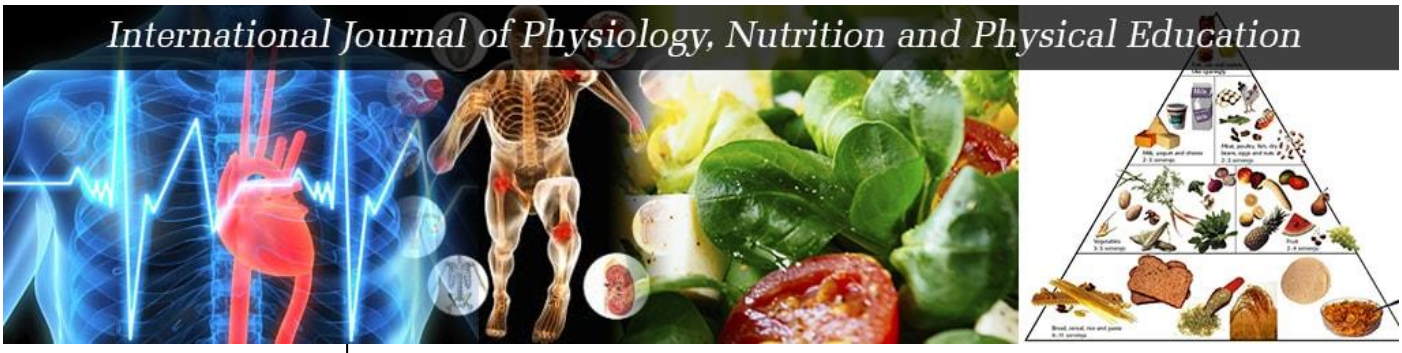

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Comparison of selected motor fitness components among different level of Javelin Throwers

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Abstract
The purpose of the study was to find out the Comparison of selected Motor fitness components and Kinanthropometry parameters among different level of Javelin Throwers. Study was conducted on 60 Javelin Thrower in age group of 18 to 38 year. Twenty (N_1 =20) National level participants / All India Inter-university participants, Twenty (N_2 =20) Inter- college medallist /State level medallist and twenty (N_3 =20) District / Inter- college participants. Subjects were recruited as subjects from Punjab, Haryana, Delhi, Rajasthan, U.P states. After collecting the data ANOVA was employed to test the significance of the post- hoc test was applied. The level of significance chosen to test the hypothesis was 0.05, $p<0.05$. In this study results showed significant difference between all the three groups of male Javelin Throwers National/All India Inter University Participants, State / Inter College Medallist & District / Inter College Participants for their Explosive Arm Strength and Explosive leg Strength, It was measure that National/All India Inter University Participants group was much superior to the other two groups and insignificant differences were measured between all the three groups for their Agility.

Keywords: Motor fitness, anthropometric, explosive leg strength, agility, total body fat, total arm length etc.

Introduction

Javelin throw is one of the original holdovers from the ancient Olympic Games. Today it's one of the track and field events. In international competition, men throw a javelin between 2.6 and 2.7m (8ft 6in and 8ft10in) in length and 800g (28oz) in weight, and women throw a javelin between 2.2 and 2.3 m (7ft 3in and 7ft7in) in length and 600 g (21oz) in weight. The javelin has a grip, about 150 mm (5.9 in) wide, made of cord and located at the javelin's center of gravity (0.9 to 1.06 m (2ft 11in to 3ft 6in) from the javelin tip for the men's javelin and 0.8 to 0.92 m (2ft 7in to 3ft 0in) from the javelin tip for the women's javelin. Javelin throwers will commonly throw four or six times per competition. In the event of a tie, the winner will be the athlete with the next-best effort. Motor fitness refers to how an athlete can perform at his or her sport, and involves a mixture of agility, coordination, balance, power, and reaction time. Improving this form of fitness is an indirect result of training in any of these attributes. Kinanthropometry is a science which deals with measurements of body and those body parts which are related to kinetics and kinematics. Human body assumes an inspirable part amid execution of development, ability and strategy. The nature of an individual's development and ability viability as far as its use esteem is specifically relative to his level of execution. The word physical wellness and motor fitness are frequently utilized conversely. The term motor fitness was produced to depict a wide idea than physical wellness. This broad term implies the capacity to perform fundamental engine abilities productively and successfully. Motor fitness is an essential part for a competitor keeping in mind the end goal to get ideal execution in games.

Purpose of study: The aim of the research was to analyze the Comparison of selected Motor fitness components and Kinanthropometry parameters among different level of Javelin Throwers

Twenty (N_1 =20) National level participants / All India Inter-university participants, Twenty (N_2 =20) Inter- college medalist /State level medalist and twenty (N_3 =20) District / Inter-college participants.

Sampling area: was recruited as subjects from the Punjab, Haryana, Delhi, Rajasthan, U.P states. All subjects were given an informed consent letter to sign to be a subject for the present study with their own will.

Selection of variables and test

Motor fitness components

1. Explosive arm strength: Softball Throw.
2. Explosive leg strength: Standing broad jump
3. Agility: Illinois Agility Test (10 X 5 Meters)

Statistical procedure

In Order to find out the assessment of selected motor fitness and Kinanthropometry parameters among javelin throwers at different level of participation the one way analysis of variance (ANOVA) was employed to test the significance of the post- hoc test was applied. The level of significance chosen to test the hypothesis was 0.05, $p<0.05$.

Results

Table 1 (a): Mean and Standard deviation results with regard to Explosive Arm Strength among three different groups of male Javelin Throwers

Group	N	Mean	Std. Deviation	Std. Error
National/All India Inter University Participants	20	87.9275	6.36711	1.42373
State / Inter College Medalist	20	81.8560	4.48437	1.00274
District / Inter College Participants	20	70.6285	5.28065	1.18079
Total	60	80.1373	8.98524	1.15999

Table-1 (a) shows the Mean and SD values of Explosive Arm Strength of male Javelin Throwers National/All India Inter University Participants, State / Inter College Medalist & District / Inter College Participants were 87.9275 ± 6.36711, 81.8560 ± 4.48437 and 70.6285 ± 5.28065 respectively.

Table 1(b): Analysis of Variance (ANOVA) results with regard to Explosive Arm Strength among three different groups of male Javelin Throwers

Source of variance	Sum of Squares	Df	Mean Square	F-ratio	Sig.
Between Groups	3081.168	2	1540.584	52.203*	.000
Within Groups	1682.165	57	29.512		
Total	4763.333	59			

*Significant at $F_{0.05}$= 3.15

It is evident from table.1(b) that the results of Analysis of Variance (ANOVA) among three groups of male Javelin Throwers; National/All India Inter University Participants, State / Inter College Medalist & District / Inter College Participants with regard to the Explosive Arm Strength were found to be statistically significant ($P<0.05$). Since the obtained "F" ratio 52.203 (.000) was found statistically significant. The results of post-hoc test have been presented in Table 4.1 (c) below.

Table 1(c): Analysis of Least Significant Difference (LSD) post-hoc test with regard to Explosive Arm Strength among three different groups of male Javelin Throwers

Group (A)	Group (B)	Mean Difference (AB)	Sig.
National/All India Inter University Participants (Mean=87.9275)	State / Inter College Medalist	6.07150*	.001
	District / Inter College Participants	17.29900*	.000
State / Inter College Medalist (Mean=81.8560)	National/All India Inter University Participants	-6.07150*	.001
	District / Inter College Participants	11.22750*	.000
District / Inter College Participants (Mean=70.6285)	National/All India Inter University Participants	- 17.29900*	.000
	State / Inter College Medalist	- 11.22750*	.000

*Significant at F0.05 (3.105)

A glance at Table 1(c) showed that the mean value of National/All India Inter University Participant male throwers were 87.9275 whereas State / Inter College Medalist throwers had mean value as 81.8560 and the mean difference between both the groups was found 6.07150*. The p-value sig.001 shows that the National/All India Inter University Participants throwers had demonstrated better on explosive Arm Strength than their counterpart's State / Inter College Medalist throwers significantly.

The mean value of /All India Inter University Participants male Javelin Throwers were 87.9275 whereas District / Inter College Participant throwers had mean value as 70.6285. The mean difference between these groups was found 17.29900*. The p-value sig.000 showed that the National/All India Inter University Participant throwers had demonstrated better on explosive arm strength than their counterpart's District / Inter College Participant throwers significantly.

The mean difference between State / Inter College Medalist and District / Inter College Participant Javelin Throwers was found 11.22750*. The p-value sig.001 shows that the State / Inter College Medalist Throwers had demonstrated significantly better on explosive arm strength than their counterpart's District / Inter College Participant throwers.

Table 2(a): Mean and Standard deviation results with regard to Explosive Leg Strength among three different groups of male Javelin Throwers

Group	N	Mean	Std. Deviation	Std. Error
National/All India Inter University Participants	20	3.0540	.18323	. 04097
State / Inter College Medalist	20	2.9095	.17509	.03915
District / Inter College Participants	20	2.7765	.18024	.04030
Total	60	2.9133	.21025	.02714

Table-2 (a) shows the Mean and SD values of Explosive Leg Strength of male Javelin Throwers National/All India Inter University Participants, State / Inter College Medalist & District / Inter College Participants were 3.0540 ±.18323, 2.9095 ±.17509 and 2.7765 ±.18024 respectively.

Table 2(b): Analysis of Variance (ANOVA) results with regard to Explosive Leg Strength among three different groups of male Javelin Throwers

Source of variance	Sum of Squares	Df	Mean Square	F-ratio	Sig.
Between Groups	.771	2	.385	11.950*	.000
Within Groups	1.838	57	.032		
Total	2.608	59			

*Significant at $F_{0.05}$= 3.15

It is evident from table 2(b) that the results of Analysis of Variance (ANOVA) among three groups of male Javelin Throwers; National/All India Inter University Participants, State / Inter College Medalist & District / Inter College Participants with regard to the Explosive Leg Strength were found to be statistically significant (P<0.05). Since the obtained "F" ratio 11.950 (.000) was found statistically significant. The results of post-hoc test have been presented in Table 2 (c) below.

Table 2(c): Analysis of Least Significant Difference (LSD) post hoc test with regard to explosive leg Strength among three different groups of male Javelin Throwers

Group (A)	Group (B)	Mean Difference (AB)	Sig.
National/All India Inter University Participant (Mean=3.0540)	State / Inter College Medalist	.14450*	.014
	District / Inter College Participants	.27750*	.000
State / Inter College Medalist (Mean=2.9095)	National/All India Inter University Participants	-.14450*	.014
	District / Inter College Participants	.13300*	.023
District / Inter College Participants (Mean= 2.7765)	National/All India Inter University Participants	-.27750*	.000
	State / Inter College Medalist	-.13300*	.023

*Significant at F0.05 (3.105)

A glance at Table 2(c) showed that the mean value of National/All India Inter University Participant male throwers were 3.0540 whereas State / Inter College Medalist throwers had mean value as 2.9095 and the mean difference between both the groups was found.14450*. The p-value sig.014 shows that the National/All India Inter University Participants throwers had demonstrated better on explosive leg Strength than their counterpart's State / Inter College Medalist throwers significantly.

The mean value of National /All India Inter University Participants male Javelin Throwers were 3.0540 whereas District / Inter College Participant throwers had mean value as 2.7765. The mean difference between these groups was found.27750*. The p-value sig.000 showed that the National/All India Inter University Participant throwers had demonstrated better on explosive leg strength than their counterpart's District / Inter College Participant throwers significantly.

The mean value of State / Inter College Medalist throwers were 2.9095 whereas District / Inter College Participant throwers had mean value as 2.7765.

The mean difference between State / Inter College Medalist and District / Inter College Participant Javelin Throwers was found.13300*. The p-value sig.023 shows that the State / Inter College Medalist Throwers had demonstrated significantly better on explosive leg strength than their counterpart's District / Inter College Participant throwers.

Table 3(a): Mean and Standard deviation results with regard to Agility among three different groups of male Javelin Throwers

Group	N	Mean	Std. Deviation	Std. Error
National/All India Inter University Participants	20	16.7630	.31324	.07004
State / Inter College Medalist	20	16.9490	.24140	.05398
District / Inter College Participants	20	16.9405	.29835	.06671
Total	60	16.8842	.29412	.03797

Table-3 (a) shows the Mean and SD values of Agility of male Javelin Throwers National/All India Inter University Participants, State / Inter College Medalist & District / Inter College Participants were 16.7630 ±.31324, 16.9490 ±.24140 and 16.9405 ±.29835 respectively.

Table 3(b): Analysis of Variance (ANOVA) results with regard to Agility among three different groups of male Javelin Throwers

Source of variance	Sum of Squares	Df	Mean Square	F-ratio	Sig.
Between Groups	.441	2	.221	2.697	.076
Within Groups	4.663	57	.082		
Total	5.104	59			

*Significant at $F_{0.05}$= 3.15

It is evident from table 3(b) that the results of Analysis of Variance (ANOVA) among three groups of male Javelin Throwers; National/All India Inter University Participants, State / Inter College Medalist & District / Inter College Participants with regard to the Agility were found to be statistically insignificant (P>0.05). Since the obtained "F" ratio 2.697 (.076) was found statistically insignificant.

Findings of the Study

The outcomes of the study represent that there were significant differences between all the three groups male Javelin Throwers; National/All India Inter University Participants, State / Inter College Medalist & District / Inter College Participants with regard to the their Explosive Arm Strength and Explosive leg Strength. It was establish that these three levels of groups were statistically different when compared with each other. It was measure that National/All India Inter University Participants group was much superior to the other two groups besides insignificant difference found between all the three groups of male Javelin Throwers, National/All India Inter University Participants, State / Inter College Medalist & District / Inter College Participants for their Agility.

Conclusions of the study

To conclude, it is evident that the results of the study were significant difference between all the three groups of male Javelin Throwers National/All India Inter University Participants, State / Inter College Medalist & District / Inter College Participants for their Explosive Arm Strength and Explosive leg Strength. It was measure that National/All India Inter University Participants group was much superior to the other two groups, and insignificant results were found between all the three groups for their Agility.

References

1. Barlow MJ, Findlay M, Gresty K, Cooke C. Anthropometric variables and their relationship to performance and ability in male surfers. European journal of sports science, 2014; 1(14). [Pub med]
2. Bhagat U, Singh D. Relative study of explosive strength and maximum leg strength between national level wrestlers and judokas. International Journal of Physical Education, Sports and Health. 2016; 3(5):68-69.
3. Bong-ju S, Byoung-goo K. Differences of Physique and Physical Fitness among Male South Korean Elite National Track and Field Athletes. International Journal of Human Movement and Sports Sciences. 2017; 5(2):17-26.
4. Pardeshi S, Dhondage SB. Comparative study of selected anthropometrical and physiological variables of all India inter university level canoeing and kayaking players. International Journal of Physiology, Nutrition and Physical Education. 2018; 03(02):575-577.
5. Parry IH, Senthilvelan S. Analysis of selected anthropometric and physical fitness variables among university male volleyball and basketball players. International Journal of Physiology, Nutrition and Physical Education. 2019; 04(01):426-428.
6. Singh G. Analytic study of anthropometric characteristics between basketball and volleyball players. International Journal of Physiology, Nutrition and Physical Education. 2019; 04(01):918-920.