

Types Of Music on Motivation and Exercise Intensity While Running on a Treadmill



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Abstract

The purpose of this study was to test whether or not music had an influence on personal motivation and physiological demands during exercise. This study took place over a three week period in which participants were asked to run on a treadmill in a lab setting for fifteen minutes for four different sessions while listening to four different music types: no music, rock, hip-hop, and pop. The participants had to run at least two days per week for a minimum of 15 minutes each day prior to testing. Before completing the sessions, a Chester Step Test was administered to estimate 80% of their maximum heart rate. During the running session, several physiological readings, including RPE and heart rate, and treadmill speed were recorded. At the end of each session, a short motivational questionnaire, the Intrinsic Motivational Inventory (IMI), was administered. A one-way repeated measures ANOVA was run to compare each dependent variable across the four music conditions. No significant differences were found for HR, RPE, treadmill speed, however IMI for all music conditions was significantly higher than the control. Therefore, exercisers were more motivated listening to any type of music compared to not listening to music.

Introduction

- Past research has concluded that music during exercise has a positive effect on psychological aspects of an individual, such as motivation and external focus.
- The physiological aspects however are inconclusive.
- The purpose of this study was to test whether or not music had an influence on personal motivation and physiological demands during exercise.

Procedures

Week One - Chester Step Test

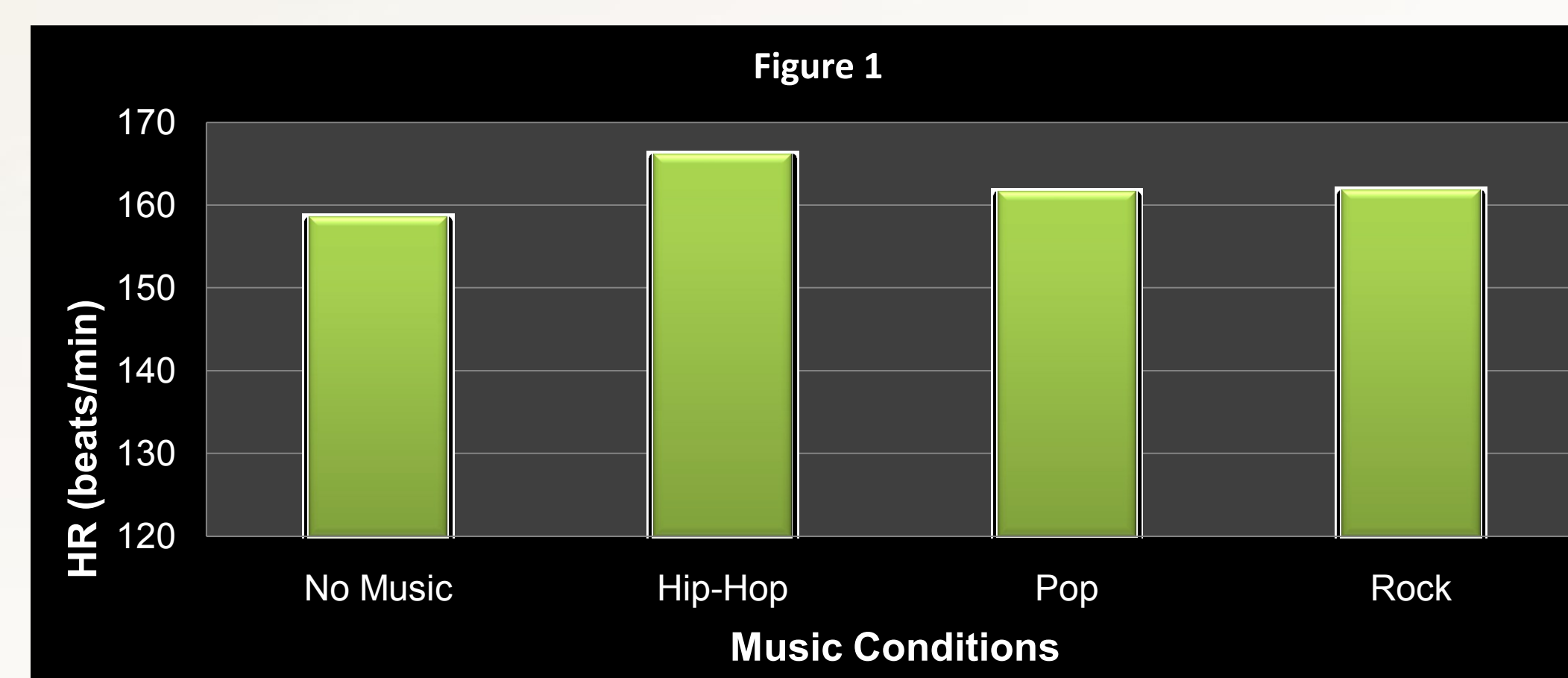
1. Participant stepped to metronome beating at 20 steps/min for 1 minute.
2. After 30 seconds, HR was recorded and the metronome was then increased to 22 steps/min.
4. HR continued to be recorded every 30 seconds and the metronome continued to increase by 2 steps/min after every minute until the participant had reached 80% of their estimated maximum HR. The results of the Chester Step test were used to compare HR between the four music conditions and their maximum HR.

Procedures continued

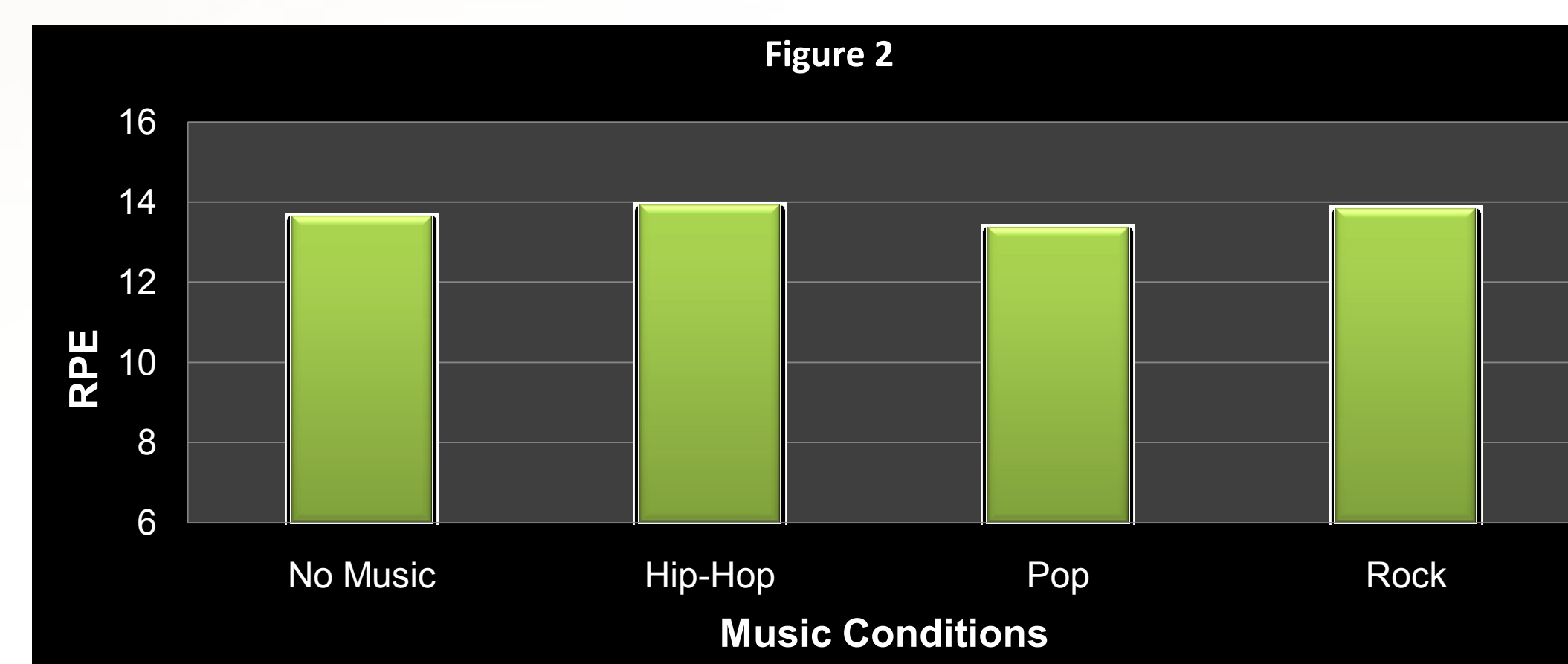
Weeks Two and Three - Treadmill Test

1. Each participant started with a warm-up which consisted of walking on the treadmill for 2 minutes with no music at their own pace.
2. After the warm-up, music selected by the participant was turned on, or no music remained, and the participant started running at their own self-selected exercise intensity (treadmill speed). This began the test.
3. At each minute interval, RPE, HR, and treadmill speed was recorded on a data sheet.
4. The test ended when the participant had run for 15 min.
5. The participant then had a 2 minute cool-down with no music walking on the treadmill at their own pace.
6. Immediately following the cool-down, the participant's motivation was assessed by answering the subscale questions of the IMI.

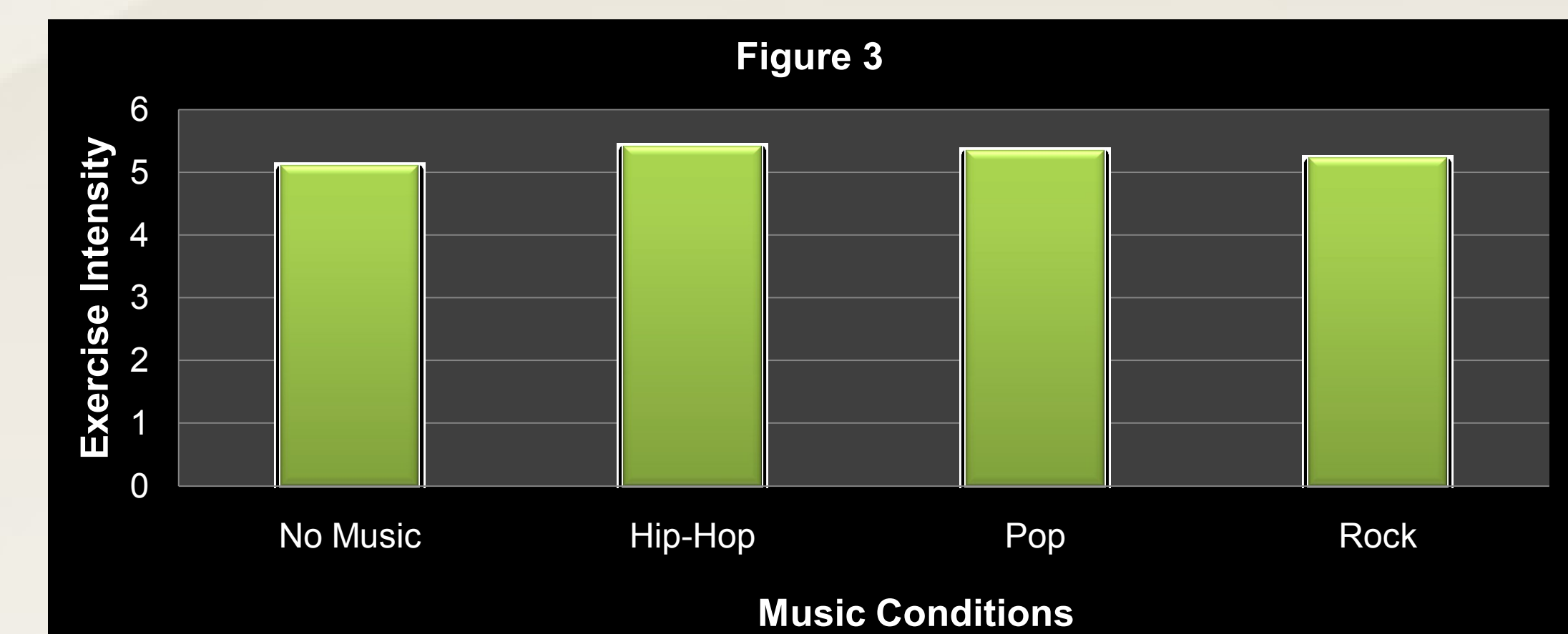
Results



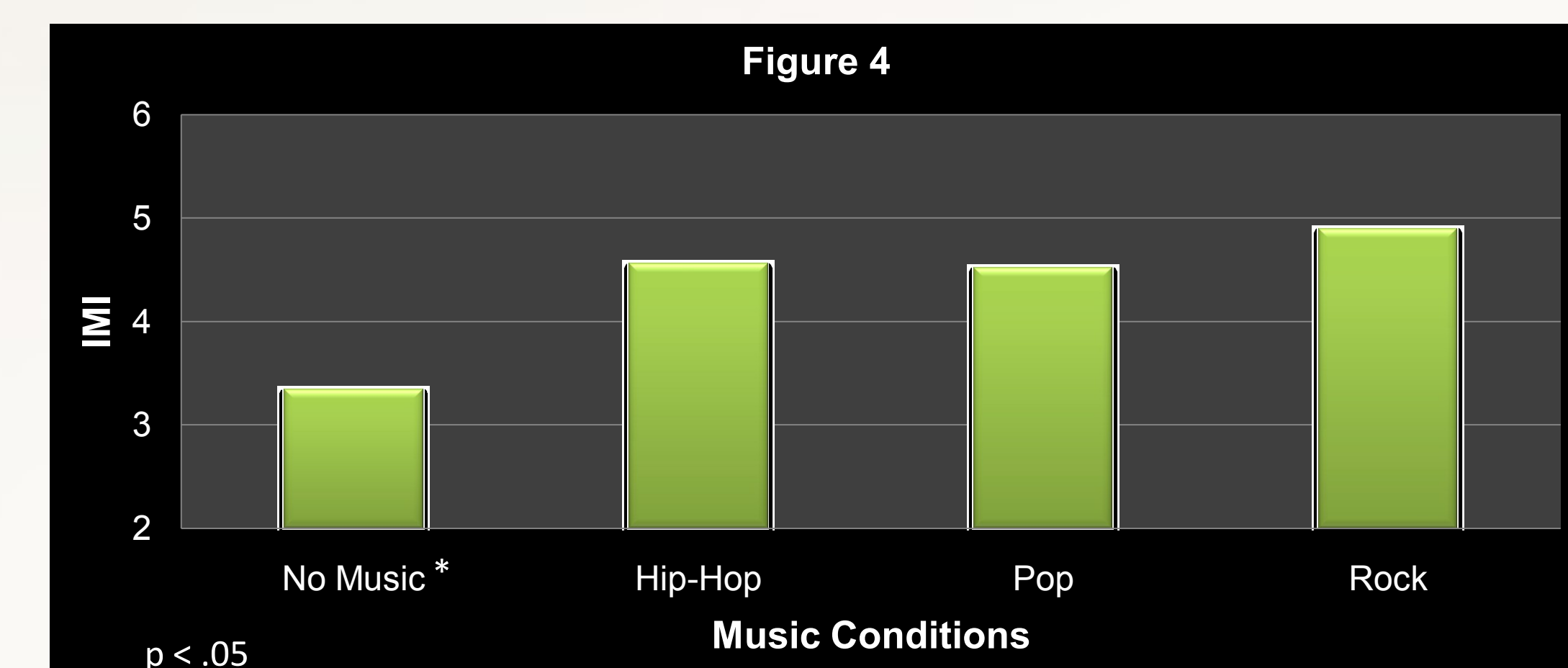
• Figure 1 shows HR resulted in no significant difference among the four music conditions, $F(3,30) = 2.009, p > .05$.



• Figure 2 illustrates an insignificant difference for RPE between the four music conditions, $F(3,30) = .482, p > .05$.



• No significant difference between the four music conditions is exercise intensity ($F(3,30) = 1.191, p > .05$), which is illustrated in Figure 3.



• The results of the IMI in Figure 4 above, did show significant differences between the control and the three music genres, $F(3,30) = 11.828, p < .0005$. A Bonferroni post hoc test revealed that the no music control condition resulted in significantly lower IMI ($M = 3.34, SD = .76$) than the hip-hop, pop, and rock conditions ($M = 4.56, SD = .86, M = 4.52, SD = .67, and M = 4.90, SD = 1.07, respectively, p < .05$).

Discussion

- Music does not have a physiological effect on an individual while running.
- Music does have an influence on motivation while exercising.
- The results are consistent with the literature in that HR was inconsistent and motivation increased with music.

Conclusion

Exercisers will have a higher motivation while listening to any genre of music while exercising compared to not listening to music at all.

Key References

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- Szabo, A., Small, A., & Leigh, M. (1999). The effects of slow- and fast-rhythm classical music on progressive cycling to voluntary physical exhaustion. *Journal of Sports Medicine and Physical Fitness, 39*(3), 220-225.
- Yamashita, S., Iwai, K., Akimoto, T., Sugawara, J., & Kono, I. (2006). Effects of the music during exercise on RPE, heart rate, and the autonomic nervous system. *Journal of Sports and Medicine and Physical Fitness, 46*(3), 425-430.