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Summary, Conclusions and Recommendations

5.1 Summary

5.1.1 Introduction

Exercise is necessary in order to develop the growth of the body consistently. Physical activities take place through the channel of sports and so the physical exercises does occur. Several sports have been practiced and hence they are in vogue since ancient times. The function of physical all round and sound exercise and recreation is achieved through the medium of sports.

Physical education and sports have an important place in India since ancient times because of several reasons. Sports of many kinds are being played in our country since a long time. Several kinds of exercises have been in vogue even today. Some sports are played in the festivals, some are played for the growth of our body. Where as some are played for the purpose of entertainment. Later on the western sports have been spread and propagandized on a large scale in the British regime. Some Vyayam Shalas, Gymnastic Schools, Arneas and sport clubs seem to have maintained the continuity and importance of our Indian games and exercises. Still indigenous (Native) sports have not got the excepted popularity. Some have tried best for achieving the same but in vain ! But it seems that no excepted success is got out of it. Therefore it is essential to prove the utility of indigenous games, their characteristics and importance.
Only for this target researches in India decided to study the sport Atya-Paty being the traditional game in Maharashtra. The researcher in the aforesaid research studied the effects of playing this game related to the players' physique and what results it shows on their health related physical ability and on their selective motor fitness ability. For this objective boys coming from 14 to 16 years age group are selected.

By using experimental research method to equal group are formed after training the experimental group for 135 days practically the game of Atya-Patya was played. The controlled group was sent to home. After 45 days in each group planning for developing health related physical fitness and selected motor ability tests were formed in both the groups. The standardized measurements of the tests were taken and it was evaluated through the medium of repeated measure ANOVA, and conclusions were drawn.

5.1.2 Objectives of the study

1) To prepare the training programme of playing 'Atya-Patya' game

2) To find out the effects of playing Atya-Patya on Health Related Physical fitness of the Adolescents i.e. 14 to 16 years age group students.

3) To find out the effects of playing Atya- Patya on the selected motor fitness of the players.
5.1.3 Statement of the Problem

Title of the thesis

EFFECT OF PLAYING ATYA- PATYA ON HEALTH RELATED TO
FITNESS FROM 14 TO 16 YEARS AGE GROUP STUDENTS

The study of effects on the selected players of Atya- Patya on Health Related Physical Fitness as well as selected motor fitness is done in the present research. It aims at studying the effects on Health Related Physical Fitness and selected motor fitness of actually played by the players of Atya- Patya. For this purpose Atya- Patya must be observed with the effects by measuring their Health Related Physical fitness and selected motor fitness.

In this research concerned, the researcher has studied and measured the health Related Physical Fitness and Selected Motor fitness of the Adolescents immediately after their playing the game of Atya- Patya for 45 days in three stages. (Total 135 days).

For this study and the measurements of Health Related Physical Fitness and selected Motor Fitness of Adolescents the researcher had regularly asked the Adolescents play the game Atya- Paty for a certain fixed period.
5.1.4 Definitions of Important Terms

1) **Health related fitness**

   Health related fitness is based on the assumption that an adequate level of body development is required for health.

   The health related fitness is measured by evaluating mainly through following three factors.

   I) **Body composition (percentage of body fat and lean body mass)**

   II) **Cardio respiratory functions of the body.**

   III) **Musculo-skeletal function is specially of abdominal and lowback part of the body.**

   IV) **Flexibility of the body.**

2) **Motor Fitness**

   As quoted by C.A. Butcher, a general motor ability means physical ability and motor ability. Body’s common motor ability means a place where different physical activities come together and where the coordination of all bodily parts and physical skills are included in it, physical and motor ability means body’s movable machines ability and efficiency with motion and general motor ability means sturdy persons’ body’s muscular strength, power, flexibility, agility, muscular efficiency, respiration of the heart and its efficiency reaction time, relations of activities between hands and eyes etc, are also included in it.

   It may be also defined as one’s present innate and acquired ability to perform motor skills of a general and fundamental nature excluding
specialized sports skills. Motor fitness suitability or preparedness for performing big muscle activity without undue fatigue. It is compassed of muscular strength and endurance, Cardio-vascular endurance, power, flexibility, co-ordination, balance, speed, agility and body composition.

1. Adolescence

The period from the beginning of puberty to the attainment of maturity.

2. Adolescence Stage

The essence of the word adolescent is growth and it is in this sense that adolescent represents a period of intensive growth and change in nearly all aspects of child's physical, mental, social and emotional life. It is very crucial period of one’s life. Generally refers to teenagers i.e.13 to 19 years.

5.1.5 Scope and limitations

This study has large scope to conduct similar research programme for other Indian cities.

The limitations of the study were as follows:

1) The researcher could not collect more data for more accurate results.

2) The researcher cannot impose restrictions on the diet of the subjects selected for the research.
3) No limitations can be laid upon the daily routine of the selected students for this research.

**Delimitations of Research**

1) The study is delimited only for Sulakhe Highschool, Barshi

2) The study is delimited only for 9th standard students (Boys Only)

3) The study is delimited only for the boys belonging to age group of 14 to 16 years ie. Adolescents.

4) The study is delimited only for the age group 14 to 16 years selected students’ health related physical fitness as well as selected motor fitness factors.

**5.1.6 Hypothesis**

1) Ho.1 : There is no significant effect of playing Atya-Patya on Cardio respiratory endurance the subjects.

2) Ho.2 : There is no significant effect of playing Atya-Patya on strength and endurance of Abdominal muscles of the subjects.

3) Ho.3 : There is no significant effect of playing Atya-Patya on Body Fat of Triceps, Subscapular, Thigh and calf muscles of the subjects.

4) Ho.4 : There is no significant effect of playing Atya-Patya on flexibility of the subjects.
5) Ho.5: There is no significant effect of playing Atya-Patya on explosive strength of the subjects.

6) Ho.6: There is no significant effect of playing Atya-Patya on Agility of the subjects.

7) Ho.7: There is no significant effect of playing Atya-Patya on Power of shoulder of the subjects.

8) Ho.8: There is no significant effect of playing Atya-Patya on speed of the subjects.

5.1.7 Significance of the study

Following are the significant points of the present study.

1) Training and its varied method in this game are planned in order to develop different efficiencies hidden in physical education and games. But this seems to be limited in a particular class. It is not seen in the case of mass and it has many reasons. Everyone must be healthy, physically fit and all must study physical education. We often say this statement, but practically it is not possible for this substantial reason. Researcher has studied the effects of students' health related physical fitness and selected motor fitness.

2) It is an inexpensive game.

3) Especially it gives us easy entertainment and it is expressed through this research.
4) This study has observed the effects of playing Atya-Patya on students’ health related physical fitness and selected motor fitness. This study helps to develop healthy body of students’ and players.

5) This research work also helps the teachers of physical education and sports directors. In building up health related physical fitness and motor fitness development of all.

6) This research work assists to increase the standard of games

7) This study increases the inexpensive health related fitness and motor fitness. It helps all to achieve the goal: physical education for all and in this context all are benefited.

8) As no research is done so far on this subjects, the field of games and sports will certainly get valuable help.

### 5.1.8 Method of the Study

The experimental method was followed for this research work. The study was designed i.e. True experimental design and pre-test and post-test. Equivalent group design were applied.

### 5.1.9 Population sample

For the present research the total strength of the students includes the students (Boys) of 9th Standard belonging to the age group of 14 to 16 years i.e Adolescents. Near about 300 students learning in
Sulakhe Highschool, Barshi (2006-07) were taken into consideration for their selection.

**Experimental and control group**

Simple random sampling method pertaining at Lottery system into the two groups of 30-30 will be divided as samples out of 60 students having equal ability.

Later on by way of Lottery system group number 1 was selected as experimental group and group number 2 was selected as control group.

Thus two groups were selected out of total strength of population from the sample.

Method of working was fixed as shown below in the present research.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Pre-test</th>
<th>Equal Group</th>
<th>Experimental Group</th>
<th>Control Group</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.1.10 **Planing of duration for treatment and test taken at the time of actual training**

The researcher had given the game Atya-Patya as the treatment of actual training of the experimental group where as 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 planing 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) dated 18th June 2006 to 8th Aug 2006

II main study : (Total duration 135 days)

(A) Stage I (Duration 45 days)
First post-test : dated 3rd Oct 2006 and 4th Oct 2006 (Mid Test No.1)

(B) Stage II (Duration 45 days)
Second post-test : Dated 1st Dec 2006 and 2nd Dec 2006 (Mid Test No.2)

(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
<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 Control 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 as a treatment</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. 6:30 am to 8:30 am was given, whereas the controlled group was given only warming up and sent home. The treatment of actual training was given for 135 days in three stages of 45 days for the main study.

### 5.1.11 Tools of Research

It is essential to accumulate all kinds of procedures in the research work with its data, sources and equipments. It is equally necessary to collect varied kinds of information’s for studying the problems, drawing final conclusions and for finding the solutions to the problem of research. The technique of scrutiny test and assessment will be used for this
research work. The required information about the equipment’s for its implementation and training of the game ‘Atya-Patya’ is as follows:

1) Playing ground
2) Planned plain surface for Atya-Patya
3) Meter-Tape
4) Stop Watch
5) Sit and Reach box
6) 400 M. running track
7) Rope
8) Leaflet of Record and pencil
9) Jumping Pit
10) A small Quantity of lime powder
11) Assistants

Tests: Test certified by the experts of health related fitness and selected motor fitness was used.

**Health related fitness tests**

1) Cardio respiratory endurance – 600 Yard Run / walk test
2) Muscular Strength – Sit-Ups (Bent Knee)
3) Body Fat – Skin Fold Score Test
4) Flexibility – Sit and Reach Test
Selected motor fitness test

1) Explosive Strength – Standing broad jump test
2) Agility – Shuttle Run Test
3) Power – 6 Pound Medicine Ball put test
4) Speed – 50 yard Dash Test

5.1.12 Statistical Tools

The statistical principals were used for the scientific explanation of collected information and while giving up the main concepts or accepting it or presenting its conclusions, statistics is used.

The following statistical principals were used for drawing out conclusions which are obtained by the figures through the preliminary and the later tests on this present research work full of experimental and administrative conditions are as follows:

1) Mean
2) Standard Deviation
3) Repeated Measure ANOVA computer package.

5.2 Results and Conclusions

With the help of the available information and statistical analysis the following conclusions were drawn and for this Repeated measure ANOVA was used and the standard significant level 0.05 was chosen.

Within the limitations, the present study concludes the following conclusions:
1) There was significant effect of playing Atya-Patya and it was observed at Level1 Vs. Level 2. This indicates that playing Atya-Patya improves cardio respiratory endurance of the subject.

2) There was significant effect of playing Atya-Patya and it was observed at Level 1 Vs Level 2. This indicates that playing Atya-Patya improves muscular strength of the subjects.

3) There was significant effect of playing Atya-Patya and it was observed at Level 1 Vs Level2. This indicates that playing Atya-Patya improves flexibility of the subjects.

4) There was significant effect of playing Atya-Patya and it was observed at Level 1 Vs Level 2. This indicates that playing Atya-Patya improves reducing body fat of triceps muscule Subscapular, calf muscle and Thigh muscule of the subjects.

5) There was significant effect of playing Atya-Patya and it was observed at Level 1 Vs Level 2. This indicates that playing Atya-Patya improves muscular power of shoulder of the subjects.

6) There was significant effect of playing Atya-Patya and it was observed at Level 1 Vs Level 2. This indicates that playing Atya-Patya improves speed of the subjects.

7) There was significant effect of playing Atya-Patya and it was observed at Level 1 Vs Level 2. This indicates that playing Atya-Patya improves agility of the subjects.

8) There was significant effect of playing Atya-Patya and it was observed
at Level 1 Vs Level 2. This indicates that playing Atya-Patya improves Explosive strength of the subjects.

**Level wise Comparison and Results**

1) **600 Yard Run/Walk Test**

For level wise comparison between Level-1 Vs. Level-2 there was significant difference between experimental and control group. There was improvement of 0.421 sec. In experimental group and that in control group it was 0.119 sec. This implies playing Atya-Patya improve the performance during first 45 days.

For Level-2 Vs. Level-3 there was significant difference between experimental and control group. There was improvement of 0.007 sec. In experimental group and that in control group it was 0.035 sec. This implies playing Atya-Patya improve the performance during 90 days.

For Level-3 Vs. Level-4 there was significant difference between experimental and control group. There was improvement of 0.115 sec. In experimental group and that in control group it was -0.008 sec. This implies playing Atya-Patya improve the performance during 135 days.

2) **Sit-Ups (Bent Knee) Test**

For level wise comparison between Level-1 Vs. Level-2 there was significant difference between experimental and control group. There was improvement of 8 Sit-Ups in experimental group and that in control group it was
0.2 Sit-Ups. This implies playing Atya-Patya improve the performance during first 45 days.

For Level-2 Vs. Level-3 there was significant difference between experimental and control group. There was improvement of 1.733 Sit-Ups in experimental group and that in control group it was 0.033 Sit-Ups. This implies playing Atya-Patya improve the performance during 90 days.

For Level-3 Vs. Level-4 there was significant difference between experimental and control group. There was improvement of 0.9 Sit-Ups in experimental group and that in control group it was 0.067 Sit-Ups. This implies playing Atya-Patya improve the performance during 135 days.

3) Sit and Reach Test

For level wise comparison between Level-1 Vs. Level-2 there was significant difference between experimental and control group. There was improvement of 5.466 cms. in experimental group and that in control group it was 0.5 cms. This implies playing Atya-Patya improve the performance during first 45 days.

For Level-2 Vs. Level-3 there was significant difference between experimental and control group. There was improvement of 1.1 cms. in experimental group and that in control group it was 0.4 cms. This implies playing Atya-Patya improve the performance during 90 days.

For Level-3 Vs. Level-4 there was significant difference between experimental and control group. There was improvement of 0.834 cms. in
experimental group and that in control group it was 0.4 cms. This implies playing Atya-Patya improve the performance during 135 days.

4) Body Fat - Skin Fold Score Tests

i) Triceps Skin Fold Score Test

For level wise comparison between Level-1 Vs. Level-2 there was significant difference between experimental and control group. There was improvement of reducing body fat of triceps muscle of 0.27 mm. in experimental group and that in control group it was 0.04 mm. This implies playing Atya-Patya improve the performance during first 45 days.

For Level-2 Vs. Level-3 there was significant difference between experimental and control group. There was improvement of reducing body fat of triceps muscle of 0.177 mm. in experimental group and that in control group it was 0.097 mm. This implies playing Atya-Patya improve the performance during 90 days.

For Level-3 Vs. Level-4 there was significant difference between experimental and control group. There was improvement of reducing body fat of triceps muscle of 0.377 mm. in experimental group and that in control group it was 0 mm. This implies playing Atya-Patya improve the performance during 135 days.
ii) **Sub Scapular Skin Fold Score Test**

For level wise comparison between Level-1 Vs. Level-2 there was significant difference between experimental and control group. There was improvement of reducing body fat of sub scapular muscle of 0.31 mm. in experimental group and that in control group it was –0.017 mm. This implies playing Atya-Patya improve the performance during first 45 days.

For Level-2 Vs. Level-3 there was significant difference between experimental and control group. There was improvement of reducing body fat of sub scapular muscle of 0.42 mm. in experimental group and that in control group it was 0.11 mm. This implies playing Atya-Patya improve the performance during 90 days.

For Level-3 Vs. Level-4 there was significant difference between experimental and control group. There was improvement of reducing body fat of sub scapular muscle of 0.553 mm. in experimental group and that in control group it was 0.047 mm. This implies playing Atya-Patya improve the performance during 135 days.

iii) **Calf Skin Fold Score Test**

For level wise comparison between Level-1 Vs. Level-2 there was significant difference between experimental and control group. There was improvement of reducing body fat of Calf muscle of 1.087 mm. in
experimental group and that in control group it was 0.07 mm. This implies playing Atya-Patya improve the performance during first 45 days.

For Level-2 Vs. Level-3 there was significant difference between experimental and control group. There was improvement of reducing body fat of Calf muscle of 0.517 mm. in experimental group and that in control group it was 0.05 mm. This implies playing Atya-Patya improve the performance during 90 days.

For Level-3 Vs. Level-4 there was significant difference between experimental and control group. There was improvement of reducing body fat of Calf muscle of 0.47 mm. in experimental group and that in control group it was 0.105 mm. This implies playing Atya-Patya improve the performance during 135 days.

iv) Thigh Skin Fold Score Test

For level wise comparison between Level-1 Vs. Level-2 there was significant difference between experimental and control group. There was improvement of reducing body fat of Thigh muscle of 0.636 mm. in experimental group and that in control group it was 0.076 mm. This implies playing Atya-Patya improve the performance during first 45 days.

For Level-2 Vs. Level-3 there was significant difference between experimental and control group. There was improvement of reducing body fat of Thigh muscle of 0.59 mm. in experimental group and that in control
group it was 0.074 mm. This implies playing Atya-Patya improve the performance during 90 days.

For Level-3 Vs. Level-4 there was significant difference between experimental and control group. There was improvement of reducing body fat of thigh muscle of 0.747 mm. in experimental group and that in control group it was 0.06 mm. This implies playing Atya-Patya improve the performance during 135 days.

5) Medicine Ball Throw Test

For level wise comparison between Level-1 Vs. Level-2 there was significant difference between experimental and control group. There was improvement of 0.36 feet and inches. in experimental group and that in control group it was 0.003 feet and inches. This implies playing Atya-Patya improve the performance during first 45 days.

For Level-2 Vs. Level-3 there was significant difference between experimental and control group. There was improvement of 0.05 feet and inches. in experimental group and that in control group it was 0.046 feet and inches. This implies playing Atya-Patya improve the performance during 90 days.

For Level-3 Vs. Level-4 there was significant difference between experimental and control group. There was improvement of 0.44 feet and inches. in experimental group and that in control group it was -0.02 feet and inches. This implies playing Atya-Patya improve the performance during 135 days.
6) 50 Yard Dash Test

For level wise comparison between Level-1 Vs. Level-2 there was significant difference between experimental and control group. There was improvement of 0.384 sec. in experimental group and that in control group it was –0.033 sec. This implies playing Atya-Patya improve the performance during first 45 days.

For Level-2 Vs. Level-3 there was significant difference between experimental and control group. There was improvement of 0.22 sec. in experimental group and that in control group it was 0.153 sec. This implies playing Atya-Patya improve the performance during 90 days.

For Level-3 Vs. Level-4 there was significant difference between experimental and control group. There was improvement of 0 sec. in experimental group and that in control group it was 0 sec. This implies playing Atya-Patya improve the performance during 135 days.

7) Shuttle Run Test

For level wise comparison between Level-1 Vs. Level-2 there was significant difference between experimental and control group. There was improvement of 1.02 sec. in experimental group and that in control group it was –0.021 sec. This implies playing Atya-Patya improve the performance during first 45 days.
For Level-2 Vs. Level-3 there was significant difference between experimental and control group. There was improvement of 0.427 sec. in experimental group and that in control group it was 0.25 sec. This implies playing Atya-Patya improve the performance during 90 days.

For Level-3 Vs. Level-4 there was significant difference between experimental and control group. There was improvement of 0.003 sec. in experimental group and that in control group it was –0.08 sec. This implies playing Atya-Patya improve the performance during 135 days.

8) Standing Broad Jump Test

For level wise comparison between Level-1 Vs. Level-2 there was significant difference between experimental and control group. There was improvement of 0.002 meter. in experimental group and that in control group it was 0.002 meter. This implies playing Atya-Patya improve the performance during first 45 days.

For Level-2 Vs. Level-3 there was significant difference between experimental and control group. There was improvement of 0.325 meter. in experimental group and that in control group it was –0.004 meter. This implies playing Atya-Patya improve the performance during 90 days.

For Level-3 Vs. Level-4 there was significant difference between experimental and control group. There was improvement of 0.129 meter. in experimental group and that in control group it was 0.16 meter. This implies playing Atya-Patya improve the performance during 135 days.
And hence it is concluded that the development in the subjects’ health related physical fitness and selected motor fitness takes place only after playing Atya-Patya for 45, 90 and 135 days.

It is seen that after playing this game Atya-Patya for 45, 90 and 135 days the growth in the subjects’ health related physical fitness-cardio respiratory endurance, muscular strength, flexibility took place and in their body fat the loss was observed. Remarkable growth was seen in their selected motor fitness-explosive strength, speed, agility and power.

**Hypothesis and Discussion**

**1) 600 Yard Run/Walk Test**

There was significant effect of playing Atya-Patya and it was observed at level 1 Vs. level 2. This indicates that playing Atya-Patya can improve Cardio Respiratory Endurance of the subjects.

Pawar has also found that playing Kho-Kho has effect on Cardio Respiratory Endurance. This result coincides the above result. Therefore the researcher rejects the Null Hypothesis Ho.1 : ‘There is no significant effect of playing Atya-Patya on endurance of the subjects’.

**2) Sit-Ups (Bent Knee) Test**

There was significant effect of playing Atya-Patya and it was observed at level 1 Vs. level 2. This indicates that playing Atya-Patya can improve Muscular Strength of the subjects.
Kondagire has also found that playing Lazim has effect on Muscular Strength. This result coincides the above result. Therefore the researcher rejects the Null Hypothesis Ho.2 : 'There is no significant effect of playing Atya-Patya on Muscular Strength of the subjects'.

3) Sit and Reach Test

There was significant effect of playing Atya-Patya and it was observed at level 1 Vs. level 2. This indicates that playing Atya-Patya can improve Flexibility of the subjects.

Khandare has also found that playing Lazim and its training programme has effect on Flexibility. This result coincides the above result. Therefore the researcher rejects the Null Hypothesis Ho.3 : 'There is no significant effect of playing Atya-Patya on Flexibility of the subjects'.

4) Body Fat : Triceps Skin fold Score Test

There was significant effect of playing Atya-Patya and it was observed at level 1 Vs. level 2. This indicates that playing Atya-Patya can improve Reducing Body Fat Of Triceps Muscles of the subjects.

Baldwin has also found that Aerobic Dance has effect on Body Fat. This result coincides the above result. Therefore the researcher rejects the Null Hypothesis Ho.4 : 'There is no significant effect of playing Atya-Patya on Body Fat; Triceps Muscles of the subjects'.
5) **Body Fat : Subscapular Skin fold Score Test**

There was significant effect of playing Atya-Patya and it was observed at level 1 Vs. level 2. This indicates that playing Atya-Patya can improve Reducing Body Fat Of Subscapular Muscles of the subjects.

Chougule has also found that Aerobic Dance and selected Yogic Exercises have effect on Body Fat. This result coincides the above result. Therefore the researcher rejects the Null Hypothesis Ho.5 : 'There is no significant effect of playing Atya-Patya on Body Fat; Subscapular Muscles of the subjects'.

6) **Body Fat : Calf Skin fold Score Test**

There was significant effect of playing Atya-Patya and it was observed at level 1 Vs. level 2. This indicates that playing Atya-Patya can improve Reducing Body Fat Of Calf Muscles of the subjects.

Chougule has also found that Aerobic Dance and selected Yogic Exercises have effect on Body Fat. This result coincides the above result. Therefore the researcher rejects the Null Hypothesis Ho.6 : 'There is no significant effect of playing Atya-Patya on Body Fat; Calf Muscles of the subjects'.
7) **Body Fat : Thigh Skin fold Score Test**

There was significant effect of playing Atya-Patya and it was observed at level 1 Vs. level 2. This indicates that playing Atya-Patya can improve Reducing Body Fat Of Thigh Muscles of the subjects.

Chougule has also found that Aerobic Dance and selected Yogic Exercises have effect on Body Fat. This result coincides the above result. Therefore the researcher rejects the Null Hypothesis Ho.7 : 'There is no significant effect of playing Atya-Patya on Body Fat; Thigh Muscles of the subjects'.

8) **Medicine Ball Throw Test**

There was significant effect of playing Atya-Patya and it was observed at level 1 Vs. level 2. This indicates that playing Atya-Patya can improve Muscular Power of Shoulder of the subjects.

Kumbhar has also found that Suryanamaskar's Training has effect on Muscular Power of Shoulder. This result coincides the above result. Therefore the researcher rejects the Null Hypothesis Ho.8 : 'There is no significant effect of playing Atya-Patya on Muscular Power of Shoulder of the subjects'.
9) 50 Yard Dash Test

There was significant effect of playing Atya-Patya and it was observed at level 1 Vs. level 2. This indicates that playing Atya-Patya can improve Speed of the subjects.

Sangral has also found that Intensive Training Programme of Ladies Volley-Ball Players has effect on Speed. This result coincides the above result. Therefore the researcher rejects the Null Hypothesis Ho.9 : 'There is no significant effect of playing Atya-Patya on Speed of the subjects'.

10) Shuttle Run Test

There was significant effect of playing Atya-Patya and it was observed at level 1 Vs. level 2. This indicates that playing Atya-Patya can improve Agility of the subjects.

Kadu has also found that Kho-Kho game has effect on Agility. This result coincides the above result. Therefore the researcher rejects the Null Hypothesis Ho.10 : 'There is no significant effect of playing Atya-Patya on Agility of the subjects'.

11) Standing Broad Jump Test

There was significant effect of playing Atya-Patya and it was observed at level 2 Vs. level 3. This indicates that playing Atya-Patya can improve Legs Explosive Strength of the subjects.
Sangral has also found that Intensive Training Programme of Ladies Volley-Ball Players has effect on Legs Explosive Strength. This result coincides the above result. Therefore the researcher rejects the Null Hypothesis Ho.11 : 'There is no significant effect of playing Atya-Patya on Legs Explosive Strength of the subjects'.

5.3 Recommendations

1) The researcher has studied the health related physical fitness as well as selected motor fitness abilities of the boys 14 to 16 age group. Research on the several factors and effects of them in relation to several abilities ie. total physical fitness, Fat in the Lean body fat, fat in the wrist can be investigated.

2) Selected motor fitness Abilities are studied in this research still most of the motor fitness abilities are to be studied. Research can be made on the study of the strength of arms and shoulders, reaction time and their effects on them.

3) Only boys were selected for this research and the same experiment will be made on the girls.

4) Such type of research can be made on the boys and girls belonging to different age groups.

5) Only the factors of health related physical fitness are considered in this research and similarly all factors of physical fitness and motor
fitness can be taken into consideration and research can be made on their effects.

6) Even such type of research can be made on other Indian sports.

7) Likewise by playing the game Atya-Patya for the long period of six months, one year research can be made on what effects are seen on their health related physical fitness or their complete physical fitness or motor fitness.