

Effects of Acute Exercise and Socialization on Mood and Cognition

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ABSTRACT

How do social interactions, exercise, or a combination of both affect a person's mood and cognition? Research has shown benefits of aerobic exercise, for example, a recent study showed that group fitness classes decreased perceived stress among a group of medical students. However, it didn't explain if that was because of the socialization that occurs in a group fitness setting or if it was because of the physical activity. **PURPOSE:** The purpose of this study was to compare how aerobic exercise and socialization contribute to acute improvements in mood and cognition. **METHODS:** Participants, recruited from CUNY campuses (n=19), completed a physical activity readiness questionnaire and informed consent. Participants were blinded to the socialization aspect of the study. Prior to study sessions, maximal aerobic capacity was assessed. Participants then completed four randomized session on non-consecutive days to explore the two variables of interest exercise (+/-) and socialization (+/-). Exercise consisted of 30-minutes on a treadmill working at 50% of heart rate reserve (HRR). Socialization included pleasant conversation / small talk. During all sessions, heart rate was monitored throughout. **RESULTS:** The %HRR was significantly higher during exercise sessions ($F=1677.29$, $p<0.01$), and also during social interaction ($F=6.10$, $p=0.02$). Measures of confusion were significantly reduced following exercise ($F=6.23$, $p=0.02$), but no significant effects of socialization were observed ($F=1.105$, $p=0.31$). Exercise approached significance for increases in vigor ($F=4.433$, $p=0.05$), with non-significant effects of socialization ($F=3.130$, $p=0.09$). Furthermore, the percent correct on the Eriksen-Flanker incongruent tasks were significantly improved by socialization ($F=8.132$, $p=0.01$), but not exercise ($F=0.08$, $p=0.78$). No other cognitive effects reached the level of statistical significance ($p>0.05$). **CONCLUSION:** Exercise showed significant effects on confusion and approached significance for vigor, which has been shown previously. However, socialization did not improve these mood parameters. Socialization did have significant effects on focus/attention. The disentanglement of exercise and socialization requires further investigation to understand why mood and cognitive changes are observed.