Mind Body and the Effects of Music
KINE 3325 – Undergraduate Research Methods – Research Project
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ABSTRACT

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.

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 counterbalance done to rule out order effect.
- 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±1.91(n=7), subjects who started without music 6.63±1.62(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.

<table>
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<tr>
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<th>Started with Music</th>
<th>Started Without Music</th>
<th>Independent t-test</th>
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<tbody>
<tr>
<td>Change RPE With Music</td>
<td>4.00±1.91(n=7)</td>
<td>6.63±1.62(n=16)</td>
<td>t(21)=-.378,p=.003</td>
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| 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.