

Impact of Hamstring to Quadriceps Strength Ratio (HQR) on Agility and Sprint Speed of Under-17 Male School Cricket Players in Kandy

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Hamstring and quadriceps muscles which maintain the dynamic stability of knee joint are important for the enhancement of agility and sprint speed; two main physical fitness characteristics which are important for the cricket players' performance. The aim of the study was to assess the impact of hamstring to quadriceps strength ratio (HQR), hamstring and quadriceps muscle strength, player role and fielding position on agility and sprint speed of under 17 male school cricket players in Kandy. A cross sectional study comprising of 68 male school cricket players was selected through convenience sampling from 6 schools around Kandy city. Height, weight, BMI, muscle strengths of quadriceps and hamstring (handheld dynamometry), HQR, leg dominance (standard kick a ball test), agility (T drill agility test) and sprint speed (10-30 meter sprint test) were determined. Demographic data of medical history, playing role and position were obtained using a pre-tested questionnaire. Pearson correlation, two sample t-test and ANOVA test were used to assess the correlation between variables and significance. Data was analyzed using Minitab 17 statistical software. The mean age and BMI were 15.01±1.07 years and 18.1±1.84 respectively. Out of 68 cricketers, 52.9% were batsmen while 47.1% were bowlers. There was no significant impact of HQR of dominant leg on agility (p=0.903) and sprint speed (p=0.206) and HQR didn't vary with leg dominance (p=0.353). There was a weak negative correlation only between quadriceps strength and sprint speed (p=0.025). Sprint speed varied with both playing role (p=0.005) and fielding position (p=0.043) while agility varied according to the playing role only (p=0.034). This study showed that HQR did not have an impact on the agility and sprint speed of the cricketers. Sprint time varied according to playing role, fielding position and quadriceps strength while agility varied according to playing role.

Keywords: HQR, Agility, Sprint speed, Playing role, Fielding position