

COMPARATIVE STUDY AND THE EFFECT OF DEPTH JUMP AND HALF SQUAT JUMP ON THE LEG STRENGTH OF VOLLEYBALL PLAYERS

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Abstract: The purpose of the study was compare the effects of the depth jump and half squat training programme on development of explosive leg strength of the volleyball players. The study was delimited to 30 volleyball players. The players were randomly assigned to three groups, two experimental groups i.e. depth jump and half squat training group and one control group consisting of 10 subject each. The study was delimited to measurement of explosive leg strength. The age of the subject were ranged from 18-25 years.

Keyword: Leg Strength , Comparative , randomly , history.

INTRODUCTION

In the last few decades sports have gained tremendous popularity all over the globe. The popularity of sports is still increasing at a fast pace and this happy trend is likely to continues in the future also when one looks at the history of modern Olympics games, one sees that the number of sports for which competition are held at Olympic sports indigenous sports have also come into existence and are quite popular much more coverage to sports, sports have become a important social and cultural activity of modern world which is being given the rightful places it deserves, by the nations and society of the world.

A training programme is the essence of the sports performance. The coaches make efforts to improve through systematic manipulation of repetitions of movements, intensity of performance and duration of exercise. Sports performance is not a single component it includes strength, speed, endurance, flexibility, co-coordinative abilities, technique and tactics. Competitive sports are again ranked according to the level of competition in which the intensity of pulse rate of the player is raised to approximately 180 beats pre minutes in dinged as top sports.

Physical process refers to the practices and learning of a skill that must be developed if an individual is to successes in sports competition the main physical qualities considered relevant to achieve success are strength, endurance, speed, agility and flexibility.

Depth jump training is an excellent method of developing of body power and it is proved to be a very effective method for improving explosive strength. It offers rich variation of exercises and load structure. Any activity that activates the strength reflex mechanism is polymeric exercise based upon the belief that a rapid lengthening of a muscle just prior to the contraction will result in much stronger contraction.

STATEMENT OF THE PROBLEM:

The purpose of the study was compare the effects of depth jump and half squat training programme on development of explosive leg strength of the volleyball players.

DELIMITATION:

- 1.The study was delimited to 30 volleyball players of Nasikrao Tirpude college of physical education Nagpur.
- 2.The 30 volleyball players were randomly assigned to three groups, two experimental groups i.e. depth jump and half squat training group and one control group consisting of 10 subjects each.
- 3.The study was delimited to measurement of explosive leg strength.
- 4.The study was further delimited to the male volleyball players only.
- 5.The age of the subjects were ranged from 18-25 years.

LIMITATIONS:

- 1.Certain factors like rest etc. which has beyond the control of the investigator and was considered as limitations of the study.
- 2.No special motivational technique was given to the subjects and any differences in performance due to the above factors were accepted as limitation of the study.

HYPOTHESIS:

On the basis of literature reviewed, research findings expert opinion and scholar's own understanding of the problem, it was hypothesized that the depth jump and half squat training may significantly improve the explosive leg strength of volleyball players.

OBJECTIVES OF THE STUDY:

- 1.To find out the effects of depth jump training and half squat training on the leg strength of the volleyball players.

2.To examine the difference in the effects of depth jump training and half squat training on the leg strength of the volleyball players.

RELIABILITY OF DATA:

The reliability of data was established by test-retest method, in terms of reliability of tests, tester competency and subject's reliability. The vertical jump ability was measured on two days with an interval of one day in between for standing broad jump three trails were given during first test and second test. A correlation was found out in standing broad jump during pre test and post test.

DESIGN OF THE STUDY:

Random groups design was adopted for the purpose of the study. The subjects were randomly divided into three groups, two experiment and one control group, consisting of ten subject each.

STATISTICAL TECHNIQUE TO BE USED:

The data pertaining to the leg strength i.e. vertical jump was examined by 't' ratio to find out the significant difference between pre and post test and the level of significance was fixed at 0.05 level of significance and analysis of co-variance (ANCOVA) was used to find out the significant difference between the different training groups and when the significance difference was found to be significant LSD Post Hoc Test was use to find out the significant difference between the groups. The level of significance was fixed at 0.05 level of significance.

FINDINGS:

The findings of the study related with leg strength as result of plyometric depth jump and half squat jump training program are presented.

Table-1: Comparison between the means of pre test and post test scores on the basis of 't' ratio for vertical jump (centimeters) of depth jump group.

	M ₁	M ₂	SD	SE	't' Ratio	Required 't' ratio
Vertical jump	34.20	37.00	1.317	0.41	6.725	2.26

*Significance at 0.05 level of confidence
M₁= Mean of pre-test M₂= Mean of post-test

Table-1 reveals that the mean of vertical jump for pre test and post test scores depth jump group are 34.20 and 37.00. Similarly an examination of table-1 reveals that there is a significant difference in the mean value of vertical jump of pre test and post test scores as a result of depth jump training, as the obtained 't' ratio value (6.725) is more than the required 't' ratio value at 0.05 level of significance.

Figure -1: Graphical depiction of the mean difference of vertical jump (centimetres) for pre test and post test scores of depth jump group.

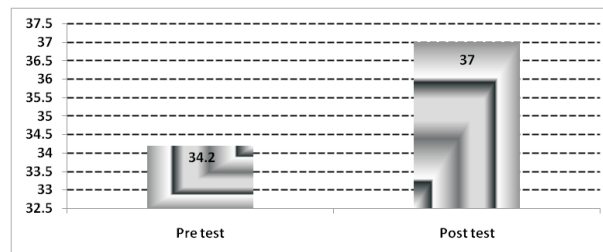


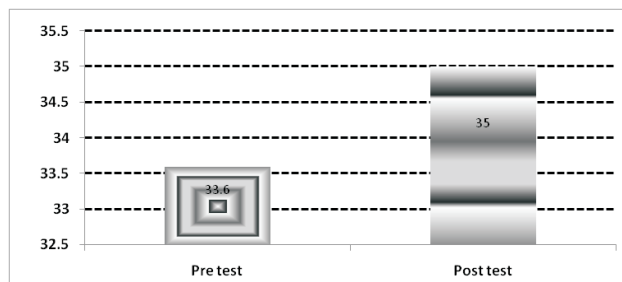
Table 2- Comparison between the means of pre test and post test scores on the basis of 't' ratio for vertical jump (centimeters) of half squat group.

	M ₁	M ₂	SD	SE	't' Ratio	Required 't' ratio
Vertical jump	33.60	35.00	1.075	0.340	4.118	2.26

*Significance at 0.05 level of confidence
M₁= Mean of pre-test M₂= Mean of post-test

Table-2 reveals that the mean of vertical jump for pre test and post test scores squat group are 33.60 and 35.00. Similarly an examination of table 2 reveals that there is a significant difference in the mean value of vertical jump of pre test and post test scores as a result of half squat training as the obtained 't' ratio value (4.118) is more than the required 't' ratio value at 0.05 level of significance.

Figure -2: Graphical depiction of the mean difference of vertical jump (centimeters) for pre test and post test scores of half squat group.



DISCUSSION OF FINDINGS:

The findings of the study showed that there is a significance difference between pre test and post test scores as a result of depth jump training group and half squat training group in leg strength of volleyball players which may be due to the reason that the training load fixed for the purpose of training depth jump or half squat training might have caused significant effect for the selected groups of volleyball to bring about adoptable changes in volleyball players physiological system. Hence they did showed significant change in vertical jump as result of selected training programme.

The findings of the study also showed that there is no significant difference in the performance of control group. It may be also due to the fact that during the training programme to the experimental group the volleyball players

were involved in any sort of training programme apart from their daily college routine and that might not have enough to bring significant adaptation change as far as vertical jumping ability is concerned. Hence, no significant difference was found in the pre and post test scores of control group.

CONCLUSIONS:

Within the limitation of present investigation the following conclusions were drawn:

- 1.The finding of the study reveals there is a significant difference between pre test and post test scores as a result of depth jump training group and half squat training group in leg strength of volleyball players.
- 2.The findings of the study also reveal that there is a significant difference among the three selected groups.
- 3.The findings of the study also reveals that the depth jump training was found to be the best training for the improvement of vertical jump of volleyball players compared to half squat training.
- 4.From the finding of the study, it may be concluded that the selected load parameters of duration of training program are sufficient to bring about significant change in the leg strength of the volleyball players.

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