Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

Physical inactivity and low fitness in children and adolescents are raising health burdens worldwide. Physical inactivity in adults has been established as one of the leading established risk factors for mortality and burden of disease. Moreover, a high fitness has been shown to prolong life and even seems to be able to counterbalance adiposity-related mortality. The fact that these factors also track into adulthood, emphasizes the necessity to evaluate and find effective strategies for increasing physical activity (PA) and fitness in youth. School is the place where almost all of the children and adolescents spend most of their days and family-based interventions have been shown to be of limited effectiveness. Therefore, a focus on the globally available school system seems justified.

The purpose of the study was to analyse the level of physical activity and exercise intervention programme among adolescents.
To achieve the purpose of the first part of the study, 300 boys 14-17 years old adolescents were selected from Sankar Higher Secondary School, Sankar Nagar, Tirunelveli, Tamilnadu and their level of physical activity was measured by Physical Activity Questionnaire (Pate et al., 1999). Based on the survey the selected subjects were classified as follows:

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Category</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Inactive</td>
<td>92</td>
<td>30.67</td>
</tr>
<tr>
<td>2</td>
<td>Occasionally active</td>
<td>41</td>
<td>13.67</td>
</tr>
<tr>
<td>3</td>
<td>Moderately active</td>
<td>75</td>
<td>25.00</td>
</tr>
<tr>
<td>4</td>
<td>Active</td>
<td>54</td>
<td>18.00</td>
</tr>
<tr>
<td>5</td>
<td>Very active</td>
<td>38</td>
<td>12.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>300</td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

From the above table, 50 male students were selected randomly from the categories of occasionally and moderately active and they were (simple random sample) assigned in to two groups of twenty five (n=25) each at random, such as experimental group I and control group. The group I (n=25) underwent exercise intervention programme for a duration of 12 weeks and the number of sessions per week is confined to three days, in addition to the regular schedule and group II (n=25)
acted as control, who is asked to refrain from any special training except their leisure time pursuit.

Members of these groups will consist of healthy boys. Prior to enrollment in the study, participants were informed of all possible risks involved in this study, and signed an informed consent form previously.

Considering the differences in level of physical activity in respect of gender, socio economic status, it seems feasible to suggest that the following variables were selected as dependent variables for this study.

- Aerobic capacity
- Abdominal strength and endurance
- Trunk strength and flexibility
- Upper body strength and endurance
- Lower back flexibility
- Grip strength
- Explosive Power

Hypothesis regarding the effects of the exercise intervention programme on participants’ aerobic capacity, abdominal strength and endurance, trunk strength and flexibility, upper body strength and endurance, lower back
flexibility, grip strength and explosive power were tested, and the findings of testing this hypothesis were presented. Next the hypothesis regarding the significant difference among the effects of exercise intervention programme and control group on participants’ aerobic capacity, abdominal strength and endurance, trunk strength and flexibility, upper body strength and endurance, lower back flexibility, grip strength and explosive power were tested, and the findings of testing this hypothesis were presented.

No attempt was made to equate the groups in any manner. Hence, to make adjustments for difference in the initial means and test the adjusted posttest means for significant differences, the analysis of covariance (ANCOVA) was used (Broota, 1989). Independent ‘t’ test was used to find out the significant improvement between pre and post tests on selected variables. All of the statistical analysis tests were computed at 0.05 level of significance (P<0.05).

5.2 CONCLUSIONS

1. There was significant improvement due to exercise training among 14-17 years adolescents on aerobic capacity.
2. There was significant improvement due to exercise training among 14-17 years adolescents on abdominal strength and endurance.

3. There was significant improvement due to exercise training among 14-17 years adolescents on Trunk strength and flexibility.

4. There was significant improvement due to exercise training among 14-17 years adolescents on Upper body strength and endurance.

5. There was significant improvement due to exercise training among 14-17 years adolescents on lower back flexibility.

6. There was significant improvement due to exercise training among 14-17 years adolescents on grip strength.

7. There was significant improvement due to exercise training among 14-17 years adolescents on explosive power.

8. There was significant difference between experimental and control groups on aerobic capacity, abdominal strength and endurance, trunk strength and flexibility, upper body strength and endurance, lower back flexibility, grip strength and explosive power 14-17 years adolescents.
9. The control group was not shown any significant improvement due to exercise training aerobic capacity, abdominal strength and endurance, trunk strength and flexibility, upper body strength and endurance, lower back flexibility, grip strength and explosive power 14-17 years adolescents.

5.3 IMPLICATION FOR FUTURE RESEARCHERS

From the discussion of the findings, it is evident in this study that exercise training was very effective in supporting participants’ performance. A close examination of the results revealed that exercise training alone is insufficient as a form of training for physical fitness and health maintenance. Hence, exercise training can be integrated with school curriculum to develop physical fitness in turn it will improve the overall health and wealth of the participants.

In this study, the findings showed that the exercise training was particularly effective in supporting physical fitness and level of physical activity. Therefore, Physical educators, trainers and coaches should give more attention to the findings.
5.4 IMPLICATIONS FOR FUTURE RESEARCH

The following recommendations for future research are based on the results of this investigation and the related literature.

1. It is recommended that further research be designed to investigate the effects of training programmes based on gender.

2. It is recommended that further research be designed to investigate the effects of training in rural and urban population.

3. It is recommended that further research be designed to investigate the effects of training on both trained subjects.

4. It is recommended that further research be conducted using more strenuous training programs.

5. It is recommended that future study include analysis of skeletal muscle morphology, skeletal muscle capillarization, muscle metabolic enzymes, hormone concentrations, as well as all the dependent variables measured in this investigation.