

Effect of Plyometric training with and without mind training on spiking skill performance of volleyball players

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Abstract

The study was designed to investigate the effect of plyometric training and plyometric training with mind training on volleying skill among college level volleyball players. For this 30 volleyball players were selected randomly from college of Kerala as subjects. Their age ranged from 18 to 25 years. They were divided into three equal groups namely control group Experimental Group II, and Experimental Group III. 3 days in a week, the Experimental Group II underwent plyometric training, Experimental Group III underwent plyometric training with mind training and Group-I control group was not given any specific training. The following criterion variable was chosen, namely spiking skill. It was assessed before and after the training period of 12 weeks. The analysis of covariance was used to determine any significant difference present among the three groups of the dependent variables. The study revealed that the selected skill performance variables (Spiking skill) were significantly improved due to the influence of plyometric training and plyometric training with mind training on college level volleyball players.

Key Words: *Plyometric Training, Mind Training, spiking Skill*

Introduction:

Sports coaching may be a systematic method extended over a protracted time. For the simplest results the system of coaching has got to be based mostly and performed on scientific facts and contours wherever it's impracticable to try to carry out, the coaching that has got to be supported the results thriving follow that has withstood the take a look at of time sport.

The word "plyometric" was invented by Fred Wilt when observing Soviet sport person inure their events in track and field; he sensed this was an input to their victory (Wilt and Yessis, 1984). Plyometrics plyos for short is a type of exercise that trains muscles to produce power (strength and speed). Plyometric exercises involve a stretch of the muscles, immediately followed by a contraction of the same muscles which is why it's sometimes referred to as "jump training." plyometric exercises will help improve explosiveness is skill to generate maximum force in a minimum time. Picture a sprinter taking off at the starting line, or an Olympic long jumper jumping from stillness, they both need explosive power to do what they do. Plyometrics is an important component of most professional sports performance training as it focuses on the "speed" component of power. Plyometric exercises include vertical and broad jumps, where jump as high and/or as far as possible. Skipping rope, jumping squats, single leg hopping and clapping push-ups are also great examples of plyometric exercises. In a seminal study examining athletes "greatest moments," Ravizza found that most athletes have the following perceptions: fearlessness, concentration in the

activity, focus of attention, graceful performance, feeling of complete control, time/space disorientation (usually slowed down), and universe perceived to be integrated and unified. The use of mind training tools (such as goal setting, imagery, self-talk, relaxation) and skills (such as concentration, selfconfidence, and arousal regulation) have been strongly linked with this profile.

Methodology:

The purpose of the study was to find out the effect of plyometric training with and without mind training on selected, performance variables. To achieve the purpose of the study, 30 college volleyball players from Kerala State, India with the age group of 18 to 25 years were

selected. The chosen subjects were randomly assigned into three groups of 10 each. Group I acted as control group II underwent plyometric training, and III underwent plyometric training with mind training. The group I was Control group and they did not undergo any specific training, group -II was given only plyometric training without mind training and III was given plyometric training with mind training for twelve weeks respectively. Training was given during alternative days for three days a week for both experiment groups. The skill performance Spiking skill was tested for three groups prior and after the training period. After twelve weeks of treatment, the post test was conducted for all three groups and the final readings have been recorded carefully. And analysed by analysis of covariance (ANCOVA). Since three groups were involved, whenever the obtained 'F' ratio for adjusted posttest means was found to be significant, the Scheffe's test was applied as posthoc test to determine the paired mean differences. In all the cases level of confidence was fixed at 0.05 for significance.

Result of the study:

Table – I
Analysis of Covariance for Pre and Post Test Data on Spiking Skill of Control Plyometric Training and Plyometric with Mind Training group

	Control Group	Without T. M. Plyometric training group	T. M. Plyometric training group	S O V	Sum of Squares	df	Mean squares	'F' ratio
Pre test Mean SD	14.2	14.4	14.1	B	0.46	2	0.23	0.70
	0.42	0.51	0.73	W	8.90	27	0.33	
Post test Mean SD	14.00	18.00	20.60	B	221.06	2	110.53	181.97*
	0.81	0.81	0.69	W	16.40	27	0.60	
Adjusted Post test Mean				B	222.19	2	111.09	191.27*
	14.01	17.93	20.65	W	15.10	26	0.58	

* Significant at .05 level of confidence.
 (The table values required for significance at .05 level of confidence for 2 and 27 and 2 and 26 are 3.35 and 3.37 respectively).

Table I shows that the pretest means on spiking skill of experiment groups and control group are 14.2, 14.4 and 14.1 respectively and the obtained F ratio of 0.70 for pretest Score is less than the required table value of 3.35 for df 2 and 27 required for significance at 0.05 level of confidence on spiking skill. The posttest means on spiking skill of experiment groups and control group are 14.00, 18.00 and 20.60 respectively and the obtained F-ratio of 181.97 for post-test scores is higher than the required table value of 3.37 for df 2 and 26 required for significance at 0.05 level of confidence on spiking skill. The adjusted post-test means on speed of experiment groups and control group are 14.01, 17.93 and 20.65 respectively and the obtained F ratio was 191.27 for adjusted post-test means scores is more than the required table value of 3.37 for df 2 and 26 required for significance at 0.05 level of confidence on spiking skill. The result of the study indicates that there is statistically significant difference between the adjusted post-test means of experiment groups and control group on spiking skill.

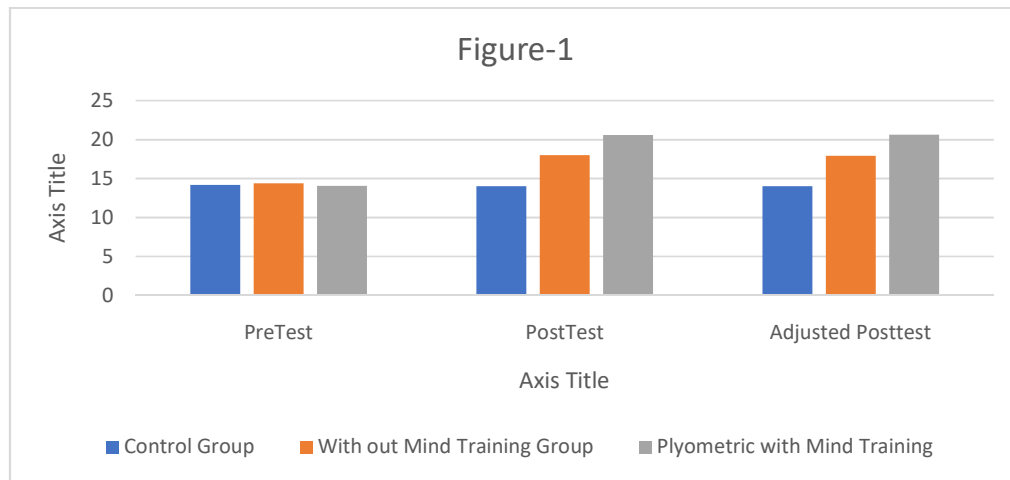


TABLE-II
SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN THE ADJUSTED POSTTEST PAIRED MEANS OF SPIKING SKILL

Adjusted Post Test Means			DM	CI
Control group	Plyometric Training	Plyometric Training with mind Training		
14.01	17.93		3.92	1
14.01		20.65	6.64	1
	17.93	20.65	2.72	1

*significant 0.05

***Significant at 0.05 level of Confidence**

Table II shows that the adjusted posttest paired mean difference between control group and plyometric training group, control group and Plyometric training with Mind Training group and Plyometric Training Group and Plyometric training with Mind Training are 3.92, 6.64 and 2.72 respectively. They were greater than the confidence interval value of 0.05 level which indicate that there was a significant difference among all paired mean on spiking skill and there was a significant difference existed between three groups.

Discussion:

The result of the study showed that significant differences exist among the experiment and control groups on spiking ability. Hence among the experiment group the plyometric training with mind training group had high improvements on spiking skill. The following studies are supporting my finding of the study. Arumugam (2016) conducted Effect of in-season training on skill performance of volleyball. The finding suggests that the skill performance improved of volleyball players. Palao and others (2004) examined the effect of a team's level on the performance of skills (serve, reception, spike, block and dig) in high level volleyball. Found a significant difference in the performance of the spike in the teams of level. An increase in success of reception, spike, block and dig in relation to the level of the team is observed. Inga and Wolframm (2011) study stated that mind skills training has a positive effect on competitive performance. and Mamassis *et al.*, (2010) The effect of a mind training program increased overall effect in physical exercise and sports performance. (Weinberg & Gould, 2015). People who are intrinsically motivated to participate in athletics enjoy the competition and are more successful and (Cucui & Cucui, 2014) commanded that, The intensity of motivation has a direct influence on sports performance, and athletes who achieve better performance are optimally motivated to do so.

Conclusion

The result of study reveals that there was significant improvement after the twelve weeks of plyometric and plyometric training with mind training in improve the spiking skill as compare to the control group whereas plyometric training with mind training group showed betterment than control and plyometric training group.

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