

**A Survey of Physical, Physiological and Psychological Profile of Judo Players  
Ms. Monika Goswami\*, Ms. Gursharan Kaur\*\*, Mr. Vinod Kumar\*\*\*, Dr. Dinesh P.  
Sharma\*\*\*\* Dr. Anil Chauhan \*\*\*\*\***

\* Research Scholar, Shri Venkateshwara University, UP

\*\* Research Scholar, Shri Venkateshwara University, UP

\*\*\* P.E.T., Navyug School, Mandir Marg, New Delhi

\*\*\*\* Assistant Professor, Dept. of Physical Education & Sports Sciences, Deshbandhu  
College, University of Delhi

\*\*\*\*\* Associate Professor, Dept. of Behavioral Science, I.G.I.P.E.S.S., University of Delhi

\*\*\*\*\* (Associate Professor), Chief Proctor & Incharge, Deptt of Physical Education &  
Sports, K.G.K.(P.G.) COLLEGE, MORADABAD

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**Abstract**

Sports performance is a diversified field of study where many factors contribute. The factors of an advance level athlete of any sports need to be identified as they are responsible for the development of world class sports person. The objective of the research was to assess the relationship among Judo playing ability and selected physical, physiological and psychological variables. For the said purpose, 25 current Judo players (age  $24.60 \pm 3.175$  yrs, height  $173 \pm 9$  cm and weight  $73.5 \pm 8.71$  kg), from district to national level were surveyed on selected variables. Physical variables constituted speed ability, arm strength, abdominal endurance, cardio-vascular endurance and leg power which were measured by using 50m dash, pull-up, one minute sit-up test, 600m run/walk test and standing broad jump respectively. Physiological characteristics consisted Breath Holding Capacity, vital capacity and Peak flow rate measured by using stop watch, dry spirometer and peak flow monitor respectively. Rossenberg Self-esteem Questionnaire and SCAT were used to measure Self-esteem and competitive anxiety under psychological variables. The Judo playing ability was assessed by applying Special Judo Fitness test. Descriptive statistics, pearson product moment correlation and partial correlation along with various illustrative measures were used to analyze the data. Result shows that Judo playing ability is highly correlated to speed, endurance, vital capacity and peak flow rate of the Judo players. Whereas, Judo performance were found insignificantly correlated to arm strength, abdominal endurance, leg power, breath holding capacity, self-esteem and competitive anxiety.

**Key words:** *leg power, breath holding capacity, competitive anxiety*

**INTRODUCTION**

The dynamic demand of sports performance includes various aspects of an individual's characteristics. The Physical, Physiological and Psychological are some instances required for the same and these variables are poorly correlated phenomena as far as sports performance is concerned. Many attempts has been made by various researches time to time in various countries that assess the relationship between playing ability of a particular sports and anthropometrical variables. But, most of them failed to identify most important and dominating characteristics that are highly associated with the sports performance of an athlete. Sports performance is a dynamic phenomenon that is not confined to bodily structure only. This is the limitation of most of the researches in the past on related subject. Dynamic variables such as fitness, health, functioning of body and its system, and behavior of the athlete on and off the ground are also equally important. With keeping this fact in mind, the researcher enlisted various fitness, physiological and psychological variables and made an attempt to establish the relationship among them. There are numerous variables under

mentioned aspects. However, few variables under each category were selected namely speed, arm strength, abdominal muscle endurance, cardiovascular endurance and leg power in physical variables. In physiological variables, breath holding capacity, vital capacity and peak flow rate was included. And psychological variables included self-esteem and competitive anxiety of the Judo players. The wide range of heterogeneous variables was considered for this research in order to make an attempt in revealing the hidden factors for considerable Judo performance. With the hypothesis that selected variables will have the highest correlation with included sports person, this study was carried out and an attempt was made to unfold the highest significant factors that would lead to great sports success in Judo.

## PROCEDURE AND METHODOLOGY

### Subjects

For the purpose of survey, total 100 male current Judo players were selected to collect data of selected variables. There were different levels of Judo players from Delhi. The age, height and weight values were obtained as age  $24.60 \pm 3.175$  yrs, height  $173 \pm 9$  cm and weight  $73.5 \pm 8.71$  kg respectively.

**Variables** :After reviewing the literature, consultation with the experts and researcher's own understanding the following variables were selected for purpose of this study:

#### Physical Fitness

- a) Speed
- b) Arm Strength
- c) Abdominal Muscle Endurance
- d) Cardiovascular Endurance
- e) Leg Power

#### Physiological Variables

- a) Breath Holding Time
- c) Vital capacity
- d) Peak flow rate

#### Psychological variable

- a) Self-esteem
- b) CSAI

### Tools and Techniques Used

Variables	Test/Equipment	Unit
Speed	50 Yard Dash	Seconds
Arm Strength	Pull-up test	Numbers
Abdominal Muscular Endurance	Sit-up test	Reps/min.
Cardiovascular Endurance	600 m	Seconds
Leg Power	Standing Broad Jump	Cm
Breath Holding Capacity	Stop Watch	Seconds
Vital Capacity	Spirometer	Liters
Peak Expiratory Flow Rate (PEFR)	Peak flow Monitor	Liters
Self-esteem	Rosenberg Self-esteem Questionnaire	As per scoring key
Competitive Anxiety	SCAT	As per scoring key
Judo Playing Ability	Special Judo Fitness Test	As per norms

### Data Collection

As per the requirement of the research in order to fulfill the objectives of the study, the data for current research was collected once for various selected variables belonging to physical,

physiological and psychological aspects. The data was collected using the most standard tests with acceptable reliability and validity coefficient.

**Statistical Technique**

The data was collected from Judo players on the selected Psychological, Physiological and Physical fitness variables, and used for the statistical treatment that specify descriptive statistics (Mean, Standard Deviation, percentile). The relationship among playing ability and selected physical, physiological and psychological variables were established by applying pearson product moment correlation where level of significance was set at 0.05 and 0.01 All the calculations were carried out by using SPSS (Statistical Package for Social Sciences) version 16.

**RESULTS AND DISCUSSIONS**

	Mean	Std. Deviation	N
<b>PERFORMANC E</b>	13.15	0.58	50
<b>AGE</b>	24.60	3.17	50
<b>SPEED</b>	7.61	0.41	50
<b>PU</b>	9.36	1.50	50
<b>SU</b>	47.12	4.09	50
<b>ENDURANCE</b>	104.92	7.22	50
<b>SBJ</b>	155.04	6.53	50
<b>BREATH</b>	50.76	7.48	50
<b>VC</b>	4731.00	366.90	50
<b>PEFR</b>	494.94	6.71	50
<b>SE</b>	17.92	3.39	50
<b>SCAT</b>	16.72	4.31	50

The table above represents the status of all Judo players on their playing ability and physical, physiological and psychological variables. The Special Judo Fitness Test clearly shows that the playing ability of Judo players was observed  $13.15 \pm 0.58$ . The variables that came under physical aspect i.e. speed, pull-up, sit-up, endurance and leg power have shown the status as  $7.61 \pm 0.41$ ,  $9.36 \pm 1.50$ ,  $47.12 \pm 4.09$ ,  $104.92 \pm 7.22$  and  $155.04 \pm 6.53$  respectively. Under physiological variables, the breath holding capacity showed its status as  $50.76 \pm 7.48$ , vital capacity represented  $4731.00 \pm 366.90$  and peak flow rate represented  $494.94 \pm 6.71$ . As far as psychological variables are concerned, their status in term of self-esteem was observed as  $17.92 \pm 3.39$  and for competitive anxiety, it was  $16.72 \pm 4.31$ .

**Correlation**

		PULL-UP	ENDURANCE
PERFORMANCE	Pearson Correlation	-0.782**	-0.411*
	Sig. (2-tailed)	0.000	0.041
	N	50	50

The correlation analysis proved that playing ability in Judo is highly correlated to Pull-up ability of an individual. However, the said relationship was found to be negative. On the other hand, endurance also found significant at 0.05 level of significance with negative correlation. The possible reason for the negative relationship with variables could be the fact that the test used for judo ability assessment gives score which considered good when it is less. Therefore, the negative correlation here is actually representing the good aspect of the performance. The r-value obtained for pull up ability was found to be -0.782 which was significant at 0.01 level of significance. However, the endurance ability was found significant at 0.05 level of significance r-value of -0.411. Rest of the variables was not significantly correlated with the playing ability of Judo players.

#### CONCLUSIONS AND RECOMMENDATIONS

On the basis of objectives of the study and result obtained after statistical application, it was concluded that the physical and physiological capabilities of Judo players was of above average standard. However, their psychological variables were lying in the range of average standard. Besides, there is a direct correlation between the judo playing ability and pull ability and endurance ability of Judo players. Therefore, it was recommended that Pull up and endurance ability are certain factors that are of utmost importance as far as development of Judo playing ability are concerned. Subsequently, another recommendation made that same research need to be conducted in other sports and/or different gender.

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