

# COMPARATIVE STUDY OF MALE JUDOKA AMONG DIFFERENT WEIGHT CATEGORIES ON SELECTED MOTOR ABILITIES

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## INTRODUCTION

The purpose of the present study was to compare the selected motor abilities such as speed, muscular endurance, explosive strength, flexibility and coordinative abilities (five types of coordinative abilities) of Judo players among seven different weight categories, which were state position holder and participated in National Judo Championship. For the study seventy male judo players, who has won medal's position in Delhi State Judo championship or participated in National Judo Championship in 2009 and 2010. Only ten Judo players of each seven categories were selected as subjects for the study.

The research scholar gleaned through all the scientific literature from books, magazines, journals, periodicals available in the various libraries of Delhi and internet surfing pertaining to Judo. Keeping the feasibility criterion in mind, especially in the case of availability of instruments, the following motor abilities were selected i.e. Speed- 40m sprint, explosive jump by vertical jumping ability, muscular strength of abdomen muscles by one minute sit- ups, flexibility by sit and reach test and coordinative ability with its five different types like- reaction ability, orientation ability, differentiation ability, balance ability and rhythmic ability. The necessary data was collected with standardized procedure by administering selected motor abilities tests as suggested by Hardy Singh, Cooper and Peter Hirtz.

The necessary work was done before the start of the test, the first practice sessions were administered several times of each test with the help of the Supervisor. All the tests were administered and explained to the subjects by the scholar categorically left no ambiguity. All the doubts of the subjects raised were clarified before taking the test.

## FINDINGS

**Table 1 ANALYSIS OF VARIANCE OF SELECTED MOTOR ABILITIES AMONG SEVEN WEIGHT CATEGORY OF JUDOKAS**

S. No.	Motor Ability	'F' Test
1.	Speed-40m sprint	6.80*
2.	Explosive Strength- vertical jump	6.37*
3.	Muscular Endurance- 1min. sit ups	6.38*
4.	Flexibility-Sit & Reach test	2.09*
	Coordinative Ability-orientation	1.62*
	Coordinative Ability-differentiation	5.34*

	<b>Coordinative Ability-reaction time</b>	<b>6.75*</b>
	<b>Coordinative Ability-balance</b>	<b>8.61*</b>
	<b>Coordinative Ability-rhythm</b>	<b>2.27*</b>

\*Significant at 0.05 Level of Confidence

'F' at 0.05 (df-6/63) = 2.25\*

(Garrett, Henry E. *Statistics in Psychology and Education*, Vakils, Feffer & Simon Ltd. Bombay, 1981)

To compare the selected motor abilities of Judokas among different weight categories, the analysis of variance (ANOVA) was employed at .05 level of significance.

The study found significant difference in majority of the motor abilities such as speed ability- 40m sprint, explosive vertical jumping ability, and muscular strength- one minutes sit ups tests, differentiation coordinative ability, reaction coordinative ability, balance coordinative ability and rhythm coordinative ability. The smaller weight categories- 60kg was found best in speed ability when tested on 40m sprint test balance coordinative ability and rhythm coordinative ability.

The second weight category of 66kg body weight was found best in abdomen muscular strength- one minute sit-ups test, differentiation coordinative ability and in reaction time. The 90kg weight category was found best in all seven weight categories in explosive strength- vertical jumps. The 81 kg category was slightly lower in explosive jumping ability. It may be due to the high level of strength training, optimum height, high level of legs strength and relative strength.

It proved that all the seven weight categories of Judo players were not involve similar type of the training on selected motor abilities. The lighter weight players put more emphasize on speed, muscular endurance and coordinative abilities. While the middle weight 81kg and 90 kg Judokas performed more weight training and improve explosive legs and arms strength.

There were no significant difference was found among some of the weight categories in relation to flexibility- sit and reach test and in orientation coordinative motor ability, it may be due to same type of emphasize on flexibility and orientation coordinative motor ability training given to selected subjects. In the present study, there was no significant difference in different weight categories might be due to the reasons that kinaesthetic sense organs assume more importance for orientation, and the Judokas of all weight categories require and use same level of kinaesthetic sense.

The significant difference between different weight categories in relation to differentiation ability might be due to the reason that the Judokas of different weight categories have different level of tuning and harmony of individual movement phase and body part movements. Judokas of low weight category might have high level of tuning and harmony due to less weight.

The significant difference in speed showed smaller weight Judo players were faster than heavy weight due to more speed training, less weight & more active, explosive jumping ability indicated more strength in thigh and legs of middle weight Judo players. The muscular strength in abdomen muscles were more in smaller weights categories may be due to less

body weight and extra training for sit ups. The balance ability, reaction ability and rhythm ability also showed significant differences in various weight categories might also be due to the same reasons i.e. difference in adiposity factor or over body weight.

## DISCUSSION OF HYPOTHESIS

The hypothesis was stated that there will not be significant difference among the selected motor abilities among different seven weight categories was accepted. In case of sit and reach test for flexibility and orientation ability the hypothesis was accepted. But in case of speed- 40m sprint ability, explosive jumping vertical ability, muscular endurance knee bent one minutes sit ups test, differentiation ability, reaction ability, balance ability and rhythm ability the selected hypothesis was rejected because there were significant difference found in these motor abilities among the different weight categories due to some reasons of personal, inherited and training. The scholar has suggested some recommendations for the future research which may be conducted in related area.

## CONCLUSIONS

On the basis of the data analysis, limitations and finding of the present study the following conclusions were drawn:

- The significant difference was found in the speed motor abilities- 40m sprint in relation to the various weight categories of Judo competition.
- The significant difference was found in the explosive vertical jumping ability in relation to the various weight categories of Judokas.
- The significant difference was found in the muscular strength- one minutes sit ups tests in relation to the various weight categories of Judo competition.
- The significant difference was found in the differentiation coordinative ability in relation to the various weight categories of Judokas.
- The significant difference was found in the reaction coordinative ability in relation to the various weight categories of Judo competition.
- The significant difference was found in the balance coordinative ability in relation to the various weight categories of Judokas.
- The significant difference was found in the rhythm coordinative ability in relation to the various weight categories of Judo competition.
- The significant difference was found in the flexibility- sit and reach test in relation to the various weight categories of Judo competition.
- There was not found any significant difference in different weight categories in relation to orientation ability.
- The smaller weight categories were found best in speed ability, abdomen muscular strength, balance coordinative ability and rhythm coordinative ability, differentiation

coordinative ability. Which may be due to hard training in these areas, lighter body weight, shorter height, to having high frequency and optimum strides length?

- The higher weight category was found best in seven weight categories in explosive strength- vertical jumps. It may be due to the optimum height, high level of legs strength training and high level of relative strength.
- It proved that all the seven weight categories of Judo players were not involve similar type of the training on selected motor abilities. The lighter weight players put more emphasize on speed, muscular endurance and coordinative abilities. While the middle weight players performed more weight training and improve legs and arms strength.
- There were no significant difference was found in sit and reach test and in orientation coordinative motor ability may be due to same type of emphasize on flexibility and orientation coordinative motor ability training given to selected subjects.

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