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The Effects of Essential Oils on Perception of Exertion, Task Pleasantness and Time on Task

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Essential oils have become wildly popular in recent years for their therapeutical and health-related benefits. Research that focuses on essential oils and their ergogenic effects may be helpful in increasing adherence to exercise by making the task more pleasant and/ or less exertive (Basevitch, 2011; Jaradat et al, 2016). **PURPOSE:** The purpose of this study was to test the effects of essential oils on perception of exertion, exercise task pleasantness and total time on task. **METHODS:** Thirty college students (24 females, 6 males) were recruited to perform a handgrip squeezing task. They were randomly assigned to one of three groups: placebo, bergamot essential oil, or peppermint essential oil ($n_{\text{Peppermint}} = 10$, $n_{\text{Placebo}} = 10$, $n_{\text{Bergamot}} = 10$). Adhesive strips with each essential oil were placed under the noses of all participants. Participants in the placebo group had a strip with no essential oil. After establishing participants' baselines for maximal voluntary contraction, participants squeezed a handgrip dynamometer at 30% of their baseline for as long as they could tolerate. Participants' session RPE, perceived exercise-task pleasantness and total grip time were recorded at session completion. **RESULTS:** Results from ANOVA analysis showed no significant group effect for RPE session ($p > .05$). Chi square analyses indicated that participants in the placebo group rated the exercise task most pleasant, ($n=6$, Pleasant). Participants with bergamot essential oil rated the task as mildly pleasant, ($n=5$, Mildly Pleasant). Participants with peppermint essential oil rated the task as least pleasant ($n=6$, Neutral) and these differences were significant ($p < .05$). Due to small size in each group and the skewness of the distribution, group medians were also analyzed as more robust and sensible signs of central tendency. Results indicated that participants with bergamot essential oil squeezed the dynamometer longer durations than others with peppermint essential oil or placebo ($M_{\text{Bergamot}} = 18.07$ minutes; $M_{\text{Placebo}} = 15.31$ minutes; and $M_{\text{Peppermint}} = 12.27$ minutes). **CONCLUSION:** These findings suggest that bergamot essential oil may help optimize exercise-related affects and increase exercise duration. Studies with larger sample sizes are needed to confirm these findings.