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Influence Of Exercise Experience On Perception Of Prescribed And Preferred Exercise Intensity

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PURPOSE: Perception plays a key role in self-regulation of exercise intensity. This study compared the perception of prescribed and preferred exercise intensities between active (AA) and inactive young adults (IA).

METHODS: Fifty young active (n = 25) and inactive (n = 25) adults (age: 24.24 ± 3.19 years, height: 165.46 ± 8.13 cm, weight: 59.21 ± 9.65 kg, body mass index: 21.54 ± 2.41 kg/m^2) performed treadmill exercises on two separate occasions. In the first session, maximal oxygen uptake (VO_{2max}) was determined using the Bruce protocol. In the second session, participants performed two self-paced treadmill exercises. They exercised at a preferred intensity level for 10 minutes, followed by a 15-min prescribed intensity exercise at three different perceived intensity levels (in the order of perceived light, moderate and vigorous intensities, 5-min each). Measurements of oxygen uptake, heart rate (HR), mental effort, physical exertion, and affect were recorded every minute during the self-paced treadmill exercises.

RESULTS: IA (83.81 ± 11.86 %VO_{2max}) perceived vigorous intensity exercise at significantly higher %VO_{2max} as compared to AA (74.98 ± 9.68 %VO_{2max}), p = 0.006. No significant difference was found between both groups based on percentage maximum HR. IA perceived greater mental effort for moderate (IA: 2.44 ± 0.66 vs. AA: 2.01 ± 0.57, p = 0.016) and vigorous intensity (IA: 4.31 ± 0.78 vs. AA: 3.80 ± 0.80, p = 0.027) exercises. IA also significantly perceived greater physical exertion for light (IA:1.26 ± 0.35 vs. AA:0.98 ± 0.46, p = 0.018), moderate (IA: 3.23 ± 0.80 vs. AA: 2.66 ± 0.77, p = 0.012), and vigorous intensity (IA: 5.86 ± 0.94 vs. AA: 5.31 ± 0.83, p = 0.035) exercises. No significant difference was found in affective responses between the two groups. Although preferred exercise intensity was found to be similar between both groups based on physiological responses, IA perceived significantly greater mental effort (IA: 2.45 ± 0.75 vs. AA: 1.97 ± 0.79, p = 0.032) and physical exertion (IA: 3.30 ± 1.19 vs. AA: 2.68 ± 0.94, p = 0.045).

CONCLUSIONS: Exercise experience influences the perception of prescribed and preferred exercise intensity. Similar physiological responses could be perceived differently among individuals of different physical activity levels.

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