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The relationship among hand grip strength, leg strength and back strength of male non-teaching staff of guru Ghasidas Vishwavidyalaya Bilaspur

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Abstract

The aim of the present study was to find out the relationship among hand grip strength, leg strength and back strength of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur. For the purpose of the present study 20 (Twenty) male non-teaching staff of Guru Ghasidas Vishwavidyalaya, Bilaspur were selected randomly as subject who falls between the age group of 30 to 55 years. Selected motor fitness components as hand Grip Strength was measured by hand grip dynamometer, leg strength was measured by leg dynamometer and back strength was measured by back dynamometer. The data was analysed by using Pearson's product moment correlation test and level of significance was set at 0.05 level. All the statistical analysed was carried out using MS excel and spss 20.0 version. The result of the study indicates that there was significant relationship between leg strength and back strength of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur.

Keywords: hand grip strength, leg strength and back strength

Introduction

Strength is perhaps the most important motor ability in sports because all movements in sports are caused by muscle contraction. Therefore, strength is a part and parcel of all motor abilities, technical skills and tactical actions (Uppal, 2000) [6]. The development of strength has almost certainly been the greatest factor to enhance sports performance. But it is not a new concern. Theories of the best way to build up strength date back at least to ancient Greek time, when Milo reputedly carried a bull calf every day from the day it was born until it was fully grown. As the bull grew and became heavier, Milo's strength levels improved to compensate, in a form of early progressive resistance training.

Strength alone will not assure success in any sports. It is usable strength that is a key, the strength which can be applied to the body to make it more faster, change speed, change the direction of body movement, put a greater speed into a cricket bat or racket head, or make the pull on an oar faster and longer. Hence, while strength is dominant factor one must also call upon skills, mobility and speed. A pupil will not be able to hold the tennis racket as instructed if he does not have sufficient strength. How can a pupil learn to pole vault if he can hold his own weight? Moreover, lack of sufficient strength result in rapid muscular fatigue, which limit the amount of practice time available for learning skills.

Proper muscular development helps to prevent imbalance in the muscles that may result in compensating movements when a child is attempting to acquire new skills. Injured people have normally been seen favouring their good (strong) sides. Similar situation may take place with a youngster who does not have sufficient strength to hold the cricket bat as instructed. In order to execute skills with the bat he will compensate by calling into play more muscles than would actually be necessary. This problem may result in imbalance, which is not corrected, may become difficult to rectify.

Strength is the ability to overcome resistance or to act against resistance (Singh, 1991). Strength has been considered as the most important conditional ability. It has been the most significant factor to enhance sports techniques and performance. Development of strength also contributes to indirect development of other conditional abilities namely speed and endurance.

Methodology

Selection of subject

Twenty (20) subjects were selected randomly from male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur, (C.G.). The age group of the subjects ranged between 30 to 55 years.

Selection of variables

- Hand Grip Strength
- Leg Strength
- Back Strength

Criterion measures

In this study the test was used for the collection of data, hand Grip Strength was measured by hand grip dynamometer, leg strength was measured by leg dynamometer and back strength was measured by back dynamometer of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur.

Statistical procedure

For the present study the relationship among hand grip strength, leg strength and back strength, Karl Pearson’s product moment correlation method was used.

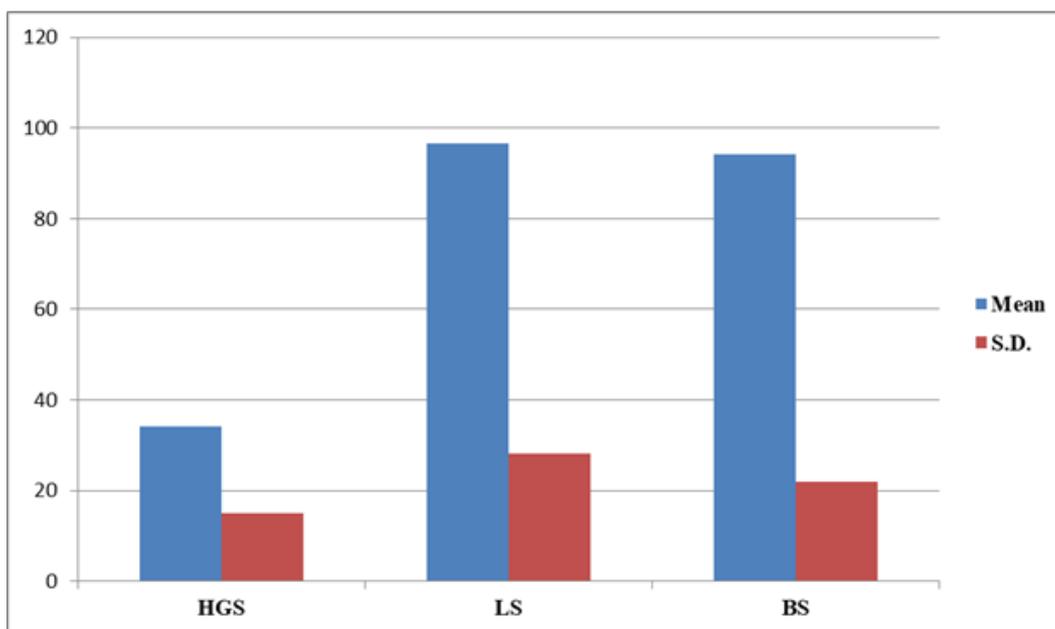
Results of the Study

Table 1: Descriptive analysis among hand grip strength, leg strength and back strength of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur

Variables	Mean	Standard Deviation
Hand Grip Strength	34.12	15.11
Leg Strength	96.57	28.15
Back Strength	94.24	22.03

Table 1 indicate that descriptive analysis of hand grip strength of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur, where mean and standard deviation, the values are 34.12 and 15.11 respectively. Above table also indicate descriptive analysis of Leg Strength of male non-teaching staff of Guru Ghasidas Vishwavidyalaya

Bilaspur, where mean and standard deviation, the values are 96.57 and 28.15 respectively. Above table also indicate descriptive analysis of Back Strength of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur, where mean and standard deviation, the values are 94.24 and 22.03 respectively.



Graphical Representation among hand grip strength, leg strength and back strength of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur

Table 2: Relationship among hand grip strength, leg strength and back strength of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur

Variables	Hand Grip Strength	Leg Strength	Back Strength
Hand Grip Strength	Pearson Correlation	1	.027
	Sig. (2-tailed)		.911
	N	20	20
Leg Strength	Pearson Correlation	.027	1
	Sig. (2-tailed)	.911	
	N	20	20
Back Strength	Pearson Correlation	-.014	.839**
	Sig. (2-tailed)	.954	.000
	N	20	20

**Correlation is significant at the 0.01 level (2-tailed)

Discussion

The present study was found that there is significant relationship between leg strength and back strength of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur. There is no significant relationship between hand grip strength and leg strength of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur. Further, there is no significant relationship between hand grip strength and back strength of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur.

Conclusion

Only leg strength and back strength was found significant correlation of male non-teaching staff of Guru Ghasidas Vishwavidyalaya Bilaspur. Whereas remaining variables was not found significantly correlation.

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