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## Effect of specific handball training on speed, agility, leg explosive power of handball men players

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### Abstract

The purpose of the present study is to find out the effect of specific handball training on speed, agility, leg explosive power of handball men players. To achieve the purpose thirty (N-30) handball men players were selected from Dr. Zakir Husain College, Ilayangudi, Sivagangai District, Tamil Nadu. The selected subjects were divided into two equal groups consist of fifteen (n-15) handball men players each namely experimental group and control group. The experimental was treated with handball specific training skill training for twelve weeks. The control group was not involved in any specific training during the course of the study. Speed, agility and explosive power were taken as criterion variables in this study. Pre- and post- test was conducted before and after the training. The scores were recorded in their respective units as pre and post test scores. Statistical technique 't' ratio was used to analyze the means of the pre and post test data. The results revealed that there was a significant difference found on the criterion variables. The difference is found due to handball specific training.

**Keywords:** Specific training, agility, speed and explosive power

### Introduction

Handball is a dynamic sport that requires players to continuously shoot and adapt to changing circumstances as a team and as individuals. Although it is a team game, players have ample opportunities to display their skills through individual performance as well as strategic teamwork. The game is known for its speed, as it is one of the fastest sports in the world, making it easily accessible and thrilling. The simplicity of the rules and familiarity of the strategic moves make every play unpredictable.

Strength is crucial for handball players as consistent shooting can only be achieved with the help of strong arms and legs. Since the game takes about an hour to complete, players need good cardiorespiratory endurance to perform efficiently even during the last minutes of the game. Flexibility enables a wider range of movement in shooting, and movements around the court may become easier. Good flexibility may also reduce the risk of long-term injury. Coordination is essential for any player to excel in any sport, but it is particularly crucial in handball because players must coordinate their hand, eye, and leg movements before shooting, passing, and dribbling. Agility also plays a crucial role in this game, as players must move quickly in all directions to retrieve the ball. Speed is another important component of handball, both in terms of movement and passing or shooting the ball, as it contributes significantly to winning. The ability to jump is also critical for shooting.

### Need of Specific Training

Specific training is necessary for players who want to excel in handball. Handball is a complex sport that requires a combination of physical and mental abilities, including agility, coordination, strength, endurance, speed, and tactical intelligence. Here are some reasons why specific training is essential for handball players ie; Handball players need to master specific techniques and skills such as throwing, catching, dribbling, and shooting. Specific training can help players improve their technique and perfect their skills, leading to better performance on the court. Handball is a physically demanding sport that requires players to be in excellent shape. Specific training can help players improve their endurance, strength, and speed, which are all essential for performing at a high level in handball.

Specific training can also help prevent injuries by improving players' flexibility, balance, and coordination. Handball players are at risk of injuries such as ankle sprains, knee injuries, and shoulder injuries, so it's essential to take measures to prevent these injuries from occurring. Handball is a strategic sport that requires players to understand their position on the court and work together as a team. Specific training can help players improve their tactical understanding of the game, leading to better teamwork and communication on the court.

### Selection of Subjects

To achieve the purpose of the study thirty handball men intercollegiate players were selected from Dr. Zakir Husain College, Ilayangudi, Sivagangai District, Tamil Nadu.

### Selection of variable

To analysis the effect of Handball Specific Training Speed, Agility and Leg Explosive power were selected as criterion variables for the study

### Experimental design and implementation

The selected subjects (N-30) were divided into two equal

groups consists of (n-15) handball inter collegiate men players each namely experimental group and control group. The experimental group underwent a Handball specific training for twelve weeks. The control group was not taking part in any specific training during the course of the study. Speed, agility and explosive power was taken as criterion variable in this study. Pre-test was taken before the training period and post- test was conducted immediately after the twelve-week training period.

### Statistical Technique

The 't' test was used to analysis the significant differences, if any, difference between the groups respectively.

### Level of Significance

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 and control group was found out by pre-test. The data were analysed and dependent 't' test was used with 0.05 levels as confidence.

## Results

**Table I:** Comparison of Mean and 't'-ratio on Speed between Pre & Post Test among Experimental and Control Groups

S. No	Physical Fitness Variables	Groups	Test	Mean	't' Value
1	Speed	Experimental group	PreTest	7.11	12.83*
			PostTest	6.10	
		Controlgroup	PreTest	7.39	0.51
			PostTest	7.40	

\*Significant 0.05 level of confidence

**Table 2:** Comparison of Mean and 't'- ratio of Agility between Pre & Post Test among Experimental and Control Groups

S. No	Physical Fitness Variables	Groups	Test	Mean	't' Value
1	Agility	Experimental group	PreTest	11.40	0.51
			PostTest	10.64	
		Control group	PreTest	11.39	6.16*
			PostTest	11.39	

\* Significant 0.05 level of confidence

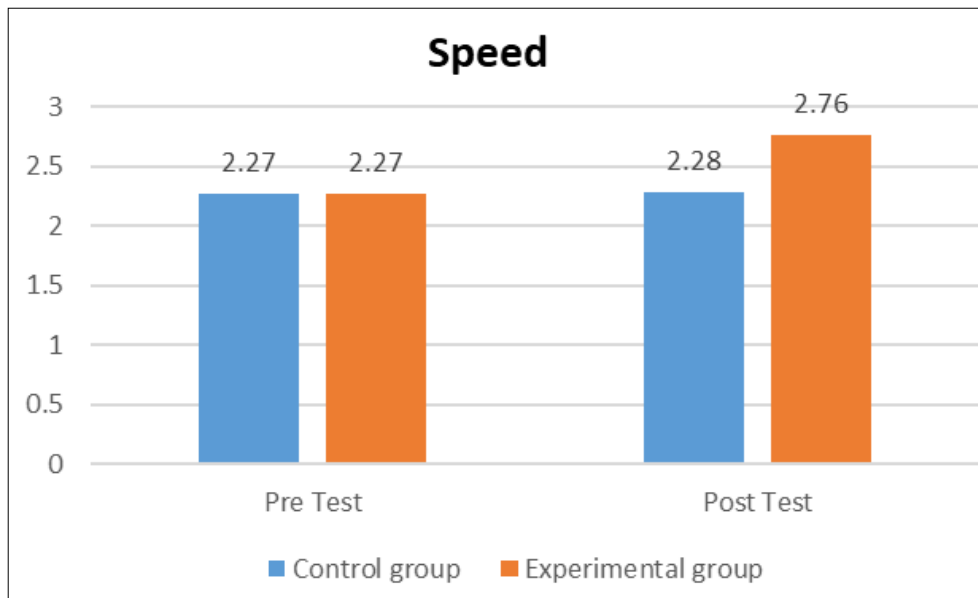
**Table 3:** Comparison of Mean and 't'- ratio of Leg Explosive Power between Pre & Post Test among Experimental and Control Groups

S. No	Physical Fitness Variables	Groups	Test	Mean	't' Value
1	Leg Explosive power	Experimental group	PreTest	2.27	3.84*
			PostTest	2.76	
		Control group	PreTest	2.27	0.53
			PostTest	2.28	

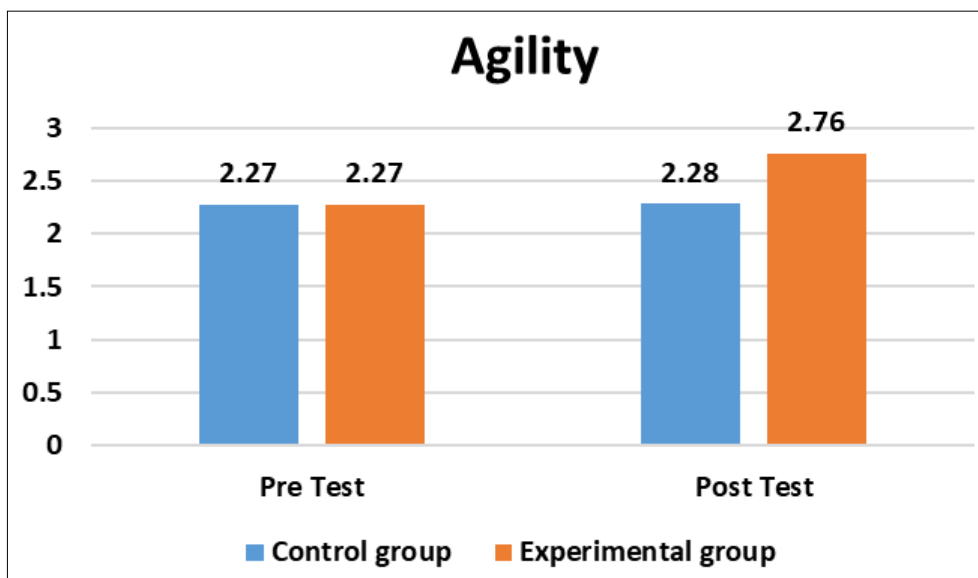
\* Significant 0.05 level of confidence

Table-I, II, and III reveals that the obtained mean values of per -test and post-test of experimental group for speed, agility and leg explosive power were 7.11 and 6.10, 11.40 and 10.64, 2.27 and 2.76 respectively; the obtained 't' ratio were 12.43, 6.16 and 3.84 respectively. The tabulated 't' value is 2.14 at 0.05 level of confidence for the degree of freedom1- 14. The calculated 't' ratio was greater than the table value. It is found to be significant in speed, agility and leg explosive power of the handball men players. The obtained mean values of pre-test and post-test scores of control group were 7.39 and 7.40,

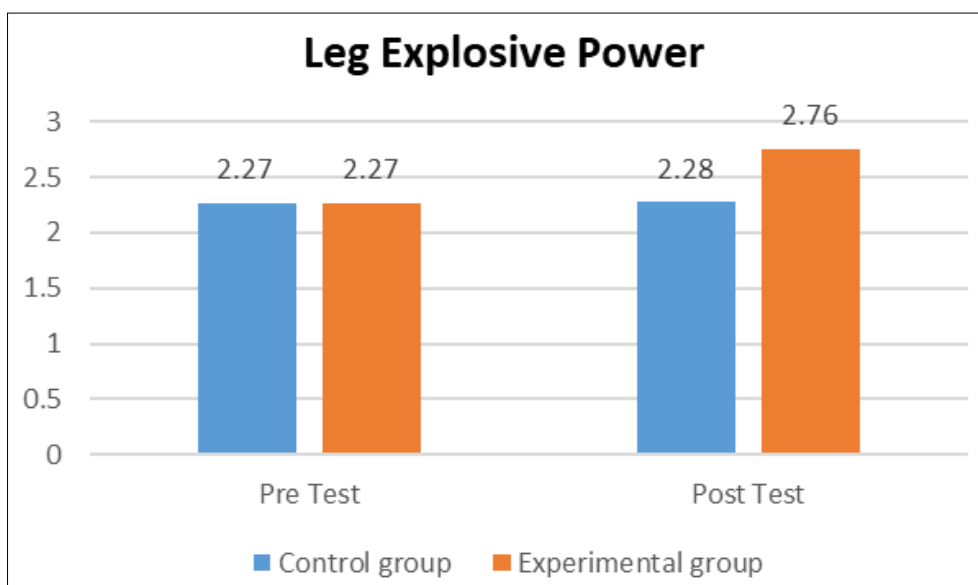
11.39 and 11.40, 2.27 and 2.28 respectively, the obtained 't' ratio was 0.51, 1.78 and 0.53. The required table value is 2.14 at 0.05 level of confidence for the degree of freedom 1-14. The calculated 't' ratio was lesser than the table value. It is found to be insignificant in speed, agility and leg explosive power of the handball men players. The mean values of selected physical fitness variables among experimental group and control group are graphically represented in figure 1, 2 and 3.



**Fig 1:** Bar Diagram Showing the Pre-Test and Post-Test on Speed of Experimental and Control Groups



**Fig 2:** Bar Diagram Showing the Pre-Test and Post-Test on Agility of Experimental and Control Groups



**Fig 3:** Bar Diagram Showing the Pre Test and Post Test on Leg Explosive Power of Experimental and Control Groups

### Discussion on Findings

According to the study, after 12 weeks of Handball-specific training, certain motor fitness variables such as speed, agility, and leg explosive power were significantly improved. These improvements were attributed to the scientific planning, preparation, and execution of the training program given to the players. The results of this study were similar to the findings of previous studies conducted by Abdul Halik (2021)<sup>[1]</sup>, Jenith (2021)<sup>[2]</sup>, Ooraniyan (2021)<sup>[4]</sup>, and S Senthil Kumaran (2018)<sup>[3]</sup>. Based on these results, it can be concluded that specific training methods are appropriate for improving the speed, agility, and leg explosive power of inter-collegiate level handball players. The present study clearly indicates that specific training significantly improves selected physical variables such as speed, agility, and leg explosive power.

### Conclusions

Based on the findings of the study and within the limitations of the research, it can be concluded that practicing Handball-specific training for 12 weeks helped to improve the speed, agility, and leg explosive power of inter-collegiate level handball players who are male.

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