

Comparison level of handgrip strength, finger grip strength and anthropometric measurement among artificial wall athletes

ABSTRACT

Purpose: Sport climbing came about in 1980 as a means of physical and technical training for high performance mountain climbers and it became popular as a competitive and recreational sport activities. The aim of this study were to compare the level of handgrip strength in male athletes between three different categories of climbing (boulder, lead, and speed) during indoor wall climbing competition. Grip strength refers to the ability of the fingers and hand to generate muscle power and force (Chang, Chou, Lin, Lin, & Wang, 2010).

Methodology: Ex-post facto because the characteristics tested on the subjects occur naturally and cannot be manipulated. Participants were 123 males (boulders; 41, lead; 41, speed; 41) whose average age is 22.46 ± 4 years. All of them are students of a university in Malaysia. The handgrip strength was measured statically using a hand dynamometer (handgrip). Descriptive statistics was used to compare the different of handgrip strength in three categories. Data from both strength tests were compared for the three categories of climbing using ANOVA.

Result: Descriptive data for boulder ($M=102.646$; $SD=14.71$), lead ($M=92.42$; $SD=15.88$), and speed ($M=88.13$; $SD=16.43$) were determined. The findings showed significant differences in handgrip strength score in three categories of climbing [$F(2,120) = 9.26$, $p=0.000$]. Data analysis by using post hoc turkey test showed significance difference between boulder and lead ($p<0.01$), and boulder and speed ($p=0.000$).

Finding and discussion: Conclusion from this study boulder climber are stronger the lead climbers in handgrip strength.

Keyword: Handgrip Strength; Boulder; Lead; Speed