Association of Certain Anthropometric Variables and Explosive Strength among Male Judokas

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Abstract

The purpose of the study was to find out the association of selected anthropometric variables and explosive strength among male judokas. To reach up to the valid conclusion thirty-two male judokas from Lakshmibai National Institute of Physical Education, Gwalior were selected randomly as the subjects for the study who have participated at Intervarsity and National level. The age of selected subjects was ranging between twenty to twenty-six years. Selected variables for the study were anthropometric variables (Thigh Girth and Calf Girth) and explosive strength. The data was collected through the measuring the selected anthropometric variables such as thigh girth (in centimetres), calf girth (in centimetres) and standing broad jump (in meters) used for measuring explosive strength. For relationship between thigh girth and calf girth with the explosive strength Carl Pearson product moment correlation were applied at 0.05 level of significant. The result of the study showed that there was significant relationship between selected anthropometric variables (thigh girth and calf girth) and explosive strength among male judokas. On the basis of the findings, it was concluded that the there is significant relationship between selected anthropometric variables and explosive strength.

KEYWORDS: Judokas, Anthropometric variables and Explosive Strength.

INTRODUCTION

Judo and body compositions are meant for each other in terms of various aspects of training i.e., speed, muscular strength, muscular endurance and cardiovascular endurance. Strength is a fitness component plays a key role in various combative sports as we need power to execute the techniques. The science of measurement applied to the human body and includes measurements of height, weight, and selected body and limb girths is considered as Anthropometry. Anthropometry is the study of the measurements of the human body. Anthropometric variables are dimension of the structure of the human body taken at specific site to give measurement of length, girth and width. (Donald K. Mathews, Measurement in physical education 5th ed. (Philadelphia; W.B. Saunder, co, 1978) p. 19).Physical fitness is the capacity of an individual to do work effectively with joy and pleasure. He /she still have sufficient capacity to do more work without any fatigue. Physical fitness is the capacity to meet the present and potential physical challenges of life with success. There are five physical fitness components. They are directly or indirectly interring related with each other. These components having their own importance in different field of games and sports such as strength, speed, endurance, flexibility and co-ordination.

Strength can be defined as the ability of muscles to overcome the resistance or in other words it is the amount of force a muscle can exert. Further strength also classified in differentcategories, maximumstrength, strength endurance and explosive strength. Explosive strength is ability of muscles to perform forceful movement at quickest possible time. Explosive strengthis the ability of muscles to perform forceful movement at quickest possible time. It is the combination of strength and speed.Standing broad jump, also called the broad jump, is a common and easy to administer test of explosive leg power. It is one of the fitness tests.

MEANS AND METHODS

The purpose of the study was to find out the association of selected anthropometric variables and explosive strength amongmale judokas. To reach up to the valid conclusion thirty-two male judokas from Lakshmibai National Institute of Physical Education, Gwaliorwere selected randomly as the subjects for the study who have participated at Intervarsity and National level. The age of the selected subjects was ranging from 21-26 years only. The selected variables for the present study were anthropometric variables (Thigh Girth and Calf Girth) and explosive strength. Explosive strength was measured by standing broad jump and recorded in meters.Thigh girth (average of both legs) and calf girth (average of both legs) was measured by measuring tape and recorded in centimetres.The data were analyzed by applying Person product moment correlation. The levels of significance was set at 0.05.

RESULT AND FINDINGS OF THE STUDY

Table – 1

Descriptive Statistics of Selected Anthropometric Variables with Explosive Strength among Male Judokas

Variables	N	Mean	Std. Deviation
Calf Girth	32	35.01	2.27
Thigh Girth	32	50.07	4.80
Standing Broad Jump	32	2.12	0.22

Table 1 clearly indicates that the mean value of male judokas in terms of calf girth, thigh girth and explosive strength were 35.01, 50.07 and 2.12 and the standard deviation of male judokas in terms of calf girth, thigh girth and explosive strength were 2.27, 4.80 and 0.22 respectively.

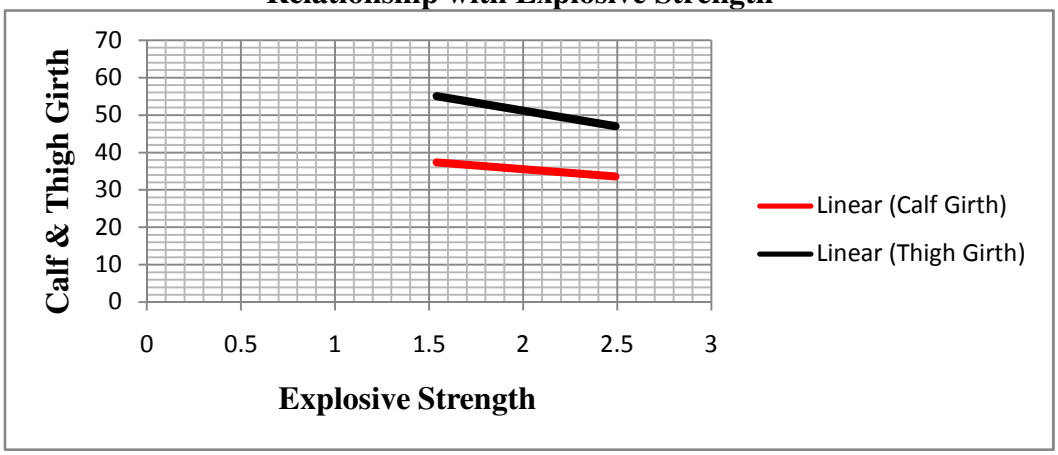
Table -2
Relationship of Selected AnthropometricVariables withExplosive Strengthamong Male Judokas

Variables Correlated	Co-efficient of Correlation 'r-value'	p-value
Calf Girth	0.384*	.000
Thigh Girth	0.393*	.000

***Significant at 0.05 level, r-value at 31 df = 0.349**

Table 2 clearly indicates that the Explosive strength is significantly related to Calf girth (0.384) and Thigh girth (0.393). Therefore, on the basis of finding of r-value (calf girth = 0.384 and thigh girth = 0.393) is more than table value (0.349). Its shows that there is significant relation between explosive strength with calf and thigh girth.

Figure - 1
Graphical Presentation of Calf Girth and Thigh Girth Values in Relationship with Explosive Strength



DISSCUSSION

The results of the study also supported by the previous research conducted by **De Garay (1974)** after an intensive study on anthropometric measurements of Olympic athletes concluded that top level performance in particular event demands particular size of the body and shape, other aspects being similar. Another similar study also supported by the previous research conducted by **Rivet (1978)** analyzed that jumping is very significant factor in volleyball performance. He has to use his maximum power during spiking and blocking to meet the ball at highest point in order to score. The results of this study show that Anthropometric variables are also one of the factors which can affect the explosive strength of sportspersons.

CONCLUSIONS

On the basis of findings of the study, the following conclusions were drawn:

1. The results of the study indicate that the significant relationship was found in Calf girth with Explosive Strength among male judokas.
2. The results of the study also indicate that the significant relationship was found in Thigh girth with Explosive Strength among male judokas.

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