



## Relationship of selected anthropometric variables and handball playing ability

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### Abstract

**Objective:** The Objective of the study was find out the relationship of selected anthropometric variables and handball playing ability.

**Procedure:** To achieve the purpose of the study, total of eighty Interuniversity hand ball men players are selected as a subjects. The anthropometric variables such as weight, arm length, forearm girth, thigh girth, elbow diameter, wrist diameter, and ankle diameter independent variables and handball playing ability was selected as dependent variable for this study. The selected independent variables were tested by using standardized test items were tested by using gullick tape. Here the weight measured by weighing machine, The playing ability of the subjects was measured by the panel of three expert judges during Interuniversity competition on five point scale, on the basis of their all round performance. The average of three judges was considered as final score. To determine the relationship between dependent variable and independent variable Pearson product moment correlation was used.

**Findings:** The results of the present study indicate weight, arm length, forearm girth, thigh girth, elbow diameter, wrist diameter, and ankle diameter are playing an important role for handball playing ability.

**Keywords:** playing ability, handball, anthropometric variables

### Introduction

Sports are not merely fun, games and diversion or entertainment in sports athletes often strive for perfection just as many persons do in religious order. In sports as in religion there are heroes and heroines who provide models to the perfection to be strived for, who are admired for what they did becoming almost like saint such as the religious nature of sports. Sincere ancient times, sports activities in the shape of running, jumping and throwing have been a natural part of man's existence whether it was hunting animals for food or escaping from the wild and dangerous species. However, latterly these activities became pleasurable and competitive, leading to desire for improving his own speed of movement or ability to complete in these competitions. The development in the present country in all walk of human life has surprised the progress of thousands of years and sports also a part of life. It has become a very important and integral part of the total educational process. Through the well directed programme, children develop skills for the worth use of leisure time, engage in activities that are conductive to healthy living and all the endeavours lead to their physical, social, mental and emotional health.

In competitive sports, there is inter play of numerous factors, physique and condition of health, psychic values, general physical fitness, technical efficiency, specific capacity of the organics tactical skills and competitive experience are some of the principle factors, which influence results attained by sports person. The present state of competitive sports that is the peak performance of large number of sports persons in great majority of sports disciplines came close to the prevailing world is a proof that great performed in sports is no larger a

primarily question of available facilities and even less, often the results of purely individual effects. But the outcome of deliberately planned scientifically based advanced training techniques, designed to improve the standard of performance. Now it has become a necessity to identify and select a future elite athlete in right in childhood or adolescent it takes many years of intensive regular training till an international sports performance is levels achieved.

Over 15 million people play the handball game in approximately 140 countries around the world. It is a wonderful mixture of soccer, basketball and a few water polo tactics throw in. It is a fascinating sport fast, dynamic, fun and anyone can play and enjoy it. It requires minimum equipments and 14 people can exercise in it at once; it builds endurance, skills and keeps one fit and strong. Handball is such a highly popular game in the world of sports where sports person requires high level of skills proficiency, psychological conditions, physical standards and obviously appropriate physique and body composition especially high for optimum physical manifestations.

For the first time, hand ball game was played between European countries. Then international Hand Ball Federation was established in 1928 at Amsterdam. Eleven countries were members of this Federation and its president was Mr. Brundez. In 1928, Olympic committee gave its permission to play this game in Olympics for the first time in 1934. Twenty five countries were affiliated members of the International Hand Ball Federation. Now a day, more than 50 countries are playing this game. In present time, rules of this game are changing very fast. This game has become very fast. Now 7 players play in a team. Its ground is small and can also be

played in indoor ground. As far as the history of Handball is concerned, it has been played in different forms and under different names having some similarities of hazana torball and handball. The formal shape of this game was given by Prof. Vactor Karas in 1905, who gave the formal rules of Handball which were similar to what were introduced by Prof. Hedger Neilson in 1896. In 1907, Neilson organized competitions and elaborated the rules of the game and he also recommended the formation of its Federation. The first international competition for men and women was held in 1925 and 1930 in Vienna & Austria respectively.

In the beginning being running oriented game it came under the International Amateur Athletic Federation (IAAF) which organized many minor sports in Europe at that time. In 1926, IAAF appointed special committee representing the countries where Hand ball was played to set up standard rules for this game. At present, International Amateur Handball Federation is the only ruling body throughout the world. Handball came to India in the year 1971. The first National eleven-a-side Handball Championship (Men) was held at Rohtak (Haryana). Seven-a-side Handball started in India in 1976 following the latest rules of the game. India toured China in 1979 and Germany in 1982. Indian team participated in the Asian Games in 1982. At present, India is an upcoming country in Handball and had been participating regularly. Indian Handball Federation has been organizing National level competition in juniors and seniors for both men & women. Handball is a game which demands high standard of physical fitness and mastery of techniques and excellent coordination. As the game gained popularity and spread all over the country, girls also looked up with almost same enthusiasm and gusto as boys did. The pleasure and thrill that the game provides have attracted the people of all classes to play Handball or witness the game all over the world.

The Handball has got various fundamental skills like player's stance and ball holding, passing, dribbling, shooting, rebounding, pivoting, screening and individual defense. Anthropometry it is a measurement for assessment of physical status was expected quite naturally to include consideration of body types and relation of physical to one's health, immunity from disease, positives physical performance and personality qualities. Presently anthropometry considers individual differences, appraises each subject relative to his structural difference and determines his potentialities in the light of these structural characteristics. Measurements of body which include in size, weight, limb length width and circumferences. There specific measurements of the segments reveal the relationship between anthropometry and performance. These body segments help the top sports persons perform in aid require for the particular performance. Accordingly the body segments have a significant place in the body field of sports activities and incorrect body proportion may lead to bad performance.

### Objective of study

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### Procedure

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university hand ball men players are selected as a subjects. The anthropometric variables such as weight, arm length, forearm girth, thigh girth, elbow diameter, wrist diameter, and ankle diameter independent variables and handball playing ability was selected as dependent variable for this study. The selected independent variables were tested by using standardized test items were tested by using gullick tape. Here the weight measured by weighing machine. The playing ability of the subjects was measured by the panel of three expert judges during Interuniversity competition on five point scale, on the basis of their all round performance. The average of three judges was considered as final score. To determine the relationship between dependent variable and independent variable Pearson product moment correlation was used.

### Findings

The data collected was analyzed by using product-moment correlation technique and findings are presented in the following tables.

**Table 1:** shows the relationship between handball playing ability and selected anthropometric variables.

Si no	Variables	Pearson "r" value
1	Handball playing ability and weight	.566**
2	Handball playing ability and arm length	.446**
3	Handball playing ability and forearm girth	.494**
4	Handball playing ability and thigh girth	.445**
5	Handball playing ability and elbow diameter	.456**
6	Handball playing ability and wrist diameter	.496**
7	Handball playing ability and ankle diameter	.433**

\*\* Significance at the 0.01 level (2-tailed).

The above table indicate the handball playing ability significantly related to weight( $r=566$ ), arm length( $r=446$ ), forearm girth( $r=494$ ), thigh girth( $r=445$ ), elbow diameter( $r=456$ ), wrist diameter( $r=496$ ), and ankle diameter ( $r=433$ ). Therefore, it is evident that weight, arm length, forearm girth, thigh girth, elbow diameter, wrist diameter, and ankle diameter are contributed to handball playing ability.

### Conclusions

Within the limitation of the study, the selected anthropometric variable weight, arm length, forearm girth, thigh girth, elbow diameter, wrist diameter, and ankle diameter are significantly related to handball playing ability.

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