

Kinesiophobia Does Not Influence the Rate of Torque Development and Hop Distance in Individuals with Anterior Cruciate Ligament Reconstruction in Controlled Environments

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Kinesiophobia, the fear of physical movement, is a prevalent occurrence in individuals who have recently sustained an injury. Prior research shows that kinesiophobia tends to increase the reaction time to perform a task. Additional research has demonstrated that the rate of torque development (RTD) of the knee is diminished in individuals who have undergone recent Anterior Cruciate Ligament Reconstruction (ACLR). RTD has been determined as a biomechanical indicator of strength performance. Thus, the purpose of this study is to analyze whether RTD and unplanned hop distance values correlate to the participant's TSK-11 score at 9-months post-ACLR. 17 participants that had undergone ACLR, utilizing a hamstring, patellar, or quadriceps tendon graft, completed unplanned crossover drop jump (UXDJ) tasks. The distance that the participant hopped was measured for each trial. Both the ACLR and contralateral limb were assessed. Then, participants underwent quadriceps strength testing. Torque data was collected using a multimode dynamometer, from which RTD values were calculated. Following the correlation analysis of the data, the results were found to be insignificant and fail to reject the null hypothesis that RTD and unplanned hop distance values are correlated to TSK-11 scores in ACLR patients. The lack of environmental stressors in this study point to kinesiophobia prevailing more in a contextual sense rather than in a controlled environment that is different from where the injury was sustained. While the change of direction hopping tasks were unplanned, the clinical setting does not perfectly mimic the environment in which the injury occurred.