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## Relationship of anthropometric measurement and physical fitness with handball playing ability

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### Abstract

The purpose of the study was to find out the anthropometric measurement and physical fitness with handball playing ability. For the present study 40 subjects were selected by using simple random sampling. The age limit of the subjects was remained 18-28 years. The variables of anthropometric measurement are (Body height, Body weight, Arm, leg and Foot length) Body height was measured by steel tape, Body weight was measured by weighting machine, and Arm, leg and foot length were measured by steel tape. The physical fitness of the players was measured by using AAHPERD Youth Physical Fitness test. And the Handball playing ability was measured by using Cornish handball test which is one of the standard tests for measuring handball ability. On the basis of results it is concluded that there is found no significant relationship between Anthropometric measurement and physical fitness with Handball playing ability.

**Keywords:** anthropometric, physical fitness, handball playing

### Introduction

The term anthropometric refers to comparative measurements of the body. Anthropometric measurements are used in nutritional assessments. Those that are used to assess growth and development in infants, children, and adolescents include length, height, weight and head circumference (length is used in infants and toddlers, rather than height, because they are unable to stand). Individual measurements are usually compared to reference standards on a growth chart. Anthropometric measurements used for adults usually include height, weight, body mass index (BMI), waist-to-hip ratio and percentage of body fat. These measures are then compared to reference standards to assess weight status and the risk for various diseases. Anthropometric measurements require precise measuring techniques to be valid.

### Hypothesis

On the basis of available literature and researcher's own experience and understanding about the problem, it was hypothesized that:

There may be a significant relationship of Anthropometric measurement and physical fitness with Handball playing ability.

### Methodology

The present researcher took 40 handball players as subjects for the study. The sources of data was made from the Handball players who participated in the inter university tournament. The age limit of the subjects was 18-28 years. In the anthropometric measurement the researcher measured the number of variables which are as under, (Body height, Body weight, Arm, leg and Foot length). Body height was measured by steel tape, Body weight was measured by weighting machine and Arm, leg and foot length were measured by steel tape. The physical fitness of the players was measured by using AAHPERD Youth Physical Fitness test. And the Handball playing ability was measured by using Cornish handball test which is one of the standard test for measuring handball ability.

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## Analysis and Interpretation

**Table 1:** Inter Correlation Matrix

	Height	Weight	Arm Length	Leg Length	Foot Length	Handball drive
Height	1.000					
Weight	0.004	1.000				
Arm length	-0.077	-0.292	1.000			
Leg length	0.028	-0.114	0.026	1.000		
Foot L	-0.022	0.059	0.041	0.054	1.000	
H D	0.067	0.160	-0.164	-0.192	-0.308	1.000

The relationship of Anthropometric measurement on Handball playing ability was as follows:

There is found no significant relationship between height and weight as the calculated value is (0.004) which is less than the tabulated value (0.312).

There is found no significant relationship between height and Arm length as the calculated value is (-0.077) which is less than the tabulated value (0.312).

There is found no significant relationship between height and Leg length as the calculated value is (0.028) which is less than the tabulated value (0.312).

There is found no significant relationship between height and Foot length as the calculated value is (-0.022) which is less than the tabulated value (0.312).

There is found no significant relationship between height and handball playing ability as the calculated value is (0.067) which is less than the tabulated value (0.312).

There is found no significant relationship between weight and arm length as the tabulated value is (0.312) which is more than the calculated value as it is (-0.292).

There is found no significant relationship between weight and Leg length as the tabulated value is (0.312) which is more than the calculated value as it is (-0.114).

There is found no significant relationship between weight and

foot length as the tabulated value is (0.312) which is more than the calculated value as it is (0.059). There is found no significant relationship between weight and Handball playing ability as the tabulated value is (0.312) which is more than the calculated value as it is (0.160).

There is found no significant relationship between Arm Length and Leg Length as the tabulated value is (0.312) which is more than the calculated value as it is (0.026).

There is found no significant relationship between Arm Length and Foot Length as the tabulated value is (0.312) which is more than the calculated value as it is (0.041).

There is found no significant relationship between Arm Length and Handball playing ability as the tabulated value is (0.312) which is more than the calculated value as it is (-0.164).

There is found no significant relationship between Leg Length and Foot Length as the tabulated value is (0.312) which is more than the calculated value as it is (0.054).

There is found no significant relationship between Leg Length and Handball playing ability as the tabulated value is (0.312) which is more than the calculated value as it is (-0.192).

There is found no significant relationship between Foot Length and Handball playing ability as the tabulated value is (0.312) which is more than the calculated value as it is (-0.308).

**Table 2:** Inter corelation matrix

	Pull-ups	.Bent knee Sit up	Standing broad jump	40-yard Shuttle Run	50 Yard Dash	600 Yard Run and Walk	Handball Drive
Pull Ups	1.000						
Bent Knee	-0.079	1.000					
S B J	0.319	-0.347	1.000				
40Y S R	-0.319	-0.132	-0.354	1.000			
50Y D	0.182	-0.064	0.148	-0.144	1.000		
600Yard	0.013	0.249	0.494	-0.498	-0.063	1.000	
H D	0.117	-0.004	-0.255	0.459	-0.037	-0.334	1.000

There is found no significant relationship between Pull ups and Bent Knee Sit ups as the tabulated value is (0.312) which is more than the calculated value as it is (-0.079).

There is found no significant relationship between Pull ups and Standing Broad Jump as the tabulated value is (0.312) which is more than the calculated value as it is (0.319).

There is found no significant relationship between Pull ups and 40-yard Shuttle Run as the tabulated value is (0.312) which is more than the calculated value as it is (-0.319).

There is found no significant relationship between Pull ups and 50-yard dash as the tabulated value is (0.312) which is more than the calculated value as it is (0.182).

There is found no significant relationship between Pull ups and 600 yard or 9 min run and walk as the tabulated value is (0.312) which is more than the calculated value as it is (0.013).

There is found no significant relationship between Pull ups

and handball playing ability as the tabulated value is (0.312) which is more than the calculated value as it is (0.117).

There is found a significant relationship between Bent Knee Sit ups and Standing Broad Jump as the tabulated value is (0.312) which is less than the calculated value as it is (0.347).

There is found no significant relationship between Bent Knee Sit ups and 40-yard shuttle run as the tabulated value is (0.312) which is more than the calculated value as it is (-0.132).

There is found no significant relationship between Bent Knee Sit ups and 50-yard dash as the tabulated value is (0.312) which is more than the calculated value as it is (-0.064).

There is found no significant relationship between Bent Knee Sit ups and 600 yard as the tabulated value is (0.312) which is more than the calculated value as it is (0.249).

There is found no significant relationship between Bent Knee Sit ups and Handball playing ability as the tabulated value is

(0.312) which is more than the calculated value as it is (-0.004).

There is found no significant relationship between standing broad jump and 40 yard as the tabulated value is (0.312) which is more than the calculated value as it is (-0.354).

There is found no significant relationship between standing broad jump and 50-yard dash as the tabulated value is (0.312) which is more than the calculated value as it is (0.148).

There is found a significant relationship between standing broad jump and 600 yard as the tabulated value is (0.312) which is less than the calculated value as it is (0.494).

There is found no significant relationship between standing broad jump and Handball playing ability as the tabulated value is (0.312) which is more than the calculated value as it is (-0.255).

There is found no significant relationship between 40 yard and 50 yard dash as the tabulated value is (0.312) which is more than the calculated value as it is (-0.144).

There is found no significant relationship between 40 yard and 600 yard as the tabulated value is (0.312) which is more than the calculated value as it is (-0.498).

There is found a significant relationship between 40 yard and Handball playing ability as the tabulated value is (0.312) which is less than the calculated value as it is (0.459).

There is found no significant relationship between 50 yard and 600 yard as the tabulated value is (0.312) which is more than the calculated value as it is (-0.063).

There is found no significant relationship between 50 yard and Handball playing ability as the tabulated value is (0.312) which is more than the calculated value as it is (-0.037).

There is found no significant relationship between 600 yard and Handball playing ability as the tabulated value is (0.312) which is more than the calculated value as it is (-0.334).

### **Discussion on findings**

It has been observed from the analysis of data that there is found no significant relationship between Anthropometric measurement and physical fitness with Handball playing ability.

### **Justification of Hypothesis**

It was hypothesized there will be significant relationship between Anthropometric measurement and physical fitness with Handball playing ability. But after the systematic collection and analysis of data it has been found that there is no significant relationship between Anthropometric measurement and physical fitness with Handball playing ability.

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