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# "ANALYSIS OF SELECTED ANTHROPOMETRIC MEASUREMENYS AND MOTOR FITNESS COMPONENTS AMONG ATHLETES AND NON ATHLETES OF DIFFERENT AGE GROUPS"

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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.

KEYWORDS :*Anthropometric Measuremenys , Motor Fitness , Athletes And Non Athletes ,physical and mentally competitive .*

## INTRODUCTION:-

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 from the wide variety of experience and feelings that result from 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.

Sport in a institutionalized competitive activity that involves vigorous physical exertion or the use of relatively complex physical skills by individuals whose participation in motivated by a combination of the intrinsic satisfaction associated with the activity itself and the external rewards earned through participation.

The body is the temple of the soul and to reach the harmony of mind and spirit the body must be physically fit. It has been stated that physical education is an education through physical activities for body, mind and spirit.

According to Clarke physical fitness is the ability to carry out daily tasks with vigour and alertness without undue fatigue and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies. He has further explained physical fitness as the ability to last long, to

withstand stress and to perceive under difficult circumstances where an unfit person would quit.

Physical fitness has always been one of the foremost goals of physical education. Exercise done regularly can result in a level of personal fitness associated with good health.

The ability of a player in a team game like volleyball depends largely in the various biometric and physical parameters of the players. Present day science is very much interested in estimating the optimum biometric make-up of a player. So the scanning and selection of a particular player may be achieved successfully to a great extent by measuring biometric components.

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.

There are numerous factors, which are responsible for the performance of a sports person. The physique and body composition including the size, shape arid form are known to play a significant role in this regard. The performance of the sports men in any game depends on skill training, motivation and on various other physiological and biochemical factors. Age sex and physical growth have also been noticed to influence a person's capacity for physical activities.

Anthropometric are dimensions of the structure of human body taken at specific sites to give measure of the human body taken at specific sites to give measures of firth and width. They include the body size and body proportions. Measurement of body size include such descriptive information as height, weight and surface area, while the measured of body proportion describe relationship between height, weight, among length, width and girths of various body segments. It has been observed that top athletes in some sports tend to have to those proportions to biological aid the performance.

Research in the field of sports and games have proved that the future performance of an individual or team could be predicted through the analysis of certain variables, which were found to be the basis for total performance often is individual motor ability that gains more importance.

Power is a physical fitness component, is seen in quick movement when body weight is propelled either upward or forward. It is characterized by one short burst of energy and is seen in such test as the standing long jump, vertical jump and shorts runs.

Running sped can involved in teams of rate of acceleration and maximum velocity. The rate of acceleration is related to hoe fast a person can increase in the rate of speed. This is the most important consideration in speed for distance of 20-30 yards and it is important in short sprints, is for distance greater than 20-30 yards maximal running speed is more important than acceleration speed. Possessing a high level of both forms of running speed is often a greater advantage. In other words, aspects of running speed are average speed and final speed.

A runner who is attempting to cover a greater distance in the shortest time possible is concerned with the fastest average speed the entire distance. Acceleration speed and sprint speed are relatively important in jumping for horizontal distance; average speed is of more real value then the final speed at the moment of take off in jumping events.

Speed dominates in all the track-running events performed since the earlier days; the ancient Greek's featured both short sprints and long runs in their games. In some ways running is the most natural of all the athletic sports utilizes basic body skills, and fulfils the human need to complete either against one's own standards or against other people.

Anaerobic literally means "without oxygen" exercise like these that rapidly created large oxygen dept are used during practice by competitive athletics to build up speed. Anaerobic falls into two classes those that demand reasonable amounts of oxygen but are cut-short voluntary arid those that demand exorbitant amount of oxygen are cut-short involuntarily.

By considering the above literature, in this study, an attempt has been made to find out the difference among male athletes and non-athletes of different age group on selected anthropometric measurements and motor fitness components.

## Statement of the problem

The study under investigation was to analyze the selected anthropometric measurements and motor fitness components among athletes and non-athletes of different age groups.

## Delimitations

The study was confined to thirty male athletes and thirty male non-athletes of Chandaragi Sports School, Chandaragi.

Among the selected groups of athletes and thirty male non-athletes, each group consists fifteen of them in the age of twelve year and the rest of them in the age of fourteen years.

## This study was confined to the following variables

a) Height
b) Weight
c) Speed
d) Explosive Power

## Limitations

When testing the subjects, the meteorological variations, such as air, temperature, atmospheric pressure, relative humidity, etc., were not taken into consideration.

Physiological factors such as diet, nutrition, rest and practices were not taken into consideration.

The subject's socio-economic status, habits, and family background were not taken into consideration.

## Hypotheses

It was hypotheses that may be significant difference on selected anthropometric measurements and motor-fitness components among male athletes and non-athletes of different age groups.

## Definition of the terms Anthropometry

Anthropometry is the science of measuring the human body arid its points. It is used as aid to the study of human eva and variations. Anthropometry is the measurement of size arid proportions of the human body.

The scientific measurement and collection of data about human physical characteristics and the application (engineering anthropometry)these data to design and evaluation of systems, equipment, and facilities.

## Motor fitness

It is defined as the ability to perform fundamental motor skill involving physical fitness traits and other basic traits such as power, agility, speed and balance.

Motor fitness may be defined as "a readiness or preparedness for performance with special record for by muscles activity without undue fatigue. It concerns the capacity to move the body

efficiently with force over a responsible length of time.

### Height

Measurement of the human body from the bottom the of a structure to the top of the same structure or a measurement taken at standardized points, which indicate, body stature. A number of different measurements of body height are used in anthropometry.

### Weight

The weight of a person's body weight- the vertical force exerted by a mass as a result of gravity reporting weight- person's body weight (as an athlete's) at the beginning of the season (when first reporting for practice).

### Speed

Speed may be defined as the capacity of the individual to perform successive movement of the same pattern at the fastest rate.

Speed may be defined as the rate at which a person can Propel his body parts of his body through space.

Speed is ability to execute motor action under given condition in maximum possible time.

### Explosive Power

Power may be designed as the capacity of an individual to bring into play maximum muscles contraction at the fastest rate of speed.

The significance of the study is based on the fact that. Anthropometric measures and motor ability can be a valuable tool.

Utmost physical fitness is required to be mastered for learning of motor skills largely depends on the optimum make up of then anthropometric measurement.

This study will help to evaluate and compare the abilities and capacities of the students by themselves and by coaches and physical educators.

The result and findings of this study would provide criteria to improve the spirit of sports to the elite outstanding performance in. The sports and sports.

Explosive power is the power or capacity to jump. Vertical jump and standing broad jump are used to assess the ability of the body in relation to the weight of the individual himself. At present it is generally accepted as admeasure of explosive power.

### Significance of the study

The significance of the study is based on the fact that anthropometric measures and motor ability can be a valuable tool to improve the spirit of sports to the elite.

Utmost physical fitness is required to be mastered for outstanding performance in the sports and sports.

Learning of motor skills largely depends on the optimum make up of the anthropometric measures.

This study will help to evaluate and compare the abilities and capacities of the students by themselves and by coaches and physical educators.

The result and findings of this would provide criteria for selecting potential athletes.

This study might be utilized as a screening instrument in analyzing and classifying the athletes.

The result and findings of this study, may guide an athlete to select a sport in which physical characteristics and motor abilities will prove an asset.

This study will help the duding researchers to take up similar studies in other levels and disciplines.

## 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 measurement and motor fitness components 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 Chandaragi Sports School were selected randomly as subjects. Of the selected groups of athletes and non-athletes, each group consists fifteen of them in the in 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.

### Selection of Variables

a) Height
b) Weight
c) Speed
d) Explosive Power

### 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 | Centimetres |
| 2 | Weight | Spring Scale Weighing | Kilograms |
| 3 | Speed | 50 metres dash | Seconds |
| 4 | Explosive Power | Standing Broad Jump | Centimetres |

### Orientation of testers

The purpose of the study, the testing procedures, and the method of scoring were briefly explained and demonstrated to testers who assisted the investigator.

### Orientation to the subjects

The purpose of the study and the role of the subjects were clearly explained with demonstration.

### Reliability of Data

Establishing the instrument reliability, tester`s competency, reliability of the tests and subject`s reliability ensued the reliability of data.

### Instrument Reliability

The instruments were purchased from standard companies and they were considered reliable.

### Tester's competency

The testers competency was established by test re-test method. Pearson's product movement correlation was used to correlate and establish the testers competency and the consistency of the scores.

### Subject Reliability

The re-test conducted scores indicated the subject reliability as the tester used the same subjects under different conditions.

### Administration of the Test

HEIGHT:

Purpose: To measure the height of the subjects.

Equipment: Stadiometer, scale, place of chalk, pencil and score sheet were used.

Procedure: The subject stood on the stadiometer with bare foot. At the time of measurement, heals were on the platform without elevating it. The scale was brought down firmly in contact with vertex. A mark was made with a chalk piece on the side of scale of scale in the stadiometer. After that subject stepped away from the stadiometer stand board.

Scoring: The vertical distance from the stadiometer stand board to the chalk piece mark is measured. The measurement was taken to the nearest one centimetre.

WEIGHT:

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

Equipment: Spring scale weight machine.

Procedure: The subjects were wearing the minimum of clothing. The standard weighing used to measure body weight should be placed in an area, which was smooth arid even surface and with sufficient light, so that, the investigator is capable of properly recording the observation. At the time of measuring the heels were on the weighing scale without elevating it and the body was erect in position. After the scale vibration has stopped the reading was taken and the subjects stepped away from the weighing scale.

Scoring: The zero point of the weighing machine must be checked often during the measurement. The

weight of the subjects was recorded to the nearest one kilogram.

FIETY METERS RUN:

Purpose: The purpose of the test is to measure the speed.

Equipment: An area on track with a starting line, a fifty meter course a finish line and stopwatches.

Procedure: The subject taken position behind the starting line. The starter uses the command, "Ready Go". The command is accomplished by a downward sweep of the timer. The subject runs across the finish line.

Scoring: The score is the elapsed time to the nearest 1/100th of a second between the starting signal and the moment the subject crosses the finish line. The best timing of two trails was recorded.

STANDING BROAD JUMP:

Purpose: The purpose of the test was to measure the explosive power.

Equipment: Measuring tape and Chunnel.

Procedure: A take off line is drawn on the ground. The subject taken a position with toes just touching the take off line, feet slightly apart. Taking off from both feet simultaneously, he jumps as far as possible, landing on both feet. In jumping, the subject crouches slightly and swings the arms to aid the jump.

Scoring: The score is the distances to the nearest centimetre from take off line to the closest heel position. Then best of 3 trails is recorded.

The investigator manually analysed the obtained data, using two-way analysis of variance to find out the difference, if any, among athletes and non-athletes of different age groups. No post hoc test was computed, since only tv/o groups of two categories are involved. In all the cases 0.05 level of confidence was fixed test the significance.

DATA ANALYSES AND RESULTS

However valid. Reliable and adequate the data may be, it does not serve any useful purpose unless it is carefully processed, systematically classified and tabulated, scientifically analyzed, intelligently interpreted and rationally concluded.

After the data had been collected, it was processed and tabulated using Microsoft Excel – 2007 software. The data collected on height, weight, speed and explosive power from among male athletes and non-athletes of different age groups. The main aim the study is "ANALYSIS OF SELECTED ANTHROPOMETRIC MEASUREMENYS AND MOTOR FITNESS COMPONENTS AMONG MALE ATHLETIS AND NON ATHLETES OF DIFFERENT AGE GROUPS" Then the data were analyzed with reference to the objective and hypotheses by using two-way ANOVA with interaction design by using SPSS 16.0 statistical software and the result obtained thereby have been interpreted.

Descriptive statistics

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

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

| Group | Category | N | Mean | SD |
|---|---|---|---|---|
| Athlete | 12 years | 20 | 26.47 | 4.7 |
| | 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 height according to athletes and non-athletes and categories. The 12 ears non-athletes have height as compared to 12 years athletes. But, the 14 years athletes have higher height as compared to 14 years non-athlete. The means scores are presented in the following figure.

Figure: Comparison of 12 years and 14 years athletes and non-athletes with respect to height

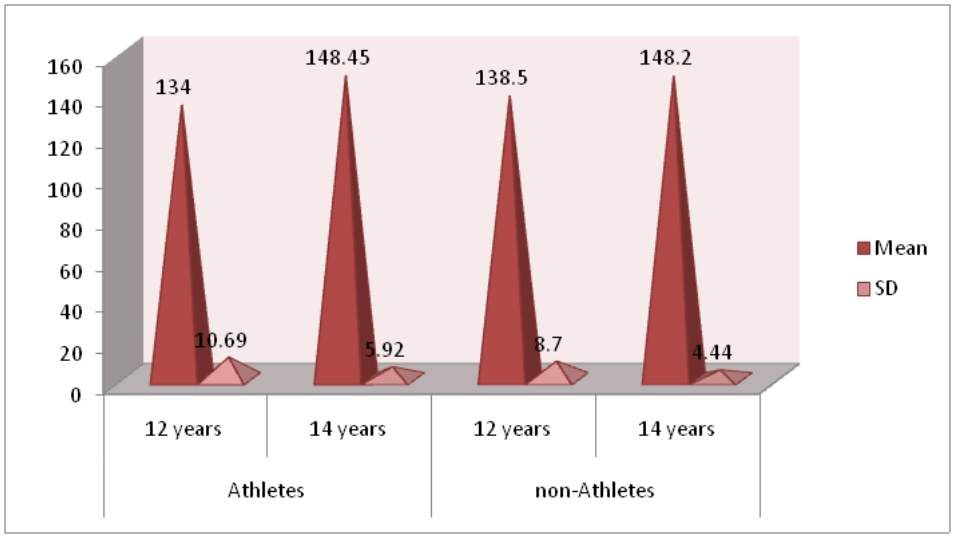



Table: Mean and SD values of weight according to athletes and non-athletes and categories

| Ground | 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 represent the Mean and SD values of weight according to athletes and non-athletes and categories. The 12 years non-athletes have weight as compared to12 years athletes. But, the 14 years non-athletes have higher weight as compared to 14 years athletes. The means scores are presented in following figure

Figure: Comparison of 12 years and 14 years athletes and non-athletes with respect to weight

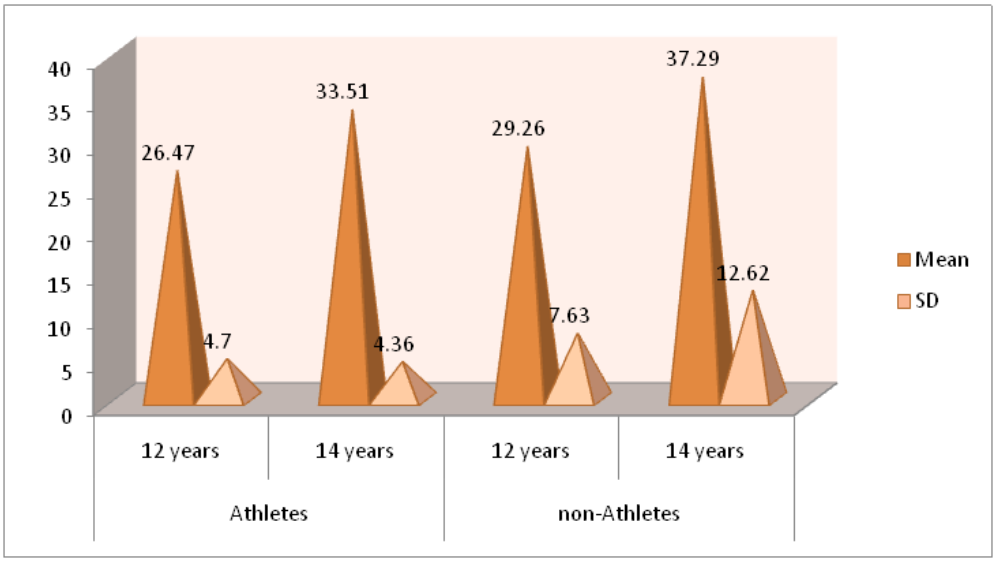



Table: Mean and SD values of speed according to athletes and non-athletes and categories

| Ground | Category | n | Mean | SD |
|---|---|---|---|---|
| Athletes | 12 years | 20 | 9.49 | 0.59 |
| | 14 years | 20 | 8.98 | 0.52 |
| Non-athletes | 12 years | 20 | 11.68 | 1.00 |
| | 14 years | 20 | 10.57 | 0.64 |

From the result of the above table represents the Mean and SD values of speed according to athlete to athletes and non-athletes and categories. The 12 years non-athletes have higher speed. But, the 14 years non-athletes have higher sped as compared to 14 years athletes. The mean score are presented in the following figure

Figure: Comparison of 12 years and 14 years athletes and non-athletes with respect to Speed.

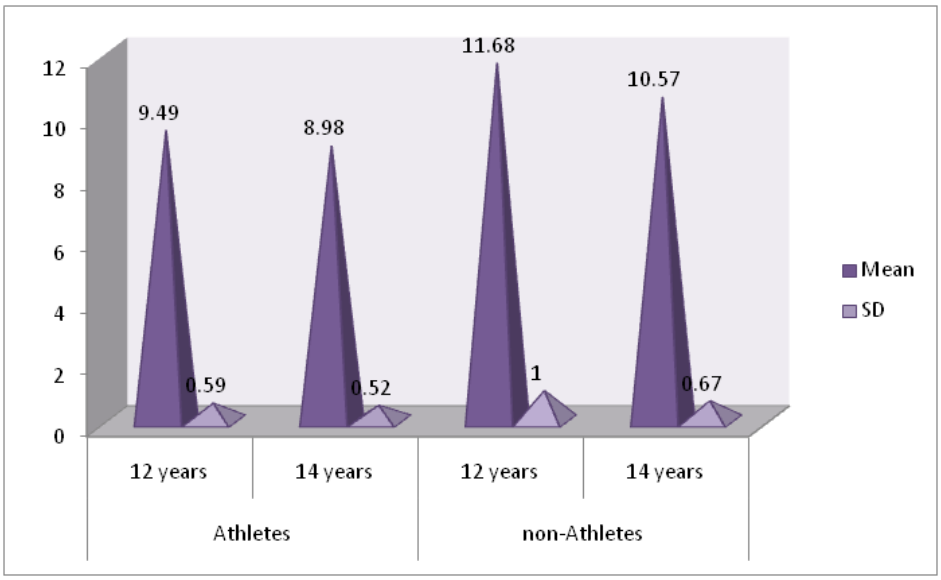
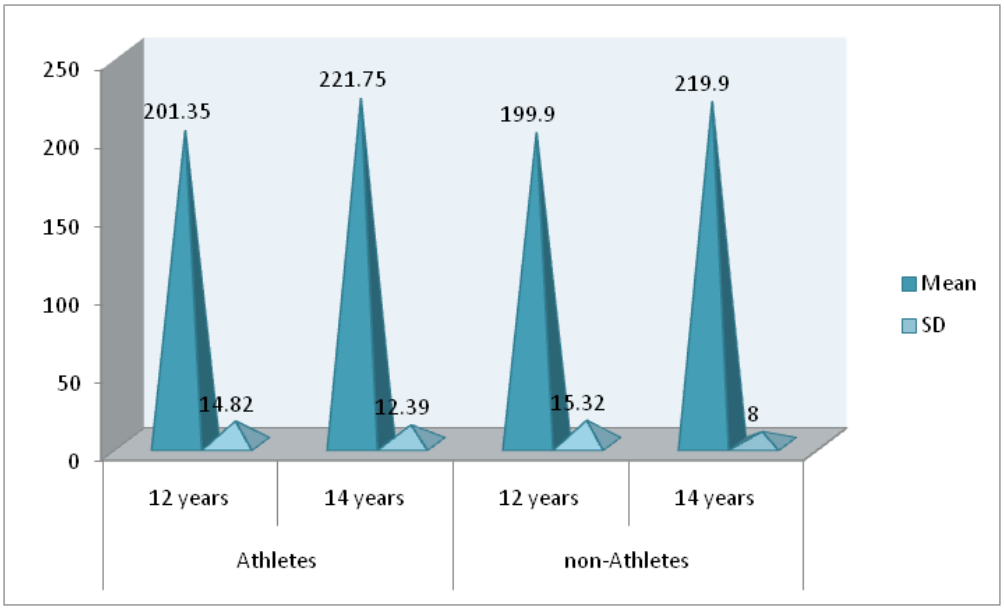


Table: Mean and SD values of explosive power according to athletes and non-athletes and categories.

| Ground | Category | n | Mean | SD |
|---|---|---|---|---|
| Athletes | 12 years | 20 | 201.35 | 14.82 |
| | 14 years | 20 | 221.75 | 12.39 |
| Non-athletes | 12 years | 20 | 199.90 | 15.32 |
| | 14 years | 20 | 219.90 | 8.00 |

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

Figure: Comparison of 12 years and 14 years athletes and non-athletes with respect to explosive power




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

In this section, 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 interaction | | | | | | |
| Groups 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 at5% 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 |
| Category | 1 | 1136.8812 | 1136.8812 | 17.5895 | 0.0001 | S |
| 2-way interaction | | | | | | |
| Groups 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 value3.92with 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.

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

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 speed

| SV | DF | SS | MSS | F-value | P-value | Signi. |
|---|---|---|---|---|---|---|
| Main effects | | | | | | |
| Groups | 1 | 71.1776 | 71.1776 | 137.7214 | 0.0000 | NS |
| Category | 1 | 13.1058 | 13.1058 | 25.3584 | 0.0000 | S |
| 2-way Interaction | | | | | | |
| Groups category | 1 | 1.8605 | 1.8605 | 3.5999 | 0.0616 | NS |
| Error | 76 | 39.27860 | 0.5168 | | | |
| Total | 79 | 125.4225 | | | | |

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

- The main effect of groups (athletes and non-athletes) on speed of study subjects is found to be significant at 5% level of significance, since the obtained F value 137.7214 is greater than the F table valuewith 1 and 79 degrees of freedom. Hence the null 3.92 hypothesis is rejected and alternative hypothesis is accepted. It means that, the speed is different in male athletes and non-athletes.
- The main effect of categories (12 years and 14 years) on speed of study subjects is found to be significant at 5% level of significance, since the obtained F value 25.3584 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 speed 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 speed of study subjects is found to be not significant at 5% level of significance, since the obtained F value 3.5999 is smaller than the F table value 3.92with 1 and 9 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 speed.

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

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 explosive power

| SV | DF | SS | MSS | F-value | P-value | Signi. |
|---|---|---|---|---|---|---|
| Main effects | | | | | | |
| Groups | 1 | 41587.20 | 41587.199 | 0.9382 | 0.3358 | NS |
| Category | 1 | 90990.05 | 90990.046 | 2.0527 | 0.1560 | S |
| 2-way Interaction | | | | | | |
| Groups category | 1 | 44274.05 | 44274.050 | 0.9988 | 0.3208 | NS |
| Error | 76 | 3368836.86 | 44326.800 | | | |
| Total | 79 | 3545688.1 | | | | |

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

The main effect of groups (athletes and non-athletes) on explosive power of study subjects is found to be not significant at 5% level of significance, since the obtained F value 0.9382 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 explosive power is similar in male athletes and non--athletes.

The main effect of categories (12 years and 14 years) on explosive power of study subjects is found to be not significant at 5% level of significance, since the obtained F value 2.0527 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 explosive power is similar 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 explosive power of study subjects is found to be not significant at 5% level of significance, since the obtained F value 0.9988 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 explosive power

## FINDINGS:

1. There is no significant interaction effect of study groups (athletes and non-athletes) with respect to height
2. There is a significant interaction effect of categories (12 years and 14 years) with respect to height
3. There is no significant interaction effect of study groups (athletes and non-athletes) and categories (12 years and 14 years) with respect to height
4. There is no significant interaction effect of study groups (athletes and non-athletes) with respect to weight
5. There is a significant interaction effect of categories (12 years and 14 years) with respect to weight
6. There is no significant interaction effect of study groups (athletes and non-athletes) and categories (12 years and 14 years) with respect to weight
7. There is a significant interaction effect of study groups (athletes and non-athletes) with respect to speed

8. There is a significant interaction effect of categories (12 years and 14 years) with respect to speed
9.There is no significant interaction effect of study groups (athletes and non-athletes) and categories (12 years and 14 years) with respect to speed
10. There is no significant interaction effect of study groups (athletes and non-athletes) with respect to explosive power
11. There is a significant interaction effect of categories (12 years and 14 years) with respect to explosive power
12.There is no significant interaction effect of study groups (athletes And non-athletes) and categories (12 years and 14 years) with Respect to explosive power.

## SUMMARY CONCLUSION AND RECOMMEDATIONS

### Summary

The purpose of the study was to analyze the selected anthropometric measurements and motor fitness components among male athlete's arid non-athletes of different age groups. For this purpose of the study, eighty students (forty of them were athletes and rest of them were non athletes) Chandaragi Sports School were selected randomly as subjects. Of the selected groups of athletes and non-athletes, each group consists twenty of them in the age of twelve years and the rest of them in the age of fourteen years. The criterion variables considered in this study were height, weight, speed and explosive power.

In order to study the difference among male athletes and non-¬athletes of different age groups on selected anthropometric measurements and motor fitness components, two-way analysis of variance was computed. Since, there were only two rows and two columns; no post hoc test is applied. The level of confidence was fixed at 0.05 for significance in all the cases.

The results of the present study indicates that there is a significant difference on speed and explosive power between athletes and non-athletes, as such, significant diff, Erenceen height, weight, speeds and explosive power exists between different age categories of twelve and fourteen years. Besides, there is a significant difference on height, weight and explosive power among athletes and non-athletes of different age groups.

### 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
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
7.The speed is different in male athletes and non-athletes
8.The speed is different in 12years and 14 years of male athletes and non-athletes
9.The 12 years male athletes, 12 years male non-athletes, 14 years male athletes and 14 years male non-athletes have similar speed
10.The explosive power is similar in male athletes and non-athletes
11.The explosive power is similar in 12years and 14 years of male

Athletes and non-athletes

12.The 12 years male athletes, 12 years male non-athletes, 14 years male athletes and 14 years male non-athletes have similar explosive power

## RECOMMENDATIONS

Based on the results of the present study the following recommendations are made. Similar study may be conducted on various districts and at variouslevels.Similar type of study may be carried out extensively with different age group and gender. The findings of this study may help coaches and teachers in systemizing and modifying their training schedule of various levels of achievements.

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