

IMPACT OF POWER TRAINING ON SELECTED PHYSICAL VARIABLES AMONG SCHOOL VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the effect of power training on selected physical variables among school volleyball players. Thirty subjects were selected from ZPHS, Kurudu, Kotabommali, Srikakulam District. The subject's age ranged from 11 to 16 years. The selected subjects were divided into two groups with fifteen subjects in each group selected randomly power training and control group. The training periods of experimental group were 8 weeks, five days per week. Control group did not undergo any training programme other than their routine work. To find out the significance difference between the means on the criterion variables correlated 't' ratio was applied. Pertaining to present study it processed with appropriate statistical technique. The obtained 't' values are tested at 0.05 levels.

Keywords: 1. Power training, 2. Speed, 3. Explosive power and 4. Agility.

INTRODUCTION

Power Training

Power training is also known as strength training. It is a common component of sports and physical fitness programmes for young people. Some adolescents and pre-adolescents may use strength training as a means to enhance muscle size and to simply improve appearance (clayne, 1979). Strength training programmes may include the use of free weights, weight machines, elastic tubing, or body weight. In addition to the obvious goal of getting stronger power training programmes may be undertaken to improve long-term health. Studies have shown that strength training, when properly structured with record of frequency, mode (type of lifting), intensity, and duration of programmes, can increase strength in pre-adolescents and adolescents. In preadolescents proper power training can enhance strength without concomitant muscles hypertrophy. Such kinds in strength can be attributed to neuro muscular "learning", in which training increase the number of motor neurons that will fire with which muscle contraction. This mechanism helps to explain the strength gained from power training in population with low androgen levels including males and females. Strength training can also augment the muscles enlargement that is normally acquired with pubertal growth in males in females.

Benefits of Power Training

Power training involves activities that use weights, machines and even body weight to

work out the muscles. It is also known as strength training or weight training. Many people have jobs that involve little in the way of physical exercise and your body adapts to this by allowing your muscles to shrink (atrophy) to the point they are able to do your job but not much more.

METHODOLOGY

The purpose of the study was to find out the effect of power training on selected physical variables among school volleyball players. Thirty subjects were selected from ZPHS, Kurudu, Kotabommali, Srikakulam District. The subject's age ranged from 11 to 16 years. The selected subjects were divided into two groups with fifteen subjects in each group selected randomly power training and control group. The training periods of experimental group were 8 weeks, five days per week. Control group did not undergo any training programme other than their routine work. The pre and post tests were administered for all the groups before and after the experimental treatment.

SELECTION OF VARIABLES

The selected Physical variables are

1. Speed - 50 yards dash (Seconds)
2. Explosive power - Standing broad jump (Meters)
3. Agility - T-test (Seconds)

STATISTICAL TECHNIQUE

To test the significance of 't' values as level of significance 0.05 level was chosen for the required table value for the degrees of freedom.

TABLE – I ANALYSIS OF 'T'-RATIO THE PRE AND POST-TEST FOR CONTROL AND EXPERIMENTAL GROUP ON SPEED, EXPLOSIVE POWER AND AGILITY

Variable	Groups	Mean		SD		Sd Error	df	't' ratio
		Pre	Post	Pre	Post			
SPEED	Control	7.97	7.97	0.55	0.55	0.14	14	0.81
	Experimental	7.98	7.46	0.18	0.16	0.14		12.97 *
EXPLOSIVE POWER	Control	2.12	2.06	0.12	0.28	0.03	14	1.08
	Experimental	2.15	2.21	0.04	0.04	0.07		18.36 *
AGILITY	Control	11.10	11.10	0.69	0.68	0.18	14	0.56
	Experimental	11.16	10.81	0.19	0.18	0.18		12.01 *

* Significance at 0.05 level of confidence

The Table shows that the mean values of pre-test and post-test of control group on speed were 7.97 and 7.97 respectively. The obtained 't' ratio was 0.81, 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 group on speed were 7.98 and 7.46 respectively. The obtained 't' ratio was 12.97 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 speed due to six weeks of power training.

The Table shows that the mean values of pre-test and post-test of control group on explosive power were 2.12 and 2.06 respectively. The obtained 't' ratio was 1.08 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 group on explosive power were 2.15 and 2.21 respectively. The obtained 't' ratio was 18.36 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 explosive power. It may be concluded from the result of the study that experimental group improved in explosive power due to six weeks of power training.

The Table shows that the mean values of pre-test and post-test of control group on agility were 11.10 and 11.10 respectively. The obtained 't' ratio was 0.57 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 group on agility were 11.16 and 10.81 respectively. The obtained 't' ratio was 12.01 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 agility. It may be concluded from the result of the study that experimental group improved in agility due to six weeks of power training.

DISCUSSION ON FINDING

In analyzing the physical variables for power training over the period of 8 weeks of training, the obtained results favored the school volleyball players on speed, explosive power and agility.

CONCLUSION

The findings of the study revealed that the experimental group, which underwent power training, showed significant improvement in selected physical variables such as speed, explosive power, and agility among school volleyball players. The analysis of the pre-test and post-test mean scores using the 't'-ratio demonstrated that the improvements achieved by the experimental group were statistically significant.

In contrast, the control group, which did not participate in the power training programme, did not show any significant improvement in the selected physical variables. Therefore, it was concluded that systematic power training is highly effective in enhancing speed, explosive power, and agility performance among school volleyball players.

REFERENCE

1. **Bloomfield J, Polman R, Donoghue P, McNaughton L. (2005)** Speed and agility conditioning methodology for random intermittent dynamic type sports. J Strengthcond 1 Res. www.ncbi.nlm.nih.gov/pubmedterm
2. **Buchheit M, Mendez-Villanueva A, Quod M, Quesnel T, Ahmaidi S.** Improving acceleration and repeated sprint ability in well-trained adolescent volleyball players: speed versus sprint interval training. Int J Sports Physical Perform. J strength con Res2010 Jun;5(2):152-64.
3. **Brandenburg J, Docherty D**The effect of training volume on the acute response and 1 adaptation to power training. Int J Sports Physical Perform. 2006 Jun;1(2):108-21.
4. **Chatzopoulos DE, Michailidis CJ, Giannakos AK, Alexiou KC, Patikas DA, Antonopoulos CB, KotzamanidisCM.** Postactivation potentiation effects after heavy power exercise on running speed.J Strength Cond Res. 2007 Nov;21(4):1278-81.
5. **Gabbets T J. Sheppard JM, Pritchard, Peschek KR, LeverittMD, AldredMJ.(2008)** Study on Speed change of direction speed and reaction Agility of rugby league players. J strength cond Res 2008 sep;22(5):1413 P.41-43 PMID:18714250.
6. **Vieira F, Veiga V, Carita AI, PetroskiEL.**Morphological and physical fitness characteristics of under-16 Portuguese male volleyball players with different levels of practice. J Sports Med Phys Fitness. 2013 Apr;53(2):169-76.