The Effects of Music on Aerobic Performance
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PURPOSE STATEMENT & HYPOTHESIS

Hypothesis:
Listening to music while completing the Cooper 12-minute run test would elicit changes in aerobic performance. This was determined by changes in distance ran, heart rate measurements, rating of perceived exertion, Rejeski feeling scale, and the running discomfort scale.

METHODS AND MATERIALS

Materials:
Cooper 12 minute run test:
• Valid and reliable testing measurement
• Subjects set their own pace in the 12 minute maximal test
Rejeski feeling scale:
• Used to assess exercise experience on a 5-15 scale
Rating of perceived exertion:
• Quantified the subjects effort levels (6-20)
Heart rate monitor:
• Polar heart rate monitor
Running discomfort scale:
• Systemized common symptoms that occurred during running and rated their severity (1-5 scale)
• Proprioceptive symptoms, respiratory difficulties, disorientation, mental toughness, completion thoughts

Methods:
Study design: Randomized control trial
Independent variable: Listening to music while performing the Cooper 12-minute run test
Dependent variable: Performance during the Cooper 12-minute run test
Subjects: Daemen College students, faculty, staff >18 years old
Inclusion criteria: Participate in >150 minutes of physical activity/week, >18 years old
Exclusion criteria: Any self reported hearing condition, heart condition, chest pain with physical activity, orthopedic limitations, recent lower extremity injury, prescribed medication for blood pressure or a heart condition, dizziness or loss of consciousness while exercising

Protocols:
Informed consent: Obtained on the first meeting
Health history questionnaire: Completed to ensure participants were healthy enough to be included in the study
Testing protocol: Informed consent → health history questionnaire → warm up → Cooper 12-minute run test (Figure 1) → running discomfort scale → repeat study w/in 1 week

RESULTS

• Data will be analyzed using a repeated measures ANOVA on IBM SPSS version 23.
• See Figure 2 for means & standard deviations (SD)

CONCLUSIONS

• Due to limited participants data has not yet been analyzed
• Based off of means & standard deviations, it can be hypothesized that music:
  • Decreases average RPE & HR
  • Increases average Rejeski Feeling Scale & Running Discomfort Scales
• More conclusions will be determined once more data is collected and analyzed

REFERENCES

1. Gutiérrez NT, Van Rooijen H, Hutchinson IC, Brown IW, Feuring AJ. The effects of music and a concurrent attention task on physical endurance, motivation, and performance during a 1,000 m rowing sprint. J Appl Sport Psychol. 2015;27(1):278-286

INTRODUCTION

• Music is a motivational tool that can alter performance, specifically in aerobic testing
• Testing measures included: rowing sprints, treadmill tests, and trail running
• Previous research did not use standardized aerobic testing
• Physical and psychological changes have been noticed when listening to music
  • Physical: rating of perceived exertion, heart rate, distance ran
  • Psychological: Rejeski feeling scale, running discomfort scale
• Cooper 12-minute run test is a valid and reliable test
• Through looking at psychological, physiological, and physical variables the changes of aerobic performance can be measured

Figure 1: The Cooper 12-minute run test protocol. On the treadmill there is both the Rejeski Feeling Scale and Rating of Perceived Exertion Scale for participants to view.