

The Psychological and Physiological Effects of Music on Athletic Performance

Baughman, C., Maize, R., Malloy, B., Paulson, S., Zientek, C., Braun, W.A. Shippensburg University, Shippensburg, PA.

cb9674@ship.edu, m1863@ship.edu, bm6909@ship.edu, sapaul@ship.edu, wabrau@ship.edu

Purpose: To examine the psychological and physiological effects of music on running performance.

Methods: Six students from Shippensburg University ($M \pm SD$ age: 20.33 ± 0.82 yrs, weight: 137.77 ± 20.78 lbs, height: 66.58 ± 3.68 in.; BMI: 21.70 ± 2.38) performed a 1.5 mile run under three conditions. The conditions were running without music (control), with music they liked (preferred), and music they did not like (non-preferred). Before and after the run, all subjects completed the shortened Profile of Mood States (POMS) survey. Physiological dependent variables were analyzed using a Repeated Measures ANOVA and the POMS variables were analyzed with a 3x2 ANOVA. **Results:** Time was statistically significant ($p = 0.02$) between conditions. The post-hoc analysis found a significant difference between non-preferred and control ($p < .05$) and preferred and control ($p < .05$). However, there was no difference between non-preferred and preferred music ($p > .05$). The POMS scales were not statistically significant ($p > .05$). **Conclusion:** Subjects performed better when listening to music during the 1.5 mile run. When compared to the control time, subjects ran 7% and 8.5% faster during the non-preferred and preferred running conditions, respectively. However, none of the other physiological or psychological variables were different across conditions. Although the sample size was small, these results suggest music may enhance athletic performance.

Variable	Control	Non-Preferred	Preferred
Heart rate (bpm)	155.67 \pm 11.55	155.66 \pm 20.92	161.33 \pm 12.50
Time (min:sec)	11.55 \pm 2.52*	10.76 \pm 2.23	10.64 \pm 1.84
RPE	12.16 \pm 1.94	11.16 \pm 2.13	11.33 \pm 1.96

*different from Non-Preferred and Preferred