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Analysis of Selected Anthropometric Measurements Among Male Athletes and Non-Athletes of Different Age Groups

KEYWORDS: Anthropometric, Athletes, Non-athletes

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ABSTRACT *A sport consists of a physical and mentally competitive activity carried out with a recreational purpose for competition, for self-enjoyment, to attain excellence, for the development of a skill, or some combination of these. A sport has physical activity, side by side competition, self-motivation and a scoring system. The difference of purpose is what characterizes sport, combined with the notion of Individual (or team) skill or prowess.In the light of contradicting reports, the main purpose of this study was to analyze the selected anthropometric measurements among athletes and non-athletes of different age groups.The height is similar in male athletes and non-athletes. The height is different in 12years and 14 years of male athletes and non-athletes.The 12 years male athletes, 12 years male non-athletes, 14 years male athletes and 14 years male non-athletes have similar height.The weight is similar in male athletes and non-athletes.The weight is different in 12years and 14 years of male athletes and non-athletes.The 12 years male athletes, 12 years male non-athletes, 14 years male athletes and 14 years male non-athletes have similar weight.*

INTRODUCTION

A sport consists of a physical and mentally competitive activity carried out with a recreational purpose for competition, for self-enjoyment, to attain excellence, for the development of a skill, or some combination of these. A sport has physical activity, side by side competition, self-motivation and a scoring system. The difference of purpose is what characterizes sport, combined with the notion of Individual (or team) skill or prowess.

Sport has a very prominent role in modern society. It is important to an individual, a group, a nation indeed the world. The world sport has a popular appeal among people of all ages and both sexes. Much of the attraction of sports comes form the wide variety of experience and feelings that result form participation Joy, anguish, success, failure, exhaustion, pain, relief and a feeling of belonging sport can bring money, glory, status and good will, however, sport can also bring tragedy, grief and even death.

According the Oxford dictionary, the term 'bio' is connected with living things and/or human life, and the term 'metric' is referred to made or measured using the metric system. Where the system of measurement that uses the metre, the kilogram, and the litre as basic units. Wells studied the relationship of the leg strength, body weight ratio and length of the lower limb segment to the vertical jump. For this study measurement of body segment (Foot, trunk, thigh and leg) were taken on 49 male college students to see whether significant relationship existed between to vertical jump height and any of the following leg strength body weight ratio, length of the selected segment of lower limbs and the ankle-heel length metatarsal length ratio. None of the relationship studied proved to be statistically significant.

PURPOSE OF THE STUDY

In the light of contradicting reports, the main purpose of this study was to analyze the selected anthropometric measurements among athletes and non-athletes of different age groups.

METHODOLOGY

In this chapter the selection of subjects, selection of variables, testers orientation, subjects orientation, instrument reliability, administration of tests and statistical techniques used for analyzing the data are described.

Selection of Subjects

The purpose of the study was to analyze the selected anthropometric measurements among male athletes and non-athletics of different age groups. To achieve the purpose of the study forty male athletics and forty non athletes from Chandargi Sports School were selected randomly as subjects. Of the selected groups of athletes and non-athletes, each group consists fifteen of them in the age of twelve years and the other fifteen of them in the age of fourteen years.

Selection of Variables

Study of literatures and the discussions with the experts had enlightened the investigator about the variables that might differ among athletes and non-athletes of different age groups. Based on the general conscience the following variables were taken up for the study.

Height
Weight

Selection of Tests

In the present study most ideal and standardised tests were used to assess the selected criterion variables, which are presented in table I.

Table -I
TESTS USED FOR CRITERION VARIABLES

Sl. No.	Criterion Variables	Instruments / Tests	Unit of Measurement
1.	Height	Stadiomeier	Centimeters
2.	Weight	Spring Scale weighing	Kilograms

Administration of the Test

STANDING HEIGHT: To measure the height of the subjects.

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WEIGHT: To measure the body weight of the individual subject.

Data Analyses and Results

Descriptive statistics

In this section, the mean and SD values of height, weight, speed according to groups and categories and the results are presented in the following tablea.

Table: Mean and SD values of height according to athletes and non-athletes and categories

Group	Category	n	Mean	SD
Athletes	12 years	20	134.00	10.69
	14 years	20	148.45	5.92
Non-athletes	12 years	20	138.50	8.70
	14 years	20	148.20	4.44

From the results of the above table represents the Mean and SD values of height according to athletes and non-athletes and categories. The 12 years non-athletes have higher height as compared to 12 years athletes. But, the 14 years athletes have higher height as compared to 14 years non-athletes. The means scores are presented in the following figure

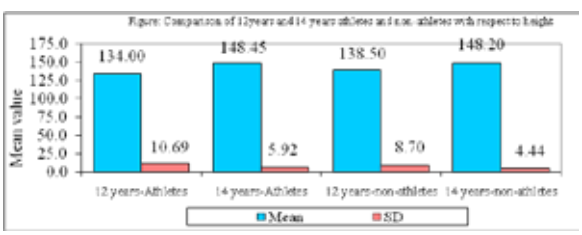
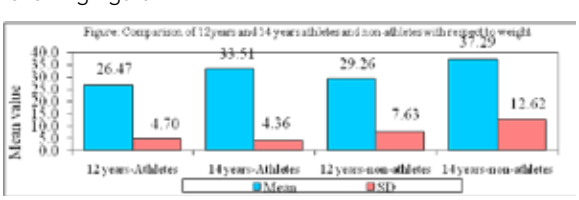


Table: Mean and SD values of weight according to athletes and non-athletes and categories

Group	Category	n	Mean	SD
Athletes	12 years	20	26.47	4.70
	14 years	20	33.51	4.36
Non-athletes	12 years	20	29.26	7.63
	14 years	20	37.29	12.62

From the results of the above table represents the Mean and SD values of weight according to athletes and non-athletes and categories. The 12 years non-athletes have higher weight as compared to 12 years athletes. But, the 14 years non-athletes have higher weight as compared to 14 years athletes. The means scores are presented in the following figure



Differential statistics with 2-way ANOVA between study groups and categories

In this section, the interaction effect was calculated between the groups and categories and the results are presented in the following table.

Hypothesis: There is no significant interaction effect of study groups (athletes and non-athletes) and categories (12 years and 14 years) with respect to heights

To achieve this hypothesis, the two-way ANOVA with interaction design was applied and the results are presented in the following table.

Table: Results of two-way ANOVA with interaction between study groups (athletes and non-athletes) and categories (12 years and 14 years) with respect to heights

SV	DF	SS	MSS	F-value	P-value	Signi.
Main effects						
Groups	1	90.3125	90.3125	1.4770	0.2280	NS
Category	1	2916.1125	2916.1125	47.6904	0.0000	S
2-way interactions						
Groups x category	1	112.8125	112.8125	1.8449	0.1784	NS
Error	76	4647.1499	61.1467			
Total	79	7766.3875				

From the results of the above table, it can be seen that,

The main effect of groups (athletes and non-athletes) on height of study subjects is found to be not significant at 5% level of significance, since the obtained F value 1.4770 is smaller than the F table value 3.92 with 1 and 79 degrees of freedom. Hence the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the height is similar in male athletes and non-athletes.

The main effect of categories (12 years and 14 years) on height of study subjects is found to be significant at 5% level of significance, since the obtained F value 47.6904 is greater than the F table value 3.92 with 1 and 79 degrees of freedom. Hence the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the height is different in 12years and 14 years of male athletes and non-athletes.

The interaction effect of groups (athletes and non-athletes) and categories (12 years and 14 years) on height of study subjects is found to be not significant at 5% level of significance, since the obtained F value 1.8449 is smaller than the F table value 3.92 with 1 and 79 degrees of freedom. Hence the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the 12 years male athletes, 12 years male non-athletes, 14 years male athletes and 14 years male non-athletes have similar height.

Hypothesis: There is no significant interaction effect of study groups (athletes and non-athletes) and categories (12 years and 14 years) with respect to weight

To achieve this hypothesis, the two-way ANOVA with interaction design was applied and the results are presented in the following table.

Table: Results of two-way ANOVA with interaction between study groups (athletes and non-athletes) and categories (12 years and 14 years) with respect to weight.

SV	DF	SS	MSS	F-value	P-value	Signi.
Main effects						
Groups	1	216.4162	216.4162	3.3483	0.0712	NS

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Category	1	1136.8812	1136.8812	17.5895	0.0001	S
2-way interactions						
Groups x category	1	4.8413	4.8413	0.0749	0.7851	NS
Error	76	4912.1859	64.6340			
Total	79	6270.3246				

From the results of the above table, it can be seen that,

The main effect of groups (athletes and non-athletes) on weight of study subjects is found to be not significant at 5% level of significance, since the obtained F value 3.3483 is smaller than the F table value 3.92 with 1 and 79 degrees of freedom. Hence the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the weight is similar in male athletes and non-athletes.

The main effect of categories (12 years and 14 years) on weight of study subjects is found to be significant at 5% level of significance, since the obtained F value 17.5895 is greater than the F table value 3.92 with 1 and 79 degrees of freedom. Hence the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the weight is different in 12years and 14 years of male athletes and non-athletes. The interaction effect of groups (athletes and non-athletes) and categories (12 years and 14 years) on weight of study subjects is found to be not significant at 5% level of significance, since the obtained F value 0.0749 is smaller than the F table value 3.92 with 1 and 79 degrees of freedom. Hence the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the 12 years male athletes, 12 years male non-athletes, 14 years male athletes and 14 years male non-athletes have similar weight.

Conclusions:

1. The height is similar in male athletes and non-athletes.
2. The height is different in 12years and 14 years of male athletes and non-athletes.
3. The 12 years male athletes, 12 years male non-athletes, 14 years male athletes and 14 years male non-athletes have similar height.
4. The weight is similar in male athletes and non-athletes.
5. The weight is different in 12years and 14 years of male athletes and non-athletes.
6. The 12 years male athletes, 12 years male non-athletes, 14 years male athletes and 14 years male non-athletes have similar weight.

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