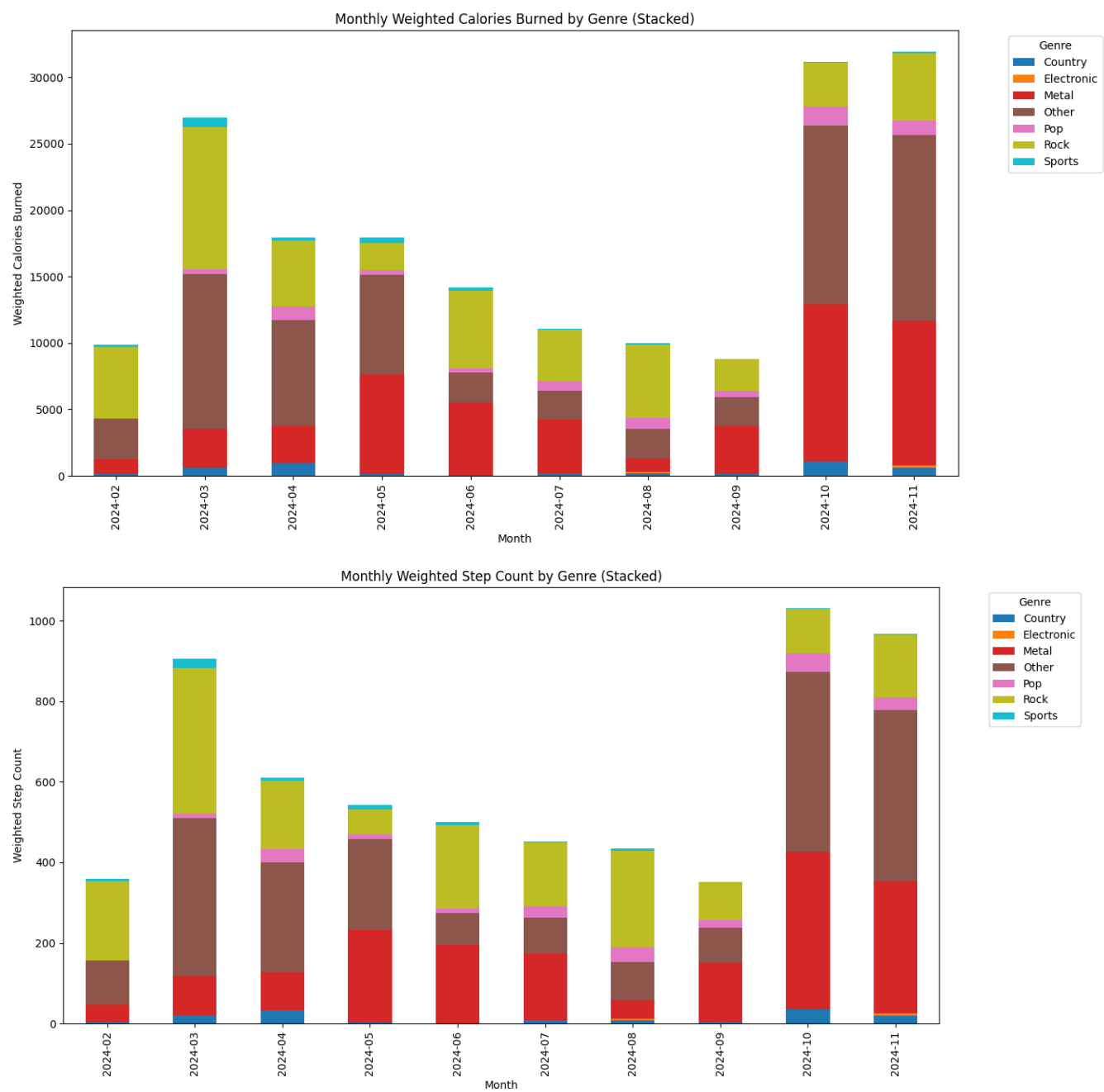


Music Genres vs Physical Activity

From the stacked bar charts:

- **Metal and Rock:** These genres are associated with moderate to high levels of physical activity, likely reflecting more upbeat or energetic music's effect on the listener.
- **Electronic:** Showed variability, with some periods of high steps and calorie burn, possibly linked to its use during workouts or active sessions.
- **Pop and Country:** These genres generally align with moderate activity levels, showing consistent but not extreme physical activity.
- **Other Genres:** Categories like "Sports" and "Other" had mixed results, possibly due to data variability or external factors influencing activity.



Conclusion

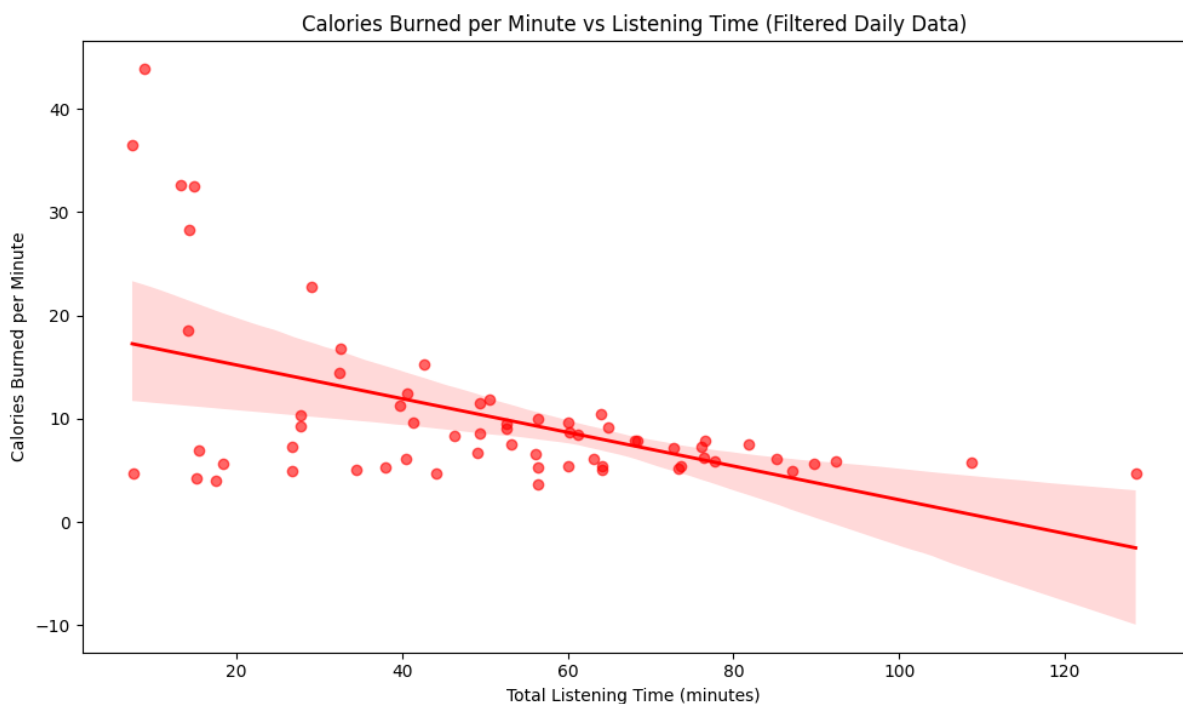
- The analysis indicates that **music genres may have a minor influence on physical activity**, with energetic genres like Metal, Rock, and Electronic showing some association with higher activity levels (e.g., more steps or calories burned).
- However, the overall relationship is not strong, and external factors likely play a more significant role in determining physical activity levels.

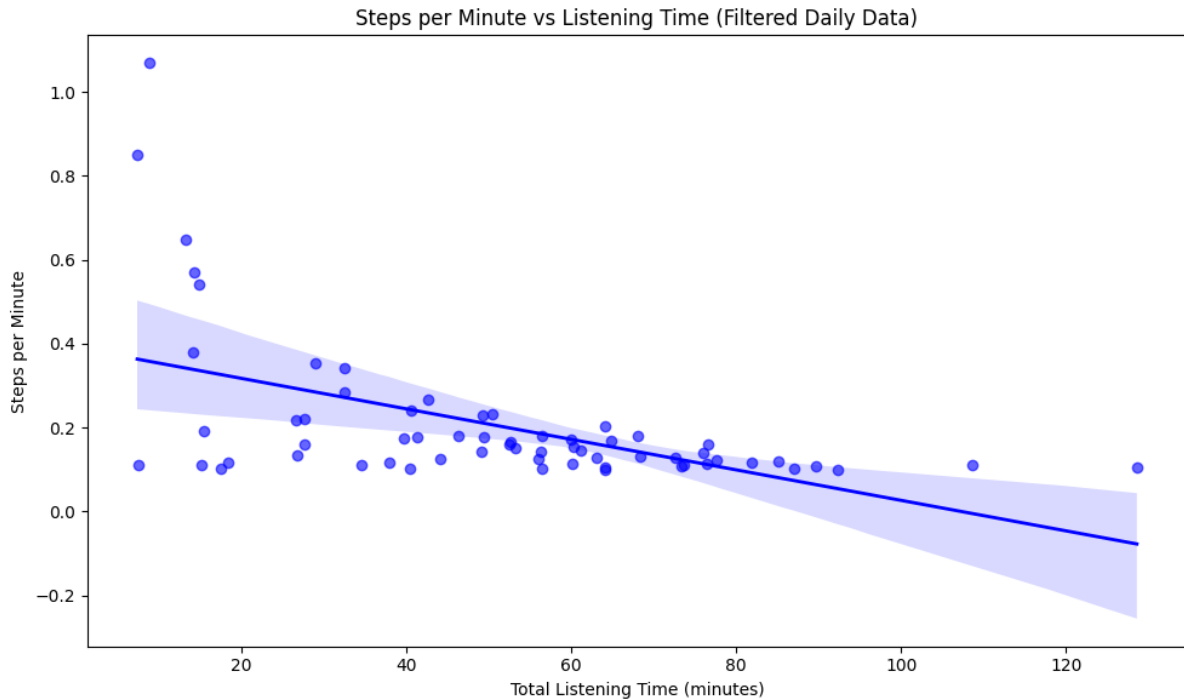
Listening time vs Exercise Intensity

Based on the analysis and visualizations:

1. Scatter Plot Observations:

- The scatter plots for both **Steps per Minute vs Listening Time** and **Calories Burned per Minute vs Listening Time** show widely dispersed points with no clear pattern or clustering.
- The regression lines are nearly flat, indicating a very weak or non-existent relationship between listening time and exercise intensity metrics.





Conclusion:

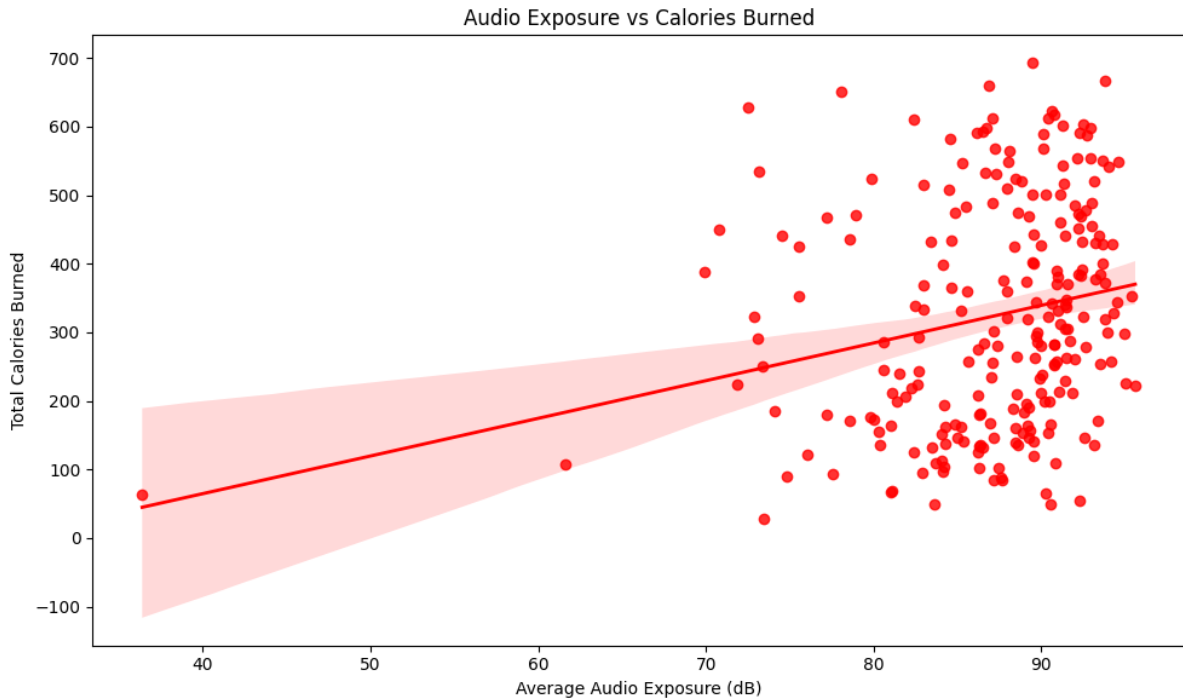
- There is **no meaningful correlation** between listening time and exercise intensity (measured by steps per minute or calories burned per minute).
- This suggests that listening time alone is not a reliable predictor of how intense someone's physical activity is.

The lack of correlation might indicate that other factors, such as the type of activity or external circumstances, play a larger role in determining exercise intensity than the duration of music listening.

Audio Exposure vs Calories Burned

• Observation:

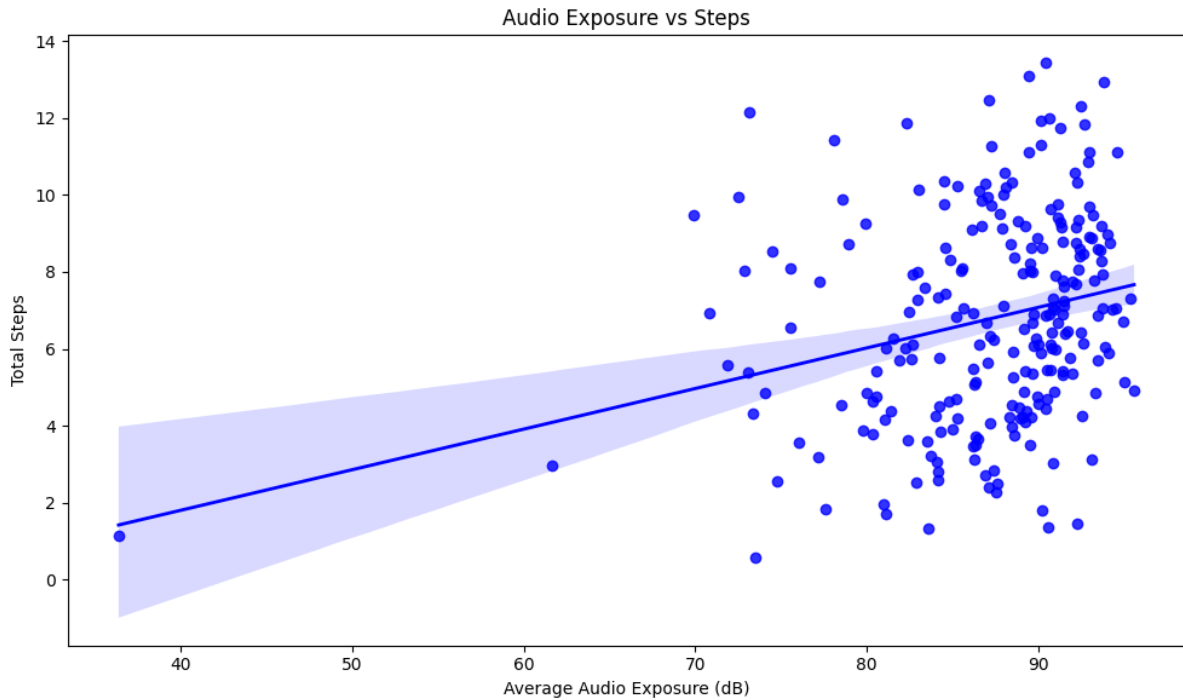
- The regression line shows a **slight positive slope**, indicating a weak **positive correlation** between **average audio exposure (dB)** and **calories burned**.
- Higher audio exposure **might** correspond to slightly more calories burned, but the relationship is weak and has significant variability.
- The **confidence interval (shaded area)** is wide, especially at lower audio exposure levels, indicating a lack of strong predictive power.



- **Conclusion:**
 - There is **no strong evidence** that audio exposure significantly impacts calorie burn levels. The weak correlation suggests other factors likely play a more dominant role.

Audio Exposure vs Steps

- **Observation:**
 - The regression line here also shows a **slight positive slope**, indicating a weak **positive correlation** between **average audio exposure (dB)** and **steps**.
 - As audio exposure increases, there is a slight tendency for step counts to increase, but again, the relationship is not strong.
 - The wide spread of points around the line and the large confidence interval at lower audio exposure levels reflect high variability.



Conclusion:

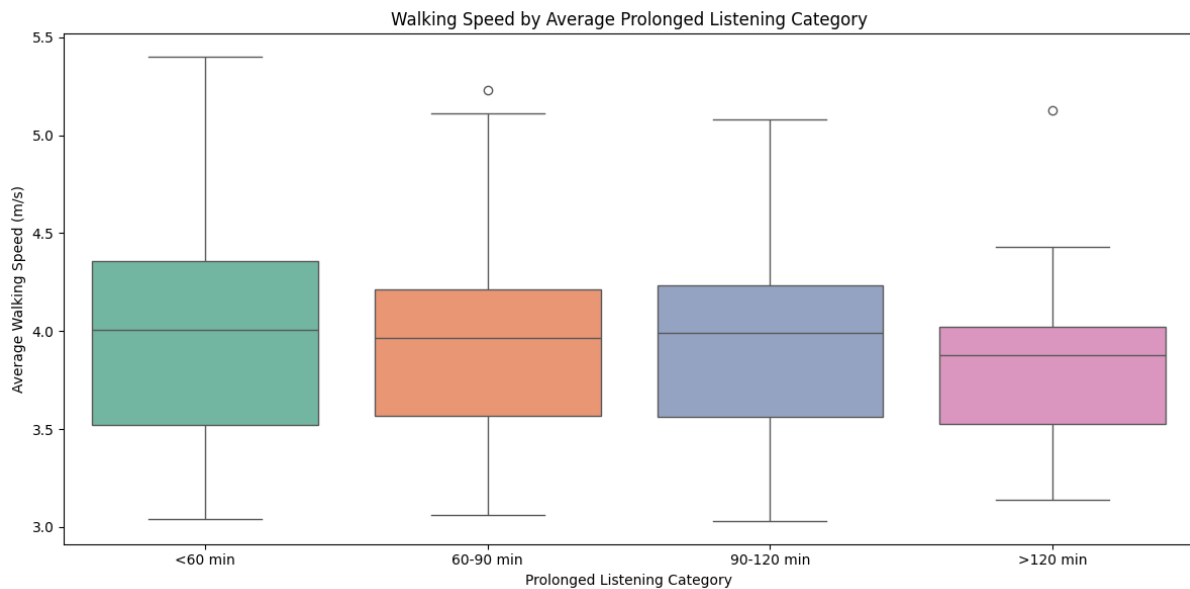
- Similar to calories burned, **audio exposure does not strongly correlate** with step counts. While there may be a slight trend, it is not meaningful or robust enough to suggest a significant association.
- **Key Finding:** Headphone audio exposure (measured in dB) shows a **weak positive correlation** with both calorie burn levels and step counts, but the relationships are not strong or consistent enough to draw meaningful conclusions.
- **Implications:** Audio exposure is likely **not a major factor** influencing physical activity. Other variables, such as the type of activity or environmental factors, are likely more significant.

Prolonged listening to specific music genres vs walking speed & asymmetry

1. Walking Speed by Average Prolonged Listening Category

- **Observations:**
 - The median walking speed (central line in each box) remains consistent across all categories, with slight variation.
 - The <60 min and 60–90 min categories show slightly higher median walking speeds compared to >120 min.

- There is no strong evidence suggesting that prolonged listening impacts walking speed significantly.
- The distribution (IQR) of walking speed is wide across all categories, indicating high variability within each group.

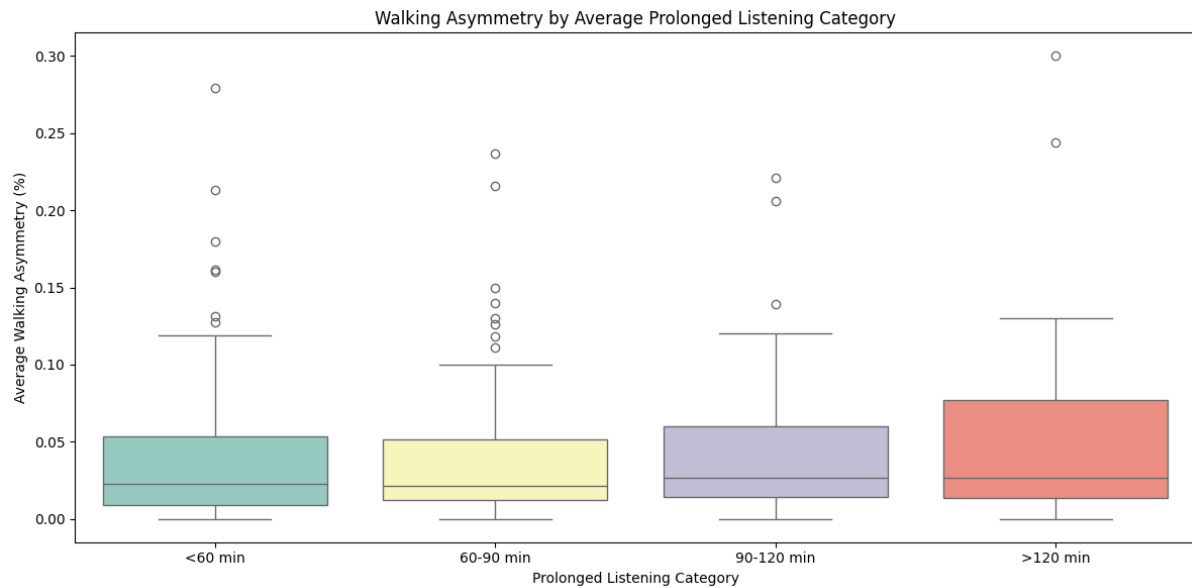


Conclusion:

- No strong correlation is observed between prolonged listening duration and walking speed.
- Any small differences may be due to external factors rather than listening habits.

Walking Asymmetry by Average Prolonged Listening Category

- **Observations:**
 - The median walking asymmetry remains nearly constant across all categories.
 - Variability (IQR) increases slightly in the >120 min category, but the difference is not significant.
 - Outliers are more prominent in higher listening categories, indicating occasional deviations in walking asymmetry on specific days.



Conclusion:

- Prolonged listening does not show a significant effect on walking asymmetry.
- The slight increase in variability in higher categories could be influenced by small sample sizes or external factors.

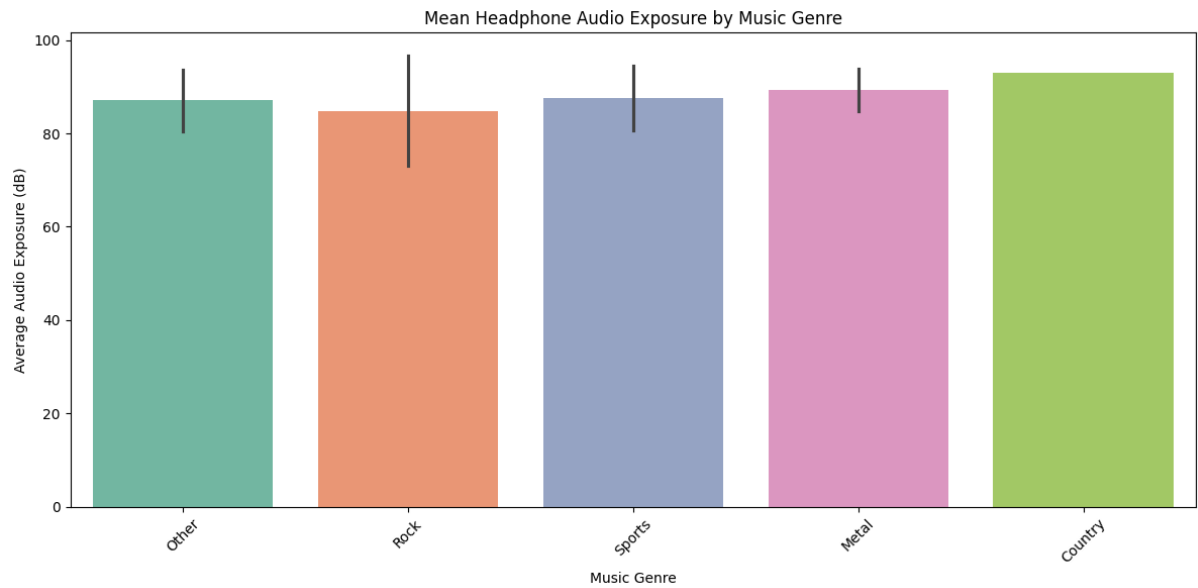
Music Genres vs Headphone Exposure Levels

1. Bar Plot Observations:

- The average headphone audio exposure levels are similar across genres such as "Rock," "Metal," "Sports," "Country," and "Other."
- The height of the bars indicates that **no significant differences in average audio exposure levels** were found between the genres.
- The error bars (representing variability) show some genres (e.g., "Sports" and "Other") have slightly more variability, indicating that listeners of these genres may have more diverse volume preferences.

2. Key Takeaways:

- There is no evidence to suggest a strong relationship between **music genre** and **headphone audio exposure levels**.
- Average audio exposure is consistent across genres, and the differences in variability are minimal.



Conclusion

The analysis suggests that **music genres do not significantly influence headphone audio exposure levels**. While individual preferences and behaviors may vary, no meaningful trend or relationship was observed between genres and exposure levels in the aggregated data.