Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

In the present competitive world women are visible, but then active involvement in physical activity is not yet pervassive. They are entering new roles in the society, which expects them to move equally with their male counterparts. This competition asks for the appraisal of the positive health life style of women. Hence there was great need felt to bring about awareness among the women specially from middle aged group with respect to the benefits gained from participation in the exercise programme. Thus, the purpose of the study was to investigate the effect of twelve weeks of aerobic exercise programme on selected physical and physiological variables of middle aged women.

The subject of this study were 80 female residents of Vikaspuri area in New Delhi. The age of the subjects ranged from 40 to 45 years. The subjects were randomly assigned to experimental group (N=40) and a control group (N=40). The experimental group participated in the twelve
weeks aerobic programme thrice a week. The control group were not involved in any sort of exercise programme for the same period.

The selected physical and physiological variables were recorded for experimental and control group prior to after the aerobic exercise programme. In the case of experimental group the selected physical and physiological variables were recorded at four pre-determined stages of exercise programme i.e., prior to the beginning of exercise programme (initial week), and then after fourth week, eighth week and twelfth week.

The data pertaining to all the selected physical and physiological variables obtained through four different stages of testing from experimental group were statistically analysed employing F test (analysis of variance - one way). To find out the paired mean differences were F test was significant the Scheffe's post-hoc test of significance was used. The comparison there of between experimental and control group were statistically analysed using 't' test. For testing the significant differences in selected physical and
physiological variables obtained from 't' ratio and 'F' ratio the level of significance chosen was .05.

Conclusions

Recognising the limitations of the present study the following conclusions may be drawn:

Cardio-vascular Endurance

1-a) Cardio-vascular endurance is improved through regular participation in 12 weeks of aerobic exercise programme in the middle aged females of 40-45 years of age.

1-b) Cardio-vascular endurance in the middle aged females develops during the later stage (after eight weeks of training). Maximum improvement occurred after 12 weeks of aerobic exercise programme.

Flexibility
(Sit and Reach, Shoulder & Wrist Elevation)

2-a) Participation in 12 weeks of aerobic exercise programme improves the flexibility (sit and reach, shoulder and wrist elevation test) in the females of the age group 40-45 years.

2-b) To obtain significant rate of improvement in the sit and reach test a period of 12 weeks of aerobic
exercise programme is sufficient. Improvement was observed only in the later stage of training (after twelve weeks).

In the case of shoulder and wrist elevation test, improvement was noticed in the eighth week of the aerobic exercise programme.

**Grip Strength**

3-a) Grip strength (right hand and left hand) improves in the case of middle aged females through the participation in 12 weeks of aerobic exercise programme.

3-b) Grip strength improved during the later stages (eighth week) of aerobic exercise programme and it further improved after the twelfth week.

**Leg Strength**

4-a) Leg strength in the females improves through the participation in 12 weeks of aerobic exercise programme.

4-b) To gain significant rate of improvement in leg strength the duration of training for 12 weeks is sufficient. Leg strength improved only in the later stages (after twelfth week) of the training programme.
Back Strength

5-a) Back strength improves through the participation of middle aged females in 12 weeks of aerobic exercise programme.

5-b) To gain significant rate of improvement in back strength minimum duration of 12 weeks of aerobic exercise programme is sufficient. The rate of improvement was observed in the later stage (after twelfth weeks) of the training programme.

Body Weight

6-a) Participation in 12 weeks of aerobic exercise programme does not significantly reduce the body weight of the middle aged females.

Fat Weight

7-a) Participation in 12 weeks of aerobic exercise programme does reduce the fat weight in the case of middle aged females.

7-b) To obtain significant reduction in the fat weight of the middle aged females a minimum duration of 12 weeks of aerobic exercise programme is required. The significant reduction was observed in the later stages (after twelfth week) of the training programme.
Lean Body Mass

8. Participation in 12 weeks of aerobic exercise programme does not significantly improve the lean body mass in the case of middle aged females.

Resting Heart Rate

9-a) Resting heart rate improves after a participation in 12 weeks of aerobic exercise programme in middle aged females.

9-b) To gain significant improvement in the resting heart rate in the middle aged females, the duration of the aerobic exercise programme should be of minimum 12 weeks. The significant improvement in the resting heart rate was observed during the late stages (after twelfth week) of the aerobic training programme.

Resting Blood Pressure

10-a) Participation in a 12 weeks aerobic exercise programme improves the resting blood pressure (systolic and diastolic pressure) in the middle aged females.

10-b) The significant rate of improvement in the resting blood pressure was observed during the later stage (during the eighth and twelfth week) of the aerobic exercise programme.
Air Flow Rate

11-a) Air flow rate improves through a participation in 12 weeks of aerobic exercise programme in middle aged females.

11-b) The rate of significant improvement was observed in mid stages (after fourth, eighth) and later stages when compared to the subjects initial level.

Vital Capacity

12-a) Participation in 12 weeks of aerobic exercise programme improves the vital capacity in the middle aged females.

12-b) Vital capacity significantly improved during the eighth week and after twelfth week it further improved.

Cholesterol

13) Participation in 12 weeks of aerobic exercise programme does not improve the cholesterol level in the middle aged females.

Haemoglobin

14) Haemoglobin does not significantly improve through a participation in 12 weeks of aerobic exercise programme in middle aged females.
Recommendations

In the light of the conclusions drawn, the following recommendations are made:

1. Similar studies may be undertaken with age group other than those employed in this study.

2. Similar studies may be undertaken by increasing the duration of the training programme.

3. Similar study may be conducted on the males of the same age group.

4. Similar studies may be conducted on subjects belonging to different regions of the country (i.e. North, East, South, West).

5. Similar study may be conducted by comparing the physiological adaptive changes of 12 weeks of aerobic training programme on Indian and other foreign National subjects of same age and sex groups.