SUMMARY, CONCLUSION
AND RECOMMENDATIONS
5.1. Summary

The human body is designed for physical activity and movement. Throughout his life, man had to be physically active in order to produce his daily food and to succeed in the battle for survival.

Improved standards of living and increased affluence, however, have led to decreased emphasis on physical fitness and locomotive power, and in the industrialized world modern human being has become more and more sedentary both at work and during leisure hours.
Speaking from the day today practical experience of life it won’t be an exaggeration to say that the people of the world stand badly in need of a better physical and mental fitness awareness to face the challenges of life, whether to make a mere survival or to make an achievement in any sport of international importance. In a more specific manner the student community, which is caught between curriculum and Extra curriculum, is mainly bothered to collect degrees and diplomas, in number and are scattered without knowing the purpose of education, which knowingly and unknowingly lands them up in heavy stressful life. With the ever-increasing academic commitments the Intensity of the stress acquired is still amplified and intensified. Therefore it is to be carefully noted that an excellent awareness of physical and mental fitness should be propagated among them, which is sure to train and mould the student community to face the upcoming challenges of life with vigour and courage.

The hypothesis of the present study are as follows:

1. Yogic practice would develop and enhance the efficiency of certain Physical and Physiological Variables.
2. Physical exercise would develop and enhance the efficiency of certain Physical and Physiological Variables.
3. The Experimental Groups would be significant in the training effects more than the control group.
4. The Yogic Practice Group would be a significant and better group.
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The significance of the study is:

1. The study indicates the training effect of Yogic Practice and Physical Exercises.
2. It will further provide which of the two training methods enhances the efficiency of the selected Physical and Physiological Variables.
3. Further it may give additional information to the Physical Education professionals and coaches in their training plan.
4. The findings of this study would be helpful to sports participants to report to yogic practice not only for the psycho-physiological benefits but also for economy in cost and time.
5. The study also highlights the positive fitness contribution of yoga to personal health and performance sports.

The methodology adopted in the present study is briefly given below:

Sixty male residential college students from School of Engineering and Technology, Bharathidasan University, Tiruchirappalli, were randomly selected. Their age ranged between 17-22. The selected subjects were divided into three groups of 20, each to form three groups such as two experimental groups and one control group. The subjects of the three groups were tested using standardized tests and procedures on selected physical and physiological variables before and after the training period to find out the training effects.

The collected data were analyzed with one-way ANOVA and analysis of co-variance (ANACOVA) to find out the training significance and compare.
Scheffe’s post-hoc test was employed to find out the better group among the three.

**Variables and test procedures**

The subjects were tested on the following Physical and Physiological variables.

<table>
<thead>
<tr>
<th>Physical variables (PV)</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Speed</td>
<td>50 meters Run</td>
</tr>
<tr>
<td>2. Agility</td>
<td>Shuttle run</td>
</tr>
<tr>
<td>3. Flexibility</td>
<td>Sit and Reach Test</td>
</tr>
<tr>
<td>4. Explosive power</td>
<td>Standing Broad Jump</td>
</tr>
<tr>
<td>5. Cardio-Respiratory Endurance</td>
<td>Cooper’s 12 minutes Run/Walk Test</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physiological variables (PLV)</th>
<th>Equipments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Resting Pulse Rate</td>
<td>Stethoscope</td>
</tr>
<tr>
<td>2. Breath Holding Time</td>
<td>Digital Stop Watch</td>
</tr>
<tr>
<td>3. Maximum Inspiratory Volume</td>
<td>Hudson Incentive Insirometer</td>
</tr>
<tr>
<td>4. Peak Flow Rate</td>
<td>Wright’s Peak Flow Meter</td>
</tr>
</tbody>
</table>

**5.2 Findings**

**5.2.1 Testing the Initial means**

Initial means of variables were tested by one-way ANOVA as one of the preliminary processes of Analysis of Co-variance (ANACOVA).
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**Speed**

‘F’ – Value - 0.211, Significance value 0.810

Not significant (P > 0.05)

**Agility**

‘F’ – Value - 0.454, Significance value - 0.637

Not significant (P > 0.05)

**Flexibility**

‘F’ – Value - 0.078, Significance value – 0.925

Not significant (P > 0.05)

**Explosive Power**

‘F’ – Value – 0.310, Significance value - 0.734

Not significant – (P > 0.05)

**Cardio-Respiratory Endurance**

‘F’ – Value – 2.477, Significance value – 0.093

Not significant – (P > 0.05)

**Resting Pulse Rate**

‘F’ – Value – 0.344, Significance value – 0.710

Not significant – (P > 0.05)
Breath Holding Time

'F' – Value – 10.452, Significance value – 0.000

Significant – (P < 0.001)

Maximum Inspiratory Volume

'F' – Value – 1.147, Significance value – 0.325

Not significant – (P > 0.05)

Peak Flow Rate

'F' – Value – 3.975, Significance value – 0.024

Significant – (P < 0.05)

5.2.2. Testing the Final Means

The final means of variables obtained by Analysis of Co-variance (ANACOVA) are presented below.

Speed

'F' – Value – 12.456, Significance value – 0.000

Significant (P < 0.001)

Agility

'F' – Value - 27.029, Significance value - .000

Significant (P < 0.001)

Flexibility

'F' – Value - 3.553, significance value – 0.035

Significant (P < 0.05)
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Explosive Power

‘F’ – Value – 19.109, significance value - 0.000

Significant – (P < 0.01)

Cardio-Respiratory Endurance

‘F’ – Value – 13.813, significance value – 0.000

Significant – (P < 0.01)

Resting Pulse Rate

‘F’ – Value – 7.035, significance value – 0.002

Significant – (P < 0.01)

Breath Holding Time

‘F’ – Value – 5.297, significance value – 0.008

Significant – (P < 0.01)

Maximum Inspiratory Volume

‘F’ – Value – 3.718, significance value – 0.030

Not significant – (P < 0.05)

Peak Flow Rate

‘F’ – Value – 12.059, significance value – 0.000

Significant – (P < 0.001)
5.2.3 Testing The Adjusted Means

Adjusting the initial with final means and testing adjusted means is yet another important aim of Analysis of co-variance (ANACOVA). It was done in the present study.

**Speed**

‘F’ – Value – 160, significance value – 0.000

Significant (P < 0.001)

**Agility**

‘F’ – Value - 270.255, significant value - 0.000

Significant (P < 0.001)

**Flexibility**

‘F’ – Value - 42.017, significance value – 0.000

Significant (P < 0.001)

**Explosive Power**

‘F’ – Value – 300.540, significance value - 0.000

Significant – (P < 0.001)

**Cardio-Respiratory Endurance**

‘F’ – Value – 145.953, significance value – 0.000

Significant – (P < 0.001)
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**Resting Pulse Rate**

'F' – Value – 74.507, significance value – 0.000

Significant – (P < 0.001)

**Breath Holding Time**

'F' – Value – 17.240, significance value – 0.000

Significant – (P < 0.001)

**Maximum Inspiratory Volume**

'F' – Value – 4.410, significance value – 0.017

Not significant – (P < 0.05)

**Peak Flow Rate**

'F' – Value – 66.673, significance value – 0.000

Significant – (P < 0.001)
5.3. CONCLUSIONS

Within the limitations of the present experimental study the following conclusions can be made.

1. The yogic practice group evidenced significant improvement over the Physical exercises group and Control group in the following variables:

   **Physical variables** - Flexibility
   **Physiological variables** - Resting pulse Rate, Breath Holding Time, Maximum Inspiratory Volume, Peak Flow Rate

   where,

   • The improvement of flexibility is indicated in the ability to bend and reach to a wider range (Increased in centimeters).
   • Definite response of decreasing in the Resting Pulse Rate (Reduced pulse / minute).
   • Ability to hold the breath for longer duration is increased (in seconds).
   • Maximization of inspiratory volume in cubic centimeter is increased.
   • Peak flow rate is increased in more number of Litres / minute.

2. The practice of Physical exercise evidenced significant improvement over yogic practices group and Control group in the following variables.

   **Physical variables**
   - Speed
   - Agility
Explosive power

Cardio- Respiratory Endurance

where,

- Speed is increased in terms of time taken to finish 50mts run is reduced.
- Agility is increased in terms of ability to change directions is quickened in shuttle run.
- Explosive power is developed in terms of distance covered in feet / inch in the explosive jumps.
- Cardio-Respiratory Endurance is developed by covering maximum distance in meters within the prescribed time (12-minutes) without fatigue.

3. Physical exercise group shows significant training effects in all physical and physiological variables when compared to the control group.

4. In the overall training effects in terms of improved number of physical and physiological variables and their magnitude of improvement through training, Yogic practice group is found to be the better group when compared to the other two groups.

5.4. IMPLICATIONS OF THE STUDY

1. The findings of this study highlight that yogic practice is a viable source to develop (as listed in the result) physical and physiological variables. The main reason behind the outcomes of yogic practice is concentrating on the time
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holding factor than that of repetition as it is in physical exercises. Earlier studies have also confirmed that while involving either stretching or strengthening exercises, it is better to hold for about few seconds in order to have desired outcomes.

Such a process is adopted only in practising the yoga. Moreover yogic practice is an energy conserving one unlike the energy exhaustion of physical exercises. Thus it is suggested that yoga could be used better for achieving health and fitness.

2. As far as human physiological systems are concerned the yogic practice is playing a very crucial role. Since the yogic practice is energy conserving in nature it could make a remarkable change in the metabolic process purifying the waste products and increasing the supply of glucose and oxygen to the tired muscles. Hence diet and physiological changes could be complemented with yoga.

3. Monotonous and stereotyped exercises included in the health and fitness training could be altered and revitalized with yogic practice for better outcome.

4. The relaxation, calmness of mind and body, better concentration and integration of mind and body obtained through yogic practices could be an ideal way for maintaining health and fitness.
5.5. RECOMMENDATIONS

1. In the present study yogic practice is compared with physical exercises. Likewise a comparison with specific training methods can be attempted.

2. A study of comparison between yoga and physical exercise can be made for skill related and health fitness on a wider scale.

3. Other than the selected parameters in the present study others can be included for further study.

4. A combination of yoga and physical exercises training schedule can be tested on studies like these.

5. A study of the same sort can be dealt with for prevention of injuries and recovering from injuries.