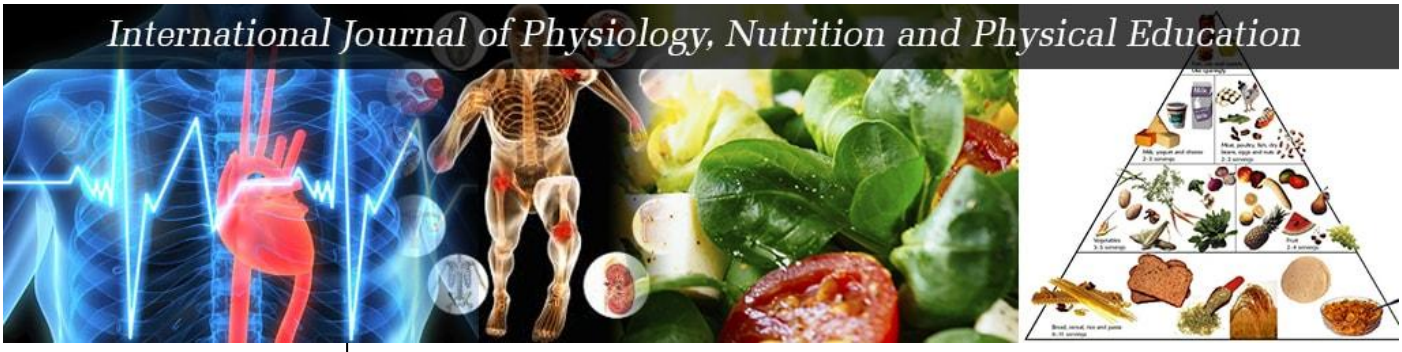

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Persuade of plyometric training and stationary training on speed and explosive power of college female basketball players

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Abstract
The underlying principle of the study was to access the Persuade of plyometric training and stationary training on speed and explosive power of college female basketball players. 45 female basketball players from Pondicherry University at the age ranged between 17 to 22 years. The selected subject were assigned into three equal groups with fifteen each subjects. The investigational group-I plyometric training, investigational group-II stationary training and control group. The training regimens lasted for eight weeks. Speed was measurement by 50 meter dash and explosive power was measurement by standing broad jump was taken for both the groups. The initial and the final readings derived from the experimental and the control group underwent a procedure of statistical analysis using ANCOVA. The confidence level was 0.05. These finding suggest that the plyometric training and stationary training program has a statistically significant influence in developing the selected criterion variables.

Keywords: Plyometric training, stationary training, speed, explosive power, college female basketball players

Introduction
Basketball is an extremely dynamic sport that requires its intermittent high intensity activity that requires players to perform actions jumping sprinting shuffling or changing directions. Basketball is becoming a game that revolves around athleticism and if athletes of a team are not fit it is going to be difficult to get on the floor. Basketball is an extremely dynamic sport that requires movements in multiple planes of motion as well as rapid transitions from jogging to sprinting to jumping.

Plyometric, also referred to as play or jump training exercise, is a physical exercise in which muscles receive maximum power in a comparatively shorter span of time increasing the strength. Plyometric it is a method of moving from a muscle extension move to compressive move in a less period or simply termed explosive way (Matavulj, D 2001) [4]. It involves bodyweight exercises to the next level by including the maximum power jump the muscles become active with the maximum force in a short span of time also increases muscle speed over time. Plyometric exercises that allow the muscle to contract eccentrically before explosive contraction which enable the muscle to reach maximum explosive strength in a shortest period of time (Khlifa 2010) [1].

Plyometric activities can be utilized to improve strength with speed to produce power and perseverance. Muscle perseverance and stamina is enhanced enabling the legs to work and performs at a higher timeframe (Manoranjith 2019) [3]. Plyometric may exclusively consume more amounts of calories but can increase the resting metabolic rate. Plyometric combines quality preparing and cardiovascular exercise.

Stationary training is a continuous series of exercises attempting to improve as many components of physical fitness as possible especially endurance. Stationary training is a method of physical conditioning in which one moves from one exercise to another usually in a series of different stations or pieces of equipment. It works well for developing strength, endurance, flexibility and coordination (Miller 1993) [9]. The Stationary training format utilizes a group of 6 to 10 Strength exercises that are completed by doing one exercise after another. Each exercise is performed for a specified number of repetitions or for a prescribed time

before moving on to the next exercise. The exerciser gains muscle through the resistance training and increases his/her cardiovascular endurance during the slightly elevated heart rate that is maintained in between sets and throughout the overall program (Rodgers Jr 1996) [8].

Statement of the problem

The intention of the exploration was Persuade of plyometric training and stationary training on speed and explosive power of college female basketball players

Subject and variables

Pondicherry University at the age ranged between 17 to 22 years. The selected subject were assigned into three equal groups with fifteen each subjects. The investigational group-I plyometric training, investigational group-II stationary training and control group. The plyometric training and stationary training underwent training for a period of eight weeks (60 days) of 24 sessions. The training sessions were conducted three days a week (Monday, Wednesday and Friday). Measurement of speed and explosive power variables was taken for both the groups.

Training protocol

The persuade of plyometric and stationary training were selected as training protocol. The both plyometric training and stationary training was provided in the morning time the subjects were involve in proper warming up practice. The plyometric exercises are High Knees, Shuttle Run, Squat Jump, Lateral Box Jump, Mini Hurdle Jump, Split Jump and Medicine Ball Chest Push with Partner. Plyometric training protocol in intensity will be increase week by weeks. The stationary exercises are High Knees, Back Kick, Pushup, Mountain Climber, Burpee, Side Plank, Russian Twist, Scissor Cuts, Split Walk, Lateral Jump and Tuck Jump.

Table 1: Selection of the test measures

Sn.no	Variables	Test Items	Units
1.	Speed	50 Mts Dash	Seconds
2.	Explosive Power	Standing Broad Jump	Meters

The data's were collected before and after the training period. The initial and the final readings derived from the experimental and the control group underwent a procedure of statistical analysis using ANCOVA. The IBM-SPSS-V22 software was used and the confidence level is maintained at 0.05 levels.

Result and Discussion

Table 2: Analysis of Co-Variance of Speed and Explosive Power of Plyometric Training and Stationary Training of Female Basketball Players

Speed							
tests	**Plyometric training group**	**Stationary training group**	**Control group**	**Sum of square**	**df**	**Mean square**	**F ratio**
Pre test	7.75	7.77	7.90	0.154	2	0.077	0.84
				3.86	42	0.091	
Post test	7.57	7.60	7.94	1.321	2	0.660	8.25*
				3.37	42	0.080	
Adjust post test	7.59	7.61	7.87	0.614	2	0.307	23.61*
				0.561	41	0.013	
Explosive power							
tests	**Plyometric training group**	**Stationary training group**	**Control group**	**Sum of square**	**df**	**Mean square**	**F ratio**
Pre test	1.27	1.25	1.25	0.004	2		1.87
				0.04	42		
Post test	1.41	1.39	1.24	0.245	2	0.122	122.5*
				0.029	42	0.001	
Adjust post test	1.41	1.40	1.25	0.204	2	0.102	188.3*
				0.026	41	0.0001	

*Significant at 0.05 level of confidence

Table shows that the pretest mean value of speed for plyometric training group, stationary training group and control group are 7.75, 7.77 and 7.90 correspondingly. The table value 3.23 for df 2 and 42 required the obtain f ratio 0.84 is lowest than the table value.3.23 and 0.05 level of confidence. The post mean value of speed for plyometric training group, stationary training group and control group are 7.57, 7.60 and 7.94 correspondingly. The table value 3.23 for df 2 and 42 required the obtain f ratio 8.25* is highest than the table value.3.23 and significant at 0.05 level of confidence. Hence the adjust posttest mean value of speed for plyometric training group, stationary training group and control group are 7.59, 7.61 and 7.87 correspondently. The table value 3.23 for df 2 and 42 required the obtain f ratio 23.61* is highest than the table value.3.23 and significant at 0.05 level of confidence.

The pretest mean value of explosive power for plyometric training group, stationary training group and control group are 1.27, 1.25 and 1.25 correspondingly. The table value 3.23 for df 2 and 42 required the obtain f ratio 0.84 is lowest than the table value.3.23 and 0.05 level of confidence. The post mean value of explosive power for plyometric training group, stationary training group and control group are 1.41, 1.39 and 1.24 correspondingly. The table value 3.23 for df 2 and 42 required the obtain f ratio 122.5* is highest than the table value.3.23 and significant at 0.05 level of confidence. Hence the adjust posttest mean value of explosive power for plyometric training group, stationary training group and control group are 1.41, 1.40 and 1.25 correspondently. The table value 3.23 for df 2 and 42 required the obtain f ratio 188.3* is highest than the table value.3.23 and significant at 0.05 level of confidence.

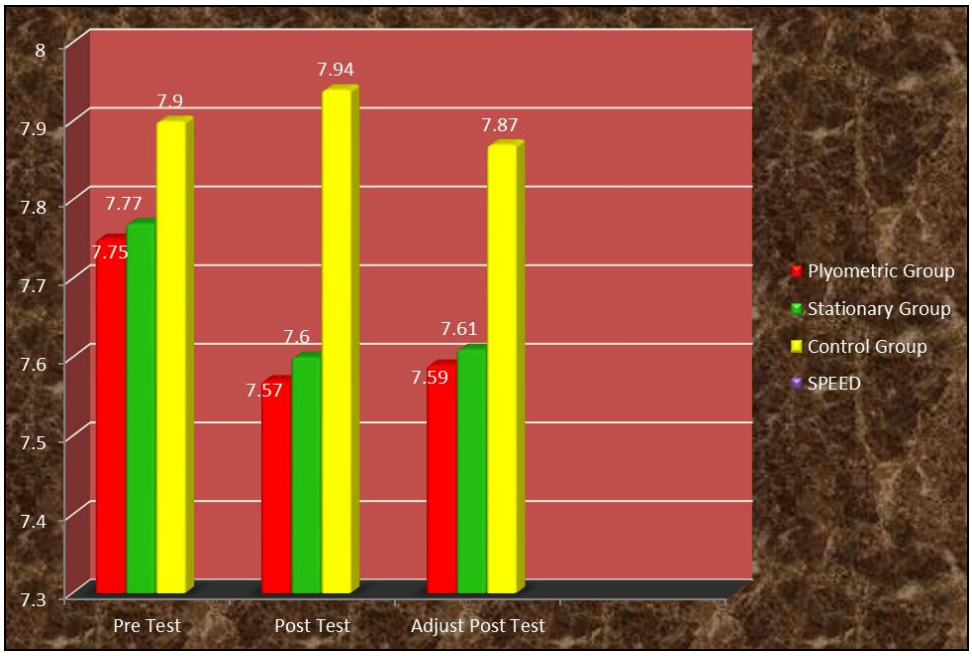

Fig 1: Bar Diagram of Speed and Explosive Power of Plyometric Training and Stationary Training of Female Basketball Players

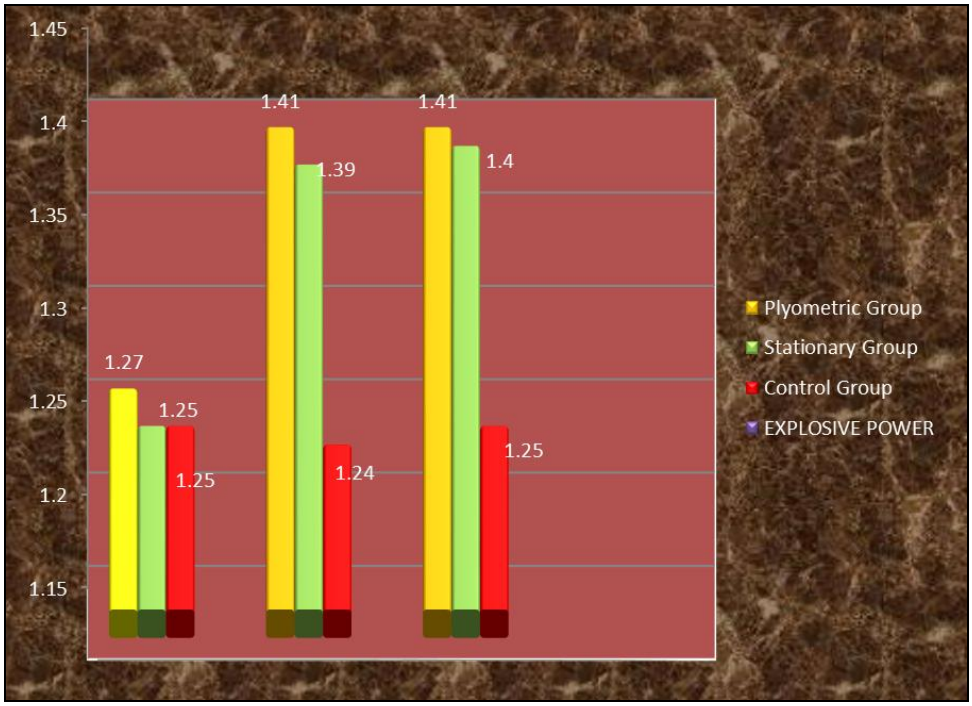

Fig 2: Bar Diagram of Explosive Power of Plyometric Training and Stationary Training of Female Basketball Players

Conclusion

Based on the result the conclusion was drawn. The result of the study reveals that there was a significant improvement in the experimental group on speed and explosive power when compare to the control group after the eight weeks of plyometric training and stationary training.

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