Chapter - V
CHAPTER V
SUMMARY, CONCLUSION AND RECOMMENDATION

INTRODUCTION

"A man's health can be judged by which he takes two at a time-

- pills or stairs."

- Joan Welsh.

Fitness keeps the body healthy. A healthy body means a more active, and
enjoyable lifestyle, and is beneficial to many ways of life.

People all over the world are becoming more and more health conscious, the
priority has been shifting from everything else to the fact that the most important thing
in life, is to keep oneself in shape and fit, to enjoy things in life. Keeping fit, means
capturing the days of youth and all the fun of those days alive. In spite of all the kinds
of treatments that have been flourishing the market, the people have not been driven
crazy, they still trust the basic natural way of keeping in shape, i.e., by exercising
regularly and maintaining a working routine. It is very necessary to go for a complete
fitness training, which takes care of all the aspects of making a fit body, beginning
from making note about the right kind of diet and right kind of exercises which suits
the physical conditions of the body. Along with eating healthy, exercising every day
can keep the body fit and reduce the chances of heart attack or stroke. A healthy body
also usually means a longer and more enjoyable life, without worrying about obesity-
related and other illnesses, like diabetes and asthma (especially after retirement), and
can make you feel younger and more active.
The major benefits derived from fitness training programs are bringing down the weight of the bulky body to right proportion, increases the resistance power in the body which results in decreasing the risks of getting attacked by diseases, helps in cutting down the fat from the body and finally gives the body a toned shape. With this standpoint, the investigator has intended to study the effect of regimen of exercise programmes on the development of health related physical fitness and physiological variables of software engineering students.

SUMMARY

A survey was conducted to find out the Health Related Physical Fitness Status of the male students of Amrita Vishwa Vidyapeetham University, Coimbatore by administering Cooper 12 minutes Run and Walk Test was used and the maximum oxygen consumption was determined. Based on the maximum oxygen consumption of the subjects, the subjects were classified into three groups namely High Fitness Category Group, Moderate Fitness Category Group and Low Fitness Category Group. The classification of High Fitness Category, Moderate Fitness Category and Low Fitness Category was determined by the Normative Scale given by Brian Mcanzie, Athletics Level 4 Coach, UK. The characteristics of the subjects are: weight 60 +/−5 in Kilograms, Height 160 +/−5.4 Centimeters and Age 20 +/-1.5 year. Eighty subjects from low fitness category group were randomly divided into four groups as Experimental Group I n = 20; Experimental Group II n = 20; Experimental Group III n=20 and Control Group n=20.

The study was formulated as pre and post tests random group design. The subjects were assigned at random to one of the four groups in which the Experimental Group I (n = 20; CEL Group) performed Calisthenics Exercises on the Land,
Experimental Group II (n = 20; CEL Group) performed Calisthenics Exercises in the Water, Experimental Group III (n = 20; YP group) performed Asanas as Yogic Practices and the fourth one (n = 20; CONTROL group) was Control group.

The subjects of three experimental groups and one control group were tested on the following Health Related Fitness Variables namely Percent Body Fat and Lean Body Mass in Body Composition, Flexibility, Cardio Respiratory Endurance and Muscular Strength Endurance and Physiological Variables namely Resting Heart Rate, Maximum Oxygen Consumption (VO$_2$max), Systolic Blood Pressure and Diastolic Blood Pressure using the following standardized test:

Health Related Fitness Variables with respect to Body Composition such as Percent Body Fat and Lean Body Mass were calculated through Inner Scan Body Composition Analyzer (TANITA BC – 545 MODEL). Flexibility was measured by administering Modified sit and reach test and sit and reach box was used to collect the data. Cardio respiratory endurance was measured by administering Cooper’s 12 Minutes Run and Walk test using a Tread Mill (Motus 990) with 1 degree increment. VO$_2$max was calculated from the scores of cardiorespiratory endurance and noted in the table with the unit of ml/kg/min. Muscular Strength Endurance was tested through Modified Sit Ups Test and in physiological variables Spigmomanometer and clinical stethoscope were used to measure Systolic Blood Pressure and Diastolic Blood Pressure. It was considered as pre-test scores. On completion of the pre-test, the subjects were treated with respective treatments for 12 weeks period three days per week in Calisthenics exercise on the Land, Calisthenics exercises in the water and yogic practices. After completion of the treatment, the subjects of all the groups were tested again as in the pre test. The analysis during pre-test and post test periods would
be identical. Further, the collected data prior to test and after test were treated with Analysis of Covariance and paired t-test. The level of significance for the investigation was 0.05 level confidences which are considered to be appropriate for this study.

CONCLUSION

1) Calisthenics exercises performed on the Land Group developed Percent Body Fat, Lean Body Mass, Flexibility, Cardio Respiratory Endurance, Muscular Strength Endurance, Resting Heart Rate, Maximum Oxygen Consumption, Systolic Blood Pressure and Diastolic Blood Pressure.

2) Calisthenics Exercise performed in the Water Group developed Percent Body Fat, Lean Body Mass, Flexibility, Cardio Respiratory Endurance, Muscular Strength Endurance, Resting Heart Rate, Maximum Oxygen Consumption, Systolic Blood Pressure and Diastolic Blood Pressure.


4) The exercise programme of Calisthenics exercises on the Land Group developed Percent Body Fat, Lean Body Mass and Muscular Strength Endurance better than Calisthenics Exercise performed in the Water and Yoga Practices Groups.

5) The exercise programme of Calisthenics exercises in the Water Group developed Cardio Respiratory Endurance and Maximum Oxygen
Consumption better than Calisthenics Exercise performed on the Land and Yoga Practices Groups.

6) The exercise programme of Yoga Practices Group developed Flexibility, Resting Heart Rate, Systolic Blood Pressure and Diastolic Blood Pressure better than Calisthenics exercises on the Land and Calisthenics exercises in the Water Groups.

RECOMMENDATION

1 Calisthenics Exercise on the Land training is a simple activity which can be done by anyone at any point of time without any equipments. Its effect on health related physical fitness and physiological variables was scientifically proved. Hence, it was suggested to the persons in the field of training and coaching to implicate calisthenics exercises into their physical training programme for the development of Percent Body Fat, Lean Body Mass and Muscular Strength Endurance.

2 Calisthenics exercises in the water allow high level of energy expenditure with relatively little strain to the body because of the cushioning effect of water providing full body resistance. The effect of Calisthenics exercises in the Water on health related physical fitness and physiological variables was scientifically proved. It can be included in the training programme by the persons in the field of training and coaching who focuses the development of Cardio Respiratory Endurance and Maximum Oxygen Consumption.

3 The effect of Yogic Practices on health related physical fitness and physiological variables showed significant improvement in Flexibility, Resting
Heart Rate and Blood Pressure which was scientifically proved in this study. It can be included in the training programme by the persons in the field of training and coaching who focuses the development of Flexibility, Resting Heart Rate and Blood Pressure.

**FUTURE WORK**

1. A similar comparative study can be done on software engineering female students.

2. More number of health related Physical Fitness variables and physiological variables can be included under the same training programme.

3. A similar study can be conducted on large population.

4. A study can be conducted among the persons working in Software.