

Mind Body and the Effects of Music

KINE 3325 – Undergraduate Research Methods – Research Project

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ABSTRACT

Introduction: Music has been used to provide motivation for people who exercise.

Purpose: The study is intended to show if music can affect one's rate of perceived exertion (RPE) using heart rate (HR) as a validity measure while exercising. The hypothesis is the effect will be positive with the use of music thus encouraging more people to exercise.

Methods: 23 participants with a mean age of 22.5 were selected using a questionnaire. Each subject came for two bouts of exercise each bout was performed on a different day. After signing consent forms the Bruce protocol test on a treadmill was administered while RPE and HR were recorded.

Results: There was a statistical difference in "change" RPE with music [t(21)=-.378, p = .003] subjects who started with music 4.00±10.50(n=7), subjects who started without music

Conclusion: The results indicated that music does affect the RPE while performing a Bruce Protocol test on a treadmill. The most significant results showed a difference for subjects who completed their first bout of exercise without the use of music.

PURPOSE

The study investigated the effects of music on rate of perceived exertion (RPE) and heart rate (HR) while exercising using the Bruce Protocol. The hypothesis is that RPE will decrease for individuals when listening to music during exercise.

INTRODUCTION

- Music has been used to provide motivation for people who exercise.
- Music has been used to sustain enthusiasm and to resist mental and emotional fatigue, and it may even facilitate physical and athletic performance (Koc 2009).
- Some may use music to cope more efficiently with specific exercises while others use music to enhance confidence.
- Studies have shown that music reduces sensation of fatigue while other studies show that arousal increases as well as improved motor coordination (Harmon 2001).
- For the purpose of this study only RPE was reviewed using HR as the validity measure.



METHODS

Participants:

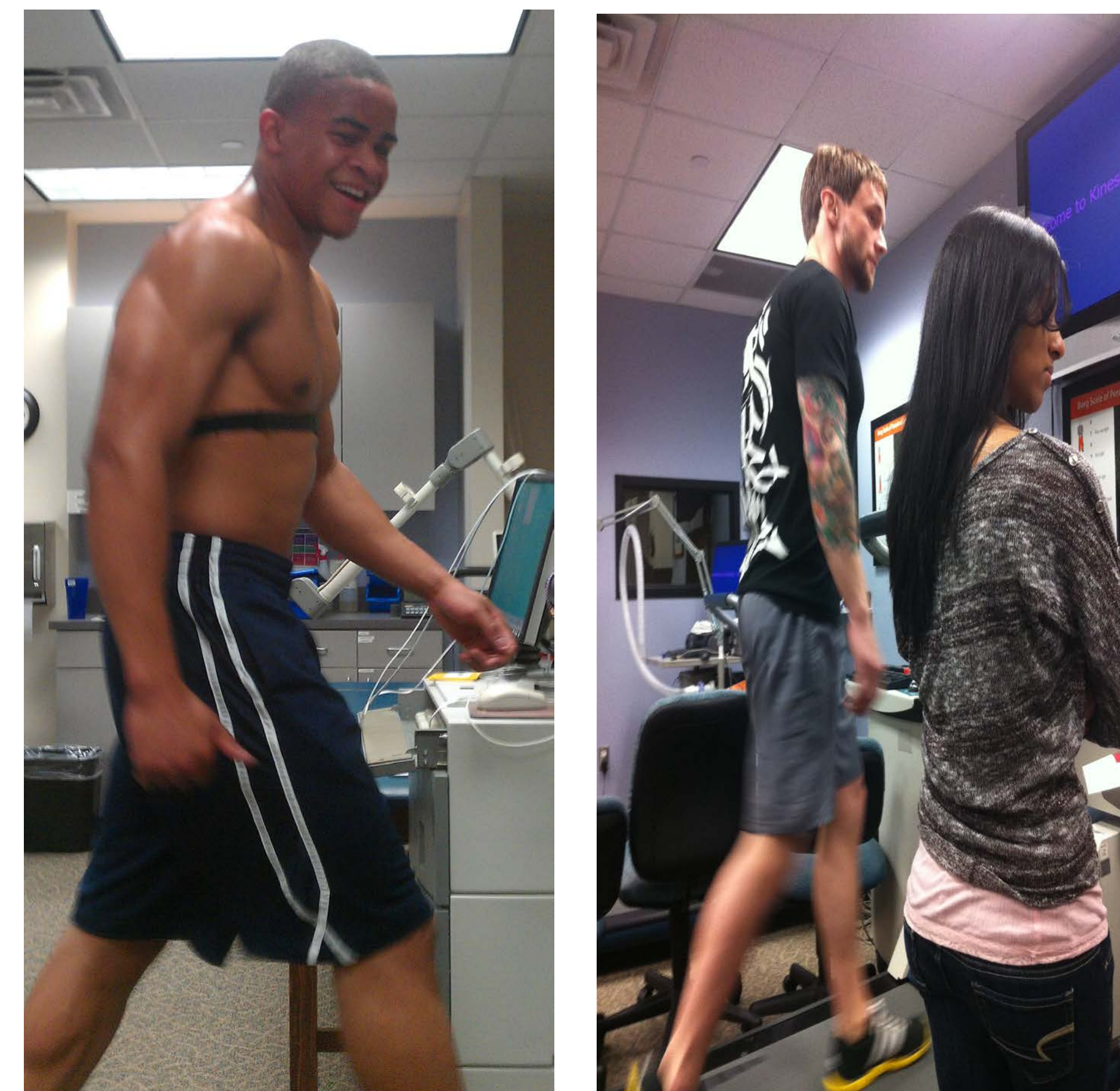
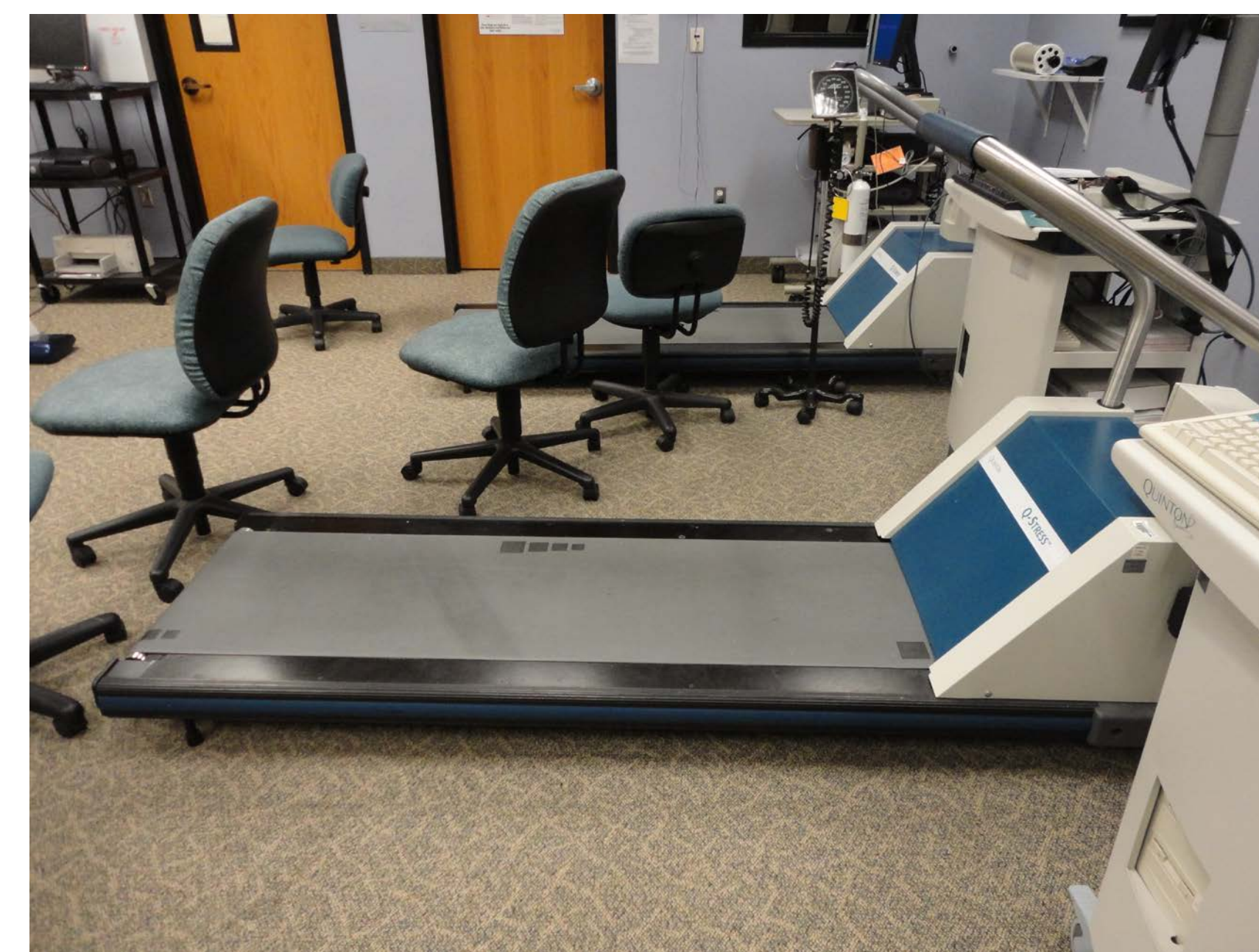
- 23 participants with a mean age of 22.5 ± 2.7
- 10 females, 13 males
- 11 trained, 12 untrained

Instruments:

- Questionnaire
- Treadmill
- The Bruce protocol
- Borg scale for rate of perceived exertion (RPE)
- Polar Company heart rate monitor model FT1 TRA/BLK GEN
- MP3 player

Protocol:

- Each subject attended two bouts, each bout were on separate days
- The protocol consists of a 20 minute exercise on a treadmill that increased both in incline percent (work) and MPH in 3 minute intervals..
- During the first bout, subject either listened to music or no music. The latter bout was opposite of the first.
- There was a counter balance done to rule out order effect.
- After signing consent forms the subjects performed the Bruce Protocol test on a treadmill,
- RPE and heart rate were recorded.



IRB Protocol: 2012-0441

RESULTS

There was a statistical difference in "change" RPE with music t(21)=-.378, (p = .003) subjects who started with music 4.00±10.50(n=7), subjects who started without music 100.44±18.56(n=16) and a difference in final RPE with no music.

Table 1. Change of rate of perceived exertion with music and without music from start of exercise to end of exercise.

	Started with Music	Started Without Music	Independent t-test
Change RPE With Music	4.00±1.91(n=7)	6.63±1.62(n=16)	t(21)=-.378,p=.003

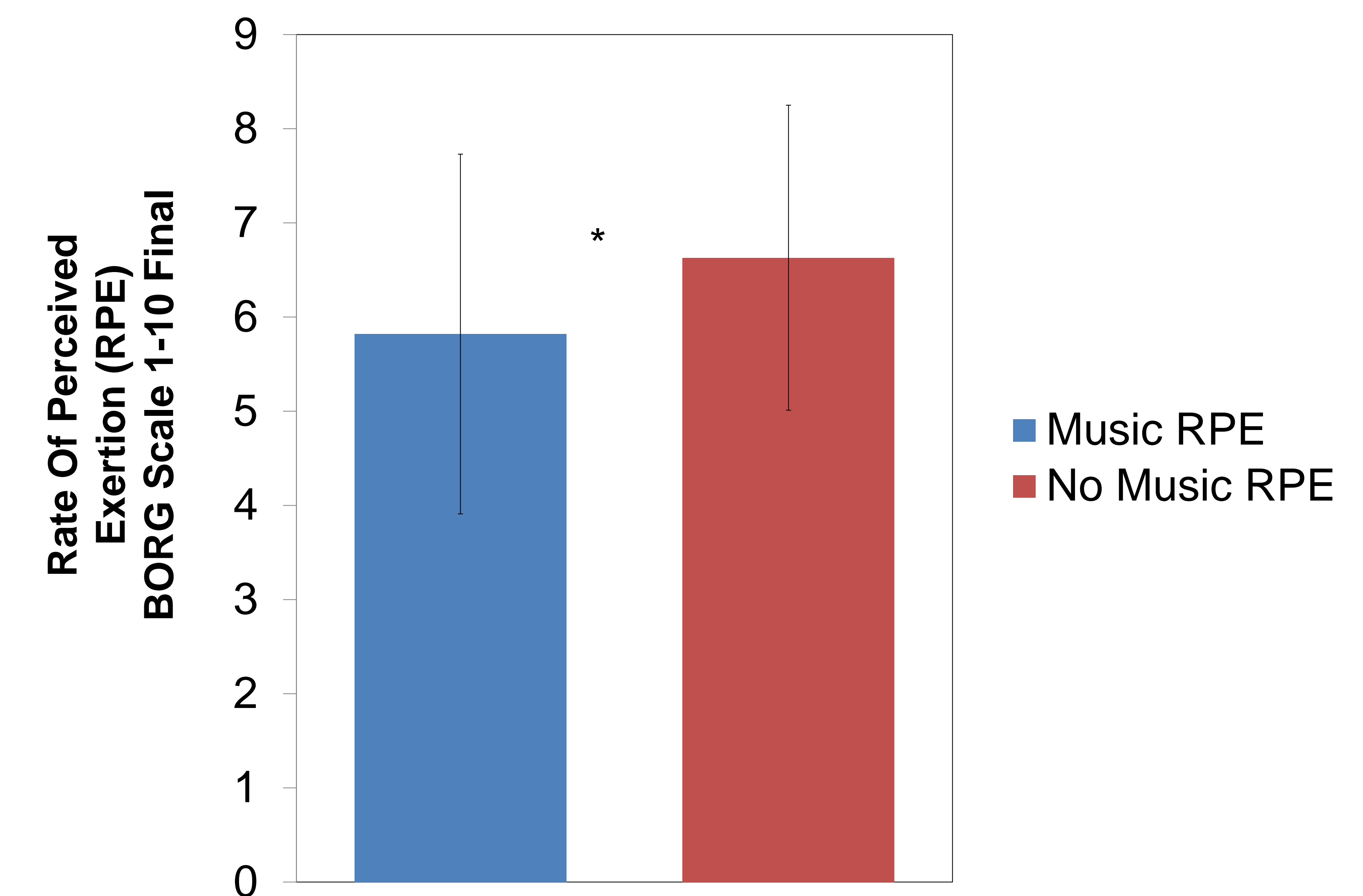


Figure 1. Average change in RPE with music and with no music. * - Change in RPE was significantly lower with subjects that started with music (p < 0.05)

DISCUSSION

The results indicated that music does affect the RPE while performing a Bruce Protocol test on a treadmill. The most significant results showed a difference for subjects who completed their first bout of exercise without the use of music. When the subjects who completed their first bout of exercise came back to do their second bout of exercise and listened to music the RPE was lower. Results from this study indicate future studies might consider a modified Bruce protocol as no one subject completed the entire 20 minute bout.

