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Effects of selected exercises on physical fitness variables of hand ball players

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Abstract
The purpose of the study was to determine the *"Effect of selected Exercises on Physical Fitness Variables of Hand Ball Players".* The study was delimited to the male Hand Ball Players of Jalgaon District. The age of selected subject were ranging from15 to19 years and their status was State Level Hand Ball Players. The researcher had selected 60 Hand Ball Players. Their fitness was tested by some selected exercises for Explosive Strength, Speed, Endurance and Agility. The scores were arranged in descending order. Ten (10) of high performance along with Ten (10) of low performance, were eliminated. It was done to selected the subjects of an average standard. Remaining forty (40) were finally selected for the study, twenty subjects in each control and experimental group respectively. Initial or pre test was conducted before the start of the experiment and was conducted on both the groups "A" and "B". The endurance was measured by using 600 yard run which was recorded in minutes and seconds. The explosive strength of shoulder was measure by using soft ball throw which was recorded in feets. (Maximum Distance Covered).The speed was measured by using 50 yard dash which was recorded in seconds. The agility was measured by using shuttle run (22x4) which was recorded in seconds and micro seconds.

Keywords: physical fitness, hand ball players, explosive strength, agility, experimental

Introduction

Fitness has become increasingly important part of Hand Ball game, both physical and mental fitness are required in Hand Ball. The physical fitness components such as 1) Endurance 2) Speed 3) Agility 4) Strength 5) Power 6) Flexibility 7) Muscular Strength etc. are very essential for the Hand Ball Players. They required arm and shoulder strength to maintain the speed in the game. The purpose of the study was to determine the" Effects of selected Exercises on Physical Fitness Variables of Hand Ball Players.

The study would help in finding out the methods of improving these components of Hand Ball.

Players. It might help the players to develop their physical fitness at optimum level. It would help the players to select the correct exercises while their training and also useful for coaches to develop the physical fitness of their Hand Ball Players in a positive and successive manner.

Procedure

The study was delimited to the male Hand Ball Players of Jalgaon district. The age of selected subject were ranging from15 to 19 years and their status was state level Hand Ball Players. The researcher had selected 60 Hand Ball Players. Their fitness was tested by some selected exercises for Explosive Strength, Speed, Endurance and Agility. The scores were arranged in descending order. Ten (10) of high performance along with Ten (10) of low performance, were eliminated. It was done to selected the subjects of an average standard. Remaining forty (40) were finally selected for the study, twenty subjects in each control and experimental group respectively. Initial or pre test was conducted before the start of the experiment and was conducted on both the groups "A" and "B". The endurance was measured by using 600 yard run which was recorded in minutes and seconds. The explosive strength of shoulder was measure by using soft ball throw which was recorded in feets. (Maximum Distance Covered).

The speed was measured by using 50 yard dash which was recorded in seconds. The agility was measured by using shuttle run (22x4) which was recorded in seconds and micro seconds.

Table 1: Training Schedule for Six Weeks

Week	Days	Exercise Programme	Intensity	Repetition	Sets	Recovery	Duration	Total Volume
I & II	Mon Wed Fri	Zig-Zag Run & 60 Yard Dash	50-55%	3 4	3 3	10 Seconds between repetition and 1 minute between sets and 2 minutes between activity.	15 minutes warm-up approx. 15-20 min. for activities (with recovery) 15 min. cool down.	Approx. 1.15 min.
	Tues Thu. Sat.	Medicine Ball Throw & 800 yard Run	55-60%	10 3	3 1	2 min. between sets. (Incomplete) 2 min. for each Repetition (Incomplete)	15 min. warming up. 2 min. between repetition. 15 min. cool down	Approx. 1.15 min
Sunday Rest (But not complete rest - 15 min. for Warming up and Cooling Down.)								
III &	Mon Wed Fri.	Zig-Zag Run & 60 Yard Dash	55-60%	3 4	3 3	20 Seconds between repetition and 2 minute between sets. 2 minutes between activities.	15 minutes warm-up approx. 15-20 min. for activities. 15 min. cool down.	Approx. 1.15 min

IV	Tues Thur Sat.	Medicine Ball Throw & 800 yard Run	60-70% 60-65%	12 3	3 1	2 min. between sets. (Incomplete) 3 min. between sets. (Incomplete)	15 min. warming up. 1.5 min. for each repetition. 15 Min. Cool Down	Approx. 1.15 min
Sunday Rest (But not complete rest - 15 min. for Warming up and Cooling Down.)								
V	Mon Wed Fri	Zig-Zag Run & 60 Yard Dash	65-75%	3	3	30 Seconds between repetition (Complete recovery between sets i.e. 3-4 minutes)	15 minutes warm-up approx. 25-30 min. for activities. 15 min. for cool down.	Approx. 1.15 min
& VI	Tues Thur Sat.	Medicine Ball Throw and 800 yard Run	75-85% 65-70%	4 3	3 1	3 min. between sets. (complete) 3-4 min. between sets (complete)	15 min. warming up. 1.5 min. for each repetition. 15 min. cooling down.	Approx. 1-15 minutes

Analysis and Interpretation of Data

The statistical analysis of the data consisting of raw scores made by the subjects by constructing a motor fitness (4 item) test by the help of AAHPERD Fitness Test have been presented. The level of significance to test the hypothesis in term of 't' ratio obtain was chosen as 0.05 level of confidence. The obtain raw scores in each test items were converted into standard scores with the help of 't' scale and composite score was formed, which were subjected to 't' test to find out the overall significant difference between the two groups i.e. pre-test and post-test. After calculating the overall significant difference in pre and posttest, each item of test was subjected to 't' test to find out the significant difference.

Table 2: Significance of Mean Difference between Pre-Test and Post-Test of Control Group

Group	Mean	Mean Diff.	S.D.	't' ratio
Pre Test	205.18	15.21	25.781	1.88
Post Test	220.39		25.194	

Tabulated t 0.05 (20) = 2.09

If calculated 't' is greater than the tabulated $t_{0.05}$, then there is a significant difference between the means of two test performance of group.

It is observe that calculated the 't' value of 1.88 is less than the tabulated 't' value of 2.09. Hence there is no significant difference between the means of pre and post test of control group.

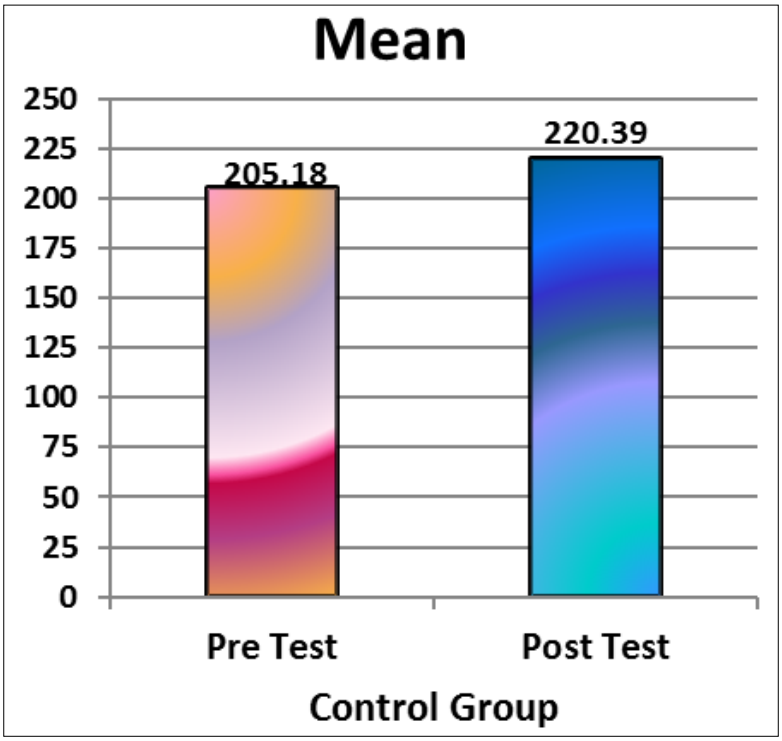

Fig 1: Graph Showing Mean Difference Between Pre-Test and Post-Test of Control Group

Table 3: Significance of Mean Difference between Pre-Test and Post-Test of Experimental Group

Group	Mean	Mean Diff.	S.D.	't' ratio
Pre Test	200.77	45.93	31.413	5.186
Post Test	246.70		24.118	

Tabulated $t_{0.05}(20) = 2.09$

If calculated 't' is greater than the tabulated $t_{0.05}$, then there is a significant difference between the mean of two test performed of group.

It is observed that calculated the 't' value of 5.186 is greater than 't' value of 2.09. Hence there is significant difference between the means of pre and post test of experimental group.

Cal. t = 5.186 > tab. $t_{0.05}(20)=2.09$

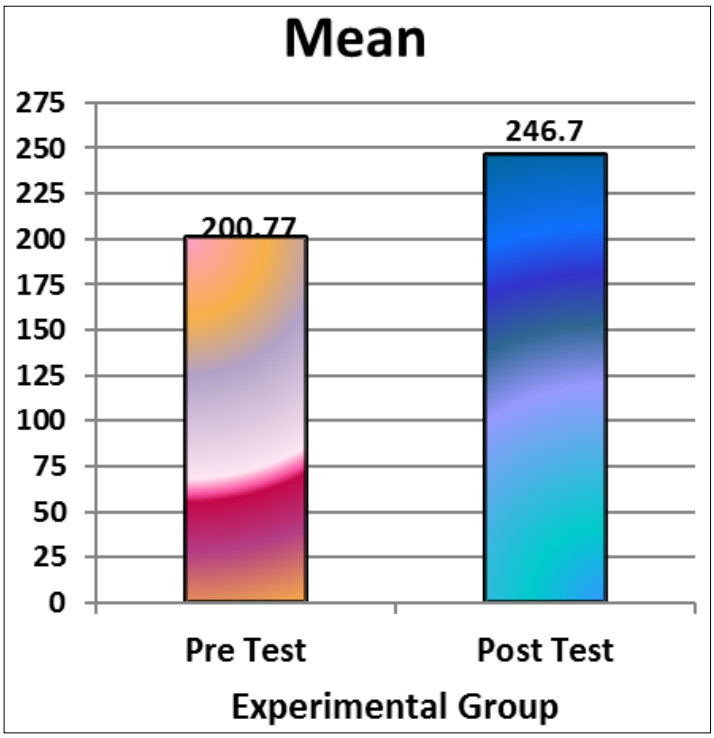

Fig 2: Graph Showing Mean Difference Between Pre-Test and Post-Test of Experimental Group

Table 4: Significance of Mean Difference between Post Test of Control Group and Experimental Group

Group	Mean	Mean Diff.	S.D.	't' ratio
Post Test Control Group	220.39	26.31	25.194	3.377
Post Test Experimental Group	246.70		24.118	

Tabulated $t_{0.05}(20) = 2.09$

If calculated 't' is greater than the tabulated $t_{0.05}$, then there is a significant difference between the mean of two test performance of groups.

It is observed that calculated 't' value of 3.377 is greater than the tabulated't' value of 2.09. Hence there is a significant difference between the means of posttest of control and experimental group.

Cal. t = 3.377>tab. $t_{0.05}(20) = 2.09$

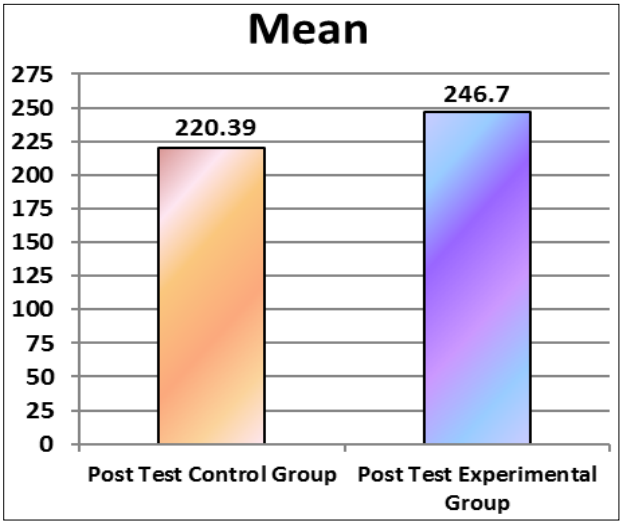

Fig 3: Graph showing Mean Difference Between Post Test of Control Group and Experimental Group

Study of the selected motor fitness training programme of Hand Ball Players of age group 15 to 19 years of Jalgaon district indicates there is a significant difference between the motor fitness of both the group i.e. control and experimental group.

Finding

Table-2, it shows that the mean differences between the pre-test and post-test of control group is 1.88, so it is found that there is no significant difference in both the tests.

Table-3, found that the experimental group have more speed, explosive strength, endurance and agility compare to the control group as their performance is found to be significant.

Table-4, show that experimental group of post test have more mean in their motor fitness as compared to the pre-test and performance is found to be significant.

It has been observed from the result of the finding of the study that the pre and post test experimental group between the age group of 15 to 19 years had better motor fitness (Explosive Strength, Speed, Endurance and Agility) of pre and post test of control group as measured by there overall performance by some selected exercises of motor fitness.

It was hypothesized that there is a significant difference between selected exercise on the development of speed, agility, explosive strength and endurance of the Hand Ball Players of Jalgaon district. From the above result and discussion, it is observed that the hypothesis stand proves to be correct.

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