CHAPTER III
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CHAPTER III

METHOD OF RESEARCH

3.1 Introductory

The researcher’s chosen subject for his studies in the present research is related to see the effect on the health related physical fitness as well as selected motor fitness of the players of Atya – Patya and so the form of the outline / draft of this research has become experimental. The variable is kept movable (changing) in the experiment and other all variables are controlled by keeping them immovable and therefore the researcher can determine which effect of independent variable takes place on dependent variable and can explain the cause & effect of this research.

3.2 Method of Research

There are various methods of research e.g. historical research, Method, experimental research method research method in principle etc. The researcher has applied the experimental research method out of them in the present research. Experimental research method is a scientific method and it is useful for the research in education. Eventhough it is based on the scientific method, its distinctive feature is experiment. The only method for testing the presumptions showing the relation between the cause and the effect in a real sense is the experimental method. If particular factors are used peculiar effects are seen and mere investigation of hypothesis is not expected here. The peculiarity of this method is the performed experiment in order to see which change, They came from Sulakhe High – School, Barshi and were
about 300 students. The researcher had selected students out of them for his research.

3.3 The Nature of Design

The researcher has applied the experimental method in the present research study. Similarly he has brought into use the pre – test and post-test equivalent group design of true experimental design in it.

Equivalent Group Design

This group i.e. (equivalent group design) is more suitable in order to compare the relative effects of the groups after applying the use of selected two or more groups in which equality is preserved in all respects. Two groups of equal competence are selected in this design and for that preliminary test is given. Experimental measurements are applied for the one group and they are not used for the second group. In the case of both the groups all other conditions are kept equal. Afterwards the only one test is given to both the groups. The effectuality of experimental measurements is determined by the fruitfulness obtained in the results of difference. The concept of this design will be cleared in the following rough draft / an outline.
### 3.3.1. Equivalent Group Design

<table>
<thead>
<tr>
<th>i)</th>
<th><strong>Experimental Group</strong></th>
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<th></th>
<th><strong>Dependent variable X1</strong></th>
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<tr>
<td>ii)</td>
<td><strong>Control Group</strong></td>
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<td><strong>Dependent variable X2</strong></td>
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<td>Lack of experimental</td>
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<td>Other all conditions</td>
<td>➔</td>
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<td></td>
<td>equal</td>
<td>➔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Experimental Group | Control Group
--- | ---
1. Pre – Test | 1. Pre – Test
2. Experimental Treatment | 2. Lack of experimental treatment
3. Mid Test-1 | 3. Mid Test-1
5. Final Test | 5. Final Test
6. Obtained (marks) in the final test of two groups and comparison of marks

First of all pre – test is given to students in this design and with its support for the selection of students of experimental and controlled group, students of equal ability in both the groups are selected.

### 3.3.2. Experimental Variables

**Dependent variables**

The health related physical fitness as well as selected motor fitness was considered as the main dependent variable as selected in this study. The variables had some components namely, strength and endurance of the abdominal muscles, flexibility, body fat % and cardiovascular endurance as well as motor fitness.
components viz., power, speed, agility and explosive strength of legs which were measured scientifically by AAHPERD Health Related Physical Fitness Test (HRPFT) and motor fitness test were certified by the experts will be used

**Independent variables**

Here training intervention (i.e. Atya-Patya playing) was considered as the independent variable.

However, in order to impart different training intervention and to make them effective the selection of exercises (The Atya-Patya Play) was important, which was made on the basis of the following points.

1) Variety of movement (Turning, twisting, bending, moving sides etc.)
2) Body parts movement (Movement of neck, arms, legs and trunk)
3) Playing steps (Movements in Trenches, Hand movements, Legs movements and whole body movements)
4) Simple to complex (starting from easy movements and gradually intensifying the exercise)

**II) Actual Method of Work**

The researcher in the present research followed the following method of working.
3.4 Population

Total number of students of 9th standard for the present research belongs to the age – group 14 to 16 years. They came from Sulakhe High School, Barshi and were about 300 students. The researcher had selected students out of them for his research.

Sampling

The selected students or objects out of the total population for drawing presumptions about the reality of population in small set are said to be sampling.

The researcher conducted test of health related physical fitness ability of the whole population while selecting models in the present research out of them the selection of sixty students having equal ability was done (carried out) as models (sampling).

Framing the Experimental and controlled group

The division of 30 students in two groups was done by lottery system out of simple random method from the total sixty students equal efficiency (health related physical fitness ability) and sampling by casting lots (toss system)i.e. lottery method only a controlled group of one group and the second group as the experimental group was selected.

Thus, the researcher has framed the two equal groups from the sampling of the total population in the present research and a ascertained the method of working as follows -
The use of one factor and after controlling all other factors. The researcher handles one independent variable in his experimental study, controls other all variable constituents and observes the occurring effects of one or several independent variables on dependent variables. This method becomes useful for the research in the field of physical education and sports.

3.5 Description of tests and Lists

The following tests were selected by the researcher in the present research

3.5.1 Planning of Test of Health Related Physical Fitness

Authentic tests are prepared in order to measure the objective results of different important and general character. Almost all factors of evaluation are controlled and certified in it. The validity, reliability and authenticity of these tests is ascertained therein.
The measurement of the capability of certain persons or groups knowledge, skill, emotions, intellect or physical ability means test or examination.

The measurement of test is done through technique. While doing it for a certain age group and for the kind of a person it is done, it is given to that person’s representative group. The following recorded equipment of test is used of to measure an average health related physical fitness and motor ability. The arrangement and the data of the test was as follows:

3.5.2 Equipment’s and Instruments

It is necessary to collect supporting equipment in the procedure of research of all kinds. It is equally necessary to accumulate various informations for drawing final results (conclusions) for the study of this issue (topic) and for finding out its solution. The technique of research of test examination in the present research was used for collecting this information. The information of equipments required for the training of Atya – Patya and its execution of work or action is given as below:

1. Play – ground.
2. Lined out play – ground of Atya – Patya
3. Meter tape
4. Stop – watch
5. Sit and reach box and rule of measurement.
6. A run – way of 400 meter.
7. Rope
8. Papers of registration or record book & pencil
(9) Jumping pit.
(10) Chalk powder.
(11) Helper
(12) Skin Fold Caliper

Validity of Equipments

All instruments used for collecting information of research were genuine and likewise they were used in the pre and post-tests. Helpers for taking test were the same and therefore the measurement taken through the test was right and reliable.

Measurement

The researcher has measured the selected factors of Health related physical physical fitness as well as selected motor fitness through tests in the present research.

Criterion Measures

Following variables of AAHPERD Health Related Physical Fitness Test were measured as follows:

1. Cardio respiratory endurance was measured by 600 Yard Run/Walk Test and the performance was recorded to minutes and to the nearest second.
2. Body fat (skin fold) measurement from triceps, subscapular, Calf and thigh skin fold was recorded to the nearest 0.5 mm.
3. Abdominal strength and endurance was measured by using Sit-Ups (Bent knee) Test. The score was recorded in the number of Sit-Ups executed correctly within 60 seconds.

4. Flexibility was assessed by employing Sit and Reach test. The score measured to the nearest centimeter is the most distant point reached in the three trials average.

As well as following variables of AAHPERD motor fitness test were also measured as follows.

1. Power of the legs in jumping forward was measured by using standing broad jump test. The score was recorded in Meters between the starting line and the nearest heel upon landing. Three trials are permitted and then the best trial is recorded as the score.

2. Agility was measured by using Shuttle Run Test. The score was recorded for each performer is the length of time required (to the nearest tenth of a second) to complete the course.

3. Power of the shoulder, agility, arm and shoulder girdle co-ordination, speed and balance was measured by using Medicine Ball Put Test. The score was recorded in the feet and inches.

4. Speed of lower extremities and explosive strength was measured by using 50 Yard Dash Test. The score was recorded the correct upto tenth of a second.
## 3.5.3 Tools of Research

<table>
<thead>
<tr>
<th>Variables</th>
<th>Tests</th>
<th>Tools Used</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cardio-respiratory Endurance</strong></td>
<td>600 Yard Run/Walk Test</td>
<td>Which requires 400 Miter track, stop watches, clapper etc.</td>
</tr>
<tr>
<td><strong>Strength and Endurance of Abdominal Muscles</strong></td>
<td>Bent knee Sit-Ups test</td>
<td>Which requires a scale and stop watch</td>
</tr>
<tr>
<td><strong>Body Fat</strong></td>
<td>Measurement of Body Fat</td>
<td>Skinfold caliper</td>
</tr>
<tr>
<td>Triceps Skinfold (mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subscapular Skinfold (mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thigh Skinfold (mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calf Skinfold (mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Flexibility</strong></td>
<td>Sit and reach Test</td>
<td>Cureton's Box</td>
</tr>
<tr>
<td><strong>Explosive Strength</strong></td>
<td>Standing Broad Jump</td>
<td>Jumping Pit Tape, Lime Powder etc.</td>
</tr>
<tr>
<td><strong>Agility</strong></td>
<td>Shuttle Run Test</td>
<td>Marked ground – 4x10 m, stop watch. Two Blocks of wood (2”x2”x4”) etc.</td>
</tr>
<tr>
<td><strong>Power of Shoulder</strong></td>
<td>Six Pound Medicine Ball Put Test</td>
<td>6 pound medicine ball, Lime Powder, Tape etc.</td>
</tr>
<tr>
<td><strong>Speed</strong></td>
<td>50 Yard Dash</td>
<td>Marked ground, Stop watches, Clapper etc.</td>
</tr>
</tbody>
</table>
3.5.4 Description of AAHPERD Health Related Physical Fitness Test

The test items were conducted strictly by following the procedures as described in the AAHPERD Health-Related physical fitness test manual. Before the actual administration of the tests the subjects were given an opportunity for a trial participation. This, in fact, enables them to well acquaint with testing procedures.

All test items were conducted with the help of personnel (Assistants) who were fully acquainted testing procedures.

1) Cardio – Respiratory Endurance

It may be defined as the ability of heart and lungs to take in and to transport adequate amounts of oxygen to the working muscles for activities that involve large muscle masses to be performed over long period of time.

For example running, swimming and bicycling activities involve large muscles. Cardio-vascular endurance has many synonyms like Cardio-respiratory endurance, circulatory-respiratory endurance, Cardio-pulmonary endurance etc. The cardio vascular endurance involves moderate contraction of large muscle groups for long periods of times during which maximum adjustments of circulatory-respiratory systems are necessary as in continuous running, swimming, climbing, biking, aerobics, bicycling and the like.
1) 600 Yard Run – Walk Test

Purpose

The purpose of the 600 yard run-walk test is to measure maximal functional capacity and endurance of cardio respiratory system.

Equipment

Stop watch, score cards, pencils, track or marked area or any other flat measured surface.

Procedure

Instruct the students to run as fast as possible. The subject is asked to take a standing start. At the single Ready ? Go !, the subject starts running the 600 yard distance. The test is usually performed on 10-12 subjects together by pairing off before the start of the event. Walking is permitted but the performer is to cover the distance in the shortest period of time.

Scoring

The time taken to run 600 yards recorded in minutes and seconds is the score of this test item.
PHOTOGRAPH No. 3.1
Starting Position of 600 Yard Run Walk Test

PHOTOGRAPH No. 3.2
End Position of 600 Yard Run Walk Test
2) Body composition

Obesity

Obesity may be defined as possession of greater amount than the prescribed limit (25% for Men and 30% for Women) of body fat (adipose tissue) in relation to lean body mass.

Body Composition

The leanness and fatness study helps to diagnose obesity which is defined as excessive accumulation of body fat. Obesity is said to be associated with health hazards.

Sum of Skinfold Fats

Purpose

This test is used to assess body composition, or more specifically, the level of fatness in an individual.

Equipment

A better constructed and more expensive caliper, such as the Harpender or Lange Skinfold Caliper, is recommended for this test. These clappers are expensive, but they provide a constant pressure of 10 g/mm² throughout the range of skinfold thickness. Other expensive calipers are now on the market and may be suitable for testing in a school setting. However, the pressure may not be constant throughout the lower portion of the range, thus yielding inaccurate measures. Therefore, a large Skinfold Caliper was used.
Procedure

In a number of regions of the body, the subcutaneous adipose (fat) tissue may be lifted with the fingers to form a skinfold. The skinfold fat measure consists of a double layer of subcutaneous fat and skin the thickness of which may be measured with a skinfold fat caliper. Two skinfold fat sites (triceps and Subscapular) have been chosen for this test because they are easily measured and are highly correlated with total body fat.

The triceps skinfold is measured over the triceps muscle of the right arm half – way between the elbow and the acromion process of the scapula with the skinfold parallel to the longitudinal axis of the upper arm. The Subscapular site (right side of the body) is 1 cm (half inch) below the inferior angle of the scapulas in line with the natural elevate lines of the skin.

The proper method for measuring these skinfolds plays very important role. The recommended testing procedure is:

a) Firmly grasp the skinfold between the thumb and the
b) Place the contact surfaces of the caliper 1 cm (half inch) above or below the finger.

c) Slowly release the grip on the calipers enabling them to Exert their full tension on the skinfold.
d) Read skinfold to the nearest 0.5 millimeter after needle stops (1 to 2 seconds after releasing grip on caliper).
Scoring

The skinfold measurement is registered on the dial of the caliper. Each measurement was taken three consecutive times with the recorded score being the average of the three scores. Each reading was recorded to the nearest 0.5 mm.
PHOTOGRAPH No. 3.3
Tricep Skinfold Scorer Test
PHOTOGRAPH No. 3.4
Subscapular Skinfold Scorer Test
PHOTOGRAPH No. 3.5
Thigh Skinfold Scorer Test
PHOTOGRAPH No. 3.6
Calf Skinfold Scorer Test
3) **Muscular Strength**

It is the ability to overcome or to act against resistance.

Muscular strength may be defined as the maximal muscular force or tension used in the creation or prevention of the movement in one maximal effort of a muscle group.

**Sit Ups (Bent Knee Test)**

**Purpose**

The modified sit ups test is used to measure abdominal strength and endurance.

**Equipment**

Mats are recommended for safety comfort, stop watch and 6 x 6 sq. ft. area with sufficient floor space may be used.

**Procedure**

The starting position of the test is a back-lying position with knees flexed, feet on floor and heels between 12 to 18 inches from the buttocks. The arms are crossed on the chest with the hands on opposite shoulders. A partner holds the examinee’s feet to keep them in contact with the testing surface. The examinee curls to a sitting position, maintaining arm contact with the chest. The chin should be tucked on the chest and should teaming In this position until
the completion of the sit up. When the elbows touch the thighs, the sit up is completed. The examinee curls back down on the floor until the mid-back contacts the testing surface. Another sit up may then be attempted.

The examinee begins executing consecutive sit ups on the word “Go!”, using the signal “Ready,Go!” At the end of 60 seconds, the test is ended with the word “Stop”! The score is the numbers of sit ups executed correctly during this time. Pausing between sit-ups is permissible.

**Scoring**

The score is the numbers of sit ups executed correctly during 60 seconds. Incorrect execution includes failure to curl up, pulling the arms away from the chest, failure to touch the thighs with the elbows and failure to touch the mid back to the testing surface in the down position.
PHOTOGRAPH No. 3.7
Starting Position of Bent Knee Sit-UpsTest

PHOTOGRAPH No. 3.8
End Position of Bent Knee Sit-UpsTest
4) **Flexibility**

   Flexibility may be defined as the range of motion around a joint as determined by the elasticity of the muscles, tendons and ligaments associated with the joint under consideration.

**Sit and Reach Test**

**Purpose**

   The sit and teach test is designed to evaluate the flexibility of the low back and posterior thigh.

**Equipment**

   The test apparatus consists of a specially constructed box with a measuring scale where 23 cm is at the level of the feet.

**Procedure**

   The examinees must remove their shoes to be tested to begin the test; the examinee sits in front of the test apparatus with feet flat against the end board. The knees should be fully extended and the feet shoulder-width apart. To performance test, the examinee extends the arm forward with one hand placed on top of the other.

   In the actual test the examinee reaches forward, palms down along the ensuring scale on the testing
apparatus. The reach is repeated three consecutive times and their average is taken into consideration. The maximum reach is held for 1 second. The distance of the maximum reach is recorded as the test score.

**Scoring**

The score, measured to the nearest centimeter, is the most distant point reached in the three trials average. The fingertips of both hands should teach this point. If the reach of the two hands is uneven, the test should be re-administered.
PHOTOGRAPH No. 3.9
Starting Position of Sit and Reach Test

PHOTOGRAPH No. 3.10
End Position of Sit and Reach Test
5) **Muscular Power**

Ability to release maximum muscular force in an explosive manner in the shorter duration, is known as muscular power.

Muscular power may be differential from muscular strength. Where as strength is the maximum workdone or torque (movement of system of force tending to cause rotation) developed during a maximal voluntary muscular contraction.

Power is the maximal rate at which muscular force is released. Strength is that component of power which does not usually refer to time and distance.

- Power is defined as ‘workdone per second’
- Power may be defined as ‘product of force and velocity’
- Power may be defined as “one’s ability to release to muscular force per second.”

**Medicine Ball Put (6 lbs)**

**Purpose**

This test measures primarily arm and shoulder girdle strength and secondarily power, agility, arm and shoulder girdle coordination, speed and balance.
Equipments

Stop watch, 6 pound medicine ball, measuring tape, 5x12 feet tumbling mat or plane surface marked with a take-off having parallel line.

Procedure

Before starting the test, the subjects are given the following instructions, “the medicine ball is not to be thrown but to be put as will be demonstrated. The subject is to stand between the two restraining lines and the ball is to be put straight down the course. Each subject is to take three trials, fouls count a trial. However, in case of three continuous or more fouls the subject will be asked to reattempt until he makes a fair put.” After giving above instructions, the event is explained by giving a live demonstration. Then a subject is asked to take a position in the throwing area and put the medicine ball as explained and demonstrated. He is given three trials.

Scoring

The maximum distance out of three trials of putting the medicine ball is the final.
PHOTOGRAPH No. 3.11
Starting Position of 6 Pound Medicine Ball Put Test

PHOTOGRAPH No. 3.12
End Position of 6 Pound Medicine Ball Put Test
6) Speed

The rapidity of muscle movement or the rate of change of body movement is known as muscular speed.

50 Yard Dash Test

Purpose

The 50 yard dash test is designed to evaluate the explosive strength of legs

Equipments

Stop watches (at least two) or a single stop watch with as split second time, clapper, 50 yard marked ground etc.

Procedure

Two lines are marked on the floor 50 yards apart. One line is used as a starting line and the other as the finish line. On the signal ready? Go!, the subject start running at there best two reach the finish line at there earliest. The signal ‘go’ is accompanied with downward sweep of the starter’s arm to give the visual signal to the timer/timers who stands/stand at the finish line.
Scoring

The interval between starting signal and the instant subject crosses the finish line is the score of the test. The time is recorded correct up to tenth of a second.
PHOTOGRAPH No. 3.13
Starting Position of 50 Yard Dash Test

PHOTOGRAPH No. 3.14
End Position of 50 Yard Dash Test
7) Agility

Ability to make to successive in different directions efficiently and rapidly.

The speed with which an individual may change his body position or swiftness in changing directions while moving is known as agility.

Shuttle Run Test

Purpose

The shuttle run test is used to measure speed and agility.

Equipments

Two blocks of wood (2”x2”x4”), a Stop watch and marking powder, marked ground (10x4 yards), the subject should wear spikes or run bare foot.

Procedure

Two parallel lines are marked on the floor 10 yards apart or the width of the regular volley ball 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 tuns 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 with some rest in between. The tome of the better of two trials is recorded to the nearest 10\textsuperscript{th} of a second as the score of the test item.
PHOTOGRAPH No. 3.15
Starting Position of Shuttle Run Test

PHOTOGRAPH No. 3.16
End Position of Shuttle Run Test
8) Explosive Strength

Ability to muscle or group of muscles to generate force in a single explosive effort.

Ability to release maximum muscular force in an explosive manner in the shortest duration, is known as muscular strength.

Standing Broad Jump Test

Purpose

The standing broad jump test is used to measure power of legs.

Equipments

Floor, mat or long jump pit may be used, measuring tape, marking chalk etc.

Procedure

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 the feet parallel to each other. He is instructed to jump as farthest as possible by bending knees and swinging arms to take off for the broad jump ion 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.
PHOTOGRAPH No. 3.17
Starting Position of Standing Broad Jump Test

PHOTOGRAPH No. 3.18
End Position of Standing Broad Jump Test
3.5.5 Statistical Tools

As scientific analysis has got special importance in the study of researches, statistical knowledge in it has been utilized specially. As the present research has got the nature of experimental design, the researcher has to frame a scheme (a plan) of how to collect information and by which means. He has to analyse the accumulated information and then to assess the hypothesis and has to determine whether to accept it accordingly or not for to give it up.

The researcher has to record his collected information and has to classify it. He has to prepare circulars frequently and has to draw their graphs varied central tendency and measures of variability are to be decided. The researcher has to make use of statistical data from time to time in order to get the solutions of several questions like: whether sampling population does this representation properly or not? What kind of co-relation is between two variables?

Whether a particular statistics is fruitful or not? What kind of examiner should be used? Statistical principles are used for the scientific analysis of collected information and analysis of data. Statistical data is used for accepting or rejecting the main hypothesis and for recording the drawn conclusion.

The researcher has made use of the following statistical data in order to draw conclusion from the obtained figure extracted from the pre and post tests of experimental and controlled groups in the present research.

1) Mean
2)  Standard Deviation

3)  Repeated Measure ANOVA.

3.5.6 Pilot study

The researcher had studied the pilot study for his research in the present research and it is as follows:

Sampling Selection : Dated:- 10,11,12,13,14,15 June 2006
Pre test :- Dated – 16th June 2006 and 17th June 2006
Treatment (Training) : Atya-Patya game for 45 days

Planning of term : Everyday excluding Sunday at 6:30 am.

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Treatment</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Warming up Activities</td>
<td>: 10 to 15 minutes</td>
</tr>
<tr>
<td>2</td>
<td>Conditioning exercises for The sport</td>
<td>: 10 to 15 minutes</td>
</tr>
<tr>
<td>3</td>
<td>Atya – Patya game</td>
<td>: 25 to 30 minutes</td>
</tr>
<tr>
<td>4</td>
<td>Relaxation Activities</td>
<td>: 10 to 15 minutes.</td>
</tr>
</tbody>
</table>

Post-Test

It was held on Dt.09th August 2006 and 11th August 2006.

Practical Execution of Experimental Design

The researcher had taken the test of health related physical fitness ability factors of 300 students of 9th standard
of Sulakhe High School Barshi on dt. 10,11,12,13,14,15 June 2006. Everyday tests of fifty pupils were held (taken)

Sampling selection was held by the simple random method as held from these tests. A detailed information about the experimental design and the sport Atya – Patya and Health Related physical fitness tests was given to the students.

All obtained figures firstly z – score and from them T – score was formed on the basis of following formula in order to make two equal groups of 30 – 30 out of 60 students on the basis of obtained figures of the pre test.

\[ Z = \frac{x - \bar{x}}{50} \quad \text{T – Score} = \frac{x - \bar{x}}{5} + 50 \]

30 -30 students group was formed by the method of ABBA on the above formula

Afterwards groups of 30 students i.e. experimental and controlled were formed by the simple random method. The pre-test of these groups was taken.

**Treatment**

On the 18th June 2006 students of experimental group were given the information of Atya – Patya with practical. The experimental group was kept under treatment for the practice of this game Atya – Patya. And after giving motivating / warming up Activities to the controlled group it
was sent to its houses for the study. The controlled group was not given this sport Atya – Patya as the treatment.

Training of minimum 4 to 6 weeks is necessary for the proper results of Health basic factors actions on the physical fitness abilities of any kind of training in the experimental research. Therefore the researcher has given 6 weeks treatment of efficacious medicine. Dated – 18th June 2006 – to Dated 8th August 2006.

The experimental treatment was given during this time in the morning i.e. 6.30 a.m. to 8.30 a.m. It means practical practice of Atya – Patya was given to them later on 9th August 2006 to 11th August 2006 the post test of the students of experimental and controlled group was taken.

### 3.5.7 Description / Details of Treatment

The researcher gave this sport Atya – Patya to the experimental group as a treatment in the present research by adopting experimental research method and producing two groups of experimental and controlled kinds by the simple Random method, whereas the controlled group was given only warming up activities. The factors of health related physical fitness and selected motor fitness abilities of post tests after 45 days and recorded afterwards.

The sport Atya – Patya was given to the experimental group as a treatment. Atya – Patya is an ancient Indian sport nine – nine players take part in this game (9 attacking / aggressing and 9 defensive players) every
player has to perform various physical activities in this game. He has to go forward by dodging the rival player. Similarly he has to defend himself. He has to make efforts to prevent attacking and defensive player from going ahead. Therefore this game becomes (proves) a game of tough competition. Aggressive and defensive players have to make sufficient physical activities while playing this game. Due to this exercise takes place through muscular movements. In this game of Atya – Patya within the minimum field maximum movements have to be made and physical strong movements are done within the minimum space. Supplementary and complementary movements occur in increasing physical and motor ability.

The following aerobics (physical skills) must be done in the game of Atya – Patya i.e. to dodge the attacking and defensive (defending ) player going down and coming up, bending down, jumping, playing, patyas, obstruct the player, supine jump, prone jump, jumping on one leg, holding Sur (Diving Jump); to make the player out to make forcible movements on the left and right side, running in a well- formed manner, to balance one’s body and to make forceful movements etc. Basic motor ability of a player is developed due to these physical skills.

Exercise of the whole body gets done and so the researcher has decided to make research on this topic and study the mutual effects of this game on the health related physical fitness ability of a player.

In order to activate our body in the game of Atya-Patya the following activities must be done to make the player out with various physical actions by dodging defensive player going ahead piercing through patya, to complete Iona (goal) to escape from the hindrance and to accomplish them the qualities
capacity of judgement, fortitude, courage, intelligence, intellectual and mental faculties are put to test. This develops one’s skill as well as a lot of physical exercise takes place.

As Atya – Patya is a disciplined and restrained game by laws and rules; to obey the judgement of referee, to play it in a disciplined manner, to show one’s sportive attitude (spirit) etc. due to all this matters moral (ethical) level is heightened. Likewise this sport entertains us. As this sport has several distinctive features and the researcher played this game after doing research on this topic; he decided to study the effects of the health related physical fitness ability and selected motor ability of the player.

The researcher studied the effect of the training of Atya – Patya on the health related physical fitness ability and selected motor ability by comparing it between the controlled and the experimental group after giving it the actual training of the game: Atya – Patya in the present research. Atya – Patya was given to experimental group as a treatment in the present research. Six days of training in a week and accordingly a stage of 45 days training was given to this group.
Its Termwise Arrangements was as follows

<table>
<thead>
<tr>
<th>Treatment (Training)</th>
<th>Time Duration</th>
<th>Treated /Trained Group.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Warming up</td>
<td>10 to 15 minutes</td>
<td>Experimental group And controlled group.</td>
</tr>
<tr>
<td>2 Conditioning Movements</td>
<td>10 to 15 minutes</td>
<td>Experimental group.</td>
</tr>
<tr>
<td>3 Atya – Patya Game</td>
<td>25 to 30 minutes</td>
<td>Experimental group.</td>
</tr>
<tr>
<td>4 Relaxation exercises</td>
<td>10 to 15 minutes</td>
<td>Experimental group.</td>
</tr>
</tbody>
</table>

The above arrangement of the term for the experimental group was given in a week for six days (excluding Sunday). One session of 55 to 75 minutes i.e. from 6.30 a.m. to 8.30 a.m. was given, whereas the controlled group was given only movements of warming up and sent home. The treatment of actual training was not given to the controlled group. This method of treatment was given for 135 days in three stages of 45 days for the main study. Time duration for the main study was as follows:

**Planning of Duration of Treatment And Test Taken At The Time of Actual Training**

The researcher had given the game Atya – patya as the treatment of actual training to the experimental group whereas only movements of warming up were given to the controlled group. But practically Atya –patya was not given the treatment but it had a
duration of 135 days. 135 days were divided into three parts each consisting of 45 days and after a gap of 45 days each post-test was taken the planning of duration of this treatment was as follows:

I Pilot study: 45 days.
Pre-test: dated 16th June 2006 and 17th June 2006
Treatment: (Duration 45 days) paled 18th June 2006 to 8th Aug 2006

II main study: (Total duration 135 days)

(A) Stage I (Duration 45 days)

(B) Stage II (Duration 45 days)
Second post-test: Dated 1st Dec 2006 and 2nd Dec 2006

(C) Stage III (Duration 45 days)
Treatment: dated 3rd Dec 2007 to 24th Jan 2007
Third post-test: dated 25th Jan 2007 and 26th Jan 2007
References


