# UNIVERSITI TEKNOLOGI MARA

# RELATIONSHIP BETWEEN HANDGRIP STRENGTH ON MUSCULAR STRENGTH AND POWER AMONG RACQUET SPORT ATHLETES

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## AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA (UiTM). It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This dissertation has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Postgraduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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# ABSTRACT

Handgrip strength has been popularly used to predict overall body strength in the general and athletic populations. The purposes of this study were to compare handgrip strength between both hands (dominant and non-dominant hand) as well as selected arm position (flexion and extension). This study was also explores the relationship between handgrip strength on muscular strength and power among racquet sport athletes. Ninety male racquet athletes aged 18 to 26 years old from Public Institutes of Higher Learning (IPTA) in Klang Valley area was participated in this study (tennis=30, badminton=30, and squash=30). Result of this study revealed that there was a significant difference between dominant and non-dominant hand in handgrip strength among all three racquet sport athletes ($p<0.05$). The tennis athletes recorded the highest handgrip strength score for both the dominant and non-dominant hand. A significant difference was also reported between extension and flexion arm position among racquet sport athletes ($p<0.05$) except for badminton athletes ($p>0.05$). The tennis and squash athletes showed more superior handgrip strength score in the extension arm position. However, the badminton athletes showed superior handgrip strength score in the flexion arm position. Moderate linear correlation was recorded between handgrip strength with upper body strength among all the three racquet sport athletes, with ($r = 0.374 – 0.529$). Result of the study also showed the significant correlation was recorded between handgrip strength with lower body strength and handgrip strength with lower body power among three racquet sport athletes. The badminton athletes showed highest correlation among the three racquet sport athletes ($r = 0.543$; $r = 0.604$). However, lower body strength with lower body power stated that almost negligible relationship among three racquet sport athletes. Based upon the findings of this study, handgrip strength can be used as a predictor for upper body strength, lower body strength and lower body power among racquet sport athletes.

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