

## TRAINING AND PHYSICAL FITNESS

### SUBRAMANYA N.S. AND PASODI M.S.\*

Physical Education Director, Onkarmal Somani College of Education Kuvempu Nagar, Mysore

\*Chairman, Department of Physical Education, Gulbarga University, Gulbarga, Karnataka

\*Corresponding author. E-mail: MS Pasodi

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**Abstract-** The present study makes an attempt to assess the influence of training on Physical fitness development. It is well understood that several factors are highly inter-related to training and Physical fitness. This application is a significant contribution to the field of physical education and sports in relation to develop Physical fitness of sports persons. For this purpose the sample of 100 cricket players of age group between 18-25 years are selected on random basis from Gulbarga University. To find the impact of training on the development of Physical fitness, the pre and post test (AAHPER fitness tests) had been conducted. And the results been analyzed and presented through tables in discussion part. So the hypothesized statement i.e., there would be significant impact of training on physical fitness development of cricket players is accepted.

**Keywords:** Physical fitness, Training

#### Introduction

"A sound mind in a sound body" is a good dictum that has stood the best test of time. There have been a number of studies tending to shows that mind and body are inseparable. Ancient thinkers of Greek, Aristotle, combined moral intellectual and physical excellence. At Athens an uneducated body was as much a disgrace as an untrained mind.

Physical fitness is one of the facts of a person's all round harmonious development. Physical fitness is the cultural phenomenon of great complexity and magnitude, which is historically, preconditioned level of health and comprehensive development of a person. Physical fitness adds grace to the young, wealth to the poor, and ornament to rich and acts as a consoling factor to the old. The place of physical fitness in any society reflects something of that society's characteristics. Today almost every country in the world gives importance to development of sports in order to improve the nation's health and for the well being of the future generation. Physical fitness is the ability to carry our daily tasks with vigor and alertness without undue fatigue and with ample energy to engage in leisure time pursuits and to meet the above average physical strength, stress, muscular endurance and circulatory endurance, muscular power, agility, speed and flexibility and added to compose motor fitness. Then kinetic, arm-eye co-ordination is needed for general motor ability.

#### Definitions of Terms

**Speed:** Speed is the quickness with which one is to move his body from one point to another.

**Endurance:** Endurance is the result of physiological capacity of the individual to sustain movement over a period of time.

**Strength:** Strength is the ability to overcome resistance or to act against resistance.

**Agility:** Agility is often presented by the terms maneuverability "mobility" etc; it is the ability to Change the direction of the body and its parts rapidly.

**Flexibility:** It is the ability of subject to move body joints to a maximum range of motion without strain or stress on muscles, tendons, ligaments and other joint structures.

**Physical Fitness:** It is ability to carryout tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure time pursuits and to meet unforeseen energies.

#### Training:

The word "Training" has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days and even months and years, the term "Training" is widely used in sports there is, however, some disagreement among sports coaches and also among sports scents regarding the exact meaning of this word. Some experts, especially belonging to sports medicine, understand sports training as basically doing physical exercises. Several terms used in training e.g., strength training, interval training, technical and tactical training reflect this line of thinking.

### Significance of the Study

1. The result of study will help physical education teacher, coaches and trainers to use the fitness activities to develop their students.
2. The result of the study will help to assess the ability of the fitness of the students.
3. The results of the study will helps coaches of physical education teachers to plan training system and coaching schedule for the students.

### Limitation

- ✓ No effort was made either to control or assess the life-style, psychological stresses, and other factors, which are recognized as limitations of this study.
- ✓ This study is purely limited to the cricket players selected from the Gulbarga University Degree colleges.
- ✓ The sample of the study is relatively small.

### Delimitation

The study was delimited to physical fitness components only for speed, agility, power, endurance and flexibility.

### METHODOLOGY

#### Statement of the Problem

To study the effect of four week physical fitness training on the cricket players of Gulbarga University.

#### Objectives of the Study

The objectives of the present study are as under.

- ✓ To study the effect of four week physical fitness training on the cricket players.
- ✓ To analyze the influence of four week physical fitness training on the performance of cricket players.

#### Hypothesis of the Study

There may be a significant effect of four week physical fitness training on cricket players.

There would be significant influence of four week physical fitness training on the performance of cricket players.

#### The Sample

The sample consists of 100 cricket players selected from the degree Colleges of Gulbarga University. The selected sample's physical fitness was measured in five physical tests speed, endurance, flexibility, agility and strength. Further, the sample was underwent physical fitness training for four weeks continuously during morning and evening hours, and at every weekend there is a rest day. After the training, physical fitness was again measured in terms of performance of the players in all the five physical fitness tests used in pre-training condition. Thus the performance of the sample's before and after training

conditions was taken to assess the effect of training on physical fitness. The data of both pre and post training conditions were analyzed statistically.

#### Tools

The following physical fitness tests have been used to measure the performance in the pre-test and post test of the Cricket Players in the present study.

**Facilities and Equipment:** An area on a track, foot ball field, or play ground with a starting line, a 50 – mtrs. dash, and a finish line, two stopwatches or a split-second timer.

**Procedure:** After a short warm-up period the student takes position behind the starting line. Best results are obtained when 2 students run the same time for competition. The starter uses the command, "are you ready" and "Go". The latter is accompanied by a downward sweep of the arm as a signal to the times. The students run across the finish line.

**Instruction:** You may take any position behind the starting line you wish on the command, "Go" you rare to run as fast as you can across the finish line. Do not slow up until up are across the finish line. Then you may slow down gradually.

**Scoring:** The score is the elapsed time to the nearest tenth of seconds between the starting signal and the instant the student crosses the finish line.

**Testing Personnel:** One starter and 2 timers are needed to administer this test. If the split-second timer is available, only 1 timer is needed the timer can record scores, but testing is facilitated if he is assisted a recorder.

Endurance (Cooper's 12 minutes, continuous run and walk test)

**Facilities and Equipment and Materials:** It is suggested that specific course be measured is distant. So that the number of laps completed can be counted and multiplied by the course distance. It is also helpful to divide the course into quarters or eights by placing markers. This enables the tester to quickly determine the exact distance covered in 12minutes. A stop watch whistle and distance markers and needed for group testing.

**Test Procedure:** It is usually most efficient to assign each runner to a spotter. The runner starts behind a line and upon the starting signal run or walk as many laps as possible, around the course within the 12 minutes. The spotters maintain a count of each lap, and when the signal to stop is given. They immediately run to the starts at which their runners were at the instant the whistle or command to stop was given.

**Scoring:** The score in yard determined by multiplying the number of complete laps distance of each laps (e.g. 440 yards) plus the number of segments (quarters, eights to yard intervals etc.) of an

incomplete lap plus the number of yards stopped off between a particular sgment.

**For example:** The 12 minutes as is given on 440 yards track sectioned into eights. A student completes 5 laps 5 one eights sgment plus 11 yard.

The Student score is  $= 5 \times 440 = 2200$

Plus (+)  $3 \times 55$  (each one eight sgment is 55 yards) = 165.

Plus (+11 yards)

e.g.:  $2,200 + 165 + 11 = 2,376$  yards overall in 12 minutes.

### **Strength (Standing Broad Jump- AAHPER Youth fitness test)**

**Purpose:** To measure power.

**Facilities and Equipment:** Tape to measure and a mat. Space on the floor or an outdoor jumping pit.

**Procedure:** The student stands behind a take off line with his feet several inches apart. Before jumping, the student dips at the knees and swings the arms backward. He then jumps forward by simultaneously extending the knees and swinging the arms forward. Three trials are permitted. Measurement is from the close heel mark to the take off line.

**Instructions:** You must take off from both feet simultaneously, jump as far forward as possible, and land on both feet. Try not to fall backward after the landing. You can jump there by crouching before the jump and swinging your arms.

**Scoring:** The score is the distance between the take off line and the nearest point where any part of the student's body touches the floor. It is measured in feet and inches to the nearest inch. Only the best trial is recorded.

Agility (10 x 4 yards meters shuttle run)

**Equipment:** Two blocks of wood (2' x 2' x 4) a stopwatch and marking powder. The subject should run near spikes or bare foot.

**Test Administration:** Two parallel lines are marked on the floor 10 yards apart or the width of the regular volleyball courts 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 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 10<sup>th</sup> of a second as the score of the test.

### **Flexibility :( Scott French bobbing test)**

**Purpose:** to measure the trunk and hip flexibility.

**Equipment:** A 20 inch scale, a bench.

**Procedure:** Scott and French attached a 20" scale marked in; 1 and ½ units perpendicular to one edge of a stable bench with the zero ends up and the tin mark at bench level. For the test the subject stands on the bench with the toes to the edge along side the scale bends at the hips and extends fingers in front of the scale, keeping the knees straight, the subject slowly reaches down as low as possible with the finger tip; the preferably two or three process trial should be given. Taking the test score as the last of a series, of quick bobs may be done but is not recommended.

**Score:** The score is lowest line touched on the stretch.

### **Statistical Analysis**

To meet the objective of the study and to verify the formulated hypotheses the data were statistically analyzed. The 't' test was calculated and data were organized.'

### **ANALYSIS OF DATA AND INTERPRETATION**

The major aim of the present study is to assess the effect of physical fitness training on the performance of Cricket Players. The study attempts to examine the differences in physical fitness in terms of motor abilities between the pre-training and post training performance of students. The data were organized, statistically analyzed and presented in the tables.

### **Reliability of Data**

Test retest method of establishing reliability was employed to determine the reliability of the performance of the subjects on various tests. For the purpose of the subjects in speed, agility, strength, endurance and flexibility were recorded twice on two different conditions with a gap of four weeks. The level of significance of two tailed test thus obtained is significant beyond 0.05(2.246).

Table-1 gives the mean scores of speed tests in two conditions. It can be observed that the mean scores in pre training were 8.91 while the mean score in post-training is 6.79. This shows that the cricket players have taken more time to complete the given task in pre training while less time was taken in post training condition. The t-value of 23.65 is significant at 0.01 level which states that there is a significant difference in the speed between the two conditions. The four weeks training has facilitated the higher performance of the cricket players. This clearly indicates that the physical fitness of cricket players is improved after training.

Table-2 presents the mean scores of endurance test of the cricket players in two conditions. The mean scores of post-training condition (1831) were significantly higher than the pre-training (1607.16). The t-value (12.76) is significant. It clearly shows the significant differences between the two conditions in the physical fitness component.

The results given in table-3 indicate that cricket players have taken significantly less time in the post

training (8.06) condition than the pre-training (9.87). The t-value (15.46) also reveals the same. Therefore the training is found to be a promoting factor in the development of physical fitness components.

Table-4 gives the score of flexibility of the sample in two tests. It is seen that the mean score of post training is 4.80 and mean score of pre-training is 3.76. This shows that the flexibility is found to be more in trained sample. It is all because of the training given. The t-value of 9.19 which is significant also reveals the same.

Table-5 presents the results of strength test of the cricket players in pre and post training conditions. It is seen that mean score of post training (1.91) is higher than the pre training (1.41). The t-value is 8.92 which is significant at 0.01 level. Thus the results clearly speak the influence of the physical fitness training on the performance of the students.

### CONCLUSION

There is a significant difference in physical fitness test of speed between pre and post training. After the training cricket players show significantly higher performance in speed test as compared to before training. There is a significant effect of training on the development of endurance component of cricket players. The significant difference was found in agility test between pre and post training; the agility performance was increased after the training. There is a significant influence of training on the physical fitness components of flexibility of cricket players. The flexibility strength has been developed after the training. The significant difference was found in physical fitness test of strength between two conditions. And the strength performance increased after the four week training. Hence there is a significant effect of four week training on the performance of cricket players.

### Suggestions for the Future Research:

The findings of the present study can be utilized by the HRD (Human Resource Development) experts and Ministry of Sports and Youth Affairs, and Sport

Councils while formulating the policies and implementing the same at levels. Attitudes, perceptions and interpersonal relations of the players should be studied in the future investigation. Endeavours need to be undertaken in the direction of studying comprehensively, the psychosocial correlates of high achievers at the national and international level. Cross sectional studies need to be conducted at the inter-university, regional and national levels.

### References

- [1] Negi and Singh Hardayal (1994) *NIS, Scientific Journal*, 17, 3.
- [2] Onwewadume (1994) *NIS scientific Journal*, 17, 3.
- [3] President Council (1995) *Youth physical fitness, Washington, on Youth Fitness, U.S Government Printing Office*, 5-9.
- [4] Singh Hardayal. "Science of sports Training" Published by D.V.S. Publications, 100 T. K. Giri Nagar. Kalkaji, New Delhi
- [5] Sudip Sunder Das and Banerjee A.K. (1992) *NIS scientific journal*, 10.
- [6] Banerjee and Barik (1994) *NIS Scientific Journal*, 17, 2.
- [7] Bawa and Debanth. *NTS scientific Journal*, 17, 3.
- [8] Clark. H. Harrison (1963) *Application of measurement to Health and Physical Education" Eaglewood Cliff's, Prentice Hall, New Jersey*, 4, 8.
- [9] Handa and Khan (1994) *NIS Scientific Journal*, 17, 3.
- [10] Ministry of Education (1959) 'Government of India', *A plan for National Physical Efficiency Device". Delhi Manager of Publications, P.I.*
- [11] Malhotra M.S. (1981) 'Evaluation of General Physical Times, National Level Sportsman: As per Journal 3-18.

**Physical fitness tests (AAHPER)**

Sl. No.	Components	Tests	Unit of Measurement
1.	Speed	50 yard dash	Time
2.	Endurance	12 min. Run & Walk	Distance
3.	Flexibility	Sit & Reach test	Inches
4.	Agility	Shuttle run10x4 yards	Time
5.	Strength	Pull Ups	Score

**Method applied to obtain the data for Physical Fitness Components****Speed (50 mtrs. dash - AAHPER Youth fitness test)**

**Purpose:** To Measure speed.

*Table 1- Mean, SD and t-values of Speed test among Cricket Players in two Training Conditions*

Conditions	Mean scores	SD	t-value
Pre training	8.91	0.31	23.65**
Post training	6.79	0.37	

\*\*Significant at 0.01 level

*Table 2- Mean, SD and t-values of Endurance test among Cricket Players in two Training Conditions*

Conditions	Mean scores	SD	t-value
Pre-training	1607.16	63.55	12.76**
Post-training	1831	69.93	

\*\*Significant at 0.01 level

*Table 3- Mean, SD and t-values of Agility test among Cricket Players in two Training Conditions*

Conditions	Mean scores	SD	t-value
Pre-training	9.87	037	15.46**
Post-training	8.06	0.51	

\*\*Significant at 0.01 level

*Table 4- Mean, SD and t-values of Flexibility test among Cricket Players in two Training Conditions*

Conditions	Mean scores	SD	t-value
Pre-training	3.76	0.45	9.19**
Post-training	4.80	0.41	

\*\*Significant at 0.01 level

*Table 5- Mean, SD and t-values of Strength test among Cricket Players in two Training Conditions*

Conditions	Mean scores	SD	t-value
Pre-training	1.41	0.22	8.92**
Post-training	1.91	0.21	

\*\*Significant at 0.01 level