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Does the Presence of an External Observer Affect Participant RPE?

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Studies have shown that the presence of an observer can have an impact on participant effort, reported ratings of perceived exertion (RPE), and even resting physiological measures. **PURPOSE**: To investigate the effect of external observers on reported RPE during a bout of cycling. **METHODS**: Thirteen subjects, six recreationally active males (Age: 21.0 ± 0.9 yrs, Height: 177.7 ± 7.2 cm, Mass: 87.6 ± 18.1 kg, Body Fat: 19.0 ± 4.6%, $Workload_{max}$: 220.8 ± 71.4 watts) and seven recreationally active females (Age: 20.4 ± 1.5 yrs, Height: 164.2 ± 5.4 cm, Mass: 70.1 ± 7.8 kg, Body Fat: 30.5 ± 7.3%, $Workload_{max}$: 160.7 ± 24.4 watts) participated in the study. The first visit consisted of a body composition assessment and a maximal workload test on the cycle ergometer. On three more visits, subjects were asked to complete a 5-minute warmup on a cycle ergometer, followed by a 20-minute bout at a constant workload equal to 70% of their maximum workload. In each visit, subjects were exposed to a different observer condition: no external observer (C), a female observer (F), and a male observer (M). Testing order was determined by counterbalanced assignment. Overall RPE (RPE-O), peripheral RPE (RPE-P), and heart rate (HR) were assessed every minute. Blood lactate was assessed pre- and post-exercise. Delta-lactate was calculated as the difference between the pre- and post-lactate measures. Repeated measures ANOVAs were used to compare the different observer conditions. **RESULTS**: Average RPE-O (C: 14.6 ± 2.0, M: 14.0 ± 2.1, F: 13.9 ± 2.8; p = .279), peak RPE-O (C: 17.1 ± 2.1, M: 16.6 ± 2.2, F: 16.7 ± 2.8; p = .620), average RPE-P (C: 15.4 ± 2.1, M: 14.6 ± 2.1, F: 14.5 ± 2.6; p = .104), and peak RPE-P (C: 17.7 ± 2.0, M: 17.3 ± 2.1, F: 17.3 ± 2.6; p = .592) were not significantly different across conditions. In addition, no significant differences were observed for average HR (C: 162.9 ± 12.4, M: 161.1 ± 14.8, F: 161.9 ± 14.0 bpm; p = .751), delta-lactate (C: 4.4 ± 2.1, M: 3.2 ± 3.1, F: 4.2 ± 2.0 $mmol \cdot L^{-1}$; p = .195), or post-lactate (C: 5.5 ± 2.2, M: 5.0 ± 2.3, F: 5.6 ± 1.9 $mmol \cdot L^{-1}$; p = .558). **CONCLUSION**: The presence of an external observer during the exercise bout did not influence participant reported RPE. **SIGNIFICANCE**: RPE is a commonly used tool to assess and prescribe exercise intensity but has been shown to be influenced by a variety of external factors. The influence of observers on RPE has been reported more during low and moderate-intensity exercise as opposed to high-intensity. This study demonstrates that in this population of college-aged students, during a submaximal exercise bout of 70% of their maximal workload, no observer effect was seen, regardless of the sex of the observer.