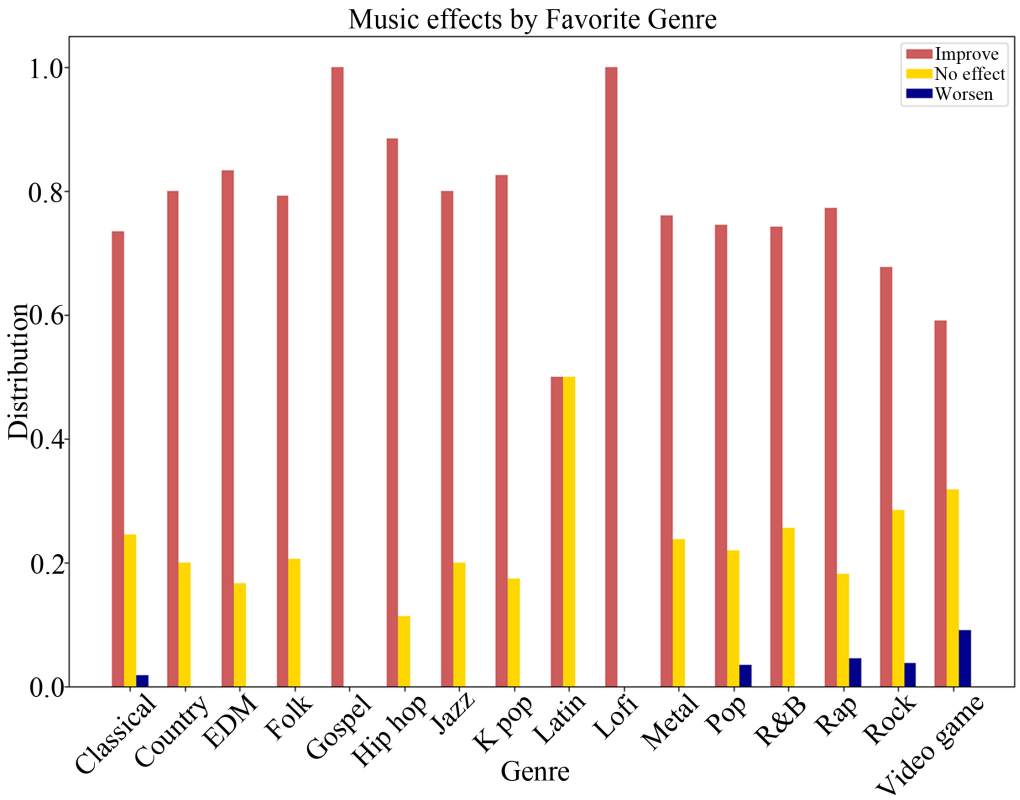


Figure 15. Music effects by favorite genre.

### 4.16. Genre vs BPM (Beats Per Minute)

The boxplot in Figure 16, visualizes the tempo characteristics (BPM) of different genres. EDM, metal, and Latin music exhibit higher BPM ranges, typically associated with increased energy and stimulation. In contrast, classical, folk, and jazz music feature lower BPM ranges, which are often linked to relaxation and introspection. These tempo variations suggest that different genres serve distinct psychological functions, from energizing and motivating listeners to helping them unwind and de-stress.

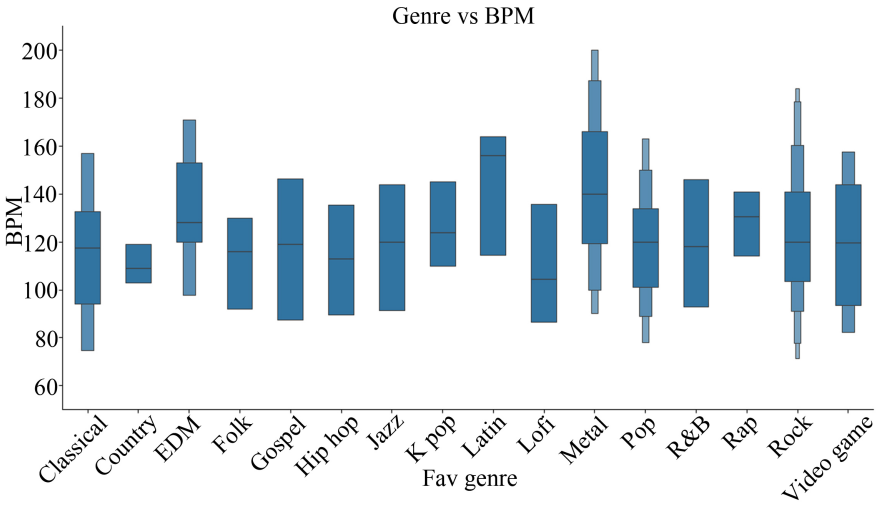


Figure 16. Genre vs BPM.

## 4.17. BPM vs Mental Health

A heatmap in Figure 17 examines the relationship between music tempo (BPM) and mental health conditions, including anxiety, depression, insomnia, and OCD. The results indicate that individuals with higher mental health scores engage with a wide range of BPMs, with a notable preference for moderate to high tempos. This suggests that music with faster tempos may serve as an emotional regulator, either by stimulating positive emotions or acting as an outlet for distress.

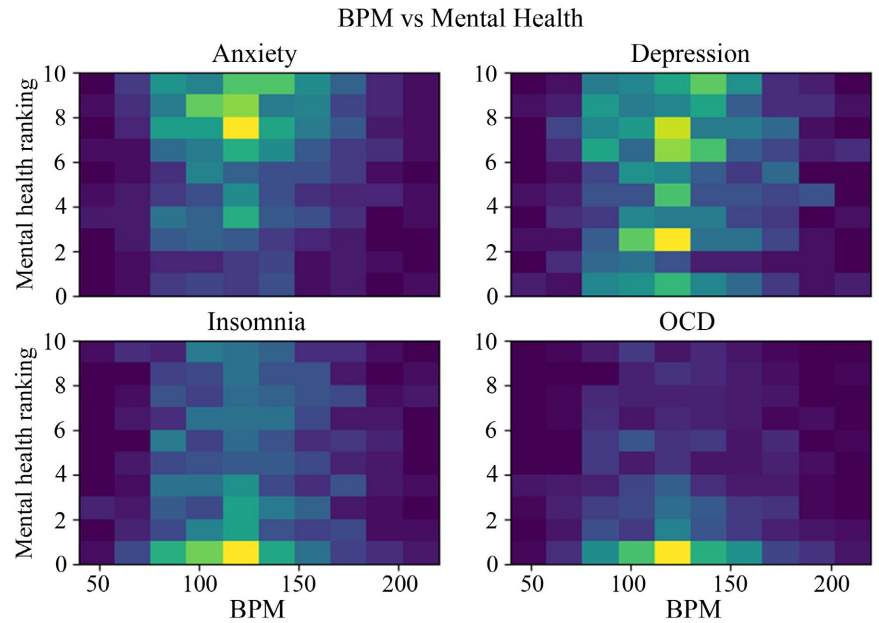


Figure 17. BPM vs mental health.

## 4.18. In Depth Genre Popularity

A stacked bar chart in Figure 18 provides an in-depth view of how frequently respondents listen to different genres. Rock, pop, and hip-hop are among the most

frequently played genres, while classical and gospel music, though less commonly listened to, retain a dedicated audience. The results indicate that listening frequency varies across genres, potentially influencing the emotional and psychological impact of different styles of music.

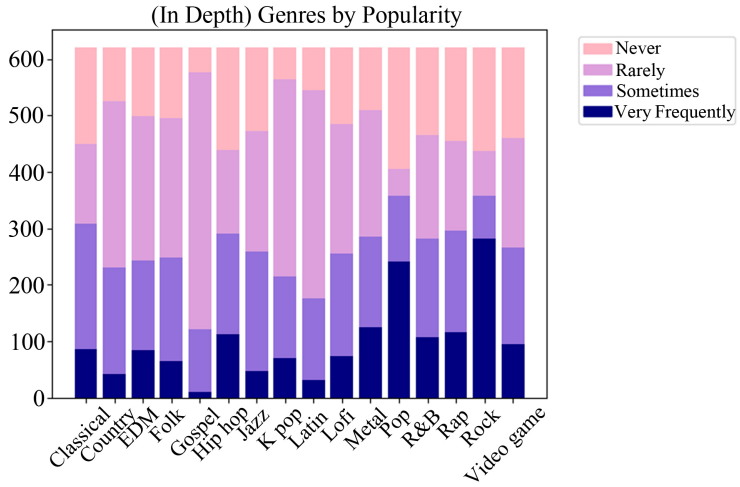


**Figure 18.** In-depth genre popularity.

## 4.19. Relationship between Anxiety and Genre Frequency

This bar chart in **Figure 19** visualizes the frequency of listening to different music genres among individuals with varying levels of anxiety. The results indicate that individuals who frequently listen to rock, metal, and EDM tend to have higher anxiety rankings compared to those who listen less frequently. This suggests that high-energy and emotionally intense music may either attract individuals with higher anxiety levels or serve as a coping mechanism for stress and anxious thoughts.

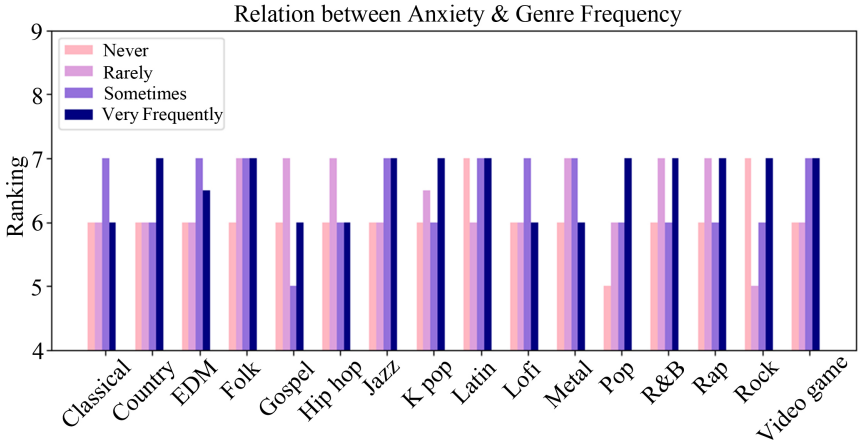


**Figure 19.** Anxiety vs genre frequency.

## 4.20. Relationship between Depression and Genre Frequency

The distribution of depression rankings across different music genres reveals sim-

ilar trends to anxiety. Individuals who frequently listen to rock, metal, EDM, and lofi music tend to report higher depression scores in Figure 20. This pattern may indicate that individuals with depressive symptoms gravitate towards these genres due to their lyrical themes, emotional depth, and potential for catharsis. However, it is unclear whether listening to these genres exacerbates depressive symptoms or provides emotional support.

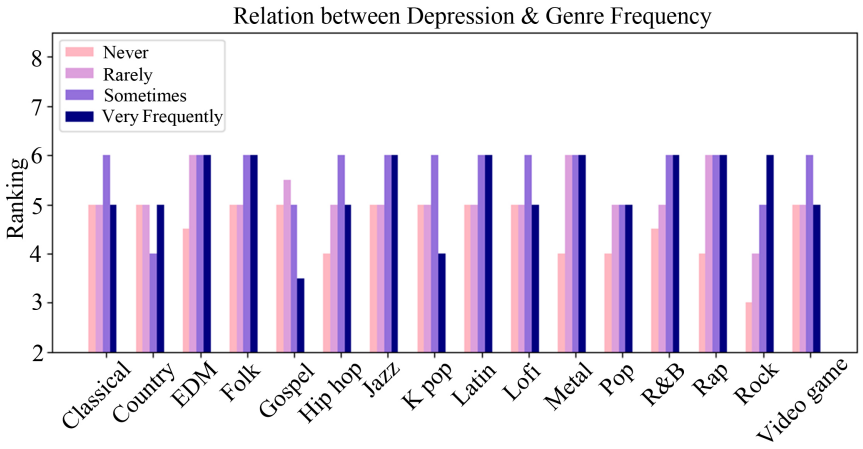


Figure 20. Depression vs genre frequency.

## 4.21. Correlation between Rock Music Frequency and Depression

A scatter plot in Figure 21 analysis of rock music listening frequency and depression levels shows a positive correlation. Individuals who listen to rock music more frequently tend to report higher depression rankings. This finding aligns with previous research suggesting that individuals struggling with depression often connect deeply with emotionally intense music. However, further investigation is required to determine whether this correlation reflects causation or simply a personal preference for expressive and introspective music.

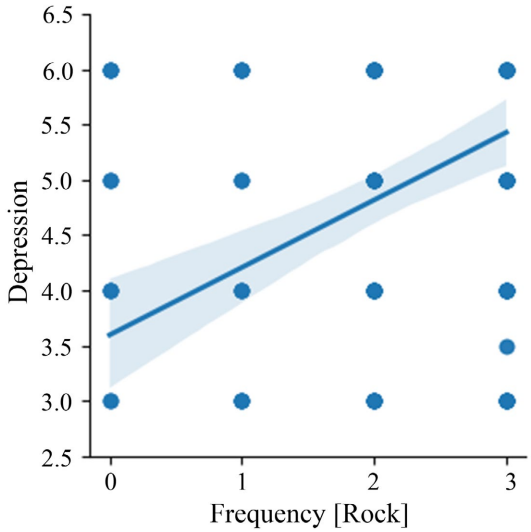


Figure 21. Rock music frequency vs depression.

### 4.22. Relationship between Insomnia and Genre Frequency

The relationship in Figure 22, between insomnia rankings and genre listening frequency highlights an interesting trend. Individuals who frequently listen to jazz, lofi, and electronic music report higher insomnia scores. This may be due to late-night music listening habits, which could interfere with sleep patterns. Alternatively, these genres might be used by individuals with insomnia as a means of relaxation or distraction during sleepless nights.

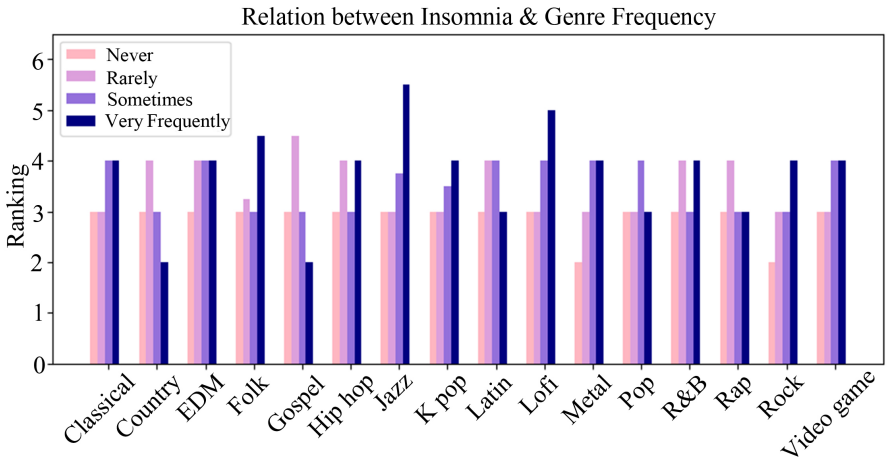


Figure 22. Insomnia vs genre frequency.

### 4.23. Relationship between OCD and Genre Frequency

This chart, in Figure 23, examines the relationship between obsessive-compulsive disorder (OCD) rankings and music genre frequency. Unlike anxiety, depression, and insomnia, OCD does not show strong genre-specific preferences. However, a slight increase in frequent listening to structured and repetitive genres, such as classical, pop, and lofi, is observed among individuals with higher OCD scores. This could suggest that predictable and rhythmically stable music provides comfort and structure for individuals experiencing obsessive-compulsive tendencies.

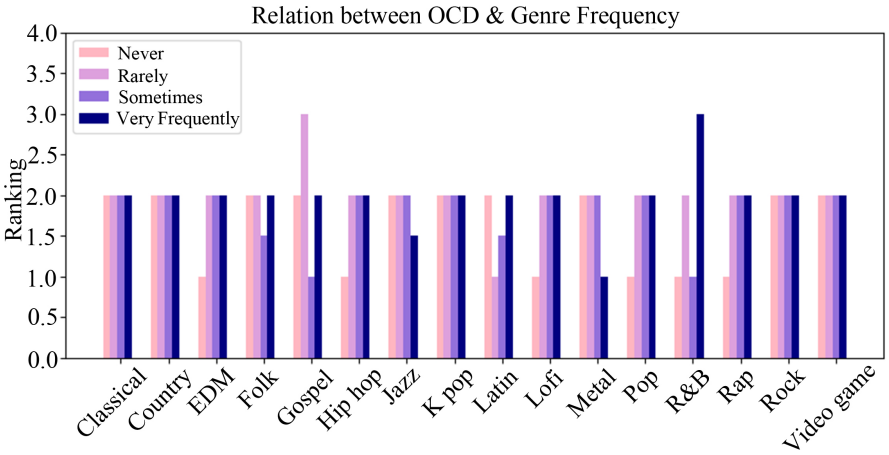


Figure 23. OCD vs genre frequency.

## 5. Discussion

The findings from this study provide a comprehensive insight into the complex relationship between music listening habits and mental health outcomes, particularly in relation to anxiety, depression, insomnia, and OCD. While music is widely perceived as beneficial for emotional regulation, the results suggest nuanced interactions where listening habits, genre preferences, and listening frequency may contribute differently to mental health experiences [52] [53].

### 5.1. Music as a Mental Health Regulator

A significant proportion of respondents reported that music positively influences their mental well-being, supporting the hypothesis that music serves as an emotional regulator. Individuals who perceived music as beneficial had generally lower mental health distress scores, reinforcing the notion that music can be an effective self-help tool for managing emotions. However, variations exist based on listening duration, genre preferences, and underlying mental health conditions. Participants who engaged with music for moderate durations (e.g., 1-5 hours per day) tended to report better mental health outcomes compared to those who listened excessively [54] [55]. This suggests that while music is a helpful emotional tool, prolonged or compulsive listening may be associated with underlying mental health challenges. Excessive listening, particularly among those with anxiety and insomnia, could indicate that music is being used as a coping mechanism rather than a means of relaxation.

### 5.2. Impact of Genre Preferences on Mental Health

A notable pattern emerged in the correlation between genre preferences and mental health conditions. Individuals with higher anxiety and depression scores frequently engaged with rock, metal, and electronic dance music (EDM) [56]-[58]. This aligns with existing research suggesting that emotionally intense and high-energy music may attract individuals who experience higher levels of emotional distress. Whether this connection is due to the lyrical themes, sonic intensity, or the cathartic nature of these genres remains an area for further study. Conversely, genres such as classical, folk, and jazz were more commonly associated with individuals reporting lower levels of anxiety and depression [59]. These genres, often characterized by slower tempos and structured compositions, may facilitate relaxation and stress reduction. However, frequent listening to these genres was also observed among individuals with OCD, possibly due to their repetitive and structured nature, which may offer a sense of order and predictability [60]. Lofi and jazz music were frequently associated with insomnia, suggesting that individuals with sleep disturbances may rely on music as a relaxation aid [61] [62]. However, excessive engagement with music before bedtime could also contribute to sleep disturbances, particularly if the music is cognitively stimulating rather than soothing.

### 5.3. The Role of BPM and Musical Tempo in Mental Health

The analysis of beats per minute (BPM) and its relationship with mental health revealed interesting trends. Individuals with higher mental health scores tended to listen to a wide range of tempos, while those with anxiety and depression gravitated toward moderate to high BPMs. This could indicate that faster-paced music serves as either a stimulant or an outlet for emotional expression [63] [64]. High-BPM genres such as EDM, metal, and rap were preferred by individuals with anxiety and depression, suggesting that these tempos may either amplify or help regulate their emotional states. In contrast, slower tempos, such as those found in classical and folk music, were associated with lower mental health distress scores [65] [66]. This supports the idea that music with lower BPMs can have a calming effect, potentially aiding relaxation and emotional balance.

### 5.4. Excessive Music Listening and Mental Health Risks

One of the key findings of this study is that excessive music listening may be linked to increased levels of anxiety and insomnia. Participants who reported listening to music for extended periods (beyond 5 - 6 hours per day) were more likely to experience heightened anxiety symptoms. This suggests that while music can be an effective coping mechanism, over-reliance on music for emotional regulation may indicate deeper underlying psychological concerns. This excessive consumption may stem from the need for constant auditory stimulation to avoid intrusive thoughts, emotional discomfort, or stress. It is also possible that individuals experiencing heightened anxiety or insomnia may use music as a distraction, but in doing so, may reinforce certain maladaptive behaviours, such as avoiding emotional processing or disrupting natural sleep patterns.

### 5.5. Correlation between Rock Music and Depression

The correlation between rock music listening frequency and depression scores was one of the most pronounced findings in this study. Individuals who frequently engaged with rock music were more likely to report higher depression rankings. This may be attributed to the thematic content of rock music, which often explores topics such as emotional struggles, personal challenges, and existential themes. While some individuals may find solace in music that reflects their emotions, there is also the possibility that continuous exposure to melancholic or intense themes may reinforce negative thought patterns. However, it is also possible that individuals with depression are naturally drawn to rock music as a form of self-expression and catharsis [67]. Further research is needed to establish whether this correlation is causal or merely a reflection of individual emotional alignment with the themes found in rock music.

### 5.6. OCD and Genre Preferences

The findings regarding OCD and music preferences were less pronounced compared to other mental health conditions [68]. However, individuals with OCD ex-

hibited a slight preference for structured and repetitive genres such as classical, pop, and lofi music. This could be attributed to the ordered nature of these genres, which may provide a sense of comfort and predictability for individuals with compulsive thought patterns. Additionally, repetitive or rhythmically consistent music might play a role in soothing obsessive thoughts by providing an external, structured focus. However, the lack of a strong correlation suggests that music's impact on OCD symptoms may be more individualized than its impact on anxiety or depression.

This study highlights the complex relationship between music listening habits and mental health, aligning with prior research that identifies music as a powerful emotional regulator. Studies have shown that high-energy and emotionally intense genres, such as rock, metal, and electronic music, are often favoured by individuals with anxiety, depression, and insomnia, potentially serving as a form of emotional catharsis or sensory stimulation. Conversely, individuals with lower psychological distress tend to engage with structured, slower-tempo music like classical or folk, which has been associated with stress reduction and relaxation. These findings support the emotion regulation model of music consumption, suggesting that individuals intuitively select music that aligns with or alters their emotional states. From a practical perspective, these insights have important implications for music therapy. Personalized music interventions could be developed based on individual mental health profiles, incorporating specific genres, tempos, and listening durations to enhance emotional regulation. For instance, individuals with anxiety and insomnia may benefit from structured, calming music to promote relaxation and sleep hygiene, whereas those experiencing depression might respond well to rhythmic, uplifting music that stimulates motivation and mood improvement. For mental health professionals, these findings emphasize the need to assess music consumption habits as part of psychological evaluations. Excessive reliance on music, particularly among individuals with high anxiety or insomnia scores, could indicate maladaptive coping mechanisms, such as rumination or avoidance behaviours. Integrating music-based strategies into cognitive-behavioural therapy (CBT), mindfulness practices, or guided relaxation techniques may enhance treatment outcomes. Future research should go beyond correlation-based findings by conducting experimental and longitudinal studies to explore whether music consumption actively influences mental health conditions or simply reflects existing psychological states. Investigating how different music interventions impact diverse populations could further refine evidence-based applications of music therapy in clinical settings. Understanding how individuals use music for emotional regulation can contribute to the development of personalized therapeutic strategies, making music a more effective tool in mental health care.

## 6. Conclusion

This study provides valuable insights into the complex interplay between music listening habits and mental health. While music is widely regarded as a powerful

tool for emotional regulation, its impact varies depending on factors such as listening duration, genre preference, and individual psychological conditions. The findings suggest that moderate music consumption generally has a positive influence on mental well-being, with many individuals perceiving music as a therapeutic outlet. However, listening to excessive music, particularly among individuals with high anxiety and insomnia scores, raises concerns about its potential role as a coping mechanism rather than a healthy emotional regulation strategy [69] [70]. Genre preferences also play a crucial role in mental health outcomes [71]. Individuals with higher anxiety and depression levels tend to gravitate toward emotionally intense and high-energy genres such as rock, metal, and EDM [72]. Meanwhile, those who prefer structured and slower-paced music, such as classical and folk, tend to report lower distress levels [73]. These findings indicate that music choice may reflect underlying psychological states and personal coping mechanisms. Although this study establishes meaningful correlations, further research is needed to explore causality. Understanding whether music actively influences mental health or simply reflects emotional tendencies could provide critical insights for developing music-based therapeutic interventions. Future studies should also investigate personalized approaches to music therapy, optimizing listening habits to maximize psychological benefits while minimizing potential risks associated with excessive consumption.

## Conflicts of Interest

The authors declare no conflicts of interest.

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