The Effect of Music Listening on Running Performance of Secondary School Girls

Chia Song Yuan, Sabrina Emil, Sean Yeoh, Toh Lin Sin, Yeo Pei Li

Does listening to music affect running performance of secondary school girls?

In the past music was functionally used as a listening device for travelling in automobiles, while in the homes, while engaged in recreational activities and occasionally at work. Today, the portable music industry (e.g. compact discs, and iPhone/iPod/MP3 digital audio devices) has popularized music “on the go” and invaded just about every environment including training venues. These devices have made it easier for people to enjoy their music and create their own style of workouts with relative ease, regardless of the setting, and has transcended into a multi-million dollar industry (14). Athletes and traditional exercisers alike have used music as an accompaniment to exercise to sustain motivation, resist mental and emotional fatigue, and potentially enhance their physical and athletic performance (10). Scientific inquiry has revealed three key ways in which music can ‘influence’ preparation and competitive performances through dissociation, arousal regulation, and synchronization (3, 4, 6, 8-10). More specifically, research indicates music to be particularly effective in distracting exercisers away from their perceived exertion.

Eighty-one secondary students of an all-girls school in Singapore (age = 12-14 yrs) were studied to determine if running performance could be affected by music. Running performance (RP) was measured by a 1.45km run. Four trial runs, with or without music, were conducted. The first run was deliberately fixed as one with no music while the subsequent 3 runs were dependent on the groups assigned.

Music Listening was defined as plugging a personal digital audio player (MP3 player, any smart phones etc) with a music track while performing the run trial. The music tracks were not prescribed thus participants had the freedom to select a track of their choice to be played during all run trials that required music.
Running performance was determined by the timing taken after a run of distance 1.45km was completed. Participants were asked to complete the distance run in the fastest time possible. Results were recorded in minutes and seconds.

Each trial was measured seven days post the previous trial. Listening to music (music listening) was defined as the subject’s self selection of music tracks and use of a personal digital audio player (e.g. IPod, MP3) during exercise.

**The Bottom Line**

Data analysis was performed on the raw data by utilizing dependent t-tests to calculate and compare paired sample means of all subjects regardless of grouping and independent t-test to calculate and compare unpaired sample means of Groups A and B. Statistical analyses found music listening had an insignificant impact on running performance. In addition, a dependant t-test was carried out for all groups to calculate and compare paired sample means. The findings affirmed the earlier results found. Based on the results of this study it is recommended that secondary schools students need not consider listening to music during runs to enhance performance.

**Implications**

The effects of listening to music on running performance during maximal 1.45km runs were investigated. By comparing the running times of the two situations, no trend can be clearly defined. It is important to note that while all measures were taken to ensure consistency of the trials, the intervals between the trials of every participant could not be standardized between trials and this may have been an additional error source. Conducting the trials with the same group of students on the same day every week could have addressed this problem. Secondly, the participants from each class were divided into 3 groups; some groups with music and some without. As all three groups will complete each running trial together, some of those without music have a natural tendency to follow and keep in pace with those with music. This action may have compromised the internal validity of the study. Conducting the trials separately for those with music and those without would have addressed this problem. Thirdly, the participants may not be running at maximal effect as this aspect was not properly documented. Having the participants indicate their effort level through RPE scale might motivate them to give their best as they suffer no negative consequences if they had chosen to run in sub maximal effort. Fourthly, the distance being tested here may be too short to effect much change
over performance. Increasing the distance to 1.5 mile or 2.4km might see greater effects on running performance in between trials.

References

14. O'Rourke, B.K. Email interview, March 5, 2011.
