

# Effect of Complex Training on Muscular Strength Among Men Kho-Kho Players from Jammu District

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**Abstract-** The aim of this study was to analysis the effect of complex training on muscular strength among men Kho-Kho players. Complex training was selected as independent variable and the following dependent variable was muscular strength. Twenty men Kho-Kho players were randomly selected from the Jammu District as subjects, and their age ranged between 20-24 years. They were divided into two groups, complex training group (n=10), and control group (n=10). . The muscular strength was assessed by pushupstest was selected as variable. The selected variable was tested by using the standardized test items pre and post-test. Complex training consists of six weeks and three days in a week, the experimental group underwent their specific complex training and control group did not participate any training. The collected data were analyzed by using analysis of covariance to find the significant difference among the experimental and control groups. The results were tested at .05 level of confidence. It was concluded that there was significant improvement on muscular strength due to the effect of complex training when compared to the control group among the Kho-Kho players.

**Key Words:** Complex Training, Muscular Strength, and Kho-Kho Players

## INTRODUCTION

1. Tudor O. Bompa, (1999),.In the past, people were trained systematically, in recent years the athletes prepare themselves for a goal through training and they improve physiological goal and optimize athletic performance. The purpose of training is to increase athletes work and skill capabilities and to develop strong psychological traits
2. Tudor O. Bompa, (1999) Training is primarily a systematic athletic activity of long duration, which is progressively and individually graded.

3. Tudor O. Bompa, (1999) Training adaptation is sum of transformations brought about by systematically repeating exercise
4. Wilmore, Costil, and Kenney, (2008) Repeated days of training can be considered positive stress because training improves one's capacity for energy production, tolerance of physical stress and exercise performance. The major physical changes associated with training occur in the first six to ten weeks. Complex training integrates strength training, plyometrics, and sometimes sport-specific movement. It consists of an intense strength exercise followed by a plyometric exercise. Complex training activates and works the nervous system and fast twitch muscle fibers simultaneously. The strength exercise activates the fast twitch muscle fibers (responsible for explosive power). The plyometric movement stresses those muscle fibers that have been activated by the strength training movement. During this activated state, the muscles have a tremendous ability to adapt. This form of intense training can teach slow twitch muscle fibers to perform like fast twitch fibers. By integrating plyometrics with strength training, there is an added benefit of improving rate of force, the speed with which force is achieved in movement. Strength training alone will not maximize speed or power. Combat athletes need the ability to explode with speed in addition to brute strength. Complex training is one of the most effective ways to improve power output for combat.

## Purpose of the Study

The purpose of the study was to find out the effect of Complex training on muscular strength among men Kho-Kho players.

Objective: To study the effect of complex training on Muscular Strength among Men Kho-Kho Players.

#### METHODOLOGY

The purpose of this study was to find out the effect of complex training on muscular strength among men Kho-Kho players. To achieve the purpose of the study twenty men Kho-Kho players were randomly selected from Jammu District as subjects, and their age ranged between 18-25 years. The researcher reviewed the available scientific journals, periodical, magazine, e-resources and research paper. Taking into consideration feasibility criteria, availability of the instrument and relevance of the variable of the present study the following dependent variable namely muscular strength were selected. Similarly complex training was chosen as independent variable. The muscular strength were assessed by sit & reach test respectively.

This study was conducted to determine the possibility cause and effects of complex training on muscular strength among men Kho-Kho players. The subjects

were divided into two equal group consists of 10 each and named as experimental group (Group-I) and control group (Group-II). Group-I (n=10) underwent complex training and Group II acted as control group. The control group was not given any treatment and the experimental group was given small sided games training for three days per week, for a period of six weeks. The related group research design was used in this study. The collected data from the two groups prior to and after the experimental treatments on muscular strength were statistically analyzed by using the statistical technique of analysis of covariance (ANCOVA). In all the cases 0.05 level of confidence was fixed as a level of confidence.

#### RESULT AND FINDINGS

The effects of complex training on muscular strength was analyzed and presented below.

Data Analysis: The effect of Complex training on muscular strength variable was analyzed and presented below.

Table – I Computation of Mean and Analysis of Muscular Strength of Experimental and Control Groups

	ExperimentalGroup	ControlGroup	Source ofVariance	Sum ofSquares	df	Mean Square	F
Pre Test Mean	26.74	26.69	BG	3.33	1	3.33	2.41
			WG	24.84	18	1.38	
Post Test Mean	34.27	26.74	BG	33.43	1	33.43	11.37*
			WG	52.92	18	2.94	
Adjusted Post Mean	34.16	26.73	BG	29.32	1	29.32	10.25*
			WG	48.62	17	2.86	

\* Significant at 0.05 level. Table value for df 1, 18 was 4.41, df 1, 17 was 4.45

The above table indicates the pre test mean value on muscular strength variable of experimental and control groups were 26.74&26.69 respectively. The obtained F-ratio of 2.41 for the pre test mean was lesser than the table value 4.45 for the degrees of freedom 1 and 18 required for significance at 0.05 level of confidence. The above also table indicates the post test means value on muscular strength variable of experimental and control groups were 34.27&26.74 respectively. The obtained F-ratio of 11.37 for the post test mean was greater than the table value 4.45 for the degrees of freedom 1 and 18 required for significance at 0.05 level of confidence.

The above table also reveals the adjusted mean value on muscular strength variable of experimental and control groups were 34.16&26.73 respectively. The obtained F-ratio of 10.25 for adjusted mean was

greater than the table value 4.45 for the degrees of freedom 1 and 18 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on muscular strength among men Kho-Kho players from Jammu District.

#### CONCLUSION

It was concluded that there was significant improvement on muscular strength due to the effect of Complex training among men Kho-Kho players. However the control group had not shown any significant improvement on any of the selected variables.

#### REFERENCE

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