



P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 4.69
IJPESH 2016; 3(2): 251-253
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www.kheljournal.com
Received: 19-01-2016
Accepted: 21-02-2016

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International Journal of Physical Education, Sports and Health

A comparative study of strength among throwing events players

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Abstract

The purpose of the study was to compare the Strength among Throwing Events Players of Intercollegiate Competition. The Objectives of this study was to find out whether there is any significant difference the Strength among Throwing Events Players of Intercollegiate Competition. The data pertaining to this study was collected by administrating the appropriate tests described below on the inter-collegiate players of S.G.B. Amravati University, who were participated at least inter-collegiate tournaments where held in S.G.B. Amravati University, Amravati. The subjects for this study were selected from the state of Maharashtra. A total of forty (40) male subjects were selected. 10 subjects were selected from each games i.e. Javelin Throw, Shot Put, Discus Throw and Hammer Throw, who had participated in inter collegiate tournaments, were preferred as area under discussion for this study. The age of the subject matter was ranging from 18 years to 25 years. The subject was selected as a sample. The required data were collected from Intercollegiate Competition level of S. G. B. Amravati University Amravati Subjects was selected using Simple Random Sampling Method for this study. The research Scholar selected Elements Tested 1) Arm and Shoulders Strength 2) Abdominal Strength 3) Explosive Legs Strength and Test Items 1) Pull Ups 2) Sit Ups 3) Standing Long Jump To find out the significant difference between the Strength among Throwing Events Players The collected data were analyzed by using one way ANOVA. In all cases 0.05 level of significance was fixed to test the hypothesis set for this study. Analysis of variance in arm and shoulders strength among throwing events players, as well as Analysis of variance in abdominal strength among throwing events players and Analysis of variance in abdominal strength among throwing events players.

There was no significant difference in arm and shoulders strength, abdominal strength and explosive leg strength of javelin throw, shot-put, discus throw and hammer throwing players. But graph shows the difference in mean of arm and shoulders strength, abdominal strength and explosive leg strength.

Keywords: Strength, Throwing Event

Introduction

In the last quarter of the 19th century there has been a marked shift in the emphasis of measurement away from anthropometry to strength testing. D.A. Sergeant, In 1880, along with W.P. Brigham devised a strength test battery in which the legs, back, hand's grip and arms strength as well as vital capacity were measured. During the period 1880 to 1920, Strength and endurance testing was very popular and intercollegiate competitions were held in Sergeant's strength test (Lumpkin, 1986). Hitchcock and sergeant did extensive work on muscular endurance of the arms and shoulders of college boys during the last quarter of the nineteenth century. In 1884, Moss, an Italian physiologist, invented the ergo graph and showed that fatigue of one set of muscle group affects other muscle groups as well. He also established the relationship between muscular activity and physical fitness. Moss's ergo graph was modified by Kelso- Hildebrandt in 1922, to make it more suitable for the measurement of muscular endurance with the help of smoke drum. In 1894 the universal Dynamometer was developed by J. H. Kellogg, which could test isometric strength and endurance of many muscular groups. In 1915, resistance strength test was developed by EG. Martin, to measure the strength and endurance of muscular with flat- faced type of spring balance. Then F.R. Rogers refined the intercollegiate strength test in 1925 and also proved that this strength test may be validly used to measure the general athletic ability. He also created of Physical Fitness Index (P.F.I.) for determining one's status of physical achievement with respect to population norms. Later Dr. C. H. McCoy of the State University of Iowa (USA) improved the strength test items in place of

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vital capacity (which is not a strength measure). In 1928, Edwin R. Elbe reported that strength could be increased by short static contraction exercises, but these results could not attract the human attention for the isometric exercises unit 1953 when Hettinger and Muller experimented extensively on isometric strength training. The publication of the results of their experiments ushered in a new era in strength training. Both muscular strength and endurance have been tested with the help-of chin-ups and dips in many present days physical fitness test batteries (Kensal, 1996).

Methodology

Sources of data

The data pertaining to this study was collected by administrating the appropriate tests described below on the inter-collegiate players of Amravati University, who were participated at least inter-collegiate tournaments where healed in Amravati University, Amravati.

Selection of the subject

The subjects for this study were selected from the state of Maharashtra. A total of forty (40) male subjects were selected. Ten subjects were selected from each games i.e. Javelin Throw, Shot Put, Discus Throw and Hammer Throw, who had participated in inter collegiate tournaments, were preferred as area under discussion for this study. The age of the subject matter was ranging from 18 years to 25 years.

Table I: Selection of Subjects among Games Players

S. No.	Group	Number of Players
1.	Javelin Throw	10
2.	Shot Put	10
3.	Discus Throw	10
4.	Hammer Throw	10

Criterion measures

The criterion measures to test the hypothesis of the study were below:

Table II: Selection of Variables

S. No.	Elements Tested	Test Items
i.	Arm and Shoulders Strength	Pull Ups
ii.	Abdominal Strength	Sit Ups
iii.	Explosive Legs Strength	Standing Long Jump

Results and Discussion

The collected data were analyzed by using one way ANOVA. In all cases 0.05 level of significance was fixed to test the hypothesis set for this study.

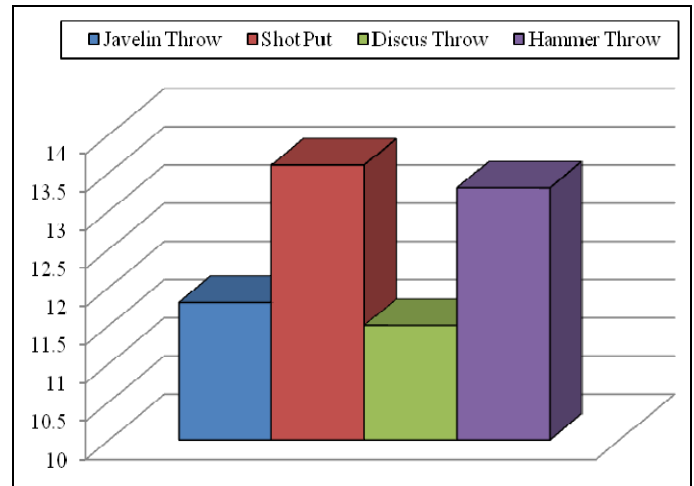
Table III: Analysis of variance in arm and shoulders strength among throwing events players

Variable	Source of Variation	SS	df	MS	F
Arm and Shoulders Strength	Between Groups	33.300	3	11.100	1.953
	Within Groups	204.600	36	5.683	

* Significant at .05 level of significance $F_{.05}(3, 36) = 2.87$

Table-III reveals that there was significant difference between the means of javelin throw, shot-put, discus throw and hammer throw players of arm and shoulders strength. The calculated 'F' was 1.953 whereas tabulated 'F' was 2.87. Calculated 'F' less than the tabulated 'F', which shows insignificance in javelin throw, shot-put, discus throw and hammer throw

players of arm and shoulders strength. Therefore, there is no need of post hoc test.



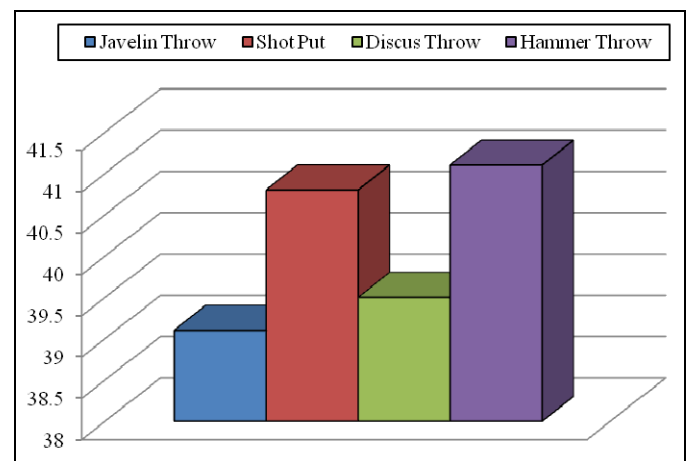
Graph 1: Comparison of the means of arm and shoulders strength among throwing events players

Table IV: Analysis of variance in abdominal strength among throwing events players

Variable	Source of Variation	SS	df	MS	F
Abdominal Strength	Between Groups	28.475	3	9.492	0.076
	Within Groups	4515.900	36	125.442	

* Significant at .05 level of significance $F_{.05}(3, 36) = 2.87$

Table-III reveals that there was significant difference between the means of javelin throw, shot-put, discus throw and hammer throw players of abdominal strength. The calculated 'F' was 0.076 whereas tabulated 'F' was 2.87. Calculated 'F' less than the tabulated 'F', which shows insignificance in javelin throw, shot-put, discus throw and hammer throw players of abdominal strength. Therefore, there is no need of post hoc test.



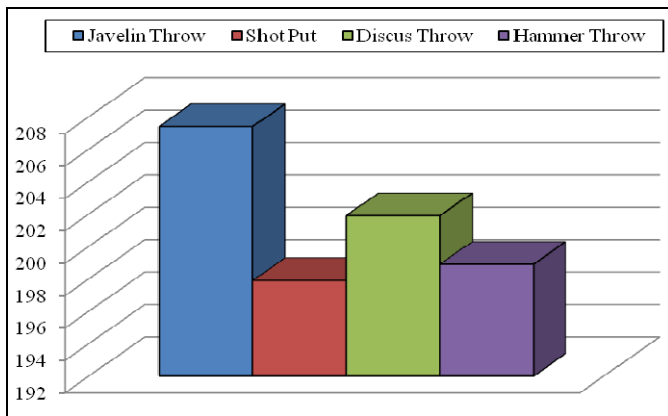
Graph 2: Comparison of the means of abdominal strength among throwing events players

Table V: Analysis of variance in abdominal strength among throwing events players

Variable	Source of Variation	SS	df	MS	F
Explosive Legs Strength	Between Groups	546.875	3	182.292	0.624
	Within Groups	10513.100	36	292.031	

* Significant at .05 level of significance $F_{.05}(3, 36) = 2.87$

Table-III reveals that there was significant difference between the means of javelin throw, shot-put, discus throw and hammer throw players of explosive leg strength. The calculated 'F' was 0.624 whereas tabulated 'F' was 2.87. Calculated 'F' less than the tabulated 'F', which shows insignificance in javelin throw, shot-put, discus throw and hammer throw players of explosive leg strength. Therefore, there is no need of post hoc test.



Graph 3: Comparison of the means of explosive leg strength among throwing events players

Conclusion

From the result of the study, the conclusions have been drawn as follows: There was no significant difference in arm and shoulders strength, abdominal strength and explosive leg strength of javelin throw, shot-put, discus throw and hammer throwing players. But graph shows the difference in mean of arm and shoulders strength, abdominal strength and explosive leg strength.

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