ABSTRACT

TITLE:	The Effect of Gender and Age on Hamstrings to Quadriceps Ratios and Core Strength Among Youth Soccer Players
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ABSTRACT: Muscle strength has been defined as the capacity of a muscle to produce the tension necessary to maintain posture, as well as the initiation and control of movement. The hamstring to quadriceps strength ratio is important in injury prevention, and there has been controversy about the appropriate ratio to use. It has been documented that the quadriceps are greater in strength than the hamstrings although there is no particular ratio that is appropriate for all categories of people in a population. The purpose of this study was to determine the effect of gender and age on the strength ratios of hamstring to quadriceps muscles in youth soccer athletes. The correlation of the muscle ratios and core strength was also assessed. The participants were volunteers from Durango Youth Soccer Association who varied in age from 10 to 18 year olds. There were 19 girls and 22 boys who participated. It was assumed that the athletes ages 13 and younger were prepubescent (M=11.64, +SD=0.19) and the athletes aged 14-18 were post pubescent (M=14.88, + SD=0.38). Subjects performed a series of leg exercises along with core strength testing at a designated soccer practice. The testing procedure was made up of two dynamic strength tests including hamstring leg curls and leg extensions where the subjects performed maximum repetitions at an individually determined weight. The number of repetitions performed was used to predict the one repetition maximum for each exercise. Core strength was also assessed. The results were analyzed using a Two-Way ANOVA. The Tukey's Post Hoc Analysis indicated that there was a significant difference between pre and post pubescent groups and between genders. The results also indicate that there was a low correlation between the ratios and core strength. The data showed the H/Q ratio means were greatest before puberty in girls and after puberty in boys, even though puberty was not assessed. These results demonstrate that there is a relationship between age, gender, and H/Q ratios in adolescent athletes.