

Effects of Plyometric Exercises on Agility, Power and Speed Improvement of U-17 Female Sprinters in Case of Burayu Athletics Project, Oromia, Ethiopia

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Abstract : The purpose of this study was to examine the effects of plyometric exercises on agility, power, and speed and improvement of U-17 female sprinters in the case of the Burayu Athletics project. The true experimental research design was employed for conducting this study. The total populations of the study were 14 U-17 female sprinters from Burayu athletics project. The populations were small in numbers; therefore, the researcher took all as a sample by using comprehensive sampling techniques. These subjects were classified into the Experimental group (N=7) and the Control group (N=7) by using simple random sampling techniques. The Experimental group participated in plyometric training for 8 weeks, 3 days per week and 60 minutes duration per day in addition to their regular training. But, the control groups were following their only regular training program. The variables selected for the purpose of this study were agility, power and speed. The tests were the Illinois agility test, standing long jump test, and 30m sprint test, respectively. Both groups were tested before (pre-test) and after (post-test) 8 weeks of plyometric training. For data analysis, the researcher used SPSS version 26.0 software. The collected data was analyzed using a paired sample t-test to observe the difference between the pre-test and post-test results of the plyometric exercises of the study. The significant level of $p < 0.05$ was considered. The result of the study shows that after 8 weeks of plyometric training, significant improvements were found in Agility (MD=0.45, $p < 0.05$), power (MD=-1.157, $P < 0.05$) and speed (MD=0.37, $P < 0.05$) for experimental group subjects. On the other hand, there was no significant change ($P > 0.05$) in those variables in the control groups. Finally, the findings of the study showed that eight (8) weeks of plyometric exercises had a positive effect on agility, power and speed improvement of female sprinters. Therefore, Athletics coaches and athletes are highly recommended to include plyometric exercise in their training program.

Keywords : plyometric exercise, speed power, agility, female sprinter

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