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Exercise Intensity: Do Individuals Perceive It as We Physiologically Define It?

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The American College of Sports Medicine (ACSM) defines exercise intensities using physiological measures (%VO₂max, %VO₂R, %HRmax, %HRR). Currently, there are no studies examining if individuals perceive the exercise intensity as it is defined by the physiological ranges. **PURPOSE:** To determine if individuals perceive aerobic exercise intensities as defined by %VO₂max. **METHODS:** Thirty-three subjects (16 males, 17 females) aged 27.6 ± 10.6 years, BMI 24.8 ± 2.9 kg·m⁻², and VO₂max 43.5 ± 7.3 mL·kg⁻¹·min⁻¹ participated in this study. Subjects completed a Bruce treadmill protocol to maximal exertion while rating the intensity at the end of each stage using a Perceived Intensity (PI) scale. The scale reads: Very Light, Light, Moderate, Vigorous, Near Maximal, and Maximal. Subjects were given standard instructions on how to use the scale during the test. Actual Intensity (AI) was determined using %VO₂max attained at the end of each stage. PI rated at the end of each stage was compared against the AI. Near Maximal and Maximal were combined into one category (Near Max/Max) for statistical analyses. **RESULTS:** Correlation analyses showed a strong relationship ($r = 0.918$, $p < 0.001$) between PI responses and %VO₂max. Contingency tables showed PI ratings that matched AI were 73.3%, 50.0%, 34.5%, 37.1%, and 78.6% at Very Light, Light, Moderate, Vigorous, and Near Max/Max intensities, respectively. At Moderate intensities, 10.3% and 55.2% of PI ratings were Very Light and Light, respectively. At Vigorous intensities, 11.4% and 48.6% of PI ratings were Light and Moderate, respectively. Cohen's Kappa (K) revealed a moderate agreement between PI and AI ($K = 0.447$, $p < 0.001$). **CONCLUSION:** Current physical activity recommendations state that adults should participate in moderate and vigorous intensity activities for several health-related benefits. Despite having a strong relationship with %VO₂max, the majority of subjects under-rated moderate and vigorous intensities as they are defined by %VO₂max. The agreement observed suggests that further subjective definitions of intensity and practice may be needed to match perceptions with physiological measures. Therefore, individuals may need additional familiarization with intensity definitions if they are going to use perceptual measures to regulate intensity as defined by the ACSM.