Effect of quadriceps angle on static and dynamic balance in young adults: a correlational study

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Abstract

Lower extremity injuries are commonly due to impaired balance. [(1)] The best way to assess lower extremity alignment is the Quadriceps angle (QA), it is the important variable and

because it represents quadriceps muscles vector direction in frontal plane. The purpose of this study is to find a relation between quadriceps angle and balance measures. [2]

A Convenience sample of 100 young adults was recruited between 22-35 years of age. Subjects with previous injury to lower limb in past one year, who have complained of pain like patellar bursitis, anterior knee pain, and patellar chondromalacia, osteoarthritis of knee and hip, Achilles tendinitis were excluded.[3,4] This Observational analytical study consists of stork and y-balance test for assessing static and dynamic balance respectively and data was analysed using the statistical package SPSS 22.0 (SPSS Inc., Chicago, IL) at $p<0.05$. Descriptive statistics to assess mean and standard deviation, Shapiro Wilkinson test for normality and Pearson's Correlation test for inferential statistics.

The research suggests that there is a weak negative correlation present between Q angle and Static balance. Moderately negative correlation was observed between Q angle and Dynamic balance.

In this study, Q angle and static and dynamic balance moderately correlated and was found that quadriceps angle play important role in predicting injuries of lower extremity. This makes it an important diagnostic tool during assessment of an individual, especially those who are interested in sports as it shows the risk of injury.

KEYWORDS: Y balance test, stork test, knee joint, quadriceps strength, balance

Figure 1 Markings on the knee joint for measuring Q Angle

Figure 2 Stork Test

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