

Effect of Plyometric Training Volume to Develop the Explosive Power on Horizontal Jump Athletes

S.V. Mark*, S. Othalawa, and L. Sharmilan

Department of Sports Sciences and Physical Education, Faculty of Applied Sciences,
Sabaragamuwa University of Sri Lanka, Belihuloya, Sri Lanka.

*venilaanveni2@gmail.com

Jumpers must possess a combination of speed and strength as well as a high level of explosive power due to the high-intensity effort of the event. The aim of this study was to evaluate the effect of plyometric training (PT) volume (Low Volume vs High Volume) to develop the explosive power on horizontal jumpers (Long and Triple jump). Twenty male horizontal jumpers were randomly divided into four treatment groups: LJLV- (n=5), LJHV- (n= 5), and TJLV- (n=5), TLHV- (n=5) with age (18.5 ± 2 years), height (178 ± 3 cm), and bodyweight (64 ± 5 kg). All treatment groups underwent 3 days per week of plyometric training (PT) intervention for a duration of 6 weeks, the volumes were ranging from low to high. The jumping height, flight time, force, and velocity were assessed at the intervals of week number two, four, and six using the MY JUMP 2 (v. 2.2.3) mobile app, and the results were analyzed using a two-way mixed ANOVA with repeated measures. The mean differences were detected from the Bonferroni post hoc (BPH) test. Significant differences ($p < 0.05$) were revealed between the groups at each time for all variables, and the main effect of group was significantly different ($p < 0.05$) within-group for all variables, and according to the BPH, a significant difference ($p < 0.05$) exists between the LJHV - TJHV, and LJLV - TJHV. A non-significant difference ($p > 0.05$) was observed between the LJHV - LJLV, TJHV - TJLV, but the mean differentiation LJHV (2.3), and TJHV (5.9) were improved. The main effect of time significant difference, furthermore BPH significant difference ($p < 0.05$) between the test at each time for all variable. Except LJLV non-significant difference ($p > 0.05$). It can be concluded that the high volume PT more efficiently improved the explosive power when compared to the other volume groups of PT.

Keywords: Explosive Power, Muscular Adaptation, Plyometric, Horizontal Jump, Training Volume