

# Guided Grip Force of the Dominant hand for male subjects

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## Abstract

Subjective rating has been adopted in quantifying the physical exertion in industrial works. In this study, an experiment was conducted to measure the grip force of twenty male subjects under guided gripping scenario. The subjects were requested to apply a power grip force with one of the four exertion level toward their maximum voluntary contraction (MVC) using their dominant hands. The analysis of variance was conducted to test the variations of the grip forces among different level of force exertion. The results were statistically significant. A linear regression model was established to describe the relationship between the gripping force and the perceived hand exertion. This model was statistically significant.

The Pearson correlation coefficient between the grip force and the rating of the CR10 scale was 0.95. The results of this study showed that the guided grip force of the dominant hand of the male subjects had linear relationship with the ratings of CR10 scale. Therefore, the CR10 scale is appropriate as a quantitative measure of perceived hand grip exertion of the dominant hand for males.

Keyword : grip force, hand exertion, perception, Borg