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Effect of Jump Circuit Training and On Court Volleyball Conditioning On Explosive Power among Volleyball Players

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Abstract: The purpose of the study was to find out the effect of jump circuit training and on court volleyball conditioning on explosive power among volleyball players. To achieve the purpose thirty volleyball players were randomly selected as subjects from the department of physical education, Annamalai University. The subject were divided into three groups each comprising of ten each as experimental-I (court volleyball conditioning), experimental-II (jump circuit training) and control groups. The average age, height, and weight of the experimental group were 17 to 24 years. The experimental group-I and experimental-II had undergone 60 minutes of court volleyball conditioning and jump circuit training three alternate days in a week for eight weeks whereas control group did not participate any type of specific training. The criterion variables confined to this study were explosive power measured by sergeant jump before and after the training programme. The collected data were statistically analysed by using analysis of co variance (ANCOVA). On the basis of the result, it was found that there was significant improvement on explosive power due to the above said training among volleyball players.

Keywords: Explosive Power, Volleyball Conditioning, Circuit Training.

INTRODUCTION

Circuit training is an excellent way to simultaneously improve mobility, strength and stamina. Scientific studies have linked resistance training with a reduced rate of injury in athletes. Ref.[3].It fortifies leg muscles and strengthens 'weak links' in athletes' bodies, including the often-injured hamstrings and shin muscles, as well as abdominal and low-back muscles. Circuit training is an efficient and challenging form of conditioning. It works well for developing strength, power, flexibility and coordination. Plyometric is the term now applied to exercises that have their roots in Europe, Ref.[1].Where they were first known simply as jump training. Interest in this jump training increased during the early 1970s as East European athletes emerged as powers on the world sport scene.

Volleyball conditioning methods allows skill development and fitness. This type of conditioning is technique specific and could have complex game like drills with more efficient type of conditioning combining physical development along with technical and mental skills. Athletes can enjoy conditioning drills that are more specific to game situations. Ref.[4]. Greater the general quality of speed, strength, power, endurance, flexibility and agility the more quickly will be the specific skill he learned and once learned the better will be the performance. The coaches structure the practice differently to allow the skill and physical abilities of the players to develop concurrently.

Warm-ups in team training environments should be used to prepare the players for the activities to follow. If the sport requires

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jumping, then jumps should be included, sprinting requires sprint drills, contact sports require contact etc. Where possible, a ball should be involved for ball sports, and game- related drills performed so that the players can then get warm physically, technically and mentally. If balance training has little impact on speed and power, or on anaerobic conditioning, then can skill-based conditioning games have such an impact Good coaches can integrate skills training into small games and drills that require a game-related physical effort, making them fun and hard work.

Methodology

Selection of Subjects and Variables

The purpose of the study was to find out the effect of jump circuit training and on court volleyball conditioning on explosive power among volleyball players. To achieve the purpose thirty volleyball players were randomly selected as subjects from the department of physical education, Annamalai University. The subject were divided into three groups each comprising of ten each as experimental-I (court volleyball conditioning), experimental-II (jump circuit training) and control groups. The average age, height, and weight of the experimental group were 17 to 24 years. The criterion variables confined to this study were explosive power measured by sergeant jump.

Training Protocol

The experimental group-I undergone volleyball court conditioning such as shuttle runs, block jumps, short sprints, tuck jumps, astride jumps for 30 minutes and experimental-II undergone jump circuit training such as burpees, skipping, squat jumps, jump and jogs, tuck jumps for three alternate days in a week for eight weeks respectively whereas control group did not participate any type of specific training.

Statistical Technique

The collected data were statistically analysed by using analysis of co variance (ANCOVA). On the basis of the result, it was found that there was significant improvement on explosive power due to the above said training among volleyball players.

Analysis of the Data

Explosive Power in Terms of Vertical

The analysis of covariance on explosive power in terms of vertical of the pre and post test scores of on court volleyball conditioning, jump circuit training and control groups on explosive power among volleyball players have been analyzed and presented in Table -I.

Table –I Ancova of on court volleyball conditioning jump circuit training and control groups on explosive power

Test	Volleyball conditioning Group	Jump circuit group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test								
Mean	49.40	53.30	50.60	Between	79.80	2	39.90	1.482
S.D.	5.18	6.21	3.89	Within	726.90	27	26.92	
Post Test								
Mean	61.90	58.00	51.60	Between	540.86	2	270.43	10.26
S.D.	4.81	6.32	3.97	Within	711.30	27	26.34	
Adjusted Post Test								
Mean	63.43	56.01	52.05	Between	653.440	2	326.72	69.94
				Within	121.449	26	4.67	

* Significant at 0.05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 42 and 2 and 41 are 3.222 and 3.226 respectively).

The table- I show that the pre-test mean values on explosive power in terms of vertical of on court volleyball conditioning, jump circuit training and control groups are 49.40, 53.30 and 50.60 respectively. The obtained "F" ratio of 1.482 for pre-test scores is less than the table value of 3.222 for df 2 and 27 required for significance at .05 level of confidence on explosive power in terms of

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vertical. The post-test mean values on explosive power in terms of vertical of skill based training, plyometric training and control groups are 61.90, 58.00 and 51.60 respectively. The obtained "F" ratio of 10.26 for post test scores is greater than the table value of 3.222 for df 2 and 27 required for significance at .05 level of confidence on explosive power in terms of vertical.

The adjusted post-test means of on court volleyball conditioning, jump circuit training and control groups on explosive power among volleyball players are 63.43, 56.01 and 52.05 respectively. The obtained "F" ratio of 69.94 for adjusted post test scores is greater than the table value of 3.226 for df 2 and 26 required for significance at .05 level of confidence on explosive power in terms of vertical. The results of the study indicated that there was a significant difference among the adjusted post-test means of on court volleyball conditioning, jump circuit training and control groups on explosive power among volleyball players.

To determine the significance difference among the three paired means, the Scheffe's test was applied as post-hoc test and the results are presented in Table -II.

Table -II the scheffe's test for the differences between paired means on explosive power in terms of vertical

Volleyball conditioning Group	Jump circuit group	Control Group	Mean Differences	Confidence Interval Value
63.43	56.01	-	7.42*	2.29
63.43	-	52.05	11.38*	2.29
-	56.01	52.05	3.96*	2.29

* Significant at .05 level of confidence.

The table -II shows that the mean difference values between volleyball conditioning and jump circuit training, volleyball conditioning and control groups, jump circuit training and control groups 7.42*, 11.38* and 3.96* respectively on explosive power in terms of vertical which were greater than the required confidence interval value 2.29 at .05 level of confidence. Hence the above comparisons were significant.

Discussion on Findings

The below literature thoroughly supports the evidence of the present study, Studies have shown improvement in aerobic capacity from participation in circuit training. ef. [5]. An enhancement of motor performance associated with circuit training combined with court conditioning drills or the superiority of jump circuits, compared to their method soft training. Ref.[6]. Skill-based conditioning games improved 10-m, 20-m, and 40-m speed, muscular power (vertical jump), and aerobic power. The combination of circuit training with plyometric care thought to be useful for developing athletic power.

Conclusions

Hence, it was concluded from the results that both on court volleyball court conditioning and jump circuit training were better method to improve explosive power in terms of vertical. Among the training, on court volleyball court conditioning improved much better than jump circuit training programme.

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