

The Effect of Tai Chi Exercises on Postural Stability and Control in Older Patients with Knee Osteoarthritis

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Abstract : Purpose: A few studies have examined the effect of Tai Chi on balance in elderly patients with knee osteoarthritis (OA). The aim of this study was to determine the balance measures in elderly patients with knee OA after Tai Chi exercises. For this purpose, 14 females and 6 males with knee OA were chosen. The area and mean velocity of the center of pressure movements (CoP) were measured by force plate in standing positions (on foam and rigid surfaces). The measurements of area and mean velocity of CoP were performed before and after 60 min of Tai Chi sessions (twice a week for 8 weeks). Results: The results showed that the area of CoP in a standing position on a rigid surface was significantly decreased ($P < 0.01$) after Tai Chi exercises. Furthermore, the mean velocity of CoP was significantly decreased after Tai Chi exercises on both rigid and foam surfaces ($P < 0.001$). Our study also indicated that changes in surfaces (rigid and foam) would cause significant differences regarding the area of CoP in standing positions. However, similar findings were not found regarding the mean velocity of CoP. Considering the effects of Tai Chi on the mean velocity of CoP, it might be concluded that motor control and Postural stability improvements have occurred. Conclusions: Therefore, based on these results, Tai Chi exercises could be recommended for elderly patients with knee OA as part of their rehabilitation and physical therapy protocols.

Keywords : Tai Chi, balance, knee osteoarthritis, elderly patients, different surfaces

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