Relationship Between Repetitions Completed and Rating Of Perceived Exertion in Resistance Exercise Sets to Failure: Effect of Gender and Exercise

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INTRODUCTION

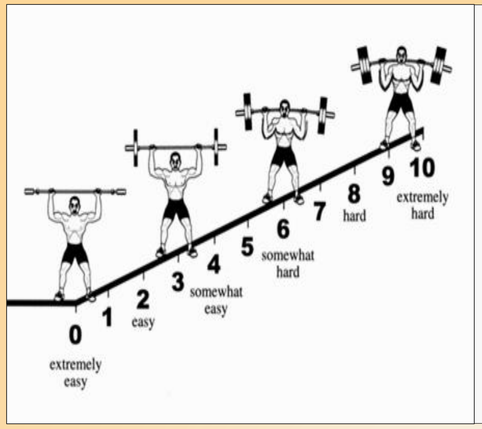
- Rating of perceived exertion (RPE) is a common assessment following a set of resistance exercise; however, RPE during resistance exercise sets to failure has been primarily studied in men.
- Gender and type of resistance exercise may have an influence on the relationship between RPE and repetitions completed.

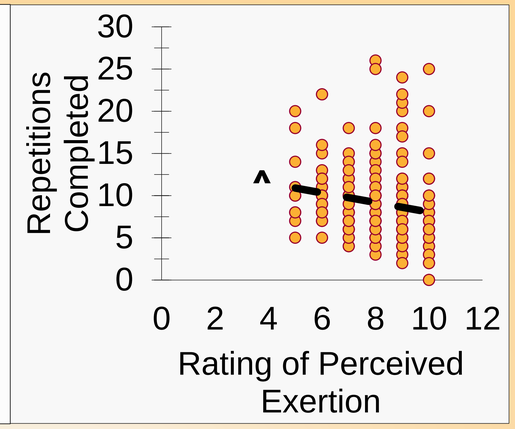
PURPOSE

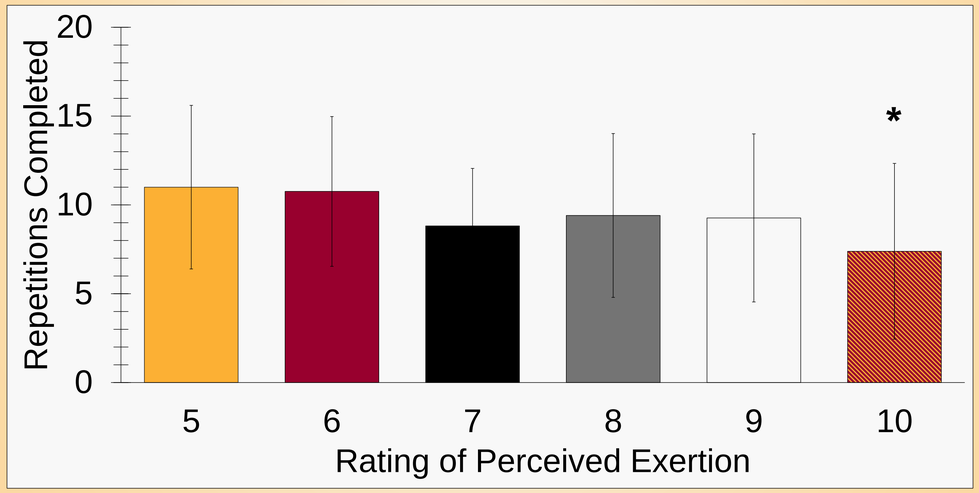
- To determine the relationship between repetitions completed and the reported rating of perceived exertion during a resistance exercise set to failure.
- Secondly, to investigate the effect of gender and exercise on this relationship.

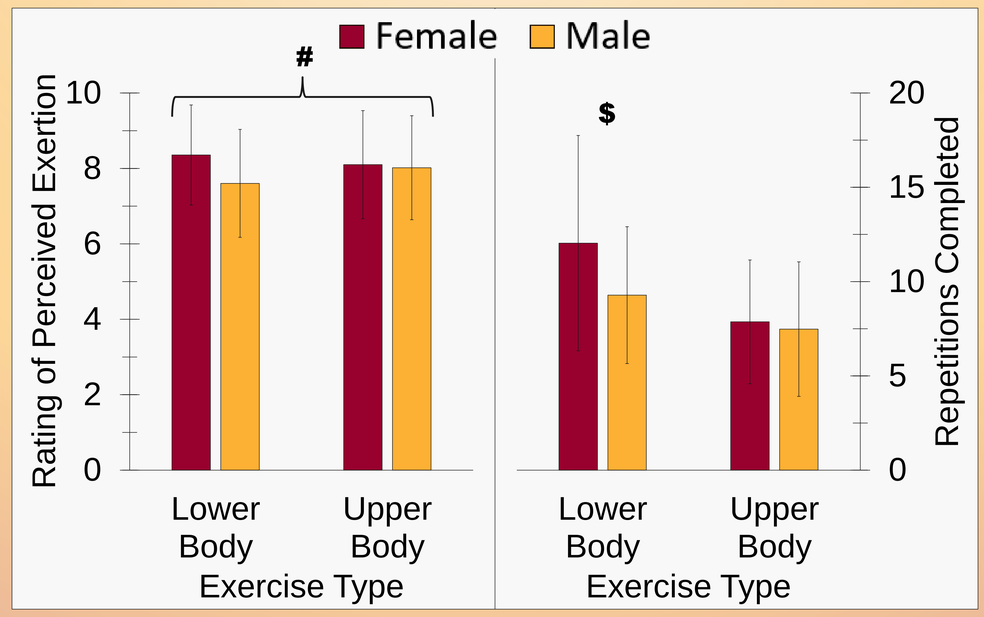
METHODS

- 10 subjects completed two separate full-body resistance exercise workouts consisting of back squat, bench press, trap bar deadlift, and bent over rows.
- Exercises were completed for three sets to failure at 75% of 1RM.
- Rating of perceived exertion (RPE) was assessed after each set using the OMNI scale (0-10) for resistance exercise.
- Spearman rho correlations between repetitions and RPE were determined.
- One way ANOVA to compare the repetitions per set between each reported RPE (5-10).
- Gender×exercise ANOVAs were conducted on repetitions completed and RPE.









RESULTS

- Spearman's rho revealed a significant negative correlation between repetitions completed and RPE (ρ=-0.235, p<0.001)^.
- ANOVA revealed a significant difference (p=0.05) in repetitions completed between sets with different RPE. Sets with an RPE of 6 resulted in significantly (p=0.05) more repetitions than sets with an RPE of 10*.
- ANOVA revealed a main effect of gender for RPE (p=0.03). Post hoc tests revealed greater RPE for females (8.37±1.25 AU) when compared to males (7.98±1.26 AU)#.
- ANOVA revealed a significant interaction for repetitions completed (p=0.04). Post hoc tests revealed females completed more repetitions per set than males for lower body exercises (p=0.004)$.

PRACTICAL APPLICATIONS

- RPE negatively correlates to the number of repetitions completed. RPE may be more indicative of an individual's fatigue rather than the amount of work.
- Females seem to complete more repetitions and report a greater RPE than males during lower body sets to failure.
- Practitioners should be aware of how individuals interpret RPE scales when using them to gauge exercise intensity.

National Strength and Conditioning Association National Conference
Baltimore, MD – July 10-13, 2024

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