Original Paper

Comparsion of peak vertical ground reaction forces and the rate of loading during single leg drop landing between men with genu varum deformity and normal knee from different heights

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Abstract

Background and Objective: There are relations between rate of loading, osteoarthritis and genu varum result in osteoarthritis. This study was done to compare the peak vertical ground reaction forces and the rate of loading during single leg drop landing between men with genu varum deformity and normal knee from three heights.

Methods: This quasi-experimental studywas carried out on 20 male students with genu varum deformity and 20 male students with normal knee. Genu varum deformity was measured and recorded by collis and goniometer. Subjects performed single-leg landing dropping from three heights (20, 40, 60 Centimeter) on a force platform.

Results: The peak vertical ground reaction force in calcaneus contact and the rate of loading between groups significantly were different ($P<0.05$). No significant difference was found in the peak vertical ground reaction during toe contact.

Conclusion: Frontal knee angle affect on loading rate. Maybe one of the reasons for higher injury risk and knee arthritis in genu varum population might be due to higher ground reaction forces and the rate of high loading.

Keywords: Peak vertical ground reaction forces, Rate of loading, Leg drop landing, Genu varum

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