



PHYSICAL FITNESS CHARACTERISTICS WITH THE PERFORMANCE OF HIGH JUMP: A RELATIONSHIP STUDY

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ABSTRACT :

An Investigation was conducted with a purpose to find out the relationship of selected physical fitness component with the performance of high jump in the technique of straddle roll relationship selected and physical variables are respectively. A total of 10 subjects were examined on selected physical variables with calibrated instrument. The results have exhibited that obtained value of coefficient of correlation in case of the significant relationship between high jump performance and standing broad jump with the subjects in straddle roll technique of high jump. And the significant difference was also found in between high jump performance and weight (.645) of the subjects. The study concludes that the greater extension of the leg has positive effect on the performance of high jumper in straddle roll technique. and the subject those who are having lean body mass can take more up thrust as their body is light weighted so, the performance will be enhance physical variables the result has shown the insignificant relationships such as flexibility, height have insignificant relationship with the performance of straddle roll technique in high jump.*



KEYWORDS : Track and Field, straddle roll, (high jump).

INTRODUCTION :

Research into sport offers a multitude of opportunities that are diverse in topic and broad in approach. A number of research strategies and associated research methods exist that allow for the exploration and explanation of sporting behavior from a range of perspectives Biomechanics is the study of forces and their effects on living systems, whereas exercise and sports biomechanics is the study of forces and their effects on humans in exercise and sport. Biomechanics may be a useful tool for physical educators, coaches, exercise scientists, athletic trainers, physical therapists, and others involved in human movement. Application of biomechanics may lead to performance improvement or the reduction and rehabilitation of injury through improved techniques, equipment, or training. High jumpers typically cleared the bar feet first in the late 19th century, using the Scissors, Eastern cut-off or Western roll technique. The straddle technique became prominent in the mid-20th century. Keeping this view in mind, the present experiment is designed to check the relationship of kinematics variables with the performance of straddle roll in high jump. Unlike the scissors jump where the jumpers face forwards when jumping or the flop where they face upwards, in the straddle they face down as they roll over the bar.

So, the purpose of this study was to investigate the Relationship of selected physical variables with the performance of straddle roll in high jump.

METHOD AND METERIALS

Ethical Approval

All the subjects were given a thorough explanation of the procedure and a written informed consent was obtained before participating in the study.

Selection of the Subjects

Ten male high jumper of all India inter-university level of 18-28 years age group were selected as subjects for the study. They all possessed good level of technique. The purpose of the research was explained to the subjects were motivated put in their best, during each attempt.

Criterion Measure and Reliability of Data

- The criterion measure for the study was the performance of each high jumper. The performance was measured by the qualified officials, recorded in height (in meters).
- Height was measured in nearest centimeters.
- Weight was measured in nearest kilograms.
- Flexibility was measured in nearest inches.
- Leg strength was measured in one hundred of meters

The reliability of data was established by instrument reliability. The instrument which was used in this study was taken from research laboratory of LNIPE, Gwalior and hence their reliability was insured. All the measurements pertaining to the selected physical variables were taken by the research scholar under the expert’s guidance, so the data collection for the present study was considered to be reliable

RESULTS AND DISCUSSION

Table-1
Descriptive Statistics of the high jumper from selected groups

Descriptive Statistics			
	Mean	Std. Deviation	N
Performance	1.4100	.04595	10
Broad jump	2.6350	.21088	10
Flexibility	13.5840	2.13279	10
Weight	62.9000	5.62633	10
Height	1.6960	.02875	10

Graphical representation shows the Descriptive Statistics of High Jumper

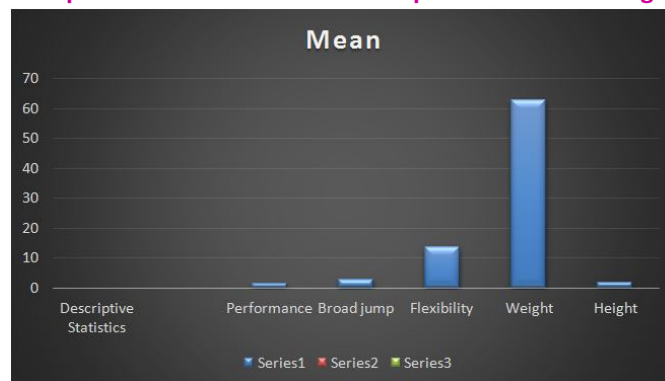


Table 2
Relationship of Selected Physical Variables with the Performance of Straddle Roll Technique in High Jump at the Time of Moment Take- Off

		Correlations				
		Performance	Broad jump	Flexibility	Weight	Height
Performance	Pearson Correlation	1	.648*	.053	.305	.538
	Sig. (2-tailed)		.043	.885	.391	.108
	N	10	10	10	10	10
Broad jump	Pearson Correlation	.648*	1	.017	.645*	.585
	Sig. (2-tailed)	.043		.963	.044	.076
	N	10	10	10	10	10
Flexibility	Pearson Correlation	.053	.017	1	-.251	-.058
	Sig. (2-tailed)	.885	.963		.484	.873
	N	10	10	10	10	10
Weight	Pearson Correlation	.305	.645*	-.251	1	.313
	Sig. (2-tailed)	.391	.044	.484		.378
	N	10	10	10	10	10
Height	Pearson Correlation	.538	.585	-.058	.313	1
	Sig. (2-tailed)	.108	.076	.873	.378	
	N	10	10	10	10	10

*. Correlation is significant at the 0.05 level (2-tailed).

Since the required value of coefficient correlation for 8 degrees of freedom to the insignificant at 0.05 level is 0.632 and the obtained values were less than given value, therefore, none of selected Physical variables at the selected moment have exhibited significant relationship with performance of straddle roll technique in high jump.

CONCLUSION

The study shows the significant relationship between high jump performance and standing broad jump (.648*). this may be due to the reason that SBJ is Plyometric exercise and explosive power is required in this that the greater extension of the leg has positive effect on the performance of high jumper in straddle roll technique. and more force will be executed thus; it is useful for improving the high jump performance.

The significant difference was also found in between high jump performance and weight of the subjects (.645*), as we know that the subject those who are having lean body mass can take more up thrust as their body is light weighted so, the performance will be enhance.

But in this study, it shows the insignificant relationship between the high jump performance and other selected physical and variable may be attributed to the level at which all the subjects competed. The selected high jumpers were those who knew only the basic of the high jump. This might be due to this dissimilarity in the skill level of the subject causes this insignificance relationship. And, the subjects were not asked to follow a fixed pattern of warming up session prior to the collection of data for physical variables and high jump performance as well, may be owing to this the subjects could not give their best in the variables like physical performance and flexibility. So, the researcher may attribute this lack of subjects as a setback to the present findings.

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