



The effect of pull ups variation on strengthening thoracic spinal extensor muscles and improving the performance of CrossFit athletes with hyper kyphosis

Poster Presentation

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Abstract

Introduction: Hyper kyphosis is a musculoskeletal disorder that results in postural changes and deformities such as forward head and round shoulder. This disorder is common in most people in the community and can be caused by overuse of technology, routine poor posture, and weakness of the trunk extensor muscles, and weakness of the trunk extensor muscles. The aim of this study was to evaluate the effect of eight weeks of exercising three different types of pull ups techniques which are the main movements of CrossFit: butterfly pull ups, kipping pull ups, strict pull ups. It reduces the kyphosis angle by strengthening the wider muscles of the thoracic spine extensor and improving the performance of CrossFit athletes.

Methods: The minimum number of samples was determined using G power software, 20 people (12 men and 8 female) with an average age of 30 years, range (20-40). They were randomly divided into two groups of control (10) and intervention (10). The intervention group received exercises for 8 weeks, three sessions per week for one hour. While the control group did not receive any intervention during this period. The kyphosis angle of the participants was measured using kyphometer at pre-test and post-test and the data were analyzed by SPSS software.

Results: The results of study showed that the experimental group showed a significant improvement and a significant correlation between the kyphosis angle and the strength of the trunk extensor muscles and the improvement of the athlete's performance.

Conclusion: Previous research has reported the positive effect of strengthening back muscles in reducing the angle of kyphosis. 8 weeks of exercising pull ups variation techniques can be effective in reducing the angle of kyphosis, strengthening the extensor muscles of the spine and improving performance. It can be recommended to specialists and trainers as a treatment method.

Keywords

Pull ups variation; hyper kyphosis; thoracic spinal extensor muscles; CrossFit

Reference:

- 1.(Seidi, Foad et al. 'The Efficiency of Corrective Exercise Interventions on Thoracic Hyper-kyphosis Angle'. 1 Jan. 2014 : 7 – 16.)
2. (<https://doi.org/10.36905/jses.2021.02.08>) (A comparison of muscle activity between strict, kipping and butterfly pull-ups)
3. (Study of Hyperkyphosis, Exercise and Function (SHEAF) Protocol of a Randomized Controlled Trial of Multimodal Spine-Strengthening Exercise in Older Adults With Hyperkyphosis)

