

Relationship of selected physical fitness variables with the performance of male Long Jumpers

Kunvar Singh¹, Dr. Ratnesh Singh²

¹ Research Scholar, Department of Physical Education, GGV, Bilaspur (C.G)

² Associate Professor, Department of Physical Education, GGV, Bilaspur (C.G)

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Abstract

In the present study total twenty college male long jumper athletes were selected as subject on the basis of purposive sample selection. The samples were selected from different college of Bilaspur during District level athletic tournament. The age of subjects were ranging from 18 to 24 years. Under independent Variables researcher has selected (Physical Fitness Variables)–Speed, Agility, Flexibility and under dependent Variables is Long Jump Performance. Before the test proper instructions were given by the researcher. Data were collected by researcher with the help of some volunteers. Subjects were given to three chance and permitted to they can use any jumping technique. Best of three trials will be considered as performance. For determining the significant relationships of selected anthropometric and physical fitness variables with the fast bowling performance, descriptive statistics and the Pearson's Product Moment Correlation was used for the analysis of data with the help of SPSS (16.0 version) software and the level of significance was set at 0.05 level of confidence. The mean scores of Speed, Agility, Flexibility and Long Jump performance is 6.851, 9.100, 37.035 and 4.795. The correlation value of Speed, Agility and Flexibility is -.759, -.839, .860 that shows significance relationship of selected physical fitness variables with the long jump performance.

Key words: Long Jump Performance, Speed, Agility, Flexibility

1. Introduction

Long jumpers are likewise quick sprinters and authority. They strive to accomplish their jumping abilities and execution as do the competitors of the other field occasions. The separation a long jumper can jump is affected by different variables; the velocity of the run, the change of this pace to forward - upward drive at the remove, the reach through which he can apply this strengths at an ideal point and the productivity with which these elements end at the arrival in the pit (Hubbard, 2001; Linthorne, Guzman, and Bridgett, 2005). The world's top long jumpers have dependably been remarkable sprinters however some without extraordinary sprinting capacity may get to be top entertainers on the off chance that they work in the event and perfect throughout the entire the jumping methods. Particular regions to be considered in long jump are; the style of run, the remove, the activity noticeable all around (the flight), and the arrival (Linthorne, Guzman, and Bridgett, 2005). Be that as it may it is vital to decide the indicators of long jump execution.

The continuous scientific progression in the area of sports has made sports training more purposive, based on fact and very specific than ever. Sports scientists are leaving nothing to improve in order to find out the performance enhancing and affecting factor as well as the best outcome oriented training systems for each sport.

In modern time more and more consideration has been paid to nature of physical fitness not only in terms of general healthiness but also of the particular physical requisite for competitive sports and sure highly specialized and challenging occupations. Physical fitness is an inseparable piece of sports performance and achievements. The quality of its consumption value is directly proportional to the level of performance. That means the greater level of fitness, greater the ability of a person to attain higher level of performance.

Long jump is a moving occasion and requires a member to have speed, unstable leg quality and appropriate coordination of separation, walks and skip activity of the body at take-off stage level. (Ngetich, 1998; Renwick, 2001). The separation of a long jumper is affected by some different variables; i.e. the methodology run speed, the adjustment of this pace to forward and upward drive at the departure, the extent amid which he can apply this powers at a most favorable point and the productivity with which these elements finish up at the arrival in the pit (Hubbard, 2001; Linthorne, Guzman, and Bridgett, 2005). The world's best long jumpers have continually been brilliant sprinters however some without remarkable sprinting capacity may get to be top entertainers in the event that they gather in the occasion and impeccable throughout the entire the hopping systems. Particular territories to be considered in long hop are; the methodology run, the remove, the activity noticeable all around (the flight), and the arrival (Linthorne, Guzman, and Bridgett, 2005). In spite of the fact that that is critical to decide the indicators of long hop execution. Hence the motivation behind this study was to survey whether pace and deftness can be utilized to anticipate long hop execution of male competitors.

1.1 Objectives of the study

The objective of the present study was to find out the relationship of selected Physical fitness variables with the Long Jump performance.

1.2 Hypothesis of the study:-

It was hypothesized that there will be no relationship of selected physical fitness variables with the long jump performance.

2. Methodology

2.1 Selection of Subjects

In the present study total twenty college male long jumper athletes were selected as subject on the basis of purposive sample selection. The samples were selected from different college of Bilaspur during District level athletic tournament. The age of subjects were ranging from 18 to 24 years.

2.2 Selection of variables

Independent Variables- (Physical Fitness Variables)

- Speed
- Agility
- Flexibility

Dependent Variables- Long Jump Performance

2.3 Criterion measures:

- Long Jump performance was measured by measuring tape in meters
- Speed was measured by stop watch in second
- Agility was measured by stop watch in second
- Flexibility was measured by sit and reach test in centimetres

2.4 Administration of test

Before the test proper instructions were given by the researcher. Data were collected by researcher with the help of some volunteers. Subjects were given to three chance and permitted to they can use any jumping technique. Best of three trials will be considered as performance.

2.5 Statistical Technique

For determining the significant relationships of selected anthropometric and physical fitness variables with the fast bowling performance, descriptive statistics and the Pearson's Product Moment Correlation was used for the analysis of data with the help of SPSS (16.0 version) software and the level of significance was set at 0.05 level of confidence.

3. Result and Findings of the Study

Table-1 Descriptive Statistics of Dependent Variable (Long jump Performance) and Independent Variables (Speed, Agility, Flexibility)

	N	Mean	SD
Speed	25	6.851	.954
Agility	25	9.100	1.090
Flexibility	25	37.035	2.389
Long Jump performance	25	4.795	.849

Table-1 shows the mean and SD of Speed, Agility, flexibility and Long jump performance

Table-2 Correlation between Dependent Variable -Long Jump Performance and Selected Physical fitness variables (Independent Variables) -Explosive Strength, Speed, Agility, Flexibility and Cardiovascular Endurance

Independent Variables	N	Correlation Coefficient r	p-value
Speed	25	-.759	.000
Agility	25	-.839	.000
Flexibility	25	.860	.000

Table-2 shows significance relationship of selected physical fitness variables (Speed, agility, flexibility) with the long jump performance

4. Discussion of the Findings

The purpose of the present study was to find out relationship of selected physical fitness variables with the long jump performance. The results of the study show that significance relationship was observed that of physical fitness variables with long jump performance. Physical fitness variables play effective role in deciding the long jump performance. The probable reason of this result may be the speed provides and strength to covers the maximum distance during long jump performance. Agility provides to quick move the body part during takeoff. Flexibility is the range of the joints around the joint. If range of motion increases the strength also increases that is very important to high performance of long jump. As we probably am aware the long jump, speed capacity and dexterity are the dynamic developments and these exhibitions to be confidently related. The event of Long jump can be grouped into various stages. So perhaps it is a conceivable purpose behind these findings. Another defense for the high relationship between rate, spryness and Long bounce execution might be the same vitality frameworks that every development sort requests.

5. Conclusions

On the basis of result and findings these following conclusions can be drawn:

- Significant relationship was found between Long Jump performance and speed ($r = -.759$, $p < .05$).
- Significant relationship was found between Long Jump performance and Agility ($r = -.839$, $p < .05$).
- Significant relationship was found between Long Jump performance and Flexibility ($r = .860$, $p < .05$).

Initially it was hypothesized that there will be no relationship of selected physical fitness variables with the long jump performance is not accepted at 0.05 level of significant.

6. References

- [1]. Alemdaroglu U. (2012). The relationship between muscle strength, anaerobic performance, agility, sprint ability and vertical jump performance in professional basketball players. *J Hum Kin*,; 31: 99-106.
- [2]. Barrow and McGee, (1989). *A Particle Approach to Measurement in Physical Education*, Philadelphia, London.
- [3]. Chaouachi A, Brughelli M, Chamari K, Levin GT, Ben Abdelkrim N, Laurencelle L, Castagna, C. Lower limb maximal dynamic strength and agility determinants in elite basketball players. *J Strength Cond Res*. 2009; 23: 1570–1577.
- [4]. Clark, H. H. and Clark, D. H. (1975), *Research Process in Physical Education*. Englewood cliffs, New Jersey: Prentice Hall, Inc.
- [5]. Cronin, J.B. & Hansen, K.T. (2005). Strength and power predictors of sports speed. *Journal of Strength and Conditioning Research*, 19(2), 349-357.
- [6]. Davis, K., Rossi, S., Langdon, J., & McMillan, J. (2012). The Relationship Between Jumping and Sprinting Performance in Collegiate Ultimate Athletes. *Journal of Coaching Education*, 5(2), 24-92.
- [7]. Dr. Sandip Sankar Ghosh, Mr. Surajit Majumder (2013). A Comparative Study On Selected Physical Anthropometric And Psychological Variables Of National Level Fast bowling And Kabaddi Players In India. *Asian Journal Physical Education and Computer Science in Sports*. Volume No.8, No.1.pp1-5 .
- [8]. Goran, Sporis., et. al. (2010). The effect of agility training on athletic power performance. *Kinesiology*, 42(1):65-72.
- [9]. Harold M. Barrow and McGee, R. (1971). *A Practical Approach to Measurement in Physical Education* (Philadelphia : Lea and Febiger), p.123.
- [10]. Hubbard, M. (2001). The flight of sports projectiles. In V. M. Zatsiorsky (Ed.), *Biomechanics in sport* (pp. 381-400). Oxford: Blackwell Science.
- [11]. Kansal, D. K. (1996). *Test and Measurement in Sports and Physical Education*. New Delhi: D.V.S. Publications.
- [12]. Koklu Y, Alemdaroglu U, Ozkan A, Koz M, Ersoz G. (2015). The relationship between sprint ability, agility and vertical jump performance in young soccer players. *Sci Sport*, 30, e1-e5.
- [13]. Linthorne, N. P. (2001). Optimum release angle in the shot put. *Journal of Sports Sciences*, 19,
- [14]. Linthorne, N. P., Guzman, M. S., and Bridgett, L. A. (2005). Optimum take-off angle in the long jump. *Journal of Sports Sciences*, 23, 703-712, 359-372.
- [15]. McCurdy, K.W., Walker, J.L., Langford, G.A., Kutz, M.R, Guerrero, J.M. & McMillan, J. (2010). The relationship between kinematic determinants of jump and sprint performance in division I women soccer players. *Journal of Strength and Conditioning Research*, 24(12), 3200-3208.
- [16]. Milanese, C. Bortolami, O. Bertucco, M. Verlato, G. and Zancanaro, C. (2010), Anthropometry and Motor fitness in children aged 6-12 years, *Jurnal of Human Sporta and Exercise*, 1.5(2), 265-279.
- [17]. Ngetich, E.D.K. (1998). Assessment of Physical Fitness Components as Predication factors of Long Jump performance among female undergraduate students of Indira Gandhi Institute of Physical Education and Sports Sciences - Delhi University. Unpublished M.P.Ed Thesis. Delhi University, New Delhi, India.
- [18]. Renwick, G.R. (2001). *Play Better Athletics*, Delhi: sports Publication.
- [19]. Seiler, S., Taylor, M., Diana, R., Layes, J., Newton, P. & Brown, B. (1990). Assessing anaerobic power in collegiate football players. *Journal of Applied Sport Science Research*, 4(1), 9- 15.
- [20]. Sharma, H. O. & Subramanian, R. (2014). Speed and Agility as determinants of Long Jump Performance. *Academic Sports Scholar*, 3(9), 49-52.
- [21]. Singh V.K. & Singh R. (2014). Physical, Physiological, Psychological and Anthropometric Variables as Predictors for Speed of Sub-Junior Athletes. *Academic Sports Scholar*, 3 (8), 1-4.
- [22]. Singh, K. & Singh, R. (2015). Relationship of selected anthropometric variables with the throwing distance of cricket ball in cricket. *Academic Sports Scholars*, 4 (8).

- [23]. Singh, K. & Singh, R. (2015). Relationship of selected anthropometric variables with the velocity of ball in pace bowling in cricket. *International Journal of Applied Research*, 1 (10), 613-616.
- [24]. Sohi, A. S. (1986), A study of development of speed and agility among 6 – 14 years of boys and girls. *Snipes Journal*, 9(3), 16-23.
- [25]. Thomas, J. R., Nelson, J. k. & Silverman, S. J. (1985). *Research Methods in physical activities*. U.S.A: Human Kinetics.

Corresponding Author:

Kunvar Singh
Research Scholar,
Department of Physical Education,
GGV, Bilaspur (C.G).
Email: kunvarsinghggv@gmail.com