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## Changes of vertical jump through maximal power training among college men handball players

**K Selvakumar and Dr. P Yoga**

### Abstract

The purpose of the present study was to investigate the changes of vertical jump through maximal power training among college men handball players. To achieve the purpose of the study thirty college men handball players were selected from Alagappa University College of Physical Education, Karaikudi, during the year 2018. The subject's age ranges from 18 to 24 years. The selected players were divided into two equal groups consists of 15 men handball players each namely experimental group and control group. The experimental group underwent maximal power training programme for six weeks. The control group was not taking part in any training during the course of the study. Vertical jump was taken as criterion variable in this study. The selected subjects were tested on vertical jump was measured through Wall Mounted Vertical Jump Test. Pre-test was taken before the training period and post- test was measured immediately after the six week training period. Statistical Technique 't' ratio was used to analyse the means of the pre-test and post test data of experimental group and control group. The results revealed that there was a significant difference found on the criterion variable. The difference is found due to maximal power training given to the experimental group on vertical jump when compared to control group.

**Keywords:** Maximal power training, vertical jump and 't' ratio

### Introduction

The ability to generate maximal power during complex motor skills is of paramount significance to a hit athletic overall performance throughout many sports. A important difficulty confronted by using scientists and coaches is the improvement of effective and efficient schooling programmes that improve maximal energy production in dynamic, multi-joint movements. Such schooling is called 'energy education'

"Maximal explosive energy education entails overall performance of dynamic weight training on the load which maximizes mechanical strength output." this entails lifting masses inside the variety of 30 to 45 percent of most at high pace. It need to be apparent that the sporting activities must now not be common weight-training physical games where the bar reaches zero pace at the cease of the motion. This would be counterproductive to the stated purpose of elevating explosive power.

Maximal strength, maximal repetitive upper and lower body high power exercises programme improve in maximum power, maximum strength (Mikel *et al.*, 2001) [3].

Combined maximum power and maximum strength with plyometrics training programme improve maximum power, lower body power (Fagan *et al.*, 2000) [4].

### Methodology

The purpose of the study was to find out the effect of maximal power training on vertical jump among college men handball players. To achieve this purpose of the study, thirty college men handball players were selected as subjects at random. The age of the subjects were ranged from 18 to 24 years. The selected subjects were divided into two equal groups of fifteen subjects each, such as maximal power training group (Experimental Group) and control group. The experimental group underwent maximal power training for three days per week for six weeks. Control group, which they did not undergo any special training programme apart from their regular physical activities as per their curriculum.

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The following physical variable, namely vertical jump was selected as criterion variable. All the subjects of two groups were tested on selected criterion variable vertical jump was measured through the wall mounted vertical jump test. The ‘t’ test was used to analysis the significant differences, if any, in between the groups respectively. The 0.05 level of confidence was fixed to test the level of significance which was

considered as an appropriate.

**Analysis of the Data**

The significance of the difference among the means of the experimental group was found out by pre-test. The data were analysed and dependent ‘t’ test was used with 0.05 levels as confidence.

**Table 1:** Analysis of t-ratio for the pre and posttests of experimental and control group on Vertical jump

Variables	Group	Mean		SD		SD Error		D f	‘t’ ratio
		Pre	Post	Pre	Post	Pre	Post		
Vertical jump	Control	42.05	41.90	0.63	0.77	0.16	0.19	14	0.66
	Experimental	41.95	43.89	0.75	0.86	0.19	0.22		7.17*

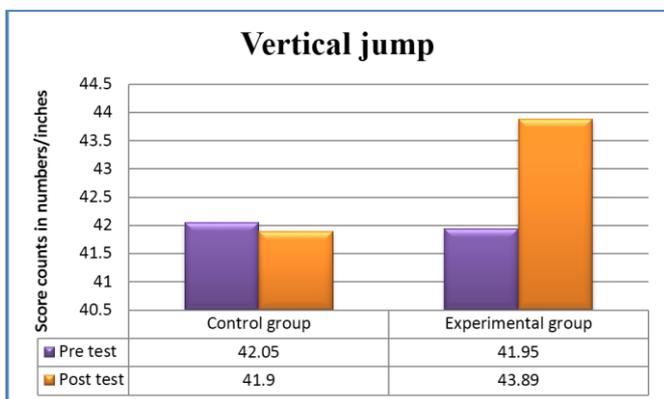
\*Significance at.05 level of confidence.

The Table-I reveals that the mean values of pre-test and post-test of the control group on vertical jump were 42.05 and 41.90 respectively. The obtained ‘t’ ratio was 0.66, since the obtained ‘t’ ratio was less than the required table value of 2.14 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 the experimental group on vertical jump were 41.95 and 43.89 respectively. The obtained ‘t’ ratio was 7.17\*since the obtained ‘t’ ratio was greater than the required table value of 2.14 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 vertical jump. It may be concluded from the result of the study that experimental group improved in vertical jump due to six weeks of maximal power training.

experimental group due to six weeks of maximal power training.

**References**

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**Fig 1:** Bar diagram showing the pre and post mean values of experimental and control group on Vertical jump

**Discussions on Findings**

The result of the study indicates that the experimental group, namely maximal power training group had significantly improved the selected dependent variable, namely vertical jump, when compared to the control group. It is also found that the improvement caused by maximal power training when compared to the control group. The result of this study on vertical jump has in line with the study conducted by E Balaji and Dr. K Murugavel 2017 [1].

**Conclusions**

1. There was a significant difference between experimental and control group on vertical jump after the training period.
2. There was a significant improvement in vertical jump. However the improvement was in favour of