

Original Paper

Effect of Iliopsoas muscle tightness with active motion on extensor-flexor muscle strength of femor and thoracolumbar curves in adolescent soccer player

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Abstract

Background and Objective: Stiffness and restricted range of movement (ROM) affect muscle balance and body alignment. The purpose of this research is the study the relationship between Iliopsoas tightness and hip active range of motion, extensor-flexor muscle strength and thoracolumbar curves.

Methods: This case-control study was carried out on 15 adolescent's male soccer players with short length of Iliopsoas muscle as case group and 15 healthy adolescents with matched based on age, height, weight, BMI, dominant leg and sport experience as control group. The range of motion was measured with universal goniometer, kyphosis and lordosis with flexible ruler and muscle strength with manual dynamometer.

Results: The range of motion of the hip extension and the strength of the Iliopsoas muscle in the case group were statistically lower than the control group ($P < 0.05$). The rate of lumbar lordosis and the ratio of gluteus maximus to the strength of the Iliopsoas muscle in the case group were significantly higher than the control group ($P < 0.05$). There was no statistically significant difference between the range of motion of hip flexion, dyspnea kyphosis, and gluteus maximus muscle strength in the studied groups.

Conclusion: Adolescents with Iliopsoas tightness have limited hip extension and greater lumbar lordosis and weaker Iliopsoas strength in comparison to healthy counterparts.

Keywords: Adolescent soccer player, Iliopsoas tightness, Hip, Motion, Muscle strength, Lordosis, Kyphosis

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