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INFLUENCE OF PLYOMETRIC TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES AMONG VOLLEYBALL PLAYERS

Dr. C. Vairavasundaram
Assistant Professor, Alagappa University College of Physical Education, Karaikudi, Tamilnadu

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Abstract:

The purpose of the study was to find out the influence of plyomeric training on selected physical fitness variables among volleyball players. To achieve the purpose of the study thirty (N=30) volleyball players have been randomly selected from the Alagappa University college of physical education, Tamilnadu, India. The age of subjects were ranged from 18 to 25 years. The subjects had experience of at least three years in volleyball and only who has represented the intercollegiate tournament was taken as subjects. A series of physical tests was carried out on each participant. These included leg explosive power and agility leg explosive power was assessed by vertical jump and agility was assessed by shuttle run. The subjects were randomly assigned into two groups of fifteen each, such as experimental and control groups. The experimental group underwent the plyometric training for 3 alternative days in a week, one session per day and for 6 weeks each session lasted 60 minutes. The control group apart from daily routine activities no special training was given. The subjects of the two groups were tested on selected variables prior and immediately after the training period. The collected data were analyzed statistically through't' ratio to find out the significance difference, if any between the groups. The 0.05 level of confidence was fixed to test the level of significance difference, if any between groups. The results of the study showed that there was significant differences exist between plyometric training group and control group. Plyometric training group showed significant improvement on level of leg explosive power and flexibility, when compared to control group.

Introduction:

Physical events such as scoring goals or a sport is an organized, competitive, entertaining and skillful physical activity requiring commitment, strategy and fair play in which a winner can be defined by objective means. It is governed by a set of rules or customs. In sports the key factors are the physical capabilities and skills of the competitor when determining the outcome (winning or losing). The physical activity involves the movement of people, animals and/or a variety of objects such as balls and machines or equipment. In contrast, games such as card games and board games, though these could be called mind sports and some are recognized as Olympic sports, require primarily mental skills and only mental physical involvement. Non-competitive activities, for example as jogging or playing catch are usually classified as forms of recreation. Crossing a line first often define the result of a sport. However, the degree of skill and performance in some sports such as diving, dressage and figure skating is judged according to well-defined criteria. This is in contrast with other judged activities such as beauty pageants and body building, where skill does not have to be shown and the criteria are not as well defined. Records are kept and updated for most sports at the highest levels, while failures and accomplishments are widely announced in sport news. Sports are most often played just for fun or for the simple fact that people need exercise to stay in good physical condition. However, professional sport is a major source of entertainment. (Douglas Harper, 2008).

Methodology:

To achieve the purpose of the study, thirty male volleyball players have been randomly selected from Alagappa University College of Physical Education Karaikudi, Tamilnadu, India. The age of subjects were ranged from 18 to 25 years. The subjects had experience of at least three years in volleyball and only those who represented their respective intercollegiate tournament were taken as subjects. In the following variables are included such as leg explosive power, agility and speed. Explosive power was assessed by vertical jump agility was assessed by shuttle run and speed was assessed by 50mts dash. The subjects were randomly assigned into two groups of fifteen each, such as experimental and control groups. The experimental group participated in the plyometric training for 3 alternative days in a week, one session per day and for 6 weeks each session lasted 60 minutes. The control group maintained their daily routine activities and no special training was given. The subjects of the two groups were tested on selected variables prior and immediately after the training period. The collected data were analyzed statistically through't' test to find out the significance difference, if any between the groups. The 0.05 level of confidence was fixed to test the level of significance difference, if any between groups.

Table 1: Criterion Measures

S.No	Criterion Measure	Test Items	Unit of Measurement
1	Leg Explosive Power	Vertical Jump	In Centimeter

2	Agility	Shuttle Run	In Meter
3	Speed	50 Mts Dash	In Meter

Table 2: Analysis of selected physical variables among control and plyometric training groups

S.No	Variables	Group	Pre-test Mean	SD (±)	Post –Test Mean	SD (±)	't' ratio
1	**Leg Explosive Power**	PMG	6.75	0.17	8.06	0.17	9.89
		CG	6.15	0.24	6.66	0.23	0.21
2	**Agility**	PMG	24.72	2.31	22.24	2.26	0.30
		CG	18.68	1.34	18.62	1.35	10.69
3	**Speed**	PMG	8.43	.37	7.54	.46	6.30
		CG	7.85	.24	7.86	.20	1.95

The Table shows that the mean values of pre-test and post-test of control group on leg explosive power were 6.15 and 6.66respectively. The obtained 't' ratio was 0.21, since the obtained 't' ratio was less than the required table value of 2.15 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of experimental groups on leg explosive power were 6.75 and 8.06 respectively. The obtained 't' ratio was 9.89 since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in leg explosive power. It may be concluded from the result of the study that experimental group improved in leg explosive power due to six weeks of plyometric training.

The Table shows that the mean values of pre-test and post-test of control group on agility were 18.68 and 18.62 respectively. The obtained 't' ratio was 0.30, since the obtained 't' ratio was less than the required table value of 2.31 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of experimental groups on shuttle running were 24.72 and 22.24 respectively. The obtained 't' ratio was 10.69 since the obtained 't' ratio was greater than the required table value of 1.31 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in shuttle running. It may be concluded from the result of the study that experimental group improved in shuttle running due to six weeks of plyometric training.

The Table shows that the mean values of pre-test and post-test of control group on speed were 7.85 and 7.86 respectively. The obtained 't' ratio was 1.95, since the obtained 't' ratio was less than the required table value of 6.30 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of experimental groups on 50mts running were 8.43 and 7.54 respectively. The obtained 't' ratio was 6.30 since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in speed. It may be concluded from the result of the study that experimental group improved in 50mts run due to six weeks of plyometric training.

Discussion on Findings:

The findings of the present study have strongly indicates that plyometric training of of six weeks has shown significant improvement n all the selected physical and performance related variables namely leg explosive strength and agility of volleyball players. Ebben W P, Feldmann C R, Vanderzanden T L, (2010) "observed Periodized plyometric training is effective for women, and performance is not influenced by the length of post training recovery. The plyometric exercise are develops strength and agility.

Conclusion:

Based on the results of the present study the following conclusions have been made.

- ✓ Results on testing the differences on pre-test means between experimental and control groups, no difference was found on variables used in the study namely , agility(shuttle run, leg explosive power)
- ✓ On testing the post-test means between experimental and control groups, significant mean difference was found on variables used in the study such as agility and leg explosive power.
- ✓ The significant results derived from testing the adjusted post-test means confirms the efficacy of training program used in the study positively.

References:

1. Ebben W P, Feldmann C R, Vanderzanden T L, (2010) "Periodized plyometric training is effective for women, and performance is not influenced by the length of post-training recovery". Journal of Strength Conditioning Research; 24(1):1-7.
2. Impellizzeri F M., Rampinini E., Castagna C, Martino F, Fiorini S, Wisloff U, (2008.) "Effect of plyometric training on sand versus grass on muscle soreness and jumping and sprinting ability in soccer players" British Journal Sports Med. 42(1):42-6.

3. Khlifa R, Aouadi R, Hermassi S, Chelly S, Jlid M C, Hbacha H, Castagna C, (2010). "Effects of a Plyometric Training Program with and without Added Load on Jumping Ability in volleyball Players". Journal of strength and conditioning research, 24 (X): 000 – 0000; 2010.
4. Kotzamanidis, Christos (2006) "Effect of plyometric training on running performance and vertical jumping inprepubertal boys" Journal of strength conditioning research; 20: 441-5.
5. Solanikidis K, Zaferiridis A, (2008)"A effect of plyometric Tennis – drills and combined training reaction lactoral and linear speed, power and strength Novice Tennis players" Journal of Strength conditioning research; PP.182-191.