

# COMPARATIVE STUDY OF SELECTED PHYSICAL COMPONENTS OF MALE BOXERS, WRESTLERS AND JUDOKAS

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**Abstract:** Most of the skill performances and execution of techniques in the sports such as boxing, wrestling and judo were based on the basic fitness components. The purpose of the study was to determine the existence of statistically significant difference on selected fitness components (*speed, agility, power, flexibility and endurance*) among boxers, wrestlers and judokas. For this purpose, ninety sportsmen (30 boxers, 30 wrestlers, and 30 judokas) were selected. Their age ranged between 18 to 23 years. The selected variables were assessed using 50 metres dash, shuttle run, jump and reach, sit and reach, and Harvard step test. The data was analyzed by applying ANOVA and Scheffe S post hoc test. The result showed that there were significant difference in all the selected physical fitness components among boxers, wrestlers and judokas. The boxers showed a better capability in speed, agility and power, while the wrestlers were better in endurance and the judokas with greater flexibility.

**Keywords:** Boxers, wrestlers, judokas, speed, agility, power, flexibility, endurance

## Introduction

The fitness components are qualities that athletes must develop to physically prepare for sport competition. They are the building blocks of exercise and physical activity. Sports training programs are designed to build these components in the proper proportions that match the requirements of each sport. A basic definition of physical fitness is "the ability to complete daily tasks with energy, reduce health risks due to inactivity, and be able to participate in a variety of physical activities." The 5 fitness components that are deemed health-related are: cardio, strength, endurance, flexibility, and body composition. In addition, speed, agility, power, balance, and coordination have been identified as performance-related. All of these qualities exist to some degree in most sports, but developing certain combinations is important in any given sport. While definitions are assigned to qualities that represent what "fitness" is, it can be operationalized in different ways for each sport. In other words, fitness for one sport is somewhat different from another.

In today's society sports and physical fitness play an important role in physical well-being. In this material world man does not get enough time for doing physical activity. Spectral concept of health emphasizes that the health of an individual is not static; it is a dynamic phenomenon and a process of continuous change. The physical dimension of health is probably the easiest to understand. The state of physical health implies the notion of perfect functioning of the body.

Nowadays physical activities have a great role in maintaining better health. Meanwhile better health is only possible through doing some sort of physical activities. In this point of view, the combative sports like boxing, wrestling and judo are the good source of developing physical fitness and mental fitness. Comparing of selected physical fitness components of male boxers, wrestlers and judokas would reveal that significant difference exists as their physical fitness developed through participation in respective sports.

## Method

### Subjects and variables

For the study total 90 males (30 boxers, 30 wrestlers, and 30 judokas) were selected. The age ranged between 18-23 years. The following variables were selected for the study: 50 Meter dash, shuttle run, jump and reach, sit and reach and Harvard step test.

### Statistical technique

The data was analyzed by applying ANOVA. The level of significance was fixed at 0.05 level. Scheffe's post-hoc test was employed where "F" ratio found significant.

## Results

The data on selected fitness components were analysed and tabulated in Table 1 through 3. The mean values on speed, agility, power, flexibility and endurance of boxers, wrestlers and judokas were given in Table 1.

**Table 1: Mean scores on selected physical fitness components**

Variables	Boxers	Wrestlers	Judoka"s
Speed	6.6796	7.127	7.0353
Agility	9.896	10.686	10.633
Power	20.4666	15.3	16.7666
Flexibility	24.2996	28.7176	30.0723
Endurance	68.1796	78.0866	74.8396

The data on selected fitness components was analysed for statistically significant difference among boxers, wrestlers and judokas using analysis of variance and it is given in Table 2.

**Table 2: ANOVA on selected physical fitness components**

Variables	Source of Variance	Sum of Squares	df	Mean Square	„F“ value
Speed	Between	3.3509	2	1.6754	11.8991*
	Within	12.2530	87	0.1408	
Agility	Between	11.7707	2	5.8503	35.8694*
	Within	14.1910	87	0.1631	
Power	Between	425.3466	2	212.6733	23.0380*
	Within	803.1330	87	9.2314	
Flexibility	Between	546.7799	2	273.3899	68.5720*
	Within	346.8619	87	3.9869	
Endurance	Between	1530.4725	2	765.2362	18.0347*
	Within	3691.5089	87	42.4311	

\*Significant at F 0.05 level

Table 2 states that there is a statistically significant difference on all the fitness components (*speed, agility, power, flexibility and endurance*) confined to this study, as the obtained *F* ratio was found to be greater than the required table value of 3.10 at 0.05 level of confidence. Since, significant difference exists, the post hoc test was applied to find out the paired mean difference among boxers, wrestlers and judokas on each of the fitness components selected in this study, and it is given in Table 3.

**Table 3: Scheffe"s post-hoc test on selected physical fitness components**

Variables	Boxers	Wrestlers	judokas	MD	CD
Speed	6.6796	7.127		0.4474*	0.23
	6.6796		7.0353	0.3557*	0.23
		7.127	7.0353	0.0917*	0.23
Agility	9.896	10.686		0.79*	0.02
	9.896		10.633	0.737*	0.02
		10.686	10.633	0.053*	0.02
Power	20.4666	15.3		5.1616*	1.94
	20.4666		16.7666	3.7*	1.94
		15.3	16.7666	1.4666*	1.94
Flexibility	24.2996	28.7176		4.418*	0.65
	24.2996		30.0723	5.7727*	0.65
		28.7176	30.0723	1.3547*	0.65
Endurance	68.1796	78.0866		9.907*	7.01
	68.1796		74.8396	6.66	7.01
		78.0866	74.8396	3.247	7.01

Table 3 reveals that boxers demonstrated significantly better speed, agility and power performance compared to wrestlers and judokas, in case of flexibility judokas have notably better flexibility than boxers and wrestlers. Wrestlers have considerably superior endurance capacity than boxers.

### Discussions

In the present study boxers demonstrated significantly better speed, agility and power performance compared to wrestlers and judokas, in case of flexibility judokas have notably better flexibility than boxers and wrestlers. Wrestlers have considerably superior endurance capacity than boxers. Earlier studies of Jagiełło, Kalina, and Tkaczuk (2001; 2004) well documented the development of the motor capacity [1, 2]. It is worth to emphasize one more issue by comparing the sportsmen of

different sports. Only few studies made a comparison between different sports and revealed differences on fitness characteristics along the participation of different sports [3, 4], where Gernigon and Le Bars (2000) stressed the compatibility of a competitive context and task orientation in such studies [5]. Consequently, future studies might take a closer look at the relationship between the characteristics of participants and the chosen sport.

### Conclusions

On the basis of the findings it was concluded that participation in different sports cultivates physical fitness but at a very much varied context of such chosen sports.

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