

The correlation of hamstring to quadricep ratio and injuries in BMCU collegiate athletes

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This study examined the correlation between hamstring-to-quadriceps strength imbalances and the incidence of knee injuries among Blue Mountain Christian University athletes. Forty participants, from tennis, soccer, and basketball were pre-tested and post-tested on hamstring and quadriceps strength and asked how many injuries they sustained over the last two years. A correlation coefficient indicated a weak correlation between the hamstring-to-quadriceps ratio and the incidence of injuries. The ratio was obtained by dividing the participant's maximum hamstring by the participant's maximum quadriceps assessment. The intent was to determine whether a disproportionate strength ratio may have compromised joint stability, increasing susceptibility to injuries such as ACL (anterior cruciate ligament) tears or other knee dysfunctions. This research focused on identifying if imbalances in these muscle groups directly influence the biomechanical stress placed on the knee joint during athletic performance. Findings suggested that, while there was a slight positive relationship between the two variables, the relationship was not significant. Further examination of the ratio of hamstring-to-quadricep ratios and their correlation to sustained injuries may help inform targeted strength training interventions designed to limit the risk of injury and optimize performance.