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The Effect of Compound Exercises Emphasizing Local and Global Stability on the Dynamic Balance in Elite Taekwondo Athletes

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Abstract : Few studies have been conducted about the effects of compound exercises emphasizing local stability and global stabilization subsystems on the performance of athletes. The present research aimed to study the effect of 6 weeks of compound exercises emphasizing local and global stability on the dynamic balance of elite male Taekwondo athletes. Twenty-seven elite male Taekwondo athletes (with a mean age, mass, and height of 24.4 ± 4.9 years, 75.7 ± 15.1kg, and 181.4 ± 7.8 cm, respectively) were assigned to two groups of control (n=12) and exercise (n=15). 6 weeks of compound exercises in 2 local and global phases. The first phase included activation exercises which were done separately and locally for 3 weeks. Then, integrative exercises specific to the global stabilization subsystems (longitudinal-depth, posterior oblique and anterior, and lateral) was carried out for next 3 weeks. The dynamic balance of subjects was measured in the pre-test and post-test using the Y Balance Test (YBT). After 6 weeks of compound exercises, scores of the YBT in the exercise group showed a significant improvement in all three anterior ($p=0.035$), posterolateral ($p=0.017$) and medial ($p=0.001$) directions in the post-test compared to the control group ($p \leq 0.05$ for all comparisons). The findings of the present study suggested that compound exercises focusing on muscle as separate units and then as interdependent chains (muscular subsystems) can significantly increase YBT on elite male Taekwondo athletes in all three directions.

Keywords : Taekwondo, compound exercises, local and global stability, muscular subsystems
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