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## Relationship of anthropometric measurements with the performance of forehand overhead stroke in badminton

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### Abstract

The purpose of the study was to determine the relationship of anthropometric measurement with the performance of Forehand Overhead stroke i.e. clear, Smash and Drop in Badminton. The finding of this study would indicate the no relationship of anthropometric parameter to the performance of forehand overhead stroke of badminton players. It should be also helpful in preparing some training programs to develop the forehand overhead stroke of badminton players. For the present study the sample consisted of Ten Male Indian Badminton players (Rank under 50). The age ranged of the subjects ranged Between 22 to 27 years. Subject were selected from Karnataka Badminton association during Yonex sunrise all India senior ranking Badminton Tournament. All the anthropometric measurements were taken with the help of anthropometric kit and performance evaluated through subjective judgment by qualified officials on the basis of three judges rating system. For analysis of data correlation (Pearson Correlation) test was used. The level of significance was set at 0.05 levels. Result of the study revealed that, age, height, weight, upper arm, lower arm, palm, upper leg, lower leg, foot length. Obtained values (.154), (.191), (.077), (.249), (.182), (.151), (.151), (.328), (.269), is less than Tabulated value (.549) therefore it have shown insignificant relationship with performance of clear stroke. Obtained values (.523), (.308), (.231), (.270), (.229), (.297), (.212), (.316), (.199), value is less than Tabulated value (.549) therefore it has shown insignificant relationship with performance of smash stroke. Obtained values (-.163), (.319), (.303), (.252), (.338), (.030), (.318), (.115), (.313), is less than Tabulated value (.549) therefore it has shown insignificant relationship with performance of drop stroke. Anthropometric variable has no significant correlation with the performance of Forehand Overhead stroke i.e. clear, Smash and Drop.

**Keywords:** Anthropometric, forehand, badminton

### Introduction

Changes are the order of the day. Changes are taking place every day in every walk of life. Life of people their philosophy, way of living etc. are undergoing changes due to basic and applied research in various field. Man has reached the space age from the primitive Stone Age because of continuous change. Modern age is the age of science, the progress mankind has achieved through the last quarter of a centuries. Technology has permeated every aspect of modern life and sports are no exception. Science applied to sports has enabled modern youth to develop physical capabilities beyond anything imagined earlier. "Competition is one of the out growths of modern life. It is a natural human activity which is evitable in life and the education process should assist in the preparation of individual for the battle of life" progress and a high degree of achievement are the true reflexes of the wonderful world of competition. Nothing could have been higher faster and farther if there had been no competition in sports.

### Objective of the Study

The purpose of the study was to determine the relation of Anthropometric measurement with the performance of Overhead stroke i.e. clear, Smash and Drop in Badminton players.

### Methodology

Selection of Subject: For the present study the sample consisted of ten male Indian Badminton players (Rank under 50). The age ranged of the subjects ranged Between 22 to 27 years. Subject were selected from Karnataka Badminton association during Yonex sunrise all India senior ranking Badminton Tournament.

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**Selection of Variable:** Anthropometric measurements of all the selected players were selected as independent variable, Forehand Overhead stroke performance was selected as dependent variables of the present study.

**Selection of test:** To find out the relationship in between independent (Anthropometric measurement) and dependent variables (Forehand Overhead stroke performance) the research scholar selected the following test.

**Dependent Variable:** Forehand Overhead stroke performance was evaluated through subjective judgment by qualified officials on the basis of three judges rating system.

**Independent Variables:** All the selected Independent variables like; age in year, weight in kg, height, upper arm, lower arm, palm, upper leg, lower leg, foot length was measured in centimeter by the help of Anthropometric kit.

**Procedure of data collection**

The test was administered on the subjects who were participated in Karnataka Badminton association during

Yonex sunrise all India senior ranking Badminton Tournament. A thorough warm up should be given. There was three trails provided to each subjects for Forehand Overhead stroke performance was evaluated through subjective judgment by qualified officials on the basis of three judges rating system.

**Statistical Technique**

The statistical analyses of data pertaining to the study were collected on ten male Indian Badminton players (Rank under 50). For the analysis of data the correlation (Pearson correlation) test was used. The level of significance to check the relationship obtained by correlation (Pearson correlation) was set .05 level. All statistical functions were performed with the SPSS (v.20) software.

**Finding and Results**

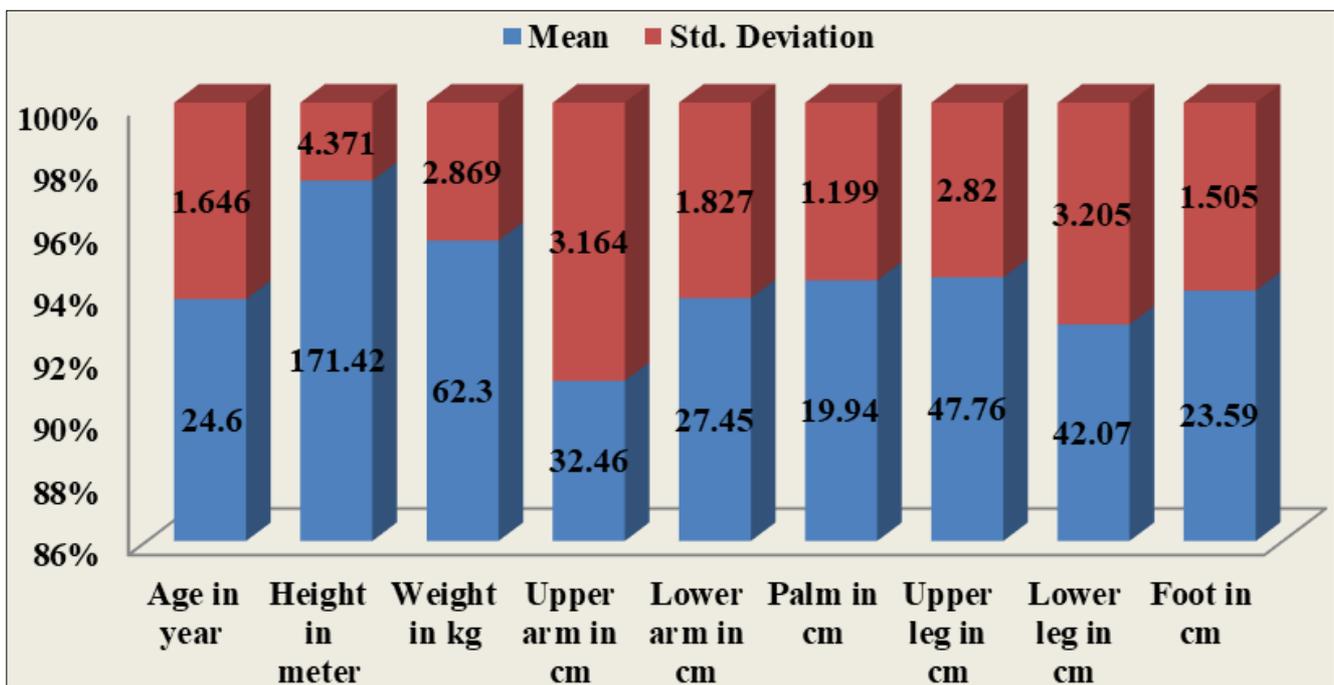
Result was made on the basis of the finding of the present study. The researcher reached at the result of this empirical investigation which is presented by the respective Table-1, table-2, and figure-1.

**Table 1:** Descriptive Statistic of male Badminton player in relation to anthropometrical variables of Forehand Overhead stroke in Badminton

Variable	Mean	Std. Deviation	Minimum	Maximum	Sum
Age in year	24.6	1.646	22	27	246
Height in meter	171.42	4.371	166	181.1	1714.2
Weight in kg	62.3	2.869	58	68	623
Upper arm in cm	32.46	3.164	30.1	41	324.6
Lower arm in cm	27.45	1.827	25	31.5	274.5
Palm in cm	19.94	1.199	18	21.3	199.4
Upper leg in cm	47.76	2.820	44	54	477.6
Lower leg in cm	42.07	3.205	38	48	420.7
Foot in cm	23.59	1.505	22	27.1	235.9

It is evident from table -1 that mean, standard deviation, scores of anthropometrical variables of forehand overhead stroke in badminton have been found as follow: Age in year 24.6 (Std. 1.646), Height in cm 171.42 (Std. 4.371), Weight in kg 62.3 (Std. 2.89), Upper arm in cm 32.46 (Std. 3.164),

Lower arm in cm 27.45 (Std. 1.827), Palm in cm 19.94 (Std. 1.199), Upper leg in cm 47.76 (Std. 2.820), Lower leg in cm 42.07 (Std.3.205), and Foot in cm 23.59 (Std. 1.505) respectively.



**Fig 1:** Graphical Representation of male Badminton player in relation to anthropometrical variables of Forehand Overhead stroke in Badminton

**Table 2:** Relationship of Anthropometrical Variables with the Performance of clear, smash, drop Stroke in Badminton.

Anthropometrical Variable	Performance		
	Clear	Smash	Drop
Age	.154	0.523	-0.163
Height	.191	0.308	0.319
Weight	.077	0.231	0.303
Upper Arm	.249	0.270	0.252
Lower Arm	.182	0.229	0.338
Palm	.151	0.297	0.030
Upper Leg	.151	0.212	0.318
Lower Leg	.328	0.316	0.115
Foot Length	.269	0.199	0.313

\*Significant at 0.05 level

Coefficient of correlation required to be significant at 8 degree of freedom = (.549)

Table-7 reveals that in case of Anthropometric variable i.e. age, height, weight, upper arm, lower arm, palm, upper leg, lower leg, foot length. Obtained values (.154), (.191), (.077), (.249), (.182), (.151), (.151), (.328), (.269), is less than Tabulated value (.549) therefore it have shown insignificant relationship with performance of clear stroke.

Table-7 reveals that in case of Anthropometric variable i.e. age, height, weight, upper arm, lower arm, palm, upper leg, lower leg, foot length. Obtained (.523), (.308), (.231), (.270), (.229), (.297), (.212), (.316), (.199), value is less than Tabulated value (.549) therefore it has shown insignificant relationship with performance of smash stroke.

Table-7 reveals that in case of Anthropometric variable i.e. age, height, weight, upper arm, lower arm, palm, upper leg, lower leg, foot length. Obtained value (-.163), (.319), (.303), (.252), (.338), (.030), (.318), (.115), (.313), is less than Tabulated value (.549) therefore it has shown insignificant relationship with performance of drop stroke.

### Discussion of the Study

The correlation (Pearson correlation) technique was applied to determine the relationship of Anthropometrical variable with the performance of Forehand Overhead stroke i.e. clear, smash and Drop in Badminton. In case of Clear, Anthropometric variable i.e. age, height, weight, upper arm, lower arm, palm, upper leg, lower leg, foot length. Obtained values (.154), (.191), (.077), (.249), (.182), (.151), (.151), (.328), (.269), is less than Tabulated value (.549) therefore it shown insignificant relationship with performance of clear stroke, in case of Smash, Anthropometric variable i.e. age, height, weight, upper arm, lower arm, palm, upper leg, lower leg, foot length. Obtained (.523), (.308), (.231), (.270), (.229), (.297), (.212), (.316), (.199), value is less than Tabulated value (.549) therefore it has shown insignificant relationship with performance of smash stroke and in case of Drop, Anthropometric variable i.e. age, height, weight, upper arm, lower arm, palm, upper leg, lower leg, foot length. Obtained value (-.163), (.319), (.303), (.252), (.338), (.030), (.318), (.115), (.313), is less than Tabulated value (.549) therefore it has shown insignificant relationship with performance of drop stroke.

### Conclusion

**Based on the result of the study the following conclusions were drawn**

Insignificant correlation was found between age, height, weight, upper arm, lower arm, palm, upper leg, lower leg and foot length of soccer players with the performance of Forehand Overhead stroke i.e. clear, Smash and Drop in relation to the Anthropometrical variable.

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