Ergonomics in the Perception of Hand Exertion for Females

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Abstract

Borg's CR-10 scales are commonly used to quantify perceived muscular exertion for body segments. Twenty female subjects were recruited in the study the power grip force at four perceived exertion levels using either dominant or non-dominant hand under two posture conditions. It was found that the subjects tended to apply a higher power grip force (%MVC) than they needed. The grip forces between the two hands were significantly different when the exertion level was nearly maximal. Linear regression models were established for the subjects to describe the relationship between the perceived hand exertion and measured grip force, and used, and hand/arm posture. All the models were statistically significant ($p<0.0001$) with R2 values 0.97 or higher.

Keyword：hand exertion; power grip; female subject; perception