

## A Comparative Study of Selected Health Related Physical Fitness and Personality Characteristics among Physical Education and Non-Physical Education Students in Aurangabad City

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### **INTRODUCTION:**

Physical fitness is one's richest possession; it cannot be purchased, but is earned through daily routine and physical exercise.

Physical fitness is important for all human being, irrespective of their age. A given work may not be available. But if he does not keep himself in the game till the end of the allocated time, he may not find a place in the team. So fitness becomes the first and foremost to enjoy the life fully.

Today, there is a growing emphasis on looking good, feeling good and living longer. Increasingly, scientific evidence tells us that one of the keys to achieving these ideals is fitness and exercises. Getting moving is a challenge because today physical activity is less a part of our daily lives. There are fewer jobs that require physical exertion. We have become a mechanically mobile society, relying on machines rather than muscles to get around.

"Physical fitness refers to the organic capacity of the individual to perform the normal tasks of daily living without undue tiredness or fatigue having reserves of strength and energy available to meet satisfactory any emergency demands suddenly placed upon him."(NIXON)

"Fitness is that state which characterizes the degree to which the person is able to function. Fitness is an individual matter. It implies the ability of each person to live most effectively with this potential. Ability to function depends upon physical, mental, emotional and social components of fitness all of which are related to each other and mutually interdependent."(Kirchner)

### **PHYSICAL FITNESS:**

An important component of total fitness, it is the ability to perform daily tasks with sufficient strength and without experiencing undue fatigue, and to have enough strength and stamina left over to enjoy recreational pursuits and be able to meet unforeseen emergencies.

The term has been applied to many different goals of life. The avoidance of disease, efficiency in everyday life, the ability to perform in different activities in desired levels, and healthy mental and social behaviors

Total fitness is the capacities to combine all these aspects to achieve the optimal quality of life. The state of total fitness results in positive health that far exceeds the state of simply being free from disease. The fully fit person has high levels of cardio-respiratory function and mental alertness, meaningful social relationships, the ability to cope with problems, desirable level of fat, sufficient level of flexibility, muscular strength and endurance and healthy low back. If you are fit, your life includes regular exercise and a healthy diet, and you are able to cope with stress without substance abuse. Being fit means being able to enjoy a full life with a low risk of developing major health problems. The quality of the life continuum including stages from known illness to absence of disease, to life in the fullest sense of the world

## **CENTRAL ANATOMICAL FITNESS:**

The physical fitness may be classified as general physical fitness and specific fitness. The general fitness is the pre-requisite for the sports, which include strength speed, endurance, agility, flexibility and balance where as specific fitness varies from sport to sport. In certain sports the length component of fitness is a dominating factor whereas in other sports endurance.

## **ASPECTS OF SPECIFIC FITNESS:**

State of fitness for the play is dependent upon the suitability of his body structure for the work to be performed, the effectiveness with which his organ systems support the effort, and the view that the player task as he approaches it and carries it through to completion.

## **SPECIFIC ANATOMICAL FITNESS:**

The player must possess all of the body parts necessary to the performance of the task and at the same time he must have appropriate shape and size of the body for a particular game. In a game like basketball the height of the player is a basic requirement. Handball is such a game as can accommodate players of various sizes and shapes but this quite acceptable up to a point for the recreational player who has no higher aspirations. For them their requirement never needs modification. But at higher levels, even though there is a variety of a

## **SPECIFIC PHYSIOLOGICAL FITNESS:**

For the specific physiological systems of the body to be fit they must function well enough to support to the particular game that the player is playing. Since different games make different demands upon the organ with respect to neurological respiratory circulatory metabolic and temperature regulating functions, physiological system are highly adoptable to exercise. The response of each system is diacritic, hard work in the heat is necessary to improve the fitness of the temperature regulation mechanism. Each task has its major physiological components, and fitness for the task requires effective functioning of appropriate systems.

## **SPECIFIC PSYCHOLOGICAL FITNESS:**

A player is a psychologically fit for the game if he possess the required perception, emotional stability, motivation, intelligence and educatibility to accomplish the task. By creating tension, elevated heart rate and blood pressure and endocrine disturbances anxiety can become barrier to performance. This adds to the stress of the task and therefore contributes to the player's unfitness for it. No player is without anxieties, but some are better able to adopt to the stress of the anxiety in their lives and these player's are more psychological fit for arduous work.

## **MANAGING PHYSICAL FITNESS:**

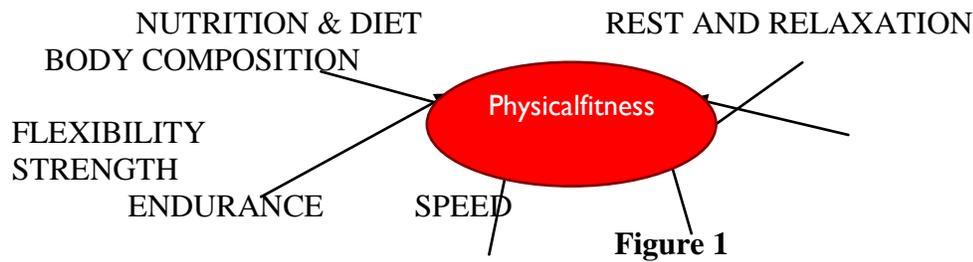
Physical activity is defined as bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above the basal level. Physical activity can be categorized in various ways, including type, intensity, and purpose. Because muscle contraction has both mechanical and metabolic properties, it can be classified by either property. This situation has caused some confusion.

## **AN UNDERSTANDING OF FITNESS:**

### **TERMINOLOGY:**

Terms such as physical fitness and physical training are used in various ways by physical educationists, sports scientists, coaches and athletes, yet the way in which these terms are related is often unclear. In order to clarify the definitions of these terms and help with understanding the total concept of physical fitness, a model is presented in FIG 1. By working from model of this kind, one is encouraged to take a more balanced

approach to increasing levels of fitness through being made aware of the contribution of the various components to the total state of physical fitness.



## PHYSICAL FITNESS:

Physical fitness as a term refers to the total dynamic physiological state of the individual, range on a continuum from optimal human performance to severe debilitation and death. Athletes would be found towards the upper end of the continuum – fluctuating up or down depending on their state of training – whilst at the other end conditions of illness could exist. While this term may be satisfactory in a descriptive sense, problems arise when attempts are made to define the concept in an operational way, that is, when we try to measure or develop it. The complexity arises because physical fitness is made up of a series of components, for example, strength, endurance, flexibility, and so on, each one of which makes some independent contribution to the whole state. While some of these components are related, it is possible for an athlete to have a great deal of one component and very little of another. Also, when considering the wide range of sports, certain components assume a considerable importance; the necessity for flexibility in gymnastics, the importance of strength in weight- lifting and the quality of endurance in marathon running. Most sport, of course, requires a contribution from a number of components of fitness in varying degrees.

## PHYSICAL TRAINING:

Physical training refers to the processes used in order to develop the components of physical fitness, for example, how to improve aerobic endurance, to stretch and relax muscles, to increase arm and shoulder strength, to relate exercise and programmes to the specific requirements of individual sports.

## BODY COMPOSITION:

Body composition refers to the proportions of lean body mass and body fat. It is more important than total weight as a component of physical fitness, since it is possible for a very muscular person to be overweight according to popular height – weight tables, and still have a relatively small percentage of total weight deposited as fat.

## BENEFITS OF PHYSICAL FITNESS:

Exercise or fitness is not just for Olympic hopefuls or supermodels. In fact's, you are never too in fact, too young or too old to get started. Regardless of your age, gender or role in life, you can benefit from regular physical activity. If you are committed, exercise in combination with a sensible diet can help to provide an overall sense of well – being and can even help to prevent chronic illness, disability and premature death. Some of this benefit of increased physical activity or physical fitness is:

Improve Health:

Improved Sense Of Well – Being:

Improved Appearance:

Increased Stamina:

Envelopment of Physical Fitness:

## ANAEROBIC ENDURANCE CAN BE SUB – DIVIDED AS FOLLOWS:

1. Short anaerobic – less than 25 seconds (mainly alactic)
2. Medium anaerobic – 25 seconds to 60 seconds (mainly lactic)
3. Long anaerobic – 60 seconds to 120 seconds (lactic + aerobic)

Using repetition methods of relatively high intensity work with limited recovery can develop anaerobic endurance.

## SPEED ENDURANCE:

Speed endurance is used to develop the co – ordination of muscle contraction in the climate of endurance. Repetition methods are used with a high number of sets, low number of repetitions per set and intensity greater than 85% with distance covered from 60% to 120% of racing distance. Competition and time trails can be used in the development of speed endurance.

## STRENGTH ENDURANCE:

Strength endurance is used to develop the athlete’s capacity to maintain the quality of their muscles contractile force in a climate of endurance. All athletes need to develop a basic level of strength endurance. Examples of activities to develop strength endurance are weight training, circuit training, Fartlek, hill running etc.

## STRENGTH:

The common definition is the ability to exert a force against a resistance. The strength needed by a weight lifter to lift a 200 kg barbell. This, therefore, implies that there are different types of strength.

## HOW DO MUSCLES GET STRONG?

A muscle will only strengthen, when it is worked beyond its normal operation, or it is overloaded. Overload can be progressed by increasing the:

1. Number of repetitions of an exercise
2. Number of the sets of the exercise
3. Intensity – reduced recover time

## SPEED:

Speed is the quickness of movement of limb, whether this is the legs of a runner or the arm of the shot putter. Speed is an integral part of every sport and can be expressed as any one of, or combination of, the following

1. Maximum speed
2. Explosive strength (power)
3. Speed endurance

## STRUCTURE OF PERSONALITY IMPRESSION:

GOOD INTELLECTUAL	BAD INTELLECTUAL	GOOD SOCIAL	BAD SOCIAL
HONEST ARTIST RESERVED CAUTIOUS PRACTICAL MEDITATIVE INTELLIGENT	UNHAPPY VAIN FINICKY BORING DISHONEST UNIMAGINATIVE IMPULSIVE	TOLERANT HELPFUL GOOD NATURED WARM SINCERE SENTIMENTAL HUMOROUS	HUMORLESS COLD UNSOCIABLE STERN CRITICAL MOODY DARING DOMINATING

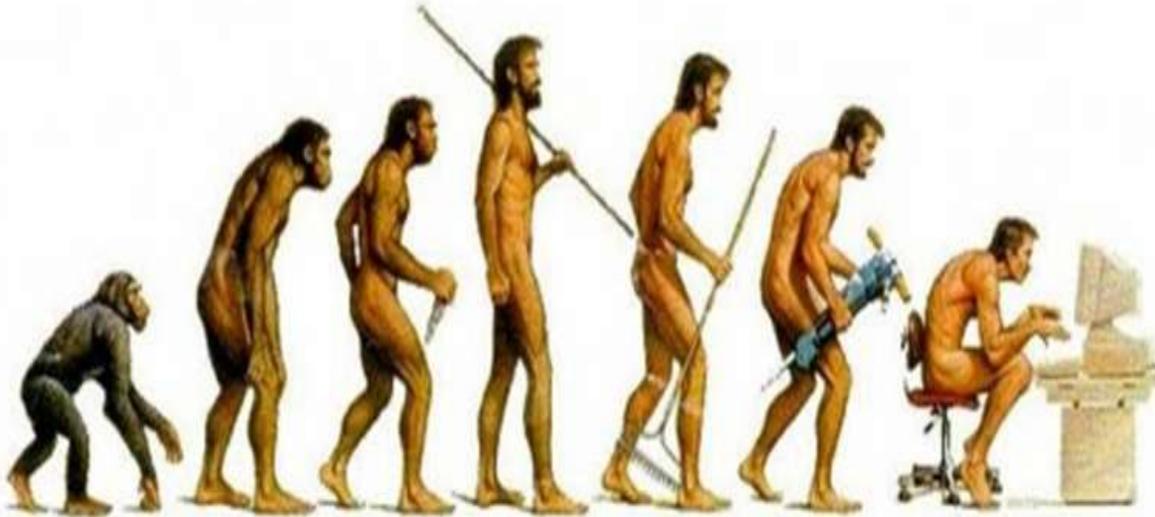
SKILLFULL SERIOUS IMAGINATIVE IMPORTANT	WASTEFUL FOOLISH WAVERING UNINTELLIGENT CLUMSY	HAPPY-POPUL SOCIAL MODEST	IRRITABLE SHREWD UNPOPULAR
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### 1.1 BACKGROUND:

#### HISTORY OF PHYSICAL FITNESS – FROM 10,000 BC UNTIL NOW:

Both the ancient Persian Empire and the ancient Roman Empire fell into demise, partly because the physical fitness of their peoples fell into demise. The demise of physical fitness in human cultures, therefore, is not a new phenomenon.

#### PHYSICAL FITNESS DEVOLUTION:



#### THE TRUE PICTURE:

Anyone caught up in the physical fitness movement of 20 or 30 years ago might be surprised to learn that human cultures have always gone through cycles of fitness and fatness. Even more surprising is the fact that the majority of people in highly developed countries today are no more physically fit now than they were two or three decades ago. Instead, people in developed countries today seem to be stuck in the fatness phase of the most recent fitness/fatness cycle.

#### HISTORICAL DEVELOPMENT OF THE CONCEPT OF INDIVIDUAL PERSONALITY:

The modern sense of individual personality is a result of the shifts in culture originating in the Renaissance, an essential element in modernity. In contrast the Medieval European's sense of self was linked to a network of social roles: "the household, the kinship, the guild, the corporation- these were the building blocks of personhood", Stephen Greenblatt observes, in recounting the recovery (1417) and career of Lucretius' poem *De rerum natura*: "at the core of the poem lay key principles of a modern understanding of the world." "Dependent on the family, the individual alone was nothing," Jacques Gélis observes.

#### EMERGENCE OF THE PROBLEM:

The researcher has noticed it from past two years that there is some difference in physical fitness and thinking, acting, behaving and feeling levels among physical education and non-physical education college students in Aurangabad. Therefore, the researcher finds it necessary to compare some physical fitness and personality characteristics scales among physical and non –physical education college students in Aurangabad.

## STATEMENT OF THE PROBLEM:

The purpose of the study is to develop an awareness regarding the importance of physical fitness and personality characteristics that determine the total behaviour of an individual. This is why the researcher have selected the topic, "A comparative study of selected health related physical fitness and personality characteristics among physical education and non-physical education college students in Aurangabad".

## SIGNIFICANCE OF THE RESEARCH:

- 1) The study may suggest effective coaching method for physical education students.
- 2) The study may help to make specific training program for development of physical fitness and personality characteristics of physical education college students.
- 3) The coach may known about the role of physical fitness and personality characteristics in sports performance by predicting success of students, or to expect the peak performance
- 4) The finding of the study may provide a guideline to the future research investigation in sports science to conduct further in this field.
- 5) The findings of this study can be used as a screening tool assessing and classifying physical education and non-physical education college students.

## HYPOTHESIS:

- H1:** There is no significant difference of physical fitness among the physical education and non-physical education college students.
- H2:** The physical education college students are more physically fit as compared to non-physical education college students.
- H3:** There would be no significant differences of different personality scales among physical education and non-physical education college students.
- H4:** The Extraversion scale would be more in physical education college students as compared to non-physical education college students i.e., they would be more Extrovert.
- H5:** The non-physical education college students would be more Neurotic as compared to physical education college students.
- H6:** The physical education college students would be more socially desirable than non-physical education college students.

## DELIMITATIONS:

1. The study was delimited only to the physical education college students of M.S.M's college of physical education and students of non-physical education Azad college of education.
2. The study was delimited to only 50 male students.
3. The study was delimited only to the age group of 19-25 years age.
4. The study was delimited to the some selected physical fitness components viz.----
  - a. Muscular strength (dynamic) and muscular endurance of arms and shoulders. (Pull ups)
  - b. Muscular strength and endurance (trunk). (bent knee sit ups)
  - c. Speed and Agility. (shuttle run)
  - d. Explosive strength of legs. (standing broad jump)
  - e. Speed of lower extremities and explosive strength. (50 yard dash).
5. And Eysenek personality inventory questionnaire.

## LIMITATIONS:

- 1) The study was limited to the sincere response of the students.
- 2) No availability of some sophisticated instruments for measuring different components may consider as one of the limitation of the study.

- 3) The researcher can't control the weather conditions, diet, lifestyle, habits etc. was considered as the limitation of the study.
- 4) There may be some factors which are beyond the control of researcher that may be limitation of this study.

## **COMPARATIVE STUDY:**

It is the act of comparing two or more things with a view to discovering something about one or all of the things being compared.

## **LIE-SCALE OR SOCIAL DESIRABILITY:-**

Social desirability bias is a term used in scientific research to describe the tendency will be viewed favourably by others. This will generally take the form of over reporting good behaviour or understanding bad behavior. The effect is common within the fields of medicine, psychology and the social sciences.

## **EXTRAVERSION:**

Extraversion is characterized by being outgoing, talkative, high on positive affect (feeling good) and in need of external stimulation. The extroverts have more self-confidence, take more interest in others, are outgoing, lively and realistic. They are very social and form friends quite easily. Actors, social and political leaders etc fall in this category. 16%.

## **INTROVERSION:**

Introversion, on the other hand, (also about 16% of the population) are chronically over-aroused and jittery and are therefore in need of peace and quiet to bring them up to an optimal level of performance. Introverts are too self-conscious, they are more interested in their own thoughts and ideas, are self-centered, shy, reserved and lovers of solitude. Philosophers, poets, artists, scientists etc., belong to this class.

## **AMBIVERT:**

The ambiverts are a mixture of both the extremes lie most of the people, about 68%, who have been labeled as Ambiverts. The ambiverts are a mixture of both the extremes in a balanced manner. Ambiverts are neither outgoing nor reserved to themselves; they are able to adjust themselves with any situation.

## **NEUROTICISM:**

Neuroticism or emotionality is characterized by high level of negative effect such as depression and anxiety. Neuroticism, according to Eysenek`s theory, is based on activation threshold in the sympathetic nervous system or visceral brain. This is the part of the brain that is responsible for the fight-or-flight response in the face of danger. Activation can be measured by heart rate, blood pressure, cold hands, sweating and muscular tension (epically in the forehead).

## **METHODOLOGY:**

The purpose of the study was to compare the selected physical fitness components and personality characteristics among physical education and non-physical education college students studying in Aurangabad.

## **POPULATION**

The M.S.M's college of physical education and non-physical education college students (Azad College) Aurangabad is the population of the study

## SAMPLES

A total number of 50 students from M.S.M's college of physical education and AZAD College of education were selected randomly through case study method. A number of 25 students from M.S.M's College of physical Education Aurangabad and 25 from Azad College Aurangabad were selected for the study.

Each subject participated in a series of tests conducted upon physical fitness were compared to each other on five (5) different physical tests items. A questionnaire is used to collect information for their personality characteristics scales difference.

## VARIABLES

### A) INDEPENDENT VARIABLES:

Comprised of Eysenek Personality Inventory

Comprised of AAPHER Youth Physical Fitness test.

### B) DEPENDENT VARIABLES:

Performance of the students

### C) INTERVENING VARIABLES:

Depending upon the age and sex:

Age: - 19-25.

Sex: - Only Male.

## TOOLS AND MEANS:

- 1) The equipment's used in performing the pull-ups a wooden or metal bar approximately 1.5 inch in diameter and also be used the stopwatch.
- 2) The equipment's used in performing the bent-knee sit-ups a mat for each subject.
- 3) Marking powder.
- 4) Questionnaire on personality characteristics of Eysenek Personality inventory, pencil, rubber.

## PROCEDURE

The subjects were selected randomly through case study method to compare their physical fitness and personality characteristics differences, for this purpose some selected physical fitness components and scales of personality were used i.e., Lie-scale or social desirability, Extraversion and Neuroticism. The total number of 50 students, 25 from M.S.M's college of physical education Aurangabad and 25 from Azad college Aurangabad were selected. After the permission from both principals, the students were conducted physical fitness test and given a questionnaire containing 57 questions regarding how they feel, act and behave. They were given 10 minutes to write the answers. Then on the basis of their responses the mean score was drawn i.e. adding their answers by their number and compared it. Then their standard deviations were drawn by square rooting their arithmetic means of the deviations from the mean. After that their T-Tests were compared which is use to find the significant differences on the mean scores of two groups of students.

## SHUTTLE RUN:

Purpose: Speed and Agility

Equipment: Two blocks of wood (2"x2"x4"), a stopwatch and marking powder. The subject should wear spikes or run bare foot.

Test Administration: Two parallel lines are marked on the floor 10 yards apart or the width of the regular volleyball court may be used for the test. The two wooden blocks are placed behind one of the lines. The subject is asked to start from behind the other line. On the signal ready? go, the timer starts the watch and the subject runs towards the blocks, picks – up one block, runs back to the starting line, places the block behind the starting line, runs back and picks – up the second block to be carried back across the starting line. As soon as the second block is placed on the ground the timer stops the watch and records the time.

Scoring: Two trials are allowed to each subject with some rest in between. The time of the better of the two trials is recorded to the nearest 10th of a second as the score of the test item.

### STANDING BROAD JUMP:

Purpose: Explosive Strength of Legs

This test measures the power of legs in jumping horizontal distance and may be applied to children of both sexes aged seven years and above.

Equipment: - Floor, mat or long jump pit may be used, measuring tape, marking tape/ chalk.

Administration: - A demonstration of the standing broad jump is given to a group of subjects to be tested. The subject is then asked to stand behind the starting line with in fact parallel to each other. He is instructed to jump as fastest as possible by bending Knees and swinging arms to take off for the broad jump in the forward direction. The subject is given three trials.

Scoring: The distance between the starting line and the nearest point of landing provides the score of the test. The best (maximum distance) trial is used as the final score of the test.

### COLLECTION OF DATA:

The data was collected from Aurangabad city. Out of which, 25 from M.S.M's college of physical education Aurangabad and 25 from Azad college Aurangabad were selected.

### STATISTICAL METHOD:

The statistical analyzes used to test the data are reported as mean and standard deviation after using parametric tests. The comparisons of both the variables are analyzed by the t- test. The comparison between variable means and standard deviations was performed by using the t – test. The analyses of the variables are under the following tables.

Mean, Standard Deviation and t-Test were used as statistical methods.

$$\text{Mean} = \frac{\sum x}{n}$$

$$\text{Standard Deviation} = \sqrt{\sum \frac{x^2}{N}}$$

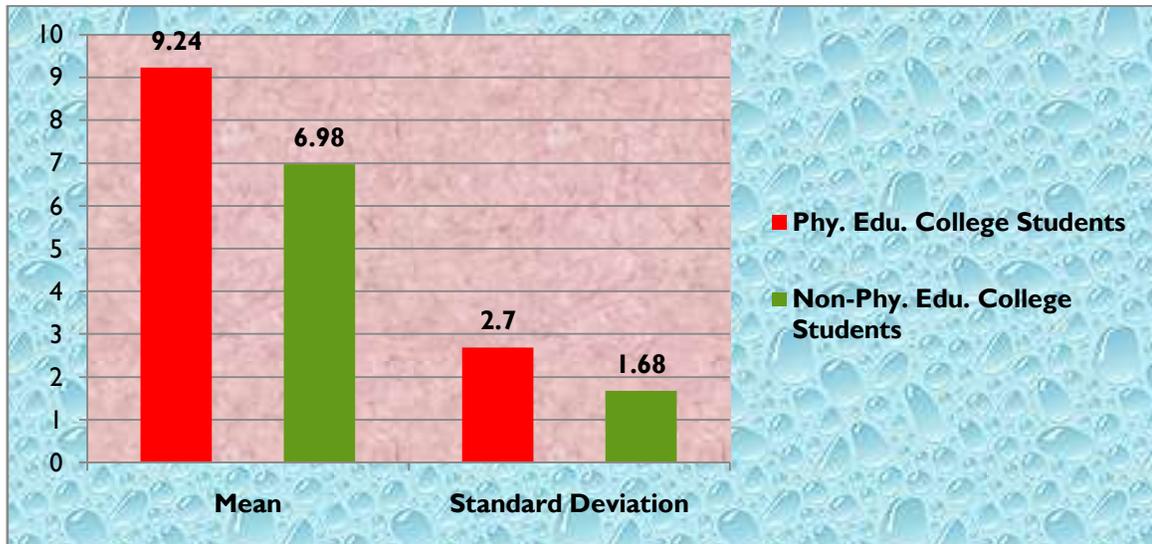
$$\text{T. Scale} = \frac{x_1 - x_2}{\sqrt{\frac{(SD_1)^2}{n_1 - 1} + \frac{(SD_2)^2}{n_2 - 1}}}$$

$$\begin{aligned} \text{Degree of freedom} &= N_1 - 1 + N_2 - 1 \\ &= 25 - 1 + 25 - 1 \\ &= 24 + 24 = 48 \end{aligned}$$

**TABLE 1: Pull – ups**

**Mean and Standard deviation between physical education college students and non physical education college students**

Variables	Mean	Standard Deviation
Phy Edu College Students	9.24	2.70
Non Phy Edu College Students	6.96	1.68

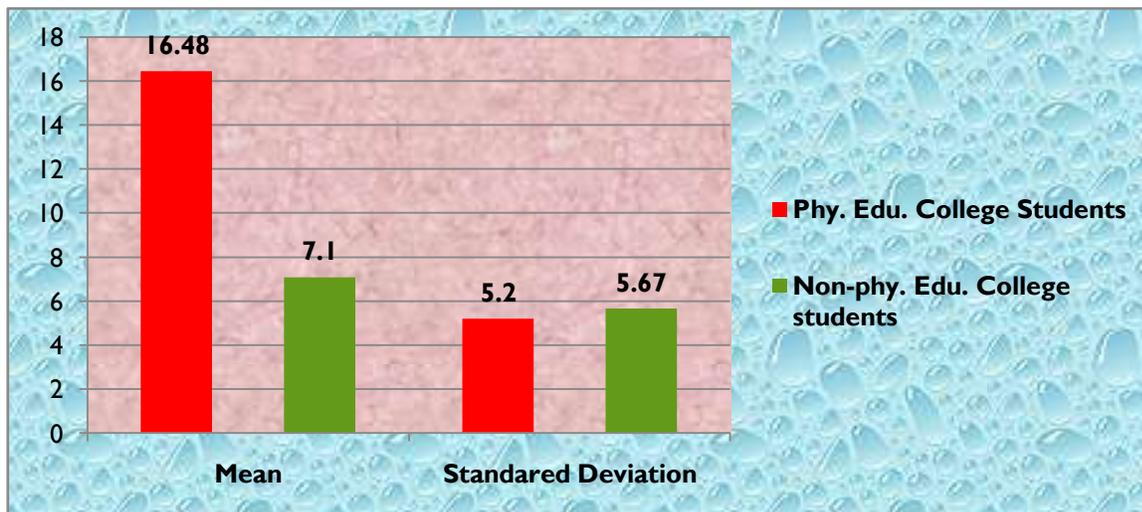


Graphical Comparison of Pull Ups Mean and Standard Deviation value between physical education college students and non physical education college students is 9.24(2.7) and 6.96(1.68) respectively.

**TABLE 2: BENT – KNEE SIT-UPS**

**Mean and Standard Deviation between Physical Education College Students and Non Physical Education College Students**

Variables	Mean	Standard Deviation
Phy Edu College Students	16.48	5.20
Non Phy Edu College Students	7.10	5.67

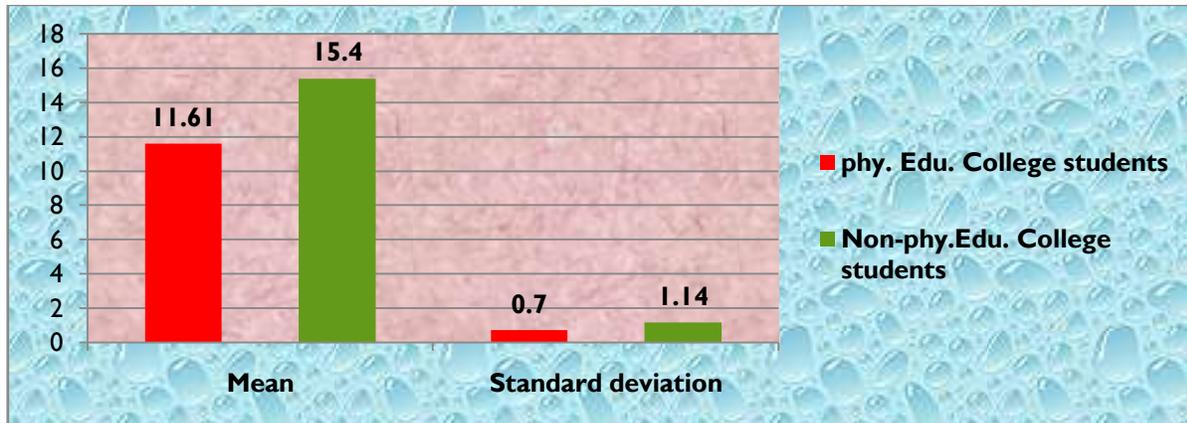


Graphical Comparison of Bent-Knee Sit-ups Mean and Standard Deviation value between physical education college students and non physical education college students is 16.5(9.19) and 7.1(5.67) respectively.

**TABLE 3: SHUTTLE RUN**

**Mean and Standard Deviation between Physical Education College Students and Non Physical Education College Students**

Variables	Mean	Standard Deviation
Phy Edu College Students	11.61	0.7
Non Phy Edu College Students	15.40	1.14

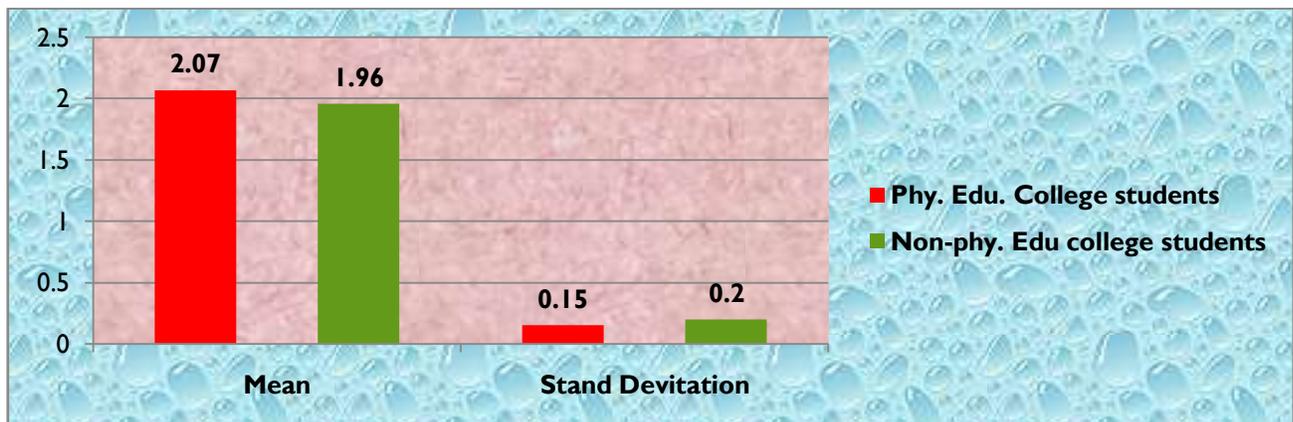


Graphical Comparison of Shuttle Run Mean and Standard Deviation value between physical education college students and non-physical education college students is 6.24(0.69) and 4.96(0.54) respectively.

**TABLE 4: STANDING BROAD JUMP**

**Mean and Standard Deviation between physical education college students and non physical education college students**

Variables	Mean	Standard Deviation
Phy Edu College Students	2.07	0.15
Non Phy Edu College Students	1.96	0.20

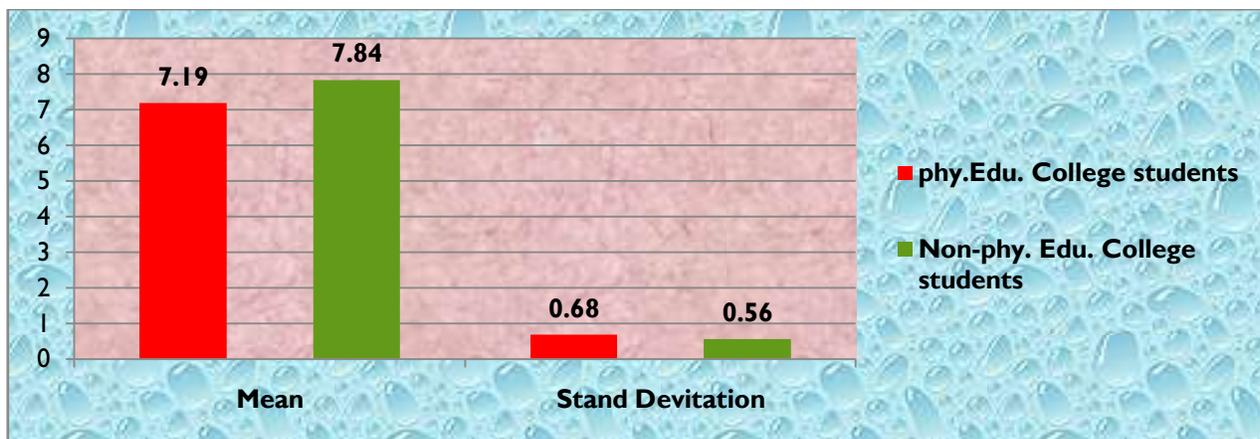


Graphical Comparison of Standing Broad Jump Mean and Standard Deviation value between physical education college students and non-physical education college students is 2.07(0.15) and 1.96(0.2) respectively.

**TABLE5: 50 YARD DASH**

**Mean and Standard Deviation between Physical Education College Students and Non-Physical Education College Students.**

Variables	Mean	Standard Deviation
Phy Edu College Students	7.19	0.68
Non Phy Edu College Students	7.84	0.56

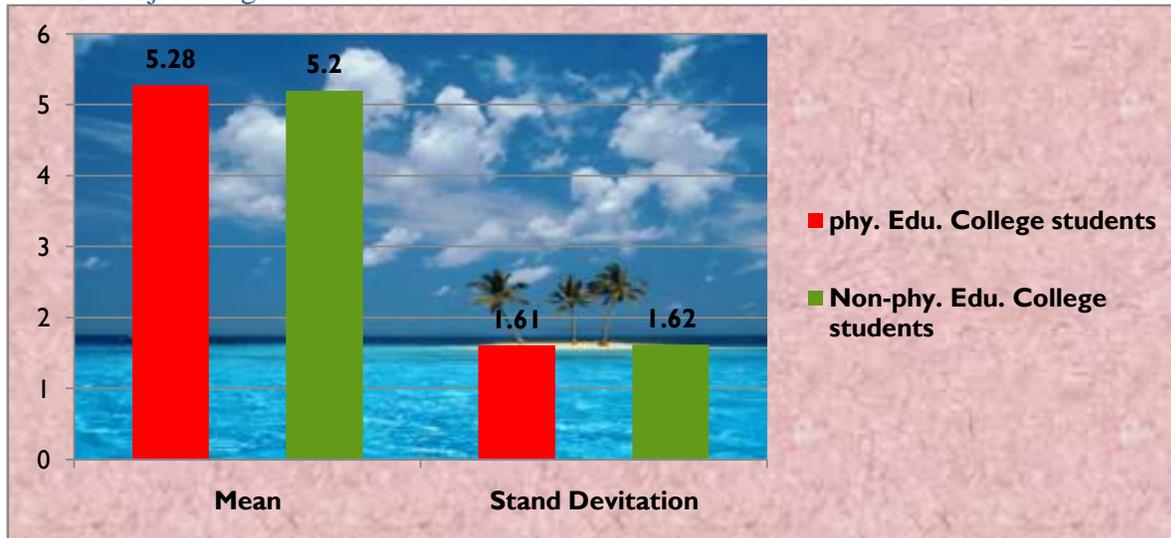


Graphical Comparison of 50 Yard Dash Mean and Standard Deviation value between physical education college students and non physical education college students is 7.19(0.68) and 7.84(0.56) respectively.

**TABLE 6: T – TEST**

**“t” – Test Of Physical Education College Students And Non-Physical Education College Students In Pull – Ups, Bent – Knee Sit-Ups, Shuttle Run , Standing Broad Jump And 50 Yard Dash**

Variables	T-Test Score	Comments	Degree of Freedom
Pull – Ups	3.56	Significant	48
BENT – KNEE Situps	6.02	SIGNIFICANT	48
Shuttle Run	15.98	Significant	48
Standing Broad Jump	0.11	Insignificant	48
50 Yard Dash	3.42	Significant	48

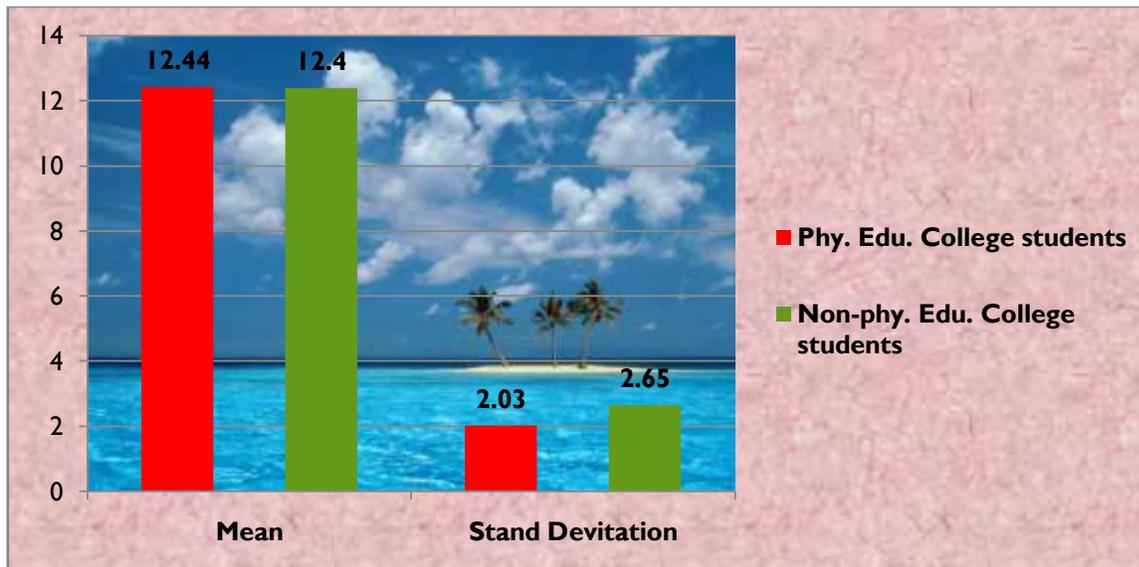


Graphical Comparison of Lie scale Mean and Standard Deviation value between physical education college students and non physical education college students is 5.28(1.61) and 5.20(1.62) respectively.

**TABLE 7 EXTROVERSION**

**Mean and Standard Deviation between Physical Education College Students and Non Physical Education College Students**

Variables	Mean	SD
Phy Edu College Students	12.44	2.03
Non Phy Edu College Students	12.40	2.65



Graphical Comparison of Extroversion Mean and Standard Deviation value between physical education college students and non- physical education college students is 12.44(2.03) and 12.40(2.65) respectively

## CONCLUSION:

After the statistical analysis of results of this study, the following conclusions can be 'drawn'.

1. The first hypothesis is that there is no significant difference in physical fitness among the Physical education and non-physical education college students is rejected.
2. The second hypothesis is that Physical Education College students are more physically fit as compared to non-Physical education college students is accepted.
3. The third hypothesis is that there is no significant difference of different personality characteristics scales among the physical education and non-physical college students is rejected.
4. The fourth hypothesis is that the extraversion scale is more in physical education college students as compared to non-physical education college students is rejected.
5. The fifth hypothesis is that the non-physical education college students are more neurotic as compared to physical education college students is accepted.
6. The sixth hypothesis is that the physical education college students would be more socially desirable is rejected.

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